

WATER SCARCITY AND HUMAN RIGHTS

According to the World Health Organization, in 2014 there were more than 750 million people without adequate access to drinking water and more than 2.5 billion lacked proper sanitation conditions.

In many countries, including Brazil, the disparities in water and sanitation services are among the main battlefronts when projecting a fairer and more sustainable society, according to 2015 UNESCO data. It is one of the central objectives of the Sustainable Development Goals (2016-2030). These challenges adopt new extents in areas which already have naturally low water availability, such as many African and some Middle-eastern and Asian countries. The equity principle therefore promises a world with greater water security for all.

We live among increasing unsustainability in water consumption, and this relationship is marked by two aspects: on one side there has been a rise in climatic disasters (droughts, floods), and on the other, pollution of water sources turns supply more and more expensive. This pollution is consequence of the expansion of the economy and of production practices that drive countries' development, aside from natural resources exploitation and the obstinacy for fossil fuel expansion, such as the fracking case for gas extraction.

Today, more than a billion people—i.e. one in seven inhabitants—lack adequate access to drinking water. Over 40% of the world population will live, in the short term, in regions which are being increasingly affected by hydric stress. Hydrologists forecast that, should this trend continue, freshwater will withstand a double pressure: population growth, enhanced by intense consumption habits that will increase the demand for food and energy, and the impact of climate change. Approximately 80% of the world suffers severe threats regarding hydric security, according to IPCC indicators, concerning water availability, demand, and pollution.

It should be noted that a significant part of the world population lacks proper sanitation and 1/5 of aquatic systems that keep ecosystems functioning and feed a rising population is threatened, drying out or becoming too polluted to take advantage of.

The fact is, agriculture water losses stopped being the most visible effect of droughts affecting many countries and regions. The energy crisis and the threat of water scarcity in great metropolis escalate and have become a reality.

It is also important to emphasize that the impacts of the deterioration of ecosystems (caused by an urbanizing process without due sanitation actions taken, and subsequently under-implementation of actions promoting proper access to drinking water and basic sanitation) is reflected on a global water crisis.

Hence, as Pedro Arrojo Agudo (one of the creators of New Water Culture Foundation - *Fundación Nueva Cultura del Agua*) notes, the deepest crisis is that of continental

aquatic ecosystems. This is added to a poverty linked to a development model which promotes inequity and anti-governance, thus affecting the most vulnerable social strata. Water is a vital natural source and its adequate management is thus a fundamental component in environmental politics. When people do not have access to safe drinking water or water as a production resource, their choices and freedoms are hindered by disease, poverty, and vulnerability.

The need for managing conflicts arising from water use priorities has led to incorporating civil society actors within institutions; still there are numberless underprivileged groups with restrained access to the resource in many societies.

It is precisely under this spotlight that it is important to analyze water governance, comprising not only its management aspects, but the usage as a natural resource which tackles sustainability from a social point of view as well. Therefore, engagement of new social actors must be broadened, from its management to its use and appropriation.

For governance processes to materialize, we need to create suitable conditions, such as inclusion, accountability, participation, transparency, predictability, and response capacity. One of the greatest challenges regarding water governance is to ensure an open and transparent approach, which is also inclusive and communicative, coherent and integrative, equitable and ethical.

Given the complexity of the process and the difficulty to consolidate environmental citizenship, limits are outlined by management logics still strongly technically-centered and prioritizing water demand when controlling production. Access to information and transparency of negotiation processes become a key matter in reducing power asymmetries arising from negotiation arenas, when these exist and are considered in decision-taking instances.

Correspondingly, transparency is strongly associated to “the right to know”; in other words, individuals impacted by third-party actions have the right to be fully aware of what risks they are exposed to, and the potential impacts on their health. The transformation of governance practices and the inclusion of social actors in new negotiation arenas have made the access to information a key matter, as well as serving as a power factor when taking decisions.

The growing plurality of actors, by means of their legitimate participation potential, strengthens management choices based on the assurance of access to information. It also consolidates open channels for participation, which in turn are basic pre-conditions for the institutionalization of social control.

The challenges of water resources governance are not only related to the creation of negotiation arenas or to participation promotion, but also to the consolidation of such arenas and to the promotion of symmetric negotiation conditions among the various system actors.

Transparency takes place when information is public and readily available. New governance practices reflect new information fluxes and the different ways of accessing and spreading it by means of new technologies. Information access and knowledge have become crucial in these practices as strategies influencing decision-taking. Governance implies that access to information can reposition actors which will have higher impact

on negotiation and discussion processes. By displaying and disseminating data, it is possible to increase control over the actors responsible for the execution of programs and expected results. Today, this has become possible thanks to the fact that many present environmental problems are identified and treated with disclosed information.

Appreciation of participation and decentralization practices, as a transparency means to strengthen and inform marginalized sectors, can reduce the knowledge asymmetry and promote a fairer decision-taking, in agreement with the demands of all. This maximizes the capacity of empowerment and strengthening of participation processes and information democratization.

Public engagement allows people or groups of people to influence the result of decisions that will affect them or they are interested in. It also promotes improvements in the quality of water governance processes, enabling stakeholders to seize the problems and thus to engage and cooperate toward alleviation or solution actions.

These brief solutions introduce this special volume that tackles Water Scarcity and Human Rights under several perspectives and approaches, featuring water crisis, hydrosocial scarcity, water as a human right, water security, conflicts and social protest, user perception, and resilience in face of hydric stress.

By means of an analysis of the media coverage of the water crisis in São Paulo, authors **Laura Alves Martirani** and **Isabela Kojin Peres** show the information building process on this matter within the public sphere and the population's access to the information in their article "*Water crisis in São Paulo: news coverage, public perception and the right to information*".

Authors **Érico Soriano**, **Luciana de Resende Londe**, **Leandro Torres Di Gregorio**, **Marcos Pellegrini Coutinho** and **Leonardo Bacellar Santos** approach the water crisis from the risk and disasters management point of view, considering the affected people and associated damages in their article "*Water crisis in São Paulo evaluated under the disaster's point of view*".

The article "*Methodological proposal for redesigning informal communities – constructing resilience in hydrological stress conditions*" by authors **Luiz Fernando Flores Cerqueira** and **Luciene Pimentel da Silva**, proposes a research-action methodology for the redesign of informal settlements based on Low Environmental Impact Urban Development.

In attempt of debating about the rise of inequalities regarding access to water and uneven distribution, the article "*Human right perspective: inequality in access to water in a rural community of the Brazilian Northeast*" by authors **Bernardo Aleixo**, **Sonaly Cristina Rezende**, **Borges de Lima**, **João Luiz Pena**, **Gisela Zapata**, and **Léo Heller**, performed a case study in the Cristais – Ceará community, revealing quantity, physical accessibility, and local economic factors.

Basing herself on a document analysis, author **Pilar Carolina Villar** discusses the role of underground water and its management within the water crisis context and before the need to secure the human right to water in the article "*Groundwater and the right to water in a context of crisis*".

The paper "*Water security in the metropolitan region of Rio de Janeiro: contributions to the debate*", by author **Bianca Borges Medeiros Santos**, approaches water resources

management focusing on water security, including matters about the dependence on the Paraíba do Sul river, the role of state administrative bodies and water management instruments, and the maintenance of regional water security.

Based on political ecology and environmental justice, authors **Robinson Torres-Salinas, Gerardo Azócar García, Noelia Carrasco Henríquez, Mauricio Zambrano-Bigiarini, Tatiana Costa** and **Bob Bolin** present their article “*Forestry development, water scarcity, and the Mapuche protest for environmental justice in Chile*” where they evaluate how forestry development has generated social-spatial environmental degradation dynamics and water scarcity in southern Chile.

The article “*The arbitral tribunal as an alternative legal instrument for solving water conflicts in Brazil*” by authors **Celso Maran de Oliveira, José Wamberto Zanquim Junior** and **Isabela Battistello Espíndola**, advocate in favor of the creation of a Water Arbitration Court with the capacity to act in parallel to official court rulings, to further protect and repair the environment.

Authors **Maria Helena Del Grande, Carlos de Oliveira Galvão, Livia Isabel Bezerra de Miranda** and **Lemuel Dourado Guerra Sobrinho** pinpoint causes of a water injustice situation in Campina Grande, in the Brazilian semiarid, through monitoring conditions of residential provision and the dwellers’ perception of the water rationing impacts on their daily lives. Their article is called “*The perception of users about the impacts of water rationing on their household routines*”.

“*Water supply and hydrosocial scarcity in the Rio de Janeiro Metropolitan area*” is the title of the article by authors **Ana Lucia Britto, Rosa Maria Formiga Johnsson** and **Paulo Roberto Ferreira Carneiro**, which analyzes the present situation concerning water supply in the Metropolitan Region of Rio de Janeiro in the light of the hydrosocial scarcity concept, and of the human right to water beyond structural problems associated with water and sanitation services management.

By means of field surveys, author **Larissa Helena Ferreira Varela** through her article “*Challenges to the human right to water and to the sustainability of services in Santa Cruz, Cabo Verde*”, studied the water consumers’ payment capacity in the city of Santa Cruz, Cabo Verde, a country with high water stress and low in financial resources. The aim was to evaluate how social-economic conditions affect the achievement of the human right to water and to sustainability.

Closing this volume, **Julia Guivant**, presents the essay entitled “*Ulrich Beck’s Legacy*” by special request of the Editor-in-Chief of *Ambiente & Sociedade Journal*, where the researcher’s scientific contributions to contemporary social theory are exposed.

We wish you all a pleasant reading.

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