



**NATIONAL ACTIVITIES OF TURKEY  
ON CLIMATE CHANGE**

October, 2010



## FOREWORD

Climate change is the most pressing and complex challenge that the humanity faces today. Combating climate change requires strong solidarity of the international society. Besides being an environmental problem, climate change is also a sustainable development issue. Even if we stop emitting greenhouse gases to the atmosphere today, the climate change will continue for several decades. This fact makes adaptation as important as mitigation actions.

Today, climate change affects our daily life in a number of ways, ranging from the physical and natural environment, agriculture, food security, clean water and health to the economy, technology and even human rights. This kind of threat requires decision makers to enhance their efforts towards finding a solution.

The IPCC has presented the causes and results of climate change in a scientific manner with 4 Assessment Reports (ARs) and thus has made a unique contribution to global efforts. As the 4th AR states, Turkey is located in the Mediterranean Basin, an area which will be affected most severely by climate change.

At the 7th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in Marrakech, Turkey's name was removed from Annex 2 and special circumstances of Turkey were recognized. Turkey ratified the United Nations Framework Convention on Climate Change on 24th of May 2004. As of 26 August 2009, Turkey is a party to the Kyoto Protocol.

Climate change and the wide range of greenhouse gases causing this phenomenon require a comprehensive approach in seeking ways to mitigate climate change. Countries are taking into consideration their own circumstances, such as technology infrastructure, human resources and

short-medium term development priorities. In this respect, Turkey's main policies and measures focus on energy, transport, industry, waste, land use change and forestry.



Contributing to global efforts on climate change, erosion control and protection of water resources is high in the list of topics on our agenda. Our country has taken crucial steps within the framework of 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).

Turkey, considering her own special circumstances, is continuing to contribute to global action for mitigation of the negative effects of climate change while sustaining her development. In this context, Turkey is planning to adopt nationally appropriate mitigation actions and no-loose targets to limit emissions growth and move to a low-carbon economy. This shift to a low-carbon economy is only possible through technology transfer and multilateral financial support.

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## CLIMATE CHANGE AND TURKEY

- The Ministry of Environment and Forestry (MoEF) is the National Focal Point on climate change and is the coordinating governmental body for all issues related to climate change in Turkey.
- Following the Decision 26/CP.7 adopted at the 7<sup>th</sup> Conference of Parties (COP7) of the United Nations Framework Convention on Climate Change (UNFCCC), held in Marrakech in 2001 which "recognized the special conditions of Turkey accepted that Turkey remains an Annex I Party of the UNFCCC, in a position that is different to that of other Annex I countries and Turkey will be removed from the Annex II", Turkey has become a party to UNFCCC on May 24<sup>th</sup>, 2004.
- As of 26 August 2009, Turkey is a party to the Kyoto Protocol.
- Turkey will continue her contribution to the global fight against climate change as a Kyoto Protocol Party.

Turkey attaches great importance to the issues of "Protection of the climate system on the basis of equity and in accordance with the principle of common but differentiated responsibilities, consideration of specific needs and special circumstances of country developing Parties to the Protocol that will be affected by the climate change, adoption of precautionary measures to prevent climate change in an efficient manner and with the at minimum cost, supporting sustainable development and including the measures to be taken and the policies to be adopted in the national development programs", which are the basic principles of the Convention concerning climate change policies.





## TURKEY'S VULNERABILITY TO CLIMATE CHANGE

Turkey's high vulnerability to the negative effects of climate change shows how important it is to adapt to this change as well as fight against it. In Turkey, considerable measures have been taken in regard to policymaking, regulations and organizational structuring, even though these are not directly within the scope of preventing or mitigating the effects of climate change.

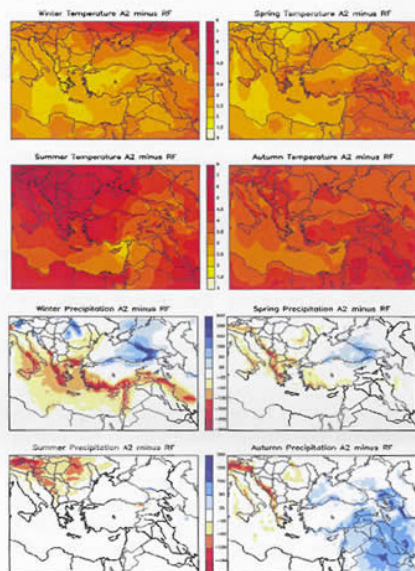
- Being a cultural and natural bridge between Africa, Europe and Asia, Turkey has hosted experienced several civilizations in the course of her history
- Being an important economic and social sector in Turkey, agriculture will require special attention, since the studies show that it is one of the most vulnerable sector to climate change
- The IPCC report makes it clear that future climate change could critically undermine efforts for sustainable development throughout the world and especially in the Mediterranean Basin.
- Turkey is located in the Eastern Mediterranean basin where countries are in the highest risk group.
- Climate change had an additional impact on our existing problems of desertification and water scarcity.
- Turkey has exceptionally rich wetlands and biological diversity.

## TEMPERATURE AND PRECIPITATION TRENDS

In recent years, statistical records in Turkey showed that climate has been clearly changing throughout the country. Synthesizing the observed changes yields the following conclusions regarding Turkey's current climate;

- a general upward trend in average air temperature especially in southern region
- distinct and widely distributed warming trends seen in minimal air temperatures in spring and summer
- rapid urbanization in Turkey has a large effect on these warming effects at minimal temperatures
- general trend in maximal temperatures are in an upward trend in summer seasons
- significant precipitation decrease trends are seen in winter seasons
- significant precipitation decrease periods of NOA (North Atlantic Oscillation) are corresponding to strong positive anomaly periods

While Turkey is faced with many types of environmental hazards, there are three major ones, namely, droughts, floods and wildfires.



**Temperature**  
Climate Change Projections for Turkey: Changes in Temperatures for all seasons

**Precipitation**  
Climate Change Projections for Turkey: Changes in Precipitation for all seasons



## SECTORAL POLICIES AND IMPLEMENTATION

Within the scope of the UNFCCC, Turkey supports to the extent of its available means the global efforts being made for the implementation of the policies and measures that are formulated with the goal of reducing greenhouse gas emissions and is determined to continue its economic development within the principle of sustainable development. Although Turkey does not have any quantitative reduction commitment, significant efforts in all sectors have been launched.



### Energy

Being the major source for Turkey's greenhouse gas emissions, Turkey attaches importance to mitigation and adaptation measures in the energy sector. Turkey has defined targets for reducing energy intensity. The Renewable Energy Law was introduced in 2005. The share of hydropower and wind energy and other renewable sources are increasing. The Energy Efficiency Law has come into force and we are focusing on energy efficiency. As a result of Energy Efficiency Law, 75 million CO<sub>2</sub>-eq tones of emissions will be avoided until 2020.



Turkey also rehabilitating power plants and utilizing low carbon content fuels. In accordance with the By-Law on Heat Insulation in Buildings which was published in 2006, buildings are insulated to reduce heating and cooling needs. We are running a public campaign on energy efficiency and awareness is increasing.



### Industry

Increasing energy efficiency in cement and iron and steel plants by using and promoting the best available technologies and techniques, improving and supporting the transition to clean production in industry to optimize the use of natural resources are

important policies applied in Turkey. In addition to this, some studies on specifying eco-design requirements for energy-using products are being launched and research and development studies are continuously being conducted. Regulations on emissions from motor vehicles and informing consumers about the on CO<sub>2</sub> emissions and fuel economies of new passenger cars are of the utmost importance in the process.



### Transport

Important initiatives are being applied in the transportation sector, such as enhancement of the quality of fuels consumed in vehicles, the utilization of bio-fuels, the use of vehicles with new engines technologies, the withdrawal of old vehicles from the road, the expansion of metro and light rail networks

in big cities in order to encourage mass transportation, the beginning of the Marmaray Sub-sea Tunnel Project in Istanbul (which will connect the Asian and European sides of the city and will reduce 130.335 ton/year of greenhouse CO<sub>2</sub> equivalent greenhouse gas emissions), as well as the expansion and improvement of the railway network, including high-speed train lines.



### Agriculture

Agriculture occupies an important role in the economy of the rural areas, and negative effects of climate change on water resources will be reflected in water scarcity, thus increase the need for irrigation. In terms of implementation, positive activities within the scope of adaptation to climate change are

protection of water resources, generalizing, spreading and subsidizing modern irrigation techniques enabling water savings, establishing early flood warning systems, generalizing the use of renewable energy in many sectors including agriculture, and creating some initiatives to develop drought-tolerant seeds.

Turkey is promoting the use of biomass instead of fossil fuels and use of best available agricultural and irrigation techniques to reduce the emissions and conserve natural resources in Agriculture. The Law on Soil Conservation and The Law on Grassland and Pasture Conservation contribute to sequestration of CO<sub>2</sub>. Turkey's adopted the "Action plan on drought preparedness and combat with drought" and it is being executed since 2008.





Some of our practices are:

- drip irrigation and pressurized irrigation systems
- introduction of drought-adapted crop or timber species
- improvements in water distribution,
- construction of additional storage capacity,
- provision of crop insurance policies.
- programmes for improving public awareness of water conservation issues and climate change

### Waste



Solid Waste Management plays a crucial role in terms of community health and protecting the environment. In Turkey, there are 46 (in year 2010) municipal waste landfill sites. These landfill sites serve 36.500.000 people.

The National Waste Management Action Plan (2008-2012) was prepared. According to this plan, 114 landfill sites will be constructed and will serve 76% of the population by 2012.

Detection and recovery works for methane arising from landfill and refuse tips are going on. Our aim is to recover methane arising from landfill and refuse tips for energy or CO<sub>2</sub>. In Turkey there are four energy recovery systems in Ankara, İstanbul and Gaziantep. Totally 51,73 MW of energy is generated from landfill gas. Approximately, 2 million tons of CO<sub>2</sub> decreased annually in this recovery systems.

### Forestry



Turkey is committed to increase sink areas by afforestation and by controlling deforestation. We are striving to improve the economic and social conditions of the people living in the forest villages and provide funds to utilize renewable energy sources to prevent deforestation. We have started an ambitious afforestation campaign with a target of 2.3 million hectares of land in a 5-years period (2008 - 2013). 181.4 Million Tones of CO<sub>2</sub> will be sequestered in 20 years a result of this campaign.

## WATER



- Natural disasters and climate related extreme risks such as droughts, floods and landslides are also likely to increase in terms of frequency and intensity as Turkey's climate changes. The planning and management of water resources are carried out in an integrated way by taking into account possible adverse affects on the environment and climate change. Our objective is to achieve effective water saving by better water management. Turkey is using only one third of her available water potential.
- In order to make better use of limited water resources, we have changed our irrigation practices from the conventional flooding type (open channel) irrigation to the piped sprinkler irrigation or to drip irrigation. Flood forecasting systems are being built to provide early warnings to provincial and local authorities and to the public.
- Currently we are using about one third of our hydropower potential. Through participation of the private sector more than 1500 new hydropower projects have been initiated. Total hydropower capacity will reach 40.000 megawatts when these projects are completed.
- Adaptation to climate change activities will overlap many of the objectives of the rural development plans, such as management of drought, reduction of erosion, sustainable use of water resources, conservation of biodiversity and enhancing food security.



## PROJECTS

- Implementation of the project for "Enhancing Turkey's Capacity to Adapt to Climate Change" funded by the MDG Achievement Fund, has begun to be implemented from the 1st of August 2008.
- The project called "Developing Turkey's Climate Change Action Plan" funded by the British Embassy was initiated in January 2009 and is planned to be finalized in April 2011.
- The project called "Identification and Development of Nationally Appropriate Mitigation Actions (NAMAs) for Environment and Forestry Sectors in Turkey" has been started and is planned to be finalized in April 2011.
- The project called "Enabling Activities for the Preparation of Turkey's Second National Communication to the UNFCCC" has been initiated and planned to be completed in the end of 2011.
- Implementation of the project for "Developing The Capacity of Turkey to Participate Efficiently in the International Climate Change Negotiations and Voluntary Carbon Markets" funded by SPO and UNDP, was commenced on 1st of January 2009 and is expected to be finalized at the end of 2010.
- National Capacity Needs Self-Assessment Project of Turkey Under Rio Conventions (UNCCD, CBD, UNFCCC) was initiated by the MoEF in August 2008 and is expected to be finalized at the end of 2010.



## EXPECTATIONS OF TURKEY FROM THE POST - 2012 REGIME



- Turkey is willing to make a fair share contribution in accordance with her special circumstances.
- Turkey is planning to adopt nationally appropriate mitigation actions (NAMAs) and no-loose targets to limit emissions growth and move to a low-carbon economy.
- Turkey believes that a low-carbon economy is only possible through technology transfer and multilateral financial support.
- Turkey expects the post-2012 regime to reflect the principles of common but differentiated responsibilities and respective capabilities.
- Turkey also expects the consideration of the adaptation needs of the most vulnerable countries.
- Turkey will support the efforts in the fight against climate change, in conformity with her economic and social development objectives and priorities.





## NATIONAL CLIMATE CHANGE STRATEGY

The National Climate Change Strategy Document, which identifies priority activities to be carried out in sectors for mitigating climate change, as well as urgent measures for adapting to climate change, was approved by the Higher Planning Council Decision dated May 03, 2010. The National Climate Change Strategy Document, developed under the coordination of the Ministry of Environment and Forestry, through an effective working process by the participation of public institutions, private sector establishments, non-governmental organizations and universities, possesses a special place due to its nature as Turkey's strategy document in the field of climate change.

## VOLUNTARY CARBON MARKET IN TURKEY

Although Turkey cannot benefit from the market-based flexible mechanisms of the Kyoto Protocol; voluntary carbon projects are being developed and implemented in Turkey for a long time.

Voluntary Carbon Market (VCM) Profile of Turkey

Number of Registered VCM Projects up to date (limited to the publicly available registries)	109
Estimated Annual Emission Reduction (all applied projects)	8 million CO <sub>2</sub> eq.
Estimated Annual Volume of Market (according to the price of Turkish VERs in 2009)	83.2 million USD

Source: Gold Standard, VCS, VER+, Ecosystem Marketplace; 16 August 2010.

## Carbon Project Registry

Following the publication of the Communication on Registry Operations of GHG Emission Projects (no: 27665) in the Official Gazette on 07.08.2010, a carbon registry is established within the Ministry of Environment and Forestry. Registration can be made through [www.karbonkayit.cob.gov.tr](http://www.karbonkayit.cob.gov.tr) and [www.iklim.cob.gov.tr](http://www.iklim.cob.gov.tr).

## INTERNATIONAL EVENTS

Attaching great importance to combating Climate Change and its negative effects, Turkey hosted major conferences in 2009.

### Fifth World Water Forum

33,058 participants (including Water Fair participants) took part in the 5<sup>th</sup> World Water Forum, from March 16<sup>th</sup> to 22<sup>nd</sup>, 2009 in Istanbul, making it the world's biggest ever water-related event. Much more than the size of the event, the number of recommendations, proposals, commitments and initiatives made throughout the preparatory process and during the week make this Forum a long-lasting highpoint in the international development calendar.

5<sup>th</sup> WORLD WATER FORUM  
ISTANBUL 2009



### Thirtieth Session of the Intergovernmental Panel on Climate Change (IPCC)

Thirtieth Session of the IPCC took place in Antalya on 21-23 April 2009.

This session was also essential for the evaluation of the post-2012 climate regime.

Turkey will pursue the outcomes brought by the IPCC. We will integrate these outcomes, which will surely guide us in our efforts, and into our climate change policies.



### Committee for the Review of the Implementation of the UNCCD

The seventh session of the Committee for the Review of the Implementation of the Convention (CRIC 7) was held in Istanbul, Turkey back-to-back with the first special Session of the Committee on Science and Technology (CST-S1), from November 3<sup>rd</sup> to 14<sup>th</sup>, 2008.





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