

Climate Change and Security: The Case for Turkey

İklim Değişikliği ve Güvenlik: Türkiye Örneği

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Abstract

The nexus between climate change and security has achieved prominence in contemporary international relations literature. Natural and anthropogenic environmental degradation such as global warming or sea level rise, as well as its repercussions at political, social and economic levels constitute great sources for debate within a broader and deeper understanding of security studies. This study begins with a review of theoretical approaches on climate change and security, and proceeds on the climatic state of affairs in and around Turkey. It is contended that Turkey, although vulnerable to a number of climate induced risks and threats, is in a relatively advantageous position as compared to many of its neighbors. However, despite random cases of dialogue on climate induced security matters, longstanding issues of trust as well as political and ideological divergences between Turkey and the neighboring states render any comprehensive and sustainable collaboration against climate change difficult.

Key Words: Climate Change, Security, Turkey, Transboundary Waters, Migration

Özet

İklim değişikliği ve güvenlik arasındaki bağlantı, modern uluslararası ilişkiler literatüründe kendine belirgin bir yer edinmiştir. Küresel ısınma veya deniz seviyesinin yükselmesi gibi gerek doğa gerekse insan faaliyetleri ile tetiklenen çevresel yıkım ve bu durumun siyasi, sosyal ve ekonomik düzlemlerde yarattığı sonuçlar, güvenlik çalışmalarının genişletilmesi ve derinleştirilmesi çerçevesinde oldukça büyük kaynak teşkil etmektedir. Bu çalışma, iklim değişikliği ve güvenlik üzerine teorik yaklaşımların bir derlemesini sunduktan sonra, Türkiye ve civarındaki iklim değişikliği süreci ve muhtemel senaryoları değerlendirmektedir. Makale Türkiye'nin her ne kadar çeşitli iklimsel risk ve tehditlerden muzdarip olsa da, komşularına kıyasla daha avantajlı bir konumda olduğunu vurgulamaktadır. Ancak, bölge ülkeleri arasındaki çeşitli siyasi ve ideolojik görüş ayrılıkları, iklimsel güvenlik meselelerinde kapsamlı ve sürdürülebilir bir işbirliğini zorlaştırmaktadır.

Anahtar Kelimeler: İklim Değişikliği, Güvenlik, Türkiye, Sınırşan Sular, Göç

Introduction

Contemporary security studies have gone beyond a narrow interpretation of security that focuses only on risks and threats towards national borders. Despite some sceptical views as to the presence and scope of climate driven environmental destruction, a multitude of scholarly work maintain that climate change has direct negative impact upon humans and states alike. Drought, floods and loss of biodiversity and species are believed to trigger various types of political, social and economic conflicts like mass revolts, water wars and illegal migration. Not only Turkey, but also its neighbors share the same grim fate albeit at varying levels. Historical evidence attests to the fact that environmental issues in and around Turkey has failed to transform into a catastrophe, leading to violent international drama. Nevertheless, the current

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picture displays that deeper engagement with regional actors on climate induced problems might lay in the distant future. Impasse in high politics has the potential to cloud dialogue on low politics, while in fact there are substantial benefits for Turkey and its neighbors to join forces in alleviating the bleak consequences of climate driven change.

Literature on Climate Change and Security

Since the end of the Cold War, the study of security has witnessed a series of new debates. Among them, "broadening" and "deepening" the security agenda to incorporate environmental issues and the notion of human security became a widely deliberated theme. Some argued that, in order to attain "positive peace", ecological balance is essential, along with a healthy political, social and economic setting. Others maintained that environmental issues must be "securitized" to mobilize awareness, whereas some others revealed the veiled political interests behind securitizing such issues, claiming that this would invoke classical zero sum responses through an othering process, while in fact we all share some responsibility for the current environmental problems.¹ Scholars advocating more attention to environmental issues seek to redefine security by claiming that the well-being of the individual and other living organisms is no less important than that of the state. They stand against the argument that environment constitute one element of "soft security", whereas national security and the military threats and responses that went with it as matters of "hard security." These scholars justify their point by demonstrating various links between environmental degradation and intra- and international conflict. Examples include the role of decreasing supplies, increasing demand, or unequal distribution of a resource in the outbreak of conflict.²

Although critics question their causality, maintaining that the dominant reason behind conflicts in many cases was not environment-related but such factors like land maldistribution or regime legitimacy, they nevertheless contend that environmental degradation shares a substantial role in conflict formation.³ On another note, and particularly about climate wars over water, some scholars argue that such violent outcomes can be avoided with

1 For a detailed description of these debates see especially Pinar Bilgin et al., "Security studies: the next stage? *Naçao e Defesa*, Vol 84, No 2, 1998, p. 131-157; Ole Wæver, "Securitization and desecuritization", in Ronnie D. Lipschutz (ed.) *On Security*, Columbia University Press, New York 1995, p. 46-86; Barry Buzan, *People, States and Fear: International Security Studies in the Post-Cold War Era*, Harvester Wheatsheaf, New York & London 1991; Simon Dalby, "Security, intelligence, the national interest and the global environment," *Intelligence and National Security*, Vol 10, No 4, October 1995, p. 175-197.

2 Jessica M. Tuchman, "Redefining security" *Foreign Affairs*, Vol 68, 1989, p. 162-177; Thomas Homer-Dixon, "Environmental scarcities and violent conflict: evidence from cases", *International Security*, Vol 19, 1994, p. 5-40; Joyce Starr, "Water wars," *Foreign Policy*, Vol 82, 1991, p. 17-36; Diane Raines Ward, *Water Wars: Drought, Flood, Folly, and the Politics of Thirst*, Riverhead Books, New York 2002; Michael T. Klare, *Resource Wars: The New Landscape of Global Conflict*, Metropolitan Books, New York 2001.

3 Keith Krause-Michael C. Williams, "Broadening the agenda of security studies: Politics and methods," *Mershon International Studies Review*, Vol 40, No 2, October 1996, p. 235.

cooperation and proper planning. “Cornucopian” approaches unequivocally reject the heavy loss of available resources and point at mismanagement as the main culprit. Hence, they advocate, for example, pricing, water markets or demand management for evading future conflicts over water.⁴ In a similar vein, critics note that proponents of the water war hypothesis often rely on a very limited number of case studies and that relatively little empirical evidence exists of past wars over water and of conflict over water becoming more frequent and violent. Others argue that, in terms of human loss and military preparations, it would be much costlier to fight over water. It is also emphasized that there are more articles written and cited by scholars on cooperation rather than conflict over water issues.⁵ As regards cooperation, “functionalists” predict that cooperation in low politics like environmental issues will spill over into high politics, leading to *rapprochement* and cooperation among states.⁶ Nevertheless, “realists” respond to this with a counterargument: lack of cooperation in high politics (war and diplomacy) can as well lead to a deadlock in low politics (economy and culture). On the issue of cooperation in transboundary river basins, it is argued that positive conclusions exist only where resource need becomes an issue of national survival, and where cooperation benefits the hegemonic power of the basin.⁷

Other critics of the doomsday literature on climate wars contend that, throughout history, warm periods are more peaceful than cold ones, as colder climate meant reduced crops, famine and instability. Conflicts were on the rise as the average global temperature diminished between 1940 and 1975. Especially for Africa, contemporary cases of conflict stem mainly from desire to access oil, minerals, timber and pastures. That is why resource rich places are often the arena for violence like the border of Kenya and Somalia or Darfur. In the latter case, local variations of climate in western Sudan may only be a part of the explanation for the rise of violence in the region. Otherwise, the conflict would not have erupted nearly 30 years after the onset of the current drought. Finally, critics are skeptical about climate-induced massive population displacement. In their opinion, such movements have always existed, yet they

4 N. P. Gleditch, “Armed conflict and the environment: A critique of the Literature,” *Journal of Peace Research*, Vol 35, No. 3, 1998, p. 381-400; Idean Salehyan. “From climate change to conflict? No consensus yet,” *Journal of Peace Research*, Vol 45, No 3, 2008, p. 315-326; Frederick Frey-Thomas Naff, “Water: An emerging issue in the Middle East?” *Annals of the American Academy of Political and Social Science*, Vol 482, 1985, p. 65-84.

5 David Katz, “Hydro-political hyperbole: Examining incentives for overemphasizing the risks of water wars,” *Global Environmental Politics*, Vol 11, No 1, February 2011, p. 13-18; Aaron Wolf, “Shared waters: conflict and cooperation,” *Annual Review of Environmental Resources*, Vol 32, 2007, p. 241-269.

6 David Mitrany, *The Functional Theory of Politics*, St. Martin Press, New York 1975; Mustafa Dolatyar-Tim S. Gray, “The politics of water scarcity in the Middle East,” *Environmental Politics*, Vol 9, No 3, Autumn 2000, p. 65-88.

7 M. Lowi, *Water and Power: The Politics of a Scarce Resource in the Jordan River Basin*. Cambridge University Press, London, 1993, p. 9-10, 196-197.

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were slow in motion, mostly dependent on economic opportunities outside and they often took place within a country or a region.⁸

Most studies on climate change and Turkey deal with climate models and try to estimate the scope of present and future climate-induced damage that would negatively affect Turkish coasts, various cities and socio-economic activities. Many are quite pessimistic about the impact that climate change would have on Turkey. However, there are only a few academic studies dealing with the security implications of climate change in Turkey, and they mostly share these dim conclusions.⁹

Climate-Driven Security Issues in Turkey

According to the Intergovernmental Panel on Climate Change (IPCC)¹⁰ report of 2007, future climate change could irreversibly endanger sustainable development especially in the Mediterranean Basin, where Turkey is also located. Generally speaking, in Turkey, statistical records show a visible increase in average and minimal air temperatures with particular reference to the southern and southeastern regions.¹¹ The annual mean temperature increase is estimated to be around 2-3°C. Precipitation is expected to decrease along the Aegean and Mediterranean coasts by 30% and to increase along the Black Sea coast by 10-20%. In sum, Turkey is highly vulnerable to desertification with 86.5% of its total land area.¹²

As regards climate change's impact on water resources and agriculture, the decreasing water potential of the Gediz and Büyük Menderes River Basins in the Aegean Region is expected to reach 20% by 2030. In the Mediterranean Region, the increase of CO² concentration, temperature and water stress in the Seyhan River basin may affect production of major crops like wheat and maize. As for the Black Sea Region, eutrophication, overfishing, and abrupt cooling and warming events can be traced back to the 1980s.¹³ Particularly on account of global warming, the migration routes of the fish in Turkey have also witnessed a change. Warming of sea water has led to anchovies finding refuge

8 Bruno Tertrais, "The climate wars myth," *The Washington Quarterly*, Vol 34, No 3, Summer 2011, p. 17-24.

9 Ibrahim Al-Marashi, "Turkey," in Daniel Moran, (ed.) *Climate Change and National Security* Georgetown University Press, Washington D.C. 2011, p. 153-162; Nejat Eslen, "İklim deđişikliđi ve Türkiye'nin güvenliđine etkileri," *Stratejik Arařtırmalar*, Vol 8, No 15, June 2010, p. 237-275; Armađan Kulođlu, "Küresel iklim deđişikliđine iliřkin güvenlik algılamaları ve Türkiye," *Ortadođu Analiz*, Vol 1, No 7-8, Temmuz-Ađustos 2009, p. 80-85.

10 The IPCC established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) scientifically assesses the current state in climate change as well as its potential environmental and socio-economic impacts.

11 *National Activities of Turkey on Climate Change*, Turkish Ministry of Environment and Forestry, Ankara 2010, p. 3.

12 G. Apak-B. Ubay (eds.), *First National Communication on Climate Change*, Ministry of Environment and Forestry, Ankara 2007, p. 161-165, 176-178; İbrahim Güner, "Küresel ısınma, Türkiye'nin su kaynakları, olası etkileřim," in *T. Türkiye İklim Deđişikliđi Kongresi Bildiri Kitapçıđı*, İTÜ, İstanbul 2007, p. 19.

13 *First National Communication on Climate Change*, p. 167-176.

in the much cooler northern regions of the Black Sea. As anchovies diminish along the Turkish coasts, the main source of fish fodder also disappears.¹⁴

Another climate related impact is the sea-level rise, which may lead to erosion, flooding, coastal inundation and saltwater intrusion. Turkey does not appear especially vulnerable to sea-level rise. However, for the Mediterranean and Black Sea regions, the sea-level rise is around 12 cm in the last century, which reaches the average record for the global sea-level rise estimated between 10 and 20 cm. Although coastal cities cover less than 5% of the total surface area of Turkey, they comprise 51% of the population, 80% of industrial activities and 90% of tourism income. Coastal erosion along Turkish shores may yield about 6% of GNP for capital loss. Istanbul, the main contributor to Turkey's GDP, is Turkey's largest coastal city. The city also hosts numerous cultural and historical sites along the Bosphorus. One of the major climate-induced impacts on Istanbul is saltwater intrusion. The Büyükçekmece and Küçükçekmece lagoons, as well as the Haliç (Golden Horn) estuary are vulnerable to sea-level rise, particularly in terms of salinisation. A similar fate awaits the Terkos Lake, the freshwater supply of Istanbul, near the Black Sea coastline.¹⁵ Throughout the country, rise in the sea level of 1, 2, and 3 meters by 2205 could lead to 545, 1,286 and 2,125 km² of territorial loss.¹⁶

A related danger can be observed in the Straits. The Istanbul Strait as well as the Golden Horn froze various times throughout history. The latest incident took place in February 1954. The Strait was filled with ice blocks of 15-20 meters width that made their way to Turkey after the bombing of the frozen Danube and other rivers discharging into the Black Sea to reopen the congested water traffic. The blocks even reached to the Marmara and the Black Sea.¹⁷ The Black Sea and the Straits constitute the 21st century's energy and security corridor via the EU-supported TRACECA transport line, which would link the Far East, Middle East, Central East and the Caucasus with Europe. However, any climate induced risks and threats would endanger the realization of this new "Silk Road."¹⁸

There are no clear indicators as to climate-driven migration within and outside Turkey that have constituted a security issue. Migration studies on

14 Ahmet Adem Tekinay-Derya Güroy, "İklim değişikliği Türkiye balık üretimini nasıl etkileyecek?" *I. Türkiye İklim Değişikliği Kongresi Bildiri Kitapçığı*, İTÜ, İstanbul 2007, p. 331-332.

15 *First National Communication on Climate Change*, p. 166-167; Bedi Alpar, "Vulnerability of Turkish coasts to accelerated sea-level rise," *Geomorphology*, Vol 107, 2009, p. 58; Mehmet Karaca-Robert J. Nicholls, "Potential implications of accelerated sea-level rise for Turkey," *Journal of Coastal Research*, No 242, 2008, p. 288.

16 Ali C. Demirkesen et al., "Quantifying coastal inundation vulnerability of Turkey to sea-level rise," *Environmental Monitoring and Assessment*, Vol 138, No 1-3, p. 103-104.

17 "Burası İstanbul Boğazı," *Habertürk*, March 10, 2011, <http://www.haberturk.com/yasam/haber/609220-burasi-istanbul-bogazi> (retrieved September 9, 2011).

18 Undersecretariat for Maritime Affairs, 2010 Statistics for Traffic in the Turkish Straits', <http://www.denizcilik.gov.tr/dm/istatistikler/ResmIstatistikler/> (retrieved September 20, 2011); TRACECA Turkish National Secretariat, <http://www.traceca.org.tr/> (retrieved September 20, 2011).

Turkey mostly emphasize the “pull” factors in migration, meaning opportunities regarding education, employment or freedom of expression rather than “push” factors such as environmental degradation and poverty that accompanies it. According to statistics by the former State Planning Organization (now the Ministry of Development), around 21 million people migrated within Turkey between 1965 and 2000. While men often moved on the grounds of employment or appointment, women moved for the reasons of marriage and education. Western Black Sea and northeastern Anatolian regions surpassed south and southeastern regions in terms of migration.¹⁹ As for Turkish citizens abroad, they mainly constitute migrant labor force, students or refugees of mostly Kurdish origin.²⁰

Climate-Driven Security Issues around Turkey

The Balkans and the Black Sea Basin

Perhaps the most speculative argument about the link between climate change and violent conflict involves a heat wave in July 2010 in the wider Black Sea basin, leading to a food crisis and thence catalyzing the Arab Spring of 2011. As global warming hit the wheat production of Kazakhstan, Russia, and Ukraine, production in Romania and Bulgaria also witnessed a similar drama on account of heavy rain. The problem intensified with the blazing fires accompanying the drought in the Black Sea region, especially in Russia and Ukraine. This led to a soaring rise of global food prices, which also affected meat and dairy prices. As the major market for these foodstuffs constituted Middle Eastern countries including Turkey, Egypt and Syria, various responses ranging from protests to revolts followed in return.²¹

Warming over Albania, Montenegro, Bosnia, Croatia, and Slovenia is also high, reaching up to 7°C. Bulgaria is expected to suffer from a reduction of 23% in precipitation. The country is already afflicted with intense drought periods during the summer. The most visible change in winter precipitation is observed in Greece, with a 32% decrease.²² Summer precipitation is also projected to follow a similar line. The temperature in Greece has been on the rise since the end of the 1990s and average temperatures are expected to increase from

19 Emine al-Hülya Gündüzalp, “DPT Türkiye'nin gö haritasını ıkardı,” *Milliyet*, June 18, 2008.

20 *Republic of Turkey Migration Profile*, International Organization for Migration, September 2007, p. 18, 29; *Migration in Turkey: A Country Profile*, International Organization for Migration, 2008, p. 11; Ahmet İduygu, “Demographic mobility and Turkey: Migration experiences and government responses” *Mediterranean Quarterly*, Vol 15, No 4, Fall 2004, p. 96-98.

21 Ilia Roubanis-Zefi Dimadama, “Food security, human security and the Black Sea: The instructive case study of 2010-2011 events,” *ICBSS Policy Brief*, No 23, July 2011, p. 4, 11-12..

22 Barış Önel-Fredrick H. M. Semazzi, “Regionalization of climate change simulations over the Eastern Mediterranean,” *Journal of Climate* 22 (2009), 1953, 1958; European Commission report on the economics of climate change adaptation in Bulgaria, http://ec.europa.eu/maritimeaffairs/climate_change/bulgaria_en.pdf (retrieved September 9, 2011).

3.1°C to 5.1°C by 2100.²³ In Romania, one third of total arable land suffered from severe drought in 2007. At the same time though, there have been some major floods in 2005 and 2006.²⁴ As for the sea-level rise, among the seriously threatened areas in the Black Sea basin are the Danube delta, the Dniester estuary, the deltas of Kuban (Sea of Azov) and Rioni. According to statistics, in 2005, around more than half of the total population living in the Black Sea coastal regions were concentrated along the Turkish coast. Taking into account the UN projections, 70% of the regional population might be condensed along these southern shores by 2050, because of relatively favorable living conditions.²⁵

In the near future, Europe would be overly busy to accommodate climate stricken members like the Netherlands, which is threatened by inundation and the influx of illegal immigrants. Severe climate change might induce more exclusionary policies, which might also negatively affect Turkey's own accession process.²⁶ One particular example is Greece's constructing an armed fence parallel to the Meriç (Maritsa) River. Given the accelerating global warming, illegal immigration might become easier for the people as Maritsa dries up in the future, creating easy access to Fortress Europe.²⁷ Last year, Greek authorities recorded around 40,000 illegal border crossings from various parts of the river. Since Turkey waived its visa requirements from North African countries, a substantial share of the refugees to Europe now come from Morocco, Algeria and Tunisia along with the Afghans, Iraqis and Palestinians.²⁸ Turkey itself does not suffer from an influx of migrants creating heavy burdens. Furthermore, there is no evidence linking migrant flows to climate-driven factors. Migrants coming from Ukraine or Moldova choose Turkey for work and better living standards, whereas those from Iran, Iraq, Afghanistan, Bangladesh, and Pakistan often regard Turkey as a transit zone.²⁹ In addition, Turkey does not accept non-European refugees based on its geographical limitation in the 1951 Geneva Convention.³⁰

23 European Environment Agency, Country Assessments-Greece, November 26, 2010, [http://www.eea.europa.eu/soer/countries/gr/soertopic_view?topic=climate change](http://www.eea.europa.eu/soer/countries/gr/soertopic_view?topic=climate%20change) (retrieved September 12, 2011); D. Founda-C. Giannakopoulos, "The exceptionally hot summer of 2007 in Athens, Greece — A typical summer in the future climate?" *Global and Planetary Change*, Vol 67, No 3-4, June 2009, p. 227.

24 European Commission Report on the Economics of Climate Change Adaptation in Romania, http://ec.europa.eu/maritimeaffairs/climate_change/romania_en.pdf (retrieved September 9, 2011).

25 A. Shivarov, "Economic impacts of climate change in the Black Sea region," *Journal of Environmental Protection and Ecology*, Vol 11, No 3, 2010, p. 954–955.

26 Leon Fuerth, "Severe climate change over the next thirty years," in Kurt M. Campbell (ed.), *Climatic Cataclysm: The Foreign Policy and National Security Implications of Climate Change*, Brookings Institution Press, Washington D.C., 2008, p. 138-139.

27 "Yunanistan Türkiye sınırını gece gündüz kazıyor," *Radikal*, August 5, 2011.

28 Manfred Ertel-Walter Mayr, "Shutting the back door to Fortress Europe," *Der Spiegel*, January 13, 2011, <http://www.spiegel.de/international/europe/0,1518,738992,00.html> (retrieved September 16, 2011).

29 *Migration in Turkey: A Country Profile*, p. 31.

30 İçduygu, "Demographic mobility and Turkey," p. 92-93.

The Maritsa transboundary river basin constitutes another problem in terms of frequent floods. Turkey, as a downstream member country, is the most afflicted riparian in this respect. The current situation is an extension of consequent and abrupt floods crippling the Central and Eastern Europe, where over 100 floods were observed between 1998 and 2004.³¹ The upstream Bulgaria and downstream Turkey recently agreed upon jointly constructing the Suakacađı Dam so as to avoid the plight caused by climate-induced heavy rains and floods.³² Likewise, the first meeting of the Turkey-Greece Maritsa River Joint Working Group was carried out on June 24, 2011.³³ Nevertheless, the EU Flood Directive of 2007 fails to become an initiative that would bring out an all-inclusive coordination among the parties involved. Even though the Directive advocates consultation and dialogue among the member and non-member states as regards floods in transboundary water basins, the non-member states are excluded from the benefits envisaged by the Directive.³⁴

Eastern Mediterranean and the Middle East

The greatest evidence regarding climate change in the Eastern Mediterranean, Syria, Northern Iraq, Northeastern Iran and the Caucasus is precipitation decrease. A decrease of over 170,000 km² in rainfed agricultural terrain is expected by late-century, including an increase in the length of the dry season particularly in Western Syria, Northern Iran and large parts of Iraq.³⁵ In Iran, thousands protested in the streets to urge the government to save the dying Urmia (Orumieh) Lake in Iran's Azeri region. Urmia has lost nearly a third of its water as a result of drought and poor water management policies. Last August, Iran's parliament rejected a bill to fund the irrigation of the lake. At present, the salinity of the lake's water is 330 percent, whereas Ölüdeniz (Dead Sea) lagoon in southwest Turkey has 275 percent. Some observers argue that the drying up of Urmia would affect Turkey and Azerbaijan in the form of massive migration from the region.³⁶ Iranian authorities themselves are concerned about a reignition of ethnic tensions. In fact, the Lake, a UNESCO Biosphere Reserve home to hundreds of species, is a key factor for sustainable development in Iran as a whole. It is estimated that 18 of Iran's 31 provinces would be affected by this catastrophe.³⁷

31 Ayşegöl Kibarođlu, "Küresel iklim deđişikliğinin sınıraşan su kaynakları politikasına etkileri," *TMMOB 2. Su Politikaları Kongre Kitapçığı*, 2008, p. 352-353.

32 Ibid.; Dursun Yıldız, *Meriç Nehri Havzası Su Yönetiminde Uluslararası İşbirliği Zorunluluđu* ORSAM Water Research Programme Report, No 4, April 2011.

33 Tuğba Evrim Maden, "The cooperation steps on the Maritsa River Basin," <http://www.orsam.org.tr/en/WaterResources/showAnalysisAgenda.aspx?ID=712> (retrieved September 9, 2011).

34 Kibarođlu, "Küresel iklim deđişikliğinin sınıraşan su kaynakları politikasına etkileri," p. 353.

35 Jason P. Evans, "21st century climate change in the Middle East," *Climatic Change*, Vol 92, 2009, p. 417, 427-430.

36 "Rally protesting Iran over Lake Urmia turns violent," *Hürriyet Daily News*, September 1, 2011.

37 Golnaz Esfandiari, "Dying lake gives new life to Iran's antigovernment protests," RFE/RL, September 2, 2011.

The IPCC report along with several independent studies also suggest a major reduction in precipitation, ranging from 10%–30% in the Middle East and North Africa by the next century. For Syria, the 2007-2008 UN Human Development Report estimates a 50% decline in renewable water availability by 2025, compared to 1997 levels.³⁸ More than half of the Syrian territory consists of desert and semi-desert regions. The Euphrates River constitutes as much as 86% of the country's water resources. As for Iraq, the two-thirds of land area is also desert, and similarly, this country is highly dependent on the Euphrates and Tigris for irrigation water. In both countries, the use of water has become increasingly linked to ethnopolitics. Any decrease in the water of these rivers equals a decrease in the agricultural production and the income of the Shiite farmers, who mostly reside in southern Iraq. In the same manner, the users of Euphrates in Syria consist of small landowners who have traditionally been against the Alawi dominated Syrian regime. The government has made efforts to secure their loyalty through provision of cheap and abundant water.³⁹

On the issue of Euphrates and Tigris, Turkey shares with Syria and Iraq the same identity and legitimacy problems. Lacking oil resources, Turkey has been building a grand hydrodevelopmental initiative since the 1980s named the Great Anatolian Project (GAP), in order to tame feudal tenure relations and class divisions in a mostly Kurdish-populated and violence-dominated region. The project consists of 22 dams and 19 hydro-electric power plants (HEPP) to be built on these rivers. At present, around 50% of the GAP has been achieved. As the GAP facilities render the mid-stream Syria vulnerable, the same conclusion is valid for Iraq in the light of various upstream projects in Syria. Syria resorted to aggressive strategies for a greater share of the Euphrates and Tigris. These included supporting the terrorist organization PKK between 1984 and 1998, which ended up in security protocols of 1987 and 1998, or blocking international investments in GAP through lobbying activities in international institutions and European countries between 1993 and 2002. Eventually, Syria achieved in securing the support of some countries like the United Kingdom and Switzerland, along with companies like the Swiss UBS, British Balfour Beatty and Italian Impregilio, which withdrew their support for the GAP between 2001 and 2002.⁴⁰ Using the Arab League and making alliances with Turkey's adversaries such as Greece were also other strategies.⁴¹ A related question that needs to be tackled is the construction of the Ilisu Dam and

38 Jeannie Sowers et al., "Climate change, water resources, and the politics of adaptation in the Middle East and North Africa," *Climatic Change*, Vol 104, 2011, p. 603-608.

39 Ali Çarikoğlu-Mine Eder, "Domestic concerns and the water conflict over the Euphrates-Tigris River Basin," *Middle Eastern Studies*, Vol 37, No 1, January 2001, p. 52, 63-64.

40 Marwa Daoudy, "Asymmetric power: Negotiating water in the Euphrates and Tigris," *International Negotiation*, Vol 14, 2009, p. 369-370, 378-379.

41 Müşerref Yetim, "Governing international rivers of the Middle East," *World Affairs*, Vol 166, No 2, Fall 2003, p. 89.

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its consequences on the Tigris. According to Iraqi officials, the dam would decrease the waters of the river by 47% annually, depriving Mosul of 50% of its waters during summers.⁴²

While there is some kind of a basin regime as regards the Euphrates and Tigris, perhaps the main reason that hinders a longstanding “blue peace” among the three riparians is related with different interpretation of the rivers’ status. Turkey has refused to sign and ratify the UN Convention on the Non-Navigational Uses of International Watercourses of May 1997, whereas Syria and Iraq are already parties to this Convention. Turkey opposes the UN International Law Commission’s interpretation of “international watercourses” and upholds the rule of “state sovereignty over natural resources.” Turkey also maintains that the Euphrates and Tigris Rivers constitute a single basin, hence advocates centralized planning of all dam projects on these rivers and across the three countries. Turkey also claims that the upstream dams help to regulate the rivers through cushioning floods and droughts in the downstream regions. It is also Turkey’s attempt to include the Asi River’s (Orontes) waters on the negotiation agenda, a claim long rejected by Syria for the reason that Iraq is not a riparian to it. Despite these longstanding differences of opinion, in March 2008, the three co-riparians declared their will to cooperate by establishing a joint water institute with experts from each country.⁴³

Parenthetically, since the early 1980s, Syria refused to discuss the Orontes river with Turkey. Syria long claimed the Turkish province of Hatay, through which the Orontes trespasses and discharges into the Mediterranean, as belonging to Syria. In return, Turkey argues that Syria is utilizing 90% of the river’s total flow and polluting the waters irrigating the Amik Plateau. However, soon after Syria extradited the PKK leader Abdullah Öcalan in 1998, there have been a number of mutual high-level visits. In December 2004, Syria and Turkey agreed to build a joint dam on the Orontes at the border.⁴⁴ During the meetings in 2009, the parties signed a memorandum of understanding as regards constructing the “Orontes Friendship Dam” at the Turkish-Syrian border. Again in the same year, Turkey signed 50 protocols with Syria, and 48 with Iraq, some of whom were related with water issues. The construction of the Orontes Dam officially began on February 6, 2011.⁴⁵ However, it remains to be

42 Daoudy, “Asymmetric power,” p. 381–382; Ilisu Dam Official Site <http://www.ilisubaraji.com> (retrieved September 15, 2011).

43 Marwa Daoudy, “Hydro-hegemony and international water law: laying claims to water rights,” *Water Policy*, Vol 10, Supplement 2, 2008, p. 91-96.

44 Ayşegül Kibarođlu et al., *Cooperation on Turkey’s transboundary waters*, Status Report commissioned by the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety, October 2005, p. 70-78.

45 Tuğba Evrim Maden, *Türkiye-Suriye İlişkileri: Sınırşan Sularda Örnek İşbirliđi Olarak Asi Dostluk Barajı*, ORSAM Water Research Programme Report No 5, May 2011, p. 15-22; “Interview with Assoc. Prof. Dr. Ayşegül Kibarođlu,” <http://www.orsam.org.tr/tr/SuKaynaklari/uzmangorusugoster.aspx?ID=257> (retrieved September 9, 2011).

seen whether the level of concord especially between Turkey and Syria would survive, given the clash of opinions as regards the Arab Spring experienced in the latter. Turkey severely condemns the brutal suppression of the Syrian people at the hands of the Assad regime, whereas Syria perceives this as encroachment on Syria's internal affairs.⁴⁶ In a similar vein, Iraq is nervous about Turkey's military incursions to the PKK camps in northern Iraq. Years of efforts in the name of reaching an optimal solution on regional rivers might die on the altar of high politics.⁴⁷

Contrary to the mass flow of Iranians in the 1980s, and that of Iraqis in the late 1980s and early 1990s on account of war and political turmoil, there have been relatively rare occasions of asylum seeking from these countries. In the early 2000s, the number of asylum seekers from Iran and Iraq amounted to only around 2,500 and 1,000 respectively.⁴⁸ As for Syria, even though Turkey currently hosts a multitude of Syrian protesters in the province of Hatay, this is related with the Assad regime's efforts to crunch the opposition calling for a more transparent and participatory governance. Even though Syria suffers from chronic drought beginning in 2005, Syrians has so far responded to this catastrophe with internal migration. It is estimated that around 1,300,000 people have been afflicted, with 60,000 families moving from Haseke, Deir Ez-Zor, Rakka and Humus to Damascus, Halep and Dara.⁴⁹

Israel has long depleted its renewable freshwater resources and now mostly uses desalination to meet increasing demands. In 1996, the Israeli government regarded in a favorable light a regional project in which Israel, Egypt, Jordan and the Palestinian Authority would cooperate on water imports from Turkey. In 1999, it was believed that the Manavgat River could indeed become the source for a peace pipeline. Given Israel's dependence on the transboundary waters of the rain-fed Mountain Aquifer in the West Bank to meet the water provision articles in the Israel-Jordan Peace Treaty, the Manavgat Project designed provide 50 million m³ of water annually from Turkey to Israel in supertankers would pave the way for more cordial and sustainable relations among regional actors.⁵⁰ However, as recently announced by the Turkish Ministry of Energy and Natural Resources, there would be no new energy or water projects with Israel until relations between the two countries improve after the Gaza flotilla incident.⁵¹

46 Nathalie Tocci, "Turkey and the Arab Spring: Implications for Turkish foreign policy in transatlantic perspective" *Carnegie Endowment Commentary*, September 12, 2011; Martin Chulov, "Turkey to press ahead with sanctions against Syria," *The Guardian*, September 29, 2011.

47 "Irak: Kara harekâtı için Türkiye kapımızı çalmalı," *Radikal*, August 24, 2011.

48 İçduygu, "Demographic mobility and Turkey," p. 92-93.

49 "Suriye'yi kuraklık vurdu: 60 bin aile göç etti," *CNN Türk*, September 16, 2009.

50 Konuralp Pamukçu, "Water trade between Israel and Turkey: A start in the Middle East?" *Middle East Policy*, Vol 10, No 4, Winter 2003, p. 94, 96-97; Sabri Sayarı, "Turkey and the Middle East in the 1990s," *Journal of Palestine Studies*, Vol 26, No 3, Spring 1997, p. 46.

51 "Turkey halts all state energy and water projects with Israel," *Haaretz*, June 4, 2010.

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As for Cyprus, simulations for the periods of 2021-2050 and 2071-2100 demonstrate an increase of maximum temperature on the island compared to the reference period 1961-1990. For the 2021-2050 period precipitation decrease varies from 6% to 18% across various parts of the island, while for the 2071-2100 period this decrease varies from 20% to 35%.⁵² Whole Cyprus suffers from droughts and partial desertification. Over the past 35 years, the water runoff into reservoirs has declined by 40%.⁵³ The period of 2005-2008 was marked by extreme drought, which eventually caused Southern Cyprus to decide on importing water from Greece.⁵⁴ The temperature increase in Southern Cyprus based on a hundred years of data is 0.01 °C/year, whereas in the Turkish Republic Northern Cyprus (TRNC) between 1980 and 2004, the temperature increase is found to be 0.45 °C/year. TRNC suffers from a dearth of water sources. Ten streams originating from the Trodos Mountains of Southern Cyprus run across the Northern Cyprus. However, most of them are controlled by the dam facilities of the Southern Cyprus. Desalination plants have already been implemented in the 1990s in Southern Cyprus and the 2000s in Northern Cyprus. In 1998, the project of bringing waters in large water bags and via tankers of varying capacity from 10,000 to 30,000 m³ from Turkey was under way. Hence, TRNC became the first beneficiary of the Manavgat Project with the first ship arriving in September 1998. Nevertheless, technical problems led to the cancellation of the project in 2002.⁵⁵ Last year, an undersea water pipeline project that would bring 75 million m³ water annually from Turkey to TRNC was signed. Accordingly, TRNC would receive water from the Alaköprü Dam, to be constructed on the Dragos Stream in Mersin. Both sides believe that this initiative would pave the way for a *rapprochement* between the TRNC and Southern Cyprus, because it is intended that the southern part of the island would also benefit from this initiative.⁵⁶ However, this good will may not be reciprocated by the Southern Cypriots, who, together with the help of Greece, Israel and many other international actors, have recently engaged in offshore energy drilling projects in the Eastern Mediterranean. Turkey also joined in the process as a retaliation.⁵⁷

Conclusion

The level of uncertainty is always high in climate science. Plus, there are many different models used, ending up in varying predictions for the future. Nevertheless, climate change can indeed increase the number of weak and

52 C. Giannakopoulos et al., "Precipitation and temperature regime over Cyprus as a result of global climate change," *Advances in Geosciences*, Vol 23, 2010, p. 19-21.

53 European Commission Report on the Economics of Climate Change Adaptation in Cyprus, http://ec.europa.eu/maritimeaffairs/climate_change/cyprus_en.pdf (retrieved September 17, 2011).

54 European Environment Agency, Country Assessments-Cyprus, November 26, 2010, http://www.eea.europa.eu/soer/countries/cy/soertopic_view?topic=climate%20change (retrieved September 10, 2011).

55 Gözen Elkıran-Ayşen Türkman, "Salinity problems in Northern Cyprus and desalination applications," BALWOIS Conference, Ohrid-Macedonia, May 27-31, 2008, http://balwois.com/balwois/administration/full_paper/ffp-885.pdf (retrieved September 15, 2011).

56 "Kıbrıs'a su müjdesi," *Sabah*, July 19, 2010.

57 "Kıbrıs petrol içinde mi yüzüyor?," *Milliyet*, September 21, 2011.

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fragile states, pose a risk for global economic development and trigger migration and crushing of human rights. Trying to meet these issues through a holistic way carries the best potential to alleviate domestic and cross border conflicts. As almost every person in the world shares part of the blame in today's climate-driven problems, it would be best not to engage in exclusionary processes of othering at home or at the international level. Governments would win bonuses so long as they strengthened their governance, health care, and disaster prevention and relief capabilities. Raising crop types that are resilient to drought and salinity, moving facilities from ports that are vulnerable to sea level rise, or investing in renewable energy like solar and wind could lead to a brighter future.

In terms of vulnerability to climate change, Turkey is in a rather advantageous position in a number of respects. Geographically speaking, since it is not situated along the tropical belt, the country is not under the direct impact of the very dangerous precipitation or wind trends as can be exemplified in the El Nino Hurricane or Monsoon Rains. It is only indirectly affected by extreme hot and cold air waves.⁵⁸ It is also expected that Turkey would be affected at a lesser degree and at a relatively later stage by gross environmental change. Its water potential would also help Turkey to survive for many years, especially as compared to its Middle Eastern neighbors.⁵⁹ In a similar vein, the vulnerability of Turkey to accelerated sea level rise appears to be less than that of Egypt and the Nile delta, albeit more than France and Spain.⁶⁰ As of 26 August 2009, Turkey is a party to the Kyoto Protocol and many state institutions and agencies are developing plans and realizing them in terms of reducing the greenhouse gases or making the best use of solar energy.⁶¹

In the short and medium terms, Turkey does not seem to become afflicted with climate-induced wars. However, as the saying goes, this does not mean the absence of conflict. Turkey, being the hegemonic state in the Euphrates-Tigris conflict thanks to its robust military and economic capabilities, is nevertheless straightjacketed given the awaiting developmental issues in the basin and downstream riparians' provocations in this sensitive region. This is a case where protracted high security conflicts limit the incentives to de-link issues. However, despite several crises, the riparians have not engaged in militarized conflict on water. Yet, full cooperation may not be possible as long as the downstream countries still have some indigenous or outside sources to meet public demands. Or, Turkey may not have the incentive for the collective coordination of the waters unless it sees a vital interest to do so. At a time of impasse between Turkey and its neighbors on the issues of Arab Spring, the PKK or NATO missile defense, collaboration may not easily

58 Mahmut Kayhan, "Küresel iklim değişikliği ve Türkiye," *I. Türkiye İklim Değişikliği Kongresi Bilirdi Kitapçığı*, İTÜ, İstanbul 2007, p. 81.

59 Kuloğlu, "Küresel iklim değişikliğine ilişkin güvenlik algılamaları ve Türkiye," p. 84.

60 Karaca-Nicholls, "Potential implications of accelerated sea-level rise for Turkey," p. 288-298.

61 *National Activities of Turkey on Climate Change* p. 1.

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appear on the horizon. In fact, water swapping has the potential of cooperation for the riparian countries in the Euphrates-Tigris and the Jordan river basins. It would work for each actor's benefit if Israel agreed to release an equivalent amount of water from the Sea of Galilee to Jordan for each cubic meter of water received from Turkey.⁶² However, water importing Middle East countries would not want to strengthen Turkey's position at a time when the policy of "zero problems with neighbors" has been interpreted by some as a neo-Ottomanist hegemonic aspiration in disguise. Hence, trying to settle the diplomatic issues first would pave the way to collaboration on climate related security matters.

Another issue complicating dialogue among riparians is the fact that many water sharing agreements fail to consider the issue of climate change. This observation is valid not only for the Euphrates-Tigris Basin, but also the Maritsa Basin and it constitutes the gist of related regional conflicts. For example, as the articles of the Jordanian-Israeli Peace Treaty of 1994 pertaining to water sharing did not include the frequently encountered drought conditions in the region, the countries were embroiled in a crisis in the face of the drought of 2001.⁶³ Last but not least, and particularly on the issue of climate-induced tensions in the Maritsa River Basin, Turkey should press for inclusion into the EU Flood Directive Framework perhaps at least on special status. As a candidate country for the EU, which suffers the most from the flooding of the Maritsa, this would be the most viable step for regional security.

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62 Kibarogđlu et al., *Cooperation on Turkey's transboundary waters*, p. 82.

63 Kibarogđlu, "Küresel iklim deđişikliğinin sınırşan su kaynakları politikasına etkileri," p. 350-351.

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