

Water Crisis in Iran and Its Security Consequences

Mohammad sadegh Talebi¹

Abstract

Today, countries have become disordered due to the lack of water resources, especially safe drinking water, which has provided the basis for the formation of many crises in countries. Iran is one of the countries in the world where the water crisis has manifested itself more than other countries. In this way, it is necessary to pay special attention to this crisis that has formed in the atmosphere of the country in order to witness a favorable outlook. Accordingly, this study is aimed at investigating and analyzing the water crisis and its security consequences in Iran. Hence, the present study is conducted in a descriptive-analytical format and based on library data. The research results reveal that over the recent decades, the situation of Iranian water resources has reached an alert status, so that it is considered on the verge of entering a water crisis by many experts and some others consider it as a country with a severe water crisis. Accordingly, it is forecasted that with the current situation in Iran, this country will be propelled to a supercritical situation and the conflict will increase over water resources in Iran, in such a way that its consequences will threaten the security of cities and settlements and on the other hand, lead to environmental degradation. On this basis, considering water crisis and resolving it as a major process necessitates the use of elites and presentation of their constructive suggestions to organize the situation of water resources in the country.

Keywords: Water Crisis, Security, Iran, Consequences.

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1. Introduction

Being difficult to treat, expensive to transport, impossible to replace, water is the only element whose existence is essential for food production, economic development, and survival [1]. Nowadays, as a threat to the security of countries, water scarcity has increased its importance, being considered as a rare and valuable commodity playing a role in creating human security in the future so that many strategic experts consider water as the crises of the Current century [2]. Based on the UN reports, 1830 disputes over water have occurred in the last half century, 37 of which leading to war or the explosion of dams [3]. Given the current study's subject, Iran is located in the world's arid region, with an average rainfall of one third of the global average, so that even

¹ Department of Geography, Faculty of Humanities, Meybod University, Meybod, Iran. Email: talebi@meybod.ac.ir (Corresponding Author)



this low rainfall is associated with an inappropriate time and place distribution, making it difficult to achieve and creating many tensions and conflicts at the regional and local levels. Based on the water crisis indicators, Iran is one of the countries having a severe water crisis, and by 2025, it will move towards a supercritical state disrupting the security of the Iranian people, so that many Iranian officials have adopted many water policies for water transfer from the Caspian Sea and the Persian Gulf and the construction of desalination plants with a high cost, some of which have been implemented. According to the abovementioned index, to maintain the current situation until 2025, those in charge (authorities) should be able to add 112% to their extractable water resources, appearing impossible given the facilities and water resources available in Iran [4]. Regarding to the water resources status and its importance in the future as well as its impact on the dimensions of life, particularly the security dimension, researchers recognized it necessary to pay attention to this issue for informing the public and especially officials. The present paper is prepared in this regard.

2. Theoretical Discussions

2.1. Crisis

It is a factor threatening human being life and suddenly affecting a wide range of human life, including biological, social, security dimensions, etc. Crisis stands for a situation showing a degree of threat to people's lives, health, and livelihoods. Most crises are silent and simultaneously potential to create harm, and when this dormant factor is activated, it necessitates a quick response [5], or it is an accident occurring naturally or by humans suddenly and increasingly, imposing hardship and difficulty on human society so that basic and extraordinary measures are required to eliminate it [6].

2.2. Security

It refers to being fearless and safe, fearlessness and safety, and becoming safe and secure [7]. On the other hand, security shows a situation in which all the society's citizens may enjoy all their legal rights in the absence of obstacles [8]. In the end, security is linked to the survival of the soul besides the protection of life [9] and without security, human life coincides with the destruction of life as well as the feeling of insecurity and fear for him/her.

2.3. Hydropolitics

The geopolitics of water or hydropolitics studies "the water's role in the relations and conflicts of human communities, nations, and governments, whether within countries or between them with transnational, regional, global, and international dimensions" [10].

2.4. Water crisis

It is a situation where the amount of available water resources is less than the amount demanded in a region or a geographical area and available water resources' amount cannot meet human needs such as agriculture, industry, and drinking. In simple words, it occurs when the amount of water available in a watershed is less than the amount of water demanded in that area And this imbalance will continue to intensify [11].

Iran is located in the south of the northern temperate region, between 25 to 40 degrees north latitude and 46 to 64 degrees east longitude [12]. Geographical location, rainfall regime, and annual rainfall, as well as the temperature conditions have made our country (Iran) one of the arid and semi-arid regions in the world [13].

Given the above, known as the main source of water resources in the country, the average

precipitation is between 250 to 300 mm [14]. Considering the extent and average annual precipitation, about 412 billion cubic meters of water is achieved, 270 billion cubic meters of which evaporate and 130 billion cubic meters, i.e. about 31% is transferred to the country's aquifers [15]. In Iran, precipitation has a heterogeneous spatial and temporal distribution. With an area of about 30% of the country, the northern, western, and southwestern halves of the country have about 52% of rainfall and 70% of runoff, while 70% of the country, about it produces 44% of Iran's rainfall and 30% of its runoff [16]. Given this amount of rainfall in the country, 318 billion cubic meters, i.e. about 78% is owing to the rainfall in mountainous areas and just 92 billion cubic meters, i.e. 22% on the plains [17]. In terms of temporal distribution of precipitation in Iran, given the Iran's location in the arid region, the temporal variation of its precipitation is very large. This is while in rainy years, the average precipitation enhances from 250 mm to 380 mm and in years with low rainfall, it reduces from 250 mm to 155 mm. Consequently, Iran is an arid country with very low and insignificant rate of precipitation, and the same amount of low rainfall unevenly falling in Iran every year is equal to one third of the world average annual rainfall, which is about 860 mm. In table number (1) various indicators of Iran and the world are presented. Figure number (1) shows the comparative status of these indicators.

Table (1). Comparison of precipitation and evaporation (evapotranspiration) in millimeters in Iran and the world [14]

World	Iran	Factor
860	242	Precipitation
1132	900	Potential evapotranspiration
485	180	Actual evapotranspiration

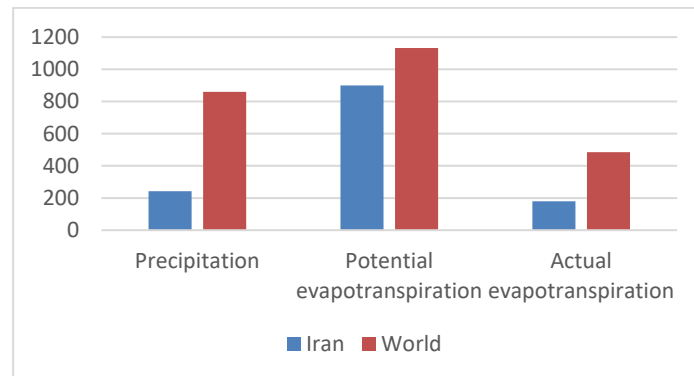


Figure 1. Comparison of evaporation and precipitation (evapotranspiration) in millimeters in Iran and the world [14]

Given Iran's geographical location as well as its climatic situation, it may be concluded that Iranian water resources are not in a good condition. According to the World Bank reports, the annual reduction in fresh water resources in Iran from 1987 to 2002 was 56.7, equivalent to 72.9 billion cubic meters. Over the mentioned years, this annual reduction in domestic freshwater resources in Iran has been 8.6 times more than the UK, 3.3 times more than the US and 2.7 times more than Japan, and based on the forecasts, this reduction in Iran is about 5.5 times more than rich countries, 3.7 times more than poor countries, and 8.9 times more than middle-income countries [18]. According to the water resources situation in Iran, based on the data and figures proposed by water experts and scholars, and given the official statistics and experts' belief, Iran is on the verge of entering a water crisis and in the future years, the situation of water resources in

Iran will worsen, becoming one of the biggest challenges of the country in many provinces, cities, and regions [4]. According to the hydrologists' forecasts, the per capita water resources in Iran that was 7025 cubic meters per person per year in 1990 will decline to a figure between 776 to 860 cubic meters by 2025, in fact being a warning for the country. Global water consumption rate is 150 liters per 24 hours. In Iran, this figure is 320 liters and it even reaches 400 liters in some cities [3]. Based on the conducted research, the current state of Iranian water resources is because of the high consumption and inappropriate temporal and spatial distribution of precipitation, followed by unsuitable water distribution in the country's geographical areas, population growth, besides heterogeneous expansion in agriculture and industry. The situation will get worse in the future [19].

Some places in Iran have neither surface water nor usable groundwater, so that their drinking water is supplied either via water transfer, by water tankers, or by desalination of saline water using water desalination machines (Ibid: 28). According to Figure 2, we find that the total water used in Iran is 97.8 billion cubic meters per year, of which 92.5% is used in agriculture, 1.5% in industry, and 6% in cities. [5].

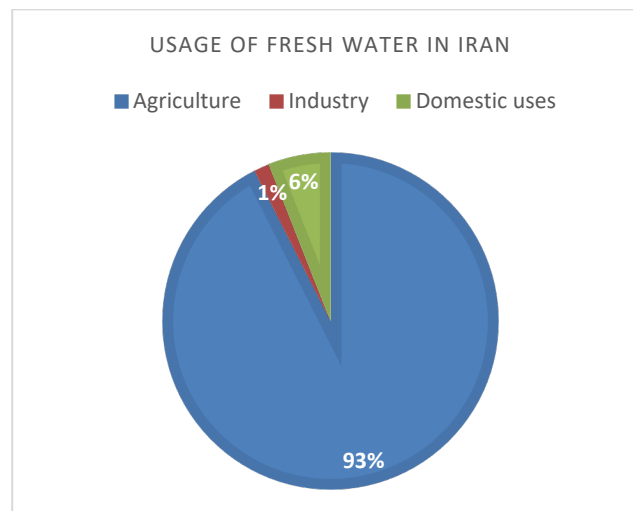


Figure 2. Usage of fresh water resources in Iran [18]

3. Water Crisis in Iran and Its Indicators

The water crisis is Iran and the Middle East's key issue today and in the future, ignoring it can create many deadly problems in the future. In recent years, water crisis issue has been considered in Iran and simultaneously, its role has changed from an ordinary and everyday commodity in the past and it is now considered as a "security" commodity affecting the lives of human societies. In other words, today many researchers, scholars, and experts in the field of water have done many researches on the water crisis issue in Iran and given warnings and current figures of water situation in Iran to officials and governors. All the figures show the lack of water in Iran, saying that Iran will experience a severe water crisis by 2050. The situation of water shortage in this climate is normal in Iran given its climate with an arid and semi-arid climate, but this factor does not solely indicate a water crisis in Iran, and there are other reasons for this environmental risk. Besides environmental and natural phenomena like droughts, climate change, and rising temperatures, as well as evapotranspiration, Iran's water crisis is rooted in unbalanced population distribution and growth, mismanagement of water resources, the agricultural sector's inefficiency,

rampant urban growth, and lack of proper consumption culture as well as attention to the real value of water [20]. In terms of water crisis, Iran is ranked 14th among 116 countries, indicating the unfavorable situation of water resources in Iran and prevailing water crisis [21].

At present, Iran is facing periodic tensions and as the population grows, it will move towards permanent tensions; since given the increase in population in previous years, the renewable water per capita in Iran has decreased from 5500 cubic meters per capita to less than 2100 cubic meters from 1961 to 1976, and then to 1750 cubic meters in 2001. With this population rate and upward trend in Iran in 2006 with a population of about 70 million people, the renewable water per capita in the country was about 1670 cubic meters per year; this renewable water per capita in the country is expected to be less than 1250 cubic meters in 2021 for each person [14].

4. Water Scarcity Indicators

To determine the dehydration or flooding degrees in an area, some indicators and criteria have been considered. These criteria employ the water per capita or the amount of renewable water per person per year in each country; however, since this amount is a basic and fixed figure each year, water experts have proposed another criterion as the country's annual population to determine it. If they want to determine the dehydration or flooding degree of a geographical area, they attribute the two to each other. The most significant one of these indicators are the Falkenmark Index, the United Nations Index, and the International Water Management Index. Based on the first index, Iran's water resources situation is on the verge of water crisis and according to the other two indicators, Iran's water resources are in a state of severe water crisis [13].

4.1. Falkenmark Index

This index calculates the annual renewable water resources of each country. If the per capita water amount in each country is 1700 cubic meters per year, that country is experiencing a state of tension, but if this amount is reduced to 1000 cubic meters per year, it will be introduced as a deficit index. With renewable water per capita of 1718 cubic meters in 2011, Iran was on the verge of entering a water crisis [22] and in recent years, with the increased population, Iran definitely is one of the countries with water shortages or water stress².

4.2. UN Index

"Ruskin et al. are researchers in the field of sustainable development of the UN who have defined the water scarcity index in terms of the percentage of annual extraction³ from the country's renewable water resources, according to which, when the country's water extraction exceeds 40% of the total renewable resources, that country is experiencing a severe water scarcity" [31,15]. At present, given this index, the rate of water consumption in Iran is 76% based on various studies conducted by the Ministry of Energy, and in studies performed by Hwaxter and Hwang in 2002 for the period 1995-99. The water extraction and consumption rate in Iran has been estimated 72.9%. It may be acknowledged that Iran is now facing a water crisis (Ibid: 411). Based on the forecasts made by the UN, Iran will be one of the countries facing chronic water scarcity by 2025 [5].

² When a geographical area does not have sufficient water resources, it is said that the area is experiencing water shortage or water stress.

³ withdrawal, abstraction

4.3. International Water Management Institute (IWMI's) Index

To investigate the water resources situation, this index simultaneously examines and uses the current percentage of water extraction in relation to the total annual water resources and the percentage of water extraction in the future in relation to the current water extraction [22]. According to this index, Iran is in a state of severe water scarcity [4]. Based on the abovementioned indicators, to maintain its current status by 2025, Iran must be able to add 112% to its extractable water resources, and given all the existing facilities and status of water resources in Iran, this amount will not be possible at all (Ibid: 5).

5. Causes of Water Crisis in Iran

The water crisis in Iran has existed for several years by now, so that according to the abovementioned indicators and criteria, the water crisis in Iran is severe and Iran will be in a worse situation by 2025. I.e. all parts of Iran will soon dry up like Gavkhuni wetland. However, researchers and experts in the field of water in Iran have identified various causes and factors for the current situation, including:

5.1. Climate change

“one of the major causes of drought and water crisis in Iran is climate change since due to the geographical location of Iran and annual fluctuations in rainfall due to drought and climate anomalies, this factor is also a major factor playing role in Iran's water crisis, resulting in many problems” [19]. Given the climate change in Iran, like other countries in the Middle East, the average temperature of Iran has risen by 2 degrees and its average annual precipitation has decreased by 20% [15]. Due to this climate change in Iran, the temperature increases and the evaporation rate increases, too. This amount evaporates water more so that the evaporation rate in Iran is about 70%, i.e. a large amount of water evaporation, and this may reduce the amount of water entering the aquifers while resulting in drying many wells and underground aquifers. Nowadays, more than 85% of aquifers or in other words, groundwater sources have dried up and have lost their potential [23].

5.2. Population growth

This is another major factor playing a significant role in intensifying the water crisis in Iran. The population rate has been increasing during the second half of the last century compared to the first half. Naturally, as the population rate increases, the demand for water increases, too. Based on the country's statistics, its population has reached more than 80 million people and with this growth rate, Iran is forecasted to be one of the top 10 most populous countries in the world by 2025 [18, 20]. The high growth rate of Iran's population, which reached 3.8% during the war years, caused its population to increase from about 50 million in 1986 to 76 million in 2011 and more than 79 million in 2016 [24]. In accordance with the upward trend of Iran's population, the renewable water per capita in the country has declined from nearly 13,000 cubic meters in 1921 to about 1900 cubic meters in 2006, and researchers say that in case of the continuation of this trend, the situation will worsen in Iran. Besides, they predict that in 2023 (solar year 1402), the country's renewable water per capita will increase from 1830 to 1530 cubic meters per year [25]. According to available data and research performed by researchers, “Iranians do not play a major role in the country's water crisis, since people consume only 7% of the available water, and in case of saving 20% in their consumption, only 1.5% of water in the country is saved” [4]. Therefore, it is recognized that the population is not the only reason for the water crisis in Iran, and other factors have certainly played a role in creating this crisis.

5.3. Industries growth

Today, given the industries growth and their water usage, about one percent of the country's fresh water is spent on industries, so that water experts claim that the industries growth is one of the main causes of water crisis since most industries are water-consuming on the one hand, and are mostly located in polluted cities on the other hand. Thus, their effluents enter agricultural lands and rivers, finally polluting their water. On the other hand, the country's two major industries and pole are located in the arid regions of Iran, i.e. Isfahan and Yazd. According to estimates, 80% of Iran's steel and iron is produced in Isfahan and Ardakan city in Yazd province is supposed to become the country's steel center and pole [26]. Thus, the industries growth in the country's arid areas whose water is supplied by transferring from elsewhere is due to officials and artisans' mismanagement. According to the principle of Law on Sustainable Development, the steel and iron industries should be located by the sea (ibid: 422) in order to use seawater, not domestic fresh water, in order to supply their water for cooling equipment.

5.4. Unprincipled Dam Constructions

Given the construction of dams in the country without proper planning, it can be claimed that one of the water crisis causes and factors in Iran is the improper construction of dams throughout the country. Based on the statistics provided by Iran Water Resources Management Company in 2022, 647 out of 1366 dams in Iran are under operation, 146 are under construction, and 573 are under study [14]. Nevertheless, the construction of these dams in the country has had both positive and negative aspects, so that some of them have helped agriculture and urban water supply, and some others have resulted in the drying up of lakes, wetlands, and rivers, with its negative effects much greater than its positive effects. For instance, Gotvand Dam may be mentioned, leading to the transfer of Gachsaran mine's salt to the Karun River and salt water to agricultural farms in Khuzestan province and thus the destruction of hundreds of hectares of agricultural land and palm trees in this area [15] or Lake Urmia can be referred to, losing the lives of many animals with the construction of many dams on it and now being a lake empty of water.

5.5. Inefficient Agriculture

Another factor in the water crisis in Iran is improper or incorrect agriculture or in simpler terms, inappropriate irrigation methods in the agricultural sector from water resources [26]. Most of our farmers use flooding method to irrigate their lands or chemical pesticides to eliminate pests of their crops [20]. Every year, 15% of the country's area is cultivated and about 93% of water consumption is related to agriculture [4]. Thus, it should be announced that in recent decades, the policy of agricultural development and self-sufficiency in agricultural products at any cost could be considered as the main cause of the water crisis [24], i.e. factors like achieving self-sufficiency and agricultural production, extraction from surface and groundwater resources, uncontrolled development of agricultural lands, and moving towards a pattern of cultivation of water-rich and not necessarily expensive crops have been seriously implemented, with the result of consumption of 92% of Iran's total resources in the agricultural sector (Ibid: 2). It is worth noting that water consumption in Middle East's agricultural sector is 84% and in Africa is 82% [26].

5.6. Lack of Proper Water Consumption Culture

The lack of a proper culture for water consumption is another factor causing excessive water waste in Iran. Although the share of domestic consumption of fresh water in Iran is about 6%, this six percent is improperly consumed. As a solution by this study's authors, in places with severe water crisis and weak consumption culture, the Ministry of Energy should train the proper water consumption culture and even pass it on to future generations.

5.7. Improper Management

Another factor in the water crisis is the lack of management and improper monitoring of water resources and water experts on domestic levels of the water crisis clearly state that today's water challenge is mostly because of mismanagement of water resources and misdirection compared to the lack of precipitation, high annual evaporation, and periodic droughts [23]. Nine to 10 institutions in the country are responsible for managing various aspects of water, but in this issue, the role of the three Powers (legislature, executive and judiciary) is bold; however, the Ministry of Energy is the main water management institution [11].

6. Security Consequences of the Water Crisis in Iran

The water crisis has had many social, political, economic, environmental, and security consequence that should not be ignored. Whether owing to lack of rainfall and numerous droughts or a sharp and uncontrolled increase in extraction from aquifers and groundwater resources, as a serious threat, the water crisis is followed by many negative consequences [27]. Considering the importance of water and its shortage in recent years and its resulting security implications, crises caused by water resources shortage have become one of the key issues in political geography, creating hydropolitics knowledge. In recent years, this water shortage has led to a bunch of tensions and competitions between countries over water governance, and many conflicts and tensions have occurred between different settlements over the use of water resources at the national and local levels. This may endanger the security of the country and areas under this crisis, both domestically and foreignly [3]. In recent years and now, the water crisis in Iran has had many consequences, such as security consequences for residents of the western, southern, northwestern, and southeastern regions of the country. We are facing the phenomenon of dust and fine dust in Sistan and Baluchistan and Khuzestan provinces, the main cause of which is drought and water scarcity in the last decade in these two provinces' basins, so that the lives and economic security of the people in these areas are in danger. Thus, and they are forced to migrate to the central, northern, and northwestern regions of the country and settle on the margins of cities and metropolises, particularly Tehran, Karaj, and Mashhad to save their lives, all these increasing the pressure on environmental resources and disturbing the balance between population and natural resources [15]. It is forecasted that in case that migration because of drought overlaps with migration due to dust, large populations of the country will be displaced, estimated at up to 50 million people in the future (ibid). In their research in South Khorasan cities, Zarghani et al (2017). claimed that industry and population growth, lack of precipitation, persistence of drought, and uncontrolled extraction of groundwater resources are included in the key factors in the water crisis and scarcity in this province. Local and regional tensions have made the development process difficult and have caused various types of insecurity in the province, besides local and regional tensions, hampering the development process and causing various insecurities in the province [9]. In another study performed in Gonabad region, they consider the water crisis as the main cause of tensions and disputes among the residents of this region, changing the security so that the more rainfall and water resources in this area decrease, the more the rate of disputes and conflicts among

the inhabitants of this region increase. Beside, as the precipitation rate increases and its underground aquifers become stronger in terms of water extraction, the more the war and conflict between them decreases [28]. Environmental threats to national security like military and economic threats also damage the governmental material bases and may even progress to the extent that threaten the governments' ideas and institutions [27]. In spite of the water crisis in Iran, its mismanagement, and its increase in the future, it is forecasted that in the near future Iran will have to spend heavy budgets for the construction of desalination plants in the Caspian Sea and the Persian Gulf and transfer their water to various parts and supply drinking water of the country, particularly in its central areas. This heavy cost is very worrying for the officials and politicians to face the water crisis, in the future of Iran. Another security consequence of the water scarcity in Iran is related to the agricultural sector. Since a large part of Iranian national economy depends on agriculture, water scarcity and droughts in recent years, which will definitely intensify in the coming years, may be a challenging factor in the country's national and economic security; because the share of this sector in GDP is 11.4%, besides supplying 25% of employment, 23% of exports of non-oil goods, 80% of the country's food, and 90% of the industry's raw materials needs [5]. Based on the above figures, it is recognized that Iran's economy relies on agriculture, and intensification of the water crisis in the future will diminish the role of agriculture in the country's economy to the extent that it will disrupt its security. The drying up of wetlands and lakes is another security consequence of water crisis in Iran; since wetlands are one of the main areas for many animals' life, besides providing many human needs. The importance of these wetlands may be their high biodiversity, migratory bird habitat, crop water storage, feeding aquifers, pollution reduction, tourist attraction, and industrial, medical, economic, and employment uses, besides food and water supply sources and growing livestock, being important to the people around them. Any threat to their lives will endanger their security, leading to the migration of residents around these wetlands to cities and increasing unemployment [15]. Based on the estimates made in Iran, there are 236 small and large wetlands, 20 of which are internationally important and 14 have dried up by 2001. Given the reduced water inflow of Zayandeh Rud River and the emergence of water crisis, Gavkhuni wetland I now dried up; or we can refer to Urmia Lake or Hamun Lake that have become acute because of droughts and water crises, now being among the wetlands and lakes with adverse security consequences since the lives of the inhabitants of these lakes' shores have become difficult. The destruction of many plant lives, forests, and the environment is another security consequence of the water crisis in Iran. Iranian natural ecologists estimate the country's forests and pastures destruction at 360 cubic meters per second. Annual water erosion exceeds two billion tons, with an average of 33 tons of soil per hectare. Every year, the deserts of Iran increase by one million hectares. The amount of sediment entering the three (Karun, Dez, and Sefid-rud) dams is more than 50 million cubic meters per year, all happening in a country 52% of which has less than 200 mm of precipitation per year and 70% of its area lacks a permanent river. This is while in a country like the US, there is 17 tons of soil erosion per hectare annually [24]. Externally, Iran has seven neighboring countries that may lead to a wide range of insecurity inside and outside the country in terms of common water resources. For instance, the Iran-Iraq war over Arvand River can be mentioned, certainly creating a wide range of tensions and insecurities between the two countries over the governance of Arvand River and disrupting the security of the western inhabitants. Moreover, the policy of Turkey and Syria on the Tigris and Euphrates can be referred to, decreasing the amount of water of the Tigris and Euphrates Rivers entering Iraq by construction of the Ataturk Dam by Turkey and the construction of the Tabqa Dam by Syria and creating dust in the downstream country [Iraq] besides increasing dust and insecurity in some parts of Khuzestan and people from the western regions are forced to

migrate to the central regions to save their lives. “Today, many hydrologists and even politicians in various countries all over the world believe that the way of consuming the world’s water resources and the way of dividing them will be one of the causes of wars in all parts of the world. According to them, water is not an abundant commodity with no economic value anymore; but it is a commodity without alternatives, with great economic value, and it is consumed in all fields” [1].

7. The Association between Water and Security

Given the concept of water and security, it is acknowledged that although the two have not been previously in close relationship, their relationship has deepened today due to water scarcity in the world and particularly in Iran; since human life is impossible without water. Nowadays, water is known as a security and expensive commodity throughout the world, so that the world’s security is based on the lack or presence of water in the future. According to the forecasts of water experts, the third world war is over water, not oil, i.e. many countries in the world will face a water crisis by 2025, and their security will be endangered in such a way that tensions and conflicts for the competition for water governance in the world will increase, changing their security, as commander-in-chief Rahim Safavi, the military advisor to the Supreme Leader of the Islamic Republic of Iran, states that water and energy crises are closely related to national security, national defense, comfort, and progress” [15].

8. Discussion and Conclusion

Today, considering the position of water and its key role in human life, its significance to human beings has doubled as it is forecasted that future wars will be over water, not oil. Given its geographical location and arid and semi-arid climate, our country, Iran is one of the countries where the water resources’ condition must be properly managed and maintained. Over the recent decades, Iran’s water resources condition has reached a state of crisis, so that many consider it on the verge of entering a crisis while others consider Iran as a country engaged in a severe water crisis. According to the Ministry of Energy’s available documents and statistics, Iran is now experiencing serious water problems. Consecutive droughts with over-extraction of groundwater and surface water, population growth in recent decades, inefficient agriculture, and mismanagement and lack of consumption culture, besides the global warming phenomenon are major factors playing a role in creating water crises in Iran. Domestically, this crisis and the resulting tensions over water resources may be one of the major and war stimulus factors in the society, the most obvious instance of which is Zayandeh River and its problems. It is forecasted that with the current situation, the country will be propelled to a supercritical situation and wars over water resources will be intensified in such a way that the consequences will threaten the cities and settlements’ security, endangering the environment and the safety of vegetation and animals. Hence, water crisis or its scarcity is one of the most dangerous environmental crises, with a deep connection with security, and given its scarcity in the future decades, it is of paramount importance considered as an essential and security commodity whose absence will affect the country’s security, defense, and development.

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