

How Iran's dam-building obsession is killing Middle East's largest lake

Kourosh Ziabari | TRT World | 29 July 2022

<https://www.trtworld.com/magazine/how-iran-s-dam-building-obsession-is-killing-middle-east-s-largest-lake-59266>

It was once the largest saltwater lake in the Middle East, and the sixth largest on Earth. Along its fertile banks, civilisations rose and fell. It was the cradle of life, sustaining millions of lives through millennia — humans, animals, birds. It is now dying.

Lake Urmia in northwestern Iran is fast on its way to desiccation or drying up. And the emergency management authorities of the West Azerbaijan province have warned as recently as July 14 that more than 95 percent of the highly saline lake's water has disappeared.

This follows a two-decade pattern of annually losing 40 centimetres of its water level.

Although officials blame the runaway drying of the lake to the conundrum of climate change and protracted periods of drought gripping Iran, there is scientific evidence from scholarly work that says otherwise—the main drivers of the environmental tragedy are aggressive water resources development schemes, unregulated agriculture, man-made changes to the system and upstream competition over exploitation of available water.

The perceived mismanagement of the crisis by the government, despite millions of dollars splurged on restoring the iconic body of water, has precipitated frequent outpourings of dissent nationally, with people taking to the streets to protest the Islamic Republic putting the fight against environmental degradation at the back burner.

Earlier this month, at least 16 people were arrested by the police in Iran's West Azerbaijan province after they staged protests demanding government action on the atrophying ecosystem of Lake Urmia. Dubbed by locals as “the turquoise solitaire of Azerbaijan”, Lake Urmia has been an imperative stop and a haven for migratory birds. It has also served as a therapeutic bath for tourists who used its warm, hypersaline waters as a balm on their wary bodies.

With endemic neglect and the absence of a political will, especially in the hardline Raisi administration, the lake's survival is anyone's guess. And it is highly likely that the saltwater lake, where archaeological excavations have found evidence of life and artefacts in the basin dating back to the 3rd millennium BCE, will die soon.

Creating water bankruptcy

Kaveh Madani, a globally-recognised environmental scientist and a research professor at the City University of New York's Remote Sensing of Earth Systems Institute, has been involved in researching the desiccation of Lake Urmia for several years and provided policy recommendations for saving it. He and a group of academics have devised the term "Aral Sea syndrome" to characterise Lake Urmia's cataclysm.

Surrounded by Uzbekistan and Kazakhstan, the drainage basin of the Aral Sea that largely dried up by the 2010s covered the former Soviet republics of Uzbekistan, Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan as well as neighbouring Afghanistan and Iran.

"The Soviet leaders thought they should be using water for increased development, production of cotton, increased agricultural activities, employment and other purposes. As a result, they reduced the inflow to the lake...and it went dry," Madani tells *TRT World*.

"This created dust and health problems (for the people living near the lake). For a long time, the world has been trying to help restore that lake and it has been nearly impossible," he adds.

Madani, who also serves as the head of a research programme on integrated resources management at the United Nations University-FLORES, says the main cause of Lake Urmia's gradual demise is what he terms a "mass balance issue".

"The lake naturally loses some water due to evaporation every year, and to lose water through evaporation and be able to stay at the same level, it requires a certain degree of input. The inflow is provided through rivers. If you cut the inflow to the lake, and the outflow and evaporation continue, the lake would eventually dry up," he says.

According to Madani, the government and local enterprises have "reduced the inflow to the lake by increasing upstream use of water and diversion of water [in the form of] taking water out of the river for what humans perceive as beneficial use, namely for growing food, expanding the agricultural sector, providing water supply to cities and industries and so on."

"To do that, they have expanded irrigation and drainage networks and built multiple dams and over time increased water consumption upstream. Then they created a clear water bankruptcy state. The expenditure, which is the evaporation, is more than the income, which is the water coming into the lake, and the system is bankrupt," he adds.

One of the catalysts of serious environmental challenges in Iran has been an excessive pattern of constructing dams—which the authorities assert is an indication of the nation's industrial growth—

required to address water shortages in the dry seasons. But this practice has abysmally backfired, and the 74 dams built on Lake Urmia's basin have accelerated its drying.

Madani calls the tidal wave of dam-building in Iran an outcome of a "hydraulic mission era", in which "humans, technocrats and insecure leaders think that by using money and technology, they can address all their water problems. They think they can overcome nature and see their mission to be storing every drop of water possible and using it for generating income."

"Building dams became a symbol of development in Iran, especially an Iran under sanctions, an Iran in a war with the rest of the world, and Iran after the Revolution which wanted to prove itself and say it can do things on its own. So, dam-building became a top mission and a way to address some feelings of insecurity," he argues.

But the scientist, who served briefly as the deputy head of Iran's Department of Environment from 2017 to 2018, says Iran's dam-building bonanza is not a sustainable policy.

"Once you allocate money to construction projects, everyone is happy at the beginning; you boost the local economy and you create job opportunities, so a lot of people are happy with dam building. The adverse results come in the long term," he says.

"Lack of transparency, corruption and other factors worsen the situation plus short-term planning is still integral to the way Iran manages its system, which is a system only thinking about survival not about long-term and national interests. So, it is still attractive and a way of proving success for government bodies and even parliament members are happy when there is a development project happening in their constituency," he adds.

Iran's official task force for the restoration of Lake Urmia was founded in 2013 to respond to what had evolved into a national demand. The budget initially promised for the Urmia Lake Restoration Program (ULRP) was a staggering sum of \$7 billion. Last year, the inter-agency initiative reported to have expended 56 trillion rials, equivalent to \$176 million, in resuscitating the endangered ecosystem, but the investment has been largely to no avail.

"The programme tried to connect itself to world-class research. It was the first time they essentially tried to involve researchers in the business, in a policy program. They established connections with universities, for example, the Sharif University of Technology, Iran's top university, was heavily involved. "More than 600 researchers got involved, including many non-Iranian researchers... The effort was useful if you think about it that way because Iranians didn't give up. They still thought that they could take action and do something. They didn't give up easily," Madani says.

However, what stymied the success of the initiative was a lack of political capital: “The system was designed to give them big authority but eventually they didn’t necessarily have that level of authority, they were not the decision-making body unfortunately, but became more of an advisory body to the government and that’s where the problem started.”

“They were not able to get a warrant from the Ministry of Energy, asking it to release water on a timely basis and satisfy the environmental water rights of the lake or the environmental flow requirements... But the political budget was the missing component. What I mean by political budget is some decision-makers who could have been willing to pay the high political cost of implementing big reforms.”

Saving Lake Urmia, despite frequent calls by civil society, doesn’t appear to be top on the list of the priorities of President Ebrahim Raisi. Only time will tell if this internationally-cherished ecosystem with its paramount biodiversity can survive a blend of acute drought and systemic neglect and mismanagement.

Experts say its resilience will not be unlimited.