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Water Scarcity and Its Discontents: Conflict, Migration, and Inequality in Iran with a Focus on Urmia and Ahvaz

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Abstract
Iran has had significant water scarcity for more than twenty years, positioning it among the nations with the greatest degrees of water stress. This dire scenario has led to macroeconomic, social, and political issues, such as heightened urban and rural migration, economic instability, and environmental deterioration. The document examines significant occurrences and public demonstrations about water difficulties across various regions of Iran, specifically from the south to the north, up to 2023. The document directs particular attention to the protests related to the desiccation of Lake Urmia and the unrest in Khuzestan, which illustrate the overarching national dilemma. We examine the effects of water shortage on urbanization, agriculture, and public security, highlighting notable regional disparities and the influence of climate change in intensifying the situation. The paper continues by highlighting the imperative for sustainable water management strategies and the acknowledgment of water as a fundamental human right to alleviate future socio-political and economic problems.

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Introduction

Iran, due to its location in an arid and semi-arid region, faces a water crisis and has always experienced conflicts with neighboring countries over the management of shared water resources, which have sometimes led to verbal disputes and even military confrontations. Due to their long borders, Iraq and the former Ottoman Empire have experienced the most disputes with Iran over borders and shared resources. Afghanistan is the second country with significant conflicts over shared water resources with Iran, primarily due to its extensive poppy cultivation and the growing demand for agricultural water. This failure to allocate water rights from the Helmand River to Iran has resulted in the drying up of Lake Hamun and the destruction of Sistan's agricultural sector. Historical evidence shows that whenever Iran has faced severe drought and a water crisis, not only have tensions within the social structure increased, but in some cases, these tensions have also resulted in instability and created grounds for the collapse of the ruling political system. As some studies indicate, the drought of 1905-1906 led to widespread protests in Iran and even paved the way for the fall of the Qajar political system [1].

In recent years, the water shortage crisis has become so prominent in various parts of the world that some scholars and researchers have discussed the possibility of wars in the 21st century, not over oil or land, but over freshwater resources—resources that are not only essential for all living beings but also drive development and are critical for economic and industrial prosperity in modern societies. The water crisis weakens and traps civilizations [2].

[1] Abramian, Ervand. Iran between Two Revolutions. Princeton, NJ: Princeton University Press, 1982, p103.
[2] Abbas Hatami and Sousan Nourbakhsh, "Semantic Reconstruction of the Water Crisis in Eastern Isfahan Based on Grounded Theory," Applied Sociology, no. 30 (2019): 123-142.

This problem is more pronounced and tangible in the Middle East and North Africa, and because of its location in this region, Iran is susceptible to a water crisis.

Iran shares land borders with seven countries, with a total length of 1,010 kilometers. The length of Iran's shared border with Iraq in the west is 1,908 kilometers (the longest); with Turkmenistan in the northeast, it is 1,190 kilometers; with Pakistan in the southeast, it is 925 kilometers; with Afghanistan in the east, it is 919 kilometers; with Azerbaijan in the northwest, it is 757 kilometers; with Turkey in the northwest, it is 566 kilometers; and with Armenia in the northwest, it is 45 kilometers (the shortest). These countries are considered Iran's land neighbors. Among Iran's neighbors, Turkey has the highest annual rainfall, at 593 millimeters, while Turkmenistan has the lowest, at 161 millimeters [3].

However, in terms of renewable water resources per capita, Turkmenistan, with 4,302 cubic meters per year, has the highest, while Pakistan, with 1,253 cubic meters per year, has the lowest amount of renewable water per person. Inefficient policies, particularly in the agricultural sector, have significantly impacted Iran's water resources, leading to the depletion of a large portion of the country's groundwater resources and the seasonality or non-reach of many permanent rivers. This has resulted in the drying up of wetlands and the formation of internal dust storm sources.

Renewable energies are replacing fossil fuels in the global ecosystem. Nuclear and solar energy have gradually reduced humanity's dependence on fossil fuels. However, humanity's decreasing need for fossil fuels and industrial societies has not diminished the strategic importance of the Middle East. Why? The intense competition for water resources in this region could potentially lead to global war and conflict [4].

Homer-Dixon believes that future wars and civil and social violence will mainly arise from the scarcity of water, food, forests, and fisheries. Nazli Chouiri and Robert Forth argue that the First and Second World Wars were primarily fought over scarce and non-renewable resources, while both modern countries and those heavily dependent on renewable resources will clash over both types of resources in the future [5].

Thus, water, as a resource for meeting human needs, can challenge national security in the event of scarcity and crisis. With the expansion of the dangerous phenomenon of water scarcity, more than 11 countries with a combined population of over 811 million people are currently facing a water crisis. If the current trend continues, by 2050, this number will reach 11 countries with a population accounting for approximately two-thirds of the world's total population.

According to a United Nations report, in the last half-century, more than 5381 water-related conflicts have occurred globally, 81 of which have resulted in wars or dam explosions. The Middle East's water crisis and the Persian Gulf region's geopolitical significance underscore the crucial role of water resources in these countries. Most Middle Eastern countries are deficient in freshwater resources, and by 1970, they had already developed a strategic need for water [6].

The severity of the water crisis in the Middle East is such that, within the next 11 years, many countries in the region will be unable to meet their agricultural, industrial, and drinking water needs. Currently, over 11 countries in the world are facing water shortages, of which 8 are located in the Middle East. Given the importance of water in determining the fate of humans and societies, the concept of water geopolitics, or hydro-politics, has gained significance.

According to United Nations forecasts, Iran is among the countries that will face chronic water shortages by 2025. Many of the water resources in Turkey and the Middle East are located in the eastern part of the country, precisely where terrorist groups are active. Terrorist tensions in northern Iraq and Syria are also aimed at gaining access to vast water resources in eastern Turkey, and a deeper analysis of the issues in Syria and Iraq reveals that this matter follows the pattern of an invisible water war [7].

The conflict between Palestine and Israel has also revolved around the Jordan River basin since the establishment of Israel. Bangladesh, India, and China have serious disputes over the Ganges and Brahmaputra rivers. Ethiopia, Egypt, and Sudan remain in conflict over the filling of dams on the Nile's branches. Similarly, the ongoing water tensions between India and Pakistan over rivers such as the Indus serve as further examples. Iran and Afghanistan have fundamental disputes over the Helmand and Harirud rivers. The construction of 28 dams by Iran on the Harirud River and the initiation of water storage at the Kamal Khan Dam in Afghanistan during the Taliban's rise to power have heightened concerns about the potential for water wars. Therefore, we can assert that nature continues to influence politics.

Iran is located in one of the world's driest regions and is among the highest-risk countries in terms of water resources. Moreover, Iran is one of the top ten producers of fruits and vegetables in the world. This ranking highlights the dire state of watershed management and water resource governance in the country [8].

Agriculture uses ninety-three percent of Iran's water resources. This means that for every kilogram of watermelon exported, Iran effectively exports 286 liters of water. The pressure to achieve self-sufficiency in wheat production after the Islamic Revolution placed a significant burden on Iran's water resources. The overuse of water, especially in water-rich areas like Khuzestan and Azerbaijan, has led to the drying up of 297 plains, while 40% of Iran's water network is now outdated. Additionally, with policies aimed at increasing the population, water consumption in urban areas has also risen significantly [9].

The uncontrolled construction of dams during Hashemi Rafsanjani's presidency marked the beginning of a crisis. The Gotvand and Chamshir dams, along with several dams built on the rivers feeding Lake Urmia, turned the lands of Azerbaijan and Khuzestan into barren deserts. Azerbaijan drilled numerous deep wells, and what was once Iran's center for grain and fruit production gradually transformed into a

[3] Statistical Center of Iran, Statistical Yearbook of the Country, 2019 (Tehran: Statistical Center of Iran, 2019).
[4] Janparvar, Mohsen, and Farid Abbasi. "Iran-Turkey Relations from a Water Perspective." Human Relations, 2021, 44-56. https://doi.org/10.22304-qahr/2021/270.
[5] T. F. Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," International Security 19, no. 1 (1994): 5-40.
[6] UNESCO and UN-Water. UN World Water Development Report 2023. Paris: UNESCO Publishing, 2023.
[7] İbid.
[8] Top 10 Fruit and Vegetable Producing Countries, Shoaresal, accessed January 8, 2025, https://shoaresal.ir/fa/news/100927.
[9] "Iran Consumes 93 Percent of Its Water Resources for Agriculture," Fararu, accessed January 8, 2025, https://fararu.com/fa/news/208666.

hub for pistachio cultivation. The rivers feeding Lake Urmia bore seventy-four poorly planned dams. Overuse of groundwater led to water subsidence in central Iran. The policy of dam construction continued, and instead of resolving this crisis, large tunnels were built to divert water from the Karun River's tributaries to central Iran, exacerbating the disaster.

The Kohrang and Behesht Abad tunnels annually transfer more than 770 million cubic meters of water to central Iran. Instead of managing water resources properly, these regions use the transferred water for industrial purposes such as pelletizing and steel factories. The situation worsened to the point where rice cultivation, an inappropriate use of Karun's tributaries' water, began in Isfahan [10].

Experts also criticized the implementation of the sugarcane cultivation and agro-industry project, one of the largest and most water-intensive agricultural projects, in Khuzestan Province. The excessive water consumption of this project created problems for Khuzestan's rivers, especially the Karun River, sometimes exceeding its flow rate of 210 cubic meters per second. The project cultivated sugarcane despite its high irrigation needs during the hot season, neglecting more reasonable alternatives like sugar beet cultivation [11].

A severe decline in rainfall was another factor that aggravated the drought crisis. The expansion of anti-hail system sales in Azerbaijan and orchard regions prevented the aggregation of rain-bearing clouds. Furthermore, the release of industrial and mining waste into rivers led to the contamination of drinking water supplies. Examples such as the Varzeqan mine and the Haft-Tappeh sugarcane project standas evidence of this disaster.

According to the Research Center of the Iranian Parliament's study "Assessment of the Drinking Water Stress Situation in the Country in 2021," water stress could potentially escalate into a widespread crisis. After referring to the history of water tensions over the past decade, they wrote: "Tensions resulting from a shortage of drinking water quickly manifest as social dissatisfaction and escalate into a security challenge" [12].

The authors further added, "The spread of dissatisfaction and the extension of its dimensions to other tensions and ethnic divides is highly likely."

Isa Kalantari, former head of the Department of Environment, also admitted that Iran has reached a state of "water bankruptcy," stating that 70 percent of the country's problems stem from the water crisis [13].

The water crisis has shown its impact in other sectors, such as energy and the environment. Frequent power outages during the summer, dust storms in Khuzestan, migration from rural areas, the destruction of ecosystems, and their effects on livelihoods and public health are among the most significant consequences of the water crisis in Iran.

In recent months, protests by the people of Khuzestan over water scarcity, river drying, water transfer projects, and systematic governmental discrimination continued for a while and eventually spread to other cities in Iran. The Iranian security forces responded with waves of violence and lethal force, killing and injuring dozens of protesters and arresting hundreds more. The severe crackdown on protesters by Iranian security forces sparked a wave of domestic criticism, solidarity from various social groups in support of the protesters, and widespread international condemnation.

Previously, in late 2017 and early 2018, farmers in Isfahan staged protests over water shortages and the failure to allocate water rights. These protests spread to other cities, including Borazjan, Kazeroon, Boyer-Ahmad, Saman, Yasuj, and Ahvaz.

Alaeddin Boroujerdi, former head of the Iranian Parliament's National Security and Foreign Policy Commission, had declared that the water crisis had become a "security issue " [14].

These warnings, along with the issues of water migration, land subsidence, and poor resource management, led to the expansion of water-related protests up to 2023. Over time, these protests, initially focused on Lake Urmia and later on the Karun River, spread to Isfahan and Chaharmahal-Bakhtiari. Apart from water and migration issues, these protests also triggered ethnic tensions in Iran, given the existing social and ethnic fault lines. Rather than addressing these tensions, the government's suppression of human rights exacerbated the situation, which in turn led to the rise of environmental activists with ethnic and water-related agendas. In other words, the absence of a coherent socio-political, human rights, and economic-water policy framework in the country has led to the gradual transformation of natural processes and crisis mismanagement into a form of civil protest.

Migration, large cities and water

Iran has been facing water scarcity for two decades. Iran ranks fourth among countries experiencing an "extraordinary water crisis", according to the latest estimate by the World Resources Institute. Iran is on the verge of the "last day", according to this estimate. The day is approaching when the nation's water resources could be exhausted [15].

According to a study carried out by the Research Centre of the Iranian Parliament, 282 cities in this country will be exposed to water stress in the year 2023. The researchers of the study stated that the amount of rainfall in Iran has decreased by 36% compared to the average amount of rainfall over the past 52 years. This figure is higher in provinces such as Hormozgan, Sistan and Baluchistan, Fars, Kirman, Razavi Khorasan and South Khorasan, where average rainfall has decreased by 50-85 per cent [16].

The macroeconomic impact of environmental crises and water scarcity on urban and rural households is that the significant costs of new and alternative water supply options

[10] "Hearing the Warning on Water Bankruptcy: If Water Rights Are Not Paid, We Will File a Complaint with the Judiciary," ISNA, June 7, 2021, accessed January 8, 2025, https://www.isna.ir/news/1400031711860.

[11] Houman Khakpour, "The Failure of the Behesht Abad Water Transfer Project in the Technical Assessment," Ebnanews, March 24, 2012, archived from the original on March 12, 2016.

[12] Research Center of the Iranian Parliament. Assessment of the Drinking Water Stress Situation in the Country in 2021. Report No. 17765. Tehran: Islamic Consultative Assembly of Iran, September 18, 2021.

[13] "Hearing the Warning on Water Bankruptcy: If Water Rights Are Not Paid, We Will File a Complaint with the Judiciary," ISNA, June 7, 2021, accessed January 8, 2025, https://www.isna.ir/news/1400031711860.

[14] "Boroujerdi: The Water Crisis Has Become a Security Issue." Deutsche Welle (DW). Accessed January 8, 2025. https://www.dw.com/en/boroujerdi-the-water-crisis-has-become-a-security-issue/a-39499175.

[15] Rezapour, "Multi-scale Entropy Analysis to Assess İmpacts of Dam Construction on Aquifer, Case Study" 157.

[16] Lotfollah Safaee, Rudkhanye Karun va moshkelate sosyopolitikash (Tahran: Tarbiyat Modarres Yayınları, 2005), 87.

are borne by the state. In fact, the water pricing system is not real and efficient in any of the urban, agricultural and industrial sectors due to the high subsidisation of water and energy in Iran. As a result, private operators are unable to provide water in a modern way. The state therefore bears the cost, at least in the domestic sector. These costs are extremely high, given the government's current plans for water transport (e.g. from the coast to the central and eastern parts of the country). At the social level, in the urban and rural commons, the water and environmental crisis is causing discontent, social tension and migration. The micro-dust crisis in the south-west of the country and the mass migrations in the southern and eastern regions are clear examples of this. The political and security problems caused by water crises are another issue that stands out at the macro rather than the micro level [17]. Water shortages, migration and evacuation of villages, especially in the border areas, will create a security crisis for the country and also lead to criminal and political conflicts (on the eastern borders). In the agricultural sector, the inability to provide food for a growing population will have the greatest economic impact of the water crisis. At the macro level, reducing agricultural production increases the cost of imports and reduces the ability to export and generate income. At the political and social level, the decline in food security means increased political dependence on the international arena. This costs the country a lot of money. In addition, the continuation of this situation weakens the country's national strength and increases the likelihood of internal and regional tensions. Water risks can be reduced by locating industrial and mining activities correctly. However, the geographically uneven and heterogeneous development of these industries within the country has resulted in large and water-intensive industries locating in arid and water-scarce areas, thus perpetuating the water crisis and the costs of supplying and transporting water. In other areas (e.g. the coast), this is also a burden on the sectors, leading to an increase in costs and a reduction in their competitiveness. On the other hand, the industrial sector will not only absorb the surplus labour released by the agricultural crisis. Unemployment and the adjustment of the workforce will also be inevitable as a result of the decline in competitiveness and the reduction in production capacity. According to the country's population, the amount of water available per capita in the country has reached 1447.5 cubic metres. It is worth noting that in the central plateau of Iran, where about 50% of the population lives, water per capita reaches 550 cubic metres. Accordingly, it can be said that Iran is under water stress, based on Falkenmark's statement that 1700 cubic metres of usable water is the limit of water stress. Obviously, per capita water availability is expected to remain below this amount as the population grows in the future. In 1979, the country had about 3400 cubic metres of renewable water per capita.

Indeed, rapid population growth combined with prolonged reduced rainfall has led to severe water shortages. The risk of conflict between new economic sanctions, farmers and the Ministry of Energy, and urban dwellers and government officials in hot and dry areas has increased as a result of the water crisis in the cities and villages of Iran's central plateau. In addition, the risk of future evacuation of the population from many hot and arid regions of the country, such as Sistan and Baluchistan, South Khorasan, [18] Kirman and Yazd, should be taken seriously. In fact, the delivery of drinking water by tanker to these regions will not be a solution to the economic, social and welfare problems of their inhabitants. It doesn't seem that the government has come up with any proper plans to help solve these problems. It is for this reason that the water issue is a security issue and has been under the scrutiny of the National Security Council and parliament. As for other natural resources, severe soil erosion caused by natural and human factors, conversion of agricultural land to urban use in many fertile parts of the country, felling of forest trees, converting forest land to private villas and overgrazing of pastures should be avoided. In all these cases, the laws that have been passed to protect the country's natural resources are being ignored. This is done in collusion between a few government officials and private interests. All this is a sign of the weakness of the relevant government agencies, the country's regulatory bodies and the judiciary in the protection of intergenerational resources. In terms of erosion, the average water erosion is 16.7 tonnes per hectare per year. The economic damage caused by soil erosion is estimated at more than 10 billion dollars per year. The average sediment production is 3.6 tonnes per hectare per year, which results in about 250 million cubic metres of sediment entering the reservoirs of 41 dams, and an annual loss of about 0.74% of the volume stored in the country's dams [19].

On the other hand, most provinces face the threat of desertification due to prolonged drought. There are many shortcomings in the prevention of desertification. In addition, 450 cities and 8,650 villages and settlements are threatened by flooding. In the medium term, the combination of sanctions and the huge problem of water and natural resources will increase the country's dependence on imports of crops, livestock, and agricultural inputs such as animal and poultry feed. At the same time, a sharp rise in the price of foreign exchange in foreign trade and on the open market could limit the supply of agricultural products and imported inputs and increase their costs. In this case, over-emphasis on self-sufficiency in agriculture will lead to further destruction of the country's renewable natural resources. Moreover, given the government's financial constraints, it would be impractical to subsidise both producers and these agricultural products. Many factors have contributed to the emergence and aggravation of this crisis. In an era of advanced defence technologies, the growth of a poor and unemployed population does not help to strengthen the country's defence base. On the contrary, it becomes a source of economic and social danger. During the period 1957-1977, in addition to the increase in the country's population, the rate of urbanisation also increased rapidly. It rose from 31.4% in 1957 to 47% in 1977 and continued to rise in the following period. The distribution of the population in terms of settlement is perhaps a more important issue in Iran than the growth of the population.

Most of the country suffers from a mismatch between available water and population. For small and medium-sized cities, water supply and management are becoming increasingly problematic. Economic inequality and more job opportunities in urban areas have increased urbanisation and

[17] K. Ahmadi ve O. Elmi, Water Scarcity, Migration and Conflict in Iran: A Political-ecological Investigation (Switzerland: Palgrave Macmillan, 2019), 26.

[18] A State.

[19] Elham Kordi Ardakani vd, "Su Sorununa Önerilen Metotlar", Şiraz Ulusal Su Kongresi (Şiraz, 2014), 56.

migration from rural areas and small towns to large urban areas [20]. The concept of 'water migrants' is a very broad definition that has no basis in fact. Indeed, even if they could improve their livelihoods and lives, the poorest often lack the means to migrate. In addition, migration in response to water scarcity varies significantly according to country income, with people living in poor countries being four times less likely to migrate than those living in rich countries. The triple scourge of water scarcity, loss of economic opportunities and lack of means to move to areas with better conditions is faced by trapped populations unable to migrate due to poverty. The World Bank's Water, Migration and Development report is based on analysis of the largest dataset on internal migration. It covers nearly half a billion people from 1960 to 2015 through 189 censuses in 64 countries. The Water and Migration Report analyses migration-related rainfall shocks by key variables including age, gender, education and household size. The report consists of two parts. The first part focuses on water, migration and development. The second focuses on water, displacement and conflict in the Middle East and North Africa. Water scarcity is linked to a 10 per cent increase in global migration, according to the report. Climate change is accelerating the global water crisis. Rainfall shocks include situations where rainfall is significantly above or below a region's long-term average. Dry rainfall shocks are five times more likely to affect migration than wet rainfall shocks [21]. Water shocks have an impact not only on the number of people on the move, but also on the skills they bring with them. Migrant workers leaving areas with low rainfall and frequent drought shocks tend to have lower levels of education and skills and face a wage gap of up to 3.4 per cent at their destination, with important policy implications for host cities.

It is related to the migrations that have taken place over the last half century from the southern and eastern regions of Iran's western and northern plateaus to the slopes of the Zagros and Alborz [22]. This has created an asymmetric population pattern. The increase in migration to the water-rich western and northern regions, in parallel with the decrease in water resources in the south and east of the country over the past 50 years, is now being experienced in a different way. Recent statistical studies have shown that climate change and increased drought in the southwest and western regions of Iran have caused the inhabitants of these provinces to migrate to the northern periphery of the country. This has increased the population density of the southwest and western regions [23]. On the other hand, the settlement of these migrants in the northern provinces has increased the population consuming water resources in these regions. In the absence of rainfall, the population has become more dependent on groundwater resources. Official reports from the Ministry of Energy show that the composition of the population's dependence on water resources in the northern provinces has changed over the past 10 years. This coincides with climate change and a shift from running water to underground sources. The reason for this is that in these areas the volume of flowing water has decreased drastically. However, the number of consumers has increased [24]. The population of 17 provinces in the country now depends on groundwater for more than 60% of their water consumption. In the past 50 years, less than 9 provinces have been heavily dependent on groundwater. Most of these provinces are in the same region, in the south and east of the country. In other words, droughts and population growth in the northern regions have increased the dependence of 8 new provinces on groundwater resources, increasing the risk of drying up intergenerational reserves in these regions.

Groundwater resources are considered strategic reserves and play a fundamental and maximum role in water supply. However, lack of attention to this point has led to the depletion of around 136 billion cubic metres of these non-renewable reserves over the last 40 years. Currently, due to the uncontrolled demand of the consuming population (especially in the western, central and northern regions of the country), the rate of withdrawal from these reserves is very high and the remaining underground water reserves are being depleted. There are reports of land subsidence and falling groundwater levels in Tehran, Alborz, Qazvin, Zanjan, Hamadan, East Azerbaijan, Ardabil, West Azerbaijan and even on the southern slopes of Alborz. The population that once lived in the southern plains and alluvial deposits has migrated to the northern lands, where they work in agriculture and industry without changing their water use patterns. This population, with the same consumption patterns as in the past, will put pressure on the underground reserves of the northern provinces. The growing phenomenon of migrants from the southern provinces renting agricultural land in the northern provinces has become a serious economic and social risk for the densely populated part of the country in recent years. It threatens the future security of this region. In such a situation, the pattern of water consumption in the domestic, agricultural and industrial sectors should be adhered to by all if it is not possible to stop migration from the southern provinces to the northern areas. It is now a national imperative to require domestic consumers to use water-saving devices and to comply with water use regulations, and to force operators in the agricultural sector to fully comply with new cropping patterns to reduce pressure on groundwater resources. If the industrial sector relies on non-renewable water resources to produce a product, it is better not to start production at all and jeopardise the water security of future generations. In migrant-sending countries, it has been necessary to adapt the population to the new conditions of drought and to educate the population to reduce water consumption.

Transferring false water consumption figures from one geographical region to another does nothing more than temporarily eliminate the problem and deepen the water scarcity crisis for the future. The United Nations Global Water Assessment Program Report estimates that "by 2025, 1.8 billion people will live in areas of absolute water scarcity." Water scarcity has been exacerbated by climate change, leading to increased global migration. Nowhere is this crisis more acute than in the Middle East and North Africa. Climate change, environmental degradation and water stress have had a transformative effect on migration patterns across the region. Extreme weather and energy imbalances in the Middle East have exacerbated water

[20] Hadi Zonuz Behrouz, Naghshe ab dar tahrimhaye beynolmelaliye İran (Tehran, 2019), 44.
[21] World Bank, "Ebb and Flow: Water, Migration, and Development".
[22] Iran Kuzeyindeki sıra dağlar.
[23] A. Malekhossini ve A. Malikzadeh, "Evaluating Soleimanshah's Dam's Social Impact on Near Rural Areas", Journal of Rural Research (2014), 102.
[24] Reza Ardakaninia, "Concern for Two Decades, Special Issue on Water Managmant", Iran Newspaper, Temmuz 2015, 2.

scarcity in the region. According to the report, the drought in the Syrian region between 2006 and 2011 led to the widespread failure of the agricultural systems and social structures in Figure and to the internal displacement of more than 6.7 million Syrians since 2011 [25].

Abbas Ali Nobakht (Nobakht), head of the country's Natural Resources and Watershed Management Organization, said in November 2022: "*According to research, Iran will be one of the 19 driest countries in the world by 2040 if the country continues to suffer from drought at the current pace*." Based on these studies, there is still time until 2030 to conduct research and find solutions to prevent the destruction of anything that will ensure the safety of the environment or the safety of human life. In the next three years, by 2025, the country will move rapidly towards drought at the current rate. "*At the moment, 540 metres of wells have to be dug in Jahrom, 360 metres in Shahriyar, Tehran, and 60 metres in West Azerbaijan in order to reach water, which is in fact an environmental disaster*" [26].

The tragedy of shared resources occurs when population pressure on resources exceeds the carrying capacity of the area and people want to consume the same amount. In this case, the social environment should be in line with the current situation, but this is not the case. For example, it is not possible to violate the right of use of someone who has already cultivated agricultural land. Granting unlimited licences for agricultural use of groundwater that does not comply with existing conditions has led to drying up of streams and subsidence. In many cases, the Energy Ministry's policies are inconsistent with those of other organisations and ministries, including agriculture and industry. Here it is the side with legal support that wins. The law is officially behind economic and agricultural development, and this cannot be denied. Meanwhile, the management of the water and energy ministries has been in question. For example, in November 2022, statistics for several dams showed that the Ekbatan dam was only 2% full. This means that it could be considered dry. The Sefidrud dam has stored water at 10% of its capacity. Sefidrud and Manjil dams provide 70% of Gilan's surface water. Kerhe dam is 16% full and Dez is the highest of the other dams at 62% full. This was about 3 months ago. It can be said that even the same figures cannot be trusted now [27].

Water issues and their impact on public issues

In recent years, news about the absence or poor quality of water in the urban system, the reactions of the people to this issue, the appropriation of water resources from rural areas by urban areas, opposition to the transfer of water between basins, local tensions over the use of water resources, especially among farmers, and even protests against the drying up of rivers, wetlands, lakes and watersheds, together with news about ethnic and regional discrimination, have become commonplace. As a result, water is increasingly becoming a security concern in Iran. Instead of solving this problem, the Iranian water system, which depends on rents, has blamed the problem on nature. Paradoxically, water has been transferred from basin to basin to arid areas. These issues have increasingly become a trigger for the public and have led to unrest. The table below is an illustration of the process of politicisation of the water issue in Iran [28].

Iran has a long history of drought and thirst problems. It is a challenge in almost every region of Iran, except for limited areas in the north. For example, even a province like Khuzestan, which has high rainfall and the country's most irrigated rivers, faces serious water shortages. Even provinces such as Mazandaran and Gilan are struggling to cope with water shortages. Ann Lambton [29]. In her book "The Landlord and Peasant" in Iran, has described historical examples of conflicts and disputes over water in Iran, such as the conflict between the Arabs who settled in the Qum region after entering Iran and the local population. A document from the Safavid [30] era of Shah Tahmasab also illustrates the tensions caused by the lack of water in the Zayanderud River, which led to the oppression of peasants and farmers by the rich and powerful [31] However, the first public meetings or protests about water date back to the early 1360s. According to Saeed Medani [32] and others, "since the early 1980s, the problem of water scarcity, which was mainly limited to water for agriculture, has spread to other areas, especially water for consumption" [33].

The first protest took place in the district of Afsariyeh in Tehran. On 27 June 1985, after a 48-hour water shortage in Afsariyeh, south-east of Tehran, protesters took to the streets. They blocked the Afsariyeh highway[34] to protest the problem. In addition to the water cut, the protest was also about the quality of the water. These protests lasted from 8 a.m. until late in the night. In July 2018, the second protest against the lack of water was organised by a group of farmers from Babol. The farmers demanded that the governorate authorities take action to solve the problem of water shortage for agriculture in the area by providing water from the Lar Dam. A year later, with the problem still unresolved, farmers from the Lalehabad district of Babol [35]. Once again gathered in front of the governor's office to demand water for their crops. Since then, public protests, civil society organisations and even government agencies have repeatedly raised the issue of water scarcity. For example, in June 2000, the people of the town of Sinai gathered on the old road to Kerec, a town with a population of about 3-4 thousand. They were angry at the authorities' indifference to their water shortage. When drinking water was cut off in the area, they blocked the road from Malard to Kerec as a sign of their protest.

In 2007, thirst led to a protest by the city council of Qanshan. In 2018, to protest water cuts and shortages, residents of Deyyer and Kengan in Bushehr Province gathered outside the governor's office for four days. In August 2010, residents of

[25] The United Nations, "World Water Development Report 2022: Groundwater", UNESCO, Access date: 25 December 2021, https://unesdoc.unesco.org/ark:/48223/pf0000380721

[26] Economy World, "Chera Moshkele Ab Hal Nemıshavad?", Access date: 1 January 2023, https://donya-e-eqtesad.com/tags/%D8%AE%D8%B4%DA%A9%D8%B3%D8%A7%D9%84%DB%8C

[27] Economy World, "Chera moshkele ab hal nemishavad?".

[28] K. Barzegar, Iran's National Security Policy in the Middle East: A Critical Discourse Analysis (Abingdon, UK: Routledge, 2019), 9.

[29] Ann Katharine Swynford Lambton, OBE, FBA, usually A.K.S. Lambton or "Nancy" Lambton, was a British historian and an expert on medieval and early modern Persian history, Persian language, Islamic political theory and Persian social organization.

[30] One of the Safavid Turkish Padishahs.

[31] Ann Lambton, Keshavarzi va arbab saları dar İran (Tehran: Elmi ve Farhangi Yay, 2015), 224.

[32] Iranian sociologist.

[33] Saaed Madani, Mozaherat Selmiye (Tehran: Rahman Publication, 2022), 12.

[34] The name of a neighbourhood and street in Tehran.

[35] It is a city in Mazandaran province of Iran.

Colge Khalaj village in Poldohter district of Lorestan province blocked the north-south transit road for an hour to protest against oil-contaminated water. This had been a problem for several years. In 2014 and 2015, people in Sistan and Baluchistan protested in both Qazeroun city and Aliabad Katul [36] against comments by the then head of the Environment Organisation, Masoum Ebtekar, about water from Lake Hamun. They protested against the transport of water from local sources to Semnan in Gulistan province. In 2017, the transfer of water from the Caspian Sea to Semnan was protested by civil society organisations. Isfahan is one of the areas where serious water-related protests have been held in recent years. The problem of water scarcity in Isfahan has a long history, and one of the solutions is to transfer water from water-rich areas. To this end, two Kuhrang tunnels were built in 1953 and 1985. They were designed to transfer water from the tributaries of the Karun at Chaharmahal and Bakhtiari [37] to Zayanderud. However, protests have erupted in response to water shortage problems in the Mansab regions, such as Khuzestan. In 2013, a group of farmers east of Isfahan broke water pipes in Yazd province. On 8 December 2012, another protest took place against the transfer of water from Zayanderud. These protests continued in 2015, 2016 and 2017. In Azerbaijan, [38] water protests began in 2008 following the drying up of Lake Urmia and continue to this day [39].

Lake urmia protests

In 2008, a group of environmental activists protested for the first time against the drying up of Lake Urmia and the indifference of the government to the problem. They called for the public to be made aware of the problem and the disastrous consequences of allowing the Lake to dry up. But the government, which sees any protest as a threat to its security, responded with repression. More than 100 people were arrested. Police officers blocked off and checked the roads leading to Lake Urmia [40] and arrested a large number of people at the lake. However, the movement had the effect of drawing public attention to the issue of the drying up of Lake Urmia. The movement was repeated in 2020. This time, however, the city of Tabriz joined Urmia. On Saturday 13 April, rallies were held in the cities of Tabriz and Urmia. The rallies were called “Campaign to Protest the Situation of Lake Urmia.” However, as in 2008, these rallies were attacked by security forces. At least 70 people were arrested and several demonstrators injured in Tabriz. The protests brought the issue of the drying up of Lake Urmia and its consequences for the people of the region to the attention of the Azerbaijani population of Iran like never before. So much so that six months before the parliamentary elections, Azerbaijani representatives in the Islamic Majlis submitted a motion with two urgent conditions entitled “Water transfer to prevent the drying up of Lake Urmia” in order to convince the public opinion of the Azerbaijani people. However, on 25 August, the two urgent requests of this plan were rejected in the parliament with only 57 votes in favour, while 66 people had signed it. The rejection of this plan was widely echoed in Azerbaijani public opinion. This time, Turkish environmental activists protested the immediate rejection of the plan in parliament and called for a protest rally on 5 September. However, government officials, including the Friday Imam of Urmia, declared the rally illegal and against the interests and security of the country. Security forces intervened in the demonstrations of the people of Urmia on Saturday 5 September. Suppressing them sparked a fire which spread from 12 to 18 September and engulfed many cities in Azerbaijan. Until then, the protest against the drying up of Lake Urmia had been an environmental uprising. But now it had become a direct social protest. The protests of 25 July 2022 were the second widespread street gathering of Azerbaijanis in protest at the drying up of Lake Urmia. Similar protests took place in 2011 and before [41] That year's protests were the result of years of the Islamic Republic of Iran ignoring the warnings of the Campaign to Save Lake Urmia and rejecting the Lake Urmia resolution in parliament. The government has continued its misguided policies towards Lake Urmia despite public protests and warnings from experts and international organisations about its dire situation. The current state of Lake Urmia is a legacy of unbalanced development, wrong decisions regarding water management and neglecting the regional potential of its catchment area. The critical conditions of the lake have not improved since the establishment of the Lake Urmia Revitalisation Organisation during the first administration of Hassan Rouhani [42] According to Jalal Mahmoudzadeh, [43] a member of the parliament's “Agriculture Commission”, the Lake Urmia Revitalisation Centre received a state loan of around 6 billion divisions in addition to international aid. However, this organisation has not been transparent in spending its allocated budget and has justified the government's water policy on Lake Urmia during its seven years of operation. Today, Lake Urmia is on the verge of recording the worst situation in the history of the lake. According to the latest data published by the Regional Water Organisation of East Azerbaijan Province on 22 July 2022, the level of this lake has decreased by 44 cm compared to the same period last year. In the same period, 1,257 square kilometres were added to the dry areas of Lake Urmia. Its water volume decreased by 1.4 billion cubic metres. According to its ecological level, this amount means that more than 90% of Lake Urmia's water has dried up. The government's regional discrimination against Azerbaijan and Khuzestan with regard to water is, of course, another important issue. As mentioned above, problems have arisen in these areas as a result of the country's flawed water policy system, especially since the era of Hashemi Rafsanjani. These regions see themselves as victims of Tehran's discriminatory policies, apart from the debate about the incompetence of the country's water and energy sector managers [44].

Khuzestan water issue

The first protests against the water problem in Khuzestan took place in 2001. People gathered in front of the provincial hall with 20-litre barrels of water, protesting against the poor quality of the water and trying to get the authorities to listen to their protests. The police responded violently to these protests. The next protest took place the following year, in

[36] It is a city in Golestan province of Iran.
[37] It is a province in Iran.
[38] The province of West Azerbaijan is referred to here.
[39] Saeed Madani, Atashe kutah (Tehran: Rahman Pub, 2020), 25.
[40] Or known as Lake Urmu.
[41] Aygin Omidi vd, Yaftan-e ab dar bohran (Tahran: Atran pub, 2018), 35.
[42] Former president of Iran.
[43] MP for the city of Mahabad or Soyukbulak.
[44] Reza Talebi, Azerbaijan, Revolution and Appeal (Londra: Mehri Publication, 2021), 19.

June 2002, in Khurremshahr. People closed shops and markets and gathered outside the governor's office, condemning the diversion of Karun water to Bahman Shir [45] The Friday imam of Khurremshahr [46] also attended the gathering. No report was published on the outcome of this protest. Two years later, the people of Sabaghan in Mahshahr [47] protested water and electricity cuts in the area. They blocked the road to Mahshahr for hours. The following year, in 2003, a protest rally was organised by the Khuzestan Farmers' Union against the transfer of water to Kirman and Rafsanjan. On 14 August 2013, Abadan [48] MP Abdullah Kaabi objected to the sale of water to Kuwait and its transfer to Kirman in a meeting with the Iranian Labour Inspectorate. In 2008, the news of two protests in Khuzestan was broadcast again. The first took place on 4 July, when residents of Abadan gathered at the governor's office to voice their concerns about the water problem and its quality. The second took place in September. Farmers from Dezfullu demonstrated in front of the city's governor to protest the sharing of agricultural water, the government's failure to meet its commitments and its lack of plans to tackle water scarcity. The persistence of the water problem and the protest the arbitrary withdrawal of water from Karun in 2012 led to a series of rallies called the 'Humanitarian Chain of Support for Karun'. These rallies were held at least six times. The first took place on 24 October on Karun Beach in Ahvaz [49] and the last on 28 December, attended by thousands of locals. No representatives or councillors attended the last rally. However, these measures did not have any effect. Seventeen years later, the water story continued in Ghayzanyeh, next to Ahvaz, and on the third day of June 2019, residents took to the streets at the same time. The start of 2021 in Khuzestan was a time of unbearable heat. This was caused by a strengthening subtropical (astropical) system which produced very hot weather. The lack of water in the Kerhe River has caused many problems for farmers in the region. The publication of these pictures has provoked many reactions and protests. On 10 July, 1400 people from Dasht-e-Azadegan [50] and Hoveyzeh protested in front of the judiciary. Most of them were farmers and ranchers who had suffered losses in the region. A week later, on 17 July, public protests spread to other regions. In response to the water crisis, protests broke out in the cities of Ahvaz, Abadan, Hamidiya, Bostan, Susangerd (Hafajiya) and Bandar Mahshahr (Maashur). According to most experts, such as Abdullah Salami, the protests began in Arab-populated areas and around Hur. They eventually spread to the northern and eastern parts of the province, such as Ize [51] and Dezful. Keywan Lotfi [52] says the role of traditional ethnic relations in shaping these protests should be considered [53].

Abdullah Salami also argued that a number of local and national factors played a role in the emergence of these protests. He says these factors can be summarized as follows:

1) Failure to implement Articles 15 and 19 of the Constitution concerning the rights of ethnic and social groups,
2) 8 years of devastating war,
3) Failure to reconstruct war zones,
4) Displacing war victims from war zones to safe areas in Khuzestan and other parts of the country,
5) Increase in unemployment,
6) Restrictions on the use of water resources by the people of Khuzestan in the implementation of national plans,
7) The emergence of ethnic rivalries over the exploitation of the resources and interests of the state,
8) Implementing centralized policies and limiting local powers,
9) Lacking or ineffective lobbying in sectoral and centralized national policies,
10) Mismanagement and instability in provincial administration,
11) Limited resources, including water,
12) Implementing false national profit plans that contradict the nature of the province and damage the province's ecosystem and environment.

Water and human rights

The right to clean water is recognised as essential for everyone to live. It was recognised as a human right by the United Nations General Assembly on 28 July 2010. On the same day, the right to safe, affordable, clean and accessible water and sanitation was reaffirmed in General Assembly resolution 292/64. This resolution ensures that governments have control over this issue at the global level by recognising access to safe, clean and hygienic drinking water as a free human right. The right to safe, clean drinking water and sanitation was also reaffirmed as a human right [54]. Access to safe, clean water and sanitation must be universally recognized as essential for a productive and healthy life. The United Nations Committee on Economic, Social and Cultural Rights provided the clearest definition of the human right to water in 2002. It defines 'the right to water entitles everyone to have access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use' [55].

This definition is an interpretation, without legal obligation, that access to water is a condition for enjoying the right to adequate living conditions.

\This definition states that the right to access water gives the right to sufficient, safe, acceptable, accessible and affordable water for personal and household use. However, in 2015, 663 million people lacked access to an improved source of drinking water, according to the Joint WHO/UNICEF Water Supply and Sanitation Monitoring Programme [56]. Access to safe water remains a major problem in many parts of the world. Acceptable sources include "indoor taps, public pipes, boreholes, protected wells, protected springs and rainwater catchments" [57]. Although 9 per cent of the world's

[45] The River in Abadan.
[46] The local people refer to Khurremshahr as Muhammere.
[47] Ma'şar.
[48] Ebadan.
[49] Center of Khuzestan Province.
[50] It is a district in Khuzestan province.
[51] It is a city in Khuzestan province.
[52] Member of the Ahvaz City Council.
[53] Madani, Mozaherat Selmiye, 19.

[54] United Nations, "Resolution 64/292: The Human Right to Water and Sanitation", 2010.
[55] UN (United Nations), Resolution Adopted by the General Assembly (New York: United Nations, 2010).
[56] World Health Organisation (WHO) and United Nation Children's Fund (UNICEF). 2012. Progress on drinking water and sanitation. 2012 update. New York: WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation.

[57] "The Human Rights to Safe Drinking Water and Sanitation".

population does not have access to water, the problem is felt more acutely by people who live in remote areas. The United Nations points out that water and sanitation-related diseases kill about 1.5 million children under the age of five every year and cost 443 million school days [58]. However, there is another important, often overlooked, aspect of water in Iran: A deepening discrimination (based on class, race, gender, etc.) that is linked to the water problem. Research has shown that there are long-term effects on people's lives and health from living near polluted water and not having access to stable and clean water. Many reports on the differences in water quality in different parts of Tehran have been published by the Tehran Provincial Water Affairs Department. For example, there have been reports of water quality deterioration in the south of Tehran. The salt content of the water is extremely high in areas such as Yaftabad and Sinai districts. Water quality and access are problematic in the province of Sistan and Baluchistan, which has the lowest average daily water consumption of 143 litres, compared to the national average of 197 litres. Water quality and quantity are often poor in industrial towns and ghettos on the outskirts of large cities. Industrial towns such as Asaluyeh [59] located in the southern and coastal regions of Iran, have contaminated well water due to the concentration of gases from industrial activities. Not all citizens experience the same level of harm and hardship caused by lack of access to clean and sustainable water. People living in poverty, including children, women and those living in neglected villages, slums and areas with a high concentration of labor and industry, are disproportionately affected. According to the latest Environmental Characteristics Survey conducted by the Centre for Statistics, about 97% of the country's urban areas are irrigated. However, the use of sustainable and safe water sources is inadequate and needs to be improved. Many reports indicate that a significant number of villages still rely on water tankers. Many villagers are experiencing problems related to poor water quality [60].

Final Assessment

The intricate issue of water deeply connects Iran's geopolitical, economic, and environmental concerns. The water scarcity in Iran is a multifaceted issue. This book emphasizes that the country's water deficit stems from a confluence of insufficient governance, ineffective policies, and regional inequalities. The Iranian bureaucratic and political structures have insufficiently addressed the issue, despite previously acknowledging the impending disaster through various reports and warnings published over the past several decades. We highlight the crucial contrast between ignorance and incompetence in the management of the water issue. The tragedy was not a result of ignorance, as previous development plans and environmental evaluations had acknowledged the potential for water scarcity decades before. The problem stems from structural inadequacies, poor governance, and a focus on short-term political and economic goals to the detriment of long-term sustainability. These factors have intensified the problem. Contributing factors to the crisis include inadequate investments in water conservation technologies, political pressures for agricultural self-sufficiency, and an obsession with dam construction that overlooks environmental repercussions. He situation's complexity stems from its diverse nature, involving multiple stakeholders, insufficient infrastructure, and divergent policy objectives. The political dynamics in water management, involving influential contractors and municipal politicians, have exacerbated the situation. The bureaucratic system's lack of transparency, poor coordination, and corruption have intensified the problem and obstructed the development of effective water governance. Historical and contemporary events illustrate the gravity of the water crisis. Reports indicate that Iran's yearly precipitation has decreased, resulting in increased evaporation and less runoff throughout the country. Notwithstanding this awareness, the government continued to promote extensive dam construction projects without reevaluating the obsolete limitations. The excessive exploitation of groundwater and insufficient replenishment from diminished rainfall have caused considerable land subsidence and desertification in several regions. Furthermore, research has shown the influence of political and psychological elements on the disaster. Individuals frequently prefer the emblematic depiction of large-scale infrastructure projects, such as dams and irrigation systems, rather than more sustainable alternatives. These operations have led to environmental degradation and resource depletion, once regarded as notable milestones. The document emphasizes that Iran's water dilemma is not merely a technical or environmental issue; it has transformed into a significant political and eeconomicchallenge. The governing structure necessitates a substantial reform to accomplish this. This shift must be characterized by decision-making that is transparent, inclusive, and focused on long-term sustainability rather than short-term political advantages. We anticipate that this issue will emerge as Iran's primary challenge in the future, carrying significant implications. he emergence of water activists, water-induced migration, state expansion regarding water resources, and the likelihood of water-related conflicts underscore the necessity of adequately tackling this issue. In the absence of swiftand coordinated efforts to change governance, diminish water usage, and engage in sustainable practices, Iran faces the potential for irreversible ecological, social, and political challenges. Therefore, rather than just relying on technological solutions, it is crucial to implement a comprehensive plan that incorporates political, social, environmental, and economic factors to effectively tackle the water problem facing Iran. Iran's only opportunity to mitigate the consequences of this crisis and secure a sustainable future resides in acknowledging its historical missteps, encouraging public dialogue, and enhancing national unity. Timeliness is essential; a lack of timely response may soon threaten the nation's stability and economy owing to the water crisis.

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The author declares that there is no conflict of interest regarding the research, authorship, or publication of this article.

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[58] UN News Center, Global Issues at the United Nations (UN, 2014).
[59] It is an important port in the South of Iran.
[60] Fakt-Nameh, “Gozareshe dastyabi be ab”, Erişim 18 Mart 2023, https://factnameh.com/fa/fact-checks/2020-11-11-iran-drinking-water

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