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TGNA'S ROLE IN CLIMATE CHANGE POLICY

Summary for Policymakers



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The Global Balance Association is responsible for the entire content of the report.



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Foreword

A wide network comprising governments as well as parliaments, civil society organizations, local communities, academia, and business communities have been waging efforts to combating the global climate change for years. Contributions are also being made to climate change policies at the level of national and regional parliaments. The European Parliament (EP), for instance, called on European Union (EU) countries for being more committed to reaching the goal of reducing greenhouse gas emissions and to make energy saving goals legally binding prior to the Copenhagen Climate Conference in the Fifteenth session of the Conference of the Parties (COP 15, 2009).



A climate committee was set up within the EP in order to ensure that priority is accorded to combating climate change on the European and global agenda in that period. Reports issued by the EP Climate Committee established a common position for Europe (in partnership with the parliaments of the EU countries) for the EP's international global negotiations. In that context, policy proposals put forward by European parliamentarians capture attention. Their key proposals suggested that the EU should have a foreign policy on the climate change, Mediterranean countries which are members of the EU, should set up a solar energy partnership; the EU should set greenhouse emission targets also for the agricultural industry; and EU grants that would enable developing countries to combat climate change should be increased.

The TGNA has a key role in the new global climate regime initiated by the Paris Agreement in terms of its legislation and scrutiny processes

It is essential to clarify the roles and responsibilities of the Parliament in Turkey for combating climate change.

This report has been drawn up for the TGNA (The Grand National Assembly of Turkey) as part of the "Strengthen the Role of Turkish Parliament for the Improvement of National Climate Change Policy Project". Being executed by the Global Balance Association, other stakeholders of the project include the Association for the Protection of Consumers and Climate and the Legislation Association. The primary objective of the project is to raise awareness within the Turkish Parliament with regard to policies and practices for combating climate change and to draw attention to the issue.

Legal Framework

Turkey ratified the United Nations Framework Convention on Climate Change in 2004 and the Kyoto Protocol in 2009. The most recent international agreement regarding the climate change was the "Paris Agreement" adopted at a United Nations meeting held in Paris in December 2015. The Paris Climate Agreement is expected to be placed on the TGNA's agenda as Turkey has found it satisfactory in terms of its political commitments as a UN member.

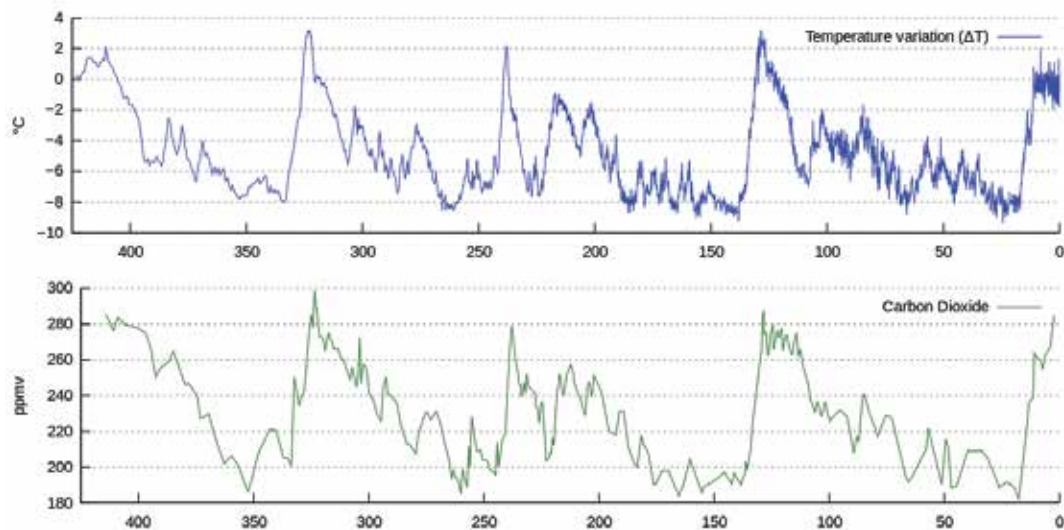
TGNA started assessing climate change policies in terms of legislation and parliamentary scrutiny as a key milestone with regard to responsibilities that Turkey will shoulder in the new global climate regime initiated by the Paris Agreement adopted by all members of the United Nations (UN) in December 2015.

This is a noteworthy issue for preparing the ground for the improvement of legislation, a crucial policy tool, as climate friendly. This report also aims at clarifying the responsibilities of politicians, who represent citizens in Parliament, concerning people's demands in that field, and enabling them to play a more active role.

1 CURRENT STATUS OF CLIMATE CHANGE

Energy consumption, which was limited to biomass prior to the industrialization, rapidly increased when fossil fuels subsequently came into the picture. Excessive use of fossil fuels for industry, urbanization, and agricultural activities as well as gradual deforestation increased greenhouse gases accumulated in the atmosphere. Carbon dioxide in parts per million, which was 278 ppm in 1750, rose 40% and reached 391 ppm in 2011. These figures show that there has been an immense increase in the quantity of carbon dioxide in atmosphere in the past 800 thousand years prior to industrialization.

Figure 1 • Temperatures measured in Vostok Glacier in the past 420 thousand years (blue) and variation in carbon dioxide (green) concentration



This unusual increase in the concentration of carbon dioxide has caused two key threshold related to global climate balance to be crossed:

- 1- Scientific research shows that the safe limit in terms of the concentration of carbon dioxide in atmosphere is 350 ppm (350 parts per million) in respect of climate balance. 350 ppm was exceeded in 1988 according to measurements.
- 2- It is known that the globe experienced 400 ppm 4.5 million years ago. It has been proven that global temperature during the Pliocene epoch 5 to 3.6 million years ago was 3°C or 4°C higher than today; temperature was 10°C higher in the poles; and sea level was 5 to 40 meters higher than today. Average for April exceeded 400 ppm for the first time in 2014 since that epoch.

While these findings revealed by the 5th Assessment Report (AR5/2014) of the IPCC explain the deterioration in the global climate balance, they also offer important clues

¹ Intergovernmental Panel on Climate Change/IPCC.

about its future consequences. Risks will be much higher if the temperature rise caused by climate change resulting from greenhouse gases nears 2°C as compared to the pre-industrialization era and extreme climatic events will become frequent. This will mean irreversible conditions. Scientific models demonstrate that temperature increase cannot be stopped and climatic will face the risk of tipping point as the amount of carbon dioxide in the atmosphere comes close to 450 ppm.

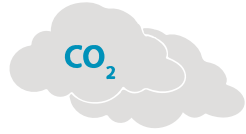
There are two important axes that ensure climatic balance. The first one is oceans and land sinks that hold carbon dioxide emitted by burning coal, oil, and natural gas. Forests are the most important land carbon sinks, but carbon dioxide deficit resulting from dwindling sinks also makes it difficult to compensate for existing forests and ocean sinks. The difference between total carbon dioxide emission and the capacity of sinks to hold it lead to an increase in the amount of carbon dioxide in the atmosphere. In fact, these mechanisms hold sun rays reaching the globe and ensure that temperature is kept at a specific level in the atmosphere. Meanwhile, polar glaciers, Greenland glacier or snow cover reflect sun rays and prevent them from being retained by the earth and turn into heat. The decrease in the number of days with snow cover and the diminution of summer glaciers in the Northern Pole is a clear sign that melting process is being witnessed in the Greenland glacier.

Meanwhile, average temperature rose 0.85°C between 1880 and 2012, the hottest three years were observed in the past decade, and 2015 was recorded as the hottest year ever measured and these facts are shown as the most current indicators of long-term scientific projections. At this point, greenhouse gases must definitely be reduced and the capacity of sinks should be strengthened rather than weakened for keeping the temperature rise below 1.5°C or to decrease the amount of carbon dioxide in the atmosphere before it reaches 450 ppm.

Carbon dioxide, which remained between 190 and 280 parts for 800 thousand years, played a key role in keeping temperature within certain limits as part of the natural cycles of climate change. CO₂, which significantly exceeded the capacity of oceans and land sinks as a result of increased use of fossil fuels after the industrialization and land degradations, particularly deforestation, started to accumulate in the atmosphere and **carbon budget deficit**, straining the globe's natural equilibrium, led to an increase in the concentration of carbon dioxide in the atmosphere.

According to AR5, the concentration of carbon dioxide, the global carbon budget of which was 288 ppm in 1870, went up because of the excessive use of coal, oil, and natural gas, and problems in the cement industry and land use change. Land and oceanic sinks retained only a part of this increase and ensured that it remained at 395 ppm in 2013. **Sinks retained 145 out of 252 units of the increase resulting from the use of fossil fuels and land use which meant that there was a 107-unit deficit.**

It is essential to preserve the capacity of sinks in order to reduce the carbon budget deficit while ensuring a sustainable use of land and reducing the consumption of fossil fuel in order to bridge that deficit. Failing to bridge the carbon budget deficit inherited from the past and to use the earth's carbon budget to its full extent would mean that climate change is rapidly moving toward a point of tipping point.



2. GLOBAL CLIMATE CHANGE POLICIES

Carbon dioxide budget that could be emitted should not be exceeded in order to accomplish the safest scenario (RCP2.6) in terms of climate change, according to the latest report of the Intergovernmental Panel on Climate Change. To achieve that goal:

- More than 80 % of coal reserves, 30% of crude oil, and 50% of natural gas must remain under ground in order not to expend the carbon budget;
- Global greenhouse gas emissions must be reduced before 2020 and the annual quantity of carbon dioxide released to atmosphere should be reduced at least 40% to 70% as compared to 2010 by 2050 and a "carbon-neutral" society must be formed by 2070;
- Consumption must be cut down through energy saving and efficiency and fossil fuels should no longer be used;
- While carbon dioxide is the most important greenhouse gas, the emission of other greenhouse gases should be reduced in order to ensure that deceleration of increase in the temperature rise through a reduction of carbon dioxide is not offset by other gases.

The global carbon budget should not be totally used and more than 80% of coal, 30% of crude oil, and 50% of natural gas reserves must stay in the ground

What is important here is to achieve the "decarbonization" of economy through policies called "low carbon economy" and to develop a "zero-carbon" economy over the long run.

New Climate Regime Brought About by the Paris Agreement: International climate negotiations which followed on the heels of the implementation of UNFCCC and Kyoto Protocol began in the 90s and were periodically held annually. A new global climate agreement was adopted in the 21st round of the Conference of the Parties (COP21²) held in Paris in December 2015.

The Paris Agreement contains various provisions aiming at holding the increase in the global average temperature to well below 2 °C, increasing the Earth's ability to adapt to the adverse impacts of climate change; and to provide funds and technology needed for offsetting losses and damages resulting from climate disasters and fighting them. The countries were asked to provide "Intended Nationally Determined Contributions (INDCs)" regarding those issues prior to the Conference as the agreement contains concrete goals for the reduction of greenhouse gas emissions. It was, however, scientifically shown that global temperature increase could not be kept below 2°C even if all the quantitative promises made in INDCs were honored and all actions were taken.

These actions will not be sufficient for the decarbonization of all economic systems in the world. The solution lies in pursuing radical and ambitious policies in order to dispense with fossil fuels. Abandoning coal is one of the main aspects of those policies. In addition, the critical threshold, which has been scientifically established, is to stop global temperature rise at 1.5°C. The Paris Agreement, however, failed to produce a consensus on 1.5°C and it was only included as a recommendation directed to the State Parties. The Agreement



COP21- CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE

Absence of "liability and compensation" provisions has weakened binding role of Paris Agreement

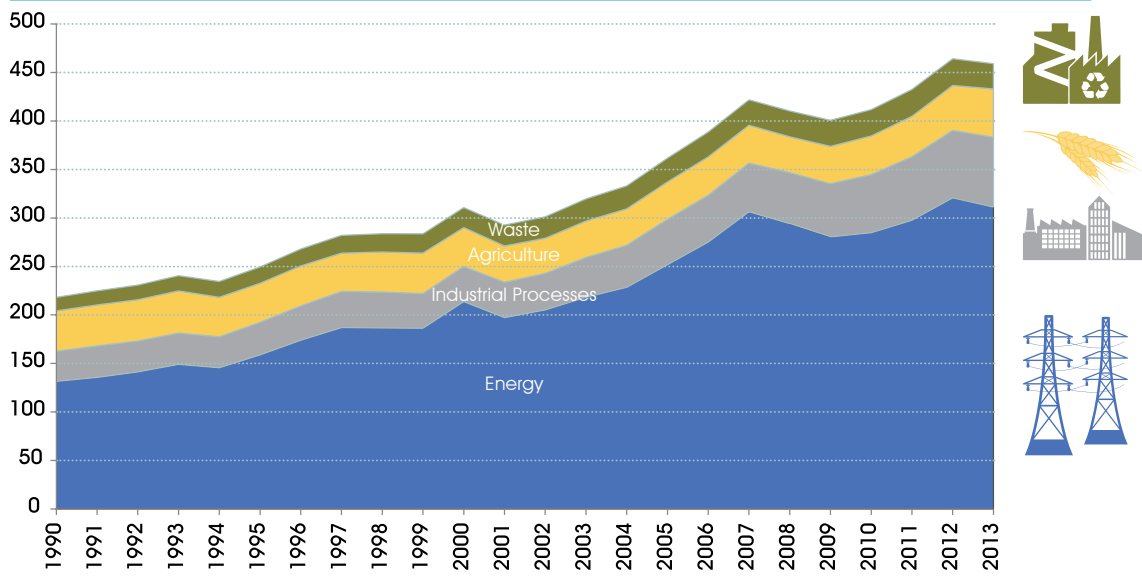
² COP 21: 21. Conference of the Parties.

does not contain provisions regarding “liability and compensation.” This fact can be interpreted as a sign that messages issued in Paris did not reflect strong determination for the sustainability of global values and climate resilience in the future.

3. CLIMATE CHANGE POLICIES IN TURKEY

According to a current inventory of greenhouse gas emissions issued by TurkStat annually, Turkey’s emission was 110.4% higher in 2013 as compared to 1990. Turkey released a total of 218.2 million tons of greenhouse gases in 1990 which was up to 459.1 million tons in 2013.

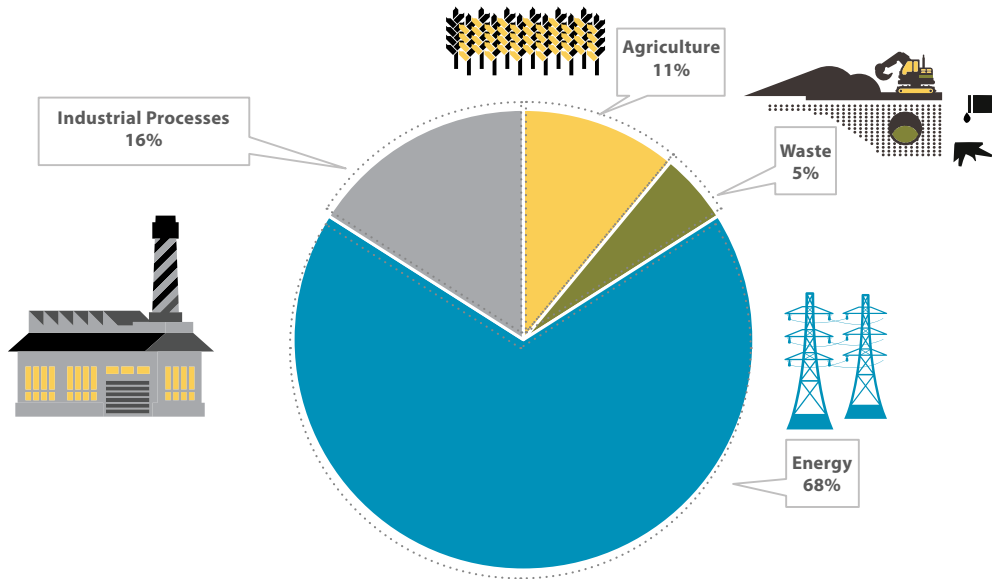
Figure 2 • Changes in Turkey’s Total Greenhouse Gas Emissions by Years and Industries



An analysis of this inventory by different industries shows that the energy sector had the lion’s share with 67.8 % and that it was followed by emissions from industry, agriculture, and waste. The energy sector led the industry with a 137 % increase in greenhouse gas emissions as compared to 1990. Considering the share of energy and industry and their increase over the total rise, it is understood that the most fundamental problems in Turkey’s climate change policies concentrate in those sectors. A look at the situation in terms of greenhouse gases shows that carbon dioxide dominated the share with 79 % in 2013 and registered a 136 % rise since 1990. Carbon dioxide had a share of 79 % in 2013, up from 70 % in 1990.

A consolidated assessment of the recent years indicates that greenhouse gases arising from energy and industrial processes have accelerated climate change in Turkey because of their high shares such as the one in 2013 and percentages increasing the average.

Figure 3 • A Breakdown of Turkey's Emissions by Sectors in 2013



Turkey's Policy on Greenhouse Gases in the Future: Intended Nationally Determined Contribution (INDC), submitted to the UN Secretariat in September 2015, was the first international policy document in which Turkey unveiled her quantified goals for greenhouse gas emissions as part of the fighting global climate change for the post-Paris obligation period 2020 - 2030. In her INDC, Turkey specified the projections for 2030 and the total quantity of greenhouse gases which it has committed accordingly. Thus, a 21 % reduction in the emission to be reached in 2030 has been set as a quantified goal under the Reference Scenario in Turkey's INDC. A look at the sub-industries indicates that there are various quantified targets such as 10 thousand MW solar energy, 16 thousand MW for wind energy, making full use of hydropower potential, commissioning one nuclear power plant, and reducing the loss in power generation and network to 15% in 2030.

Metal production, power generation, transportation, and construction industries are the decisive factors accelerating climate change in Turkey

While Turkey's INDC states that "it will take a major step on the path to a low-carbon development in order to attain the goal of 2°C at global scale, the Ministry of Environment and Urban Development has said that per capita emission would go up from 4 tons in 1990 to 10.5 tons in 2030. In Turkey, there was a 110.4 % increase in emissions in 2013 as compared to those in 1990. Projections suggest that it will rise to 438 % in 2030 and that there will be a 326 % increase following a 21 % fall.

Thus;

- 1- Although it is necessary to reduce emissions after 2015 to hold the temperature increase below 1.5 °C above pre-industrial levels and to reduce them after 2020 in order to reach the goal of 2°C, Turkey's emission increase is gaining momentum and continues to rise until 2030.
- 2- While RCP2.6 scenario envisages that i) global greenhouse gas emissions in 2020 will remain below their levels in 2010 and be almost equal to those recorded in 2000, ii) emissions are expected to fall below 1990 levels in 2030; and iii) a "Zero" emission economy needs to be created after 2050, none of these goals were taken into consideration in Turkey's policies and INDC.
- 3- In conclusion, Turkey's greenhouse gas emissions will have reached a point of no return according to the INDC statement.



4. A GLOBAL OUTLOOK ON ADAPTATION TO CLIMATE CHANGE IMPACTS

Adaptation to the climate change can be described as the strengthening, improvement, and implementation of strategies in that field with a view to resist to the impacts of climatic events (risks), providing benefits, and managing impacts. The climate change will gradually increase its impacts in the coming years because of greenhouse gases in the atmosphere even if all activities causing greenhouse gas emissions in the world were stopped today.

This conclusion has gradually become clear in the scientific community through projections using different models based on future scenarios related to greenhouse gas emissions. According to AR5, continuing emissions of greenhouse gases will cause more warming and changes in all components of the climate system. This fact clearly shows the importance of adaptation to impacts. Thus, adaptation activities is gradually gaining more importance as part of the combating climate change in the whole world.

A research conducted by the World Resources Institute³ concluded that the number of people who will be affected by inundations and floods throughout the world will increase almost three times in the next 15 years (2030), emphasizing that climate change is the main factor contributing to that increase. Thus, climate change resulting from the rising concentration of greenhouse gases maintains its potential to harm communities and ecological systems. This situation leads to a reduction of functions and degradation of agriculture, forests, water resources, infrastructural systems, settlements on coastal regions, and, more importantly, natural ecological systems and all these facts demonstrate the need to adapt to the changing climate once again.

The climate change will gradually increase its impacts in the coming years even if all activities causing greenhouse gas emissions in the world were stopped today

Lower or higher level of communities' exposure to the impacts and risks of the climate change also largely depends on the legal bases and the capacities of institutions concerned in that field. Sustainable planning of coastal areas, constructive innovations in land-use and building regulations, **conducting EIA researches and climate risk analyses, and integrating them in adapting to the impacts of climate change are among important actions.** In addition, it was observed that reputable institutions which have achieved innovations in the insurance industry and disaster relief payments in some countries increased their capacity to adapt themselves to the negative impacts of the climate change.

Global efforts related to adaptation to the impacts of climate change still lag behind actions aiming at cutting down greenhouse gases. Adaptation to impacts was not paid sufficient attention during the climate negotiations held at international level and also reflected in the process of implementing the UNFCCC and the Kyoto Protocol. It was, however, later observed that a series of UN policy documents focusing on adaptation policies had been issued. Of particular importance were the Nairobi Work Program (2005), Bali Action Plan (2007), and the Copenhagen Compromise (2009). More recently, the Paris Agreement (December 2015) brought adaptation to the impacts of the climate change to the fore as a global policy area. The provisions of the Paris Agreement directly linked to adaptation to the impacts of the climate change are as follows:



³ WRI: World Resources Institute.

- Article 2/1b: Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;
- Article 4/7: Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans can contribute to mitigation outcomes under this Article.
- Article 7/1: Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.

Today, it is recognized that adaptation to the impacts of the climate change is necessary and complementary to a comprehensive and coordinated strategy in fighting climate change because adaptation is a major defense measure against impacts, alleviating the size of potential loss. What needs to be emphasized at this point is that further rise in the globe's temperature will lead to noticeable losses and damages in a variety of fields and thus higher costs will emerge.

The Paris Agreement provides a new perspective on policies aiming at adapting to the impacts of the climate change and the Agreement contains various provisions regarding losses and damages.

Strategies and action plans are being developed in many countries (including Turkey) at national / local levels in order to adapt to the impacts of the climate change. Such planning about the impacts of the climate change and the management of risks arising from impacts should also be read as support provided for governments' policies concerning sustainable development.



Climate change will lead to further losses and damages in many fields

5. IMPACTS OF CLIMATE CHANGE ON TURKEY AND ADAPTATION POLICIES

A series of contemporary scientific studies, particularly IPCC/AR5 report suggest that Turkey will have a warmer and hotter climatic system which will be more unpredictable in terms of precipitation. Thus, excessive precipitation, extreme cold, and unusual rain and floods are unexpectedly being observed in Turkey. Heavy instantaneous precipitation cause loss of lives, property, and soil.

IPCC's Turkey scenario estimates that annual average temperature in the country will rise 2,5°C-4°C in the coming years and that the increase will be as high as 4°C in the Aegean and Eastern Anatolian regions. The scenario foresees that the southern part of the country will suffer from severe drought while the northern regions will face an increased risk of floods. These scientific projections are considered as a clear sign of the fact that Turkey will be affected by the adverse aspects of the climate change such as the depletion of natural resources, forest fires, drought and desertification, and resulting ecological deterioration. Turkey is among the countries classified as a risk group in terms of the potential impacts of the climate change in the near future.

All these facts demonstrate that reducing greenhouse gas emissions in combating climate change and adapting to its impacts are extremely important in Turkey and necessitates urgent policies in that regard.

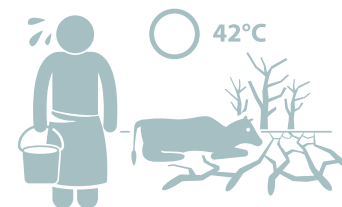
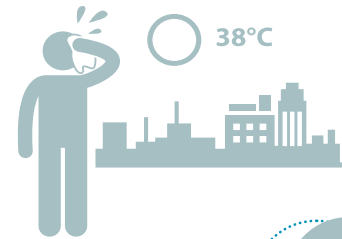
The 10th Development Plan, which is in force today and covers the period 2014-2018, contains some actions directly or indirectly related to adaptation to the impacts of the climate change. The plan includes actions conducive to adaptation to the climate change it is own strategic goals and objectives of industries (e.g. agriculture - plant production, animal products, forestry, energy, manufacturing industry, and tourism) which need to take adaptation actions. These issues, however, have yet to be directly linked to adaptation to the climate change and combined impacts between different industries are not sufficiently taken into consideration. The link between desertification and food security, for instance, is not included in current policies.

Combating climate change in Turkey focuses on five fundamental vulnerability areas:

- Management of Water Resources
- Agriculture and Food Security
- Ecosystem Services, Biological Diversity, and Forestry
- Risk Management for Natural Disasters
- Human Health

The National Strategy Document for Combating Desertification (2013 - 2023), National Strategy Document on Basin Management, and Roadmap for Climate Change and Disasters (2014-2023) are among other strategies and policy documents related to adaptation to the climate change at national

2010 was the hottest year ever recorded in Turkey



Economy policy options giving due consideration to adaptation to the impacts of the climate change have not yet to be developed in Turkey

level. Despite all those efforts, the main shortcoming in Turkey is that economy policy options giving due consideration to adaptation to the impacts of the climate change have not yet to be developed. Decision-makers in Turkey have regarded policies designed to cut greenhouse gas emissions and the economic assessments of those policies rather than adaptation to impacts as the number one priority to date.

Buildings are responsible for almost half of greenhouse gases resulting from electrical power

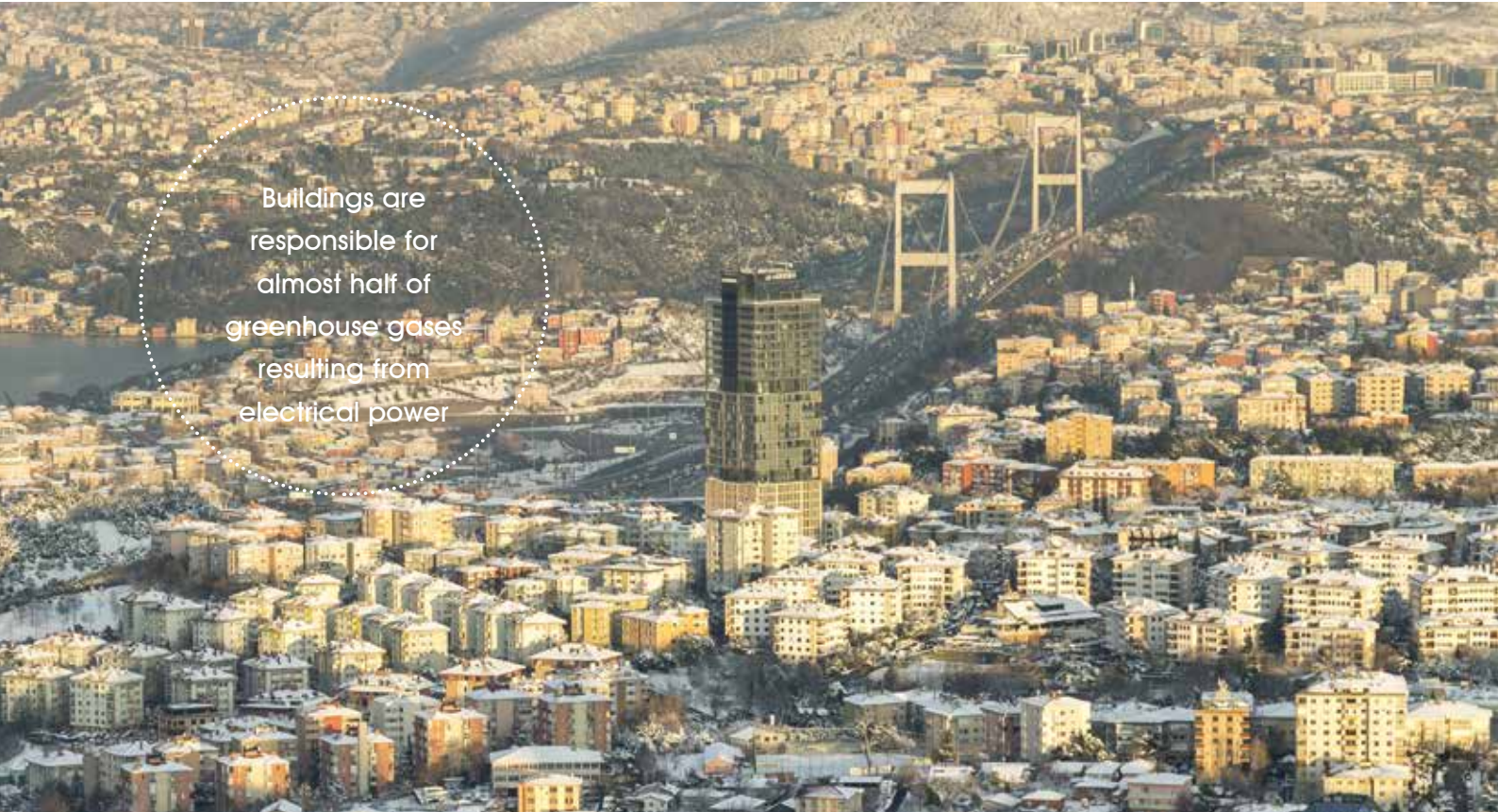




Table • Examples of Impacts of Climate Change and Adaptation Strategies

| Impacts of Climate Change | Examples of Adaptation Strategies |
|--|--|
| Increased temperatures | To modify building designs so that they can withstand high temperatures and to develop cooling systems needed during the summer. |
| Extreme precipitation | To build dams that could accommodate increased precipitation as a result of more frequent storms and other flood protection structures and urban storm and sewerage systems. |
| Retraction of glaciers | Ensuring that hydroelectric power plants on glaciers are adapted to increased winter flows resulting from temperature rise and reduced summer flows caused by the width of glaciers. |
| Snow blanket | Diminishing snow blanket is taken into consideration by the skiing industry at low altitudes (artificial snow is a short-term strategy) |
| Arctic sea glacier | To protect the habitats of local people |
| Rising sea levels | To modify structures in sensitive areas e.g. modification of ports and marinas against rising water |
| Maritime development seasons | To manage variations in fishing and tourist industries (harmful algae blooms) |
| Composition of marine species | To develop onshore management strategies in order to create passage areas allowing species to migrate freely |
| Distribution of plant species in highlands | To establish ecological reserves with reduced additional pressure resulting from land use and tourism |
| Terrestrial carbon emission | Strategies designed to increase the resilience of soil and agricultural areas against carbon intake by soil, building designs containing more timber. |
| River discharge | To build flood areas and dikes |
| Agriculture | New cultivation practices taking account of longer growing seasons; growing crops in a single season. Creation of new varieties and moving agricultural areas outside of risky areas (flood zones, soil desiccation) |
| Economic losses | Modification of building and infrastructure designs, avoiding construction of homes in areas with a high flood risk. |
| Human health | To raise public awareness on diseases communicated by ticks through informational campaigns. To organize campaigns that would raise awareness on risks posed by heat waves. |

The awareness of
decision
makers on the impacts
of climate change
to the citizen health and
their livelihood is not
in sufficient



6 TGNA'S ROLE IN COMBATING CLIMATE CHANGE

There is no doubt that the Grand National Assembly of Turkey (TGNA) is a key organ for the position that the government of the Republic of Turkey will take for combating the climate change at global or national level under the new universal climate regime initiated by the Paris Agreement adopted in December 2015. It is, therefore, essential to start debates on policies vis-a-vis to combat the climate change as part of the TGNA's legislative and parliamentary scrutiny roles.

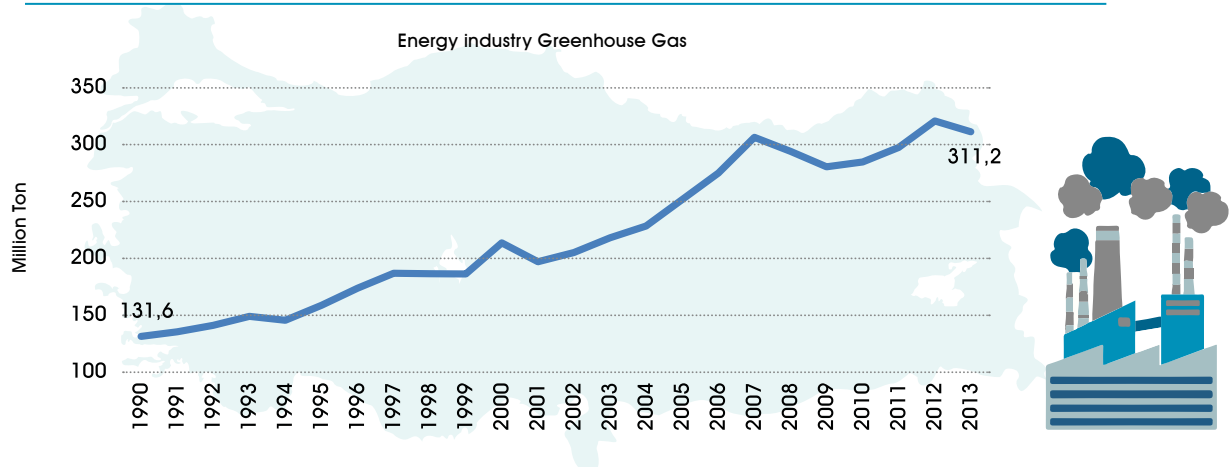
Relationship between Laws and Greenhouse Gas Emission

The provisions of fundamental laws applicable to the power industry, buildings, and communications that could be connected to the climate change were reviewed in order to clarify the TGNA's role in the struggle against the climate change. The relationship between the laws applicable to the industries under scrutiny and the climate change is assessed in terms of the unique operations of each industry. For example, burning fuel for generating power and heat in the power industry, air-conditioning in buildings in the building industry and using power for operating electrical devices; consumption of fuel in the communications industry in order to move motor vehicles cause climate change.

Energy: Turkey is highly dependent on imported crude oil and natural gas and the rise in energy prices fuels debates over energy and the climate change and it will continue to be a contentious issue in the future.

Figure 4 • Variation in Greenhouse Gas Emissions in the Turkish energy industry between 1990 and 2013.

(Data: CR2015, Greenhouse Gas Inventory for 2015, Graph: Algedik, Ö)



It can be said that legislative and institutional arrangements in those fields have increased since the 80s. There is no unit directly tasked with ensuring adaptation with the impacts of the climate change and fighting it within the organizational structure formed by Law No. 3154 on the Organization and Duties of the Ministry of Energy and Natural Resources. Climate and energy issues are being handled through the Directorate-General for Energy Affairs within the Ministry.

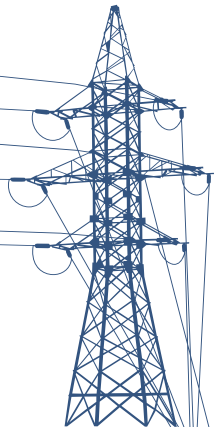
The Directorate-General for Renewable Energy (YEGM), which replaced the Electricity Affairs Engineering Office (EIE) within the Ministry as a result of an amendment to the law in 2011 with a view to exploiting sources of renewable energy and increasing efficiency, ensures the implementation of Law No. 5346 on the Use of Sources of Renewable Energy which was put into force in 2005.

The purpose of the Law in question is to promote the use of sources of renewable energy for the generation of electrical energy; exploitation of those sources in a reliable, cost-effective, and efficient fashion for economic purposes; diversification of sources; reduction of greenhouse gas emissions; recycling waste; protection of the environment; and development of a manufacturing industry needed for the attainment of those objectives. The Law is the only law which clearly identifies the reduction of greenhouse gas emissions as an objective in its foreword among the laws reviewed. This is an important issue considering that the substitution of fossil fuels with sources of renewable energy is one of the most effective actions to deal with climate change. The main method that the Law employs in order to substitute sources of renewable energy for fossil fuels is to provide financial support for the generation of power from sources of renewable energy.

Law No. 5627 on Energy Efficiency (2007) is one of the key Turkish laws in the energy field, which directly deals with the climate change. The Law aims at attaining specific goals such as the reduction of energy costs and the protection of environment by increasing energy efficiency in different areas i.e. generation, transmission, distribution, and consumption of power; industrial enterprises; buildings; and the transportation sector. This Law is a key legislative arrangement intended to increase energy efficiency in a variety of fields e.g. energy industry, housing, transportation, and manufacturing industry.

It is of common knowledge that the laws regulating energy industries generally set forth provisions and procedures related to market functions and licenses as well as enforcement and the obligations of operators and these laws do not contain provisions directly related to combating climate change. These laws only include specific provisions pertaining to the approach to the protection of the environment. According to the forewords of Law No. 6446 on the Electricity Market and Law No. 4646 on the Natural Gas Market, making electricity and natural gas available for consumers without causing any harm to the environment is set as a goal. Other articles do not contain any provision which can be directly connected to the environment and the climate change.

Decreasing energy intensity through the efficient use of energy, development of an energy system that would minimize the environmental impacts of energy, and the



exploitation of sources of renewable energy in the energy industry are among the objectives of the 10th Development Plan.

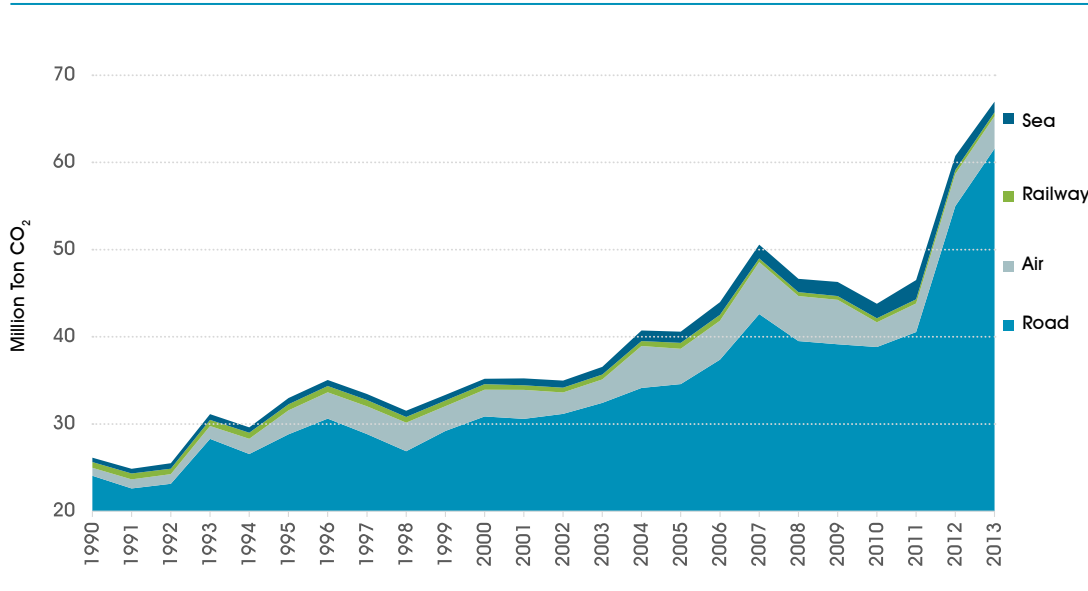
Goals related to increasing energy efficiency are listed among the “Priority Transformation Programs” in the Plan. It is assumed that those goals will lead to a decline in greenhouse gas emission, but policies to be pursued under the Plan also includes the conversion of national coal reserves into electrical energy, exploitation of lignite reserves in Afşin-Elbistan basin for power generation; and using small coal reserves at regional power generation plants.

These policies which aim at extracting all coal reserves and converting them into electrical energy will evidently lead to an increase in greenhouse gas emissions and create adverse effects for fighting climate change.

Aiming at turning all coal reserves into electrical energy, Turkey cannot fight against the climate change.

Transportation: The share of greenhouse gas emission originating from the Turkish transportation sector within the energy industry is 22.2 % while it accounts for 15% of national total emission. All kinds of processes affecting fuel consumption within the transportation sector affect the quantity of greenhouse gas emission and the climate change. Considering emissions originating from transportation, it is seen that there has been a significant increase particularly over the past couple of years and inland transportation had the largest share in that increase. Thus, inland transportation represents the bulk of transportation in the 10th Development Plan, which causes road safety issues as well as environmental problems.

Figure 5 • Sector-Wise Development of the Quantity of Carbon Dioxide Originating From Transportation in Turkey between 1990 and 2013
(Data: CRF2015, Greenhouse Gas Inventory 2015, Graph: Algedik, Ö)

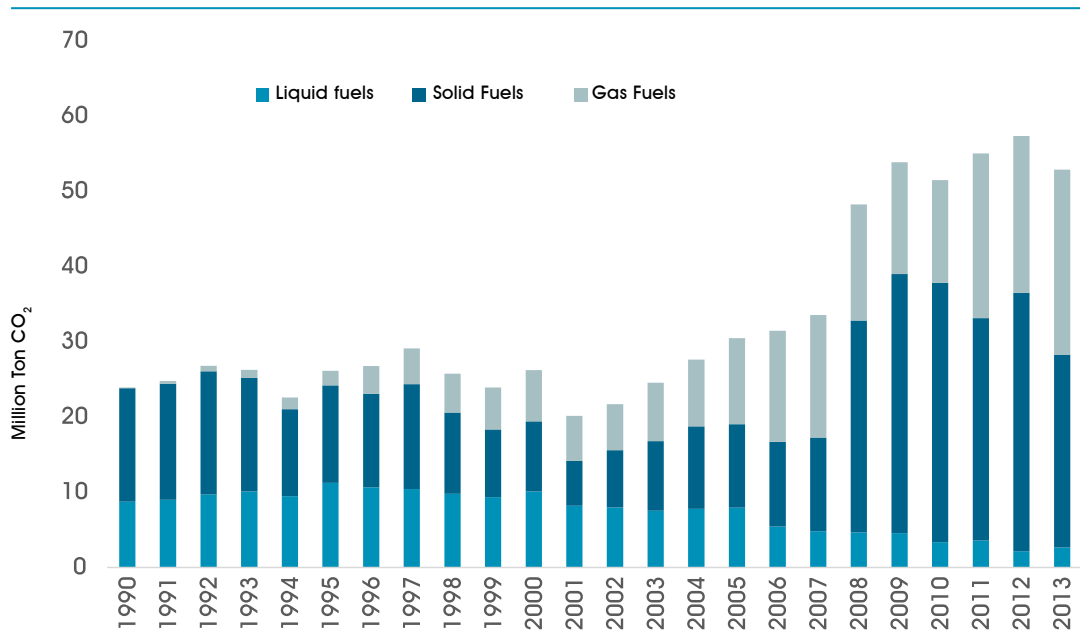


Buildings are responsible for almost half of greenhouse gases resulting from electrical power

Buildings: The buildings industry comprising homes and all buildings used for commercial and public services is characterized by high greenhouse gas emission because of the heating or cooling of buildings and the use of electric devices in buildings.

From the perspective of the housing industry, Law No. 3194 on Land Use and Law No. 4708 on Building Supervision contain some important provisions in terms of climate change. Meanwhile, legislation is also being drafted related to electric household appliances. In that context, it is possible to design ecological and energy-efficient buildings, to minimize energy consumption by offering solutions to heat insulation in buildings and thus to prevent an increase in greenhouse gas emissions by saving energy. **It is, however, understood that carbon dioxide emissions resulting from fossil fuels in buildings has not slowed down and even gained momentum after that period despite improvements in regulations applicable to energy efficiency in buildings after 2007.**

Figure 6 • Carbon Dioxide Resulting From Fossil Fuel Consumption in Buildings in Turkey
(Data: CRF2015, Greenhouse Gas Inventory 2015, Graph: Algedik, Ö)

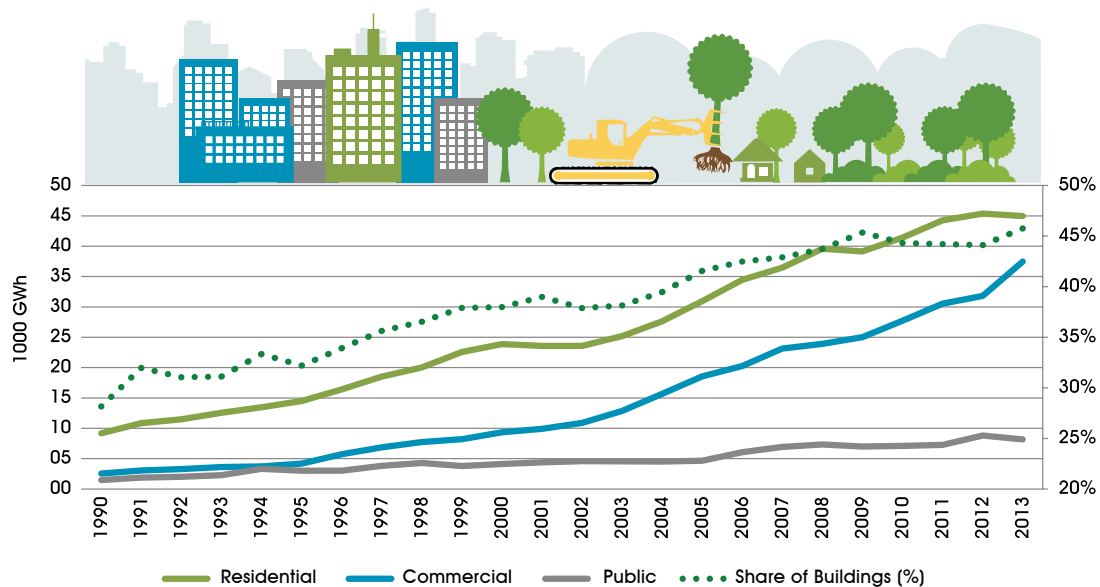


Power consumption in buildings an addition to the consumption of fossil fuels also plays a key role. Greenhouse gas emissions originating from power consumed by devices used in buildings occur in electricity and heat generation industry whereas emissions originating from the production of devices happen in sub-industries within the industrial processes industry. In that sense, electricity consumption in buildings accounted for 28 % of total electricity consumption in 1990, but it rose to 46% in 2013 as a result of an extraordinary increase particularly in commercial and public buildings.

Thus, buildings are responsible for almost half of greenhouse gases originating from power generation.

Figure 7 • Annual Power Consumption of Residential Areas, Commercial and Public Buildings in Turkey (left axis) and Variation in the Share of Buildings in Total Consumption as % (right axis).

(Data: TEDAŞ, Graph: Algedik, Ö)



Relationship between Laws and Adaptation to the Impacts of Climate Change

Some fundamental laws which are directly or indirectly related to the adaptation to the impacts of climate change approved by the TGNA are analyzed in this section and it was determined that applicable legislation was not sufficient in that regard.

Agriculture and Food Security: The Law on **Conservation of Soil and Land Use**, which was put into force in 2005, is an important law which should be considered in terms of adaptation to the impacts of the climate change because agriculture is one of the industries which will be seriously affected by the climate change as they depend on the nature. The agricultural industry creates jobs and provides raw materials for associated industries in addition to the supply of food. **The impacts of the climate change on agriculture has the potential to lead to important social and economic consequences.**

The Law on **Conservation of Soil and Land Use** does not take into account the impacts of climate change

The Law generally sets forth fundamental guidelines for the use and management of soil in the country and aims at preserving and improving soil and land; promoting balanced

and efficient use; and preventing and compensating for loss and degradation of soil resulting from unplanned and wrong use of land. The law and the related legal arrangements may ensure that agricultural land is protected and may be effective in minimizing potential impacts of the climate change. While the Law has a very important place because of that aspect, developments observed have shown that it proved to be ineffective in protecting agricultural land. The provision in ad hoc article 1 of the Law, which can be interpreted as an amnesty for the users of agricultural land which has been unlawfully opened to exploitation for purposes not specified in the law before a certain date, is not consistent with the spirit of the Law.

One of the laws that has to be considered within the scope of the climate change is the Law No. 5363 on **Agricultural Insurance** which came into force on 14.06.2005. The climate change will inevitably affect agriculture. The purpose of this Law is to compensate producers for losses incurred as a result of a risk such as drought, hail, frost, flood, .storm, or twister listed in article 12. While the Law includes no reference to the climate change, it is essential that the regulation covers severe climatic phenomena.

The **Agriculture** Law No. 5488 dated 18.04.2006 regulates various issues such as the protection of the environment, improvement of soil and water resources, preservation of biological diversity and ecosystems, and fight against natural disasters, which are closely linked to the climate change. A review of the sequential number of this Law, which concerns an overwhelming majority of society and the minutes of deliberations at a general session of Parliament indicates that the climate change and global warming were not directly included and that the Law was approached mainly from the economic angle.

Seeds Law No. 5553 dated 31.10.2006 is one of the laws which should be considered as part of the preservation of biological diversity regarding the climate change and its impacts to adaptation. One of the objectives of this Law is to increase efficiency and quality in vegetative planting, to ensure quality assurance for seeds, and to regulate trading in seeds. Another objective, which is criticized, is to open the seed industry up to the private sector and hence to global and industrial agricultural companies as specified in its rationale.

Forestry and Land Use: Sinks are one of the crucial factors in slowing down the climate change and **pastures** are among those sinks. Forests, agricultural areas, and pastures offer the best opportunity for sinks in Turkey. Thus, Pastures Law No. 4342 dated 25.02.1998 and recent amendments to that law should be given proper consideration regarding the climate change. The overall purpose of the Pastures Law is to identify pastures and meadows, to rehabilitate them, to increase their yield, and to improve animal husbandry. The Law was amended many times since its adoption and one could argue that especially recent changes to the Law constitute a backward step with regard to combat climate change. The provisions of the Pastures Law, pertaining to allocation purposes, were mostly amended by means of omnibus laws (Omnibus law: Torba kanun in Turkish).

Pastures were opened up to urban transformation and urban development as a result of those amendments. The Law on Metropolitan Municipalities is another law that affects the Pastures Law and its application. Recent amendments (2012) to that Law allow metropolitan and county municipalities are permitted to carry out all kinds of activities and to provide services on pastures with a view to supporting agriculture and animal husbandry in the country. This issue is important because it denotes the responsibilities of local governments related to adaptation to the impacts of the climate change.

Forests are exposed to various factors such as drought and erosion resulting from the impacts of the climate change. This phenomena cause changes in the forest ecosystem and harm forest biological diversity. In light of these facts, Forestry Law No. 6831, which was put into force in 1956 and amended almost twenty times and some articles of which was annulled by the Constitutional Court, is a crucial piece of legislation in terms of the preservation of forests, sustainable forest management, and combating climate change.

While the Forestry Law contains some provisions directly permitting such interventions, other laws such as the Law on Promotion of Tourism, Mining Law or Law on the Use of Areas Excluded from Forest Boundaries, which is also known as the 2B law, provide opportunities for using forests for purposes not related to forestry.

Cadastral Affairs Law is also important for the protection and improvement of forests. Some provisions of the Cadastral Affairs Law No. 3402, which are particularly related to forestry cadastral works, management soil and water resources, and land-use planning have aspects which need to be highlighted in connection with adaptation to the impacts of the climate change. Despite the fact that it came into force a long time ago, the Cadastral Affairs Law is closely related to the climate change because of its provisions related to forestry cadastral works, management of soil and water resources, and land-use planning.

Natural Parks Law No. 2873 of 09.08.1983 aims at identifying and preserving national parks, natural parks, natural monuments, and nature preservation zones as defined in the law. The fact that the law protects forests and biological diversity is of crucial importance in terms of combating climate change. Having undergone many revisions since its inception, the most comprehensive change to the Law was done with the Decree with Force of Law (KHK) No. 648 in 2011.

Article 5 of the National Parks Regulation was amended on 18.03.2014 in order to stipulate that facilities which are considered indispensable and definitely necessary in terms of public benefit could be built in national parks without being bound by the requirements set forth in the Regulation. **There is no doubt that this arrangement permitting all kinds of interventions in national parks is problematic because it weakens resilience to the climate change.**

Urbanization: The Law No. 6306 dated 16.05.2012 on the Transformation of Disaster-Prone Areas, which primarily aims at building healthy and safe settlements by transforming disaster-prone urban areas, should be analyzed in terms of fighting climate change in **cities** because the connection between building industry policies and the climate change is very important. The ultimate goal is to renovate 6.5 million out of 13 million houses built before 1999, when the Earthquake Regulation was put into effect, by 2023 under this Law. Considering the recent increase in greenhouse gas emissions in the related industries and related practices, the law dubbed as Law on Urban Transformation will let greenhouse gases, originating from industries producing construction materials, use of fossil fuels in buildings, and use of electricity, continue to rise.

It is obvious that Urban Transformation Law will increase greenhouse gases emissions resulting from the use of electricity in buildings, construction materials sectors and fossil fuel usage in buildings

Among greenhouse gases causing climate change in cities, fossil fuels used for heating homes make the greatest contribution. Petroleum used for intra-city transportation is one of the main causes of the climate change. Examples such as energy efficiency policies followed in renovated settlements and promotion of public transit may reduce the amount of greenhouse gas emission. In other words, climate-resilient cities can be built. At this point, however, it is seen that the Law is primarily used for obtaining revenues.

Other Related Laws and Bills: Environment Law No. 2872, which was put into effect in 1983, is one of the fundamental laws which needs to be considered in terms of combating climate change. Very comprehensive amendments were made to the Environment Law in 2001 because could not meet current needs. An amendment to the Environment Law in 2006 included a provision stipulating that funds should be earmarked from the Ministry's budget for efforts against the climate change. **No member of parliament, however, questioned the sufficiency of the Environment Law in terms of combating climate change during deliberations at a general session of the TGNA.**

Law No. 3254 on the Organizational Structure and Functions of the Meteorology Directorate-General, which came into force in 1986, was amended in 2011 (by KHK No. 657) in order to equip the Directorate-General with various powers in connection with the climate change. The Research Department, one of the technical units of the Meteorology Directorate-General, has been tasked with conducting research and development works regarding natural disasters of meteorological nature, hydrometeorology, marine and agricultural meteorology, climate, climate change and other issues related to meteorology.

Law No. 5902 Regarding the Organizational Structure and Functions of the Disasters and Emergency Management Department, which was passed by the TGNA in 2009, integrated all agencies responsible for dealing with disasters under a single roof and Disasters and Emergency Management Department under the Prime Minister's Office (AFAD) was established as a new entity under the Prime Minister's Office. AFAD prepared a "Road Map for Climate Change and Related Disasters" in 2014 (2014-2023)".

Decree With Force of Law No. 644 on the Organizational Structures and Functions of the Ministry of Environment and Urbanisation, which was issued in 2011 and Decree With Force of Law No. 645 on the Organizational Structure and Functions of the Ministry of Forestry and Hydraulic Works lack provisions that would allow visionary steps regarding to combat climate change. Both ministries have taken numerous actions permitting construction of buildings rather than preserving the nature based on those Decrees.

Climate Change in Parliamentary Scrutiny Process

While the report principally evaluates parliamentary scrutiny during the 24th Legislative Term⁴ in the context of global warming and the climate change, it will be useful to provide some information showing the extent to which the issue was brought up through parliamentary scrutiny tools prior to the 24th Legislative Term.

A review of **questions** tabled by members of parliament between the 17th Legislative Term and the 23rd Legislative Term indicates that there were questions directly related to global warming and climate change. Thus, the questions dwelled on drought resulting from climate change, problems witnessed in the agriculture industry because of the climate change, impacts of the climate change on vegetation, impacts of the climate change on wetlands, measures taken against the climate change, related documents drawn up by governments, and various documents such as the Kyoto Protocol related to the climate change and related issues. The ratio of the said questions to the total number of parliamentary questions is negligible. While there was no reference to the concepts of global warming and global climate change, it should also be noted that there were many questions about other environmental issues⁵ that could be linked to other environment issues.

A look at the motion of **censure** and **parliamentary inquiry** tabled between the 17th Legislative Term and the 23rd Legislative Term and motions for **general debate** tabled between the 21st Legislative Term and the 23rd Legislative Term indicates that none of those motions directly refers to the global warming and climate change. An analysis from the perspective of motions for parliamentary investigations scrutinies shows that other environmental issues mentioned in the related section are neither highlighted in the motions. Some motions for a general debate and censure were submitted that could be connected to global warming and climate change in those terms. In that context, it was determined that five motions for a general debate on floods, problems faced by growers because of drought, waste management, use of coastal areas, and preservation of forests in previous terms. None of those **motions for general debate** in question was actually discussed.

It is worth mentioning that there was another motion for a general debate in the 19th Legislative Term. The motion for a general debate tabled by the parliamentary delegations

⁴ TGNA 24th Legislative Term: June 12, 2011 - April 23, 2015.

⁵ Other Environmental Issues: Environmental pollution / conservation of the environment / raising awareness on the environment, local environmental pollution, EIA policies, pollution and preservation of wetlands, fuel use, energy policies and energy efficiency, renewable energy.

of political parties composing the coalition government of the time was related to the United Nations Environment and Development Conference (Rio Summit) held on June 3-14, 1992. The motion requested a general debate in order to discuss issues debated at the Conference, documents adopted, and decisions made and to clarify efforts that needed to be made and measures to be taken in that regard. A general debate on the motion was held at a general session of Parliament on 30.06.1992.

In addition, the parliamentary delegations of the ruling party and the opposition parties expressed their opinions about environmental issues in connection with the Rio Summit and the global climate change was one of the issues raised at the general session of the TGNA as the United Nations Framework Convention on Climate Change was one of the conventions signed at the Rio Summit. **The opposition parties in the TGNA made positive comments because Turkey was not a party to the Convention as it was included in the category of developed countries as one of the interesting aspects of the meeting** which was considered important in the context of this report.

It was noted that there were also **motion of censure** in addition to motions for a general debate that could be indirectly linked to global climate change in the previous terms. In that context, it was found out that two motion of censure had been tabled against the then Minister of Energy and Natural Resources because of his position on the construction of mobile thermal power plants and on the grounds that he had remained indifferent to biological assets and environmental pollution and against then Minister of Public Works and Settlement because of the allegations that he had allocated a forest declared as a national park after it had been designated as a green area to an individual. One of those motions was rejected and not put on the agenda while the other was withdrawn. Meanwhile, the number of motions for a general debate and motion of censure in questions represented a small portion of the total number of motions for a general debate and motion of censure in the previous legislative terms.

One could say that parliamentarians put the climate change deal on Parliament's agenda directly through certain scrutiny tools or indirectly through other scrutiny tools. Here, **parliamentary investigations** are particularly important regarding the TGNA's approach to global warming and climate change in particular. It should be noted that the number of motions for a parliamentary investigation directly related to this issue is very low except for motions which constituted a basis for investigation committees set up in respect of global warming and climate change. It should, however, also be stated that the number of motions for a parliamentary investigation which were related to environmental issues and could be linked to the climate change from different angles is much higher than those directly related to global warming and climate change. **Most of the motions for a parliamentary investigations tabled in the TGNA were about contamination and protection of wetlands, power plants, land use, construction of settlements, public works and urban transformation, water resources, management/irrigation, and mining operations.**

The most important historical development that we have witnessed in connection with parliamentary processes was the establishment of a parliamentary investigation

committee specific to this issue. The committee in question -- although it was dissolved during the 22nd Legislative Term - was the Parliamentary Investigation Committee Set Up for the Investigation of Problems and Risks Resulting From Global Warming and Determination of Actions Required To Be Taken. Another parliamentary investigation committee focusing on the impacts of the climate change particularly on water resources was established in the following term i.e. 23rd Legislative Term. The main reason for the establishment of this investigation committee was the need to get a political perspective from the TGNA regarding whether or not Turkey should be a party to the Kyoto Protocol. In that context, the "Parliamentary Investigation Committee on the Sustainable Management of Water Resources and the Impacts of the Global Warming" set up in 2008 completed its report and submitted it to the Office of TGNA Speaker.

Climate Change in Scrutiny Activities in 24th Legislative Term: An assessment of parliamentary scrutiny activities conducted during the 24th Legislative Term, the last active legislative term in the context of the global warming and climate change shows that parliamentarians tabled a total of 7,173 **oral questions** and 65,057 **written questions** in that legislative term. The questions in question included 4 oral questions and 16 written questions directly related to the global warming and climate change. A look at the content of those questions indicate that they focus on the reduction of greenhouse gases, particularly CO2 emissions, potential impacts of the global warming and climate change on Turkey, measures that need to be taken against such impacts, and efforts made for that purpose.

TGNA should develop "proactive scrutiny" mechanism also at the phase of formulating policies and drafting legislation

Meanwhile, an examination of questions tabled during the 24th Legislative Term show that there were numerous questions related to other environmental issues, which could be linked to the global warming and global climate change, in spite of the fact that there was no direct reference to the global warming and global climate change. An analysis was conducted without making any distinction between different types of motions as there was no difference between oral and written motions for the purpose of bringing up the matter and it showed that there were a total of 3,559 questions about those issues. A look at their percentages within all questions indicates that questions directly related to the global warming and global climate change accounted for 0.03 % of all questions as compared to 4.93 % about other environmental issues, representing questions that could be linked to this issues from different angles.

A total of 3,308 **motions for parliamentary investigations** were tabled in the 24th Legislative Term. An examination of those motions for a parliamentary investigation indicates that there were 8 motions directly related to the global warming and climate change. An analysis of the 8 motions shows that six of them sought an inquiry into the impacts of the global warming and climate change; one of them requested an investigation into the applicability of the Kyoto Protocol by Turkey and the last was about investigating the impacts of the global warming and climate change especially on agriculture. None of those motions, however, was debated in a general session and did not yield any result.

Meanwhile, there was no direct reference to the global warming and climate change according to an examination pertaining to motions for a parliamentary investigation tabled during the 24th Legislative Term. In fact, it was observed that there were numerous motion for a parliamentary investigation, which were related to other environmental issues and could be linked to the global warming and climate change from different angles.

In that context, it was determined that there were a total of 594 motions for a parliamentary investigation concerning other environmental issues other than the global warming and climate change. Motions directly related to the global warming and climate change represented 0.24% of all motions tabled during the 24th Legislative Term for a parliamentary investigation as compared to 17.96% accounted for by motions related to other environmental issues and indirectly related to this issue.

A screening of the 24th Legislative Term in terms of **motions for a general debate** shows that a total of 85 motions for a general debate was tabled. None of those motions were directly related to the global warming and global climate change issues. There were, however, motions for a general debate that could be indirectly connected to the global warming and global climate change issues. In that context, it was found out that three motions for a general debate were submitted with regard to Turkey's forestry policy, disposal of immovable property owned by the Treasury, management and supervision of immovable property, and opening agricultural land up to property development in the 24th Legislative Term. None of those motions was actually debated.

%10,29 A total of 55 **motion of censure** were tabled during the 24th Legislative Term. An analysis of these motions suggests that none of those motion included a direct reference to the global warming and global climate change issues. There was, however, one motion of censure about environmental issues, which could be indirectly linked to the global warming and climate change. The motion in question was tabled against then Development Minister on the grounds that he had caused environmental, economic, and social problems by neglecting his duties in the process of the preparation of a development plan and strategy and failing to support SMEs. The motion was rejected and not placed on the agenda.

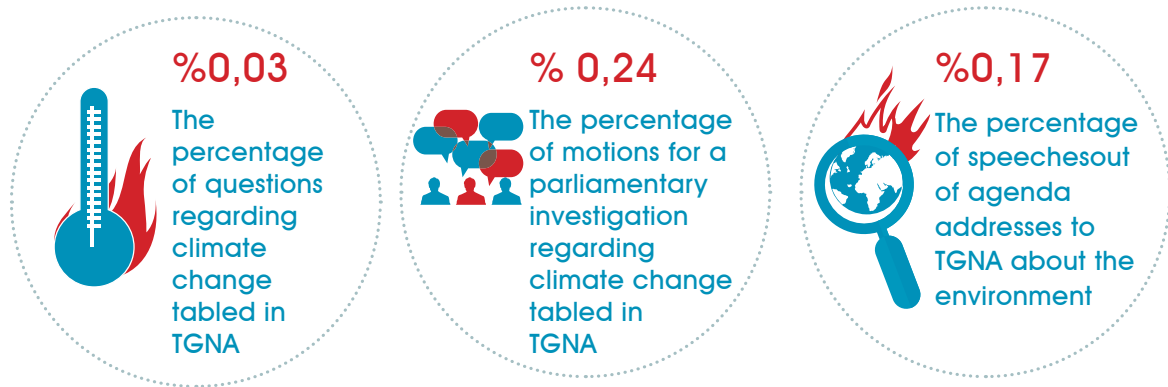
The percentage of "speechesout of agenda addresses to TGNA about the environment

A total of 13 motions for a parliamentary inquiry were submitted during the 24th Legislative Term. It is understood that the motions inquiry did not contain any direct reference to the global warming and climate change issues.

It is seen that 0.17 % of **speechesout of agenda** delivered during the 24th Legislative Term directly brought up the global warming and climate change issues.

While 10.29 % of speechesout of agenda delivered during the 24th Legislative Process did not directly refer to the concepts of global warming and global climate change, they raised various issues related to other environmental issues that could be linked to the global warming and global climate change from different perspectives.

In general, **parliamentarians do not link issues that they brought up in their speeches out of agenda in TGNA and conventional scrutiny activities and the climate change.** Meanwhile, questions and motions for parliamentary investigations were among TGNA scrutiny tools more frequently used for bringing up issues related to the environment and climate change.



Climate Change in TGNA Debates over Development Plan

Laws may refer to institutional organizations, restrictions, capabilities, practices, and incentives which are effective in combating climate change. Development goals that Turkey wants to reach should also be analyzed in order to foresee the future of combating climate change. Development plans should also be taken into consideration in that context because they reflect future policies and goals. From that standpoint, there is a direct relationship between the implementation of policies on climate change and the country's development goals.

The Tenth Development Plan⁶, which has been approved by the TGNA and is currently in force, refers to issues related to climate change in "Livable Places, Sustainable Environment" under the sub title "Climate Change and Environment" in the section "Global Trends and Their Impact on Turkey" and analyses are done and policies are outlined in that regard. The first point capturing attention in the 10th Development Plan is the fact that it contains more sections about the climate change as compared with the 8th and 9th development plans. This emphasis may be described as a major step in the recognition of the climate change in spite of the fact that it only describes the current situation and does not set concrete goals. The **10th Development Plan, however, identifies "speeding up coal exploration operations in order to find new reserves" as one of the goals under title "Energy Production Program Based on Domestic Resources.**

The 10th Development Plan focuses on "green growth" policies but not include any reference to "low carbon economy."

⁶ The Tenth Development Plan (2014-2018), Republic of Turkey, Ministry of Development

The 10th Development Plan sets a concrete goal for the reduction of energy intensity in government buildings under “Energy Efficiency Improvement Program” and predicts a 10 % cut in energy consumption by 2018 based on energy consumption in 2012. The program also stresses the need to ensure heat insulation in old buildings with low and/or insufficient insulation. It is, however, observed that energy consumption has increased in government buildings because of inadequate implementation.

Turkey has clearly stated in the 10th Development Plan that it will maintain fighting climate change in line with the principles of “common but differentiated responsibilities” and “relative capabilities.” A review of the minutes related to debates over the 10th Development Plan at general debate sessions of the TGNA indicates that climate change was never brought up during that process.

Climate Change in TGNA Debates over the Budget for the Central Government

Scrutiny through budget laws is another way of scrutiny conducted by the TGNA over the government on behalf of people. Climate change was brought up during deliberations of the TGNA Plan and Budget Commission on the budgets of the Ministry of Energy and Natural Resources and the Ministry of Transportation, Maritime Affairs and Communication as part of debates over the budget for 2015. Climate change was directly discussed during debates over the budgets of the Ministry of Forestry and Hydraulic Works and the Ministry of Environment and Urbanisation as part of deliberations on the budget law for the central government for 2015.

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