

# Iran's War on the Environment and Environmentalists

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## Iran's War on The Environment and Environmentalists

One of the most ruinous facets of the Islamic Republic of Iran's destructive legacy has been the government's war on the country's own environment. Without drastic environmental and water management policy changes, [over half of Iran's population is at risk of being displaced over the next 25 years](#). Instead of making the necessary changes, however, Iran's regime has responded to the impending environmental crisis by harassing, arresting, and even killing the experts who have sought to advise the government on sound policy. The Iranian regime has similarly responded with heavy handed tactics to quell the protests of citizens facing hardships, including drinking water shortages and the loss of cultivable farmland, due to the regime's environmental mismanagement.

Iran's disregard for the environment has negatively impacted neighboring countries as well, particularly Iraq and Afghanistan. Rather than distributing shared water sources with Iraq equitably, Iran has dammed and diverted the tributaries originating in its territory feeding into the Tigris River for its own purposes, significantly curtailing water flows to the vital Iraqi lifeline. Iran's actions upstream have led to shortages of drinking water and electricity, destruction of wetlands, and loss of farmland downstream in Iraq. At the same time, Iran has gone as far as training and arming the Taliban to sabotage Afghan dam construction upstream in order to prevent against any disruption of water flows to its own territory. Iran's environmental meddling has weakened the Iraqi and Afghan central governments, and Iran has exploited the instability to project power and influence in these countries.

In the face of a mounting environmental crisis, the regime has consistently acted in its perceived narrow, short-term interests, failing to recognize the devastating public health and national security consequences that its mismanagement has given rise to. Taken together, Iran's war on its own and its neighbors environments adds a combustible element that risks further inflaming tensions and instability within Iran and throughout the Middle East.

## Iran's War on Its Own Environment

The clerical government of Islamic Republic of Iran, in concert with the leadership of the Islamic Revolutionary Guard Corps (IRGC), has created a prolonged, self-inflicted environmental crisis that, although driven in small part by climate change, is primarily the result of policy missteps informed by incompetence, mismanagement, and corruption at the highest levels of the regime. The Iranian regime's willful flouting of environmental best practices since the 1979 inception of the Islamic Republic is tantamount to a war on the environment.

Iran's leadership has consistently enacted agricultural and industrialization policies intended to benefit elite constituencies that the regime has sought to appease. The regime has accordingly [diverted](#) water and other natural resources away from ordinary Iranians and poorer communities, who have disproportionately suffered environmental consequences such as water shortages, loss of cultivable farmland, and sand and dust storms.

Iran's policy missteps have given rise to multi-pronged environmental challenges including an [insecure water future](#), [widespread drought](#), [desertification](#), [destruction of wetlands](#), and [decreased air quality](#). Iran's environmental deterioration poses a potentially destabilizing national security risk to the Islamic Republic, as it threatens internal cohesion, public health, and the economy. The Iranian leadership has inflicted damage on the country's environment that many experts fear may be irreversible and will have catastrophic humanitarian repercussions if current trends continue. Tragically, due to structural factors largely borne of corruption, the Iranian regime has failed to seriously acknowledge the scope of the impending crisis, let alone to begin the adaptation and implementation of vitally necessary corrective measures, which may already be insufficient at this juncture.

## Iran's Environment Pre-Revolution

Iran's environment has undergone a drastic transformation over the last century-plus. The environmental issues plaguing the country today did not exist at the turn of the 20<sup>th</sup> century. Iran had plentiful water, rich biodiversity, and did not yet suffer from air and water pollution, soil erosion, and desertification.

As population growth accelerated between the 1950s and 1970s, Iran's environmental policies under Mohammad Reza Shah Pahlavi had both positive and negative attributes. On the positive side of the ledger was the Shah's prioritization of conservation, despite popular resistance due to the prevailing ethos that fish and wildlife were God-given gifts to be pursued without regulation. In response to over-hunting and fishing, which threatened Iran's abundant wildlife and biodiversity, the Shah inaugurated Iran's first governmental-backed wildlife-conservation effort. In 1957, the Shah created the [Game Council of Iran](#) with the backing of a wealthy businessman who provided the majority of the funding.

A decade later, parliament expanded the Council's mandate and increased governmental involvement, transforming the council into the Game and Fish Department of Iran. The newly empowered department created a basic administrative and regulatory framework for game hunting and fishing, and also established wildlife parks and protected areas. The Game and Fish Department's strict enforcement allowed wildlife populations to rapidly increase.

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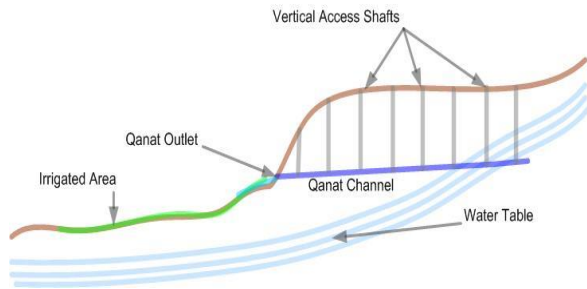
In 1974, the government integrated the Game and Fish Department into the newly formed Department of the Environment (DOE), whose [duties were analogous to those of the U.S. Fish and Wildlife Service, Environmental Protection Agency, and National Park Service](#). The DOE worked cooperatively with scientists from Colorado State University to establish best practices for hunting, using aerial monitoring technologies to set quotas for culling excess wildlife in protected areas. International sport hunters and local hunters paid for licenses which helped defray Iran's conservation expenses, and meat from sport hunts was distributed among local villagers. As a result of these measures, "[on the eve of the Islamic Revolution, Iran was reputed to have the best wildlife and natural-areas management in Asia, and a program that rivaled European ones](#)," according to an Atlantic Council report.

While Iran's conservation record was a success under the Shah, his efforts to rapidly modernize and industrialize Iran gave rise to numerous other environmental issues. In 1955, the Shah inaugurated an ambitious [Seven Year Plan](#) for economic planning and development. The DOE sought to ameliorate the environmental impacts of the Shah's plans, but his relentless focus on development ensured that environmental concerns were secondary to economic ones.

Iran built factories with little regard to air and water pollution and vehicles proliferated, also contributing to air pollution. The Shah's economic planning was beset by an overarching belief in the superiority of Western technology and ideas, which resulted in the pursuit of numerous goals and projects that were not suitable to local conditions. According to Iran scholar Nikki R. Keddie, in many instances, the Shah pursued "[large, impressive projects](#)" over those that would "[increase the output of the intensive labor of peasants, nomads, and small-scale workers](#)" who had up to that point formed the backbone of the Iranian economy.

One of the more harmful environmental legacies of the Shah's economic planning was an emphasis on massive dam construction for power generation and irrigation purposes. Under the Shah, 13 such dams were built. According to Keddie, the dams built by the Shah were "[showy and spectacular](#)," but poorly planned and wastefully expensive. Moreover, the dams ultimately had utility only in power generation and not irrigation, because, as Keddie noted, "[often, the subordinate local irrigation systems, without which the dams serve no agricultural purpose, were not built for years, if ever, nor have the areas been adequately studied to see if the planned types of irrigation and field allotment are suitable to the regions](#)."

Another harmful practice that the Shah advocated was the introduction and subsequent overreliance on modern, expensive Western agricultural equipment such as tractors and deep wells with motor pumps that proved deleterious for the local environment. The Shah had [instituted a major land reform initiative in 1963](#) which redistributed large amounts of land previously held by large landowners into smaller farming units for peasants. The Shah sought in this manner to reduce the political power of the wealthy landowning class while at the same time co-opting the peasantry by increasing their reliance on the government. The Shah's government favored the import of tractors for plowing farmland and subsidized the practice, in keeping with its belief that Western technologies were inherently superior. The use of tractors was unsuitable for Iran, an "[arid country with few remaining forests and thin topsoil](#)," according to Keddie. The tractors over-plowed topsoil in many instances, often depositing it into rivers and streams, which increased flood risks and, in some cases, even altered the directional flows of rivers.



Qanat system, Source: [Wikipedia](https://en.wikipedia.org/wiki/Qanat)

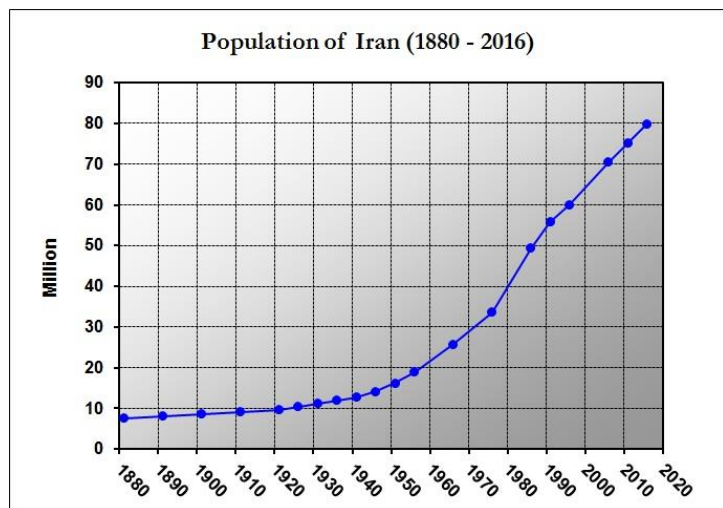
Deep wells with motor pumps caused further environmental damage during the Shah's reign. Iran has traditionally relied upon underground water channels, known as *qanats*, for its irrigation needs. *Qanats* originated in Persia during the early first millennium BC and are a sustainable, non-ecological damaging method for harvesting and conveying water from aquifers situated on higher ground down to lower lying areas using gravity. While labor intensive, *qanats* allowed for water to be distributed equitably to landowners based on the size of their

farms. Skilled managers, known as *Mirabs*, were responsible for ensuring fair distribution and ensuring that groundwater was not overly extracted from aquifers. The introduction of deep wells with motor pumps led to the *Mirabs* becoming functionally obsolete. As landowners sought to maximize profits, they abused the system by drawing increasing quantities of water from the *qanats*, significantly lowering the water table in many *qanats*. These unsustainable water extraction practices rendered many of the areas previously serviced by *qanats* uncultivable.

### Iran's Environmental Deterioration Post-Revolution

While the Shah's counterproductive agricultural policies laid the groundwork for environmental deterioration in Iran, the environmental mismanagement and corruption of the post-revolutionary regime has exacerbated the situation to the brink of crisis.

**Population Growth:** The first factor negatively impacting Iran's environment since the 1979 Islamic Revolution is rapid population growth. Iran's population has grown precipitously since the turn of the 20<sup>th</sup> century, a trend which has especially accelerated since the 1979 Islamic Revolution. In 1900, Iran's population was under 10 million. At the end of 1978, on the eve of the Islamic Revolution, Iran's population sat at [just under 36 million people](#). Since the 1979 revolution, Iran's population has more than doubled and, according to the most recent estimate by the CIA World Factbook, now sits at [over 82 million](#). Iran's clerical leadership has [encouraged](#) this population boom and advanced policies to facilitate it, paying scant regard to the profoundly deleterious ecological effects and strains on natural resources engendered by rapid population growth and the attendant wide-scale modernization of the country.



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***Competing Priorities:*** Iran has many environmental stakeholders, both within the government at the DOE, Ministry of Energy, Ministry of Agriculture, and outside in the private sector and academia, who are aware of environmental best practices. However, due to corruption and mismanagement, Iran has steered a perilous course to the brink of an environmental crisis. A confluence of intertwined policy missteps by Iran's revolutionary government have led to the current state of play.

In the immediate aftermath of the revolution, Iran's leadership was consumed first with consolidating the Islamic Revolution, and then with the brutal Iran-Iraq War, which lasted from 1980-1988. Iran's precarious domestic stability and regional position were the highest priority, and environmental concerns largely fell by the wayside. The government has severely underfunded the DOE as a result, and the department has further suffered from a series of incompetent and/or corrupt managers, although President Hassan Rouhani has succeeded in placing technocrats at the DOE since assuming the Presidency in 2013.

***Agricultural Mismanagement:*** Another factor in the environmental deterioration has been the regime's prioritization of self-sufficiency in food production since the Islamic Republic's founding. The notion of food independence fit within revolutionary Iran's anti-colonial ideological paradigm which eschewed reliance on Eastern or Western powers. The government's preference for food self-sufficiency also grew in concert with Iran's increasing international isolation as a result, first, of the Iran-Iraq War and, later, of mounting sanctions over its illicit nuclear program and human rights abuses.

The regime courted farmers, many of whom were harmed by the Shah's agricultural policies, as a base of political support. Peasants and displaced farmers sought to occupy and expropriate the land of large corporate farms created under the Shah, [labelling the owners as un-Islamic](#). The revolutionary regime tacitly backed these tactics and were quick to label any activity to rein in farmers as counterrevolutionary, but the unrest served to dissuade would-be investors whose funds were needed to modernize Iran's agricultural sector.

In the post-revolutionary climate of lax environmental enforcement, the regime myopically encouraged farmers to increase crop production with scant regard paid to sustainability or environmental consequences. According to Nikahang Kowsar, an expatriate Iranian environmentalist with a background in water management policy, "[After the 1979 revolution, a large number of farmers chose to dig secret wells, extracting water by night and concealing the wells during the day. Many inspectors either consciously ignored the excessive use of water or were bribed to do so.](#)" According to official statistics, there are [750,000 operational deep wells in Iran, 330,000 of which are illegal](#).

Agricultural mismanagement has heavily stressed the country's water resources, portending a water-insecure future for Iran. The regime [granted subsidies](#) on both food production and consumption, driving farmers to grow lucrative, yet water-intensive crops such as wheat and rice that were ill-suited for Iran's arid climate and also artificially drove up demand for these and other staple crops. It would have been cheaper and more sustainable for Iran to import foodstuffs such as cereal grains and beef, while instead focusing on growing crops suitable for arid climates such as rapeseed and canola.

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Iran's agricultural sector accounts for over [90% of the country's water usage yet generates only 15% of the country's gross domestic product \(GDP\)](#). Despite the push for food self-sufficiency since 1979, Iran still only domestically [produces 66% of the food it consumes](#) and must import the rest. Outmoded farming and water extraction methods, as well as poor agricultural decision-making, are largely to blame for these inefficiencies. Iran's [water efficiency rate sits at 30-35%](#), well below the global average of 75% efficiency.

Iran heavily [subsidized electricity and diesel gas](#) for farmers, who responded by wastefully turning and leaving on diesel pumps, even when their fields did not need irrigation. Iranian farmers largely rely on flood irrigation, which [wastes approximately 65% of the water used](#), rather than more efficient methods such as drip irrigation or greenhouse farming. Iranian farmers frequently irrigate their crops during daylight hours, when evaporation is highest.

Iran's agricultural mismanagement has gravely stressed the country's water resources. The culture of excessive and often illegal, but officially ignored, over-extraction of groundwater has grave implications for Iran's water future. Iran has [extracted 70% of its groundwater](#), and the depletion of the water table has left much of the remaining groundwater brackish and unusable. Due to Iran's unsustainable and wasteful farming practices, the country is the world's worst offender in terms of consuming its renewable water resources. Iran uses an estimated [81% to 92%](#) of its renewable water, well above the international recommended guideline of 40% and nearly double the usage of the next closest country, Egypt.

According to a report put out by the [Center for Naval Analyses](#) authored by retired U.S. military officers, "since the 1979 revolution, the per capita quantity of Iran's renewable water supplies has dropped by more than half, to a level commonly associated with the benchmark for water stress." An Iranian environmental official noted in July 2018 that Iran's [renewable water resources have dwindled](#) from 132 billion cubic meters 50 years ago to less than 100 billion cubic meters today, with over half of the depletion occurring in the last five years.

***The IRGC and Reckless Dam Construction:*** The over-construction of dams for irrigation and hydroelectricity generation has also been responsible for Iran's deteriorating environment, as its revolutionary leadership has haphazardly sought to divert water to benefit favored constituencies irrespective of environmental impacts. Iran's policy of reckless dam construction is borne largely out of a desire on the part of the Supreme Leader and his allies to placate Iran's elite special military, the Islamic Revolutionary Guards Corps (IRGC).

One of the most significant lasting consequences of the Iran-Iraq War was the empowerment of the Islamic Revolutionary Guards Corps (IRGC). The war transformed the IRGC from a hastily organized militia into one of Iran's most powerful institutions. The IRGC emerged from the crucible of the war as a [formidable fighting force with considerable organizational and engineering prowess](#). Under orders of Supreme Leader Ayatollah Ali Khamenei, the IRGC [formed a civil construction and engineering arm after the war](#) called Khatam al-Anbiya (Seal of the Prophets), which helped secure the IRGC's entrenchment and continued relevance even in peacetime.



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In 1989, following the war's conclusion, Ali Akbar Hashemi Rafsanjani was elected president and tasked with rebuilding the country. Rafsanjani encouraged Khatam al-Anbiya to partner with his government for the rebuilding of Iran. Khatam al-Anbiya's move into civilian enterprises expanded its influence and economic portfolio as it took on lucrative post-war reconstruction projects. Fueled by Khatam al-Anbiya's profits, the IRGC has taken on an outsized role in the militarization of Iran's economy and the organization effectively operates as a state within a state, accountable only to Supreme Leader Khamenei.

Both Supreme Leader Khamenei and President Rafsanjani sought to build patronage links to the IRGC, and as a result, Khatam al-Anbiya began winning tenders and bids to build dams, expanding upon the legacy of showy dam construction inaugurated under the Shah. Another beneficiary of the boom in dam construction has been [Mahab Ghodss](#), an engineering consulting firm that has supervised the construction of hundreds of Iranian dams. Mahab Ghodss is linked to Iran's largest charitable holding foundation, Astan Quds Razavi. Astan Quds Razavi is a bastion of support for Iran's hardline clerical establishment. The revenues generated by dam construction help Khamenei keep his core constituencies, the IRGC and hardline clerical establishment, satiated, incentivizing their continued loyalty to Khamenei.

Whereas 13 dams were constructed during the Shah's reign, Iran's Islamic Revolutionary government that succeeded the Shah has built [over 600 dams](#) in its nearly four decades in power, massively accelerating the environmental deterioration that began under the Shah. Iran today, the world's 18<sup>th</sup> most populous country and 18<sup>th</sup> largest nation in terms of land area, stands as the world's [third largest dam builder](#).

Iran's emphasis on dam building has been carried out in a reckless and corrupt manner. The combination of stakeholders in Iranian dam projects has created a perverse incentive structure whereby dams are commissioned regardless of utility or environmental impact. According to Nikahang Kowsar, Iran's "[construction boom was spurred by consulting firms, politicians, and parliamentary candidates who saw large infrastructure projects as a way to consolidate their political support. The bigger the dam, the longer they would hold office.](#)"

In an in-person interview, Nikahang Kowsar explained the corrupt process by which Khatam Al-Anbiya imposes its will to force through construction projects. Khatam al-Anbiya provides a livelihood for [135,000 employees](#). The size of its labor force gives Khatam al-Anbiya political clout, which it has abused to secure backing for dam construction projects, as well as road building and energy field development. There is little to no accountability in the process. Khatam al-Anbiya insists that the people need a dam and it will be good for the environment. The regime has effectively neutered Iran's primary environmental stakeholder, the DOE. The DOE often raises environmental concerns over dam projects but has little recourse through the judicial system to prevent Khatam al-Anbiya and the IRGC from carrying out massive projects. At times, the regime will commission an environmental study, but will then impose an arbitrary deadline. When the DOE fails to complete the study on time, Khatam al-Anbiya and its partners will simply construct the dam without the DOE's approval.

In a phone interview, water expert Seth Siegel further elaborated on why the DOE has failed to gain traction in petitioning the government to uphold its environmental concerns. Even in the United States,

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the Environmental Protection Agency, which is the closest analogue to Iran's DOE, does not have the unrestrained ability to regulate environmental policy. Industrial and defense/military priorities must be weighed against environmental concerns, generally leading to compromise which upholds basic standards of environmental compliance. In Iran, however, there is a complete mismatch between the government's priorities and the wellbeing of the population at large. The government places its thumb on the scales to ensure that the financial interests of a handful of players close to Supreme Leader Khamenei in the leadership of the IRGC and hardline clerical establishment take precedence over environmental concerns. In a similar vein, the IRGC has been permitted to conduct military exercises in protected areas over the protestations of concerned environmental stakeholders, leading to the degradation of Iran's biodiversity. Iran's unfair and corrupt system has effectively legitimized the structural destruction of Iran's natural environment by powerful constituencies such as Khatam al-Anbiya and Mahab Ghodss.

## Consequences of Environmental Mismanagement

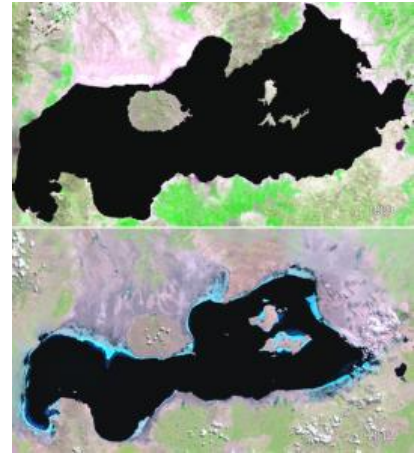
Iran's harmful agricultural policies and reckless over-construction of dams have had deleterious environmental and ecological impacts around the country. The large number of unnecessary dams, coupled with the government's deliberately permissive attitude toward the 330,000 illegal wells, has led to the depletion of [over 300 of Iran's 609 aquifers](#) and blocked the rivers that historically replenished them.

The depletion of Iran's aquifers has had severe follow-on effects. According to environmental experts Kaveh Madani, Amir AghaKouchak, and Ali Mirchi, Iran faces "[drying lakes, rivers and wetlands, declining groundwater levels, land subsidence, water quality degradation, soil erosion, desertification and more frequent dust storms](#)" stemming from drought conditions combined with the over-abstraction of water from aquifers.

Iran's environmental mismanagement has particularly impacted Khuzestan province, which borders Iraq in Iran's southwest and is primarily inhabited by Arab citizens. The regime has diverted much of Khuzestan's [water resources to favored populations in cities such as Qom, Isfahan, Yazd, and Kerman](#), leading to the depletion of Khuzestan's wetlands and rivers. As a result of this drying out, formerly fertile farmland is becoming increasingly inhospitable to crops and desertification of the province is taking root. The lack of moisture is exacerbating the frequency and intensity of sand and dust storms in the province. Before the revolution, the province had one dam, but now has over 14. One such dam, [the Gotvand](#), was built on salt beds despite prior research indicating that constructing a dam in the area would adversely affect the salt concentration of the Karun River which flows from the Gotvand dam. As a result, the [salinity of the local water in the city of Abadan is equivalent to seawater](#), which has led to rationing of drinking water and forced factories and farms to shut down. Over [80,000 residents of Abadan have migrated](#) away from the city just in the past year.

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Another visible effect of Iran's environmental crisis is the drying up of rivers, lakes, and wetlands. Lake Urmia in Iran's northwest was once one of the world's largest salt lakes, but during the Rafsanjani presidency, Iran constructed a number of dams that cut off the waterflow to the lake despite the warnings of environmentalists. The dams and prevalence of illegal wells has led to the [shrinking of Lake Urmia to 5% of its previous volume](#) and contributed to toxic dust storms due to the remaining salt residue. Similarly, Lake Bakhtegan, previously Iran's second largest lake, has [dried up and turned completely into a salt desert](#) due to the regime's excessive damming of the Kor River, which reduced water flow and increased the river's salinity.



Depletion of Lake Urmia, Source: [NASA](#)

The Zayandeh Roud River previously flowed from Iran's Zagros Mountains through the city of Isfahan before its terminus south of Tehran, serving as the main water source for a string of farming communities along its path. The river also fed the Gavkhouni wetlands, a 470-square kilometer swamp that was home to a large migratory bird population. Drought and [political decisions to divert its water to water-intensive factories](#) have largely dried up the Zayandeh Roud in recent years. Farming towns along the river have had to cease agricultural activities as a result, impacting the livelihoods of thousands of citizens. Formerly lush fields and wetlands have transformed into [desiccated, salty fields, leading to increased sandstorms](#).

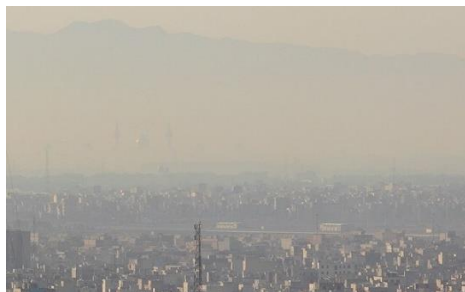


Dry river bed of the Zayandeh Roud River, Source: [Wikimedia Commons](#)

The depletion of Iran's aquifers has also led to land subsidence, soil erosion, and the degradation of previously arable land. Land subsidence, when the ground sinks, occurs due to over-extraction from aquifers when, according to Nikahang Kowsar, "[the weight of the earth and soil above causes the land to collapse. This destroys the land's ability to hold water, turning the entire area into a desert.](#)" Major cities such as Tehran face increased risk of sinkholes and earthquakes due to land subsidence, imperiling critical infrastructure such as bridges and high-rise buildings. According to Issa Kalantari, a former Minister of Agriculture and current head of the DOE,

[Iran risks losing 70% of its farmland in the next 20-30 years](#) due in large part to soil erosion, another effect of aquifer depletion.

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Tehran Air Pollution, Source: [Wikimedia Commons](#)

Iran also faces widespread social upheaval due to its environmental mismanagement. Air pollution, dust storms, lack of potable water, and improper usage of wastewater to treat crops have all had deleterious public health impacts. Many farmers, herders, villagers, and rural citizens have lost their lands due to lack of water. The draining of aquifers and desertification have driven millions of farmers and villagers to take up residence in shantytowns and ghettos on the margins of larger cities. In 2015, DOE head Issa Kalantari warned that water and environmental degradation may ultimately displace [as many as 50 million of Iran's current 83 million residents](#).

## Conclusions

While climate change factors such as decreasing precipitation and declining snow storage on Iran's mountain peaks have played a role, the Iranian regime's policy missteps, mismanagement, corruption, and failure to adapt are primarily to blame for the country's protracted environmental crisis. Numerous experts have advised Iran's leadership on best practices to follow and issued warnings of the consequences to come, but the regime has ignored their protestations. The [Stanford 2040 project](#), for instance, urged Iran to deemphasize its policy preferences for food self-sufficiency and population growth. There have been no encouraging signs that the regime seeks to discourage population growth however, as politicians dare not question one of Khamenei's signature policies. Instead, Iran's leadership has enacted a campaign to [increase the population to 150 million by 2050](#) and sought to [restrict access to family planning measures](#).

Experts have also suggested investing in aquifer management as a panacea for Iran's water crisis. This cheap and easy alternative to environmentally destructive dams would enable Iran to store 30 billion cubic meters of water each year for current and future use. However, the IRGC has resisted this approach since its leadership would be unable to profit as it does from dam construction.

Iran's water issues are similar to those faced by the drought-plagued American southwest. The United States should offer the prospect of water cooperation and investment to incentivize Iran's leadership to return to the negotiating table in order to work out a comprehensive treaty covering Iran's illicit nuclear program as well as its hegemonic regional agenda and destabilizing ballistic missile pursuits. The Trump administration should target messaging directly to the Iranian people through platforms such as Voice of America – Persian News Network and Radio Farda letting them know that the government and people of the United States stand ready to help the Iranian nation contend with long-term drought conditions, adapting to climate change, and upgrading and helping maintain water infrastructure and governance.

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Such a campaign would pose a stark choice to Iran's leadership; it can either commit to governing in its peoples' interest and ameliorating the impending environmental crisis or prioritize preserving and exporting the Islamic Revolution at the nation's expense.

Israeli Prime Minister Benjamin Netanyahu has found surprising success with targeted outreach to the Iranian public. In June 2018, Netanyahu [released a video message](#) to the Iranian people declaring Israel's readiness to share its technological prowess and innovations in fields such as wastewater recycling and drip irrigation to help Iran overcome its water challenges. The video received [hundreds of thousands of views](#) in Iran and was widely covered in the state-controlled media. Over 100,000 Iranians [joined the Israeli government's Farsi Telegram channel immediately](#) after the video was uploaded.

The regime was quick to cast aspersions on Netanyahu's appeal. Iranian Energy Minister Reza Ardakanian [responded](#), "The prime minister of this regime [Israel] or any other person who claims to have the ability to manage water resources is aware that Iran is among the countries whose several-thousand-year record of water management has been recognized, and we can be a source for other world regions in this regard and promote methods to cope with water shortage and optimum use of water." His statement distorted the reality that Iran's current revolutionary regime has erased Iran's historical provenance of skilled water management and demonstrated that Iran's leadership is unwilling to accept the outside technological skill and assistance it will need to overcome its destruction of the nation's environment.

## Iran's War on Environmental Experts and Activists

The environmental deterioration in Iran caused by the regime's corruption, incompetence, and mismanagement of environmental policy carries significant public health and national security risks. Factors such as air and water pollution, water shortages, and loss of farmland have inflicted suffering upon Iranians from around the country and all walks of life. The resulting social upheaval, which has disparately impacted poor and rural Iranians and those from disfavored ethnic minorities, has driven millions of Iranians out of their farms and villages to slums on the periphery of larger cities, exacerbating resource competition and rural/urban societal cleavages. Those who have remained behind face increasingly inhospitable conditions, and as many as 50 million Iranians may ultimately be displaced.

The impending environmental crisis poses formidable risks to internal cohesion, which should incentivize the Iranian regime to adopt the recommended policy fixes. Since late December 2017, the Iranian regime has faced a revived protest movement stemming primarily from marginalized communities on Iran's periphery. The protestors' grievances have centered largely on economic mismanagement, corruption, rising inequality, inadequate provision of social services, and lack of attention to infrastructure needs. Rising unemployment and inflation, as well as rapid currency devaluation – trends which have accelerated since the re-imposition of suspended nuclear sanctions and the exodus of foreign companies in the aftermath of the Trump administration's decision to withdraw from the 2015 Iran nuclear deal – have further compounded Iran's domestic unrest. The economic promise of the nuclear deal never materialized for average Iranians, as the regime siphoned billions of dollars in previously frozen assets and increased revenues from trade and investment into foreign adventurism, bloated military budgets, and further enrichments for the Supreme Leader, the Islamic Revolutionary Guard Corps (IRGC), and their affiliated patronage networks.

### Environmental Protests

Environmental deterioration is another salient, lesser-understood factor undergirding Iran's domestic unrest. Although environmental considerations are rarely the explicit causal factor behind protests, they act as a force multiplier; an added combustible ingredient on top of the Iranian citizens' social, political, and economic grievances. Lack of drinking or agricultural water is a potent symbol of the government's failure to provide the most basic of services to the Iranian people. According to Nikahang Kowsar in an in-person interview, around 85% of the demonstrations since the resumption of protests have taken place in areas hit by drought and water shortages due to excessive damming, and many of these demonstrations have been among the most violent examples of unrest.

In January 2018, for example, Iranian security forces [clashed with protestors in Qahderijan](#), a city close to Isfahan over water rights. Protestors threw Molotov cocktails at a police station, leading security forces to open fire, killing at least five.

In July 2018, the regime [quelled four days of demonstrations in Khorramshahr](#), a majority-Arab city in the oil-rich Khuzestan province bordering Iraq, by escalating from using tear gas to disperse the protestors to employing live fire, reportedly killing four. The protests centered on the lack of desalinated water for drinking and agriculture due to the regime's mismanagement, which had exacerbated local drought conditions.

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In August 2018, protests broke out against the IRGC in Marivan, a city in Iranian Kurdistan, after [the IRGC reportedly set wildfires](#) in order to drive out Kurdish peshmerga. Four environmental activists died fighting the blazes, triggering demonstrations featuring thousands of protestors.

It should be noted that Iranian environmental activists and protestors do not always function as a unified bloc and are frequently concerned primarily with local concerns rather than focused on the larger picture of the regime's environmental mismanagement. This has led to tensions between activists in different provinces fighting over rights of certain rivers and their sources. For example, activists in Isfahan province fighting to save the Zayandeh Roud River call for water to be transferred from the Karun basin and the Gavkhuni wetland, which has virtually dried up, pitting activists with conflicting interests against each other. The regime has encouraged and exploited such discord as part of a divide-and-conquer strategy, as it keeps Iranian activists focused on their own provincial concerns rather than the bigger picture of the regime's mismanagement.

## Targeting of Activists and Experts

In addition to the demonstrators who are directly impacted by deteriorating environmental conditions, numerous Iranian environmental experts and activists have warned that the regime's mishandling of water resources and agricultural and industrial malpractice are setting the nation on an unsustainable, calamitous path. Rather than acting to placate protestors, activists, and experts by amending its harmful policies, the Iranian regime has disregarded their protestations and expert advice, and responded instead with repression.

Iran's campaign against environmental activists and experts is borne of a power struggle between the pragmatic factions represented by President Hassan Rouhani's administration, and the hardline clerical and IRGC elites who provide the backbone of support for Supreme Leader Khamenei and remain the true power brokers in Iranian society. Rouhani was elected twice on a platform that [prioritized boosting civilian power](#) in the political and economic spheres by curtailing the IRGC's pervasive control. From 2013-2015, Rouhani's administration sought and obtained – with Khamenei's cautious backing which he has since rescinded – a nuclear deal with Western powers. Rouhani's primary motivation was to open up the Iranian market to Western trade and investment, which he believed would empower civilian business interests at the expense of the IRGC. It should be noted that Rouhani's efforts to empower an alternative civilian elite do not stem from benevolence, but from his belief that this represents the ideal path to salvage and preserve Iran's Islamic Revolutionary regime, as well as a desire to enrich his own political allies and benefactors.

The IRGC, naturally, has proved loath to cede its power, influence, and riches, and therefore acted to [sabotage](#) the Rouhani administration's machinations for greater economic openness and integration with the West. The IRGC has sought, through threats and harassment, to prevent investment in Iran from those who would not give the IRGC its share. Most notably, the IRGC's intelligence organization arrested Siamak Namazi, a member of a prominent Iranian-American dual national family who had been in business with powerful elements of the Iranian regime since the early 1990s, such as the Rafsanjanis and the Khatami administration. The Namazis and their associates were also close to President Rouhani's team, and had sought to invest in Iran. Subsequently, his father, Baqer was arrested after

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attempting to visit his son. The Namazis' arrests sent the message that the IRGC would not allow alternate elites to challenge its prosperity and served to chill the investment plans of other Iranian expatriates.

The power struggle between the Rouhani administration and the IRGC has played out in a similar vein in the environmental sphere. Rouhani's administration, particularly Department of the Environment head Issa Kalantari, has recognized the severity of Iran's impending environmental crisis in [remarkably candid terms](#). Rouhani's administration has called for environmental reforms and more sustainable policies, most notably moving to [curtail dam construction](#), a crucial revenue generator for the IRGC and its construction arm, Khatam al-Anbiya. Environmental activists have also sought to prevent the IRGC from carrying out military exercises and building military installations in protected lands. Sensing a threat to its profits and military activities, the IRGC has responded by targeting water management and environmental activists and experts – and often, their families – for harassment and arrest. The Iranian regime has also stepped up targeting of environmental activists due to their demonstrated ability to mobilize protestors, which the regime views as a threat particularly during the current period of unrest.

In January and February of 2018, the IRGC [arrested 13 environmental experts and wildlife preservation activists](#). According to a [report](#) in an opposition website, the IRGC carried out the January and February arrests due to the detainees' opposition to the IRGC's efforts to install missile silos and related military equipment on UN-protected environmental preservation areas.

The IRGC Intelligence Organization has held the detainees in its wing in Tehran's notorious Evin prison, where they have suffered from mistreatment and abuse. The IRGC has [denied the detainees visitation](#) with their families and lawyers. In June, two of the detainees [reported suffering a nose injury and broken teeth](#). In October, five of the detainees charges were reportedly [upgraded from espionage to "corruption on Earth,"](#) a capital offense. Iran's Islamic Penal Code defines "corruption on Earth" as: "Any person who extensively commits felony against the...people, offenses against internal or international security of the state, spreading lies, disruption of the economic system of the state, arson and destruction of properties, distribution of poisonous and bacterial and dangerous materials, and establishment of, or aiding and abetting in, places of corruption and prostitution...shall be considered as 'corrupt on earth' and shall be sentenced to death."

Another prominent instance of the IRGC's targeting of environmental experts was their harassment of Kaveh Madani. Rouhani and DOE head Issa Kalantari asked Madani, an American-educated water management expert and academic, to leave his teaching post in London in order to return to Iran and serve as deputy head of the DOE, where his expertise would be put to use in reversing Iran's water shortages. It was also hoped that Madani's appointment would lead other expatriate technocrats to return to Iran to apply their expertise to solving the country's problems, [stanching an ongoing brain drain](#).

Madani was immediately subject to IRGC harassment upon his arrival in Iran in September 2017. Madani [alleges](#) that he was detained and interrogated immediately upon his arrival in Tehran, and that IRGC intelligence agents accessed his online accounts and confiscated various files and photos. The harassment grew worse following the



*Kaveh Madani, Source: [Wikimedia Commons](#)*



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resumption of domestic unrest in late December 2017 due to the regime's increased sensitivities. In February 2018, the IRGC detained Madani again but ultimately released him due to public outcry. The IRGC accused him of spying on behalf of the MI6, Mossad, and CIA.

The IRGC's mistreatment of Madani was meant to undermine the Rouhani administration and can be viewed as an extension of its power struggle with the moderate and reformist factions. Madani was also marked for persecution because of his [outspoken criticism of Iran's water mismanagement](#), particularly its over-construction of dams, which the IRGC viewed as an attack on its economic interests. The IRGC's harassment campaign led Madani, fearing for his safety, to resign his post in April and flee the country. Angered conservative parliamentarians summoned [Intelligence Minister Mahmoud Alavi](#), a Rouhani ally, to Iran's *majles* to demand answers for how Madani was able to leave the country without facing the espionage charges against him.

## Conclusions

Reformist politicians [were critical of the regime's handling of the Madani affair](#), complaining that it would have a chilling effect on expatriate elites from returning and contributing their expertise to solving the country's many issues. In the face of mounting environmental and water crises, the Iranian regime and IRGC have employed a shoot-the-messenger approach, choosing to repress protestors, activists, and experts and reject their demands and advice in favor of protecting their narrow, short-term political and economic interests. As climate change, environmental mismanagement, and corruption continue to take their toll, Iran is likely to face growing protests and subversive activities, particularly from those hardest hit in peripheral communities, which also face the worst ethnic, political, and economic discrimination in the country.

## Environmental Issues in Iran's Foreign Policy

Iran's foreign policy is characterized by frequent [meddling and subversive activities](#) in its neighbors' affairs as part of its regional domination strategy. While most coverage of Iranian foreign policy focuses on its support for terrorist movements and waging of proxy wars, environmental and water issues play an important role in Iran's hegemonic efforts to dominate neighboring states. Iran shares [ten river systems](#) with surrounding countries and lacks bilateral arrangements that would allow for equitable distribution of water between it and its neighbors. Iran has sought to dominate shared water sources, particularly with Iraq and Afghanistan, exacerbating drought conditions and negatively impacting agriculture in those countries, which in turn has contributed to increased regional tensions.

### Tensions with Iraq

According to [an officer of the UN Food and Agriculture Organization](#), "[Each of \(Iraq's\) neighboring countries, whether Turkey, Iran or Syria, controls the water flow into Iraq according to its interests, needs and circumstances without adhering to any quota or consideration. ...The one that pays the price is always the country where the river ends — in this case Iraq.](#)" Iran has recklessly dammed and diverted shared water sources with Iraq for hydroelectricity generation, agricultural use, and drinking water for its own people. This dynamic has had deleterious effects downstream in Iraq.

The Tigris and Euphrates Rivers account for [98% of all surface water in Iraq](#), but the flow of water to these ancient waterways is imperiled by Iran's activities upstream. Several tributaries originating in western Iran flow to the Tigris River in Iraq, providing [up to 25% of the Tigris's mean annual flow](#). In 1975, Iran and Iraq reached an agreement governing transboundary water flows of the smallest tributaries, but no accord was ever reached on sharing the major tributaries.

With no agreement in place, Iran has set about [cutting off or diverting 42 shared rivers and tributaries](#) with Iraq, according to an Iraqi foreign ministry spokesman. Iran has built multiple dams along the Diyala River, the largest tributary feeding into the Tigris in order to divert water to the Iranian city of Kermanshah for drinking, farming, and hydroelectricity. Iran's damming along the Diyala, as well as the Sirwan and Alwant rivers, has lowered long-term median flows to the Tigris by [over 50%](#). An additional dam and inter-basinal water transfer tunnel is in the works to divert waters from tributaries feeding the Tigris to Iran's southwestern Khuzestan province, which is projected to cut the flow of Iranian waters to the Tigris [to just 22% of what it would be unimpeded](#).

The lack of water flows to the Tigris has negatively impacted agriculture and hydroelectricity generation in Iraq, leading to intermittent blackouts. Iran's Karkheh and Karun rivers feed into Iraq's Shatt al-Arab River (formed by the confluence of the Tigris and Euphrates), but Iran's diversion of these tributaries through damming has [shrunk the Hoor-Alazim wetlands](#), which run along the nations' shared border, to one-third its previous size. The damming has also increased the salinity of the Shatt al-Arab downstream, making it no longer drinkable for Iraqis.

The situation in Basra, at the southern terminus of the Tigris and Euphrates, is especially severe due to the reduced water flows of these two rivers. The Tigris, which crosses through Basra, formerly served as the city's primary source of drinking and agricultural water. Today, the portion of the Tigris servicing

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Basra has virtually dried up due to Iranian and Turkish water diversions upstream. The river's water flow upstream of Basra is [no longer sufficient to dilute chemical and industrial pollutants](#) introduced into the stream by Iraq's petroleum industry. Since July 2018, Basra has faced riots driven in large part by the city's failing water infrastructure, which has caused a [spike in emergency room visits](#) due to water poisoning, skin infections, and intestinal infections.

Experts have warned that Iran's reckless policies are [engendering drought conditions](#) in Iraq, pointing to the clearly reduced water levels of the Tigris and Euphrates. Iraqi politicians have alleged that Iran's policies are tantamount to a declaration of war, as they have led to the [desertification of over 250,000 hectares of agricultural land](#) and started the process of forcing Iraqis dependent on fishing and agriculture for their livelihoods to migrate from 17 impacted towns and villages. The head of Iraq's Committee on Agriculture and Water in the Iraqi parliament has alleged that [Iran benefits from undermining Iraq's agricultural sector](#), as it forces Iraq to increase its food imports from Iran. Iran's ability to control Iraq's water supply gives Iran a key potential source of leverage in its quest to weaken Iraq and co-opt the nation into its sphere of influence.

## Tensions with Afghanistan

Shared river systems have contributed to growing tensions between Iran and Afghanistan as well, although in this instance, Iran is the downstream party in the dispute. Iran views Afghanistan's growing water demands and water infrastructure development as a threat to its drought-stricken eastern provinces and has therefore resorted to subversive measures and sabotage to secure the full flow of Afghan rivers into Iran.

Two major rivers originate in Afghanistan and flow to Iran, the Helmand and Harirud. [96% of the Iranian portion of the Helmand and 61% of the Iranian portion of the Harirud](#) originate in Afghanistan. A treaty reached in 1973 to ensure sufficient flows to Iran was never fully implemented, derailed by the 1979 Islamic Revolution in Iran and Soviet invasion of Afghanistan. Since the fall of the Taliban government, Afghanistan has sought to construct new dams and rehabilitate existing ones for hydroelectric power and irrigation purposes. The dam projects in the works project to drop the Helmand's flows to Iran "[by 2.7 km<sup>2</sup>, equal to half of Iran's entire water demand in the Sistan basin.](#)" A newly inaugurated dam on the Harirud is expected to [cut flows to Iran by 62-76%](#).

Addressing an international conference in Tehran on combating sandstorms, President Rouhani spoke out against Afghanistan's dam plans, [warning](#), "We cannot remain indifferent to what is damaging our environment. The construction of several dams in Afghanistan – the Kajaki, Kamal Khan and Selma dams and other dams in the north and south of Afghanistan – impacts our Khorasan and Sistan and Baluchestan provinces." Rouhani's warning was not an idle threat. Iran stands [accused of training and arming the Taliban](#), despite ideological differences, since 2006 as part of a strategy to play all sides against each other in Afghanistan to ensure that any government that emerges in Afghanistan will be friendly, or at least too weak to threaten Iranian interests.

In exchange for its support, the Taliban has reportedly endeavored to [obstruct dam construction](#) and ensure free flows of water to Iran. Iran has denied such claims, insisting that it only uses diplomacy to

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settle water disputes with Iran. Afghan officials dispute the assertion, alleging that the IRGC has [provided the Taliban with sophisticated weaponry](#) meant to disable offending dams. Iran's efforts to maintain Afghan water flows go beyond arming terrorist proxies. Iranian border police have repeatedly fired upon Afghan villagers along the Harirud who have sought to divert water from the river in order to ensure clean drinking water. Iranian border police [have killed at least ten villagers](#) and reportedly wounded many more.

## Conclusions

At the international conference on sandstorms held in Tehran in 2017, President Rouhani declared without a trace of irony, "The important region of Middle East and West Asia is a family. ... We must aim at having a more powerful region instead of being the most powerful country in the region." Iran has a long-term interest in the development of stable governments in neighboring countries such as Iraq and Afghanistan. Working collaboratively through diplomatic channels on water issues could potentially defuse tensions between Tehran and its neighbors and help bring needed stability to Afghanistan and Iraq. Instead, Iran has pursued its narrow, short-term interests, adding drought conditions and water shortages to the combustible mix of problems plaguing the Afghan and Iraqi governments.