Climate change: Is a “U-turn” possible

The Conference of the Parties held in Durban in December, 2011, resulted in the decision to draft an agreement that would bind all countries and target global reduction of emissions by 2015. The new agreement that will be in force by 2020 actually targets the reduction of global greenhouse gas emissions, which so far could not be achieved.

The legally binding nature of the agreement to come out, as well as the seriousness of its targets currently brings up the biggest questions. However, the actual problem is that this date does not have any scientific validity. While the scientific community shows that we will be in trouble unless global greenhouse gas reduction is achieved by 2015, setting 2020 as the target date means risking it all. The challenge here can be seen as the chance of success in braking after turning the bend.

Based on a comparison of scientific predictions made in the past and events currently taking place, scientists state that events took place earlier than envisaged. A series of scientific studies have been published since the last assessment report was published by the Intergovernmental Panel on Climate Change-IPCC in 2007. All the studies foresaw extreme hydro-cycles in the form of draught-extreme precipitation, increase in the frequency of extreme climate events, increase in the frequency of heat waves and the possible results of all these factors.

The climate change brought about by men, which was scientifically uncovered with long-term observations, today manifests itself in the events we have encountered in the short run. The global record heat and flood-related disasters that took place in a number of countries in 2010 are some global examples of this. The melting of the ice cap in Greenland on 8-12, July, 2012 by 97 percent gave us a more vivid idea of what the speed of climate change in its current stage could be. The whirlwinds that happened in Turkey in the winter months, the flooding that took place in a number of towns and regions in the summer months, with Samsun ranking first, as well the heat waves are a few examples. The fact that Ankara experienced the warmest day measured since 1926, which was recorded as an “extreme heat wave”, is another example from our daily lives showing the current state of affairs in this process.

The seesaw equation

There is a difficult equation at stake here. The scientific community and wide sectors of society complain about the inadequacy of the combat against climate change. Politicians do not want to lose the advantages of the usual carbon economy and current dynamics. This conflict is most seriously visible in the climate negotiations.

During the summit in Durban, Russia, Japan and the USA, with Canada ranking first, formed a significant obstacle. The remaining countries were pleased with this balanced status in the process, pretending to want change, with the exception of Africa and island states. The second period of obligation of the Kyoto Protocol could be saved as the European Union pushed for a change by convincing China and India at the last moment.

On one end of the seesaw were those who wanted to continue with high carbon emissions, the other end of the seesaw was taken by those who wanted a low carbon solution, with those who wanted the continuation of the pact in the middle. The ones who stood in the middle formed the largest group. Such an equation might mean not only an increase, but also a multiplication of the disasters that we experienced in 2012.

In an equation where the balance has to shift towards the climate-friendly side, where does Turkey sit on the seesaw?

Turkey’s love affair with carbon

One can say that Turkey stands apart from the seesaw. To paint a more detailed picture, it stands closer to the carbon-friendly side. Let us see the element of truth in this analogy.

First of all, in 2004 it became a party to the UN Climate Change Framework Agreement negotiated in Rio in 1992, after more than 180 countries had signed.

Secondly, in 2005 it became a party to the Kyoto Protocol negotiations in 1997, again after it was signed by more than 180 countries.

Thirdly, while 140 countries made their own commitments in the Copenhagen Consensus that emerged in 2009, Turkey did not make any commitments.

In short, Turkey has the inertia that could set an example for a country that does not want to take any steps in climate, namely, it is almost non-existent in international negotiations tackling climate change. There are two places it occupies. Firstly, it did not take any responsibilities, featuring on the Attachment-1 list, namely, the “special circumstances”, which was accepted in the summit in Marrakech and recorded at every meeting. Secondly, it wants to be a beneficiary in fields such as financing and technology, without

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assuming any responsibilities.

Let us come to its proximity to the carbon side, namely, its love affair with carbon!

The greenhouse gas emissions of Turkey which were equivalent to 187 million tons of carbon dioxide in 1990 increased by 115 percent in 2010 and reached 401.9 million tons. In the 1990s, emissions per person was 2.6 tons, which was below the global average.

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However, it increased to 5.45 tons in 2010, hence above the average. One of the leading roles in this increase is played by greenhouse gases stemming from electricity consumption. The amount of carbon dioxide arising out of only electricity consumption increased by 252 percent! That is to say, that coal and natural gas usage was marked by an extreme increase. One can assume that this increase shall continue as it is. The reason is not only that the construction of power plants that caused these emissions is under way, but also, the construction of coal and natural gas plants is ongoing. Focusing only on the coal plants, we see that 27 are in the construction phase, one of them has been licensed and license applications have been completed for 27, bringing the total number to 51! In other words, Turkey's love affair with carbon is in bloom and moving at full speed.

A global climate policy without Turkey

Just as the steps by Canada to withdraw from the Kyoto Protocol at the Durban climate summit weakened negotiations, the lack of responsibility assumed by Turkey and the steps it has taken in the reverse direction provide the driving force for fossil fuel policies. Turkey forms a good example for many politicians who do not want to take any steps. Signing the agreements almost after the work is done, declining to assume any obligations and marketing fossil fuels packaged as "development" make Turkey the secret hero of the front of double-crossers.

Having said all these, one can think about a combat against climate change without Turkey, but that is wrong!

First of all, there is little time left until the emissions of developing countries surpass those of developed countries. In other words, the total emissions of "developing countries" like Turkey are more than the amount required to stop climate change alone if things continue as they are!

Secondly, good and bad examples have a really determining role for countries. Today, the 8 percent decrease made by Australia in its greenhouse gas emissions, in spite of the 3 percent growth in economy, as emission trading schemes go through troubled times[1] has an impact on the plans of politicians. Just as Australia has a good influence and Canada a bad one, it would be unfair to ignore the impact of Turkey.

Thirdly, this problem will not be solved unless governments, companies, local governments and societies as a whole in all countries act. There is a very simple truth; you go wherever the horses pull you. Combating climate change is an act in which everybody should take part.

Although one cannot imagine a world without Turkey, imagining a world without carbon is, on the contrary, very easy. Reviewing a model that becomes carbon-free by focusing on transportation will give you a good idea.

Turkey and climate-friendly transport

Turkey has gained a significant motor vehicle volume, with 15 thousand kilometers of divided roads, many new overpasses, underpasses and a series of urban roads constructed in the last decade. Thus, through the policies, the number of vehicles in 2002 was 8.6 million, and by May, 2012, that had increased to 16.5 million - having almost doubled in number.[2] Today, only the number of cars is equal to the total number of vehicles in 2002. Therefore, greenhouse gas emissions stemming from transport was increased by 80 percent from 1990-2010.

On the other hand, the policies have now rendered transport impossible and costly. The traffic problems in the two largest cities of Turkey during the summer months caused people to be stuck on the roads for several hours. The roads that are repaired and overlaid with asphalt every year also indicate that these policies can no longer continue. In addition to the time lost and the destinations unreached, as well as never-ending public transport projects, millions of dollars spent on renewal constitute a serious problem. The amount allocated to asphalt overlaying works only by the Ankara Metropolitan Municipality in 2012 is 365 million TL,[3] namely, around 200 million dollars!

Such an equation makes us think about how the reduction in fossil fuels will be achieved on top of the problem of cities where "transport is impossible".

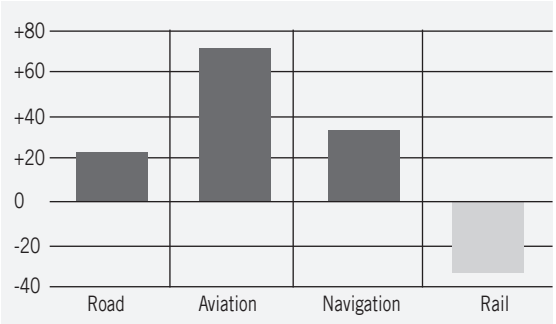
A subtle topic: Transport

As the greenhouse emissions due to transport turn into a rapid and uniform model within the framework of the notion of the "globalizing world", the globalization of commerce has also become a serious issue. As per the latest report by the International Center for Trade and Sustainable Development, greenhouse gases emitted into the atmosphere due to trans-border transportation of commercial goods and people have increased by 65 percent during 1990-2009. In Turkey, the increase in greenhouse gas emissions stemming from transport is a bit higher - it is 80 percent! The fields where the increase has been the highest are airway and seaway transport. Roadway transportation has been in its golden year thanks to divided roads and urban highways. As a matter of fact, the emissions stemming from transport was increased by 64 percent as compared to 1990.

This picture of transport in Turkey is not independent from global policies. The European Union data provided in Graph 1, prepared in accordance

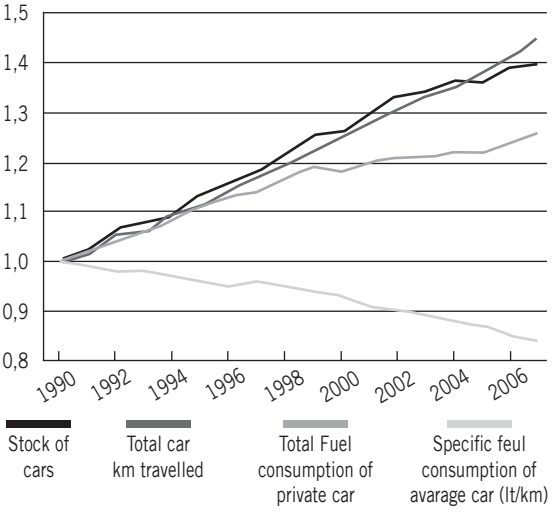
with the International Energy Agency data,[4] indicate that the airway transportation emissions increased the highest, at 70 percent, in 1990-2009, whereas roadway emissions increased by more than 20 percent and seaway transport emissions increased by almost 30 percent. All this in spite of the 20 percent emission reduction target of the EU in the year 2020!

One can come up with the question of "why the EU has such a gap while leading in a series of policy areas". Let us explain it with a simple example. Following the crisis in 2008, Turkey classified the replacement of old vehicles with more efficient ones, thus raising the engine efficiency, as combating climate change. In the EU countries, engine efficiency is a matter that is similarly taken into account and remains on the agenda.



Graph 1- Changes in percentage in the greenhouse gas emissions of the EU countries arising respectively out of roadway, airway, seaway and railway transportation in 1990-2009 [5]

Thanks to the advancements in technology and applications, the cars in the EU in 2007 had a more efficient fuel consumption rate by 15 percent as compared to 1990. However, as seen in Graph 2, the 40 percent increase in the total distance where cars are driven as a result of the efficiency increase, as well as the increase in the number of cars of up to 40 percent, resulted in an increase of 25 percent in total fuel consumption. This shows that a simple efficiency increase policy never produces tangible results as long as it is part of a holistic strategy and it creates the reverse effect, called the "re-bound effect".



Graph 2-The total number of cars, covered total distance, total fuel consumption and fuel efficiency graph in the EU countries in 1990-2007, 1990 is shown as 1.[6]

Departing from this example, the question we have to answer is "how shall we switch to a transport solution that will not change the climate and will not prevent human mobility."

Mobility, not transport

The 'success' of designs, not to say, policies that are centered on the notion of transport is evident. The major factor in this is that urban transport is based on motor vehicles, therefore, on cars. Mobility means people reaching a destination in line with their needs. In other words, mobility, namely, a person, a handicapped or a pregnant woman reaching their destination, is taken as the basis, not motor vehicles.

The essential parameter being motorized vehicles, urban transport slows down too. For example, the average speed of a car in London is only 19 kilometers per hour.[7] Naturally, a car-centered transport jungle does not provide ease in public transport. As a matter of fact, the average speed of a bus in New York City[8] has dropped to 15 kilometers and this speed is declining each and every day. Unfortunately, all these data are similar throughout the world. This arithmetical value has been the most-debated topic in Turkey in 2012. The traffic congestion that started in Istanbul and Ankara during the summer months with a simple repair reached a point where 1 kilometer was covered in almost 5 hours, hence at a speed of 0.2 km/hour. On the other hand, in Ankara, one of the cities with no cycling infrastructure where traffic is judged to be very bad, a cyclist can solve their urban transport need at an average speed of 16-17 km per hour while commuting to work or school. In a city like Ankara, where traffic jams occur often, the speed achieved on the same road and with no problems actually indicates that the key parameter in transport is not motorized vehicles, but mobility.

Consequently, the car-centered transport policies are able to neither move people nor stop climate change. However, climate-friendly solutions are affordable and practical in terms of both investment and utilization.

Climate-friendly = Wallet-friendly

In the struggle against climate change, counties submit their annual greenhouse gas inventory data every year to the UN Climate Change Secretariat. Today, similarly to the carbon calculations of countries, companies have also started to make their own calculations. Furthermore, the greenhouse gas emissions during the life cycle of products ranging from raw materials to production and use, then disposal are calculated as carbon-equivalents. Since the value obtained as a result of this calculation is actually related to the coal or oil used, it brings about a result that is proportional with not only the climate cost, but also the fossil fuel cost in a sense.

According to the studies[9] conducted, dividing the total greenhouse gas emission values of a bicycle including its production, maintenance and use, by the covered kilometers gives a result of 21 grams CO2/km. Applying the same calculation to a bus, the value is 101 gram CO2/km for a passenger travelling by bus to cover 1 kilometer and 271 gram CO2/km by car.

From another perspective, the greenhouse gas emission resulting from covering one kilometer by car is

achieved after 13 kilometers covered by bike and after 2.7 kilometers covered by bus.

The life cycle carbon dioxide calculation we made, climate-friendly vehicles and applications that support them give us the chance to use less fossil fuels and they also provide wallet-friendly alternatives due to less greenhouse gas emissions and less fossil fuel consumption.

A simple example of a city

Today, the share of transport by bike in a relatively large city in Turkey is almost below 1 percent, whereas the ratio of public transport is not more than 40 percent. A simple urban arrangement can enable the construction of cycling lanes, cycling can be developed as priority means of transport and stronger steps can be taken towards integrating it with public transport. Let us make a conservative estimate considering that the share of biking in transport is 40 percent in Amsterdam and 32 percent in Copenhagen, it will be understood that the proposed share of 10 percent for biking is not that high. One can suggest that the share of cars in transport falling to 40 cent is a conservative proposal considering that the rate of car ownership in Bogota, the capital of Colombia, is 13 percent on account of a significant public transport network and integrated cycling transport.

	Bicyicle	Bus	Car	Emitted CO_2
CO_2, gr/km	21	101	271	
Current Share	%0	%40	%60	➡ 100
Policy Change	%10	%10	%40	➡ 79

Table 1- Calculation of carbon dioxide savings via a city-wide, climate-friendly policy change.

Investment in climate-friendly transport

Binali Yildirim, Minister of Transport, Maritime and Communications, stated that around 43 billion TL were spend for 15 thousand kilometers of divided roads that have been added to date. Unfortunately, this cost does not include the cost of asphalt that is renewed every year. Such an amount of money alone is enough to make the transport in Turkey today climate-friendly and economical beyond similar examples in the world.

Considering the investment items of public institutions, the alternative that could be created is rather exciting. This money could have been spent to construct a double-line railway of 2.600 kilometers in total to connect cities of Turkey with populations more than one million and no railway transportation and the fast train line, which is a serious alternative to air travel, could have been increased from 500 kilometers to 5 thousand kilometers. The remaining funds could have been used to increase the total urban railway system length of Turkey, which is 242 kilometers today, with 113 kilometers of subway and 129 kilometers of tramway in 10 cities, to 1.000 kilometers, thus it could have been quadrupled! Turkey could have already had all these investments; it could even have used the remaining funds to have a cycling network of 15.000 kilometers similar to the cycling highways that reached 60.000 kilometers in Europe and hundreds of cycling lanes in cities.

In other words, Turkey could have had today a more comfortable, affordable and climate-friendly transport system with the same investment.

Can Turkey make a “U-turn” for climate change?

The current oil-centered policies are not able to offer us any services other than traffic and climate change. We need more good examples and less bad examples, like Turkey, for the reduction of greenhouse gases on a global level.

Turkey dreams of growing its economy by constructing more roads in addition to more coal power plants in the forthcoming period. The cost of this dream is that we would have an expensive life at the expense of losing the climate.

Turkey’s return to a climate-friendly policy is possible with a sharp “U-turn”. Even though the term ‘possible’ denotes that it is within the limits of possibilities, scientifically speaking, it is an obligation. In terms of preferences, it is much cheaper than the carbon-centered economy as explained above.

The main question is ‘are we going to wait for the politicians to put on the brakes to stop climate change or are we going to make sure that they put on the brakes?’

Footnote

1. http://www.yesilekonomi.com/roportajlar/turkiye-dunyanin-tersine-daha-karbon-yogun.
2. TUİK (Statistics Institute of Turkey), Motorized Road Vehicles, May 2012, News Bulletin.
3. 2012 Budget Year Performance Program, Ankara Metropolitan Municipality Administration, p. 133.
4. Railway Handbook 2012, Energy Consumption and CO2 Emissions, International Union of Railway.
5. op. cit. p. 26
6. For the original graph, please see: Quantifying CO2 savings of cycling, European Cyclists’ Federation, November 2011, p. 18.
7. http://www.forbes.com/2008/04/21/europe-commute-congestion-forbeslife-cx_po_0421congestion.html.
8. http://www.straphangers.org/buscams.
9. Quantifying CO2 savings of cycling, European Cyclists’ Federation, November 2011.