



The Water Crisis is the Cry of the Poor: Challenges to Restoring the Hydrosocial Cycle

Heliodoro Ochoa-García

Professor, ITESO Jesuit University of Guadalajara, Mexico

The Water Crisis, the Cry of the Poor

The water crisis is global in scale and the data is shocking. Water ecosystems, as well as the livelihoods and dignity of the poorest people are increasingly at risk. International organizations, governments, scientists, social movements, business people, water users and civil society in general seem to agree on this. It is estimated that 80% of the world's population faces a high threat level in terms of water security and biodiversity due to changes in hydrographic basins, pollution, biotic factors, infrastructure development and water policies (land cultivation, impermeable surfaces, dense development of dams, river fragmentation, pressure from fishing and aquaculture, increased nitrogen, phosphorus, pesticides and sediment loads). Areas which lack the capacity and have little or no investment to deal with these issues are the most vulnerable (Vörösmarty et al., 2010).

Conflicts over fresh water multiply everywhere, provoking various forms of confrontation, where “[...] powerful actors assume control of valuable resources and water basins for their own benefit, depriving local communities whose livelihoods depend on these resources and ecosystems” (Kay & Franco, 2012:2). This phenomenon also coincides with the seizure of decision-making powers over the water, including the power to decide how and for what purposes water resources are used, now and in the future.

For this reason, the multiple crises associated with water become a cry of distress from the poorest and most excluded communities. The cry of the water is the cry of the poor, and vice versa. People (often women) fight and defend the water, demanding access and equitable distribution in the countryside and in the city; they call for efficient public services, inclusive water policies, and more sustainable management of water ecosystems. Frequently, this means defending the land and standing up for fundamental rights.

The irony is that the water crisis is taking place on the blue planet, where water is abundant and the progress of science and technology is increasing. However, geography, the course of

history (sometimes a violent one, of war and dispossession)¹, institutional arrangements and socio-economic priorities have resulted in divergences in terms of water management and access. The constant reduction in available volumes of water (ground and surface water) is evident, poor quality affects around 27% of the world's population (Rodell et al., 2018; WWAP, 2018) and, in regions where water is scarce, it is monopolized by a small group.

In countries of the Global South, the shortage and contamination of drinking water causes major public health problems, political crises and the forced displacement of people; furthermore, huge fields of food crops are irrigated with polluted waters and the harmful effects of these practices are still unknown.

“More than 80% of wastewater resulting from human activities is discharged into rivers or sea without any treatment. Water scarcity affects over 40% of the world's population, and this figure is projected to increase. Over 1.7 billion people live in river basins where water use exceeds recharge. Floods and other water-related disasters account for 70% of all deaths related to natural disasters. The global demand for water is projected to increase between 20% and 30% by 2050.” (United Nations, 2018).

The United Nations affirms that water scarcity derives from unequal power relations, poverty and inequality. From this perspective, the crisis can be caused by social or natural factors, but most of these can be solved or mitigated (UNPD, 2006; FAO, 2012). In rural areas, the challenge seems greater because:

“2.6 billion people depend directly on agriculture, but 52% of the land used for agriculture is moderately or severely affected by soil degradation.

Arable land loss is estimated at 30 to 35 times the historical rate. Due to drought and desertification each year 12 million hectares are lost (23 hectares per minute) where 20 million tons of grain could have been grown.

74 per cent of the poor are directly affected by land degradation globally” (United Nations, 2018).

Managing water means managing the land and its ecosystems. The productivist model of agriculture, fishing and livestock faces the challenge of containing its expansion, while also transforming practices in order to regenerate and conserve soils, reduce pressure on water use, and adapt to the unpredictable effects of climate change, among others. In cities, the main challenges related to water are sanitation, efficiency and reuse, quality control, distribution, equitable access for all, as well as moving towards sustainable water infrastructures (small, flexible and linked-up) and proper waste management to reduce the knock-on environmental impacts in rural environments. Cities must urgently reverse the excessive water and energy consumption and take better care of their natural resources in order to avoid catastrophes, as

¹ In extreme situations, water becomes a weapon of war, as has happened in West Asia, Sub-Saharan Africa, South Asia and South America.

happened recently with the “Water Day Zero” that threatened the stability of several cities around the world.

Scientific evidence, official data and personal testimonies leave no room for doubt: the balance that nature carved out over millions of years has been broken. The devastation of the earth by human beings and the problem of water in particular is so serious that the poor are crying out because they are on the front lines. Thousands fall ill and die every day due to pollution and lack of water. For the rest of us this still seems distant, although this reality is rapidly approaching us all. Nature, despite being so powerful, does not cry out; its water ecosystems and their countless forms of life suffer and die silently at the hands of humanity. Endless small bodies of water, springs and streams disappear along with unique ecosystems and biodiversity that will be impossible to recover.

In many cases, water governance models need to be drastically improved; decision-making processes must challenge the approaches of different sectors of the economy and allow the right decisions to be made at the local level (WWAP, 2018). Pope Francis posits that issues related to the environment, water and poverty should no longer be viewed solely in terms of the differences between nations, rather the situation within countries and at the local level must be taken into account (Francis, 2015).

The Hydrosocial Cycle and Water Access Mechanisms

Recognizing the close interdependence and enormous diversity of relationships between water and societies requires transforming our understanding of the water cycle. From this perspective, the idea of the hydrosocial cycle – also referred to as the socio-hydrological or socio-natural cycle – has gained importance in recent decades, because it recognizes the interrelation and continuous evolution between water, society and its environment (Swyngedouw, 2009; Farnum, London and Macdougall, 2017). Thus, humanity is no longer placed above nature as a domineering entity, rather they live side by side, as part of one whole. “Interdependence obliges us to think of one world with a common plan” (LS § 164).

In an attempt to analyze the enormous complexity surrounding the water problem and outline possible alternatives, the concept of the hydrosocial cycle is used below to identify key elements that come into play when faced with the various mechanisms providing access (or exclusion) to water. These components and their elements are incomplete, so they must be adapted and expanded according to each context; those presented here are given for illustrative purposes. Thus, considering the socio-natural diversity of the planet and depending on the case study, it is worthwhile to first define the level of the hydrosocial cycle and then order its main components and each of its interrelated elements:

- Water flows take into account surface, underground and atmospheric water (H₂O) as part of one process that occurs on a local, regional and planetary scale. It includes geophysical aspects such as climate, precipitation (rain, snow, fog), geology, vegetation, ecosystem characteristics, soil types, evapotranspiration, etc.
- Technology, infrastructure and usage practices that intervene and alter different water flows. Interventions can come in various forms and with different purposes, including

extraction, diversion, storage, contamination, reuse, power generation, etc., which take place in rivers, lakes, aquifers, clouds, glaciers, atmospheric humidity, oceans, wetlands.

- Social, institutional and regulatory aspects that determine access, guide water management practices and cause situations of (in)justice and (in)equality.

Humanity already intervenes in multiple ways in the natural water cycle (water flows) and is capable of inducing changes on a local and global scale with the support of technology, infrastructure, institutions, legal frameworks and the exercise of power. “Yet the same ingenuity which has brought about enormous technological progress has so far proved incapable of finding effective ways of dealing with grave environmental and social problems worldwide [...] How can a society plan and protect its future amid constantly developing technological innovations?” (LS § 164, 177).

People’s quality of life and their livelihoods, the production process, social stability, the present and the future, all depend on the conditions of the water in terms of its abundance, scarcity, pollution (natural or human-induced), changes in precipitation and to the river regime, the occurrence of hydrometeorological risks and other dynamics of the hydrosocial cycle. Technological innovations and prevailing social practices have not shown themselves to be effective in improving and safeguarding water care. On the other hand, advances in the field of law, changes to practices, new policies and institutional innovations are outlining principles, rules and commitments in favor of the common good and water justice. However, the results seem insignificant in the face of the challenges, while the fulfillment of local and international objectives and commitments is being postponed.

Currently, the Sustainable Development Goals propose to achieve universal access to water, improve quality and efficiency, in addition to restoring and protecting ecosystems (United Nations, 2018). However, it is important to specify that, in practice, access to water, like other common goods, involves all possible means (legal and illegal) by which a person or entity can benefit from access and control over a certain resource or asset. From this perspective, the concept of “access” implies a set of structural factors and individual or collective social relations that intervene in the access and appropriation of water. Among these are technology for extraction, uses and distribution; capital to control and sustain access to water; markets and labor to allow the accruing of commercial and labor benefits in any phase or stage of the hydrosocial cycle; managing knowledge and information to influence public opinion, obtain advantages over others, manage conflicts, and maintain control over the resource.

Paraphrasing Ribot and Peluso (2003), “access” means the ability to benefit from water, including material objects (hydraulic infrastructures), people, institutions and symbols. Legal, political-economic and cultural frameworks influence access to water. Thus, it is relevant to identify who benefits and through what mechanisms, since power networks allow some people to obtain and retain control over resources. In relation to water, this means that some stages and elements of the hydrosocial cycle are appropriated and controlled by someone who benefits from this arrangement while others are excluded.

Over time, the positions of people, institutions and power arrangements may vary to different degrees. Some may become empowered and change the way resources are accessed; for example, through the vindication of native peoples' rights, through the attribution of legal status and personhood to rivers and lakes (India, Ecuador) or, at the other extreme, the privatization of rivers and natural reserves (Chile). From the local to the global, new forms of social and political relations must be created to improve models of management in relation to water and the land in favor of sustainability. Water justice social movements have opened up new forms of relationships, governance and sustainable practices that transcend borders and offer new perspectives in favor of people and the earth as a whole.

Final Reflection

It can be concluded that certain access mechanisms influence water problems, impacting each of the stages of the hydrosocial cycle, where water is used for multiple and complex benefits (or damages) in each socio-ecosystem; therefore, conflicts emerge and alternatives develop with varying scopes.

In each region of the planet, the water to which access is sought will be significantly different due to its relationships with the geography, the place's hydrosocial configuration and the tangible or intangible value that the water represents (river, lake, aquifer, rain, dam, glacier, livelihood, historical-cultural value). The analysis and mapping of these mechanisms in each country or locality could yield interesting results on the importance of each of these factors, thus presenting a platform from which to define action strategies that favor water management in a more just way.

In this line of reasoning, it seems logical that the design of alternatives should include the perspective of the hydrosocial cycle – which is equal to the life cycle – and consider the access mechanisms necessary to move towards new forms of relationships with water so as to effectively serve the growing needs for water in impoverished sectors. Where should we start in the midst with these diverse water geographies? Agriculture uses the most water; cities house dense human populations; in poor and marginalized areas, thousands of people fall sick and die from pollution and lack of water; forests and nature reserves are becoming extinct, taking all their biodiversity with them, while climate change wreaks unpredictable havoc.

To discern and prioritize the great challenges related to water, we can adopt the questions posed by Pope Francis (LS § 185): “What will it accomplish? Why? Where? When? How? For whom? What Are the Risks? What are the costs? Who will pay those costs and how? [...] For example, we know that water is a scarce and indispensable resource and a fundamental right which conditions the exercise of other human rights. This indisputable fact overrides any other assessment of environmental impact on a region”. Undoubtedly, the key is slowing down to allow the land and hydrological ecosystems to restore themselves. Meanwhile, those who care for and defend the water lend their voices to express the cry of the water and collaborate with many others to create solidarity networks that seek to care for our Common Home. Thanks to these efforts, hope remains.

References:

- FAO. (2012). *Coping with water scarcity. An action framework for agriculture and food security*. Rome: FAO.
- Farnum, R. L., London, C., & Macdougall, R. (2017). Re-envisioning the Hydro Cycle: The Hydrosocial Spiral as a Participatory Toolbox for Water Education and Management. In L. Roberts & K. Phillips (Eds.), *Water, Creativity and Meaning. Multidisciplinary Understandings of Human–Water Relationships* (1st ed., p. 19). <https://doi.org/https://doi.org/10.4324/9781315110356>
- Francis. (2015). *Laudato Si' On the Care of the Common Home*. Encyclical Letter. Vatican: The Holy See.
- Kay, S., & Franco, J. (2012). *El Acaparamiento Mundial de Aguas, Guía básica*. The Netherlands: Transnational Institute (TNI).
- Naciones Unidas (2018). La Agenda 2030 y los Objetivos de Desarrollo Sostenible. Naciones Unidas. <https://www.un.org/sustainabledevelopment/es/> vi:29.09.2021
- Ribot, J. C., & Peluso, N. L. (2003). A Theory of Access. *Rural Sociology*, 68(2), 153–181. <https://doi.org/10.1111/j.1549-0831.2003.tb00133.x>
- Rodell, M., Famiglietti, J. S., Wiese, D. N., Reager, J. T., Beaudoin, H. K., Landerer, F. W., & Lo, M.-H. (2018). Emerging trends in global freshwater availability. *Nature*, (557), 651–659. <https://doi.org/10.1038/s41586-018-0123-1>
- Swyngedouw, E. 2009. The Political Economy and Political Ecology of the Hydro-Social Cycle. *Journal of Contemporary Water Research & Education* 142: 56-60.
- UNPD. (2006). *Human Development Report 2006. Beyond Scarcity: Power, poverty and the global water crisis*. New York: UNPD, Palgrave Macmillan.
- Vörösmarty, C., McIntyre, P., Gessner, M., Dudgeon, D., Prusevich, A., Green, P., ... Davies, P. (2010). Global threats to human water security and river biodiversity. *Nature*, 467(7315), 555–561. <https://doi.org/https://doi.org/10.1038/nature09440>
- WWAP. (2018). *The United Nations World Water Development Report 2018: Nature-Based Solutions for Water*. Paris: UNESCO.

Original in Spanish
Translation Nils Sundermann