

THE RIGHT TO WATER
AND CLIMATE CHANGE

2025

THE ARAB WATCH REPORT ON
ECONOMIC AND SOCIAL RIGHTS

INTERLOCKING DEPRIVATION:

A FEMINIST FRAMEWORK FOR ANALYSING THE RIGHT TO
WATER IN THE ARAB REGION

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Case Studies
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This report is published as part of the Arab NGO Network for Development's Arab Watch Report on Economic and Social Rights (AWR) series. The AWR is a periodic publication by the Network and each edition focuses on a specific right and on the national, regional and international policies and factors that lead to its violation. The AWR is developed through a participatory process which brings together relevant stakeholders, including civil society, experts in the field, academics, and representatives from the government in each of the countries represented in the report, as a means of increasing ownership among them and ensuring its localization and relevance to the context.

The seventh edition of the Arab Watch Report focuses on the right to water. It was developed to provide a comprehensive and critical analysis of the status of this right across the region, particularly in the context of climate change and its growing impacts. The information and analyses presented aim to serve as a platform for advocacy toward the realization of this fundamental right for all.

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01

WATER AS A POLITICAL QUESTION

Shadia Abu Jabal, 36, left her displacement center in Nuseirat camp in the central Gaza Strip with her six-year-old son, Ahmed, carrying an empty container towards one of the few remaining water distribution stations in the camp. They joined a long queue of people waiting when the Israeli army suddenly bombed the station, killing twelve people—eight of them children—and injuring more than twenty others, mostly women and children. Shadia and her son survived the explosion, but they returned as they had left: without water. She later asked in a press interview: "Are we facing planes and death? Or hunger and starvation? Or thirst and lack of water?"

In 2010, the United Nations General Assembly recognized water as a fundamental human right through Resolution 64/292. Yet this declaration has done little to change the lived reality of millions of households across the Arab region that continue to experience water scarcity or complete lack of access. It has not reduced the cost of water tankers that burden the budgets of poor families, curbed the spread of disease when sanitation networks collapse, or prevented agricultural lands from drying up while water is diverted to export-oriented agriculture. This paper falls between the declaration and this reality - not to say that the water crisis affects only women, but rather to reveal that its costs are not distributed equally: gender

structures make women primarily responsible for securing water for their families, and therefore the first to bear its price - in time, health and lost opportunities.

This paper is simultaneously a political and feminist analysis: who owns the water, who decides its distribution, and who bears the cost of its absence; it is an analysis that exposes the power structures that create this crisis and distribute its costs. These structures remain hidden when water is treated as a technical issue, but become visible when it is viewed as a matter of justice.

The paper explores these structures through four analytical themes. The first examines the commodification of water and the feminization of the burden by tracing the trajectories of privatization and tariff increases in Morocco, Egypt, Jordan, and Yemen. The second analyses political violence and the weaponization of water through the cases of Palestine, Yemen, and Iraq, where the destruction of water infrastructure has been used as an instrument of domination. The third investigates rural poverty and water deprivation as a mutually reinforcing cycle rooted in successive historical layers of colonialism, selective development, and neoliberal austerity. Finally, the fourth examines the global extractivist model and the appropriation of water, from foreign investment in agricultural land to oil companies that deplete groundwater resources and contaminate

what remains of them.

Iraq is present in every aspect, not as an exception, but as a dense model where all these aspects intersect: the marshes were drained as a form of political punishment, have not been fully restored decades later, and are now threatened by drought, oil pollution, and transboundary depletion. Similarly, Palestine, the Draa Valley, Morocco, Egypt, Jordan, and Yemen present cases that illustrate different dimensions of water deprivation, allowing the paper to offer an analytical, rather than merely descriptive, comparison.

02

METHODOLOGICAL FRAMEWORK: FEMINIST POLITICAL ECOLOGY

The analysis traces power relations across four interconnected levels, none of which can be understood in isolation. The global level, where international lending terms are formulated, extraction contracts are signed, and the agendas of institutions like the IMF and the World Bank are set. The national level, where agricultural and water policies are decided, budgets are allocated, and legislation is drafted. The local level, where land and water use patterns and governance are shaped, and where various societal actors compete. And the family level, where all these decisions translate into daily working hours, health burdens, and power dynamics within the family. Crises that appear "local" or "family-based" are a reflection of decisions made at higher levels, filtered through gender structures until they settle on women's bodies and their time.

Each axis of the analysis rests on a unifying three-pronged thread that embodies this framework: Who controls water and shapes its policies? What burdens do women bear? And how do they resist? These questions restore women's agency as witnesses and leaders, not victims. Within this framework, the paper formulates what it calls "intersectional deprivation"—a synthetic concept based on Crenshaw's intersectionality (1989) and on feminist political ecology literature concerning the relation-

ship between gender and water resources (Sultana & Loftus, 2012). Both concepts have been applied in various contexts—Southeast Asia, Latin America, and sub-Saharan Africa—but their application as a unified analytical framework to the water crisis in the Arab context specifically has not been addressed in this way in previous literature, a gap this paper seeks to bridge.

The fundamental difference between "intersectional deprivation" and "multiple inequalities" is that it does not describe a quantitative accumulation of independent axes of deprivation, but rather a production mechanism in which these axes feed into one another. Rural women in the Draa Valley do not suffer from water scarcity, poverty, and exclusion from governance as separate problems, but rather from the intersection of these axes, which makes each one reinforce the other two and turns every partial solution into an inadequate measure.



03

AXIS OF THE ANALYSIS



THEME ONE: THE COMMODIFICATION OF WATER AND THE FEMINIZATION OF THE BURDEN

This transformation cannot be understood in isolation from the international architecture that produced it. Since the early 1990s, the World Bank and the International Monetary Fund (IMF) have increasingly required borrowing countries to incorporate water privatization or tariff increases aimed at achieving full cost recovery into the package of reforms demanded in exchange for loans. These measures are commonly referred to as loan conditionalities or financing preconditions. A study conducted by the Institute for Agriculture and Trade Policy (IATP) found that, by 2000, IMF agreements with twelve countries, eight of them in Sub-Saharan Africa, included explicit conditions of this nature (IATP, 2001). Rather than diminishing over time, this trend has expanded. The Bretton Woods Project documented that, as recently as 2024, the World Bank remained the principal global driver of water privatization, using its position as the largest financier of water projects in the Global South to exert influence over national policy choices (Bretton Woods Project, 2024).

The danger lies in the sequential structure of these conditions: meeting the IMF's requirements grants the state what is known as a "stamp of approval," which in turn opens doors to borrowing from other sources such as the European Invest-

ment Bank and the African Development Bank, or to attracting multinational service management companies like the French companies Suez and Veolia. Refusing the conditions closes all these doors, not just one loan, making it a structural constraint rather than a choice. Thus, a pyramid of actors is formed: lending institutions set the conditions, multinational corporations manage the open market, and the state acts as an intermediary, translating the conditions into national policies whose costs are borne by the poorest citizens in the form of high bills and declining services.

In Egypt, the United States Agency for International Development (USAID) supported the establishment of the Holding Company for Water and Wastewater in 2004, with cost recovery adopted as a guiding regulatory principle (USAID, 2012). In Jordan, one of the world's most water-scarce countries and host to more than one million Syrian refugees (IMF, 2017), both the German Development Bank (KfW) and the French Development Agency (AFD) linked their financing for the water sector to reform conditionalities that included improving the financial performance of water utilities, effectively requiring the gradual adjustment of tariffs toward full cost recovery (AFD & KfW, 2019). Accordingly, water tariffs have been scheduled

to increase by 4.6 per cent annually until 2030 (International Growth Centre, 2025). In Yemen, meanwhile, the cost of water has risen by more than 400 per cent in some rural areas compared with pre-conflict levels (Carnegie Endowment for International Peace, 2025), while an unregulated private sector has further accelerated the depletion of groundwater resources rather than contributing to their conservation (Al-Qadasi et al., 2025).

What unites these different contexts is not the similarity of their mechanisms but the common logic underpinning them: the redefinition of water from a collective right that the state is obligated to guarantee and regulate, like the rights to food and clean air, into an economic commodity governed by the principles of cost recovery and ability to pay. As Bakker (2004) demonstrates, water does not naturally conform to market logic. It is indispensable, irreplaceable, and cannot be stockpiled as a conventional commodity. As a result, attempts to commodify water are structurally destined to fail, with the costs falling disproportionately on those least able to afford them. Across all of these contexts, women constitute the group least able to bear these costs because prevailing gender structures assign them primary responsibility for meeting their households' water needs, making them the first to absorb the consequences of any disruption in water access.

These consequences are manifested first and foremost in what may be described as a tax on time and the body: the countless hours lost each day walking to distant water sources, waiting in queues, carrying water, and storing it. In Yemen, for example, obtaining water in Taiz Governorate requires long journeys and prolonged waits at distribution points or remote wells, within a tanker-truck economy that consumes what remains of household

income (Human Rights Watch, 2023). This burden pulls girls out of school even before poverty itself does (FairPlanet, 2026). In rural Morocco, girls assume responsibility for fetching water from distant springs from an early age, reducing their educational opportunities, while the absence of adequate sanitation facilities in schools contributes to high rates of early school dropout (Masalem, 2025). The fundamental paradox is that mainstream water policy discourse presents technical interventions, such as drip irrigation, dams, and regional water utilities, as pathways to greater efficiency, while failing to account for these hours stolen from the lives of women and girls in any cost-benefit calculation. This is precisely what Sultana (2020) describes as "embodied invisible labour": labour that remains absent from official statistics because those who perform it have no voice in shaping them. This burden also extends to health. The collapse of Yemen's water system contributed to the cholera epidemic, which claimed more than 2,000 lives in Taiz alone in 2017 (Human Rights Watch, 2023). Women bear a disproportionate share of this health burden, as they are responsible for purifying water and caring for sick family members, while simultaneously being more vulnerable to waterborne diseases during pregnancy and breastfeeding (Sultana, 2020).

Yet perhaps the most severe, and the least examined in the comparative literature, is what may be termed "cumulative structural violence": the invisible chain of causation linking water scarcity to the breakdown of social structures and the production of violence. In Oued Rommane, a village on the outskirts of Meknes in Morocco's Fez–Meknes region, the testimony of a woman in her thirties vividly illustrates this chain. Following the collapse of agricultural production caused by water scarcity, her husband was forced to

migrate in search of work. She came to feel alienated from her own body and rejected marital intimacy because she no longer felt clean, leading to domestic violence and ultimately prompting her to marry off her fifteen-year-old daughter as an attempted escape from a similar future (Masalem, 2025). In Yemen, Human Rights Watch (2023) documented cases of women and girls being subjected to sexual harassment and sexual violence while collecting water

in conflict-affected areas. Despite the starkly different contexts, the two cases reveal a common pattern: violence is not an exception but a symptom of structural inequalities in the distribution of resources and power. Zwartveen and Boelens (2014) conceptualize this within the framework of water justice, understanding it as an issue in which the dimensions of distribution, recognition, and representation are fundamentally intertwined.

■ WOMEN'S STRATEGIES OF RESISTANCE

The case of Figuig represents a stark example of a clash between two irreconcilable logics. The Moroccan state enacted Law 83.21 to transfer water management from the local population to a state-owned company. However, this decision overlooked the fact that Figuig is an oasis dependent on a centuries-old irrigation system, governed by precise customary rules that the FAO has praised as a successful model (Masalem, 2025)—meaning the state replaced a successful system with one whose success has yet to be proven. This is what sparked the popular rejection in 2023 of transferring water management to the "Eastern Distribution Group." Women were at the forefront of this rejection, taking to the streets in their traditional haiks to send a direct message: we are the owners of this resource, and we know it better than you. Figuig, therefore, is not a story of protesting a water bill, but rather a story of a community refusing to have its management of its life appropriated in the name of modernization.

Zagora offers a complementary model to Figuig. Popular protests erupted against the expansion of watermelon cultivation, which depletes enormous quantities of groundwater (3,000–4,000 m³ per hectare). This forced the authorities to issue a temporary ban on such crops in 2024 (Masalem,

2025; Bossenbroek et al., 2023). However, this ban revealed a crucial truth: the state quelled the anger without addressing its root cause. The official who issued the ban did not question why this depletion had occurred in the first place, nor did he confront the large investors reaping the profits, nor did he reverse an agricultural policy that encouraged crop exports at the expense of scarce water resources.

Besides these two forms of resistance, there is what Scott (1985) calls "weapons of the weak": silent, everyday adaptation. In Yemen, women restrict their fluid consumption to avoid unsafe toilets (Human Rights Watch, 2023), and in rural Morocco, women build informal solidarity networks to share water and transform waiting areas into spaces for community solidarity. These practices constitute what Sultana (2020) calls "embodied agency," but they contain a fundamental contradiction: they enable resilience, yet they contribute to the perpetuation of the crisis itself.

A comparative reading reveals that the water crisis is neither a natural scarcity nor a technical failure, but rather a political distribution crisis shaped along the lines of class, gender, and geography.

THEME TWO: WAR THROUGH THE CONTROL OF WATER

When water is used as a weapon, the damage is not limited to thirst. Pumps stop, sewage systems collapse, groundwater is contaminated, and access to distribution points is blocked. In all of this, women are on the front lines, as their usual responsibility of securing water for their families, in

a wartime environment, transforms from a daily burden into a life-threatening risk. However, the weaponization of water does not take a single form; rather, it manifests in two distinct models, differing in their tools, perpetrators, and methods of evading accountability.

■ MODEL ONE: INSTITUTIONALIZED WATER COLONIALISM – PALESTINE AND GAZA

The Palestinian case represents the most institutionalized form of the weaponization of water in the history of the region. Since the occupation of the West Bank in 1967, Israel has constructed a comprehensive legal and military regime to consolidate control over water resources. This regime includes military orders prohibiting the drilling of new wells without permits, which are rarely granted, restrictions that effectively freeze the development of Palestinian water infrastructure, and unilateral control over shared water resources. The construction of the Separation Wall further entrenched this system geographically by isolating 27 artesian wells and 32 natural springs, thereby reinforcing a disparity that cannot be explained by natural scarcity. Palestinians receive approximately 73 litres of water per person per day, while Israeli settlers receive more than 300 litres. This is not the result of climatic scarcity but of deliberate political engineering: although the water resources are geologically shared, Israeli law transforms that shared resource into an exclusive monopoly.

In Gaza, the picture is even more stark. Since October 2023, more than 85 per cent of the water and sanitation infrastructure has been destroyed, electricity to pumping and desalination stations has been cut off, and Israel has shut down the main water supply line. This sequence of events leaves little room for interpreta-

tion: water deprivation in Gaza is not an unintended consequence of war, but the result of deliberate decisions implemented through direct orders and mechanisms of control. Such practices are prohibited under Article 54 of Additional Protocol I (1977) to the Geneva Conventions. Yet the silence of United Nations institutions and the absence of any meaningful sanctions signify more than institutional failure; they provide implicit cover that allows these violations to continue with impunity.

The costs borne by women, in particular, are well documented. In Gaza, approximately 92 per cent of pregnant women have suffered from acute infections resulting from the lack of access to clean water, while cases of high-risk pregnancies and spontaneous miscarriages have increased by 100 per cent. Menstrual disorders have also become widespread in conditions of overcrowding and the absence of privacy. In the West Bank, women living in Area C spend hours each day purchasing water from tanker trucks, which at times charge inflated prices for water that is, in some cases, extracted from Palestinian wells. When women attempt to access springs located in areas claimed by Israeli settlers, they face significant security risks. The absence of legal accountability is therefore not merely a technical omission; it reveals that international frameworks governing wartime harm have been formulated in ways that overlook the gendered dimen-

sions of civilian suffering and fail to recognize harm to women's reproductive health as a distinct injury warranting legal recognition and compensation.

Case Study: The Water Crisis in Gaza

Azima Abu Shawish

During the war that has been ongoing since 7 October 2023, water has become a major instrument of military and political pressure in the Gaza Strip. The population has faced an unprecedented shortage of drinking water and water for human use as a result of the near-total destruction of infrastructure, the cutting off of external supplies, and the prevention of fuel from entering to operate water facilities - producing a comprehensive environmental, health, and social catastrophe.

Policies of Deliberate Deprivation

At the beginning of the war, Israel adopted an explicit and systematic policy of cutting off water to Gaza as a form of collective punishment through two parallel tracks: cutting the three main supply lines feeding the Strip operated by the Israeli company Mekorot , and completely cutting electricity and preventing fuel from entering vital facilities, including desalination plants, groundwater wells, and sewage pumping stations - leading to the immediate paralysis of the entire water system .

This was accompanied by direct military destruction: aerial and artillery bombardment damaged more than 90% of water infrastructure, from desalination plants to reservoirs, wells, and thousands of kilometres of pipelines , while the Coastal Municipalities Water Utility - the main water utility in the Strip - faced major obstacles to carrying out repairs, with maintenance workers themselves directly targeted while performing their work .

Historical Control over Wadi Gaza

Wadi Gaza, the natural watercourse that feeds the Strip's aquifer, extends from the Hebron and Negev mountains to the Mediterranean Sea, crossing Gaza from east to west. Israel has tightened its control over it over previous decades, and this control intensified during the October 2023 war through a network of small dams and diversion structures built within Israel's borders before the wadi reaches Gaza, diverting its water to Israeli agricultural projects . This continuous retention has led to the near-total drying of the wadi throughout the year, depriving Gaza's aquifer of its natural replenishment with freshwater and accelerating the intrusion of seawater into freshwater groundwater.

The Political Dimension: Thirst as a Tool of Displacement

The water crisis in Gaza cannot be separated from its political context. During the 2023 war, Israel used starvation and thirst as a policy to impose forced displacement by making the Strip an environment unfit for human life, devoid of

the basic means of survival, in pursuit of demographic and security gains at the expense of the population's fundamental civil rights .

Impact on Women

Women and girls have borne a compounded burden from this crisis: depriving them of access to clean water, sanitation facilities, and basic hygiene supplies has aggravated their physical and psychological suffering and undermined their dignity. In terms of personal hygiene, their inability to bathe, change clothes, or obtain sanitary pads has worsened menstrual health problems and recurrent infections. In relation to pregnancy and childbirth, pregnant women have faced serious complications due to the absence of clean water in hospitals, where kidney dialysis and childbirth depend on damaged desalination plants. As for infectious diseases, overcrowding in shelters combined with water scarcity has led to the spread of diarrhoea and skin infections, with women facing greater risks because of their responsibilities for caring for children.

Daily Life under the Water Siege

Obtaining a few litres of water has become a daily battle for survival, as children and women are forced to walk long distances and wait in queues for hours to obtain water that may not even be clean . With no alternatives in displacement camps, residents have relied on highly saline and contaminated well water, resulting in internationally documented health disasters: widespread outbreaks of waterborne and skin diseases due to the lack of personal hygiene and the mixing of drinking water with sewage, widespread cases of acute diarrhoea and hepatitis A, and even the re-emergence of polio in Gaza after an absence of nearly a quarter of a century .

■ MODEL TWO: PROXY WATER WARFARE — IRAQ, YEMEN, AND SUDAN

In contrast to the model of direct, institutionalized colonial domination, water warfare in Iraq, Yemen, and Sudan takes on structurally different characteristics that make accountability even more elusive. Here, the principal actors are not external colonial armies but rather armed groups, neighbouring states, and multinational corporations, each contributing to water deprivation through different mechanisms and enjoying varying degrees of impunity. This apparent localization of the instruments of water warfare enables dominant external actors to shield themselves from criminal responsibility, while women bear the consequences.

The Iraqi case is particularly complex because water deprivation has accumulated through three interrelated layers operating simultaneously. The first is a chronic external dimension: Turkey has constructed more than 22 dams and 19 hydropower plants on the tributaries of the Tigris and Euphrates, while Iran has re-engineered river flows through dams and diversion tunnels, all in the absence of binding treaties protecting Iraq's water share (Chatham House, 2025; Al-Ansari, 2025). The second is an internal militarized dimension. Following its invasion of Iraq in 2014, ISIS seized control of the Mosul, Haditha, Fallujah, and Baqubah dams, using

them as instruments of siege, flooding, and water contamination (Clingendael, 2016; EPIC, 2017). Yet there is a third layer that predates – and, in many ways, explains – the other two: between 1991 and 1997, Saddam Hussein’s regime carried out the systematic drainage of the Iraqi Marshes as punishment for the southern uprising. The oil industry subsequently compounded this destruction by consuming what remained of the region’s water resources for reservoir pressure maintenance (Circle of Blue, 2013; Carnegie Council, 2004). The result has been devastating: more than 90 per cent of the Marshes were transformed into saline plains, and approximately 500,000 people were displaced from their lands (UNEP, 2001), while Baghdad has remained unable to mount an effective response because corruption and competing centres of power have severely weakened state institutions (Chatham House, 2025).

The costs borne by women cannot be measured solely in terms of displacement. Before the drainage of the Marshes, women enjoyed genuine economic independence through fishing, buffalo husbandry, and the production of dairy products and woven reed mats. As the Marshes disappeared, this local economy collapsed, leaving women increasingly dependent on male family members, while early marriage emerged as a perceived solution to worsening poverty (Hamadi, 2024; Daraj, 2019). Economic loss thus accumulated into a documented biological burden. In Fallujah and Mosul, congenital malformations reached 48 cases per 1,000 live births, while miscarriage rates exceeded 30 per cent in villages most heavily contaminated by munitions residues (Al-Sabbak et al., 2012). At the same time, oil companies continue to pollute the Shatt al-Arab, transforming traditional drinking water sources into sites of slow poisoning (Nature Iraq, 2023). Women bear this burden disproportionately. They

remain responsible for purifying water and preparing food, are more vulnerable to exposure to contaminated water during pregnancy and breastfeeding, and devote countless hours to caring for sick children within an already overwhelmed health system. At the same time, they are almost entirely excluded from decisions concerning water management and environmental rehabilitation, with policies and interventions designed in the absence of the voices of those who experience the crisis most directly in their everyday lives (Hamadi, 2024).

In Yemen, women in rural areas of Taiz, Hodeidah, and Hajjah spend between four and six hours daily fetching water, traveling five to seven kilometers while carrying loads of up to 20 kilograms (OCHA, 2023). This deprives nearly 70% of girls in conflict zones of basic education. Reports from the United Nations Population Fund (UNFPA) reveal that more than 35% of cases of gender-based violence occur during these water fetching trips or in the vicinity of water distribution points (UNFPA, 2022).

In Sudan, meanwhile, armed groups have seized control of major drinking water facilities in Khartoum and Al Jazirah, using them as bargaining chips in military negotiations and effectively transforming water deprivation into a weapon for subjugating urban populations. This has contributed to outbreaks of waterborne diseases and severe reproductive tract infections in displacement camps (Human Rights Watch, 2024), while hundreds of women have been subjected to sexual violence as they ventured out in search of alternative water sources.

■ WOMEN'S AGENCY AND RESISTANCE: FROM SURVIVAL TO KNOWLEDGE PRODUCTION

Women in water warfare contexts are not limited to bearing the impact; They produce resistance strategies distributed on three levels. The first is daily survival management: in Palestine, women lead collective guarding of springs and wells in villages like Bardala and Al-Auja in the West Bank, because continued irrigation means continued agriculture, and continued agriculture means living legal proof that the land is inhabited and used, which complicates any settlement eviction effort (Al-Haq, 2025). In Gaza, women's committees created primitive sand and cloth filtration units to compensate for the destruction of desalination plants. In Yemen and Sudan, women have developed a "grey water management" mechanism: collecting water for domestic use and refiltering it to reduce the need for dangerous fetching trips (Yemen Women's Observatory, 2023).

The second is collective organization and building alternative governance: in rural Yemen, women formed "informal women's water committees" that protected underground wells, established daily distribution rules to prevent disputes over pumping points, and organized campaigns to install solar pumps (Yemen Women's Observatory, 2023). In the West Bank, women are leading institutional environmental resistance through the Union of Agricultural Work Committees established in 1986, which supports 47 local agricultural committees in the West Bank and Gaza and implements direct water interventions for farmers in the Jordan Valley and the Hebron countryside, as well as documenting the occupation's water violations and presenting them in international platforms (UNDP, 2016). This work gains its importance from the size of the gap: Israel controls 85% of the renewable water resources in the West Bank and withdraws 750 million cubic

meters annually - twice what its population needs - while the Palestinian's daily share (73 liters, as we mentioned above) does not exceed the minimum recommended by the World Health Organization, which is 100 liters. The women who live this deprivation on a daily basis are the ones who document it and demand its change.

The third is the production of knowledge as an act of resistance: activists in the "Iraqi Women's Network" in cooperation with the Nature Iraq organization worked to collect vital data directly from Marsh women about the rates of miscarriage and pelvic diseases related to the toxicity of oil pollutants, and presented it in parallel reports to the Ministry of Water Resources to impose the issue of reproductive health as a mandatory item in transboundary water negotiations. This is considered acceptable evidence in the political space, that is, what feminist political ecology calls "redefining legitimate knowledge."

But these three forms of resistance, no matter how important, remain insufficient unless they are accompanied by transformations at the level of institutions and laws. At the level of international law, the cumulative health harms affecting women - such as congenital malformations, high rates of miscarriages and chronic diseases - must be recognized as legal harm in and of themselves, and at the level of accountability, states that finance or support parties in proxy wars must not be exempted from responsibility for the resulting water deprivation. At the level of water-sharing negotiations between countries, they must include standards that go beyond calculating the amount of water in cubic metres, to also include calculating the time and health that women and men lose daily due to this deprivation.

THEME THREE: RURAL POVERTY AND WATER DEPRIVATION AS A SINGLE STRUCTURE WITH TWO FACES

There is a fundamental distinction between rural poverty and rural water deprivation, even though each reinforces the other. Rural poverty is a broad form of structural deprivation affecting land, employment, services, and political representation. Rural water poverty, by contrast, is one of its most severe manifestations for women in particular, because gender structures assign them primary responsibility for securing water for the household. The relationship between the two is circular: poverty constrains access to water, while water deprivation reproduces poverty through the loss of time, health, and opportunity. Neither is a matter of geographical destiny; both are the product of accumulated political decisions across three historical phases: colonial rule, which dismantled local systems of water management; selective post-independence development, which supported certain areas at the expense of marginalized rural regions; and the wave of neoliberal austerity, which shifted the burdens of the state onto households, and specifically onto women.

The roots of rural poverty and water deprivation can be traced back to the colonial period. Three geographically distant examples are sufficient to illustrate a common logic. In Egypt and Sudan, the British treaties of 1929 and 1959 continue to determine Nile water allocations to this day: 55.5 billion cubic metres were allocated to Egypt and 18.5 billion to Sudan, while Ethiopia, which contributes 86 per cent of the Nile's flow, was allocated virtually no share (Ibrahim, 2024; Halidu et al., 2025). These colonial treaties lie at the heart of the current dispute over the Grand Ethiopian Renaissance Dam: an active conflict among independent states that remains

written in colonial ink.

In Morocco, the *khattaras*—a network of underground tunnels that collected groundwater and distributed it equitably among villages according to established social contracts—provided irrigation for the Tafilalt oases and large parts of the Draa Valley. When the French colonial administration replaced this communal system with its own government pumps and dams, the groundwater level gradually collapsed, and the number of active *khattaras* dwindled from 80 to only 19 (Lightfoot, 1996). Not only was the water stolen, but so too was the collective knowledge of its distribution. When these pumps broke down or the state later withdrew, the community was left with neither its old, now defunct system nor a viable alternative, left with water it could no longer manage equitably.

With Morocco's independence in 1956, the underlying structure did not change; only its forms did. Beginning in the 1960s, the policy of large dam construction followed an explicitly selective logic, directing major investments toward the most profitable forms of agriculture while systematically neglecting the southeastern countryside. The Green Morocco Plan targeted only 19 per cent of agricultural land, leaving more than 80 per cent of land cultivated by small-scale farmers outside its scope (Ibrahimi, 2025). The equation is clear: small farmers excluded from public support lack the resources to drill deep wells, while shared aquifers are depleted for the benefit of large-scale export agriculture. Water deprivation is thereby transformed from a solvable problem into a structural predicament.

In Palestine under the British Mandate, the colonial authorities sought to replace local water-sharing systems with a system for registering water rights inspired by the US state of Wyoming, describing this dispossession as a “gift of civilization” (Violante, 2021). In Iraq, the British produced the very drainage maps of the Marshes that Saddam Hussein’s regime later used in its drainage schemes, revealing a striking continuity in how the logic of extraction reproduces itself across different political systems.

Taken together, these examples show that colonialism inflicted two forms of harm: direct harm by transforming water from a collective resource into an instrument of power, and a deeper form of harm by dismantling local governance systems that had enabled communities to manage scarcity themselves. What is now described as the “water crisis” is, in part, the continuation of policies designed a century ago (Bossenbroek & Ftouhi, 2024).

Structural adjustment programmes introduced from the 1980s onward added a third layer: the reduction of public services and the privatization of parts of the water sector, justified through narratives that blamed rural populations for wastefulness and poor management (Davis, 2006). When the state withdraws from water service provision, the need for water does not disappear. Responsibility is instead transferred to households and, within households, to women. Field research in Draa-Tafilalet, Morocco’s poorest region, demonstrates that rural–urban inequalities have been entrenched since the colonial period and that current policies continue to marginalize already deprived communities rather than redress these inequalities (MERIP, 2021).

The gendered impact of these policies is particularly evident in the Draa Valley.

When water deprivation becomes an everyday reality, men often migrate to cities in search of work, leaving women to bear alone what had previously been a shared burden. Water deprivation thus becomes a driver of inequality within the household itself. Girls are required to help their mothers collect water instead of attending school; hours devoted to water-related care work consume time that could otherwise be used for productive activities and training; and water is transformed from a shared resource into an individual burden carried by women (Bossenbroek & Ftouhi, 2024).

In Iraq, these social stratifications reach their peak in the marshes, where the systematic draining detailed in the second section (1991–1997) had a qualitative impact on women that has not received sufficient attention in the literature. Before the draining, the women of the Ma’dan tribe were engaged in harvesting reeds, handicrafts, caring for buffalo, and selling in the markets—full productive roles outside the home. After the draining, these roles diminished, and the women were confined to domestic work alone. Even more painfully, the traditional knowledge that the women carried—the rhythms of the marshes, the types of fish, the reed seasons, and the signs of pollution—is gradually disappearing with the passing of the generation that lived through it (Al-Mudaffar Fawzi et al., 2016).

After 2003, the recovery promised by international initiatives did not materialize. Although approximately 250,000 Marsh inhabitants returned following the peak of ecological recovery in 2020, a renewed wave of drought now threatens the region once again, compounded by declining water flows from Turkish dams (Yale Environment 360, 2023) and intensive oil operations that deplete groundwater and pollute

waterways (Al-Mudaffar Fawzi et al., 2016). The logic of extraction is therefore reproducing itself in a different context.

What the Draa Valley and the marshes

have in common is that women are at the forefront of the consequences of this cycle, and at the back of the line when decisions are made about it.

Case Study: The Water Crisis in Iraq

Dr. Ilham Makki

The former Iraqi regime implemented massive drainage projects in the late 1980s and early 1990s aimed at drying the marshes as a policy of collective punishment. During this period, the Central Marshes lost 97% of their water cover and were transformed into barren land and salt crusts. This internal destruction coincided with a regional wave of dam construction beginning in the late 1950s: more than 22 Turkish dams and four Syrian dams with a storage capacity exceeding the Euphrates' annual flow by five times, as well as Iran's closure of the Karun River, which supplies nearly half of the Shatt al-Arab's flow.

These factors combined with deteriorating water quality — caused by saline drainage from irrigation projects and the trapping of sediments behind dams — to produce an environmental catastrophe that destroyed an indigenous ecosystem extending over 15,000 square kilometres, brought an end to a five-thousand-year-old civilization, and displaced at least 40,000 Marsh Arab residents, while those who remain live in conditions of extreme vulnerability.

Oil fields have played a dual role in this destruction: the initial draining of more than one thousand square kilometres to establish oil infrastructure, and continued depletion to this day through the injection of water into underground formations to increase reservoir pressure, while contaminating what remains with chemicals and hydrocarbons. This has made the marshes adjacent to oil fields among the areas facing the most severe shortages of water for drinking and agriculture.

Despite a relative recovery after 2003, thanks to joint international and local rehabilitation efforts, this recovery remains fragile. Drought waves and rising extreme temperatures combine with the continued impact of regional dams in a scenario that could lead to the complete drying up of Iraq's freshwater sources by 2040. Studies project that the gap between demand and available water reserves could widen from five to eleven billion cubic metres by 2035, a gap made even more dangerous by weak state institutions.

Women have borne the greatest burden of this historical accumulation, as they experience the environmental crisis differently from men because of their social roles, without policies that recognize this disparity. Women spend long hours fetching water from distant locations and dealing with its salinity and contamination — time taken away from education, work, and community participation — with direct health consequences: higher rates of reproductive and

chronic diseases, spontaneous miscarriages, congenital abnormalities, kidney, skin, and respiratory diseases, in addition to the burden of caring for children made ill by the same pollution.

Before the deterioration of the marshes, the traditional subsistence economy — fishing, buffalo herding, dairy production, and mat weaving, based on mutual support and barter rather than profit — gave women a degree of bargaining autonomy within the household. As the marshes dried, buffalo died, and fish stocks collapsed, this source of autonomy diminished. Women became more economically dependent and less able to resist pressures within the family, while many households resorted to marrying off their daughters at an early age as a way of reducing burdens — turning the girl from a “burden” into a “solution” in the equation of poverty, depriving her of education and exposing her to serious health and rights-related risks.

These challenges are compounded by the migration of men or entire families to the outskirts of cities, where women lose the tribal support network that had been their only form of protection. They then turn to the informal economy, where they are exposed to exploitation and harassment, often because they lack the skills required by the formal economy. The loss of this autonomy is accompanied by the near-total exclusion of women from decisions concerning water management and marshland rehabilitation. Such decisions are taken at tribal and governmental levels in the absence of women, resulting in proposed solutions that are incomplete or poorly suited to their actual needs.

■ HOW WOMEN RESIST

In the Draa Valley, women’s resistance takes three forms. The first is the preservation of local knowledge. Despite the deterioration of traditional irrigation systems, handicrafts such as pottery and products made from oasis materials remain among the most resilient practices. They embody knowledge of local ecological rhythms and transmit it across generations (Bossenbroek & Ftouhi, 2024). The second form is economic organization. Women have established craft cooperatives that provide a measure of income while also creating spaces for exchanging information and building solidarity in response to decisions imposed from above (FAO, 2025). The third is collective pressure over water allocation decisions. When the state or investors decide who

receives water and who does not, women organize to demand that the needs of households and small-scale farmers be taken into account, particularly in the face of large export-oriented investments that deplete shared groundwater resources. It is important to note that the available field studies have documented these forms of resistance primarily through men’s accounts. This documentary absence is itself a methodological problem highlighted by feminist political ecology.

In the Iraqi Marshes, women are resisting not a single policy but generations of accumulated destruction, while defending a knowledge system that is gradually disappearing. In early 2026, women-focused

training programmes in Al-Chibayish enabled more than fifty women to recover skills in reed weaving and dairy production. As one participant explained: "My mother taught me this craft; it was part of our lives. But we stopped because the materials became scarce." This statement captures what feminist political ecology describes as "resource memory": knowledge embodied in people and everyday practices rather than preserved in books or institutions (UNDP, 2026).

All these forms of resistance encounter the same obstacle: the limited institutional space available to women. The knowledge they hold is not sought in water-planning sessions, and the cooperatives they establish are not represented on resource-management councils. This gap between agency on the ground and institutional absence makes resistance essential for survival, yet insufficient to transform the underlying structure.

THEME FOUR: GLOBAL EXTRACTIVE INDUSTRIES AND WATER APPROPRIATION

One form of water deprivation arises neither from war, austerity policies, nor inherited rural poverty. It originates far away, in decisions made in the offices of corporations, investment funds, and Gulf and European governments, and is then translated on the ground into depleted aquifers, exported crops, and displaced communities. Latin American scholarship describes this as the "extractivist model," a concept that emerged at the intersection of academic thought and Indigenous peoples' struggles against a development model that extracts and exports natural resources while leaving local communities

with little more than the resulting environmental and social harm.

Across the Arab region, the extractivist model is becoming increasingly visible in new forms that combine foreign investment in land and water, debt arrangements that constrain states and compel them to open their resources to external actors, and what may be termed "climate colonialism": the exploitation of resources in the Global South to address climate-related challenges in the Global North, while local communities are left to bear the consequences of this depletion alone.

■ WHO IS IN CONTROL? THE ARCHITECTURE OF WATER APPROPRIATION

Gulf states depleted their groundwater reserves during the 1980s as a result of intensive agricultural production. In some areas, groundwater levels fell by more than one thousand feet, forcing these countries to abandon one-third of their farms (National Geographic, 2021). The solution they adopted was not to reduce consumption, but to export the problem: Between 2000 and 2022, Gulf states acquired more than two million hectares of land abroad. Notably, more than one-third of this area was located in other

Arab countries, including half a million hectares in Sudan and 157,000 hectares in Egypt.

Emirati and Saudi companies control approximately 120,000 hectares in Toshka, southern Egypt, irrigated with Nile water. Internal documents have also revealed that a single farm in Wad Hamid, Sudan, generates USD 86 million annually through the depletion of water resources and the contamination of land with fertilizers and pesticides. The profits accrue to

the investor, while Sudan bears the environmental costs.

This pattern is not limited to the Gulf: in Morocco, European investments are depleting groundwater for tomato and citrus cultivation for export at the expense of local food security (MERIP, 2014), while green extraction—such as the lithium battery project in Tangier with Chinese participation—adds a new layer of water consumption and waste to a country already suffering from structural water stress. In all these cases, the South bears the environmental cost of a transforma-

tion that serves the markets of the North.

The stark irony is that this dynamic reproduces colonial relations with new tools: Gulf states specifically target countries like Sudan and Ethiopia, which have abundant water resources and land, but whose populations regularly suffer from famine and malnutrition due to wars and droughts. The resources that irrigate crops for export are the very resources that local communities lack; in Sudan, for example, raw sugar is exported to Spain, while Sudan imports 25% of its processed sugar needs from the UAE.

■ WHAT BURDEN DO WOMEN BEAR? THE INVISIBLE COSTS OF THE EXTRACTIVIST MODEL

When groundwater is depleted or diverted to export-oriented crops, the consequences are not borne equally across society. Rural women are disproportionately affected, as they are primarily responsible for securing water for their households and face increasing burdens as scarcity intensifies. Reports by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) show that extractive projects not only degrade the environment but also impose additional labour burdens on women by making access to scarce resources more difficult (IGF, 2022).

In Iraq, this mechanism is clearly evident: international oil companies not only consume enormous quantities of groundwater in extraction and refining operations, but also pollute what remains of it through industrial waste in the Shatt al-Arab and the waterways surrounding the extraction fields, turning traditional

drinking water sources into sources of slow poisoning (Nature Iraq, 2023) — scarcity and pollution at the same time, the double price of which is borne by women as they are responsible for water purification and family health care.

In Egypt, meanwhile, natural gas is exported to meet Europe's energy needs while local communities endure electricity outages and environmental pollution. This reflects a model that turns the region into a series of "sacrifice zones," where communities, and women in particular, bear the environmental and social costs without sharing in the benefits (MERIP, 2014). Nor can this reality be separated from debt structures that compel indebted countries to open their land and natural resources to foreign investment on inequitable terms, thereby entrenching economic dependency in a cycle that is difficult to break.

■ HOW WOMEN RESIST: FROM REJECTION TO DEMANDING WATER SOVEREIGNTY

The communities in the region did not remain passive: in Sudan, parliament rejected further foreign agricultural invest-

ment, and in 2013, protesters took to the streets to oppose the acquisition of land for the benefit of Gulf investors. In

Morocco, farmers in Zagora demanded stricter licensing and stricter oversight, prompting authorities to impose a temporary ban on watermelon cultivation in the region.

Perhaps the most significant form of resistance in this context is what may be described as a demand for water sovereignty: the rejection of framing water as a commodity whose price and distribution are determined by international markets, and the insistence that it be recognized as a collective right managed by local communities according to their own pri-

orities. Women in rural Arab communities have been at the forefront of this demand because they experience the daily costs of the extractivist model firsthand. When the wealth embodied in land and water is exported elsewhere, women are the first to pay the price: they must walk farther to fetch water, suffer first from pollution, and spend their time filling the gap left behind by extractive industries. This lived reality generates a practical understanding of the costs of depletion that no investment report can capture.

04

CONCLUSION: TOWARDS A FEMINISM OF WATER

From Figuiq to Gaza, and from the Iraqi marshes to the Sudanese lands leased for decades, this paper paints a single, recurring picture: water deprivation that cannot be explained by geography or climate, but rather by decisions made in offices far removed from those who pay the price. What the four themes collectively reveal is that this deprivation is not a technical

failure that can be rectified with more efficient tools, but rather a structural product of power systems that systematically generate and reproduce deprivation, placing the heaviest burden on women because gender structures position them at the forefront of the crisis's repercussions and at the back of the line in decision-making processes.

CRITIQUING THE NARRATIVES OF NATURAL SCARCITY AND TECHNICAL MANAGEMENT

Water policies in the Arab region and beyond are dominated by two complementary discourses: the first, the discourse of "natural scarcity," attributes the crisis to the region's geography and demographic pressures, proposing solutions in conservation techniques and alternative sources; the second, the discourse of "technical management," attributes it to unequal distribution, proposing solutions in better governance and more modern networks. This paper demonstrates that both discourses—despite their apparent contradiction—share the same underlying issue: the power relations that produce deprivation and distribute its costs.

When the scarcity discourse describes water shortages in the Draa Valley as a geographical inevitability, it conceals decisions that have directed investments

toward export-oriented agriculture at the expense of oasis communities. When the technical management discourse describes Gaza's water networks as "dilapidated infrastructure" in need of repair, it conceals their deliberate military targeting. And when privatization is presented in Morocco, Egypt, and Jordan as an efficiency necessity, this argument obscures the fact that its costs are concentrated on poor families, and within these families, on women. What is most troubling is that both discourses reduce women to objects of intervention rather than active participants—beneficiaries or indicators of success, not partners in shaping solutions. This is what the paper calls "symbolic representation": women's presence in the discourse without their presence in power.

INSUFFICIENT TECHNICAL SOLUTIONS AND SYMBOLIC REPRESENTATION

Water policies in the Arab region and beyond are dominated by two complementary discourses: the first, the discourse of "natural scarcity," attributes the crisis to the region's geography and demographic pressures, and proposes solutions in conservation technologies and alternative sources; the second, the discourse of "technical management," attributes the

crisis to unequal distribution, and proposes solutions in better governance and more modern networks. This paper demonstrates that both discourses—despite their apparent contradiction—conceal the same underlying issue: the power relations that produce deprivation and distribute its costs.

KEY DEMANDS FOR TRANSFORMATION

This paper calls for five interconnected demands:

First, recognizing the interconnected nature of deprivation as a binding diagnostic framework: Every water policy must begin by asking who is deprived of water and why, through gender, class, and geographic assessments that establish a definition of the problem from the outset, not as a subsequent addition.

Second, redefining accepted water knowledge: Expertise lies not only in engineering degrees but also in the practical knowledge accumulated by women who have dealt with water daily for generations—knowledge that cannot be replaced by a mathematical model and is lost when its holders are excluded from decision-making bodies.

Third, breaking the cycle of deprivation: As long as women are excluded from land ownership, water associations, and governance boards, no water reform will reach them equitably. This necessitates simultaneous reform of land, property, and political participation laws.

Fourth, holding global actors accountable: Oil company contracts, international lending terms, and the decisions of

upstream countries that build dams without equitable treaties—all of this requires international accountability mechanisms, not just diplomatic pressure. Fifth—what the paper calls "water feminism"—is the reimagining of water as a social relationship, not an economic commodity: a structure of relationships between people and their environment, shaped by history, politics, and gender. This opens up prospects for governance that restores the value of customary systems, local knowledge, and collective ownership, not as nostalgia for the past, but as a source of genuine water justice.



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The Arab NGO Network for Development

works in 12 Arab countries, with 9 national networks (with an extended membership of 250 CSOs from different backgrounds) and 25 NGO members.

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