

# Water Scarcity in Turkey and Press Response: A Literature Review

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**Abstract:-** This literature review focuses on water security in Turkey over the past years, and it examines three foreign media articles as well as three domestic media releases published in English language over a period of six months, between January and June 2021, to address the problem of how water crisis in Turkey is framed by the media under consideration. Following a discussion and a brief history of water-stress points in the region, including Turkey, the reviewer will survey the published studies on this particular topic to identify the criteria for critical evaluation of all the selected literature under the Vreese's journalistic concept of "frame-building". The synthesis, then, will highlight factors, like power, interests and disinterests, that influence the frequency and presence in building of frames by the selected media communities.

**Keywords:-** Water; Scarcity; Turkey; Press; Review.

## I. INTRODUCTION

Water security is the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability<sup>1</sup>. (UN-Water Press, 2013)

The citation from the UN-Water Task Force on water security addresses the issue which the media community uphold as the basin of practice and feed to their sociopolitical ends.

Following the Industrial Revolution in Britain in the 18th century, global enviro-economics began to witness a gradual change. The developments brought with themselves dramatic alterations of societies, rapid growth in population and the expansion of human geographies over the past two centuries. Changes in the face of land by building mega structures and industries, as the embodiment of modernization, became a value in itself and added value to life in its due turn. Additionally, the new way of life brought with itself indispensable changes in the Earth's climate which has worried its inhabitants about the consequences, including droughts and heat. Babel et. al reveal that "the impacts of climate change will be primarily manifested through water ..." brought about by a host of changes in nature and climate condition<sup>2</sup> (2020, p. 1).

More recently, the adverse impact in supplying sustainable freshwater has become a problem in many countries around the world. Population growth and the reckless use of environmental resources to meet economic needs on the one hand, and changes in global warming on the other are exacerbating water shortage problems<sup>2</sup> (Babel et. al., 2020, p. 2). Lack of access to water pools that citizens, factories and farms depend on a limited amount of water, and even the slightest change in water supply can harm their lives and activities. This can even threaten national security and economic growth, especially if a country does not have proper water management plans. Furthermore, the escalation of global water crisis will have dangerous consequences for food and health security<sup>3</sup> (Sapkota, 2019, p. 579).

The crisis, despite its pervasiveness, may not have found as much political-security dimension anywhere else as in the Middle East. The UN reports have warned that "In the [Persian] Gulf states and in West Bank and Gaza, municipal water withdrawals account for almost half of all withdrawals<sup>4</sup> (World Bank, 2018, p.47). Besides, the reports suggest that water per capita in the Middle East region would be halved by 2025. This could be as an indication of the prospects for water crisis in the Middle East. Under these circumstances, it is significant to note that Turkey, as one of the fast-growing economies of the world over the past decades, is looking to continue and add to the growth which it has already begun by moving in the direction towards industrialization and supporting the development of the agricultural sector.

In Turkey's approaches to achieving the economic and development goal, water is considered as a cornerstone. Turkey, with rainier seasons in the Middle East and the source of watery rivers in the region, is however experiencing drought due to climate change and reduced rainfall, and the problems of water management in this country are increasing. According to the Turkish Meteorological Agency, drought is currently evident in the central Anatolia region and in Ankara province to the east. Also, central regions of Turkey, along with the Mediterranean and southeastern coasts of the country, are among the regions most affected by global climate change. Experts believe that if this trend continues, Turkey will become a poor country in terms of water resources in 20 years to come. The recent studies show that Turkey currently has 1,500 cubic meters of water per capita, but this amount will reduce to 1,100 cubic meters in 2030 and 700 cubic meters in 2040. According to Tigrek and Kibaroglu

Turkey has a subtropical, semi-arid climate with extremes in temperature. The average annual precipitation depth in Turkey is around 643mm, which is lower than 800mm, i.e. the average precipitation depth of the world (Usul 2005). Annual precipitation of Turkey is 501 billion cubic meters (BCM) and 274 BCM is assumed to evaporate from surface and transpire through plants.<sup>5</sup> (2011, p. 30)

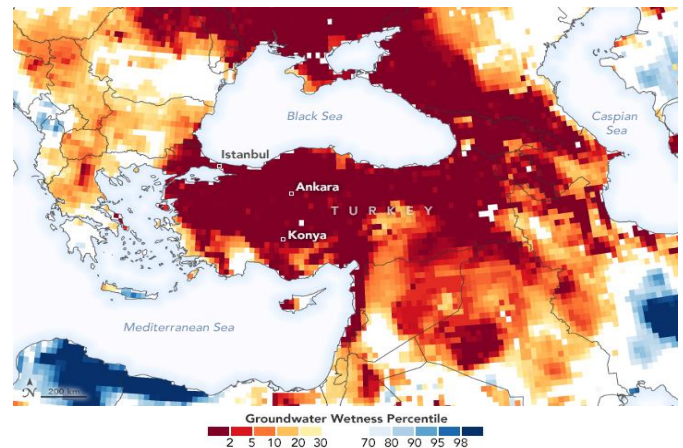
Meanwhile, more than 70 percent of Turkey's water resources are used in agriculture, and if the current drought continues, Turkey, which currently exports agricultural products, will become an importer of some products in the near future. Further, Nilgun et. al warn about the “management problems” in the river basins of Turkey urging for “the importance of the institutional and regulatory framework, and the need for direct participation of major actors and stakeholders in the decision making process”<sup>6</sup> (2008, pp. 175-6). These challenges concern collective areas, namely, state policies, academic work, industrial perseverance, population awareness and above all media responses. Under these circumstances, the role of media in addressing the issue by producing critical literature is of crucial importance.

According to Ersoy and İşeri, “Environmental communication and sustainable development are broad concepts in the literature. They have significant implications for health, security, economic, political, and environmental and geopolitical strategies”<sup>7</sup> (2021, p. 413). And, by playing the “watchdog” role, the media community are expected to observe three principles professionally in covering environmental debates, including “(i) critical analysis; (ii) balanced coverage; (iii) knowledge-based reporting”<sup>8</sup> (Norris, 2012. Cited in Ersoy and İşeri, 2021, p. 412-3). With water security in Turkey as the core issue, this paper seeks to review literature of foreign media, three articles from three different publications, based both inside and outside of Turkey as well as articles of local media, published in English language over a 5-month period from January 2021 to June 2021, to address the problem of how water crisis in Turkey is framed by media releases at the international scale.

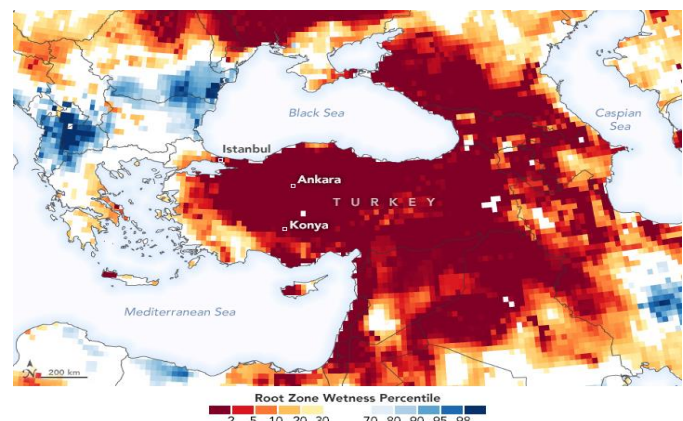
## II. WHAT DO MEDIA SAY?

### A. Foreign Media

In the article of the *Nasa Earth Observatory*<sup>9</sup> (2021, January 11), Patel discloses the dry condition in Turkey by displaying two maps showing shallow groundwater storage and estimates of soil moisture in the root zone in January 2021 (Maps 1&2).



Map 1: shallow groundwater storage as of January 11, 2021 in Turkey (cited from *Nasa Earth Observatory*)



Map 2: soil moisture in the root zone as of January 11, 2021 in Turkey (cited from *Nasa Earth Observatory*)

The colors display the dampness percentile and compares groundwater in long period, with blue areas representing more water and orange and red areas show less than usual. The measurement has been conducted by the GRACE-FO satellites.

The writer shows that the low level of groundwater in aquifers could be critically warning for Turkey as the country will suffer a main resource for crop irrigation, sustainable streams and drinking water. He visualizes the importance of issue by stating that groundwater will only rebound from drought if enough surface moisture seeps down through soil to water tables in the water-stressed regions of the country. In the article, the local media reports, Turkey's official statements over the drought and GRACE data from the (U.S.) National Drought Mitigation Center are briefly referenced to support the statement and presentations by the writer.

Another article by the *Guardian*<sup>10</sup>, published on January 13, 2021, blames the water scarcity in the major cities and in the farmlands of Turkey mainly on the “acute lack of rainfall in the second half of 2020- approaching 50% year on year for November ....” However, its approach towards prolongation of drought in Turkey, conceivable through the bulk of words and the number of allocated paragraphs, is more about criticizing development plans of the government and poor water preservation management. Akgün İlhan, a water management expert at the Istanbul Policy Center, in the interview with the *Guardian*’s Turkey bureau states that “Instead of focusing on measures to keep water demand under control, Turkey insists on expanding its water supply through building more dams ... Turkey has built hundreds of dams in the last two decades ... The warning signs have been there for decades but not much has been done in practice”<sup>10</sup> (McKernan, Jan. 2021). The writer of article also claims that Turkey has not ratified the 2015 Paris agreement and still downplays environmental concerns as it prioritizes economic growth over the global warnings reflected in the pact. Besides, Ümit Şahin, a teacher of global climate change and environmental politics at Istanbul’s Sabancı University, feeds the agenda of the British news and media website by noting that Everybody knows that water basins must be preserved, especially for these drought episodes which are becoming more severe and long term ... Yet in Istanbul, for instance, the most vital water basins, the last forests and agricultural land, [have been opened] to urban development projects ... the new airport, the new Bosphorus bridge, its connection roads and highways, and the Istanbul canal project. These policies cannot solve Turkey’s drought problem.<sup>10</sup> (McKernan the *Guardian*, Jan. 2021).

The writer then cites the viewpoint of Ekrem İmamoğlu, Istanbul’s opposition party mayor, as saying that the huge Melen Dam initiated by the ruling party to supply the city’s water needs has construction problems and its inauguration would delay for several years.

Another foreign outlet, the *Arab News*<sup>11</sup>, on January 15, 2021 follows, more or less, balanced discussion on water restraint in the city of Istanbul. Its opening sentence assign responsibility on the state officials amidst low rainfalls. “Urban planning mismanagement and a record low rainfall are considered to be the main reasons for water scarcity in Istanbul,” (*Arab News*<sup>11</sup>, Jan. 2021) the writer notes. The reference for argumentation of the *Arab News* comes from Akgün İlhan, who has also talked to the *Guardian* over the issue. She takes the same critical stance by stating that “It is true that we receive less precipitation but on top of that we also make poor use of the water falling on cities” (*Arab News*<sup>11</sup>, Jan. 15). İlhan goes on by adding that water loss in her country is due to “old and inefficient water infrastructures”, and construction of “controversial megaprojects” has resulted in the destruction of forests on Marmara coast and wetlands. The article concludes by asking the expert to suggest solutions and mechanisms to deal with the issue, which is lacking in the *Guardian*’s story. Although the report’s thesis paragraph attempts to picture its story as a balanced article, the reader finds few words about the climate change or natural events, as

the cause for water scarcity, compared to the state development plans.

### B. Local Media

In the absence of opposition groups’ English language publications in media sector, the *Daily Sabah*<sup>12</sup>, *Hurriyet*<sup>13</sup> daily and *Anadolu Agency*<sup>14&15</sup> appear to be the leading media with stories covering diverse areas of topics. The *Daily Sabah* boasts the largest coverage of the water problem since the beginning of the new year with at least eight stories, including news and articles. Despite being a pro-government media, the content of its stories are rich with description of the sensitive environmental condition of Turkey as well as the viewpoints of officials and criticism of experts. In the story in May 2021, the writer opens his discussion by conditioning Turkey’s food and water security to collective will to mitigate the impacts of emerging issue. The reader is exposed to critical gesture of the article through the interview with Levent Kurnaz, who currently serves at the Center for Climate Change and Policy Studies at Boğaziçi University, where he earnestly calls on the authorities for urgent action over water shortage. He also warns about the health risks related to falling water levels amid rising temperatures now in its second year. The expert puts forward proposals which, according to him, could address the issue in an effective way. The storyline maintains critical argument by inviting the meteorologist Hüseyin Toros, a professor at the Meteorological Engineering Department of Istanbul Technical University (ITU), to discuss the impact of increase of extreme weather condition, praising “extensive media coverage ... that increased public awareness of the issue<sup>12</sup>” (*Daily Sabah*, May 2021). While covering the news around the first Water Forum opened at the time by the Ministry of Agriculture and Forestry, the daily expands on the event by reflecting different outlooks put forward in the event. Compared to the *Daily Sabah*, the centrist *Hurriyet* daily allocates fewer publications about the drought in its English language releases, but it maintains a critical position towards the public behavior and the state policies with regard to the urban development projects and their impact on imbalances on climate behavior. In comparison, its editors are also cognizant of the principle of balancing and harmony in their stories. In the selected article, the author casts light on the concerns and seriousness of the officials in dealing with the issue when warnings from the Ankara Mayor Mansur Yavaş and the Istanbul Municipality over the lack of rainfall and the efficient use of water appear with the opening lines. The story then shifts to İhsan Çiçek, an academic from Ankara University, who states that “rainy weather would come after the second half of January, but it would not be at a promising level<sup>13</sup>” (*Hurriyet*, Jan. 2021). Çiçek attributes the rise in global temperature mainly to development plan of urban areas. He points out that this change also caused precipitation change. The daily’s debate, meanwhile, addresses the farmers’ concerns who mainly see the lack of rainfall as the cause of drought and reduction in their grain and crops harvest in the center, northwest, and southwestern provinces. “The Konya farmers would lose hope in agriculture if sufficient rainfall is not received<sup>13</sup>” (*Hurriyet*, Jan. 2021), Rifat Kavuneker, chairman of the Karatay Chamber of Agriculture, is quoted as saying.

The third local media to address the environmental issues in English language is the state-run *Anadolu Agency*. However, as with the *Hurriyet*, it has a limited coverage about the critical condition relating to water crisis. Out of the three stories available in early 2021, a short piece of news and an interview are related directly to the situation in Turkey, while the third story is a report on the marching of Turkey's celebrities, social media influencers and NGO volunteers to sympathize with the Africans' to mark World Water Day, the event organized to grab the attention of the international organizations as well as the governments amid water crisis. One of the two stories, related to Turkey and released in March 2021<sup>15</sup>, reflects the remarks by President Recep Tayyip Erdogan who, in the capital Ankara at the launch of a new Water Council, announces that Turkey is a water-stressed country and his administration is preparing new water management law. Another dimension of reporting by the agency is an interview of its writer Burak Bir with an expert, Mehmet Ekmeci, in the field who stresses the need for efforts to change people's habits and ways of using water. Ekmeci, a hydrology expert at Turkey's Hacettepe University, initially raises the global aspect of the issue by stating that "behavioral changes among individuals can help massively reduce the current levels of water waste around the world"<sup>15</sup> (*Anadolu Agency*, March 2021). He then shifts to Turkey and expresses concerns about the efficiency of water use in agricultural sector, and inadequate storage of rainwater and water loss due to evaporation. By discussing the issue in figures based on the official data, he concludes that "to ensure water security, Turkey must use all of its resources and mobilize all institutions and organizations that are directly or indirectly linked to this issue"<sup>15</sup> (*Anadolu Agency*, March 2021).

### III. DISCUSSION

#### A. How is the Issue Framed by Media?

Framing the concepts, according to Vreese, in the communication process involves frame-building, frame-setting and frame-effect<sup>16</sup> (2005, p.51). While frame-setting refers to the interaction between media sketches and audience tendency and frame-effect stresses the consequences of the framing at large, the frame-building, as the problem of this paper, focuses on the interaction between the media on the one hand and the power sources including elites, officials and movements on the other. In other words, as Hänggli notes, there are factors, like power, that influence the building of presence and frequency of frames by journalists<sup>17</sup> (2012, p. 300).

Frame building in the articles under the review is a dependent variable influenced by societal values, pressures from elites and policy makers, and ideological or political orientations of journalists. This review shows that the foreign media select and promote some aspects of the reality in Turkey's environmental condition, by defining and highlighting the problem, in such a way that communicates the theme and orientation of their social and political agenda. They try to rely on scientific facts, as in the case of the *Nasa Earth Observatory*, or official documents, data and announcements as well as the scholars and experts' viewpoints, as in the case of the *Arab News* and the *Guardian*,

to establish a causal interpretation and evaluation of the severity of condition. Treatment recommendation and remedy proposals are only made in the *Arab News* article through the words of water management official Akgun Ilhan. The approach of the *Guardian* is mainly directed towards the frequency and repetition of "failures" by the authorities, amidst the climate disparity, to create a cause and effect relation as per the enduring water stress condition. The *Arab News*, on the other hand, outlines influences by elites and policy makers to, more or less, portray the presence of balanced power in framing its article. Despite the *Guardian*, its reporting does not weigh in favor of any political current in Turkey. Besides, the *Nasa Earth Observatory* reflects the reality on the ground through its camera lenses and scientific observation while refraining from any political interpretation or recommendation.

Likewise, the local media under examination organize their stories by providing brief background information, partially impacted by societal concerns and collective ethics, external and internal pressures by elites, politicians and community as well as organizational leanings to reflect on Turkey's socio-environmental values and concerns. Nationalistic ideology and political orientations of the journalists are also instrumental in building the frames of the news articles. Among the three, the *Daily Sabah*'s approach is to out-speak the demands of society, public and officials responsibly. The presence of power in building the frame is readily traceable through the public demand on 'food security crisis' and 'water shortages' reiterated through the words of scholars and officials in the article. The frequency of 'Turkey needs to preserve all the water resources it can'<sup>12</sup>, as a demanding fact, is resonating in the story, in one way or another, through the words of experts and authorities. In the meantime, the compelling force of nationalistic drive, either organizational or ideological, presents the word 'risk' as the top-notch and powerful word in the title with the multiplication of its effect in the body of the article. The resonation of influence by the elites and professionals is also discernible, in part, in other two articles.

With reference to Norris's "critical analysis"<sup>8</sup>, as the first principle in watchdog role of media, the *Guardian* looks more critical of the government's developing plans as a major cause in the deteriorating condition. It criticizes the state for, what it calls, lacking the "political will" to solve the problem. The inclination of the article in selecting and reflecting viewpoints and the angle of analysis makes its criticism politically-oriented. It framing is what Islar and Boda refer to as "political ecology (which) provides the analytical tools needed to develop a critical perspective ... and their direct and indirect effect on the (mis)management of natural resources"<sup>18</sup> (2014, p. 15). The critical lens of the *Arab News* seems to be more balanced by framing the analytical section of the debate into "mismanagement and a record low rainfall as the main reasons for water scarcity"<sup>11</sup> (*Arab News*: Jan. 2021) in urban planning. The *Nasa Earth Observatory*'s position is scientifically dramatic representation with no involvement in the political or social interpretation of visual facts and data. The three local media have also differences in terms of their critical stance towards the issue. The *Daily Sabah*, with the larger number of

stories pertaining to the water scarcity over the five months from January 2021, pursues multi-dimensional approach to address the risks of impending situation. It spots light on the threats regarding health problems, security risks, food shortage, environmental degradation and loss of life, and sets forward demands for the authorities on the behalf of the public opinion. Compared with the *Hurriyet* daily, which cites the interview of *Demirören News Agency* (DHA) for developing the idea behind its article, and with the news-like stories of *Anadolu Agency*, the *Daily Sabah* has an in-depth reporting which challenges both the state's environmental policies as well as public behavior of water resources consumption through a 'Social Responsibility' critical angle. As for the use of scientific and knowledge-based material in the debates, none of the media articles are more telling and concise than that of *The Nasa Earth Observatory*.

#### IV. CONCLUSION

In this paper, literature of three local and three international media published in English language over the 5-month period after January 2021 about Turkey's water scarcity condition were reviewed and their mechanisms to build the frames and to develop critical analysis to address the issue were examined. The selection of media articles in English language, here, was significant to study how they sought to raise the global awareness about water scarcity condition in the country. It was shown that foreign media followed ambivalent approaches in portraying the local issue at international scale. While the British media swayed to the opposition political stance and took more critical position by selecting and promoting its agenda, the Arab-affiliated media reflected the voice and power by building, roughly, a balanced content. Besides, it was shown that the Nasa reporting adhered to a scientific method and dwelled on a dramatic presentation of the situation through its cameras and images. In the meantime, the three local media composed their stories with conformity to the dominant nationalistic ideology. However, the approach of the *Daily Sabah* appeared to be more vocal and comprehensive in dealing with the issue when it came to talk in international language. The discursive power building in the tone of its article rendered the media's agenda with socially responsible bearings.

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