

Aleyna Bakirli  
Marshalltown High School  
Marshalltown, IA  
Turkey, Factor 5

### **Turkey: The Impacts of Climate Change and Possible Solutions**

Turkey is a developing country with varied weather conditions and landscapes. The country is in a convenient location in terms of climate and assorted areas, which is the reason for both abundant animal and plant diversity. The country is facing the impacts of climate change right now. Farmers have become unable to take advantage of this richness, due to the climate change.

In the mid-1970s, nearly 60 percent of the citizens in Turkey lived in the countryside, which made the country a predominantly rural society. Now, the highest population concentrations are in Istanbul and in coastal regions. The birth rate has also decreased. Today, the average fertility rate is 2.0 births per woman (CIA Country Profile). This means that an average family consists of 4 people: A mother, father, and 2 children.

However, there are still a lot of families who live in rural areas. On one hand, large families tend to live on farms and children have less access to an education. Not only harsh weather conditions but also the permission of the parents causes the lack of education. Some parents don't even let their kids, especially girls go to school. Instead, they make them stay at home or help them work on the farm. On the other hand, people that live in urban areas have multiple opportunities to receive an education. In addition, access to health care is not considered a serious problem for people living in rural areas in Turkey, unless there is a natural disaster that causes the roads to be closed. State hospitals are as important as the private ones. Furthermore, farm families still need employees although there are a lot of kids who help out. Agricultural methods are still mostly primitive, but modern machinery has been introduced. Farmers can use either tractors or hands-on tools, depending on what they farm. They sell their products in different places after harvest. Shops and large supermarkets are the most common ways for the people living in urban areas to buy products.

Turkey is divided into seven regions: Marmara, Aegean, Black Sea, Central Anatolia, Eastern Anatolia, Southeastern Anatolia and the Mediterranean. Turkey is one of the few self-sufficient countries in terms of food production in the world thanks to its fertile soil, adequate climate, abundant rainfall and hard-working farmers. The country is among the world's leading producers of agricultural products, as well. As of March 2007, Turkey has been the world's largest producer of hazelnuts, cherries, figs, apricots, quinces and pomegranates; the second largest producer of watermelons, cucumbers and chickpeas; the third largest producer of tomatoes, eggplants, green peppers, lentils and pistachios; the fourth largest producer of onions and olives; the fifth largest producer of sugar beet; the sixth largest producer of tobacco, tea and apples; the seventh largest producer of cotton and barley; the eighth largest producer of almonds; the ninth largest producer of wheat, rye and grapefruit, and the tenth largest producer of lemons. (Food and Agriculture Organization of UN)

All of the regions are eligible for farming, however each area has different landscapes and that makes the difference in the products they produce. For instance, the mountainous eastern regions in Anatolia, which have the coldest weather conditions in the country, are less suitable for crop cultivation than the rest of Anatolia. However, a tradeoff for low crop cultivation is animal husbandry, which has an important role in the total agricultural production, and is preferred in the mountainous eastern regions rather than the rest of Anatolia. As for the Black Sea region, a moderate climate and higher than average rainfall produces tea as the major cash crop. Since there are special products for specific regions, people living in different regions eat differently. As a result of this, Turkish cuisine varies across the country. In the western parts of Turkey, where olive trees grow abundantly, olive oil is the

major type of oil used for cooking; whereas the cuisine of the southeast is famous for its kebabs, mezes and dough-based desserts.

The Black Sea region is also important for reducing the effects of the cold wave coming from Siberia in winter by acting as a blockade to the rest of the country. As this cold wave increases due to the climate change, precipitation turns to snow instead of rain. This, in turn, causes the farmers of the Black Sea region unable to produce tea, which needs rain. Moreover, the mountainous eastern regions are the most vulnerable regions against heat and cold waves. As the climate changes due to heat waves, farmers start having difficulties in animal husbandry as a result of drought caused by those waves.

Climate change, which is predicted by the Climate Change Department of NASA, will continue to affect not only Turkey but also the world in the long run. The changing climate is also the primary cause of food insecurity in Turkey. As the temperatures change in extreme measures, it also causes crop production to experience extreme highs and lows. The climate change makes it nearly impossible for people to farm in the most efficient manner.

Agriculture is a business that is based on nature and therefore explains why climate change affects agricultural productivity more than other business sectors. Turkey is one of the most climate-sensitive countries in terms of economic stability and products that are produced. Climate change prevents farm families from producing enough food for their families and community. Accordingly, farm families have difficulty in protecting their socio-economic-conditions. People who have gardens in urban areas and the shops that sell farm products are also affected by climate change. Expenses increase as the productivity decreases. In conclusion, people living in urban areas are not affected as much by climate change as opposed to people living in rural areas who are particularly disadvantaged.

Climate change and its impacts are worsening day by day. Water scarcity, energy demand and pollution also increase the size of those impacts. Tropical tornadoes, natural disasters, death caused by heat and cold waves, wildfires, sea level and extreme usage of electric energy because of air conditioning are just a few demonstrations of climate change impacts which are predicted to increase in the future. Furthermore, reduction of productivity will be caused by drought. Impacts of climate change such as these in Turkey are noticeable.

As it was mentioned by the Intergovernmental Panel on Climate Change, temperature is going to be out of control in the foreseeable future. This means winter being colder and summer being hotter, and vice versa. Turkey is also considered to be one of the countries most likely to experience the greatest increases in climate extremes by the end of the 21st Century (World Bank Full Report on Climate Change). In addition, impacts on coastal zones such as rising sea level, intrusion of salt water and coastal erosion are around the corner.

Impacts on agriculture will be worse: shortened growth period, short yield, cultivation areas shift towards middle and northern areas, change in production patterns, decrease in yield, and a decrease in production. In short, changing water levels, temperatures and air flows affect the integrity of the ecosystem as well as affecting food supply, agriculture, health, industry, tourism and transportation sectors in Turkey.

Climate change will become more and more noticeable due to the fact that it has already had observable effects on the environment. The President of Turkey said at a meeting of the Turkish-Swiss Business Council in Zurich (Sunday's Zaman), "Our main goal is to overcome global problems of energy and climate change. The Turkish government has already come up with a main policy that determines what to focus on. A theory called 3E (Energy-Economy-Ecology), which is defined as "the most crucial development criterion of the 21st century, started the process of handling matters related to energy, economy and ecology together" (Turkey Ministry of Environment and Urbanization). Moreover, the Southeastern Anatolia Project, which basically aims to increase efficiency by using

national resources more wisely in that region, helps raise people's income level and living standards. It is also a part of The Climate Change Action Plan of Turkey.

With the coordination of The Ministry of Environment and Urbanization, General Directorate of Environmental Management, and the Climate Change Department in Turkey, an action plan, was prepared. This action plan, which foresees year 2023, was prepared so as to "Integrate Turkey's future development and environmental plans and to proceed seamlessly, and without losing pace" (Erdogan Bayraktar). There are three main targets in the plan: "They are to increase the sink capacity of the agriculture sector, limit greenhouse gas emissions from the agriculture sector and to develop information infrastructure and capacity in the agriculture sector" (Erdogan Bayraktar).

To emphasize the effort that United Nations spends on this issue, Millennium Development Goals should be referred to. I believe that 'Eradicate extreme hunger and poverty', 'Achieve universal primary education' and 'Develop a global partnership for development', which are three of the eight goals for 2015, are related to food security and climate change. They would be more than helpful to solve this unpleasant situation. Since 2004, Turkey has been a part of the United Nations Framework Convention on Climate Change (UNFCCC), which started the process of informing the public and raising awareness of climate change. This international environmental treaty unites the countries that are willing to fight against the impacts of climate change. The Turkish government especially stressed the importance of consciousness-raising. After publishing Turkey's First National Communication on Climate Change in 2007, the public awareness process accelerated.

Doubtless, improving this factor of climate change would increase the quality of food. Changing weather conditions are making it hard for farmers to produce their products with efficiency and an increase of population urges people to request more food from farmers in which they can not provide. Environmental sustainability, which is directly related to climate change, would be preserved if people start making decisions that will reduce the negative impact on the environment after they are informed and become more conscious of how important climate change is. Economic development would certainly come as a result of the other improvement. The President of Turkey, Abdullah Gul noted, "It is high time for us to make peace with nature for the sake of our own wellbeing and that of next generations. That peace also means doing justice to nature and the next generations. Through the effective implementation of responsible energy policies we can avoid the fatalistic consequences of climate change and environmental degradation" (Solar Energy for World Peace Conference).

It is a long and hard process to begin to ease the pressure on our natural resources although there are a lot of support, donations, campaigns, projects and action plans to protect the natural resources. More precautions should be taken to prevent the destruction of natural resources. Climate change is directly related with the sustainability of farming, so the Turkish government should increase the efforts to find solutions that will ensure sustainable development for food security. The other group of people who need support are farm families because they contribute to our diet, and their resources are being sufficiently reduced.

Dealing with climate change should be considered not only individually but also nationally. In order to become a country where people can live in both better conditions and reduce their carbon footprints, the government should emphasize the importance and value of green living, and renewable and clean energy sources. Investing renewable energy should be encouraged. Raising awareness will be a huge step because of the fact that citizens of Turkey have enough information about climate change although they do not know how to take action and be a part of the change. Climate Literacy courses, like at British Columbia University, are such unique ways to be informed and gain consciousness. Turkish students should be encouraged to enroll in these types of courses. Another way to connect with students and point to the climate is adding a class to the curriculum of the elementary and high schools.

Mentioning the issue of climate change on the news and advertisements would increase public awareness of this foreseeable danger. The more aware people become, the more successful this

solution will be. Moreover, realistic and sustainable precautions must be taken. For example, telling people not to drive is useless as the life conditions are getting better day by day. Big cities make it impossible to go somewhere far on foot. People would not stop driving in order to prevent climate change, but they can be encouraged to ride bicycles and use more public transportation like buses and subways. That would contribute to good health, reduce the air pollution and make them spend less money. Water and energy conservation, which will help us minimize the pressure on nature and on the use of natural resources should be encouraged. Plants and trees, our oxygen sources, should be recognized for their role in combating the effects of climate change since they take carbon dioxide out of the atmosphere. “Planting a tree seed is the smallest thing but possibly the grandest gesture you can do” (WWF).

Greenpeace is a non-governmental organization that is highly apprehensive about climate change. Greenpeace Mediterranean is the part of the organization that focuses on the problems in Turkey. Greenpeace leads a lot of successful campaigns and publishes articles in order to inform people and raise awareness. The main target of this organization is to make people be a part of the positive change. ‘How Clean is Your Cloud?’, ‘Energy [R]evolution 2012’, ‘Renewables 24/7’, ‘UNFCCC Secretariat Pledges Assessment’ are examples of the publications of Greenpeace (Greenpeace Reports). Greenpeace has a great impact of informing people and showing them what to do about climate change.

Climate Network was founded in Turkey by NGOs such as Greenpeace Mediterranean, Eurosolar Turkey, the TEMA Foundation (Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats), WWF-Turkey and 350 Ankara. They share common concerns about the climate change, aiming to find common solutions. The hard work and effort of NGOs cannot be denied. However, more attention needs to be given to the people such as climate entrepreneurs who need investors and corporate support because of the fact that the innovations and technologies which might have a positive impact on our environment need to be supported. Climate entrepreneurs have a lot of applicable ideas to plant more seeds, use renewable sources more efficiently or create solar panels. NGOs should focus on this due to the fact that they are the ones who can provide the support.

To summarize, the development of the country, the agricultural business sector and the idea of providing sustainability depends on the effort that is spent and the actions that are taken. Some unpleasant impacts of climate change have already started affecting our lives. Every single person sharing and using the natural resources is responsible for the future of our environment. Every small contribution can start a chain reaction to bettering the future by reducing the effects of climate change. No matter what, food security must exist and we should be a part of the change instead of ignoring it—there really is no other choice if the human population longs to thrive. The future generations deserve to have the opportunity to provide enough food to live a healthy life style in a world that is as clean as ours.

## Works Cited

- "Turkey." *Central Intelligence Agency World Factbook*. 23 August  
<<https://www.cia.gov/library/publications/the-world-factbook/geos/tu.html>>.
- Bilici, Abdulhamit. "President Gül Says Turkey is Aware of its Task on Climate Change." *Sunday's Zaman*[Istanbul] 28 November 2010.  
<<http://www.todayszaman.com/news-228133-president-gul-says-turkey-is-aware-of-its-task-on-climate-change.html>>.
- Gul, Abdullah. Solar Energy for World Peace Conference. Presidency of the Republic of Turkey. Turkey, Istanbul. 17 Aug 2013. Speech.  
<<http://www.tccb.gov.tr/speeches-statements/344/86800/he-president-abdullah-guls-speech-at-solar-energy-for-world-peace-conference.html>>.
- Phalak, Paresh Prashant. "Living Green on Earthday." *One Million Trees*. N.p., 22 Apr 2010.  
<<http://www.onemilliontrees.org/2010/04/living-green-on-earthday/>>.
- Romain, Malcolm. "Plant a Tree Seed, Save a Planet." *World Wildlife Fund*. August 2013.  
<[http://wwf.panda.org/how\\_you\\_can\\_help/campaign/plant\\_seed/](http://wwf.panda.org/how_you_can_help/campaign/plant_seed/)>.
- Turkish Government. Ministry of Environment and Urbanization. *Climate Change Action Plan 2011 2023*. Ankara 2012.  
<[http://iklim.cob.gov.tr/iklim/Files/IDEP/İDEP\\_ENG.pdf](http://iklim.cob.gov.tr/iklim/Files/IDEP/İDEP_ENG.pdf)>.