NESAP
2012-2023

NATIONAL EARTHQUAKE STRATEGY and ACTION PLAN

AFAD

REPUBLIC OF TURKEY
PRIME MINISTRY
DISASTER and EMERGENCY MANAGEMENT PRESIDENCY

NATIONAL EARTHQUAKE STRATEGY

AND

ACTION PLAN

2012-2023

PRIME MINISTRY

DISASTER AND EMERGENCY MANAGEMENT PRESIDENCY

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ABBREVIATIONS

AFAD	: Disaster and Emergency Management Presidency
AFAD-ED	: Disaster and Emergency Management Presidency, Earthquake Department
AR-GE	: Research and Development
BTK	: Information Technologies and Communication Authority
CC	: Cooperation and Collaboration
CE	: Capacity Enhancement
ÇŞB	: Ministry of Environment and Urbanisation
ÇOMÜ	: Çanakkale Onsekiz Mart University
DASK	: Turkish Catastrophe Insurance Pool
DDK	: Earthquake Advisory Board
HGK	: General Command of Mapping
HÜ	: Hacettepe University
İBB	: İstanbul Metropolitan Municipality
IS	: Institutional Structuring
İTÜ	: İstanbul Technical University
JICA	: Japan International Cooperation Agency
KB	: Ministry of Development
KENTGES	: Integrated Urban Development Strategy and Action Plan
KRDAE	: KOERI - Boğaziçi University, Kandilli Observatory and Earthquake Research Institute
LA	: Legislation Arrangement
MEB	: Ministry of National Education
MSB	: Ministry of National Defence
MTA	: General Directorate of Mineral Research and Exploration
NESAP	: National Earthquake Strategy and Action Plan
NGOs	**:** Non-Governmental Organisations
ODTU	: Middle East Technical University
PAÜ	: Pamukkale University
SHÇEK	: General Directorate of Social Services and Child Protection Agency
TARSİM	: Agricultural Insurance Pool
TBB	: Turkish Union of Municipalities
TBMM	: Grand National Assembly of Turkey
TDMD	: Earthquake Engineering Association of Turkey
TDV	: Turkish Earthquake Foundation
TMMOB	: Union of Chambers of Turkish Engineers and Architects
TOKİ	**:** Housing Development Administration of Turkey
TRT	: Turkish Radio and Television Agency
TSRŞB	: Association of the Insurance and Reinsurance Companies of Turkey
TUJJB	: Turkish National Union of Geodesy and Geophysics
TÜBİTAK	: The Scientific and Technological Research Council of Turkey
TÜBİTAK-MAM	: TUBİTAK-Marmara Research Institute
TÜİK	: Turkish Statistical Institute
YÖK	**:** Higher Education Council

FOREWORD

We all acknowledge that on account of its geologic, seismic, geomorphologic attributes and particular climate this country is frequently affected by natural disasters that cause significant loss of life and property. Two-thirds of our land surface falls in the two highest earthquake hazard zones. Since the 1950s earthquakes alone have claimed the lives of more than 32 000 fellow citizens. Economic statistics for the last sixty years show that direct and indirect economic losses engendered by natural disasters account for 3 percent of the country's GDP. Forecasts exist that tell us that in a major earthquake in a major city this ratio may well double.

A sustained series of activities have been organized during the last decade for the purpose of enhancing the country's capacity to fight against earthquakes, and many reports have been prepared for that purpose. One shortcoming that has been consistently identified as the missing element has been the lack of a road map to guide a nation wide campaign. The Disaster and Emergency Management Presidency of Turkey attached to the Prime Ministry has undertaken a rapid endeavor to address this shortage. Under coordination of the AFAD's Earthquake Advisory Council representatives from an array of public agencies active in the area, academicians and practitioners have joined forces to prepare a nation-wide earthquake strategy and action plan. I am pleased that this work has now been completed and that a national earthquake strategy and action plan has been placed in execution.

The fundamental philosophy of the "National Earthquake Strategy and Action Plan-2023 (NESAP-2023) has been summarized as "achievement of new earthquake-resilient, safe, well prepared and sustainable settlements so that the physical, economic, social, environmental and political harms and losses that may be engendered by earthquakes are prevented, or their effects reduced." The document aims to reduce the earthquake risk and enable a society that is prepared against this form of hazard through examining the institutional framework for this objective and establish the priorities of the R&D programs on the subject. The strategy document is formed along three principal themes, seven objectives, 29 strategies and 87 action items for which 13 responsible agencies have been designated for implementing the cooperative work.

We live in a geography that is heavily prone to natural disasters and carries a high degree of risk. This is a fact that we must accept as a given but against which we must never yield or relinquish our battle and take preventive measures. While we cannot prevent the processes that emerge as natural hazards, we do have the means of reducing the damages they cause. I take the opportunity now to express my gratitude to all of our collaborators who have contributed toward the preparation of this document. There should be no doubt that my government will do its utmost to ensure that the provisions of the document are put into practice. Our common wish and priority are that all of our fellow citizens should live peacefully in this beautiful country, far from the fear of disasters.

Beşir ATALAY
Deputy Prime Minister

INTRODUCTION

1. Basic Objective

On account of its geologic, topographic and climatic attributes Turkey has frequently been confronted with many different kinds of perils and threats that turn into disasters for its inhabitants, and has managed to develop significant achievements and experience in coping primarily with earthquakes and other forms of natural disasters since the establishment of the Republic in the 1920s. During the post-1950s period massive and rapid domestic migration to urban settlements, poorly supervised urban development have combined with an equally rapid industrialization process to deliver cities that are critically vulnerable to all natural, technologic, environmental and human-induced hazards. Earthquakes command front position in the ranking of these risks. Renewed awareness that the practice of disaster risk reduction should be accorded precedence over the traditional policies for post-event healing in the aftermath of the earthquakes in Kocaeli and Düzce in 1999 when excessive levels of loss of life and property and economic, social and environmental damage were experienced. In response to this need "National Earthquake Strategy and Action Plan" has been prepared as the first step so as to empower a society that is well prepared and resilient for reduction of the seismic risk and capable of coping well in the face of earthquakes. The crafting of the institutional groundwork to achieve these objectives and to determine the associated R&D priorities is among the tasks of the document. The principal objective of the Plan is to **constitute new earthquake-resistant, safe, well prepared and sustainable settlements so that physical, economic, social, environmental and political harms and losses that may be engendered by earthquakes are prevented, or their effects reduced**.

2. Principal Development Directions, Objectives and Methodology for Plan Development

The Earthquake Advisory Board (EAB), part of the Disaster and Emergency Management Presidency of Turkey (AFAD), resolved in 2010 to launch an "Earthquake Strategy Development Exercise" with the objective of identifying activities that must be undertaken to create the policies and establish priorities for protection from earthquakes and reduce their detrimental effects, suggest policies to be followed in the post-earthquake phase and earthquake-related research. As part of this decision the Working Commissions listed below have been formed with the participation of EAB members as well as external experts (Annex-1):

Commission 1: Earthquake Information Infrastructure Research
Commission 2: Earthquake Hazard Analysis and Maps
Commission 3: Earthquake Mitigation Plans (scenario-risk analysis)
Commission 4: Earthquake Safe Settlements and Development
Commission 5: Education and Enhancement of Public Awareness
Commission 6: Protection of the Historic and Cultural Property from Earthquakes
Commission 7: Emergency Management
Commission 8: Legislation Development and Financial Arrangements

These Working Commissions have submitted their detailed reports to AFAD, and the reports were approved during the Fourth Meeting of EAB in December 2010. Each report contains problem areas relevant to the scope of each particular commission along with objectives, strategies and actions and their justifications. These items have been summarized in the form of tables. In the interest of eliminating repetitions contained in the reports of the Working Commissions and achieving consistency of style of expression it was resolved to form a sub commission that would

combine the individual reports in single text. During preparation of the draft "National Earthquake Strategy and Action Plan-2023 (NESAP-2023)" all sub commission reports were combined with the "Integrated Urban Development Strategy and Action Plan, 2010-2023 (IUDSAP-2023)" as well as the planned earthquake targets and strategies of relevant ministries, agencies and institutions. This approach has led to the current draft National Earthquake Strategy and Action Plan. Three principal thematic groups have shaped the objectives, strategies and actions of NESAP-2023 as given in the following;

1) Learning about earthquakes
2) Earthquake safe settlement and construction
3) Coping with the consequences of earthquakes

The three thematic axes have been considered in the current document where each theme has been elaborated into its own objectives and actions on the basis of work group reports. Further designation of agencies directly responsible for the implementation of the actions and agencies those are associated with the same targets (Annex-2). In Annex-3 the timelines foreseen for the actions are provided. A consensus has been reached over the Plan at a meeting held on July 18, 2011 attended by authorized representatives of the responsible agencies. Then on August 9, 2011 the Higher Council for Disaster and Emergency High Board met to adopt NESAP-2023 that then was published in the Official Gazette on August 18, 2011, Number 28029 to become effective.

The periods for realization of the Action Plan tasks have been based on the framework of **Short Term (2012-2013), Medium Term (2012-2017)** and **Long Term (2012-2023)** durations. The Strategy and Action Plan has also been converted into a summary table that is presented at the end. It has been found suitable to ensure that the table format should follow the Integrated Urban Development Strategy and Action Plan, 2010-2023 (IUDSAP-2023) that has been prepared in 2010

by the Ministry of Environment and Urbanization and approved by the Higher Planning Council before promulgation in the Official Gazette. The types of action have been considered under four principal headings as **Cooperation and Coordination (CC), Legislation Arrangement (LA), Institutional Structuring (IS)** and **Capacity Enhancement (CE)**. Their abbreviations have been introduced into the strategy and action plan tables. In preparation of NESAP-2023 the fundamental principle has been agreed that these actions are permanent tasks for the designated agencies. Other considerations incorporated into NESAP are Public-Private Collaboration, compatibility with the earthquake technical acquisitions of the EU.

THEMES, OBJECTIVES, STRATEGIES and ACTIONS

The following headings describe the abbreviations and annotations in the action tables.

Responsible Organisation: The organisation that is tasked to provide the groundwork and/or collaboration and coordination required for achievement of the stated action.
Associated Organisation: All other organisations and institutions that have been invited by the Responsible Organisation for providing the cooperation and coordination required for the action.
Term for Realization: The period of time allowed for the preparation and achievement of the action.

Goal A

LEARNING ABOUT EARTHQUAKES

OBJECTIVE A.1: ENHANCEMENT OF THE EARTHQUAKE INFORMATION BASE

The underlying support for development, enhancement, sustainability and accessibility by the public of the earthquake information basis is an essential part of loss reduction activities. The determination and evaluation of the earthquake hazard at country, region or local scales hinge on the operation of continuously and effectively operated monitoring and recording systems that enable coordinated multidisciplinary research in earth sciences.

STRATEGY A.1.1. Coordination shall be achieved in the R&D efforts for disaster information base, establishing priority R&D areas for support.

Action A.1.1.1. With the support of a scientific coordination council composed of research agencies and support institutions involved in earthquake related subjects, priority areas will be determined, and guided multidisciplinary research projects will be developed.

Following all major earthquakes and even some moderately strong ones it is observed that direct or indirect seismic losses cannot be reduced to a desirable degree. It is evident that all operations in reducing earthquake loss reduction hinge on the skill of associated scientific and industrial branches to generate cooperation and on the success for the achievement of sustainability in research and implementation. It is therefore of great importance to establish the priorities of earthquake-related research and development and to ensure that support is provided toward their realization.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TÜBİTAK, Ministry of Development, Universities, Relevant Institutions working on earthquakes.	2012-2017	CC, CE, IS, LA

Action A.1.1.2. Continue work toward understanding the earth crust structure and the geodynamic evolution.

The nucleation characteristics of earthquakes that occur are correlated basically with large scale deformations associated with plate movements in the upper crust. The structural properties of the crust and its geodynamic behavior play an important role in this process. The number of studies in this particular area in Turkey is relatively small, performed primarily by the General Directorate of Mineral Research and Exploration. (Ministry of Energy and Natural Sources) It is judged to be beneficial that further studies and research be promoted with increased emphasis.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Energy and Natural Sources	Universities, TÜBİTAK-MAM, Ministry of Development, HGK	2012-2023	CC CE

Action A.1.1.3. Research on crustal rupture processes and earthquake wave propagation will be supported.

For assessment of regional seismic hazard it is necessary to identify rupture processes and establish ground motions expressed as ground displacement, velocity or acceleration on the basis of shallow and deep seismic wave propagation information. Further numerical and experimental model studies are required for a better understanding of the rupture processes in Turkey to obtain their improved mechanical and physical characterization. The shortcoming of information in this area must be eliminated.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TÜBİTAK-MAM, Universities, Ministry of Development	2012-2023	CC CE

Action A.1.1.4. Crustal deformations before, during and after earthquakes will be continuously monitored and modeled with the use of national and regional geodetic networks.

Earthquakes occur because of the instantaneous release of the stress fields in the vicinity of fault zones that have built up over different periods (from minutes to many years) on account of spatial and temporal crustal deformations. Monitoring these deformations through national, regional, local and temporary networks and using the data to obtain enhanced basis for determination of earthquake hazard and reduction of risk will be enabled.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
HGK	TÜBİTAK-MAM, Universities	2012-2023	CE

Action A.1.1.5. Earthquake activity will be continuously monitored through sustained multidisciplinary and systematic research.

It is observed in Turkey as well as the rest of the world that major earthquakes are preceded by anomalies for which the physical mechanisms cannot be fully explained. A multidisciplinary and scientifically systematic study of these anomalies will likely lead to a better understanding of earthquakes those are highly complex natural phenomena. This may contribute to the forecasting of potential earthquakes, thus reducing the loss of lives.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TÜBİTAK-MAM, KRDAE, MTA, Universities, HGK	2012-2023	CC CE

STRATEGY A.1.2. An Earthquake Databank will be instituted and its function will be made permanent.

Action A.1.2.1. All earthquake-related information, data and reports will be collected from R&D establishments for editing.

While much earthquake-related information, data and written report reside with the R-D agencies in Turkey, a unified way of accessing these will prove to be a time-saving ease. The archiving of this body of data in electronic format will be the primary source for the envisioned Earthquake Information Databank.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TÜBİTAK-MAM, KRDAE, Universities, TUJJB, Relevant Institutions	2012-2023	CE

Action A.1.2.2. An Earthquake Databank will be created, and its function will be made permanent so that all earthquake data will be processed in accordance with international standards, stored in uniform formats and distributed to all stakeholders from a single source.

To date Turkey has experienced many destructive earthquakes, and has paid a high price in terms of lives lost and economic and social setbacks. Each destructive earthquake has also served as a natural laboratory, generating much data that might have been used for reducing the losses of future earthquakes. Nonetheless, this body of knowledge has not been systematically documented, and a central archive that is publicly accessible has not been created. Hence, a national level "Earthquake Databank" must be created and expanded.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TÜBİTAK-MAM, KRDAE, Universities, Relevant Institutions	2012–2017	CC CE

Action A.1.2.3. Earthquake catalogues for the historic and instrumental periods will be updated in standardized form.

Seismological and strong motion observation stations are indispensable elements for earthquake studies and serve as guides for implementing proper countermeasures. A prime requirement for ensuring the quality and reliability of the data is to guarantee that the stations and the data are in accordance with standardized conditions. In the interest of a broader data recovery base the position, quality and number of existing stations should be reviewed, and where necessary new stations should be established.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, MTA, Universities	2012–2023	CE

STRATEGY A.1.3. Earthquake observation networks will be developed.

Action A.1.3.1. All national and regional scale seismological and strong motion observation and recording stations will be reviewed and developed with respect to purpose, location, quantity and quality.

Seismological and strong motion stations operating at national scale are an indispensable tool for earthquake studies and related countermeasures. A high priority requirement is to ensure that these stations and the data they record are in agreement with standardized practices so that a wider and more reliable network for recovery of earthquake data is made possible at national scale with regard to their purpose, location, quantity and quality, and new stations should be set up where needed.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, TÜBİTAK-MAM, Related Universities, Relevant Governmental Institutions	2012-2017	CC

Action 1.3.2. Cooperation and coordination among national or local institutions operating seismological or strong motion networks will be realized, and joint operation and data sharing procedures developed.

Various agencies operate seismological and strong motion stations in Turkey. This operation modality can lead to problems of resource inefficiency and lack of coordination. It is important that a single coordination center should be named so that these investments funded through public resources are used with improved efficiency, are made better adapted to data sharing and the overall system performance is increased. The desired coordination requires the cooperation of the relevant agencies.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, TÜBİTAK-MAM, Related Universities, Relevant Governmental Institutions, Local Authorities	2012-2023	CC

STRATEGY A.1.4. A national preliminary earthquake damage estimation and early warning system shall be developed.

Action A.1.4.1. A system will be developed for analyzing and evaluating damages and losses brought about by earthquakes.

It is judged important that a national-scale system for early damage detection, warning and communication should be designed and its modeling completed before system installation is carried out. This will help achieve the objectives of issuing preliminary warning and loss estimates, enhance public awareness and facilitate earthquake loss reduction in addition to widening the earthquake information basis.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, Universities, Local Authorities	2012-2017	CC, CE

Action A.1.4.2. Further to using the data obtained from these activities, satellite imagery and data from geographic information systems will be incorporated into the system.

AFAD is an authorized user for the International Charter "Space and Major Disasters" organisation that has been set up to provide satellite imagery as a contributory tool for post-disaster emergency management. During recent disasters these images have been used for damage assessment purposes. The data will facilitate determination of the size of the disaster in the earthquake affected area and contribute significant and rapid assistance for damage assessment.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, Universities, Local Authorities, HGK	2012-2023	CC CE

Action A.1.4.3. Provincial Disaster and Emergency Management Directorates will be enable to use the damage assessment and early warning systems to be established.

Given that the local operation of the damage assessment and early warning systems only through personnel who have been seconded from the central resource will prove to be unfeasible, training will be provided for the personnel of the Provincial Disaster and Emergency Management Directorates in the running of these systems.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, Universities, Local Authorities, Provincial Disaster and Emergency Management Directorates, Municipalities	2012-2017	CE

STRATEGY A.1.5. Administrations and public authorities will be informed from a single source following assessment of earthquake activity.

Action 1.5.1. Work groups with different stakeholders from a multitude of disciplines will be created and their work guidelines will be established.

It is accepted that the creation of work groups consisting of varied institutional membership and incorporating persons from different disciplines involved in earthquake studies is the best approach for examination of short-term earthquake activity (swarms, aftershocks) and informing different administrations and public authorities from a single source.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TUBİTAK-MAM, KRDAE, MTA, Universities	2012-2017	CE, CC, LA

Action 1.5.2. The principles shall be established for methods to be used in the studies**,** equipment and instruments acquired evaluation procedures and informing relevant parties.

The realization of pursuing and sustaining successfully work on investigation short term earthquake activity requires that the principles for the use of methods, instruments and hardware devices as well as ways of informing relevant authorities should be established a priori and further action should be ensured these guidelines.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TUBİTAK-MAM, KRDAE, HGK, MTA, Universities	2012-2013	CE, LA

STRATEGY A.1.6. Steps will be taken to ensure that information contamination that occurs prior to and following all disasters, led by earthquakes, is prevented so that the public is informed accurately.

Action A.1.6.1. Guidelines in conformance with ethical principles for earthquake forecasts and predictions will be developed and disseminated through the media. Discussions among scientists and researchers in this area can lead to widespread public unease.

Earthquake predictions and forecasts originating from scientists and other relevant agencies and institutions that do not conform to pre-established ethical principles or scientifically accepted procedures can cause great social, economic, psychological and political discomfort and complication in societies, as have been experienced in Turkey as well as elsewhere. In *the interest of minimizing such effects ethical guidelines will be developed and disseminated through the media.*

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, YÖK, Media, NGOs, Relevant Governmental Organisations	2012-2013	CE, LA

Action A.1.6.2. New approaches and modalities will be developed for the important objective of appropriate media and public relations following disasters. Activities shall be initiated for the training of representatives of the media and newscasters.

There must be a continuous stream of public news following disasters. The public and media relations units of the relevant agencies should be staffed with people who have been trained in this area so that dissemination of accurate daily news and information to the public about the ongoing activities is established as the fundamental principle.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Governorates, Municipalities, Universities, Media, Relevant Governmental Organisations	2012-2013	CE, LA

STRATEGY A.1.7. A tsunami early warning system will be installed and made compatible with similar systems elsewhere.

Action A.1.7.1. Tsunami risk models will be built and loss scenarios developed.

The elaboration of tsunami risk models based on data recorded by the tsunami early warning systems for preparation of loss scenarios will contribute not only to the improvement of earthquake information but will benefit loss reduction activities.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
KRDAE	AFAD, Universities	2012-2017	CE, CC

Action A.1.7.2. A network for measuring mean sea levels will be developed.

The use of the measured data recovered from the network will be integrated with activities for improving tsunami models and early warning systems.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
HGK	MTA, Universities	2012-2013	CE

Action A.1.7.3. The required seismological and geophysical surveys and other investigations will be completed for an efficient operation of the system.

It is important that geophysical surveys should be completed because they play an important role in measurements and data transfer that enable the setting up of the tsunami early warning system and sustaining its activity.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
KRDAE	MTA, AFAD, Universities	2012-2013	CE

Action A.1.7.4. Early warning exercises will be conducted and awareness for it will be formed.

It is important that data from the system should be shared with the community and the necessary warning be issued. For this purpose decision makers and other stakeholders in settlements exposed to the tsunami risk will be trained and their awareness raised in keeping with existing tsunami early warning systems and their operational principles.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	KRDAE, Universities	2012-2017	CE, CC

OBJECTIVE A.2: EARTHQUAKE HAZARD ANALYSIS AND REVISION OF HAZARD MAPS

The correct description of the seismic hazard at country, region or local scale requires that we should determine the probabilities for the magnitude, frequency and possible location of earthquakes caused by active faults as well as the attenuation patterns of ground motions over distance and the effect of local geology on that motion. The first step in the determination of the earthquake risk is the accurate establishment of the hazard at country, region of local scales. In the next stage one determines the exposure of assets to the hazard and their damageability when subjected to different levels of ground motion to arrive at the risk of losses. Models designed to eliminate or reduce the risk over the long period are then developed and put into action. For these reasons maps expressing the results of earthquake hazard analysis are the basic steps of an effective seismic safety program.

STRATEGY A.2.1. Comprehensive background surveys shall be carried out for preparation of regional and local seismic hazard maps

Action A.2.1.1. Large scale (1/250 000) regional active fault and seismotectonic maps will be prepared and fault related information incorporating current data will be used on a grid using GIS basis with the use of appropriate statistical procedures.

Virtually the entire land surface of the country is under the earthquake threat, so much emphasis must be placed on active fault studies for an accurate determination of the seismic hazard. As a result the "Active Fault Map of Turkey" project currently carried out by MTA, the Mineral Research and Exploration General Directorate, and regional and local scale active fault maps as well as seismotectonic maps must be completed soon to include all active fault related parameters. The fundamental input for all seismic loss reduction activities is the detailed identification of all faults that can generate destructive earthquakes. Therefore the mapping of all such faults on a countrywide scale, their updating and the dissemination of earthquake parameters to all decision makers and end users are of great significance.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Energy and Natural Sources	AFAD, Universities	2012-2013	CE, CC

Action A.2.1.2. For the purpose of establishing active fault parameters on selected faults, fault slip velocities will be determined with the use of geodetic methods.

Parameters that characterize the earthquake nucleating potential for active faults that form the basis for seismic hazard maps must be established in accordance with standardized procedures regionally and globally. It is necessary that geodetic methods should be employed in order to measure the fault slip velocities.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
HGK	Universities, TUBİTAK-MAM	2012-2017	CE, CC

Action A.2.1.3. In selected areas paleoseismologic investigations shall be carried out.

Paleoseismological investigations are required to establish fault parameters (such as location, time-frame, magnitude, recurrence period, maximum rupture length-magnitude correlation, displacement amount) of faults that have been identified on the MTA maps for the recent geologic past (approximately the last 10 000 years) so that their future activity can be forecast with greater reliability for seismic hazard assessments.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Energy and Natural Sources	Universities, TUBİTAK-MAM, AFAD, Local Administrations	2012-2023	CE, CC

Action A.2.1.4. Regional scale maps for liquefaction potential, an earthquake-related form of ground failure, based on geological-geomorphological criteria shall be prepared.

In earthquakes that occur in Turkey the heaviest structural damage is observed in settlements built on Quaternary age loose sediments. One primary cause for this is soil liquefaction. With this fact in mind the production of zonation maps displaying liquefaction sensitivity based on surficial facies maps complemented by classification of these sediments with respect to geological-geomorphological and generalized hydrogeological criteria will constitute the basis for more detailed activities on the mitigation of the effects of such soil response. The activity to be undertaken will combine the current know-how and technical resources of MTA in collaboration with the relevant departments of universities and local governments.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Energy and Natural Sources	Universities, Local Administrations	2012-2017	CE, CC

Action A.2.1.5. For purposes of spatial planning in critical settlements further investigations will be conducted to supplement existing information on ground amplification and velocity variations in connection with soil-structure interaction assessment.

This action is required for research that will be carried concerning younger alluvial deposits that exhibit amplification, velocity variation and the consequent soil-structure interaction during earthquakes. Within this scope, for the purpose of reducing earthquake damages in settlements that are subject to ground amplification, the effect of this phenomenon on structural response must be taken up and the validity of spectral response functions in codes must be verified.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Local Administrations, Ministry of Environment and Urbanization, Municipalities	2012-2017	CE, CC

Action A.2.1.6. The principles, methods and guidelines for the use of microzonation maps in spatial planning activities will be identified. This will be used in preparing guidelines for local governments as well as sample microzonation maps as input to urban planning.

The principal objective of microzonation maps is to indicate seismic and other natural hazard effects on large scale (1/25 000 or larger) maps so that this information serves as input to decisions on physical plan activities concerned with environmental arrangements, urban settlement plans and provincial development plan decisions at different stages. These activities provide basic input to land use plans for new settlements and to risk reduction plans in existing settlements. They must be advanced and strictly enforced for reducing seismic risk.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Environment and Urbanization	AFAD, Ministry of Interior, Governorates, Universities, Provincial Administration Units, Development Agencies, Ministry of Development	2012-2023	CE, CC, LA

Action A.2.1.7. Starting from the most vulnerable settlements regional and local scale earthquake hazard maps will be prepared and such studies will be supported on a priority basis.

Starting from provinces and regions that currently are experiencing quiescence of seismic activity the elaboration of regional seismic hazard maps constitutes an urgent and important countermeasure against the seismic hazard.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Governorates, Provincial Special Administrations, Municipalities, KRDAE, Ministry of Development	2012-2017	CE, CC, LA

STRATEGY A.2.2. The principles for seismic risk analysis and preparation of earthquake scenarios will be determined.

Action A.2.2.1. The principles, procedures and implementation guidelines for analyzing, assessing and mitigating risks caused by earthquakes or earthquake triggered secondary effects will be determined and guiding publications will be prepared for local administrations.

Decision makers require information on earthquakes and secondary seismic hazards and on plans for reducing damages associated with them. During times of disasters thanks to these plans they can intervene affectively and rapidly. Manuals for disaster managers must therefore be prepared as guiding documents

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Local Authorities, Relevant Governmental Organisations, Municipalities	2012-2013	CE, CC, LA

Action A.2.2.2. Principles for predicting earthquake losses and preparing earthquake scenarios will be determined and disseminated nationally.

While determining the size of the probable earthquake and the area it will affect through the use of earthquake scenarios, estimates for damages and losses are obtained. This way, a preliminary assessment for the size of the events that will be encountered subsequent to the occurrence is made, and steps can be taken for implementing the necessary countermeasures.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Local Administrations	2012-2013	CE, CC, LA

Action A.2.2.3. Risk reduction strategies and avoidance plans will be prepared for processes in earthquake risk reduction.

During the post-2000 period legal amendments concerning provincial special administrations and municipal laws have charged these tiers of administrations with the task of preparing disaster and emergency plans for the purpose of providing protection from and reducing the effects of natural disasters, primarily earthquakes. While the fundamental objective here is protection from disasters, no such plans exist at provincial or municipal level, so this article of the law is interpreted only as the preparation of provincial emergency plans. Through this action the preparation and implementation of the procedures, methods and approaches will be realized for the real objectives of risk reduction strategy preparation and avoidance planning.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Governorates, Local Administrations	2012-2017	CE

Action A.2.2.4. Pilot settlement centers will be created in urban or rural areas vulnerable to earthquakes so that risk reduction plans are implemented.

For earthquake loss reduction activities pilot applications will be materialized by establishing new settlement areas in high-hazard prone settlements that are fully resilient against earthquakes. This work will be undertaken first in provinces in the eastern part of the country where the building stock is seismically vulnerable.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Environment and Urbanization, Ministry of Development, TOKİ, Universities, Ministry of Food, Agriculture and Livestock, Local Administrations	2012-2023	CE, CC, LA

Goal B

EARTHQUAKE SAFE SETTLEMENT and CONSTRUCTION

OBJECTIVE B.1. : THE REALIZATION OF EARTHQUAKE SAFE SETTLEMENTS AND EARTHQUAKE RESISTANT CONSTRUCTION

Among fundamental objectives of earthquake risk management is the achievement of safer and better livable settlements with earthquake resistant construction. The most effective way of realizing this objective lies in revising settlement plans as required by the principal risks, strictly enforcing the Seismic Code and other relevant technical documents and in determining the risks in existing settlements and buildings before launching the necessary activities to make them better capable of resisting earthquake effects.

STRATEGY B.1.1. Procedures that emphasize hazard and risk in planning, environment and urban activities will be accorded priority and primacy.

Action B.1.1.1. Development Agencies shall take into account earthquake hazards and risks within their domains, and conduct their activities such that these risks will not be increased, or actually reduced.

While preparing sectoral, regional or provincial plans earthquake hazards and risks shall be determined, and steps shall be taken to ensure that countermeasures to prevent or reduce these risks are enforced without concession during the planning stage.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Development	Ministry of Environment and Urbanization, Development Agencies, AFAD, Municipalities, Governorates, Provincial Special Administrations	2012-2017	CE CC

Action B.1.1.2. Prior to preparation of provincial development and environmental arrangement plans Provincial Special Administrations shall determine the hazards and risks in the province, developing strategy plans for their reduction ensuring that they are compatible with environmental and development plans.

Measures for disaster risk reduction, primarily of urban risks, shall be put into effect in environmental regulation and provincial development plans. Such measures should be led by Provincial Special Administrations and Municipalities identifying provincial hazards and risks on an integrated basis, and then incorporating their results into spatial planning.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Interior	Ministry of Environment and Urbanization, Development Agencies, AFAD, Ministry of Development, Municipalities, Provincial Special Administrations	2012-2017	CE CC

STRATEGY B.1.2. The building inventory in Turkey led by schools and hospitals shall be extracted and all existing buildings shall be grouped on the basis of their damageability and risk.

Action B.1.2.1. The number and typology of all buildings, particularly schools and hospitals, will be determined and a building identification system shall be developed.

Before determining the building inventory and its seismic vulnerability it is necessary to determine the number and typology of the existing buildings. Assigning a unique identity number to all buildings and to include all basic information about the building (such as type of construction, number of floors, construction year, number of living units, gross area, coordinates, etc.) within that number will help in enhancing the computational capacity and facilitate insurance applications.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Environment and Urbanization	TUİK, Development Agencies, AFAD, Governorates, Ministry of Development, TBB, General Directorate of Civil Registration and Nationality	2012-2017	CE CC

Action B.1.2.2. With precedence placed on schools and hospitals the vulnerability of existing buildings shall be determined and the relevant technology put on a stable basis.

For purposes of predicting damages in existing buildings during future earthquakes and enacting countermeasures vulnerability studies should be encouraged, and vernacular methods applicable to Turkey should be developed.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Governorates, Universities, Relevant Governmental Institutions, Professional Chambers, Municipalities	2012-2017	CC

Action B.1.2.3. With priority placed on schools and hospitals seismic risk grouping for existing buildings shall be completed.

Surveying all existing buildings led by schools and hospitals rapidly by means of a simple method to complete their risk classification is a priority item on account of mitigation activities that must be undertaken before future earthquakes occur and decisions concerning buildings that are considered as risky.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Relevant Ministries, Governorates, Universities, Relevant Governmental Institutions, Municipalities, Professional Chambers	2012-2017	CC CE

Action B.1.2.4. Priority shall be placed on retrofitting educational facilities and ongoing work shall be accelerated.

Educational facilities that are currently undergoing strengthening shall be preferentially completed. Work shall be started immediately for other educational facilities in the country that must be strengthened.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of National Education	YÖK, Relevant Governmental Institutions, Governorates, Universities, Private Sector, Municipalities	2012-2017	CC CE

Action B.1.2.5. Urban-scale damage prediction methods that take into account the construction practices of existing buildings shall be developed and damageability models shall be refined on the basis of data collected following earthquakes.

Based on the results of work undertaken in Action B.1.2.2 the development of urban seismic damage prediction methods is required for earthquake safe settlements and construction practices.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Governorates, Universities, Professional Chambers, Municipalities	2012-2017	CC CE

STRATEGY B.1.3. Activities that cover earthquake resistant building design, materials and standards shall be supported.

Action B.1.3.1. Priority areas for the design and construction of earthquake resistant buildings shall be identified and relevant projects shall be encouraged and supported.

In the interest of renewing the building stock on massive scale the encouragement and support of standardized construction projects for earthquake resistant and economical buildings constitute an important component for urban renewal that has emerged as a real alternative for reducing earthquake losses.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Relevant Governmental Institutions, Governorates, Ministry of Environment and Urbanization, Universities, Professional Chambers, Municipalities	2012-2017	CC CE

STRATEGY B.1.4. A coordinated system shall be set up for the purpose of ensuring that existing earthquake engineering laboratories provide more efficient and accessible service for the relevant community.

Action B.1.4.1. A consortium shall be established with the participation of universities active in earthquake engineering research.

It is important to set up a "National Laboratory System" so that inefficient resource utilization is avoided and the accumulated expertise in experimental earthquake engineering research is collected under one roof for more effective applications. Toward this end it is necessary that a "National Earthquake Engineering Laboratary System" should be instituted by a consortium of universities that are active in earthquake engineering research, and its principles of operation and working procedures should be determined for sustained operation.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Ministry of Development, Ministry of Environment and Urbanization	2012-2017	CC, CE, LA

Action B.1.4.2. The needs of existing earthquake engineering laboratories shall be identified and the required infrastructure procured.

The laboratory system planned according to the research targets identified by the universities consortium should be provided with the corresponding equipment and instruments so that experimental work in the field of earthquake engineering can be carried out.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, Ministry of Development, TUBİTAK, Ministry of Environment and Urbanization	2012-2023	CC CE

STRATEGY B.1.5. The current seismic design code shall be updated and revised in keeping with Eurocode 8.

Action B.1.5.1. The activity of the commission charged with updating and revising the seismic code will be made continuous.

It is necessary that the earthquake design code should be kept current and revised in keeping with contemporary developments in the state of the art in earthquake engineering as well as lessons derived from earthquakes in Turkey. For the fulfillment of this function the setting up of a commission comprising researchers with expertise in the area supported by experts from public agencies and institutions and ensuring that the commission is made continuous is considered to be important.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Environment and Urbanization, Universities, All Related Institutions, Professional Chambers	2012-2023	CC, CE, LA

STRATEGY B.1.6. Methods shall be developed, standardized and implemented for seismic safety assessment and building retrofit based on Turkish construction technology practices for bridges, viaducts and transportation networks as well as buried or surficial lifeline distribution systems (pipelines, natural gas lines, electric power networks and communication systems, etc.).

Action B.1.6.1. A Coordination Council comprised of representatives of research, execution and support agencies and institutions shall be set up.

In connection with the task of ensuring the earthquake safety of bridges and viaducts and other lifeline structures constructed in the country on state transportation networks predominantly since the 1970s it is important that their design criteria and the underlying principles should be determined. This calls for a coordination council.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Transport, Maritime and Communication	Universities, TUBİTAK, Ministry of Development, Ministry of Environment and Urbanization, Ministry of Energy and Natural Sources, AFAD, All Relevant Institutions	2012-2013	CC, CE, LA

Action B.1.6.2. Guided R&D projects shall be formulated in accordance with the proposals and support of the Coordination Council.

Priorities for R&D research proposals formulated according to the methods of this strategy should be evaluated by the Coordination Council. Support provided to those selected by the Council by the associated agencies and institutions will provide substantial contributions to the construction of earthquake resistant transportation network appurtenances such as bridges, viaducts, etc.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Development	AFAD, Ministry of Transport, Maritime and Communication, Ministry of Energy and Natural Sources, TUBİTAK, Universities, Ministry of Environment and Urbanization	2012-2017	CC CE

Action B.1.6.3. New regulations shall be brought for the design, maintenance and supervision of transportation systems and important transportation structures that are resistant against earthquakes.

This action derives from the KENTGES Urban Development Strategy whereby the necessary regulations and implementation principles for the construction, maintenance and supervision of earthquake resistant transportation networks and other important transportation structures is realized.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Transport, Maritime and Communication	Ministry of Environment and Urbanization, Municipalities	2012-2017	CC, CE, LA

Action B.1.6.4. The earthquake safety of buried or above ground lifelines such as water or sewage lines, power, communication or gas distribution networks shall be assessed and then upgraded as needed.

Through this action it is envisaged that regulations and applications should be developed so that vital lifelines should be constructed, maintained and supervised in conformance with earthquake resistant procedures.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Relevant Ministries, Municipalities, Professional Chambers, Universities	2012-2017	CC, CE, LA

STRATEGY B.1.7. Professional in service training shall be provided for the workforce in the construction industry.

Action B.1.7.1. Effort will be made to achieve a higher quality, more productive and practice oriented professional training in engineering and architecture.

It is necessary that the range of professional programs where training is provided to students in natural disaster topics, especially earthquakes in schools of engineering and/or architecture of universities as well as vocational schools should be reviewed in keeping with current requirements, scientific advances in earthquake science and disasters so that the programs can be revised as needed. Selected fundamental courses in earthquake science and natural disasters that formerly were offered as elective courses should now be required topics and/or new elective courses should be designed.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
YÖK	Universities, Ministry of Environment and Urbanization, Ministry of National Education, TMMOB	2012-2023	CE LA

Action B.1.7.2. Continuous professional training shall be expanded and supported.

It is commonly acknowledged that professionals in the associated areas of earthquake continuum should be fully aware of technical regulations, applicable legislation and current developments so that they can better perform their duties in the implementation and supervision stages of earthquake safe construction and settlement principles. This will undoubtedly play an important role in earthquake risk reduction. It follows then that all associated agencies and institutions should emphasize in-service continuing training.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	TMMOB, Universities, All Relevant Institutions, Ministry of Labor and Social Security	2012-2023	CC CE

Action B.1.7.3. The practice of authorized or professional engineering shall be enabled.

Earthquake related engineering services span over many different disciplines. In the interest of ensuring that these services are performed correctly and accurately in keeping with their proper procedures two essential conditions of expertise and professionalism must be accepted. The realization of these conditions is possible only with the implementation of authorized professional engineering status.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Environment and Urbanization	TMMOB	2012-2017	CC LA

Action B.1.7.4. The scope of activities for training and certification of laborers, semi-skilled workmen or master workers active in the construction industry will be broadened and the employment in the sector of uncertified personnel will be stopped.

An indispensible requirement for the construction of safe buildings is to ensure that untrained and uncertified laborers, semi-skilled workmen or master workers who serve as reinforcing steel assemblers, concrete handlers, formwork makers or fitting installers should be provided with proper training and certified.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Environment and Urbanization	Ministry of National Education, Professinal Chambers, Private Sector, Governorates, Municipalities	2012-2013	CE LA

Action B.1.7.5. Professional liability insurance will be broadened.

A vital requirement for achievement of earthquake loss reduction lies in ensuring that technical professional groups active in physical investments are capable of implementing their trade with adequate technical know how, and that all practices are conducted under professional technical oversight and damages to third parties caused by faulty implementations are under warranty. It is considered necessary that professional liability insurance and its associated legislation should be developed and broadened. Further, professional liability insurance should be mandatory for key professionals in the field.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Undersecretariat of Treasury	AFAD, Ministry of Environment and Urbanization, TSRŞB, TMMOB, Relevant Governmental Organisations	2012-2013	CE LA

OBJECTIVE B.2: PROTECTION OF THE HISTORIC AND CULTURAL HERITAGE FROM EARTHQUAKES

Most existing historic buildings are of masonry, timber or a combination of these. It is important that a complete inventory of such buildings should be assembled, their earthquake safety assessed and those without adequate safety should be strengthened in ways that will preserve their historic qualities. It is necessary that the work for strengthening should be undertaken in accordance with international requirements for repair and strengthening, based on design and construction principles that have been developed especially for this purpose.

Strategy B.2.1. Technical information on the assessment of the earthquake safety of historic structures and their strengthening will be developed and disseminated.

Action B.2.1.1. An inventory of historic buildings in earthquake areas will be assembled and their importance prioritized.

As a first step toward protection of historic buildings from earthquakes the extraction of an inventory for such buildings must be accomplished. This should be followed by prioritizing these buildings in terms of their importance so that the necessary measures can be taken accordingly.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Culture and Tourism	AFAD, General Directorate of Foundations, TBMM, Universities, TBB	2012-2017	CC CE

Action B.2.1.2. The safety of historic buildings under gravity and earthquake effects will be determined.

As preliminaries for strengthening historic buildings the capacity of their structural system for vertical and earthquake effects must be determined.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Culture and Tourism	General Directorate of Foundations, TBMM, Universities, AFAD, Professional Chambers, TBB	2012-2017	CC CE

Action B.2.1.3. Strengthening techniques shall be developed for undercapacity buildings.

The task of determining the earthquake performance, reliability of a historic building and improving that performance demands the collaboration among many different disciplines. Such collaborative work must be performed in accordance with specific codes and guidelines.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Culture and Tourism	Universities, General Directorate of Foundations, TBMM, AFAD, Professional Chambers, TBB	2012-2017	CC LA

Action B.2.1.4. The procedural principles for design and fabrication to be applied in repairing and strengthening historic buildings will be developed and developed in accordance with international rules.

In all work aiming to enhance the earthquake performance of the structural system described generally as structural rehabilitation there must exist feasible and tried and tested proposals based on detailed investigations of the foundation and the superstructure. Appropriate methods for this purpose must be elaborated with international requirements kept in mind.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Culture and Tourism	TBMM, Universities, AFAD, Professional Chambers, General Directorate of Foundations, TBB	2012-2017	CC, CE, LA

Action B.2.1.5. Methods shall be developed for reduction of the damageability of museum artifacts.

Display objects in museums must be evaluated from the viewpoint of their geometrical size or critical base movements during earthquakes that may impair their equilibrium. Methods should be developed to minimize such effects.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Culture and Tourism	TBMM, Universities, AFAD, Professional Chambers, General Directorate of Foundations, TBB	2012-2017	CC CE

Goal C

COPING WITH THE CONSEQUENCES OF EARTHQUAKES

OBJECTIVE C.1: PUBLIC EDUCATION ON EARTHQUAKES AND OTHER DISASTERS AND CULTIVATION OF ACTIVITIES FOR SOCIAL AWARENESS

The primary public education objective in becoming aware of disasters, reduction of disaster losses, disaster preparedness and intervention must consist of reaching a consensus among the highest level disaster managers and decision makers, promoting public consciousness and developing education.

STRATEGY C.1.1. Consensus and consistent language among administrators and decision makers for disaster and emergency management will be realized.

Action C.1.1.1. Coordination and common language will be assured.

It is considered essential that a workshop should be organized for participation of disaster managers and selected academics, and that a "National Earthquake Risk Management Lexicon" should be prepared.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, NGOs, Local Administrations, TRT	2012-2013	CC

Action C.1.1.2. For the continuing education programs of local administrators, primarily civil administration officials, courses on Disaster and Emergency Management shall be emplaced.

The key role played by civilian administrators and other local officials in assuring local coordination during the disaster continuum is evident. It is believed that during the in service training of such managers' courses on disaster management must be provided to them. In recent years courses taught exclusively to prospective district administrators must be expanded to include disaster and emergency management topics. This must be expanded to include other local administrators.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Interior, Governorates, Universities	2012-2013	CC LA

STRATEGY C.1.2. Increase in the number of specialist disaster managers and widening of training in disaster management shall be assured.

Action C.1.2.1. Multidisciplinary graduate programs in earthquake studies shall be launched in established universities, and graduates of these programs will be employed preferentially in the human resources of relevant agencies and institutions.

It must be borne in mind that earthquake studies require a multidisciplinary education, so the nurturing of well qualified personnel in the area and their employment in the relevant agencies and institutions represent a useful policy for earthquake loss reduction and coping with them well. In this regard, graduate level programs in earthquake engineering and disaster and emergency management may be launched. Such graduate programs can be designed such they are staffed jointly by departments of civil, geological and geophysical engineering.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
YÖK	AFAD, Universities, Relevant Governmental Institutes	2012-2023	CC, CE, LA

Action C.1.2.2. The number of distance education programs in disaster management at the master's, doctoral or certificate level for managers shall be increased in number.

For comprehensive disaster management it is important that the professional knowledge levels of disaster managers should be continuously kept current and improved. Toward realization of this objective suitable elective courses at the undergraduate level can be designed, or the training of practicing civil engineers can be run as summer courses or certificate programs, or distance education programs can be started for improved affectiveness. For training of managers or other personnel in emergency management and disaster joint graduate programs may be launched by faculties of engineering and economic and administrative sciences. Builders and users of earthquake resistant construction can be made aware of the issues involved through appropriate activities.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
YÖK	AFAD, Universities	2012-2017	CC, CE, LA

Action C.1.2.3. The curricula for disaster and emergency management shall be reviewed so that relevant agencies shall make room for these subjects in their in service training programs.

It is necessary that people active in law enforcement, fire services, health and search and rescue should be made familiar with disaster management concepts, and their education in disaster and emergency management should be perfected.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Relevant Institutions, Universities, NGOs	2012-2013	CE, LA

Action C.1.2.4. A number of topical units on disaster and emergency management shall be incorporated into primary and secondary education programs.

It will be assured that a number of subjects on disaster and emergency management currently included in the curricula of primary or secondary education programs shall be revised in accordance with current needs. Further such training shall be made available through remotely conducted programs such as remote or correspondence education.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of National Education	AFAD	2012-2013	CC, LA

Action C.1.2.5. Teachers shall be educated in disaster and emergency topics on continuous basis.

The education of educators in disaster related topics is important for making the community better aware of earthquakes and other disasters. In this regard several ongoing programs (such as the School Based Disaster Education Project currently being run jointly by the Ministry of National Education and JICA) should be widened.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of National Education	AFAD, Universities, NGOs	2012-2023	CC, CE

STRATEGY C.1.3. Earthquake museums shall be opened in provinces that have been hit by major earthquakes.

Action C.1.3.1. Societal awareness of earthquakes will be enhanced through earthquake museums.

These museums may serve to remind people of collective experiences of past earthquakes and provide visual means of familiarization to visitors, becoming effective tools for increasing earthquake awareness.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Interior	AFAD, Ministry of Culture and Tourism, TBB, Ministry of National Education, Universities, TDV, Provincial Special Administrations, Municipalities	2012-2023	CC, CE

STRATEGY C.1.4. A system for disaster volunteers shall be set up.

Action C.1.4.1. Current legislation will be examined to bring clarity to the concept of disaster volunteers and their duties, eliminating overlapping parts or inserting missing ones.

That individuals should prepared for disasters and act in advance to reduce their harms is necessary but not by itself sufficient. For achieving resilience of societies and institutions organized popular participation at all levels should be assured and stakeholders, resource persons or agencies or volunteers should be identified and their sustained involvement guaranteed. A countrywide system for disaster volunteerism must be set up.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	NGOs, Turkish Red Crescent, Universities	2012-2013	CC, LA

Action C.1.4.2. For the purpose of encouraging disaster volunteers in public agencies and institutions the necessary regulations and circulars shall be prepared.

It is considered beneficial to launch, after consultations with the relevant agencies, initiatives to form a sustainable "Disaster Volunteers System" with focus on loss mitigation capacity building taking advantage of the large human resource currently engaged as public employees.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Relevant Governmental Institutions, Universities, NGOs	2012-2017	CC, CE, LA

Action C.1.4.3. The operational procedures for the volunteer agencies and institutions shall be identified and manuals shall be prepared for decision makers and practitioners.

Following the creation of the disaster volunteer system the roles that volunteer agencies and institutions will play during the disaster continuum must be described and guiding manuals prepared for disaster managers. These handbooks must contain detailed descriptions of the duties and responsibilities of the disaster managers.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, NGOs	2012-2017	CE

OBJECTIVE C.2: REALIZATION OF LEGISLATION REFORMS FOR AN INTEGRATED AND EFFECTIVE EARTHQUAKE STRATEGY

Many legislative provisions concerning earthquakes and disaster management are currently interspersed among many laws and regulations. A review must be made in the interest of eliminating this disorganisation and bringing about harmony and unity of interpretation so that an applicable system that is understood by everyone is realized.

STRATEGY C.2.1. In the preparation of a new law for disasters, existing laws and regulations on earthquakes shall be actively used.

Action C.2.1.1. Earthquake-related legislation will be reviewed and combined into a single one.

All draft legislation on technical definitions, institutional responsibilities, range of competences, implementation problems, enforcement sanctions, organisational matters, participation, etc., should be considered in unity instead of in piecewise manner and a framework of an inter-agency cooperation for "Work Program for Disaster (Earthquake) Legislation" launched. Within this context considerations emerging from a series of country-wide meetings organized on sectoral basis with consideration of local requirements supported by disaster law norms will be vital. In the next stage these draft laws and a priroritized framework program that contains the associated agencies and institutions can be transmitted to the law-making processes.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Relevant Governmental Institutions, Ministry of National Education, Universities, Local Administrations	2012-2017	CC LA

Action C.2.1.2. A building law and an urban renewal law shall be passed.

The passing of a Building Law with provisions applying to the contracting industry as part of the Building Construction Supervision Law represents an important stage in the campaign against earthquakes. This way it will be possible to revise the Urban Renewal Law with a new focus on earthquakes. It will be possible to enforce the Building Construction Supervision Law effectively.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of National Education	AFAD, Ministry of Forestry and Water Works, Relevant Ministries, Municipalities, Governorates, NGOs, TOKİ	2012-2017	CC LA

STRATEGY C.2.2. The preparation of the National Disaster Strategy and Action Plan will be assured.

Action C.2.2.1. The Turkish Disaster Risk Reduction Platform and its sub commissions shall be formed.

For the purpose of preventing or reducing to a minimum ravages from disasters a Turkish Disaster Risk Reduction Platform including its sub-working groups shall be established. This will enable the preparation of the national disaster strategy and action plan, elaborate the corresponding short, medium and long term national action plans and provide guidance and counsel to the relevant bodies in the disaster domain in keeping with sustained development plans.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Universities, TMMOB, NGOs, HGK, Ministries, Media, Private Sector	2012-2013	CC, CE, LA

Action C.2.2.2. Legal revisions associated with the Earthquake Risk Reduction Plan shall be made.

Through this action that is within the scope of the KENTGES Urban Development Strategy it is considered necessary that revisions should be made in legislation applicable to urban affairs and development for applications having connection with methods and procedures on hazard maps, risk reduction planning, defining their scope, standards, liabilities and approaches.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Interior, Ministry of Environment and Urbanization, Municipalities, Provincial Special Administrations, Universities,Professional Chambers	2012-2017	CC LA

Action C.2.2.3. A Handbook for Earthquake Risk Reduction shall be prepared.

This action also falls within KENTGES. Through this action a text will be made available to agencies that are authorized to make such plans on risk reduction planning, procedures, methods and approaches.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Environment and Urbanization, Municipalities, Provincial Special Administrations, Universities, Professional Chambers	2012-2017	CC CE

STRATEGY C.2.3. Special arrangements will be allowed for groups that embody risky individuals.

Action C.2.3.1. A national meeting will be organized to connect groups that embody individuals at risk with disaster risk assessment efforts so that the required revisions can be realized.

A substantial majority of society consists of women, children, the aged and those with handicaps. Work must be undertaken where each of these groups is considered separately, and the outcome of these studies must be incorporated into the disaster management system. The capacity to cope with disasters and reduction of vulnerability is a function of the social links of individuals and social groups, their power connections, their knowledge and talent, social gender roles, health and social development levels and where they reside. In all of these processes the vulnerabilities of women, the aged and the handicapped emerge as factors that increase the likely impact of disasters on them.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Family and Social Policies, Provincial Special Administrations, NGOs	2012-2013	CC CE

STRATEGY C.2.4. The coverage of the Mandatory Earthquake Insurance will be expanded.

Action C.2.4.1. Efforts will be made for converting into law the current Decree No. 587 in the interest of making it more effective, and in ensuring that DASK (TCIP) and the insurance industry play a greater role in earthquake studies including research activities

Decree No. 587 has not been converted into a law since its enaction in 1999. This impairs the societal perception of whether the decree is really mandatory. It is important that the Decree is reformulated in a form that charges DASK (the executing agency) responsibility with other forms of disasters when needed, and provide incentives for buying mandatory earthquake insurance. Further, provisions must be brought for DASK and the isurance sector to set aside resources to support research and development in their own areas of interest so that insurance products are offered more effectively.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Undersecretariat of Treasury	AFAD, TSRŞB	2012-2013	CC, CE, LA

Action C.2.4.2. All forms of mass communication will be used for popularizing the mandatory earthquake insurance.

The numbers of policies sold in the mandatory earthquake insurance scheme do not display satifactory market penetration, so contact with property owners will be taken up using mass communication means.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Undersecretariat of Treasury	AFAD, Ministry of Finance, Media, Private Sector, TSRŞB	2012-2017	CC, LA

STRATEGY C.2.5. An exercise for developing a new financial model will be launched.

Action C.2.5.1. Meeting will be held where views are shared on how current resources are used and new model proposals are discussed.

As has been the case in Turkey in the past, there is a need in virtually every country that must deal with disasters for ready monetary resources that can be accessed quickly and effectively during times of disasters and the corresponding financial model. In the interest of making the model continuous and permanent, and on determining the revisions required for establishing which goods and services should be taxed brainstorming meetings are considered useful for developing ideas.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Development, Ministry of Finance	2012-2013	CC, LA

Action C.2.5.2. A survey shall be carried out to ascertain the global data on financial resource utilization.

Starting from the basic premise that disaster preparedness is essential for minimizing disaster losses and their negative effects, all exercises and expenditures require financial resources. A lesson that has emerged from the experience following major earthquakes is that the current structure is incapable of meeting the needs. A compilation of the research conducted in the world in this regard and proposed answers so that their relevance to Turkey can be assessed.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Development, Ministry of Finance, Undersecretariat of Treasury	2012-2013	CC

Action C.2.5.3. Meetings shall be organized to encourage the private sector entities to enter the disaster management system, and the importance of the topic will be stressed.

A prerequisite for a modern disaster management system is that all societal stakeholders, led by the private sector, must participate in all steps of disaster management such as risk reduction, preparedness, intervention, rehabilitation and reconstruction. A fundamental requirement for arriving at a disaster resilient community is that fabrication facilities should be rapidly repaired and placed in service following disasters. The strengthening of the role played by the insurance industry is also essential.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Private Sector, Professional Chambers	2012-2013	CC

Action C.2.5.4. Methods for generating financial disaster resources shall be developed.

A financial model is required so that it is used to good effect for capacity building in coping with disasters, creating no burdens for the public, and is available in all operations prior to, during and following occurrence of disasters. Disaster insurance products should be designed as complements of this model.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Development, Ministry of Finance, Undersecretariat of Treasury	2012-2017	CC

OBJECTIVE C.3: CAPACITY BUILDING FOR RAPID, EFFECTIVE AND TIMELY INTERVENTION IN EARTHQUAKES AND OTHER DISASTERS

Through implementation of this strategy that also forms part of KENTGES, objectives are established for strengthening the emergency infrastructure, formation of transportation and evacuation corridors, assembly and temporary shelter areas, disaster support centers and emergency facilities to allow for rapid, effective and timely intervention in earthquakes and other disasters.

STRATEGY C.3.1. The post-disaster intervention system will be improved.

Action C.3.1.1. Intercommunication at central and local levels, emergency call centers and information transmission system infrastructure and transportation systems for rapid intervention and relief will be improved.

It is necessary that at post-disaster situations and for emergencies the infrastructure for rapid and reliable communication among central and local authorities should be further developed, including also a critical review of plans for disaster management and emergency relief. Further to this transportation systems and spatial arrangements required for rapid intervention and relief must be assured, site selection should be completed and required revisions in existing plans put into effect.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Governorates, Ministry of Interior, Ministry of National Defence, Ministry of Transport, Maritime and Communication, Ministry of Health, Ministry of Energy and Natural Sources, BTK, Türksat, Turkish Telecommunication Agency, Municipalities, Turkish Red Crescent	2012-2017	CC, CE, LA

Action C.3.1.2. Determination of health facilities and social infrastructures to be used at times of emergencies shall be carried out.

Health facilities, evacuation corridors, assembly and temporary shelter areas and other facilities that will be placed into service during and following disasters must be identified, and their standards established according to population characteristics and other special needs. In spatial planning activities integrated consideration must be accorded to identifying areas and facilities that will be placed in service during emergencies, transportation and health services, temporary shelter and logistics.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Interior, Ministry of Health, Ministry of Environment and Urbanization, Ministry of National Defence, Provincial Special Administrations, Turkish Red Crescent, Municipalities	2012-2017	CC CE

STRATEGY C.3.2. Disaster health organisation shall be fostered.

Action C.3.2.1. In all provinces hospital disaster plans shall be prepared and made current.

Experience to date reveals that a major part of hospitals have no emergency plans or these are very inadequate. A planning guide must therefore be prepared and hospitals required to update their plans in accordance with it.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Health	AFAD, Ministry of National Defence, Universities, Governorates, Turkish Red Crescent, Municipalities, Private Sector	2012-2013	CC CE

Action C.3.2.2. Disaster health plans will be developed in all provinces to permit timely and effective intervention in health problems that may arise because of disasters.

While planning for health services are part of provincial emergency relief plans, it will be beneficial to convert these into action plans.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Health	Governorates, Turkish Red Crescent, Municipalities, Private Sector	2012-2013	CC CE

Action C.3.2.3. Mobile emergency intervention and transportation units will be developed.

In addition to providing the safety of health facilities in urban centers there exists a need for mobile units (such as field hospitals, fully equipped ambulances, etc.) that will be quickly deployed in disaster areas for rapid interventions. The development of these units plays an important role in the success of disaster intervention.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Health	Governorates, TOKİ, Turkish Red Crescent, Municipalities, Private Sector, Universities, Ministry of Development	2012-2013	CC CE

Action C.3.2.4. Increasing the earthquake safety of hospital buildings will be continued.

It is essential that the earthquake and other disaster safety of hospitals that are of vital importance for use following disasters must be upgraded and this safety must be assured in new hospitals. Work toward making hospitals safe until the end of 2016 planned by the Ministry of Health shall be supported.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
Ministry of Health	Governorates, Turkish Red Crescent, Municipalities, Private Sector, Universities	2012-2017	CC CE

STRATEGY C.3.3. Information sharing and cooperation for damage assessment shall be advanced.

Action C.3.3.1. New approaches shall be developed for post disaster damage assessment exercises that are done by the public and private sectors to achieve information sharing and cooperation.

Post disaster damage assessment work is performed by public agencies as part of their legal mandate, and by DASK, TARSİM and private insurance companies as part of their obligations for having marketed various insurance products. It is important that efficient information sharing and cooperation should be institutionalized in the interest of effective resource utilization (especially for facilitating damage assessment by the insurance sector) and in achieving a correct and consistent general picture for economic losses.

RESPONSIBLE ORGANISATION	ASSOCIATED ORGANISATION	REALIZATION PERIOD	ACTION TYPE
AFAD	Ministry of Development, DASK, TARSİM, TSRŞB	2012-2017	CC CE

IMPLEMENTATION AND MONITORING

Earthquake Advisory Board has been established under AFAD within the scope of Act No.5902. A work process has been started by this board fort he purpose of protection against earthquakes, reducing the damages of earthquakes, providing suggestions after earthquakes and determining policies and priorities on earthquake studies: According to Law, Earthquake Advisory Board consists of these members:

- Representative of Ministry of Environment and Urbanization,
- Director of Boğaziçi University Kandilli Observatory and Earthquake Research Institute,
- Director General of Mineral Research and Exploration,
- President of Scientific & Technological Research Council of Turkey,
- President of Turkish Red Crescent,
- University professors (5)
- Representatives of non-governmental organizations (3)

After being discussed in Earthquake Advisory Board, NESAP-2023 has been discussed in the workshop that final feedbacks are discussed by responsible institutes. As a result, thematic groups, goals, strategies and actions of NESAP-2023 were obtained as a participatory process.

1. The Management of National Earthquake Strategy and Action Plan

NESAP's realization process shall be monitored by ***NESAP MONITORING AND EVALUATION COMMISSION***, which will be formed by AFAD Earthquake Advisory Board. At the same time, this group will be in charge of coordination of work with AFAD Earthquake Department, holding meetings with responsible and related institutes and providing necessary guidance, monitoring principles and strategies of NESAP, and, if necessary, proposing changes in strategies or creating new strategies. AFAD is authorized to issue directives, guidelines or regulations in order to manage NESAP 2023 nation-wide effectively.

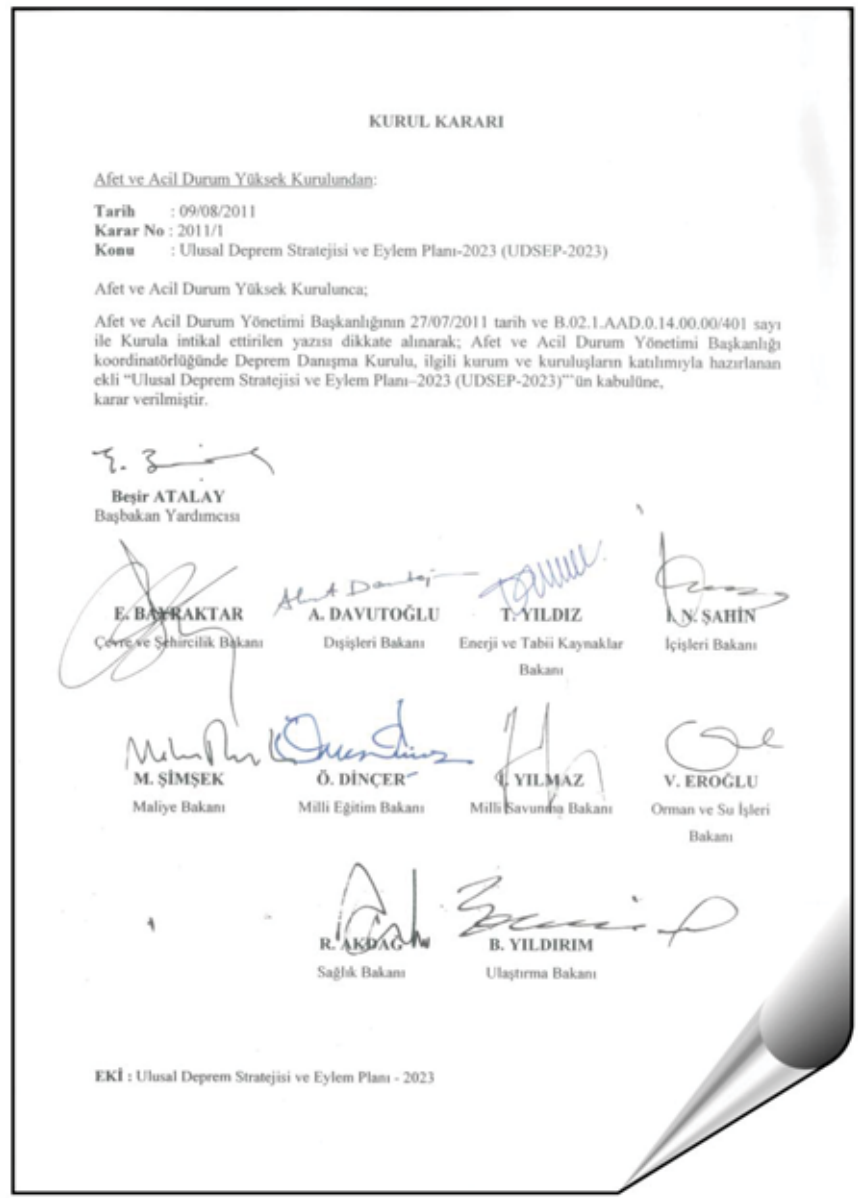
2. Works to be Performed by Responsible and Associated Organisations

Increasing the applicability of the strategy document is possible only by (in general) public bodies and institutions working on reducing the damage from earthquakes, and adopting and processing the actions that are pointed out in their annual agenda.

When Responsible Organisations prepare their budgets and annual work programs they will give priority to their activities as stated in the strategy document. Additional regulations required regarding this subject will be prepared by responsible organisations in cooperation with Ministry of Development. NESAP actions and activities will be implemented by organisations determined as "Responsible Organisation". Responsible Organisations will perform their studies in close cooperation with Associated Organisations and inform all stakeholders at every six months period. At the end of each term (six months) Responsible Organisations are obliged to prepare and submit their report to Monitoring and Evaluation Commission.

Institutions determined as "Associated Organisation" in the document are those will work in cooperation with "Responsible Organisations" and provide support to the applications and actions. Associated Organisations will participate to the studies upon request by Responsible Organisation. Responsible Organisation will be responsible from the determination of which Associated Stakeholders to be included in the action.

APPROVAL OF DISASTER AND EMERGENCY HIGH BOARD



KURUL KARARI

Afet ve Acil Durum Yüksek Kurulundan:

Tarih : 09/08/2011
Karar No : 2011/1
Konu : Ulusal Deprem Stratejisi ve Eylem Planı-2023 (UDSEP-2023)

Afet ve Acil Durum Yüksek Kurulunca;

Afet ve Acil Durum Yönetimi Başkanlığının 27/07/2011 tarih ve B.02.1.AAD.0.14.00.00/401 sayı ile Kurula intikal ettirilen yazısı dikkate alınarak; Afet ve Acil Durum Yönetimi Başkanlığı koordinatörlüğünde Deprem Danışma Kurulu, ilgili kurum ve kuruluşların katılımıyla hazırlanan ekli "Ulusal Deprem Stratejisi ve Eylem Planı–2023 (UDSEP-2023)"'ün kabulüne, karar verilmiştir.

Beşir ATALAY
Başbakan Yardımcısı

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A. DAVUTOĞLU — Dışişleri Bakanı
T. YILDIZ — Enerji ve Tabii Kaynaklar Bakanı
İ. N. ŞAHİN — İçişleri Bakanı
M. ŞİMŞEK — Maliye Bakanı
Ö. DİNÇER — Milli Eğitim Bakanı
İ. YILMAZ — Milli Savunma Bakanı
V. EROĞLU — Orman ve Su İşleri Bakanı
R. AKDAĞ — Sağlık Bakanı
B. YILDIRIM — Ulaştırma Bakanı

EKİ : Ulusal Deprem Stratejisi ve Eylem Planı - 2023

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President TURKISH RED CRESCENT	**Tekin KÜÇÜKALİ**
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Commission 8 : Legislation Development and Financial Arrangements

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	Ayşe ERKAN	(Ministry of Development)
	Selen ARLI	(Ministry of Development)

Appendix-2: Distribution of Actions as per Responsible Organisation

Responsible Organisation	Action Code				Total Number of Actions
(AFAD) Prime Ministry Disaster and Emergency Management Presidency	A.1.1.1 A.1.2.2 A.1.4.1 A.1.5.2 A.2.1.5 A.2.2.3 B.1.2.5 B.1.5.1 C.1.1.2 C.1.4.3 C.2.2.3 C.2.5.3 C.3.3.1	A.1.1.3 A.1.2.3 A.1.4.2 A.1.6.1 A.2.1.7 A.2.2.4 B.1.3.1 B.1.6.4 C.1.2.3 C.2.1.1 C.2.3.1 C.2.5.4	A.1.1.5 A.1.3.1 A.1.4.3 A.1.6.2 A.2.2.1 B.1.2.2 B.1.4.1 B.1.7.2 C.1.4.1 C.2.2.1 C.2.5.1 C.3.1.1	A.1.2.1 A.1.3.2 A.1.5.1 A.1.7.4 A.2.2.2 B.1.2.3 B.1.4.2 C.1.1.1 C.1.4.2 C.2.2.2 C.2.5.2 C.3.1.2	49
Ministry of Culture and Tourism	B.2.1.1 B.2.1.5	B.2.1.2	B.2.1.3	B.2.1.4	5
Ministry of Environment and Urbanization (ÇŞB)	A.2.1.6 C.2.1.2	B.1.2.1	B.1.7.3	B.1.7.4	5
Ministry of Health	C.3.2.1	C.3.2.2	C.3.2.3	C.3.2.4	4
Ministry of Energy and Natural Sources	A.1.1.2	A.2.1.1	A.2.1.3	A.2.1.4	4
Ministry of National Education	B.1.2.4	C.1.2.4	C.1.2.5		3
Undersecretariat of Treasury	B.1.7.5	C.2.4.1	C.2.4.2		3
Higher Education Council (YÖK)	B.1.7.1	C.1.2.1	C.1.2.2		3
General Command of Mapping (HGK)	A.1.1.4	A.1.7.2	A.2.1.2		3
Ministry of Development	B.1.1.1	B.1.6.2			2
Ministry of Interior	B.1.1.2	C.1.3.1			2
Ministry of Transport, Maritime and Communication	B.1.6.1	B.1.6.3			2
Kandilli Observatory and Earthquake Research Institute	A.1.7.1	A.1.7.3			2
13 Responsible Organisations, 3 Goals, 7 Objectives, 29 Strategies, 87 Actions					

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