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The 2020-2022 water crisis in Curitiba and the Metropolitan Region in the news of the digital newspaper Gazeta do Povo

A crise hídrica de 2020-2022 em Curitiba e Região Metropolitana nas notícias do jornal digital Gazeta do Povo

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Abstract: In March 2020, the water crisis that ravaged Curitiba and its Metropolitan Region, alongside the Covid-19 pandemic, became evident to the populace following the implementation of a rotational water supply system by the Paraná Sanitation Company (Sanepar). In addressing this phenomenon, this study adopts a conceptualization of risk predicated on the notion that it emanates from political or economic choices made and understood within their specific contexts. Furthermore, it is posited that a water crisis is not solely confined to prolonged drought periods but is intricately linked to a diverse array of natural/climatic, socioeconomic, technological, and politico-administrative factors that must be analyzed in a conjunctural manner. This article applies news framing analysis to ascertain how the digital newspaper Gazeta do Povo covered this historic water crisis in 2020. A selection of 65 articles was retrieved from the newspaper's website, utilizing a search engine and specific keywords. The framing approach was observed in the form and disposition of content, considering the title, the news lead, and body of the text. Additionally, the social actors featured in the news and the framing of their discourse were mapped. The findings indicate that the predominant frames in the analyzed news coverage placed a dominant, almost exclusive, emphasis on crisis management and risks clearly associated with natural issues, neglecting those related to technological, social, and governance elements. Rare mentions of the water crisis's effects were confined to the perception that the sole concrete manifestation of the phenomenon was the lack of water availability at the tap. The influence of the climate crisis on the phenomenon was notably absent from the discourse. Moreover, the voices of affected individuals and communities were not included in the articles or in the frames that encompassed the social experience in the communication of water risk.

Keywords: water shortage; risk communication; news framing; Curitiba and Metropolitan Region; Gazeta do Povo.

Resumo: Em março de 2020, a crise hídrica que assolou Curitiba e Região Metropolitana, simultaneamente à pandemia de covid-19, ficou evidente para a população a partir da adoção do rodízio de abastecimento de água pela Companhia de Saneamento do Paraná (Sanepar). Ao abordar este tema, adota-se a concepção de risco cuja premissa decorre de escolhas políticas ou econômicas realizadas e compreendidas no contexto em que foram tomadas. Também se entende que uma crise hídrica não se limita a períodos de secas prolongadas, mas tem relação com diversos fatores (naturais/climáticos, socioeconômicos, tecnológicos e político-administrativos) que devem ser analisados de forma conjuntural. Neste artigo, aplica-se a análise de enquadramento noticioso com o objetivo de compreender como o jornal digital Gazeta do Povo abordou essa crise hídrica histórica em 2020. A seleção das 65 matérias foi realizada no site do jornal, por meio de mecanismo de busca, utilizando-se de palavras-chave. A abordagem de enquadramento foi observada na forma e disposição do conteúdo, considerando o título, o lead e o corpo do texto. Além disso, foram mapeados os atores que aparecem nas notícias e a abordagem de suas falas. Evidenciou-se o fato de que os enquadramentos das notícias analisadas deram ênfase dominante, quase exclusiva, ao enfrentamento e aos riscos claramente associados às questões naturais, ignorando aqueles relacionados a elementos tecnológicos, sociais e de gestão. As raras menções sobre os efeitos da crise hídrica remetem à percepção de que o único

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fato concreto relacionado ao fenômeno é a falta de água na torneira. O efeito da crise climática sobre o fenômeno não foi mencionado. As pessoas e comunidades afetadas não foram ouvidas nas matérias e nos enquadramentos que abarcaram a experiência social na comunicação do risco hídrico.

Palavras-chave: escassez hídrica; comunicação de risco; enquadramento de notícias; Curitiba; Gazeta do Povo.

1. Introduction

Brazil is recognized for concentrating a large portion of the world's fresh-water in its diverse continental aquatic systems – rivers, lakes, reservoirs, wetlands, streams, etc. Each system is located in a drainage basin – composed of interconnected networks where water is accumulated naturally or artificially on the surface or in the subsurface (groundwater) – which measures the process of water transfer to surface or underground channels, lakes, and reservoirs. Although the country has good water availability, this abundance is not distributed equitably, considering that the Amazon basin holds 70% of the water production in Brazil (Barbosa et al., 2019).

It is worth emphasizing that, although freshwater is considered a renewable resource, this only happens via water cycle, that is, any dynamic that interferes in the water renewal generates effects on its availability. The 20th century was marked by several changes in continental aquatic systems resulting from the mass construction of infrastructure, large dams, water transfer between basins, water treatment and distribution systems, among others. Furthermore, there is a transformation in the pattern of water use and the effects of climate change in this accelerated process. Although many of these transformations have brought socioeconomic benefits, such as a decrease in the incidence of waterborne diseases and the increase of water use in agriculture and industry, they have also caused major social and environmental problems, such as the displacement of population groups, the destruction of wetlands and their biodiversity, among others (Gleick, 2003, conforme citado em Barbosa et al., 2019).

Most of the world's population already lives in urban areas, and it is predicted that it will reach 60% by 2030, according to the United Nations Population Fund (UNFPA). The phenomenon of urbanization brings changes in the way of life: concentration of people in one area, work location, water, and air quality, housing, and nutrition style, etc. (Leitão, 2009).

The evolution of water use is directly related to the processes and models of urbanization and economic development, a fact that can be ascertained by observing Brazil in the 1940s, when municipalities used water mainly for human and animal provision, as well as for activities in rural areas. Between the 1950s and 1980s, with the advancement of urbanization and the prevailing economic development model, the diversity of uses was expanded, especially for industrial purposes and irrigated agriculture.

From the 2000s onwards, and especially in the last decade, there has been an even greater intensification of water use in irrigated agriculture, consolidating the sector as the largest consumer of water in the country (Agência Nacional de Águas e Saneamento Básico [ANA], 2019, 2024).

According to the National Water and Basic Sanitation Agency (ANA) (2019), from 2012 onwards it's been observed a reduction in water availability due to the water crisis in several regions of the country, caused by various natural and anthropogenic factors, and by the slowdown in the Brazilian economy. Nevertheless, according to the same source, a 24% increase in water demand is predicted in Brazil by 2030.

Irrigated agriculture has been the predominant water use in the southern region of the country since the 1930s. Currently, the demand for water use in the Paraná River basin, according to its categories, is 38% for irrigation, 35.8% for human supply, 19.3% for industry, 8.2% for animal use, 1.7% for thermoelectric power, 1% for rural supply, and 0.2% for mining (ANA, 2019).

In situations of scarcity, according to the Water Law ("Lei das Águas", Law No. 9,433/1997), human supply and animal watering should be prioritized. It is worth noting that urban water supply is managed by concentrating on the territory through complex systems, which poses a challenge to water security in densely populated areas (ANA, 2019).

Considering what has been discussed, it is possible to ascertain that the water crisis is related to several factors – natural/climatic, socioeconomic, technological, and political-administrative – and that their relationship is not linear or causal, therefore requiring a combination of factors to understand it. An example of this is the water crisis experienced in the Southeast region, most dramatically in the capital of the state of São Paulo and its Metropolitan Region – RMSP – between 2013 and 2015.

According to the Water Crisis dossier, published in the USP Journal in 2015, the authors indicate that the crisis is not limited exclusively to periods of prolonged drought, but that it is the result of hydrological imbalances that interfere with natural cycles, the functioning of ecosystems, and regional and local economies (Tundisi & Tundisi, 2015), added to the substantial increase in water demand, poor management of water resources at state and regional levels, and to the conservation conditions of raw water production areas in the Cantareira System ("Sistema Cantareira"), in the case of the Southeast region (Jacobi et al., 2015).

Furthermore, the high degree of urbanization, intensive land use, and inefficient management are factors that contributed to the aggravation of the situation in that case study (Tundisi & Tundisi, 2015). Other important elements in the systemic understanding of this scenario are the drought periods experienced in the Brazilian Northeast in 2011 and the floods and droughts in the Amazon and the South, which correlate with the South

Atlantic Subtropical High (SASH)¹ and the formation of moisture transport channels originated in the Amazon, responsible for the occurrence of regular rainfall in the central-southern part of the country or for prolonged droughts (Jacobi et al., 2015).

The possibility of the episodes of adverse impacts on human and natural systems due to extreme weather events or gradual climate changes is interpreted as climate risk. According to the IPCC (Intergovernmental Panel on Climate Change [IPCC], AR5, 2014; AR6, 2022), climate risk results from the interaction between three main factors: the threat (climate events such as droughts, floods, or storms); the exposure to risk (presence of vulnerable populations, infrastructure, or ecosystems); and vulnerability (sensitivity or susceptibility to damage and limited ability of adaptation or response). Based on this fundamental concept, climate risks can be analyzed to understand how climate change affects different regions and populations unequally, making some territories more susceptible to environmental and social disasters.

Curitiba and its Metropolitan Region (RM), the field of this investigation, were under the effects of the water crisis from March 2020, a fact that led to the implementation of a rotational water supply system, as a water rationing measure, from March 18 of that year until January 19, 2022. The media reported the crisis situation based on the low water levels in the four dams of the Integrated Water Supply System of Curitiba and Metropolitan Region – SAIC (Iguaçu, Passaúna, Iraí and Miringuava), responsible for supplying treated water to ten municipalities: Almirante Tamandaré, Araucária, Campina Grande do Sul, Colombo, Curitiba, Fazenda Rio Grande, Pinhais, Piraquara, Quatro Barras and São José dos Pinhais, and the low accumulated rainfall indices between June 2019 and March 2020 (Companhia de Saneamento do Paraná [SANEPAR], 2013).

The metropolitan region and the capital are situated in an area that encompasses two of the sixteen hydrographic basins of Paraná: the Iguaçu Basin and the Ribeira Basin. Although this area is located in a humid climate region, the natural characteristics and the urbanization process corroborate with several factors that contribute to its vulnerability to the risk of water scarcity. For example, some municipalities that are located upstream of the drainage basin, are subject to lower water availability.

According to Lima (2000), the occupation of freshwater springs in the opposite direction to what territorial planning instruments indicated contributed to the aggravation of water risk, since, instead of these areas being

1 Subtropical Highs are high-pressure systems located at around 30 degrees latitude in the main oceans of our planet. In the South Atlantic, the Subtropical High (ASAS) is of great importance to the climate of South America, affecting the climate of Brazil in the winter – inhibiting the entry of cold fronts, causing a thermal inversion and a concentration of pollutants in urban centers of the southern and southeastern regions – and in the summer, influencing on the transport of humidity, favoring the formation of fog and frost in this region (Bastos & Ferreira, 2000).

preserved for water intake, they were irregularly occupied. Among other facts and causes of this phenomenon, deforestation processes, inadequate disposal of solid waste, untreated sewage and effluents, and the context of socio-spatial inequality can all be pointed, given that access conditions and water quality are very heterogeneous throughout the territory. Poor management of water resources is also cited as a risk factor that corroborates with the inequality in access to water (Leitão, 2009).

Other factors that contributed to the water crisis in question are the dependence on the water supply system of the Miringuava Station, in São José dos Pinhais, the only one in the system with surface water intake (without a dam), a configuration that makes intake difficult when the river level is low; and the rainfall patterns being affected by the passage of the La Niña phenomenon in 2020, which resulted in dry and sunny weather with insufficient rain. Other factors that can be added to those are the increasing acceleration of effects, even though they originate from geographically distant areas, with climate alterations, which exacerbates the other factors usually analyzed by meteorological analysis systems.

Given the complex scenario of the 2020 water crisis in Curitiba and its metropolitan region (in the ten municipalities supplied by the SAIC system) and the implementation of water rationing² via a rotational water supply system by Sanepar³, which began on March 18, 2020, a question arose as to how the journalistic media addressed the risk of water scarcity in this urban conglomerate. Thus, the central question of this article was defined: How was the 2020 water crisis in Curitiba and its metropolitan region represented by the newspaper *Gazeta do Povo*, from Curitiba? The main objective was to analyze the news framing used by this newspaper regarding the risk of water scarcity and shortages.

2. Risk society and communication about the water crisis

Modern societies are considered risk societies, according to Beck (2011), since, throughout the process of urbanization and modernization, deteri-

2 The water rationing via a rotational water supply system in Curitiba and 14 cities in the Metropolitan Region began on March 17, 2020, due to the drought that caused a drop in reservoir levels and flow rate at water intake points. Initially restricted to the southern metropolitan region, it was expanded on May 18 to the entire city and neighboring municipalities, following a model of 1 day without water x 4 days with. In August, it changed to 36 hours with water x up to 36 hours without. In March 2021, it was adjusted to 60 hours x 36 hours, returning to 36 hours x 36 hours in August. In November, it returned to the 60 hours x 36 hours model and, in January 2022, it was changed to 84 hours x 36 hours. There were 649 days of rationing. It is estimated that the rationing, along with other measures implemented with the population, generated savings of 89.8 billion liters of water. The rotating water rationing was discontinued on January 19, 2022.

3 Water collection and distribution in Curitiba, the metropolitan region, and in most municipalities in Paraná are carried out by the Paraná Sanitation Company (Sanepar), founded in the mid-1960s. Currently, it is a mixed-economy, publicly traded company, controlled by the State of Paraná.

oration and various other negative consequences related to the power of modernization and globalization have occurred. Beck (2016), in a posthumous work, also points out that we live in a “world in metamorphosis” that goes beyond what he understands as a world in transformation, including in this the climate crisis, digital risks, relationships between nations, etc. Current society has accumulated vulnerabilities produced throughout the historical process which, according to the author, are associated with the social production of wealth, which, in turn, is invariably related to the social production of risks, a process in which the distribution of harm is no longer limited to social, geographical and economic differences, threatening everyone without distinction, although in different ways. This conception can be understood, according to Leitão (2009), when the author states that:

Issues such as nuclear arms control, environmental degradation, water quality degradation, and scarcity of water sources are capable of endangering the entire society globally, and affect everyone indiscriminately, both in the city and in the countryside (Leitão, 2009, p. 47).

As questions arise about the understanding of the consequences of modernity, which become more universal and radical, a new capacity emerges in society: to reflect on its situation, its development, its lifestyle, and the uncertainties involved in this evolutionary process. This phenomenon, named reflexive modernity by Beck (2011), implies that modern (and post-modern⁴) society becomes its own subject, as it is concerned with the risks produced by itself (Leitão, 2009) – or contests and denies these risks, in what has become known as denialism in its various manifestations – scientific, environmental, climatic, ideological, etc.

According to Veyret and Richemond (2007), the definition of risk is directly linked to the perception of a possible danger by an individual or social group that has been exposed to it, through representations that lead them to coexist with the threat via specific practices. Risks can be classified into different categories: natural and environmental; industrial and technological; geopolitical, economic, and social (Veyret & Richemond, 2007). Environmental risks are understood as an association between natural risks unrelated to human intervention (physical processes such as earthquakes, landslides, heavy rains, droughts, and dry spells) and risks arising from natural processes aggravated by anthropogenic factors, such as land occu-

4 Postmodern society is a controversial term within the social sciences in general. In this work, we use the term specifically to mark a historical and cultural phase that succeeds modernity, characterized by global transformations in the ways of thinking, producing knowledge, communicating, and socially organizing, and intensely marked by a flexible and/or delayed capitalism. It is also a historical stage marked by risks, of the most diverse kinds, both natural and anthropogenic, including technological ones, hence being understood as a risk society. It is important to note that the concept initially debated by Beck (2011) gains intensity in the contemporary scenario, especially in the face of the intensification of risks and vulnerabilities caused by the climate crisis and the aggravation of socio-environmental injustices.

pation, deforestation, and other human activities linked to the dominant production system and sociocultural habits.

Industrial risks are related to the activities of this sector (storage of toxic products, production, and transportation of hazardous materials) which are alarming, as they result in chain reactions that are difficult to control and are not very predictable, aggravated by its location within the urban region. The probability of impact of considerable magnitude linked to the dysfunctions of a complex and technical system corresponds to technological risk. This category includes a wide variety of everyday risks, such as urban fires, pollution due to automobile traffic, accidents, and waves emitted by mobile phone antennas; digital risks are currently also included (Beck, 2016). The heterogeneity of the urban region, the complexity of urban systems, and the intensification of their flow are potential risk generators. In this context, the complexity of water supply networks and the technology involved in this process are related to water risk, the subject of this study.

Geopolitical and economic risks are related to access to and sharing of resources, which result in latent or overt conflicts between countries, regions, or a city that, in a way, are related to political stability. The matter of water in regions of scarcity illustrates this category well, as a territory living in these circumstances may experience deteriorated sanitary conditions, stagnation in food production, impoverishment, and population migration, among other effects that impact economic relations and influence geopolitics.

Social risks are associated with societies' outcomes – urban growth, industrialization, settlement patterns, excessive neighborhood density, peripheralization and slum formation – poor urban management, and, to a large extent, are related to natural risks (floods, droughts, earthquakes, etc.). In this regard, the fragmentation of the area is both a cause and a consequence of social inequalities, which are intrinsically linked to the outcomes of society and its quality, such as food security, citizen's health, quality of goods consumed, and the availability of drinking water.

Taking the above into consideration, it is evident that urban risks do not arise solely from isolated facts or objective processes and, in the case of water risk, are constituted by a combination of several factors, and can therefore be classified as a hybrid risk (Mendonça et al., 2016). This reveals the need for a specific portion of the population and locations for urgent prevention and control measures in the face of disasters resulting from the interaction between natural, socioeconomic, and technological risks (Leitão, 2009).

Thus, the accelerated urbanization process present throughout the planet, by concentrating people and activities in restricted spaces, fosters vulnerability to the risks presented above, whether natural or technical, exogenous or endogenous to the territory. Therefore, when studying water-related matters, it is important to take into account several risk factors, such

as the presence and the conditions of basic sanitation services (water supply, sewage treatment, rainwater drainage, and waste collection), water quality, the condition and management of water resources, the permanence of populations in areas with precarious sanitary infrastructure resulting from uncontrolled urban expansion and the occupation of risk areas, poor public health conditions, environmental degradation, and poverty.

On this note, it is important to revisit a fundamental element of Veyret and Richemond's (2007) concept of risk, which contributes to the understanding of water risk, the subject of this study: risk exists to the extent that individuals perceive it, that is, when there is a perception of possible hazard by an individual or social group. It is crucial to understand that in the process of acknowledging risks, they are perceived and experienced differently by individuals and societies. Di Giulio et al. (2010) argue that experts in the field of risks recommend that the risk communication process should consider not only technical analyses, but also include information related to public perception and to social concerns and their effects on a particular risk.

In this context, to bring light to arguments and proposals about a risk situation is the first step towards the existence of a public debate, that is, the establishment of a communication process among individuals (Antunes et al., 2008). Thus, social media should play a role in promoting visibility to disputes and controversies that exist in social life and that "become central to the dissemination of symbolic productions that occur in various social fields" (Antunes et al., 2008, p. 147). Currently, the assumption that the media, in their most varied formats, are extremely relevant in any society seems indeed undeniable. This is because they play an informative and, in some cases, formative role, composing the process of constructing cultural aspects (Gamson & Modigliani, 1989) – despite the disruptive effects that some digital media have been causing by disseminating fake news, hate speech and denialism, including climatic and socio-environmental (Colatusso et al., 2024).

From this perspective, it becomes inevitable to understand the various media in an intensely mediatized society as institutions in the sociological sense, that is, that they are systemically linked with social structures in a relationship of mutual determination within social dynamics (Maia, 2006). It should be noted however that more recent digital media occasionally escape this social institutionality and are even created to break with traditional institutions and act in the social interstices that configure a society marked by a dominating digital culture (Bortolazzo, 2016) and by the socio-technical organization determined by digital platforms (Van Dijck et al., 2018).

It is also worth highlighting two points about media and the process of communication: the act of communicating goes beyond the simple exchange of information. By mediating between a phenomenon and its

agents, the media organize the world in its own way, that is, under its system of signification and representation (Antunes et al., 2008). In this context, using its own language and operational modes, at the same time that it talks about the social dimension in which they are embedded and show reality, also reconstructs this social reality, since it performs a mediation in which meanings and representations are appropriated and interpreted by the individuals in a society (Antunes et al., 2008).

Therefore, what is conveyed, how content is produced and presented by the media, who it will be disseminated to, and the purposes and intentions of the production and consumption of media content are all issues worthy of attention, as they hold within them clues to how we can understand the social world and the array of significations and the social and power relations that are part of it, mapping possible interests that guide the public debate on topics of social relevance.

The arguments that guide this mediatic importance go far beyond mere conspiratorial speculation that social groups holding the monopoly of the means of communication use as an instrument of mass manipulation to defend their position in the social structure and their interests. In fact, in many cases, the common understanding dedicated towards the media involves recognizing its bias in the choice and construction of how its content will be expressed. This premise may even be based on the perception of some social actors; however, extensive research would be required in order to confirm this hypothesis, including in this how digital social networks and digital platforms have complicated this issue.

Given the conflicts and discussions surrounding the factors that caused the 2020-2022 water crisis in Curitiba and its metropolitan region, and its effects, it is necessary to examine how the conservative newspaper *Gazeta do Povo*, which still remains the leading newspaper in the state of Paraná, addressed the issue, to whom it gave a voice, and what was the approach of its news content.

3. Methodology

The effort to understand the selection and construction of news agendas presents itself as a tool for interpreting the social world and its relationships of meaning and power. Thus, amidst a universe of analytical tools, this article focuses on the use of frame analysis to try to understand how the newspaper *Gazeta do Povo*, which is available only on a digital platform since May 2017, addressed the issue of the water crisis in Curitiba and its metropolitan region in 2020. The choice of this media outlet is due to the fact that it is the most accessed newspaper in the state of Paraná, even though, in addition to its digitization, it has taken a political turn to the far right, defending conservative agendas and discriminatory ideologies in the realms of gender and other social diversities (Nunes, 2022).

Frame analysis' studies originated in the mid-1970s with sociologist Erving Goffman, who, inspired by phenomenology, organized in a system some possibilities for the definition of the concept of frame. The notion of framing proves itself central to the analysis of the processes of constructing social reality by offering a reference for the interpretation of events and interactions. Thus, according to Goffman:

Framing refers to general, socially constructed reference frameworks that are used by people to make sense of social events and situations. [...] Consequently, framing helps people to order their own perceived reality, as far as it brings light to an array of events that would hardly be processed if framing was not used. Thus, the act of framing is seen as the way social actors act and interact to create organized ways of understanding the world. (Goffman, 1974, as cited in Vimieiro & Dantas, 2009, p. 3)

According to the author's rationale, an individual's repertoire of framing is built throughout their life, through their socialization process, with the help of the social groups and institutions they move through. Framing would then be a lens for perceiving and understanding the reality around us – an organizational tool that guides individuals' behavior by helping them to “locate, perceive, identify, and label a seemingly infinite number of concrete occurrences” (Goffman, 1974, p. 21, as cited in Vimieiro & Dantas, 2009, p. 3).

Thus, according to this, Goffman's thought approaches the phenomenological tradition that attempts to understand the construction of scientific knowledge from the experience of individuals in the world, from immediate awareness of things and phenomena. For Merleau-Ponty (1999), it is from experience that individuals perceive themselves and conceive the world, even before any scientific formulation about phenomena. That is, individual perceptions precede the number, to measurement, space, and causality.

Sociological analyses led by Goffman were not the only ones to contribute to the construction and consolidation of framing studies; the area of cognitive psychology play a relevant role in this process, marked mainly by the analyses developed by Kahneman and Tversky (1984) who were dedicated to understanding how “different forms of presenting essentially identical scenarios influence people's choices and their evaluations of the available alternatives” (Vimieiro & Dantas, 2009, p. 3).

Based on the theoretical constructions of these authors, two main analytical approaches to framing emerge:

- i) one more focused on the form of presentation, framing, and arrangement of content, focusing on the visual and verbal resources used;
- ii) and another that is motivated by the understanding of framing as a synthesis of the entire process of constructing meanings and symbols, taking culture as a starting point (Carvalho, 2000; Vimieiro & Dantas, 2009).

Although the cultural approach demands a more in-depth analysis due to its complexity and relevance to framing analyses, as it draws a parallel between frames as “interpretive schemes, keys to meaning, that organize collective interpretations by associating elements of social reality” (Vimieiro & Dantas, 2009, p. 5), for the purposes of this work we will use the first approach⁵ – framing focused on the form and arrangement of content, which has Robert Entman as its great exponent. The author argues that:

Framing essentially involves selection and relevance. For this purpose, it is necessary to select certain aspects of a perceived reality and make them more prominent in a communicative text, in order to promote a particular definition of the problem, causal interpretation, moral evaluation, and/or treatment recommendation for the item described. (Entman, 1993, p. 52).

According to the author, the frame, as a selection of central aspects of social life, would be understood as a central idea that plays a role, and even has the power, to organize, classify, diagnose, and recommend a reality, promoting a causal interpretation and/or a moral evaluation of it based on repetition, reinforced association, and of the focusing employed in the text. In other words, it is through framing as a starting point that definitions and particular perspectives on a given problem or subject are propagated, and in this sense, the selection and prominence of specific aspects, at the expense of others, fulfill the role of promoting interpretations and evaluations.

In this respect, the similarity of this approach to the current of cognitive psychology becomes evident, since both start from the premise that the way a scenario or reality is presented can influence people’s choices or generate causal interpretations and moral evaluations.

Therefore, the present study uses content analysis (Bardin, 2016) to construct analytical categories based on the frequency of occurrence of certain themes in the news’ running text, in order to subsequently identify the framing given to the water crisis in Curitiba and its metropolitan region in 2020, as well as its most prominent perspectives, in news published in the *Gazeta do Povo* newspaper, based on the work of Loose et al. (2014).

The selection of articles was carried out through targeted searches on the newspaper’s website⁶, respecting the frame time of the year 2020, using the following keywords: water crisis, rotational water supply, water rationing, water supply cuts, droughts, and chronic droughts. Based on these criteria, 65 articles were collected that refer directly or indirectly to the topic of the water crisis in Curitiba and its metropolitan region.

The data collection took into account three structural elements of the text: i) the title, considered as a very strong framing element; ii) the lead,

5 For more information on the cultural approach to framing, see: Gamson and Modigliani (1989), Gitlin (1980), Maia et al. (2008).

6 Electronic address of the *Gazeta do Povo* newspaper: <https://www.gazetadopovo.com.br/>

considered as a strong framing element; and iii) the body of the text, to consider the macro-framing (see Table 1).

It is important to emphasize that the strength level assigned to each aspect of the news story – title/subheading and lead – corresponding to very strong and strong, is associated with the journalistic logic and its hierarchy (in which the main information appears first) (Loose et al., 2014, p. 147).

The analysis of the title and lead content⁷ was guided by the following frameworks, also based on the classification of the authors cited above and adapted to the issue of news about water scarcity/risk: textual focus on the effects or consequences of the phenomenon as a calculated danger or predictable event; emphasis on explicit or implicit risks; coping (actions): deals with actions or proposals for prevention, mitigation or adaptation; accountability of social actors: who should or ought to be mobilized to deal with the water crisis; and those who oppose adopting measures in this regard; others: content that refers to the water crisis from a secondary perspective (Loose et al., 2014).

The corpus of the text, in turn, composed the macro-framing analyses that correspond to the main approach adopted in the news article and, initially, were collected based on the following indicators constructed from the literature discussed in this article, with some adjustments and adherence to the topic in question.

Taking the body of the text as a starting point, the depth of information presented in the articles about the water crisis was also analyzed. To this end, information was classified as having an episodic framing when it only focused on reporting a fact, without any contextualization of the issue or detailed explanations; or thematic framing, when the approach to the topic

Table 1 Macro-framework indicators.

Macro-framework	Description
Political	Focused on issues related to problem management, where the social actors involved debate and disseminate actions on what to do regarding the water crisis, or what should have been done or is being done by the State and institutions involved in the water issue. This indicator also included expressions of social demands regarding how to address the problem.
Economic	Cases in which business and/or investment opportunities or loss calculations related to the water crisis are the central aspect of the news. When the article discusses the allocation of resources to address the factors related to the causes of the crisis.
Technical/scientific	News items stemming from the dissemination of studies and research and/or from sources originating from technical bodies, emphasizing the concerns typical of this perspective.
Environmental	Those in which the occurrence and intensification of extreme events (lack of rain, climatic phenomena such as La Niña and El Niño), climate crisis, corroborates the predictions of scientists and scholars regarding the water crisis, even though science cannot establish an effective link between the isolated event and the water crisis.

SOURCE: The authors, based on Painter (2013) and Loose et al. (2014).

⁷ The lead is an element of journalistic text, generally the first paragraph, being the opening of the news story, which serves to present in a concise way the most relevant information about the topic discussed throughout the body of the news story (Loose et al., 2014).

is done in a more detailed manner, with greater contextualization, depth, and robust information (Iyengar, 1991).

The following section will present data collected from 65 news articles, published between March 19 and December 28, 2020, that were related to the topic of the water crisis in Curitiba and its metropolitan region.

4. Result and analysis

This first session presents the framing found in the titles and leads of the 65 news articles evaluated. It is from the analysis of these two textual elements that the framing of the news articles will be determined as *very strong*, if the theme is referenced in the title, and *strong*, if it is the subject of the lead.

Both the headline and the lead occupy a noteworthy place in the construction and presentation of the news story, as they are responsible for giving relevance and prominence to certain aspects of the report (Entman, 1993). Furthermore, the headline and the lead are the first pieces of information communicated to the reader and, in many cases, it is based on their construction and the information available there that readers decide whether to continue engaged or stop reading.

Figure 1 below presents the distribution of the 65 news items related to the water crisis that were published in *Gazeta do Povo* within the established timeframe.

As previously stated, the categories of analysis used to identify the frameworks used in the titles and leads were as follows: risk, accountability, coping, and others.

Of the titles analyzed, the framing regarding actions promoted to address the water crisis was the most recurrent (44.6%), having the rotational water supply as the main measure promoted to mitigate the impacts caused by water scarcity.

The rotational water supply as a coping measure was followed by short-term solutions such as searching for a source water for supply in alterna-

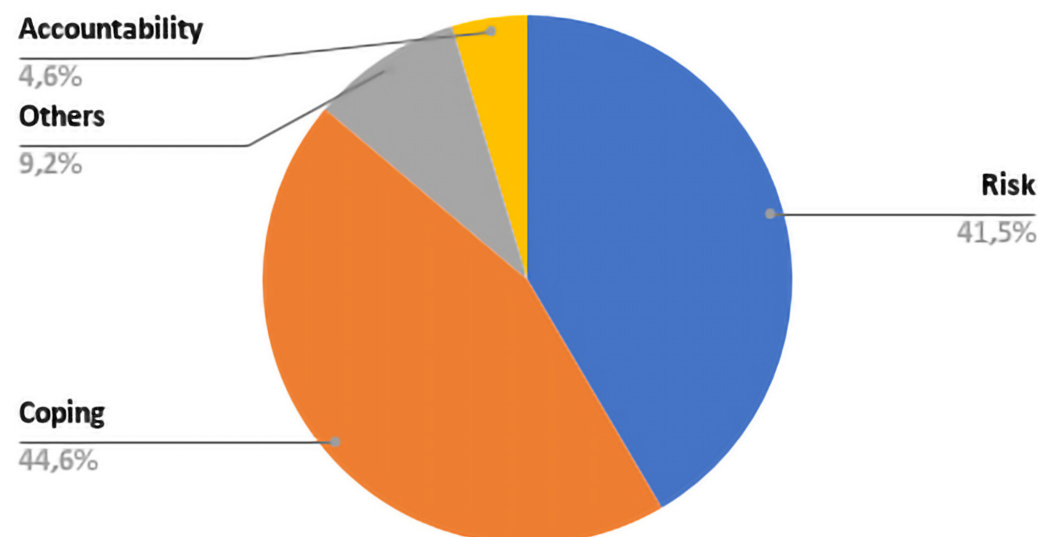


Figure 1
 Recurrences of the frameworks presented in the titles.

tive locations, such as the Iguaçu Cavas, the lake of a deactivated quarry; strengthening techniques and institutional apparatus for drought monitoring, with the creation of drought crisis rooms in Paraná by ANA (National Water Agency); and, finally, the development of long-term strategies aimed at preventing the recurrence of scarcity in the region, such as discussions on water reuse standards in Paraná, river diversion, the creation of an ecological corridor in the Iguaçu River to increase water reserves, tree planting as a strategy to prevent new water shortage crises, and the creation of new parks for leisure and strategic water reserves.

Frames referencing the risks posed by the water crisis were also very present in the headlines of the news articles analyzed (41.5%), with most alluding to the effects or consequences of the lack of rain in the region, such as the drought and the historically low reservoir levels.

It is noteworthy that of all the news items collected, only two presented a very strong framing of responsibility (4.6%) for the water crisis that Curitiba and its metropolitan region faced in 2020, with one of them referring to the role and investments made by Sanepar, and the others about the increase in water consumption in just two days without rationing.

As for the titles categorized as “other”, they referred to topics such as energy generation, water contamination in the Iguaçu River, and the suspension of the rationing through rotational water supply.

Figure 2 presents the recurring framing patterns presented in the leads, according to the same classification used for the news headlines (risk, accountability, management, and others).

When following the trend of the headlines, the main recurring themes in the leads were shown to be related to coping and risk framing. A strong convergence was observed between the content and frames of the headlines and leads, since, of the 24 leads classified with a coping framework, only one did not have a headline with that framing. The same trend was identified in relation to the risk framing of the leads analyzed.

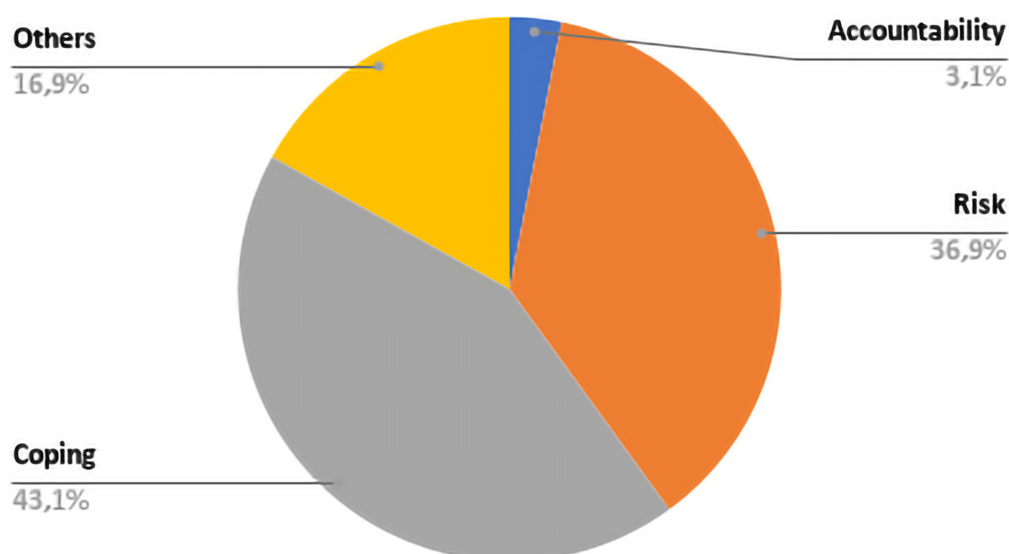


Figure 2
 Recurrences of the framing presented in the leads.

As previously mentioned, macro-framing involves reading the entire structure of the news story, considering all its elements, and evaluating which becomes the most evident in the overall analysis. The analytical categories of macro-framing used to classify the news stories were the following: Technical/Scientific, Economic, Political, and Environmental. Figure 3 presents the distribution of macro-framings of news stories related to the water crisis.

The most frequent macro-framing in news reports about the water crisis in Curitiba and its metropolitan region was technical/scientific. This means that the reports served to disseminate studies and research on the subject, circulating reports and data from sources originating from technical bodies, mainly Sanepar and the Paraná Environmental Technology and Monitoring System (Simepar), but also from university professors and specialists on the subject. The information was mostly related to water capacity and reservoir volume, rainfall water levels, consumption rates, and savings from water rationing.

Political macro-framing was also very recurrent. These, in turn, relate mainly to actions and negotiations to address the situation that demanded political positioning, such as the extension of water emergency decrees, discussions about water reuse regulations, and measures that were being planned as an immediate and long-term response to prevent this exceptional situation from becoming the norm.

Less frequently than the previous approaches, the environmental macro-framing was observed in discussions in news sources that were more qualified in terms of their sources regarding the water crisis. This is because most sources consulted included university professors, specialists, and external consultants who provided in-depth analysis and brought new elements to the discussions, overcoming the barrier of a merely technical discourse on current water levels in reservoirs and engaging in discussions from a historical perspective and comparison, with diverse information that raises awareness about the drought and its relationship with climate

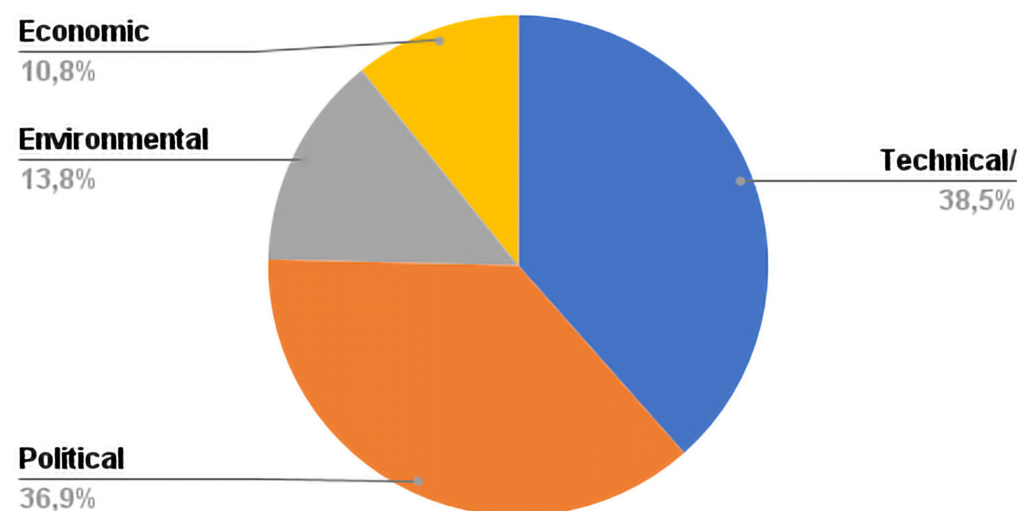


Figure 3
 Recurrences of macro-framings.

change and its effects, and about strategies that are effective to solve the problem and prevent new crises, such as tree planting (Gonçalves, 2020) and the practice of sustainable agriculture (Lass, 2020).

Finally, news within a predominant economic macro-framing, that is, those focusing on business and/or investment opportunities or calculations of losses related to the water crisis, as well as the allocation of resources to address it, were less frequent and indicate the increase in water reservoirs' sales and the suspension of water purchases carried in tanker trucks due to violations on the water rationing.

In total, twelve groups of social actors were identified: Sanepar managers; merchants and business owners; directors and technicians from other governmental institutions; Simepar managers; politicians; university professors, specialists, consultants; Sanepar technicians; health agents (doctors, nurses, technicians, managers); municipal secretaries of the Environment; municipal secretaries of Health; state secretary of the Environment; and residents in general. From this group, it was possible to identify the predominant content of eight groups. Table 2 below shows the social actors present in the analyzed news articles, as well as the predominant approach in their statements:

Generally, the political and official statements that justifies the water and supply crisis from environmental, technological, structural, planning, and management perspectives were mostly delivered by directors, managers, and coordinators from Sanepar, who were also responsible for the majority of the educational and guidance-oriented approaches (75%), with recommendations on how to save water and the days and times of the water rationing; and political and official statements, outlining Sanepar's positions and institutional justifications for the coping measures adopted.

By emphasizing individual and domestic behaviors, such statements tend to blame social sectors for degradation and exploitation. This rhetorical strategy diverts attention from broader structural debates, such as the

Table 2 Social actors and predominant approaches.

Actors	Others	Notification	Educational/Guidance	Political and Official	Technical
Directors, managers, and Sanepar coordinators	0.0%	28.6%	75.0%	50.0%	35.3%
Merchants and business owners	75.0%	0.0%	12.5%	0.0%	0.0%
Leaders and technicians from other government institutions	0.0%	0.0%	0.0%	25.0%	17.6%
Managers, coordinators, and Simepar technicians	0.0%	14.3%	0.0%	0.0%	8.8%
Politicians	25.0%	0.0%	0.0%	25.0%	0.0%
University professors, specialists, consultants	0.0%	0.0%	0.0%	0.0%	23.5%
Technicians from Sanepar	0.0%	57.1%	12.5%	0.0%	14.7%

intensive use of water by large enterprises and the unequal management of water resources making invisible the real agents of the crisis.

For the most part, the Sanepar technicians were in charge of speeches focused on warning those involved about the urgent need for widespread adoption of water rationing measures, as well as guiding the population on the appropriate rationing measures.

Leaders and technicians from other government institutions, as well as university professors, specialists, and consultants – especially the latter group – fulfilled the fundamental role of promoting a more in-depth technical debate on the issue of the water crisis, fueled by information from scientific research. Statements from political figures, in turn, were less recurrent and were connected to water emergency decrees and the use of the water crisis as campaign strategies. Finally, merchants and business owners shared statements related to the opportunities generated by the water crisis, such as the exponential increase in the demand for water tanks and tanker trucks.

Finally, the last analysis proposed in this study was to verify the depth of the news reports analyzed on the water crisis and its unfolding events. To this end, Iyengar's (1991) analytical categories were employed: episodic and thematic macro-framing. Following the trend already noted above, there was a predominance of episodic macro-framings (66.2%) over thematic ones (33.8%). As explained by the author, "the essential difference between episodic and thematic framing is that episodic framing portrays concrete events, while thematic framing presents collective or general evidence" (Iyengar, 1991, p. 14).

In this context, news reports with episodic macro-framing were more focused on specific points and restricted to conveying information without going into depth, such as the dates and neighborhoods where water rationing would be implemented that week. Thematic macro-framing, on the other hand, communicated relevant topics related to the water crisis, such as environmental phenomena that impact rainfall and heat cycles (La Niña, El Niño).

5. Final Considerations

A prolonged drought period like the one that occurred in Curitiba and its metropolitan region in 2020-2022, which led to reservoir depletion and water rationing, constitutes a climate risk because it represents a significant impact caused by a climate threat, the reduction of precipitation over time. This scenario demonstrates the interaction between the threat (water scarcity), the exposure (city's dependence on vulnerable supply sources), and the vulnerability (lack of infrastructure or effective policies to guarantee supply, especially in marginal neighborhoods, where the population is poor and has little availability of domestic storage).

Based on the data presented regarding news related to this water crisis published by the *Gazeta do Povo* newspaper in 2020, it became evident that the framing of the analyzed news emphasizes mainly the confrontation and risks associated only with natural issues (environmental risk), despite not promoting a debate on measures to control the effects of climate change, leaving those related to technological and social/economic elements in the background.

This seems symptomatic of a media coverage that, in addition to not naming those responsible for the water crisis, also makes the solution “easier”: that of attributing the causes to this abstract entity that nature is, without adding to these causes the interference of society that degrades and “deregulates” natural entities and phenomena.

Combining the biggest percentages of the categories used for macro-framing analyses (technical-scientific) with those of in-depth content analysis of the news (episodic), it can be inferred that the newspaper’s approach to the water crisis, while presenting a technical approach and scientific data, failed to address it comprehensively.

The approach only presented short-term facts (past or future), overlooking important historical, political, and social aspects, not even mentioning any kind of relationship with the global/local phenomenon of the climate crisis, which during the period of analysis was in full acceleration, according to data from the IPCC and Brazilian researchers.

The rare mentions of the effects of the water crisis may suggest that the only concrete fact related to the phenomenon is the lack of tap water, and that the environment, daily life, and economic relations have no influence or connection to the process.

In both the headlines and the leads, accountability is rarely mentioned, and Sanepar is rarely seen as a historically involved part in the process. Furthermore, the affected people and communities were not interviewed, and therefore their perspectives are not presented in the articles, indicating that the newspaper does not incorporate the experiences and knowledge of the population in communicating about water risk.

In mapping the agents that appear in the articles, to a large extent, a voice is given to the leaders of public bodies and, to a lesser extent, to technicians, highlighting the technical-scientific approach of the newspaper, with little socio-environmental content, and when this is present, it is presented by some less prominent agent throughout the time frame.

Based on the analysis conducted, it can be concluded that the coverage by the leading newspaper in Curitiba and its metropolitan region reduced the water crisis to an event resulting from natural causes, failing to emphasize aspects of water governance, not mentioning the possible interferences of the accelerated climate change, nor valuing social experience in communicating socio-environmental risk.

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