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CLIMATE EMERGENCY AND WATER GOVERNANCE
Critical challenges

EMERGÊNCIA CLIMÁTICA E GOVERNANÇA DA ÁGUA
Desafios críticos

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ABSTRACT

Considering climate change and its ongoing effects, the climate emergency appears as result of the intensification of processes such as periods of drought and/or intense rainfall. Consequently, we are witnessing unprecedented catastrophes that affect the more vulnerable parts of the population across different countries. The water governance models present around the world have coincided with a movement to privatize water services, which have hindered the treatment of water as a fundamental substance for the reproduction of life forms. Despite that, it can be useful for rethinking access to water in scenarios of scarcity or disasters, as a measure to build social and environmental justice. This paper seeks to discuss these points considering the literature.

Keywords: Climate emergency. Social and environmental justice. Water governance.

RESUMO

Considerando as mudanças climáticas e seus efeitos contínuos, a emergência climática surge como resultado da intensificação de processos como períodos de seca e/ou chuvas intensas. Consequentemente, estamos testemunhando

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catástrofes sem precedentes que afetam as parcelas mais vulneráveis da população em diferentes países. Os modelos de governança da água presentes ao redor do mundo têm coincidido com um movimento de privatização dos serviços de água, o que tem dificultado o tratamento da água como substância fundamental para a reprodução das formas de vida. Apesar disso, pode ser útil para repensar o acesso à água em cenários de escassez ou desastres, como medida para construir justiça social e ambiental. Este artigo busca discutir esses pontos considerando a literatura.

Palavras-chave: Emergência climática. Justiça social e ambiental. Governança da água.

INTRODUCTION

The water governance agenda emerges in a context of demands for "sustainable development," as an object of study and critique related to political ecology, economics and the political, applied social and human sciences. Although discussions concerning sustainable development originated in the 1980s, in the 21st century, "sustainable," as an adjective, began to appear as a qualifier for development by bringing concepts of competitiveness, equity, social and environmental principles, innovations, negotiations, and financing as its parameters (MÜLLER, 2002).

In the late 20th century and early 21st century, discussions regarding climate change and actions to mitigate this phenomenon gained strength (Pahl-Wostl et. al., 2013). In this period, the countries have advanced with agreements and actions that are sometimes ineffective, while the effects of climate change have worsened, taking on emergency proportions (IPCC, 2023). Many disasters have been occurring more frequently and with greater intensity around the world, confirming the predictions of the Intergovernmental Panel on Climate Change (IPCC) (IPCC, 2023).

In 2012, the fourth World Water Development Report highlighted the need for actions aimed at water management to promote the adaptation to the risks and uncertainties brought by the climate change scenario (PAHL-WOSTL et. al., 2013). As rainfall and water source recharge regimes have been directly affected,

it is crucial to rethink current water governance models.

This paper aims to propose critical reflections on the concepts on which the current predominant water governance models are based, relating them to the climate emergency. To do this, it is based on a theoretical framework that proposes a critical discussion on the concepts of sustainable development, water governance, and climate change, relating them to each other.

To present the discussions, the text is organized into four parts. The first brings a discussion about the climate emergency. The second presents water governance concepts applied to water. Next, it looks at the critical literature on governance models. Finally, the relationships between issues involving water governance and the current climate emergency are presented.

1. CLIMATE EMERGECY

In the last quartile of the 20th century, a group of researchers began to draw attention to a controversial situation at the time: the warming of the planet, as the result of human action through the burning of fossil fuels. Albeit controversial, this thesis was institutionalized through the IPCC, which began to bring together experts on the subject, who organize the main papers published on climate change.

Some, referred to as climate skeptics, questioned the warming of the planet. Nevertheless, their momentum decreased, particularly given the intensification of extreme events that began to occur with greater frequency and intensity (IPCC, 2023). In this way, public opinion and, mainly, the press, began to highlight such events and their frequently catastrophic consequences.

The evidence of a climate emergency scenario is highlighted in several factors, such as:

- Consistent increase in the planet's average temperature;
- Increase in ocean temperatures;
- Record high temperatures frequently reached;
- Population exposure to extreme events on a more regular basis;

- Record extreme events happening more frequently.

Faced with a situation of uncertainty, as it is not yet possible to accurately model the effects of the situation, actions are required in different areas to mitigate greenhouse gas emissions. Simultaneously, it is necessary to promote immediate actions to adapt to extreme climate events, with the aim of reducing its effects on human populations and other forms of life. In this context, governance can present alternatives for dialogue between different sectors, even if it proves to be an instrument that needs to be improved, as will be indicated below.

Necessary actions include the reduction of greenhouse gas emissions – a complex task that involves limiting the lifestyle of wealthy people spread across the world but concentrated in high-income and oil-exporting countries. This segment also includes the automobile industry and the oil sector, as well as countries that insist on using coal as an energy source, such as China. In other words, the environmental order of climate change (RIBEIRO, 2001) faces resistance from powerful political agents, whether at the business or state level.

With the increase in disasters and catastrophes worldwide, the number of victims and environmental and climate refugees is also growing. Therefore, the climate emergency must be thought of as an opportunity to repair structural issues that are present in several countries. Social and environmental justice, which has the goal of repairing the vulnerable situation of part of the world's population (KASWAN, 2020) and reparatory actions must be based on at least two premises: ecosystem restoration and social reparations.

Ecosystem restoration is more than necessary and presents an urgent challenge. The recovery of past systems comprises a massive challenge, but it is possible to reach approaches that consider, as a minimum, maintaining environmental and ecosystem services. In this process, the use of knowledge from original and local populations is fundamental, as they are familiar with the territories where they live and are able to provide information that allows the environment to be restored.

Social reparations, in turn, has a more complex political dimension than

the former. Initially, it is necessary to recognize that the social inequalities present in the world have resulted from capital accumulation processes that were also responsible for environmental degradation and greenhouse gas emissions. Following this assumption, social reparations can have a compensatory nature for countries and their populations, which would certainly generate a precedent that would face resistance in central countries of the international system.

When countries close their borders to immigrants, who are expected to increase in numbers due to issues caused by the environmental emergency, it is unlikely to imagine that they would be willing to provide financial compensations for those most affected by the current situation, which should only be worsened, one should stress. Therefore, the implementation of a resource system and its sources is fundamental

The United Nations Environment Program proposes an adaptation system that considers appropriate financing sources, i.e., financing that does not come from resources generated by greenhouse gas emissions. Moreover, it advocates for a planned adaptation system to avoid wasting resources. Finally, it considers the need to establish mechanisms for acknowledging losses and damages in countries and communities (UNEP, 2023).

Only with an effective governance system will it be possible to coordinate this group of political agents. Nevertheless, such a system does not exist, given that both the Framework Convention on Climate Change and its internal instruments, such as the Paris Agreement, have shown themselves to be insufficient thus far, in terms of both mitigation and adaptation to climate change.

2. THE GOVERNANCE CONCEPT APLLIED TO WATER

As is recognized, the concept of governance emerged in the financial sphere and in the liberal wave that swept the world, in which an attempt was made to expand the participation of political agents to the detriment of state power. For this reason, it is criticized.

There are, however, some virtues to this idea. The concept of governance

encompasses governmental institutions and non-governmental mechanisms that connect people and organizations to common goals (ROSENAU; CZEMPIEL, 1992). Regarding the search for water governance, ideas converge towards mobilizing agents through proposals and critiques that are articulated with the idea of sustainable development (ABRAMOVAY, 2010; COSTA FERREIRA, 2006; JACOBI et. al, 2021; LEFF, 1994; RIBEIRO, 2009; RIBEIRO et. al., 2022; SACHS, 1993; SILVA, et. al. 2023; VEIGA, 2010).

Ideas related to sustainable development or sustainability permeate discussions on water governance, involving discourses of “green” development or adaptation to climate change, which are often used to justify decisions such as transpositions, damming, construction of hydropower plants (to produce so-called “clean” energy), among other large-scale actions (BOELENS et. al, 2022). The word “development” is commonly associated with the meaning of economic growth. The adjective “sustainable” brings with it an anthropocentric bias, viewing nature as a resource for human consumption and the environment as a problem to be solved (LOTZ-SISITKA, 2014; SAUVÉ, et. al., 2007).

Since the institutionalization of the concept of sustainable development at the United Nations Conference on Environment and Development (Rio Earth Summit of 1992), this idea has emerged as an instrument with the possibility of acting as a springboard for a time in which development economically viable, ecologically bearable and socially equitable was present at the time, assimilated by daily human practices. Sustainability would emerge as a milestone in the perception of time, which is conceived as a horizon of expectation, in which what we aim to achieve is first formulated in language (KOSELLECK, 1979).

The preparation and institutionalization of sustainability, when considered in the sphere of proposing public policies and their different rhythms and spaces, are crossed by dichotomous pairs, dissensions, and asymmetries (PEGUIM, 2021a)

As an example, public and private and scarcity and abundance comprise dichotomous pairs that are capable of dividing the universe of meanings into reciprocally exclusive spheres and establishing a complete division, but which converges in the direction of other dichotomies (BOBBIO, 1995). These and other

dichotomies can generate dissent, that is to say, rational disagreement regarding a word, its set of meanings, and/or their use. Dissent, a critical exercise expected in proposing public policies, has its own counterpart – consensus, defined as the most reasonable option for the concerted treatment of a problem (RANCIÈRE, 1995). As a result of the accentuated polarization and heterogeneity of this process, new forms of exclusion are generated. These are asymmetries that arise from the process of seeking integration into the world economy and overcoming existing risks and challenges (LOPES, 2005).

In the historical trajectory of the process of reframing the dichotomous duo of development and environment, Agenda 2030 and its seventeen Sustainable Development Goals (SDGs) appear, with targets discussed from 2012 onwards, in the set of propositions of the United Nations Conference on Sustainable Development (Rio+20), presented and consolidated in 2015, to be achieved by 2030.

Agenda 2030 and the SDGs bring advances in relation to their predecessors, Agenda 21, and the Millennium Development Goals (MDGs), by pointing out objectives that are specifically related to environmental issues (in the MDGs, there was only one objective directly aimed at environmental issues, i.e., "MDG 7 – Ensure environmental sustainability") (SOARES, 2022). Among the innovations in the goals incorporated in Agenda 2030, "SDG 6 – Clean water and sanitation" stands out, with the goal of ensuring the availability and sustainable management of water and sanitation for all (United Nations, 2024). Given its relationship with the concept of governance, the following goals stand out:

> 6.5 – By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate;
>
> 6.a – By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies;
>
> 6.b – Support and strengthen the participation of local communities in improving water and sanitation management (UNITED NATIONS, 2024, n. p.).

Furthermore, two other SDGs are related to the issue of governance.

"SDG 16 – Peace, justice and strong institutions," which aims to promote and build peaceful, inclusive, effective and responsible societies and institutions to ensure sustainable development and to provide access to justice for all; and "SDG 17 – Partnerships for the goals," which aims to strengthen the means of implementation and revitalize the global partnership for sustainable development (UNITED NATIONS, 2024). Here, governance would involve analysis of institutional organization, the exercise of power and social participation or its absence. In this way, it appears that Agenda 2030 and the SDGs emerge as guidelines to achieve the benefits of shared water management (LEITE et. al., 2021).

The SDGs result from the process of creating the international environmental order, a set of international agreements aimed at regulating human intervention in nature (RIBEIRO, 2001). It should be noted that, since the 1990s, the national scale often conflicts with cross-border demands, which may result in porous borders, permeated by multiple relationships with the territory and, subsequently, by multiple social, power and reproduction relationships of life between different social stakeholders (PORTO-GONÇALVES, 2017). These factors directly affect governance and generate tension between international and national scales. In this process, sustainable development takes on a prominent role, as it forms the basis for agreements that later resulted in national public policies.

Cooperation between States is present in several international environmental treaties. It also involves key sectors of society to promote sustainable development. It was imagined that the State should induce the changes necessary for the transition to the sustainability paradigm, based on the actions of multiple stakeholders in a governance system, which could be understood as

> a more encompassing phenomenon than government. It embraces governmental institutions, but it also subsumes informal, non-governmental mechanisms whereby those person and organizations within its purview move ahead, satisfy their needs, and fulfill their demands (ROSENAU; CZEMPIEL, 1992, p. 4).

In the transition from the 20th to the 21st century, the State remained a

necessary intermediary in public instances, thereby highlighting the public-private dichotomy. Among the neoliberal reforms in the context, we find the Dublin Statement on Water and Sustainable Development of 1992, proposing the concept of sustainable development as a basis. Among its guiding principles, highlights include Principle 2, stating that water development and management should be based on a participatory approach between users, planners, and political agents at all levels; and Principle 4, which notes that water has economic value in all competitive uses and should be recognized as an economic good, with the market being included as a regulatory agent (PEGUIM, 2021b).

Incrementally, multilateral institutions such as the World Bank and the International Monetary Fund began to disseminate water as a commodity, with the privatization of water services as an alternative to providing access to quality water. This model, as has already been widely demonstrated (BOELENS et. al., 2018), was unable to provide water to a significant portion of the world's population.

In Latin America, in the 1990s, efforts were made to discuss the variables in the process of developing a regulatory system that is linked to the roles of the State and the market, using the experience of countries that had already undergone the economic transition from the welfare State to neoliberalism. Some of the countries in this region of the world have adopted a water governance system established in their legal system, with greater or lesser public participation.

National states that ratified Agenda 21 in 1992, such as Brazil, were committed to creating and executing institutional structures to promote the efficient use of water. This occurred in a context of multiple uses of water by different social stakeholders, in which legislation would fulfill the role of articulating socioeconomic measures (RIBEIRO, 2009). After 2015, Agenda 2030, composed of the SDGs, was internalized as a policy at different levels of government, continuing the insertion of sustainability as a defining category of its development process. The promotion of the UN 2023 Water Conference, at the UN headquarters in New York City, held in March 2023, reaffirmed these principles, in addition to strengthening the need for shared use of water,

especially between border countries, and the need to compose a technical group capable of promoting water governance.

The public role of ensuring social use and environmental discussion permeated the definition of water as a public domain and stood as a counterpoint to the definition of water as an economic good, as stated in the Dublin Statement. Public-private partnerships (PPPs) were considered an alternative for dialogue in the face of market action, previously characterized as the potential for the formation of monopolies on the supply of basic services at the expense of increasing the rates paid for these services. In the search for an effective equation, regulatory frameworks on water in Latin America also began to consider two other variables: the physical and geographic issues of water (PEGUIM, 2021b). Ribeiro (2008) presented the concept of political distribution of water in which he advocated that, without knowing the dynamics of hydrological processes, it is difficult to equalize the use of water by a political unit. This scenario becomes even more complex considering ongoing climate changes, as the calculation models used are based on past measurements, which can no longer be used given the changes in the rainfall regime.

This set of factors makes the subject of water governance even more complex and subject to criticism.

3. CRITICISM OF CURRENT WATER GOVERNANCE MODELS

The concept of governance can be used in the development of public policies, but to do so, one must consider how water is appropriated and consumed, by individuals, communities, the State, or the private sector, as well as the values associated with it, particularly the appreciation given to language (MARTINEZ-ALIER, 2012), in which dissent and consensus reside (PORTO-GONÇALVES, 2017). Thus, it is necessary to identify the political subjects in the institutional arrangement of water governance, its legitimacy, and whether it reflects the social complexity that involves the appropriation of water, whether for economic, social, political or cultural use (RIBEIRO, 2009).

By comprising diverse stakeholders who act at different scales and have

different cultures, interests and political-economic power, discussions about the principles involving water governance comprise issues of great social and ecological complexity (BOELENS et. al., 2022; WHALEY, 2022).

Among the obstacles linked to this complexity it is possible mention:

. polycentric arrangements derived from multiple decision-making centers;

. power imbalances between the stakeholders involved and its multi-scale nature;

. discussions on sustainable development;

. the drainage basins as the basic unit of governance;

. water service infrastructure;

. different identities of the stakeholders;

. context-specific systems of formal and informal standards, rules, and laws that may promote or hamper collective action and desired water policy outcomes (WHALEY, 2022).

Implementing governance models in the face of sustainability, scale and power imbalances is therefore a challenge. It can also be questioned whether it is possible to separate the concept of water governance from the premise of justice in access to water.

It can be observed that approaches to the topic of water governance are almost always anchored under the same concepts: the integration-combination-participation pattern, as seen in discussions on Integrated Water Resources Management (IWRM); the water-energy-food nexus; the so-called “good water governance;” nature-based solutions; and the ideas of sustainable development (BOELENS et. al., 2022; WHALEY, 2022). In view of this, the question arises as to whether water governance would aim to guarantee economic growth based on current models of production and consumption and simply attempt to resolve the supply of water, treating it only as a resource.

Another important point to be highlighted in the discussion on water governance is the issue of scale, which is not fixed and can encompass the international, regional, national, and/or local scope, integrating social and ecological scales (WHALEY, 2022). In the case of transboundary waters behind countries, international water governance is necessary, involving state and civil

society stakeholders from the countries involved, with decisions on a national and local scale remaining protected (SILVA et. al, 2023). Therefore, it is necessary to be clear that water governance has a multi-scale nature.

The imbalances in power dynamics between the groups involved is another point to be analyzed. According to Whaley (2022, p. 220), conventional approaches to governance involve an intentional political process that is far from innocent or neutral, which produces “silences and blind spots” and tends to “mask or obscure the practices and relations of power that drive the mechanisms and results of water governance”. In the case of transboundary basins, certain conflicts are often undeclared or masked by asymmetric cooperation agreements, in which hydro-hegemony is noted in which only one of the parties – in this case, the strongest party – benefits from the agreements, establishing domination over water resources (CONCA, 2023; WARNER, 2023; ZEITOUN; WARNER, 2006).

Thus, at all scales, it is common to find obstacles between the interests of riverside dwellers who often have their means of survival in the waters, nurturing extreme respect for them, with a vision that, at times, pays tribute to the sacred. Sometimes, is the presence of impoverished human groups who are not met in their demand for quality water and sanitation, and the interests of large groups of investors and builders, as is the case with the construction of dams and hydropower plants, in a very unequal power relationship (VALENCIO, 2009; MARTÍNEZ-ALIER, 2012).

The national water governance structure currently found in Brazil is able to exemplify these conflicts. Despite the country having a robust water governance system composed of the National Water Agency (*Agência Nacional das Águas* – ANA), the National Water Resources Management System (*Sistema Nacional de Gerenciamento de Recursos Hídricos* – SINGREH), the National Water Resources Plan, and the Drainage Basin Committees, in which the discourse of social participation is often present, policies defended by neoliberal groups, which hold strong economic power, persist, aiming at the privatization of water and contradicting a strong social opinion that opposes the idea (ASSUNÇÃO, 2023; VALENCIO, 2009; RIBEIRO, 2020).

One must recall that, in addition to the issue of imbalances, the interaction of social and environmental dynamics faces a scenario of changes, risks and uncertainties that involve global consequences (BECK, 2002), as is the case of the climate emergency. In this way, identifying the problems presented by current governance models and implementing action plans that are aimed at social and environmental justice and the real participation of the entire community involved becomes an essential issue.

FINAL REMARKS

In the context of the climate emergency, water becomes a pressing issue, either due to its absence or due to its presence in high volumes. Thus, the ongoing climate change results in periods of rainfall instability that affect water supply, making it difficult to supply humans and other forms of life during long periods of drought, but it also becomes a vector of destruction and deaths when intense rainfalls occur. This scenario worsens social inequalities built in the past, expressed in large populations without access to water, as well as others that are subject to catastrophes.

Water governance, through the articulation of different political agents, could be an instrument for public water management. Nevertheless, widespread models have been associated with the privatization of water services, which have made it difficult to see water as a fundamental substance for the reproduction of all forms of life on the planet. Despite that, the meeting and dialogue of different political agents can be an alternative to the complex equation that must combine adaptation to climate change and social and environmental justice, whether internally within countries or in international relations.

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