



Hydropolitics "The World And Turkey"

KEYWORDS

Water, Politics, World, Turkey

Assoc. Dr. Mesut Doğan

Istanbul University, Faculty of Literature Department of Geography

ABSTRACT

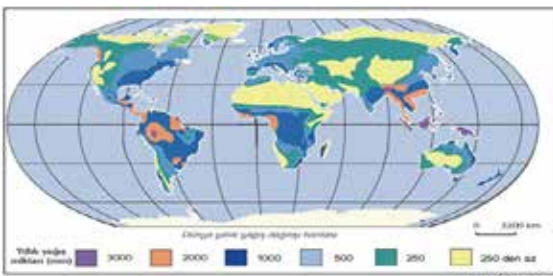
The importance of the water, which is the source of human life and all living things, is gaining more importance depending on the changes and developments in the world. Particularly, water is essential and valuable at every stage of activities that people do. Although three quarters of the world is composed of water, while it is known that potable water ratio is very low, it is a fact that it is limited and exhaustible. With the people's adoption of a sedentary life, water use began to increase at a great speed also in agriculture, industry, transportation, energy and all other services. Unconscious use of water decreased the water potential and caused water pollution and poor water quality. The precipitation conditions of Turkey are unstable and irregular due to its geographical location and local features. Turkey has a feature below the averages in terms of world water potential by its conditions.

INTRODUCTION



Figure 1: Turkey Location Map

Water resources in the world are divided into two as surface and underground. Water is one of the most important factors in the survival and continuity of states. As is known, the basic substances of the world are air, water and soil. The destruction of one of these negatively affects the others. First settlements in the world were established at waterfronts and near the water resources.



Reference: coğrafyaegitimibiz.com

Figure 2: World Annual Precipitation Distribution Map

Water, which has never lost its importance, has maintained its strategic feature until today. Being subject to transnational debates and even to wars, water is one of the world's key elements. Water is an element of power just like coal, oil, natural gas resources, etc. As in all resources and activities, also the water resources in the

world are not dispersed homogeneously. With the use of natural resources, economic activities became accelerated and people's quality of life began to increase. Also, water plays the leading role in many different activities of human life except for its feature of drinking and daily use.

While the world's annual average precipitation is approximately 1000 mm, it is approximately 643mm in our country. Oceans, seas, lakes and rivers constitute the world's presence of water. Approximately 0.3% of the water resources on earth are useable and drinkable. This ratio is quite low compared to the world population and population growth. Approximately 97% of the world's amount of water is salty water. It is known that approximately 1% of the amount of water remaining 3% is beneficial to human beings as 1.5% of it is frozen and 0.5% of it is underground.

In our country, "the surface water potential that can be consumed for a variety of purposes within the framework of current technical and economic conditions is a total of 98 billion m³ per year consisting of 95 billion m³ from the rivers within the country and 3 billion m³ from the rivers from neighboring countries coming to our country. Along with the underground water potential determined as 14 billion m³, consumable surface and underground water potential of our country is A total of 112 billion m³ per year, and 44 billion m³ of it is used"(Özkaldı,2013:6). "Approximately 75% of this is consumed in agriculture, 13% of it is consumed in industry and 12% of it is consumed as drinking water and domestic water. We pour 60% of our water potential into seas. In other words, we do not use the water 1.5 times as much the water we use yet. Therefore, it could be said that we have drinkable and domestic water which is enough for 175 million people without restricting the agricultural and industrial water. It is possible to double the capacity of drinking and potable water by a saving of 10% that can be provided in agriculture with the advanced techniques that can be used in the future"(Turfan,2011:58-59).



Figure 3: Turkey Water Basin Map

Table 1: Turkey Water Basins and the Average Annual Flow (billion m³)

Name of Basin	Average Annual Flow (billion m ³)
Euphrates and Tigris	52,94
East Black sea	14,90
East Mediterranean	11,07
Antalya	11,06
West Black sea	9,93
Western Mediterranean	8,93
Marmara	8,33
Seyhan	8,01
Ceyhan	7,18
Kızılırmak	6,48
Sakarya	6,40
Çoruh	6,30
Ye ilırmak	5,80
Susurluk	5,43
Aras	4,63
Konya	4,52
Büyük Menderes	3,03
Lake Van	2,39
North Aegean	2,09
Gediz	1,95
Meriç-Ergene	1,33
Küçük Menderes	1,19
Asi	1,17
Burdur Lakes	0,50
Akarçay	0,40
Total	186,05

Reference: Turan, F.,2002

There are 25 hydrological basins in Turkey and approximately 500 billion m³ water fall into these basins annually. We can only use 8% of this (40.000.000 m³).“ About 274 billion m³ of it turns back to the atmosphere through evaporation. While 69 billion m³ of it feed the underground water, 158 billion m³ of it to flow into the seas and the lakes in closed basins. However, 28 billion m³ of 69 billion m³ of water in the underground go back above the ground through resources. 7 billion m³ water come to Turkey along with the transboundary waters. When we look

by considering all of these, Turkey's surface water potential can be calculated as (158+28+7)=193 billion m³. Turkey's renewable water potential reaches to 234 billion m³ when we take 41 billion m³ water which fall under ground and is added to surface water again into consideration. However, it is not possible to use all these water. The amount that could be consumed is a total of 98 billion m³ in the manner that only 95 billion m³ water would come from rivers in the country and 3 billion m³ water would come from trans-boundary waters. The amount of available underground water is 14 billion m³. In this case, if it is calculated by considering the Turkey's surface and underground waters, Turkey has a total of 112 billion m³ water potential“(DS 2006). As a country with gradually increasing energy needs, the fact that we use just 20% of our HES energy will cause problems in the future such as more costly and foreign-dependent supply of needs that will arise. In other countries, this situation is as; USA 85%, Japan 80% and Norway 70%. According to this result, it is seen that we are quite far behind compared to other countries.

It was previously stated that Turkey was not a water rich country. Nevertheless, it has an extremely important place within the territory it is located and especially in the Middle East in terms of water resources. Disputes with Syria (Tigris) and Iraq (Euphrates) arise about water policies because of the fact that the waters of the Tigris and Euphrates are valuable for the Middle East. The fact that these two states ask for much more water from the specified rivers becomes a problem that occurs in political relations. “While agriculture has the highest share in the use of water in low-income countries, agriculture is replaced by industry sector in high-income countries. For example, 70% of total water in Spain, 80% of it in Greece and Portugal and 50% of it in Italy are used for irrigation. In Turkey, this rate is around 76%” (Aküzüm et al,2010,69). In developed countries, this ratio is 35% in Germany and 30% in Holland along with the precipitation and intensive conditions.

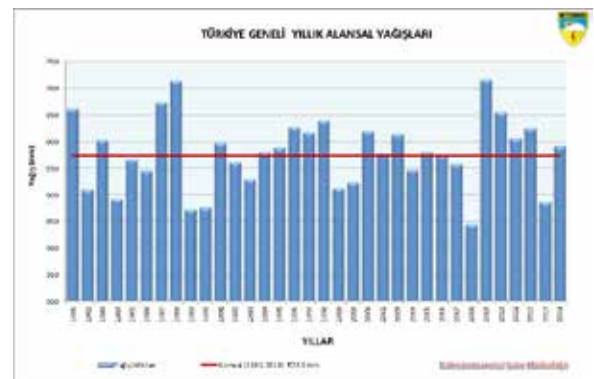


Figure 4: Overall Turkey Annual Territorial Precipitation

Depending on the geographic conditions and location, water resources do not show a balanced dispersion all around the world. Countries with more than 10,000 m³ average annual amount of water per person are regarded as water rich countries. In this regard, Canada, USA, Brazil, Russia, Norway are water-rich countries. The poorest water rich country is Israel with 125 m³. Also, Turkey is one of the candidate countries to be water poor country with 1430 m³ annually per person. While it is predicted that the average amount of water per person will fall below 1300 m³ after 2030 in Turkey, there arises a pessimistic picture for the future.” The presence of water dispersion in the world is as follows; 36% in Asia, 25% in South America, 15% in North

America, 11% in Africa, 8% in Europe and 5% in the continents of Oceania. When analyzed this dispersion, while the Asian continent is believed to be lucky, the fact that it reserves 60% of the world population indicates that the water potential is not sufficient" (Çiçek-Ataol,2009:52). Also, the other continents need water depending on the amount of population they have. Water is a strategic wealth like the other natural resources. Water-rich countries are as powerful as the countries with other natural resources.

HYDROPOLITICAL APPROACHES IN THE WORLD AND TURKEY

Starting from the Neolithic, water use has come into prominence in all economic activities carried out. All of the developed, developing and underdeveloped countries have always threatened the presence of the world's water, and all elements of the environment have been polluted along with water. However, countries that developed in terms of socio-culture, education and economy have been more sensitive to water pollution along with the environment.

The positive effect and power created by water have made countries and regions become more strategic. Nevertheless, waterborne political troubles occur in the regions and countries with less presence of water. Especially China and then Brazil with a growing economic and political power day by day began to use and evaluate the presence of water. On the other hand, significant water shortage problem is experienced especially in countries located in the African continent.

The world communities have been divided into two as agricultural and industrial society by their economic activities. In this regard, underdeveloped countries use the water in agricultural activities, and developed countries use the water in both industry and agricultural activities. In countries that are underdeveloped in all fields, non-scientific style applications are performed with considerably primitive methods in agricultural activities, especially in irrigation. The inputs of agriculture such as fertilizing and agricultural spraying come into contact with the water, and thereby, water is increasingly polluted. However, developed countries use the water for industrial and agricultural activities. They began to pollute water less than the first half of the 19th and 20th centuries. The success achieved especially in clean-up systems less pollutes both water and environment. Thus, western civilization which is seen as developed countries move studies to higher level in order to protect water and to evaluate it more effectively.

The fact that water has both economic and political value becomes the subject of trade among the countries. Especially global companies drew attention with their investments by establishing dominance over water. In the political scale, countries held water conference for the first time in 1977 under the guidance of United Nations. Along with Dublin Conference on Water and Environment in 1992, Rio Conference on Development and Environment and water policies began to be formed in the same year. Over the past years, in 1994, IWRA-International Water Resources Association recommended the establishment of "World Water Council" (WWC) in the 8th World Water Congress held in Cairo. In this regard, in 1996, the World

Water Council (WWC) was established. In 1998, International Conference on Water and Sustainable Development was conducted in Paris under the management of World Water Council (WWC). World Water Council (WWC) conducted the I. World Water Forum in Marrakech in 1997, and the II. Water Forum in Hague in 2000. From Hague, Ministerial Conference was also included in the scope of Forum. World III. Water Forum and Ministerial Conference was held on the dates of 16-23 March 2003 in Kyoto, Japan. IV. Water Forum was held in Mexico in 2006, V. Water Forum was held in Istanbul in 2009 and VI. Water Forum was held in Marseille in 2012. VII. Water Forum was held in South Korea (Daegu-Gyeongbuk) on 12-17 April 2015. In these water forums, importance of water and water safety on way to development and economical power were discussed in addition to water use and management.

Turkey has relationships with the neighboring countries about international waters (set limit), and transboundary waters. Turkey's transboundary waters are also important in terms of political, cultural and social values as well as the physical aspect. On this water scale, the issues of managing water and accordingly its use are extremely important. Otherwise, especially political issues occur.

Turkey has 5 rivers determining its borders. Therefore, these waters that draw boundaries with 5 countries are important factors in our country's policies. Transboundary waters are known to be more in the Turkey. For this reason, reflecting the power of transboundary waters to the politics of our country will be the right way.

RESULT AND SUGGESTION

The most important power of the countries will be water, soil and wheat grain in the future. Because, these three factors are the corner stones of the people and their activities. In particular, the use and management of water should be considered outstandingly.

The more specific and sensitive water policies carried out in the world should be carried out in the scale of our country.

Efficient and sustainable water policies should be adopted. It is required to take measures relating to the use and management of water resources.

Our country's foreign policy with its neighbors should be determined by considering the fact that there are many transboundary and boundary waters that form the boundaries. Turkey's power especially on transboundary waters should be made feel by the neighboring countries.

When considered necessary to protect the country's water resources, there should not be any hesitation to remove the obstacles in making legal regulations.

Water basins should be planned and evaluated ideally. Water investments should be timely and profitable.

Sectors with excessive water consumption should be informed about the importance of water and the introduction of effective control mechanisms should be priority.

REFERENCE

- Aküzüm, T., Çakmak, B., Gökalp, Z., 2010, "Türkiye'de Su Kaynakları Yönetiminin Değerlendirilmesi" [Evaluation of Water Resources Management in Turkey], Tarım Bilimleri Araştırma Dergisi, Sayı: 3, S: :67-74, Ankara. | Çiçek, I., - Ataol, M., 2009, "Türkiye'nin Su Potansiyelinin Belirlenmesinde Yeni Bir Yaklaşım" [A New Approach in Determining Turkey's water potential], Coğrafi Bilimler Dergisi, Sayı:7/1, S: 51-64, Ankara. | DSI Genel Müdürlüğü 2006 Yılı Faaliyet Raporu.[General Directorate of DSI Annual Report of 2006] Ankara. | Özkaldı, A., 2013, Su Kaynaklarının Sektörel ve Münferit Kullanımlara Tahsisli [Allocation of Water Resources to Sectoral and Individual Uses], Ankara. | Turan, F., 2002, "Türkiye'nin Su ve Toprak kaynakları Potansiyeli ve Gelişimi", Türkiye Mühendislik Haberleri [Engineering News], Sayı: 420-421-422, S:16-19, Ankara. | Turfan, M., 2011, Su Sorununa Genel Bakış ve Öneriler [Overview on Water Issues and Suggestions], TMH, Sayı: 2011/1-2, S:58-60, Ankara. | a