

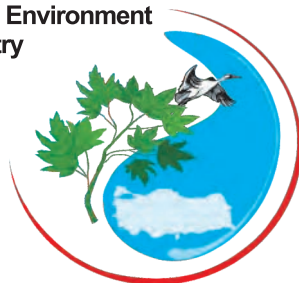


**REPUBLIC  
OF  
TURKEY** | **NATIONAL  
CLIMATE  
CHANGE  
STRATEGY  
(2010-2020)**



May 2010

**T.R.  
Ministry of Environment  
and Forestry**



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### Republic of Turkey National Climate Change Strategy Document

May, 2010  
Ankara

**Photo on the cover page:** Sultan Marshes – Kayseri, Artist: Hakan Baykal.

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## **FOREWORD**

Climate change is a great and complex challenge facing humanity today. It is an issue of sustainable development as well as an environmental problem. Combating climate change requires long-term international cooperation and strong solidarity.

Turkey conducts its activities on combating climate change, on an equitable basis, within the framework of the principle of common but differentiated responsibilities and within its own capabilities, taking into consideration its social, economic and environmental indicators, with the belief that implementation of incentive policies and measures at the national level is necessary in order to protect the global climate system and pursue sustainable development.

Within this overall framework, the National Climate Change Strategy Document, approved by the Higher Planning Council Decision dated May 03, 2010 and numbered 2010/8, identifies priority activities to be carried out in sectors for mitigating climate change, as well as urgent measures for adapting to climate change. The National Climate Change Strategy Document, which was developed in 2009, under the coordination of our Ministry, 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, following the First National Communication on Climate Change which was published in 2007.

Our Ministry would like to extend its deep appreciation to all stakeholders who contributed to the development of Turkey's National Climate Change Strategy and looks forward to a continued efficient cooperation through the processes of preparation and implementation of National Climate Change Action Plan.

The Republic of Turkey  
Ministry of Environment and Forestry  
May 2010, Ankara

## I. INTRODUCTION

Turkey, being conscious of the fact that climate change is a multi-dimensional and complex challenge which poses serious environmental and socio-economic consequences and threatens national securities and its range of potential impacts represents one of humanity's most important threats facing future generations, recognizes the importance of international cooperation to reduce greenhouse gas emissions leading to climate change, and to combat climate change.

Against this background, Turkey has developed the "National Climate Change Strategy" in order to contribute to global efforts to reduce the impacts of climate change, taking into account its own special circumstances and capacity. The Strategy includes a set of objectives to be implemented in the short-term (within one year), the mid-term (undertaken or completed within 1 to 3 years), and long-term (undertaken over a 10 year period). The Strategy will guide the actions to tackle climate change during the period 2010-2020 and will be updated as necessary, in light of emerging national or international developments.

With this strategy, Turkey sets a goal of contributing to the global efforts against climate change within its own capabilities and in line with the basic principle of the UNFCCC "common but differentiated responsibilities" and presents its national mitigation, adaptation, technology, finance and capacity building policies.

## II. CLIMATE CHANGE AND TURKEY

With Decision 26/CP.7 of the Seventh Conference of Parties (COP) in Marrakesh in 2001, Turkey was deleted from the list of Annex-II countries, under the United Nations Framework Convention on Climate Change. Moreover, Decision 26/CP.7 enshrined an invitation to all Parties to recognize the special circumstances of Turkey relative to other Annex-I Countries, placing it in a different situation. Following this decision, Turkey became a party to the United Nations Framework Convention on Climate Change on May 24, 2004.

In order to determine the policies, measures, and activities to be pursued by Turkey related to climate change, the Coordination Board on Climate Change was re-established pursuant to the Prime Ministry Circular No. 2004/13. Under the chairmanship of the Minister of Environment and Forestry, this Board is composed of high level representatives (Undersecretary and President) from the Ministry of Foreign Affairs, Ministry of Public Works and Settlement, Ministry of Transport and Communication, Ministry of Agriculture and Rural Affairs, Ministry of Industry and Trade, Ministry of Energy and Natural Resources, Prime Ministry Undersecretariat of State Planning Organization, and the Union of Chambers and Commodity Exchanges of Turkey. Ministry of Finance, Ministry of Health, Prime Ministry Undersecretariat of Treasury and Turkish Industrialists' and Businessmen's Association were included in this Board later on. Besides, technical working groups exist under this Board in order to conduct sectoral studies.

Law No. 5836 on the Endorsement of Turkey's Ratification of Kyoto Protocol to the United Nations Framework Convention on Climate Change was published in the Official Gazette numbered 27144 and dated February 17, 2009. Following the publication of the Council of Ministers Decree on the "Ratification Instrument" declaring Turkey's accession to the Kyoto Protocol in the Official Gazette on May 13, 2009, the ratification instrument was submitted to the UN Secretariat General on May 28, 2009, and Turkey officially became a party to the Protocol on August 26, 2009.

### Basic Indicators

- Turkey's population growth rate, which was 1.24 percent in 2007, is quite above the OECD average population growth rate which is 0.68 percent. Turkey is one of the four countries with the highest population growth rates. Turkey ranks 81<sup>st</sup> in the Human Development Index among 180 countries according to 2007 data.
- Turkey has a relatively lower level of welfare based on Gross Domestic Product per capita, in comparison to all Annex-I Parties that have adopted greenhouse gas emission reduction targets within the framework of the Kyoto Protocol, as well as when compared to most of the Non-Annex-I Parties with rapidly developing economies.
- Turkey is not at a comparable level of industrialization compared to other OECD countries and many countries included in Annex-I to the United Nations Framework Convention on Climate Change, as well as some Non-Annex-I countries.
- Based on 2007 International Energy Agency (IEA) indicators, the world's average primary energy consumption per capita is 1.82 tons of petroleum equivalent, and OECD average is 4.64 tons of petroleum equivalent. Turkey's primary energy consumption per capita, which is 1.35 tons of petroleum equivalent, is much lower than the world and OECD averages.
- Turkey has the lowest values in per capita greenhouse gas emission, per capita primary energy consumption and historical responsibility among all OECD countries and the countries included in Annex-I to the United Nations Framework Convention on Climate Change. Based on 2007 data, while Turkey's greenhouse gas emissions per capita was 5.3 tons of CO<sub>2</sub> equivalent, the average value of the 27 member states of the European Union was 10.2 tons of CO<sub>2</sub> equivalent and the average value of OECD countries was 15.0 tons of CO<sub>2</sub> equivalent.
- While Turkey's total greenhouse gas emission in 1990 was 170 million tons of CO<sub>2</sub> equivalent, it increased to 372 million tons of CO<sub>2</sub> in 2007.
- As for the greenhouse gas sinks, although 44 million tons of CO<sub>2</sub> equivalent greenhouse gas emission was absorbed by the sinks in 1990; this value was approximately 77 million tons of CO<sub>2</sub> equivalent in 2007.
- According to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), Turkey is located in the Mediterranean Basin that is especially vulnerable to the adverse impacts of climate change.

### III. NATIONAL VISION

Turkey's national vision within the scope of climate change is to become a country fully integrating climate change-related objectives into its development policies, disseminating energy efficiency, increasing the use of clean and renewable energy resources, actively participating in the efforts for tackling climate change within its special circumstances and providing its citizens with a high quality of life and welfare with low-carbon intensity.

#### Basic Principles

The primary objective of Turkey within the scope of global fight against climate change is to take part in the global efforts for preventing climate change, which is a common concern of mankind, determined with common mind in cooperation with the international parties and in the light of objective and scientific evidence; in accordance with the sustainable development policies, and within the framework of the principle of "shared but differentiated responsibilities" and Turkey's special circumstances.

### IV. GOALS

Turkey's strategic goals within the framework of the above basic principles are outlined in the bullets below:

- to integrate policies and measures for mitigating and adapting to climate change, into national development plans, consistent with the United Nations Framework Convention on Climate Change principle of "common but differentiated responsibilities" and its special circumstances;
- to contribute to global greenhouse gas emission mitigation policies and measures, within its own capacity, by limiting the rate of growth of national greenhouse gas emissions, without disrupting its development program aligned with sustainable development principles;
- to increase national preparedness and capacity in order to avoid the adverse impacts of global climate change and to adapt to these impacts; to share emerging experiences and knowledge from such efforts with other countries in the region; and to develop bilateral and multilateral joint research projects for mitigation and adaptation;
- to comply with the design and implementation of global strategic objectives on mitigation, adaptation, technology transfer and finance that accounts for responsibilities of the parties, and to take active role in international activities;
- to increase access to financial resources required for undertaking mitigation and adaptation activities;
- to develop national research and development (R&D) and innovation capacities towards cleaner production and to establish national and international financial resources and incentive mechanisms aimed at increasing competitiveness and production in this area, by taking into consideration our current technology and development levels;
- to facilitate climate change adaptation and mitigation activities by ensuring efficient and continuous coordination and decision making processes based on transparency, stakeholder participation, and a strong reliance on a science focus;
- to raise public awareness in support of changing consumption patterns in a climate-friendly manner through joint efforts of all parties such as the public sector, private sector, universities and non-governmental organizations;
- to establish an integrated information management system in order to increase the flow and exchange of knowledge in national climate change efforts.

### V. STRATEGIES

- To actively participate in the negotiations carried out for establishment of a comprehensive and functional international cooperation mechanism, within efforts to combat and adapt to global climate change;
- to prepare the National Climate Change Action Plan, with a dynamic approach, within the overall framework of the National Climate Change Strategy, the Ninth Development Plan and other national policy and strategy documents;
- to initiate the organizational restructuring on climate change, in concerned institutions;
- to establish the necessary infrastructure, so that the greenhouse gas emissions inventories can be developed in a more sound manner;
- to develop climate change policies in cooperation with all stakeholders.

### VI. TURKEY'S NATIONAL POSITION IN INTERNATIONAL CLIMATE CHANGE NEGOTIATIONS

Considering its socio-economic indicators, greenhouse gas emissions profile, historical responsibility, per capita emission levels, GDP per capita and per capita energy consumption indicators as well as its ranking in Human Development Index, Turkey is in the category of "middle income developing countries". This fact has been emphasized in a report of independent experts appointed by the Secretariat of United Nations Framework Convention on Climate Change to evaluate our country's First National Communication and it demonstrates that Turkey is in a different category from other Annex-I countries.

In light of this fact, Turkey plans to fulfill the duties falling on its part in tackling global climate change, on the basis of the following considerations, in line with the basic principle of the Convention "common but differentiated responsibilities", and consistent with its own capacity.

Considering its economic and demographic development status, Turkey cannot make a greenhouse gas emission reduction commitment by taking a specific baseline year. Turkey plans to limit its greenhouse gas emissions through a set of measures that will not compromise its sustainable development and poverty reduction priorities. Furthermore, Turkey declares that it will carry out these mitigation activities, in a measurable, reportable and verifiable manner, in accordance with its national programs and strategies.

Through its numerous national plans, programs and strategy documents, primarily the development plans, Turkey has put into effect many policies and measures for tackling climate change, especially in the energy, agriculture, forestry, transportation, industry and waste sectors. Moreover, Turkey is willing to contribute more to international efforts in this field, within the framework of its own means and potential.

Turkey is in a developing country position. Therefore, Turkey must be given the opportunity to benefit from both existing and emerging financing facilities and mechanisms available to developing countries for the purposes of emission reductions, capacity development, adaptation, technology transfer, and reduction of emissions increased as a result of deforestation and forest degradation. In other words, Turkey aims to support, and facilitate its emission reduction and adaptation efforts by benefiting from financing and technology transfer facilities available to countries with similar economic development levels as Turkey.

## VII. GREENHOUSE GAS EMISSION CONTROL

# Energy

### Short Term

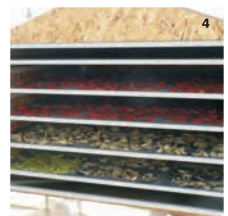
- All domestic resources, primarily hydro and wind, will be used at maximum levels, using cleaner production technologies and best available techniques, in line with energy security and climate change goals and within the framework of internal and external financing opportunities.
- An Energy Identity Certificate practice shall be introduced for new buildings.
- Renewable energy systems will be installed at new buildings, with an initial investment cost consistent with energy economics, with payback periods of 10 years for new buildings with floor space less than 20,000 m<sup>2</sup> and 15 years for new buildings with floor space of 20,000 m<sup>2</sup> and greater than 20,000 m<sup>2</sup>.
- Solar power collectors for central heating and sanitary hot water will be installed at new hotels, hospitals, dormitories, other non-residential buildings used for accommodation purposes, as well as sports centers with a usage area of more than 1,000 m<sup>2</sup>.

### Medium Term

- Energy efficiency potential in the building sector shall be evaluated and realized at maximum levels; priority projects on energy efficient construction materials and technologies will be identified in cooperation with industry.
- The infrastructure for the introduction of "Energy Identity Certificate" practices will be developed for existing buildings and heat isolation and other efficiency increasing measures will be encouraged.
- Energy management in compliance with standards shall be ensured in the industrial and building sectors by certified energy managers.
- Use of low and zero greenhouse gas emission technologies, primarily renewable energy and clean coal technologies, as well as nuclear energy, shall be fostered, R&D activities on clean technologies and energy resources shall be carried out and domestic industries shall be supported in these ventures.
- Use of new and alternative fuels in increasing levels shall be supported together with market incentives and penetration strategies for this purpose.
- Rehabilitation of existing thermal power plants shall be finalized; and more efficient operation of hydroelectric power plants shall be pursued.

### Long Term

- By 2020, energy intensity shall be decreased with reference to 2004 levels.
- Improvements shall be ensured in energy consumption at existing public buildings and facilities.
- The share of renewable energy in total electricity generation shall be increased up to 30% by 2023. In this framework, our technical and economic hydro potential will be fully utilized, wind electricity generation capacity will be raised to 20,000 MW and geothermal electricity generation capacity will be raised to 600 MW. Electricity generation from solar energy will be supported.
- Greenhouse gas emissions from electricity generation are envisaged to be 7% less than what they would have been in the Reference Scenario by 2020.



# Transportation

## Medium Term

- Plans will be developed to increase the share and load factor of railways, seaways and airways in freight and passenger road transport.
- Studies will be carried out to assess the potential for the improvement of combined transport.
- Short-distance maritime and lake transport shall be encouraged.
- Arrangements facilitating the expansion of the use of environmentally- friendly transport vehicles such as bicycles and the pedestrian access in cities, will be encouraged.
- Public transportation systems by means of subways and light rail systems shall be expanded especially in metropolitan areas.
- The use of alternative fuels and clean vehicle technologies in public transport vehicles will be expanded in cities.
- Research and development studies will be carried out in order to raise the geometrical and physical standards of road networks to ensure lower fuel consumption.
- Smart transportation system practices will be improved.
- Other practices to improve energy efficiency in the transport system shall be developed.

## Long Term

- The share of railways and seaways in freight and passenger transportation, which is currently 2%, will be increased, and airway transportation shall be supported.
- The use of alternative fuels, new technology engines which can minimize both CO<sub>2</sub> and NO<sub>x</sub> emissions and environmentally-friendly hybrid transportation vehicles will be expanded.



- 1 Artist: Mouri Rautkari, WWF Canon.
- 2 Yelkapan, Innovative hybrid (wind energy plus solar energy) water pumping windmill, Edirne-Turkey, ENA Windmill Technologies Ltd. Archive.
- 3 Sun Cookers, Kerkenes Project, Yozgat-Turkey, GEF Small Grants Programme Archive.
- 4 Sun Oven, Kerkenes Project, Yozgat-Turkey, GEF Small Grants Programme Archive.
- 5 Wind Power Plant (Demirer Holding), Çanakkale-Turkey, Artist: Mehmet Bayec.
- 6,7,8 MARMARAY Rail Tube Tunnel and Commuter Rail Mass Transit System Project in Istanbul-Turkey, Ministry of Transport and Communication Archive.



# Industry

## Short Term (1 Year)

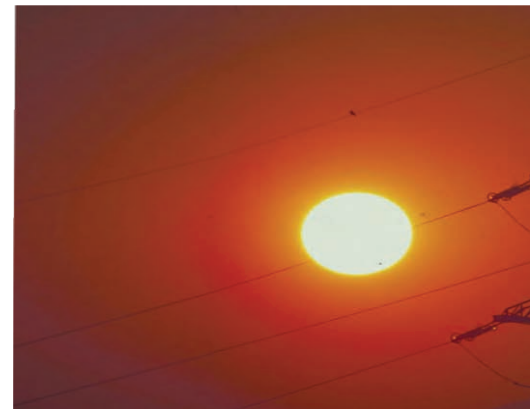
- Intensive climate change awareness raising activities will be carried out for the industrialists and consumers and handbooks/guidelines will be published.
- The process of hiring energy managers in all industrial facilities with annual energy consumption of more than 1,000 TEP shall be finalized and efficient operation of this system shall be ensured.

## Medium Term (1-3 Years)

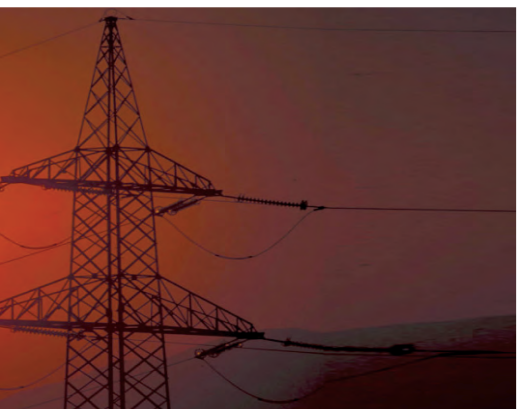
- Voluntary agreements that encourage the implementation of management instruments enabling the monitoring of greenhouse gas emissions, without any capital investment or operating cost, such as energy management systems, greenhouse gas inventory reporting systems and benchmarking systems, as well as incentive mechanisms like "climate pioneers program" will be developed in industry.
- All industrial facilities with annual energy consumption of more than 5,000 TEP will conduct annual energy studies.
- Heat recovery options in industry, engine speed control systems, and industrial cogeneration systems shall be stimulated and encouraged.
- Replacement of resources used in industry with cleaner production resources and use of alternative materials will be encouraged.
- Importance will be attached to research and development activities and technology transfer, and industrialists shall be encouraged in this direction.

## Long Term (3-10 Years)

- Incentive mechanisms will be introduced to promote cleaner production, climate-friendly and innovative technologies; and effective operation of inspection and enforcement mechanisms will be ensured.
- As climate change is among the most important environmental and economic problems affecting the international competitiveness of national industry in the existing international conjuncture, various other measures and policies will be implemented, as appropriate, within the context of the Industry Strategy Paper of Turkey (2010-2013) and the Science and Technology Policies, in close cooperation with the industrial sector.
- The determined saving potential shall be realized at maximum levels by the year 2020, through energy efficiency practices in the industry sector.







# Waste

## Short Term

- Harmonization of legislation governing municipal wastes will be finalized by the end of 2010.

## Medium Term

- The amount of waste reuse and recovery will be increased within the framework of the Waste Action Plan (2008-2012).
- 104 sanitary landfill facilities will be established and 76% of municipal waste will be disposed at such facilities by the end of 2012.

## Long Term

- Waste management hierarchy of source reduction, reuse, recycling, and recovery shall be implemented more efficiently.
- The amount of organic substances transferred to the sanitary landfills will be reduced, and biodegradable wastes will be used in energy generation or composting.
- Landfill gas will be captured and used for energy generation directly or after being processed; and if these gases cannot be used for energy generation, they will be burned.





# Land Use, Agriculture and Forestry

## Short Term

- Rational fertilizer use will be promoted; carbon emissions will be limited by using modern techniques for irrigation, soil cultivation, pesticide use, etc.; and organic agriculture, drought-tolerant plants and certified seed production will be supported and expanded.
- Producers will be financially and technically supported for their measures on conserving irrigation water and decreasing costs in the irrigation investments, and establishment of modern in-farm pressurized irrigation systems (drip / sprinkler irrigation systems) shall be encouraged.
- Technical and financial studies will be carried out on land consolidation to facilitate provision of on-farm services.
- Use of compressed wood (in the form of wood pellets or briquettes) instead of coal use will be promoted in order to support rural development and to reduce emissions.
- The status of forestry in Turkey will be assessed, focusing on deforestation and forest degradation, which have critical importance in terms of mitigating climate change, and a strategy shall be developed towards the solution of the problems.
- Scientific studies will be carried out to assess climate change impacts on forest ecosystems and to identify potential adaptation strategies in this regard, and policies will be developed based on these studies.

## Medium Term

- Crisis management will be implemented based on agricultural drought forecasts.
- Classification standards on protection, improvement and efficient use of soil and land will be developed and practices will be monitored and lands will be used consistent with their capability classes; necessary measures will be taken to prevent future soil erosion in the lands that are currently used regardless of their land capability classes and that are irreversibly damaged.
- The Law on Soil Protection and Land Use shall be efficiently implemented and enforced, appropriate secondary legislation shall be introduced; legal regulations on protection and improvement of meadows and pastures shall be efficiently implemented and effective monitoring systems will be introduced.
- 2.3 million hectares of land will be afforested and rehabilitated within the scope of National Afforestation Campaign between the years 2008–2012. 181.4 million tonnes of carbon will be absorbed by our forest areas, in 12 years, up through 2020, in addition to carbon absorbed by existing sinks.
- Trees tolerant to drought will be identified and these species will be planted especially in the arid and semi arid areas; vegetation activities will be carried out in the areas in which afforestation is difficult and costly.

- In order to reduce the negative impacts of climate change on soil and water resources and to ensure rational use of chemical fertilizers, the application of fertilizers consistent with the soil analysis results will be ensured.
- Techniques will be developed to increase carbon absorption in soil; agricultural producers shall be encouraged to adopt such techniques.
- Agricultural biomass and agricultural forestry activities will be expanded as energy resources.
- In order to reduce methane emissions originating from agricultural activities, appropriate livestock feeding methods, fertilizer management and good rice drainage conditions will be expanded.
- In agriculture, mitigation and adaptation strategies reinforce each other. Mitigation technologies increase the resistance of farmers to climate change. For this reason, mitigation and adaptation in agriculture will be planned collectively, since the synergy to be created by mitigation and adaptation strategies with effective planning and implementation shall also lead to effective results in production increase and poverty reduction.
- Measures will be taken for wastewater collection and reuse of treated wastewater in agriculture and industry.
- Research and development activities shall be accelerated in support of the combat against drought.
- Adaptation/mitigation strategies addressing climate change-settlement area interactions will be developed based on the best available science.

## Long Term

- A central geographic information system shall be established for all land use classes in Turkey in order to prepare the Greenhouse Gas Inventory and National Inventory Report in line with guidelines from the Intergovernmental Panel on Climate Change (IPCC), and a monitoring model will be developed based on stand maps and satellite data in order to calculate changes among land use classes.
- Forest lands and forestry activities, which are crucial for protection and management of water resources within the framework of sustainability principles, shall be planned and implemented based on upper basin management principles.
- Strategies for mitigation and adaptation to climate change in settlements shall be developed together with procedures and principles for planning and housing.
- Strategies for efficient use of urban land shall be developed in order to prevent the formation of urban heat islands.
- Procedures and principles on climate change adaptation in integrated coastal areas shall be determined.
- Increasing open green space systems in urban areas shall be encouraged and urban forestry shall be improved.
- Measures shall be taken in order to reduce urbanization pressures on rural and natural areas.



Misirli Plateau, Artvin-Turkey; Artist: Yıldıray Lise.

## VIII. ADAPTATION TO CLIMATE CHANGE

### Short Term

- Activities identified within the scope of the Agricultural Drought Strategy and Action Plan shall be implemented urgently.
- Stream remediation and erosion prevention activities will be undertaken and construction of flood prevention structures will be accelerated, within the context of 2010 as the year of flood protection.
- Regional flood plans shall be prepared and integrated into provincial disaster plans.
- Activities shall be accelerated for enhancing water quality that has been degraded due to the negative impacts of climate change.
- The capacity to combat animal diseases and plant pests resulting from climate change shall be strengthened.
- Activities shall be accelerated to protect and improve natural forests, carry out afforestation, prevent forest fires which may increase due to the negative impacts of climate change, and protect greenhouse sinks which are decreasing due to deforestation.
- Effective measures shall be taken against pests such as insects and fungi which are likely to increase in forested areas with rising temperatures.
- Activities on combating desertification and erosion will be developed and expanded.
- Scientific studies on the sustainable use of natural resources will continue, taking into consideration the interaction between climate change and sectors.
- Awareness raising and training activities on climate change adaptation shall target local administrations, professionals and the general public; support shall continue for scientific and social efforts, international communication and information exchange, and policy and strategy development efforts.
- Legislation on disaster and risk management shall be revised to assess potential settlement area relocation for risk reduction.
- Training activities shall be carried out in order to increase public awareness and participation on disasters and risks resulting from climate change.
- Activities such as local meetings, publications, television programs shall be planned on potential impacts of disasters resulting from climate change on human health, environment, historical and cultural protected areas, and economic activities and preparedness against these risks.
- Training activities for raising awareness on health impacts of climate change will be organized for health personnel and public via those personnel.

### Medium Term

- Water legislation shall be improved and the concept of adaptation to climate change shall be integrated into the legislation.
- River basin master and management plans for 25 river basins shall be developed within the scope of development, multi-purpose usage and protection of all ground and surface water resources in Turkey.
- Early warning systems for flood disaster reduction shall be developed and existing flood risk maps in all watersheds shall be updated.
- The impacts of climate change on water resources (in terms of quantity and quality) shall be identified and implementation proposals on adaptation will be developed for vulnerable areas.
- Agricultural practices that account for the adverse impacts of climate change on water resources shall be developed to ensure the sustainability of agricultural production.
- Projects will be developed and farmers will be trained on measures to prevent the increase in the salinity levels in irrigation areas within the regions where heat and evaporation will rise due to climate change (e.g., soil cultivation, drainage, irrigation, and mulching).
- Possible adverse impacts of climate change on vulnerable ecosystems, urban biotopes and biological diversity shall be identified; vulnerability assessments shall be carried out and measures shall be taken for ecosystem and biodiversity protection.
- Natural disasters such as floods, avalanches and landslides, frequency of which are expected to increase with climate change, shall be identified and necessary activities shall be initiated in order to minimize the impacts of these disasters, through the use of early warning systems.
- Projects on erosion and sediment control in all watersheds, especially in dam and pond basins, shall be prioritized.
- Financial assistance shall be provided in order to improve the capacity in crop productivity projections carried out based on the data on climate, land use and vegetation density, with the aim of monitoring the impacts of drought.
- Disaster, hazard and risk maps regarding flood and landslide scenarios shall be prepared and integrated into land use plans, which shall form a basis for risk management processes.
- Flood and landslide risk management plans along with implementation and monitoring guidelines shall be prepared.
- Climate change vulnerability assessments shall be conducted across the country.
- Impacts of climate change on hydroelectric energy generation capacity, tourism, health, food safety, water demand and forests will be evaluated.
- Research on development of plant and animal species that are tolerant to heat, drought, diseases, and pests shall be accelerated.

## Long Term

- Studies will be carried out on volume-based water pricing to ensure protection and efficient use of water resources.
- Irrigation networks which cause excessive water consumption and/or have completed their economic life spans shall be rehabilitated and/or replaced by modern systems, and relevant projects will be supported.
- Activities to prevent the adverse impacts of drought shall be supported within the scope of the Agricultural Drought Strategy and Action Plan.
- Seed production will be ensured through regional identification of the varieties of cereals that are drought tolerant; seed production improvement activities shall continue at public institutions, associations and private sector institutions; and a Drought Test Centre will be established in order to develop and test drought-tolerant crops.
- Mechanisms to facilitate public access to risk maps and disaster management plans relating to climate change shall be developed.
- Environmental impact assessment processes shall be supported with legal regulations and plans.
- Use of architectural styles and construction materials appropriate for local climate shall be encouraged.
- Efficient use of wastewater shall be promoted in urban green areas.
- Rainwater capture, use, and recycling strategies shall be developed for settlements and buildings, including the introduction of new technologies.
- Compulsory urban wastewater and rain water storage areas will be developed and the criteria for site selection will be updated.
- Within the framework of adaptation to climate change; agricultural basins will be identified and basin-based production will be performed for sustainable agriculture, efficient production planning and greater productivity.
- Contagious diseases and vectors, which have been linked to climate change by the World Health Organization and the Intergovernmental Panel on Climate Change, and which are already evident in Turkey, shall be monitored, and protective and preventive health policies shall be developed.
- Public health impacts associated with heat waves, extreme cold, flooding, storms and drought resulting from climate change shall be monitored. Measures shall be taken to ensure that the effects of changed climatic conditions on public health are minimized.



1. Dripping Irrigation in Sugar Beet Production, Kayseri-Turkey; Artist: Serkan Yılmaz, Sugar Beet Cooperative Archive.

2. Arguvan-Malatya-Turkey, Artist: Hatip Güven; UN Millennium Development Goals Fund Programme Photography Contest (2006) Archive.

3. Boyabat Akgöl - Turkey; Artist: Zeki Güven.

4. Artist: Cem Hakan Özastan; UN Millennium Development Goals Fund Programme Photography Contest (2006) Archive.

5. Artist: Nuray Özener, UN Millennium Development Goals Fund Programme Photography Contest (2006) Archive.

## **IX. TECHNOLOGY DEVELOPMENT AND TECHNOLOGY TRANSFER**

### **Medium Term**

- Technology Needs Assessments will be carried out on a sectoral basis, within the scope of tackling climate change, and modeling and sectoral stocktaking analysis studies will be accelerated for ensuring efficient information management.
- Various incentive mechanisms shall be developed and implemented in order to ensure technology transfer.

### **Long Term**

- Innovative financing options and innovation capacity shall be developed, research and development activities for climate-friendly technologies will be promoted, and cleaner production technologies will be encouraged, taking into account our current technology and development levels.

## **X. FINANCE**

### **Short Term**

- Existing financial resources available for mitigating and adapting to climate change will be reassessed, and efficient use of these resources shall be ensured, in light of priorities.
- Bilateral and multilateral international cooperation initiatives shall be developed in order to benefit more from international funds.
- New funding resources will be explored in order to transfer and develop green practices, good agricultural practices and climate-friendly technologies.
- Greater access to financial resources, needed to carry out mitigation and adaptation activities, shall be pursued.

### **Medium Term**

- Necessary infrastructure will be established for voluntary domestic carbon markets which provide financial assistance for reduction of greenhouse gas emissions. The voluntary carbon markets will be established in a manner that stimulates technology transfer and dissemination, and research and development activities.
- Necessary measures shall be taken to ensure that the companies already registered in voluntary carbon markets shall not be adversely affected by future legislation, and their involvement in these markets shall be encouraged.
- Clean technology investments will be supported, taking into consideration best practices of public-private sector partnerships.
- Transition to low-carbon economy will be accelerated by ensuring support for technology renewal, emission control, climate-friendly technology production, clean product design and cleaner production technologies.
- Greenhouse gas emission reduction and control and adaptation projects shall be prioritized in public investment programming.

### **Long Term**

- Innovative and sustainable additional financing resources shall be created to support the efforts for mitigating and adapting to climate change.

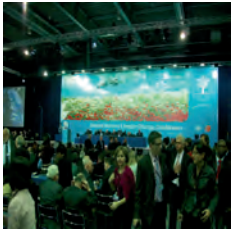
## **XI. TRAINING, CAPACITY DEVELOPMENT AND INSTITUTIONAL INFRASTRUCTURE**

### **Medium Term**

- Public awareness and institutional capacity will be strengthened in order to reduce the impacts of climate change and to adapt to the process.
- Active participation will be ensured in the negotiations for the development of a comprehensive and functional international cooperation mechanism on mitigating and adapting to climate change.
- Public awareness will be raised for promotion of climate-friendly consumption patterns through joint efforts of all sectors of society such as public, private sector, university, and non-governmental organizations.

### **Long Term**

- Scientific studies on climate change shall be encouraged. A Climate Change Research Institute shall be established to conduct scientific research on climate change at national and regional levels.



## XII. MONITORING AND EVALUATION

- Project proposals developed by public institutions and organizations, within the framework of this Strategy, in the fields of mitigation, adaptation, technology development and transfer, training, capacity development and institutional infrastructure, shall be evaluated and prioritized by the Coordination Board on Climate Change, in order to form the basis for preparation of the action plan. All these activities will be coordinated by the Ministry of Environment and Forestry.
- To ensure efficient implementation of the Strategy, a coordination and monitoring system shall be established by the Ministry of Environment and Forestry to closely track the progress and intervene as needed in a timely manner.
- A "Strategy Monitoring and Steering Committee" shall be established under the Coordination Board on Climate Change, with the aim of monitoring and assessing the implementation of the Action Plan to be prepared on the basis of this Strategy. The secretariat services of this Committee shall be carried out by the Ministry of Environment and Forestry, and the Committee will inform members of the Coordination Board on Climate Change on the implementation of the Strategy through quarterly reports.
- All institutions will make efforts in order to comply with reporting requirements established, based on completeness and correctness of information and timeliness, which is a critical component of communication within the system.

1. UNFCCC Conference of Parties COP 14, Poznan, December 1-12, 2008. Ministry of Environment and Forestry Archive.  
 2. International Climate Advocates Workshop, Challenge Europe Project, November 2009, Ankara-Turkey; British Council Turkey Archive.  
 3. Climate Change Capacity Building Project Kickoff Meeting, Ankara-Turkey, 2009; UNDP Turkey Archive.  
 4. A Systems Approach Implementation Workshop on Climate Change Adaptation in Seyhan River Basin, Adana-Turkey, 2009; UN Joint Programme on Enhancing the Capacity of Turkey to Adapt to Climate Change Archive.  
 5. "We are heading to the Moon!", Waste Oil Busters Training and Recreation Camp, Bolu-Turkey, 2008, Union of Alternative Energy and Biodiesel Producers Archive.

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