Elazig Keban Dam, Turkey. Editorial credit: temrahh/shutterstock.com

Occasional Paper Series No. 41 | October 2022

How Water Strategizing is Remaking the Middle East

Water scarcity, water fluctuations, and the threat of more of both are pushing states to re-work their approaches to resources. But to what end?

By Peter Schwartzstein

For years, many Middle Eastern states have engaged in high stakes, if generally haphazard, forms of water strategizing. Intent on guaranteeing their water futures amid fluctuations in access—and periodic scarcity, these countries have adopted unique and varyingly successful approaches to water security. The consequences have often been dramatic, helping to reshape everything from national narratives and (unlikely-looking) inter-state alliances to many of the region's battered rural economies and landscapes.

Much of this phenomenon smacks of "old school" water securitization—and among some of the more militarily powerful and geographically blessed states there's been plenty of that. Yet this maneuvering in the face of threats real or exaggerated isn't limited to an out and out pursuit of resources.

In their bids for better water outcomes, or at least greater clarity over future access, states have multiple goals in mind. They want to acquire as much water as they can *without* overstepping their economic, political, and topographical bounds. If possible, they want as much of the "right kind" of water in a part of the world where dependence on trans-boundary resources can be fraught.[1] Failing that, authorities

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(especially in the thirstiest states) are beginning to temper citizens' expectations as to how much water they're likely to receive down the line.

These approaches to water security have seldom been consistent, a reflection, in part, of the mismatch between the importance of water as a source of life and its relative insignificance in economic terms. (For instance, agriculture's share of Iraqi GDP – 6 percent – is about a quarter of what it was in the mid 1990s.)[2] For that matter, there has sometimes been good cause for inconsistency. The impacts of new technologies and political instability within many states have frequently shaken up the Middle East's balance of aqua-power, opening new possibilities for some and closing them off for others.

But as the climate changes, populations grow, and the consequences of decades-long mismanagement bite, regional states' water options are finally being forced into focus.[3] Heightened urgency has increased pressure on governments to embrace the best (or what they perceive to be the best) pathway available to them. Those who fail to pursue viable strategies risk having their fates decided on their behalf. How states handle the often-bitter realities that will arise from unequitable water distribution could go some way in dictating the peacefulness and prosperity of the Middle East's future.

Water strategizing is a global pursuit. But the Middle East is especially susceptible to water-related turmoil. The region has the most limited freshwater resources of any region, a range of contested trans-boundary rivers, such as the Jordan, and frequently tetchy inter and intra-state relations. Its experience might be but an exaggerated prelude to the challenges that will accompany other areas' experience of increasing water stress.[4]

The Upstream Powers

For the Middle East's relatively water rich states, water strategizing has generally revolved around the construction of big, bold, and often controversial infrastructure.

Aji Chay, a river passes underneath a historic bridge in Tabriz city of Iran and flows into Lake Urmia which was once the sixth-largest salt lake on earth and it lost 88% of its area. Editorial credit: solmaz daryani/shutterstock.com

Since the 1950s, Turkey and Iran have constructed scores of large dams in the Tigris and Euphrates basins, while also carving out correspondingly huge irrigation schemes to quaff some of that captive water. The results have been so dramatic as to green huge swathes of previously semi-arid land, submerge scores of mountain valleys, and reconfigure almost every significant waterway from Western Anatolia to the Afghan border.

As a strategy, this muscular, bricks and mortar-centric approach carries considerable attractions. The provision of water to previously uncultivable land via these dams and associated infrastructure has helped Iran to become largely food self-sufficient, which has reduced its susceptibility to external pressure and arguably reinforced the state's assertiveness on the global stage as a consequence.

And by freeing some farmers in both countries from the vagaries of rain-fed irrigation, this approach has bolstered their rural economies and shares of the regional food export market. The infrastructure first approach has also enabled energy-poor Turkey to produce more of its own electricity – a national security imperative. The Turkish state launched the GAP project, the biggest of its dam construction programs, following the 1973 oil crisis.[5]

Vitally, for governments – particularly in Iran – that have sometimes lacked legitimacy in their peoples' eyes, these big, tangible structures are also much more visible illustrations of state performance than unsexy piecemeal improvements to water networks – and so favored by approval-seeking politicians, and occasional gambits in corruption-riddled political systems. While conscious of these schemes' possible pitfalls, water officials say they've sometimes pushed for them in the belief that they're less likely to be sundered by kickbacks than smaller, less conspicuous projects, even as their corrupt peers welcome these expensive megaprojects as the most effective means of lining their pockets. Iran's Revolutionary Guards, for one, have profited tremendously from their role in the country's dam-building program.[6]

This is water as a plank of state 'modernization,' regime survival, and individual enrichment.

Other regional states have tried to replicate this kind of dam-centric strategy for years, often actively incentivized by international development funding. They never stood a chance. Positioned astride the mountainous headwaters of the Middle East's biggest rivers, Turkey and Iran alone have the geographic settings to capture sufficient snowmelt and rainfall, the financial clout to build megaprojects on this scale, *and* the military strength to ward off backlash from angry downstream states.

Geography is destiny, or so the saying goes, and when it comes to water most Middle Eastern states simply lack it.

For instance, Lebanon's situation speaks to the difficulties of having some, but only some of the attributes needed to support mega-dams. It, too, boasts considerable per capita water resources, and it has tried to harness them. But domestic chaos and corruption has stifled Lebanon's most grandiose infrastructure plans—and the agricultural sector which might have benefitted from them. Its civil society, uniquely strong within the Arab World, has killed off some of the more ill-conceived projects.[7] And with stronger downstream neighbors in Syria and Israel, who might not have tolerated the kind of water loss that generally accompanies the full exploitation of those resources, even a stable Lebanon would struggle to follow Iran and Turkey's example.

Battered now by periodic water shortages, despite their comparatively enviable resources, the upstreamers might have reason to rue how much of their strategy came at the expense of more holistic, far-sighted policy.[8] With so much water, these states spared little thought for conservation, an unfortunate but increasing foolish-looking attitude that's typical of global water "haves."

Officials in these nations would be hard-pressed to change course now, no matter how incompatible some of their infrastructure appears with drought and other climate realities. Who in government, would have the political wherewithal to reform (and possibly hobble) these nations' big, job-spinning agricultural sectors—especially when they are a hedge against potential internal instability, and possess longstanding foreign and domestic policy advantages?

Ripples from this powerful loyalty to possibly outdated logic risks creating problems in countries with smaller dam imprints, too.[9] In Egypt, the electricity-generating benefits of the Aswan High Dam could soon be outweighed by the loss due to evaporation of up to 10 billion cubic meters a year from its Lake Nasser reservoir, roughly ten times Jordan's total annual water consumption. Long the 'hydro-hegemon' of the Nile, Egypt's position has been challenged, probably irretrievably, by upstream Ethiopia's construction of the mega Renaissance dam (GERD).[10]

Yet, as the riparian top dogs, policymakers in Ankara and Tehran feel they have the means to at least prolong the effectiveness of their strategy. The more erratic the rains, the more surface water they can—and are—holding back to compensate farmers and municipalities. The more the reservoirs behind existing dams empty, the more they're turning to the few remaining free-flowing rivers to build new ones. Indeed, the public's clamor for dams has often matched that of officials, ensuring that their numbers continue to swell despite some technical ministries' increased recognition of the possible pitfalls.

Though many downstreamers read malfeasance in Turkey's particularly forceful recent water hold backs, seeing them, for example, as a deliberate attempt to stifle the Syrian Kurdish political project, the reality is that national self-interest demands that Turks and Iranians be the last to suffer. The strong do as they can.

The Tech-Savvy Rich

Elsewhere in the wider Middle East, every other state faces greater degrees of water disruption as supply and demand continue to diverge. Not all thirsty countries are created equal, though.

For Israel and the Arab Gulf states, the last decade or so has brought about a literal sea change in their water fortunes. Through an unprecedented roll out of desalination and wastewater re-use, these states have been able to generate reliably large quantities of freshwater, while also partly insulating themselves from drought and other seasonal access fluctuations. Officials can sound almost giddy in discussing this triumph of science over parched natural landscape.

Most of this tech-centric strategizing was born out of a marriage of opportunity and outright necessity. Having exhausted much of the Arabian Peninsula's groundwater, largely rain-less Saudi Arabia and its Gulf peers had few supply side alternatives. They also possessed little appetite, given their copious cheap energy, to drastically rework consumption patterns that are some of the highest in the world. For its part, Israel had the incentive to turn to desalination,

Modern desalination plant in Dubai. Photo credit: Stanislav71/shutterstock.com

given its partial reliance on an increasingly stream-like Jordan river, and newly tapped offshore gas fields to help power these facilities.

Boasting the world's highest levels of wastewater re-use and some of the lowest levels of pipe leakage (in Israel's case), these states have been able to transform themselves into artificial upstreamers of sorts. As a pioneer in deploying the technology at scale, Saudi Arabia alone produces almost a quarter of all global desalinated water.[11]

But there's more to this strategy than that, as regional policymakers quietly acknowledge. Wary of relying on 'external' water, especially as increasingly drought-ridden upstream powers hold back more river than ever, the tech-savvy rich have leapt at the opportunity to carve out non-transboundary sources of their own.

Israelis remain mindful of the 1967 war with its neighbors, which was triggered, among many causes, by upstream Syria and Lebanon's redirection of Jordan river waters. The Gulf states have similar, albeit less dramatic, concerns about their aquifers, almost all of which extend across borders and some of which have sparked minor inter-state disputes over extraction rates. As is the case in Singapore, there's a tremendous psychological comfort to mastering at least some of your own water in complicated neighborhoods.[12]

As a means of snatching relative plenty from the jaws of thirst, desalination, in particular, looks astonishingly seductive. To water-impoverished nations, it can seem like a conjuring trick. To these states' senior officials, desalination can sound like a ready-made alternative to their inability or unwillingness to force through unpopular water conservation and pricing measures. It's little wonder, perhaps, that ministers in Egypt, Iraq, and other countries frequently invoke this tech when pressed on possible future water crunches (often in throwaway terms), while largely ignoring the tricky-to-implement policies that desalination's more successful regional practitioners have rolled out alongside it.

However, as with extensive dam-building programs, desalination as the centerpiece of national water strategy is an option that few others can hope or should hope to follow, at least as a standalone measure at scale.

First, desalination facilities are so energy intensive that the Saudis use up to 20 percent of all domestically consumed oil and gas to power the country's facilities.[13] They're certainly prohibitively expensive for most agriculture, which accounts for over 80 percent of all regional water use.[14] (Tellingly, neither Israel nor any of the Gulf States produce much grain, especially since Saudi Arabia mostly ditched the ill-fated drive for partial food security that worsened its water crisis in the first place.)[15]

Secondly, fixations on desalination (in isolation) can be, as geographer Daanish Mustafa puts it, just a continuation of the crowd-pleasing, pocket-filling 'megaprojectivitis,' that underpins much dam construction in places where the rehabilitation of pipe networks, for example, might yield better value for money and superior long-term water security.

Increasing supply without simultaneously redressing poor water management often only stirs greater demand, as top Iranian scientists fear their country is once more doing in its accelerated drive for desalinated water. It's an approach that's characteristic of the state's 'water bankruptcy,' they say.[16]

Those whose interest in desalination is partly grounded in security also mistakenly believe that it can be fully insulated from external events. Yemeni Houthis struck a Saudi facility in March 2022, demonstrating the vulnerabilities that can come with clustering major water infrastructure.[17] One of Israel's desalination plants—at Ashkelon—has had to shut down on several occasions due to pollution from nearby Gaza—which has been magnified by wartime and bureaucratic Israeli delays in getting fuel to wastewater facilities in the blockaded territory.[18] In a region as small and interconnected as the Middle East, there might be no such thing as wholly sovereign water. But that's unlikely to quash the ambitions of those committed to this path or those attempting to join them. Because, as one Israeli official put it, "what choice do we have?"

Drilling engineers maintaining water pipe for Mekorot, the national water company, in Ashkelon, Israel. It supplies Israel with 90% of its drinking water and a cross-country water supply. Editorial credit: ChameleonsEye/shutterstock.com

The Strugglers

Beset by worsening water flux, and enjoying fewer options than the upstream powers and tech-savvy rich, most other Middle Eastern states have been trapped in a water strategy no-man's-land in recent years. The region's extremely water poor nations have done little to address their unsustainable status quos. (The war-torn and occupied states among them have had little opportunity to do so.) Better-resourced countries with no histories of scarcity and correspondingly thirsty agricultural sectors have struggled to adapt themselves and their populations to more straitened circumstances. Even as climate shocks come thicker and faster, there's been an awful lot of stasis from those who can least afford it.

Parts of this policy paralysis are understandable – or, at least, explicable. Having had some of their water woes thrust upon them by neighbors and other events beyond their control, few officials have accepted the idea of a world with less water. Many consequently continue to yank old policy levers, building more big dams to store winter rainfall for the summer despite growing doubts about the sites of this infrastructure and the prospects of retaining much water (as in Iraq), or even drilling more and deeper boreholes into non-renewable aquifers, including in Jordan.

This tendency to fall back on the familiar has become especially pronounced as water tensions have intensified. Unwilling to leave matters pertaining to national security in the hands of technical ministries, security-focused bodies (and the Ministry of Foreign Affairs in Turkey's case) have seized control of water policy. The result is that these nations have concentrated decision-making in the hands of government branches with generally inferior understandings of water. Through interviews conducted over the past decade, it's become clear that many senior regional officials don't fully grasp the nature of their countries' predicaments. It is a state of affairs that makes them extra averse to green lighting or funding the expensive, decades-long all-of-government shifts in water outlook required to navigate water crunches.

In other instances, states have acted as if they can almost throw away threats to their resources through sheer force of argument, anger, or inertia. For years, Egypt invoked its "historic Nile water rights" during its tussle with Ethiopia over the GERD, despite clear evidence that none of the sub-Saharan riparians held much truck with what they saw as colonial-era treaties. From Iraq to Israel, those who've advocated for conciliatory water approaches to their neighbors have been derided as fools, self-haters, or traitors. Politicians in Jordan, one of the world's thirstiest non-island states, have frequently baffled many of the country's hydrologists by continuing to talk up the 'Red to Dead' plan to revive the Dead Sea while also delivering potable water, long after it ought to have been apparent that the project was going nowhere due to international donors' doubts about its viability.[19]

But, bit by bit, and having exhausted other possibilities, all but the most conflict-ridden of states, like Yemen, are beginning to display genuine acknowledgement of the gravity of their water situations. They're vocally seeking water assistance from donor countries (many of which are happily reorienting aid to an area where it is both needed and desired) as they increasingly roll out non-token amounts of grey water re-use and drip irrigation in agriculture.[20] Legislation on everything from crop choices to water pricing is beginning to reflect the coming thirstier times, though there's often a yawning gap between paper plans and implementation. As water issues increasingly spill into the security and economic arenas that the powers-that-be do care about, there are signs that they are wising up to the

HAJJAH , YEMEN – March 22, 2021: Children fetch water by donkeys from an agricultural well, amid an acute water crisis. Editorial credit: Mohammed al-wafi/shutterstock.com

need for dramatic new paradigms.

Most importantly, policymakers in states which hitherto had done little to prepare their publics for the possibility of more erratic water access are starting to craft new narratives designed to 'downsize' future expectations. By emphasizing the extent to which powerful upstreamers have reduced river flow, rather than their own intensely wasteful water practices, for instance, politicians in Baghdad have tried to deflect fury outwards. And by highlighting, sometimes even exaggerating, the impact of climate change on their water supplies, authorities across the region are signaling the intractability of their positions. These circumstances have also helped explain away obligations, in the example of Jordan, to expand unpopular water cooperation with Israel as a result.

Forging new narratives is, of course, more easily said than done. Even with control of most media, the region's largely undemocratic states are leaving little to chance. Academics willing to support official water lines have had their voices amplified, as in Egypt, or are being pressured into silence if they won't advocate in this fashion.[21] Independent environmental journalists experience more scrutiny than ever, all part of an increased regime awareness of the surging public interest in their beat.[22] Alarmed by the extent to which environmental issues cut across political cleavages and rally disparate groups in times of water crisis, (including in drier parts of Iran),[23] states have launched unprecedented crackdowns on the environmental groups drawing public attention to their management failures.[24]

These officials appear to suggest that they cannot be blamed for an unprecedently dangerous situation which is not their fault and largely beyond their capacity to tackle. Perhaps this rewriting of history is not the most convincing of strategies. Among those with shrinking resources it might still be the best available.

Cooperate or Confront?

Most water politics is local. In the Middle East, too, the consequences of this jockeying for resources are largely playing out among farmers, fishermen, and poor rural families within individual nation states.

But as the size of the water "pie" shrinks in places due to climate change, and as rival state strategies begin to run up against one another, these impacts inevitably seep across borders as well. Contrary to expectations, this has sometimes produced cooperative action.

Water is a key component of the Abraham Accords, the normalization process between Israel and the UAE and Bahrain—and, more covertly, with other parts of the Gulf. These states are keen to rework their freshwater "manufacturing," much of which is grounded in older, more energy intensive forms of desalination, and to expand select forms of agriculture, like hydroponics.[25]

More efficient desalination wasn't historically a priority, given the region's oil riches, but states are changing tack now to try and meet their climate targets—and, in some instances, to maximize oil and gas for export. As with other regional states before them, they see Israeli water technology transfers as pivotal to fulfilling those ambitions, but without the veil of secrecy that many of their peers previously maintained.

Water is also a pillar of the Israel-Jordan relationship, drawing the two states, if not their peoples, closer to one another. Under the terms of the 1994 peace treaty, Israel already transfers 50 million cubic meters across the border a year. That figure will increase fivefold through EcoPeace's Green Blue Deal, a water-renewable energy deal by which Israel will funnel desalinated Mediterranean water to Jordan in exchange for solar power.[26] Through a few very rocky recent years, particularly from Amman's perspective, those close water ties seemingly helped prevent poor relations from devolving into more dramatic breaches.

Stifled by the sort of confidentiality that sensitive, often politically unpalatable discussions require, the Middle East's record of hydro-diplomacy is significantly broader than it might appear. According to water mediators, almost every regional state is working with adversaries on water at times when they will cooperate on little else. So far, so peaceful.

Jordan River flowing to the Dead Sea. Photo credit: Christopher Sprake/shutterstock.com

But—and there is a big 'but' coming—it's unclear if that cooperation as a byproduct of state water strategy will continue to outpace tension or violence in the long run. Because despite overly loose talk of water wars, and evidence of the lengths that Middle Eastern states will go to avoid them, there are a host of grim-looking complications that could arise out of national bids to firm up their water futures.

Cross-border hydro cooperation between undemocratic regimes can be more predatory than mutually beneficial, contributing to significant violence and instability. For example, the Gulf States have invested heavily in Sudanese agriculture since the 1980s, motivated, in part, by visions of its plentiful water and arable land as a limited antidote to their own lack of either resource.[27] However, the millions of acres of supposedly vacant farmland that they've acquired with the enthusiastic consent of Khartoum have been anything but empty, which has led to frequent and sometimes deadly clashes between displaced pastoralists and mega-farm security.

This is grimly topical because the most recent wave of Gulf land acquisitions followed the 2007-8 global food price spike, which alerted policymakers in food insecure states to the possible pitfalls of total dependence on the international market. As food prices surge once more after the pandemic and the Russian invasion of Ukraine, there's a risk that some cash-rich and water-poor Middle Eastern countries might renew their bids for partial control of their own food production within poorer states, no matter how badly previous attempts ended for all parties. Logic seldom wins out when states enter into "scarcity mindsets."

It's also possible that maximalist upstreamer policies will fuel worse security outcomes within their own borders (due to dam-related displacements and other grievances) and among their neighbors. Prolific Turkish and Iranian dam construction is contributing to instability in parts of Iraq and Syria—and, in turn, exacerbating territorial fragmentation and the emergence of empowered subnational actors (some with water ambitions of their own).

Taken together, it is a trend that the region's already heavily fractured water landscape can ill-afford. Last year, a Turkish-backed rebel group in northeastern Syria dammed the Khabur River, the Euphrates' largest tributary, acting like de facto upstreamer in its bid to boost supply for drought-battered farmers within its territory and also stifle villages in downstream Kurdish-held areas.[28] ISIS did much the same in Iraq, all part of its pretensions to governance.[29]

As pedestrian as it sounds, the number of global transboundary water disputes has surged, in part, because there are simply more states and autonomous entities with which to negotiate over supply.

Most importantly, perhaps, it is still uncertain how the region's major water losers will react when or if they ever have enough peace to engage with their neighbors' roles – or perceived roles – in their reduced circumstances. Indeed, many of these states have had supply reductions thrust upon them while they've been enmeshed in conflict or other crises.

For instance, Iraq more-or-less invented hydraulic systems. Now some of its most important reservoirs are almost dry.[30] Would a truly focused Baghdad seek military or other forms of recourse against the upstreamers' dam schemes, particularly if Ankara and Tehran press on with additional planned construction such as at Cizre?[31] Or if one of these nations is ever mired in domestic, easily exploitable chaos of its own, such as the turmoil in revolutionary Egypt that Ethiopia harnessed to get a jump on GERD construction?[32]

The Turkey-Syria border might be one of the most potent visual illustrations of the inequities that water strategizing can aggravate.[33] Once lush on both sides, the divide is now visible from space, with manicured green fields in the north, and largely uncultivated, parched land below it.

Finally, it's also unclear how effectively the states with histories of plenty—and hence an understandable sense of popular entitlement to access—will be able to rewrite their water narratives, however much repression and effort they devote to forging them.

Water is intensely emotive—so much so that surrendering it can be seen as akin to giving up territory. Many Palestinians in the West Bank—and especially Gaza—see Israel's inequitable distribution of their shared surface and groundwater resources as one of the most "in your face" manifestations of the occupation. And while water shortages mostly hamper agrarian or other marginalized rural communities at present, what might happen if more politically connected and economically weighty constituencies suffer significant shortages too? Could nationalist furies be kept in check?

There are few symbols of state failure greater than an inability to cater to citizens' most basic needs. If it comes to a point where governments feel that their continued legitimacy and perhaps survival rest on addressing shortages at the expense of neighbors, there's no telling how ugly the fallout might be.

The opinions expressed in this article are those solely of the author.

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