

## Environmental journalism: characteristics and interfaces in a developing field

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### Abstract

This article presents a compilation of scholarly perspectives on environmental journalism, especially between 2010 and 2020. We begin from the standpoint and experience of non-Brazilian countries to notice changes that this field of knowledge has been going through in the international context. The goal is not only to reflect about the challenges faced by professionals working in this area, but also the interfaces between environmental journalism and other fields, such as economy and politics, and its characteristics in the current context. To guide our approach, studies by Pezzullo and Cox (2018), Hansen (2019), Takahashi and Meisner (2012), Druschke and McGreavy (2016), Boykoff (2011), Dotson et al. (2012), Willer and Takahashi (2018), Christians et al. (2009), and Williams (2017), among others, helped us construct this reflection.

**Keywords:** Communication. Environment. Environmental journalism. Media. Environmental journalist.

## Introduction

The main objective of this article is to present an overview of the discussions, characteristics and challenges environmental journalism has faced in recent decades, focusing on the perspectives of academic scholars working on the subject at an international level. Our focus is on the transformations undergone by this professional field<sup>1</sup>, considering the strong influence of sectors such as the economy and politics in its functioning. In addition, we bring to reflection the scientific researches that point out that journalistic coverage focused on environmental issues and controversies is often limited by these constraints, and that environmental communication, as an area of knowledge, remains marginalized, with disjointed contributions from the science of Communication.

To this end, we divide our approach into five topics: 1) Environmental coverage and its economic and political obstacles; 2) Stylistic patterns of environmental coverage; 3) The profile of the environmental journalist; 4) Environmental Communication as a research area; and 5) Media framing and catastrophe narratives.

## Environmental coverage and its economic and political obstacles

Financial constraints across the media industry are affecting journalism production worldwide (WILLIAMS, 2017). This also includes environmental journalism. Currently, the costs involved in the production of environmental coverage, involving travels and a large number of interviews in hard-to-reach locations, pose content barriers to most media business. Environmental journalists may need more time and costly infrastructure to produce in-depth specialized reporting. All these prerequisites to cover complex issues may turn some environmental reporting into an expensive production.

A consequence of the economic constraints within the environmental area is the diminishing amount of reporting space secured for its coverage. This poses a dilemma, because it clashes with journalists' "growing need to tell longer, complicated, more in-depth stories" (PEZZULLO; COX, 2018, p. 92). The shrinking journalistic diffusion results on the production of simplified and dramatized pieces to augment the chances of publication (FRIEDMAN, 2004). Moreover, the decreasing quantity of funding for investigative pieces, the massive discharges within the media industry and the constant pressure of deadlines interfere with the quality of the news, reducing the number of in-depth stories (BOYKOFF, 2011).

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<sup>1</sup> "A field is a specific system of objective relationships that can be of alliance and/or conflict, competition and/or cooperation, between differentiated, socially defined and instituted positions, independent of the physical existence of the agents who occupy them" (BOURDIEU, 1998, p. 133, our translation). Costa (2006) highlights that the institutional base of the environmental field was formed in recent decades, with conditions for the professionalization of agents, producers and reproducers of the value of nature.

Due to the complexity relation among individuals, nature, and society, journalists who work in the environmental field are expected to deliver broader and interconnected coverage to assist the public in making sense of the current environmental issues (GIRARDI; MASSIERER; SCHWAAB, 2006). While Girardi, Massierer and Schwaab (2006) suggest a broader coverage, other scholars (JOHN, 2001; GIRARDI *et al.*, 2012; BOYKOFF, 2011) argue that despite the professionals' qualifications, beliefs and good intentions, it is not always possible to achieve meaningful reportage, as environmental coverage is still influenced by economic issues that conduct and limit the way that the news is produced and made available to the greater public.

An investigation, held in the 1990s, into the development of environmental coverage in the United States (USA), for example, already showed two very different outcomes depending on financial interests (NEUZIL; KOVARIK, 1996). First, when environmental reporting reached mainstream media (TVs, radios and newspapers belonging to media conglomerates), the impact of the coverage along with the support of the environmental movement, business and political groups were responsible for a social change regarding the emergence of the national park system in the United States. The political impact of media publicity has led the country, during Franklin Delano Roosevelt's presidency (1933–1945), into focusing on land management, (NEUZIL; KOVARIK, 1996). The media's advocacy towards land management eventually led to the formation of the national park system. The power of the coalition of environmentalists, the mass media, and high members of the business and political establishments contributed to accomplishing the environmentalists' objectives.

On the other hand, an example in the opposite direction occurred when the interests of political and economic groups diverged from the green movement. The so-called mainstream media, usually controlled by these groups, offered diverse approaches about the subject, forcing the environmentalists to look for alternative media possibilities to defend their causes. In this case and in similar situations, environmentalists were unsuccessful. "Media, when reporting on conflict, are dependent on the relationships between powerful groups more than individuals or organizations" (NEUZIL; KOVARIK, 1996, p. 126). This was the case with the Hetch Hetchy dam, built between 1914 and 1934, that flooded the homonymous valley in California. The mass media covered the event from multiples perspectives and interests. Almost all the local media backed the advantages for business and local control, while environmentalists' supporters and the dam advocates divided the national media coverage between them (NEUZIL; KOVARIK, 1996).

Ideology<sup>2</sup> and political leaning also play a significant role on the environmental media coverage internationally. A more recent investigation (DOTSON *et al.*, 2012) on journalism in the Global South<sup>3</sup> indicated that political alignments influence news content and the focus of

2 Chauí (1984) notes that ideology is organized as a logical and coherent system of representations (ideas and values) and norms or rules (of conduct).

3 "The global South is a metaphor for exploitation and social exclusion, bringing together struggles for alternative projects of social and political transformation. The expression global South has been increasingly used to refer to the peripheral and semi-peripheral regions of the countries of the modern world-system, formerly called Third World". Available at: [https://www.ces.uc.pt/observatorios/crisalt/index.php?id=6522&id\\_lingua=1&pag=7851](https://www.ces.uc.pt/observatorios/crisalt/index.php?id=6522&id_lingua=1&pag=7851). Accessed on: Aug. 31, 2020.

environmental reporting and may result in discrepancies. The research analyzed the coverage of climate change in two Chilean newspapers: the liberal *La Nación* and the conservative *El Mercurio*. The findings were that the conservative newspaper *El Mercurio* was “heavily framing climate change in a shorter-term, episodic event-focused mode 71% of the time” ((DOTSON *et al*, 2012, p. 76). Meanwhile, the liberal *La Nación* better exposed the topic, balancing the coverage between episodic and thematic frames, with more articles, which were longer and had eye-catching illustrations (DOTSON *et al*, 2012). The abovementioned studies highlight, therefore, the importance of economic and political factors as major challenges constantly faced for the production of coverage on the environment.

### **Stylistic patterns of environmental coverage**

Besides the challenges emerging from financial and political constraints faced by the media industry, improving the language of environmental communication is also an issue for the area as the standard vocabulary is criticized for being unattached and indifferent (DRUSCHKE; MCGREAVY, 2016). Both characteristics possibly originate from the requirements of impartiality, which is still considered a journalistic norm. By seeking to approach this neutrality, the reporter may end up having texts that lack prominence and impact.

Moreover, in relation to text quality, environmental reporters face an extra challenge for having to deal with academic sources who frequently make use of scientific language, more formal and technical. According to Goldstein (1986, p. 25), academic language attempts to achieve precision when sharing information, almost opposing the news angle needed by news media. While the researcher measures carefully each chosen word, the reporter looks for an attractive “bait” that can be turned into news. These adverse priorities not only increase the chances of mistranslation and inaccuracy but also act as a possible barrier to promote knowledge and public engagement. However, collaboration and interaction between the groups tend to improve when journalists become more science literate. On the one hand, scientists tend to trust specialist reporters more; on the other hand, informed journalists are less susceptible to manipulation or to mistake. The further improved the dialogue between journalists and sources, the more chances to have better journalistic pieces (GOLDSTEIN, 1986).

High-level environmental journalism can have a greater impact on countries with low environmental policymaking. This is the case of Peru, where environmental institutionalism and environmental press coverage are in early development stages (TAKAHASHI; MEISNER, 2012). The classic example is the creation of the Peruvian Ministry of Environment in 2008, created to fulfil the requirements from the free-trade agreement with the US. Investigations into the Peruvian environmental coverage are rare, but a recent study (WILLER; TAKAHASHI, 2018) analyzing the reporting of mining issues and the environment noted that the Peruvian journalists struggle to report environmental issues. The research showed that “the Peruvian mainstream media are rarely willing or able to finance this type of reporting” (WILLER;

TAKAHASHI, 2018, p. 148). Peruvian environmental journalists also lack credible sources, and they need to fight a simplistic and popular approach that relies on the dichotomy between financial interests versus environmental conservation (WILLER; TAKAHASHI, 2018).

These challenges faced by Peruvian journalists, however, are similar to issues encountered in a great part of the world press. The similarities of news media in democratic societies enabled Christians *et al.* (2009) to establish four categories of media roles: monitorial, facilitative, collaborative, and radical. Monitorial journalism observes news media. Facilitative journalism aims to improve subject comprehension. Collaborative journalism intends to boost collaboration between news media and society, whereas radical journalism is the one that encourages social changes to combat inequalities and injustices through public participation to transform the *status quo* in order to achieve universal human rights (CHRISTIANS *et al.*, 2009). Hackett *et al.* (2017) perceive these categories as a necessity to the development of an engaging environmental coverage. Even though keeping a close eye on events, facilitating public understanding, and opening spaces for collaboration are certainly important ways of understanding contemporary media coverage, it is the notion of radical journalism that gains most attention when the goal is to improve environmental reporting.

Hansen (1993), however, supports that media can improve public awareness towards the environment. Nevertheless, this real awareness should have a physical basis, as the media provides a version of reality and not reality itself. Therefore, there is a risk of falling into the media industry traps that do not “challenge the dominant paradigm” (HANSEN, 1993, p. 196), such as promoting the consumption of environmentally-friendly products, when the problem is consumerism itself.

## **The profile of the environmental journalist**

Attempting to establish a profile of environmental journalists, some investigations (HANSEN, 1994; FRIEDMAN, 2004; SACHSMAN; SIMON; VALENTI, 2006) show a tendency on environmental reporters to remain longer in their knowledge field than other specialized writers in correlated fields like science, technology, health and medicine. Environmental journalists are also more likely to have a science degree or any other degree (SACHSMAN; SIMON; VALENTI, 2010; BRÜGGEMANN; ENGESSER, 2014). Even though a scientific academic background relates to deepened knowledge, professionals do not see this as an advantage as they recognize themselves first as journalists and second as environmental specialists (EINSIEDEL; COUGHLAN, 1993; HANSEN, 1994; HARGREAVES; FERGUSON, 2000; SACHSMAN; VALENTI, 2015). When analyzing environmental journalism in Canada, Einsiedel and Coughlan (1993) had already noticed that these professionals are most likely to write longer, more in-depth, contextualized and analytical pieces, and they work more independently from sources either to generate stories or to challenge conventional beliefs. Dunwoody (1980) suggests that environmental reporters also tend to have contact with

environmental correspondents from other media companies, naming it the inner club and the competitor-colleague relationship.

The specialism also differs from other ones due to the amount of freedom that the journalists have to choose and report on subjects (HANSEN, 1994; SACHSMAN; SIMON; VALENTI, 2006), even in the current scenario of changes because of the economic and technological pressures, which end up impacting the trust in traditional media outlets (BRAINARD, 2015; WILLIAMS, 2015). Environmental journalists also have a tendency to develop a close relationship with their sources as a way of overcoming the field's ambiguities and controversies (DUNWOODY, 2015). These characteristics, however, have been gradually modified in the current changing journalistic environment that includes digital practices. Authors like Friedman (2015) and Pezzullo and Cox (2018) highlight that the media business model suffered hard impacts in the USA, Europe and Canada. Friedman (2015), on the other hand, notes that science journalists working in Latin America, Asia, North and South Africa, who usually cover environmental issues, have not faced any journalistic crises. In Brazil, however, in recent years, there has been dismissal of journalists from any area, shrinking of editions, and even the complete closure of companies (FIGARO, 2014; FIGARO; LIMA; GROHMANN, 2013; SOUZA, 2018; VIANA, 2013).

## **Environmental journalism as a research area**

In a broader and detailed perspective, Pezzullo (2017) identified seven research fields involving studies of environmental communication, not just journalism, therefore, from a broader perspective, ranging from interpersonal behavior to business management, including social, economic, and political contributions. The first contains investigations focusing on personal identity and its relationship with the environmental, and in interpersonal relationships, which consist of analyzing personal interactions and behaviors towards the environment, besides analyzing intercultural distinctions and dialogues. The second corresponds to analyses that relate to environmental Organizational Communication studies and investigate how institutions and networks deal with environmental matters. The third refers to studies on environmental science, technology, and health communication, like public health campaigns. The fourth encompasses investigations that analyses public participation in environmental decision-making, especially democratic examples of crisis solution.

Pezzullo's fifth category relates to studies of environmental mass media, including "discourse analysis of mainstream news coverage of environmental topics, studies of the social construction and/or framing of the environment in the media, visual green brands, and environmental effects, including framing, cultivation analysis and narrative analysis" (PEZZULLO, 2017, p. 15). The sixth one encloses researches about green applied media and arts, which centers on production and embraces media experts' environmental-related practices and arts exhibitions. The seventh and last category circumscribes investigations on



environmental rhetoric and cultural studies that “bridge fiction and nonfiction; individual and collective expression; verbal and nonverbal interactions; communication face-to-face or face-to-screen; concerns for meaning, materiality, and affect; and more” (PEZZULLO, 201, p. 16).

In a more recent investigation about the state of environmental communication research, Bonfadelli (2010) argues that it remains peripheral in comparison to other media researches, with fragmented contributions from communication science and unclear borders with other fields like risk communication, Communication of disasters, and science communication. Based on “mass communication” science, the author identifies three central investigation areas. The first one concerns media and journalists. It tries to identify the impacts of media resources, public relations activities and journalistic roles and routines on environmental coverage and its perception as an urgent social problem. The second one relies on the studies of media and coverage and seeks to delimit the importance of environmental coverage and its quantitative and qualitative development worldwide, as well as its influence on the perception of the environment and on the field of ecology. The third investigation area examines news media effects on the public with the intent to understand the public reaction towards the increasing environmental media coverage.

Einsiedel and Coughlan (1993) already stated, when dealing with environmental journalism, that, over time, environmental reports have incorporated a growing number of issues and have been conveyed from multiple perspectives. Furthermore, the perception of the environment as a social problem has gradually gained urgency, and its acceptance has translated into increased media coverage. One consequence of this expanding coverage around the world was the fact it has become an important field of interest for researchers. Most studies on environmental journalism have come from the Global North<sup>4</sup> and focus on climate change and global warming. This scenario has gradually changed with the emergence of analysis of media coverage also in the Global South (TAKAHASHI *et al.*, 2018; DOTSON *et al.*, 2012; GIRARDI *et al.*, 2012; GUERRERO; CHAVEZ, 2009; MATOS, 2012; MELLADO *et al.*, 2012; MERCADO, 2013; PINTO; PRADO, TIRADO-ALCARAZ, 2017; ZAMITH; PINTO; VILLAR, 2013).

## Media framings and catastrophe narratives

Most investigation areas of environmental communication have a common criticism, which is that media coverage focuses on crisis and catastrophes, thus offering the public an event-driven perspective of the field. The message often spread by news media targets isolated episodes rather than promoting analysis of the interrelated phenomena that concur to generate environmental issues. Hansen (1993) claimed that the press works on registering crisis, but

4 “The Global North represents the economically developed society of Europe, North America, Australia, Israel, South Africa, among others”. Available at: [https://www.researchgate.net/publication/265425871\\_A\\_comparative\\_analysis\\_of\\_global\\_north\\_and\\_global\\_south\\_economies](https://www.researchgate.net/publication/265425871_A_comparative_analysis_of_global_north_and_global_south_economies). Accessed on: Aug. 31, 2020.

it rarely contributes to any solution or to the evolvement of the risk-society. According to Beck (1992), in the current industrial society, risks have become part of people's lives as they turned global, borderless and omnipresent. Beck (1992) and Matten (1998) endorse environmental risks are a consequence of lifestyle, thus as complex phenomena that do not have short-term solution. It is also "a systematic way of dealing with hazards and insecurities induced and introduced by modernisation itself" (BECK, 1992, p. 21). To Giddens (1998, p. 209), "a society increasingly preoccupied with the future (and also with safety), which generates the notion of risk".

Hansen (2019), in a recent study, aimed to understand why some environmental issues are identified as problems and receive public and political attention, while other similar issues never achieve recognition, and, consequently, do not gain political attention nor investment. Hansen's (2019) analysis centers on the constructionist perspective. In essence, the constructionist theory defines that social problems are intentionally created, defined and disputed in public areas, such as the media. Social problems are, therefore, a planned discursive product. Elaborating on the relationship between environmental news and the constructivist process, Hansen (2019, p. 65) still notes that "News about the environment, environmental disasters and environmental issues or problems does not happen by itself but is rather 'produced', 'manufactured' or 'constructed'".

Environmental news, thus, just like any other type of news, is part of a process that involves information selection, production, releasing, and reception. Those issues also suffer external influences that can determine the viability or not of an issue to become news. It all leads to the media framing process, which refers to issue selection and prominence (HANSEN, 2019). As Pezzullo and Cox (2018, p. 100) note, "In journalism, a media frame is the central organizing theme that connects the different elements of a news story (headlines, quotes, etc.) into a coherent whole". When thinking about media framing, it becomes evident the importance of the communication strategies and agendas of claim-makers, as environmental pressure groups, governments and industries. They have been showing their power by promoting issues or by silencing the media interest on specific subjects<sup>5</sup>.

Through its several framing processes, news media produces environmental knowledge; and consequently, it endorses certain discourses in detriment of others (BONFADELLI, 2010; ALLAN; ADAM; CARTER, 1999). By promoting environmental news through specific events, the sense of complexity is often lost. Providing a mediation with fragmented approach, journalists do not contribute to improving the public's understanding of the meaning of ecosystem interconnection, especially by demonstrating how diverse scenarios perform and are associated through co-dependent and symbiotic relationships. The fragmentation presented by news media lacks, in general, integrated coverage, reinforcing a collapsed awareness of the environment, resulting in the weakening of social mobilization towards sustainable policy (CAMPOS, 2006).

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5 An example is the power of Brazilian agribusiness associated with the media through the institutional campaign of Rede Globo: "Agro: the wealth industry of Brazil", broadcasted for more than four years in prime time, through videos of 50 seconds each (COSTA; MUNIZ, 2019).



Such concerns prove to be legitimate, insofar as environmental journalistic coverage needs broader perspectives on specific issues to facilitate comprehension of the phenomena involved.

Another characteristic of environmental media coverage is that it is cyclical. It initiated in the mid-1960s, reaching a peak in the early 1970s, followed by a decline from the 1970s to the early 1980s, re-increasing on the second half of the 1980s, getting to the top in 1990 (an example was the occurrence of Eco-92<sup>6</sup>, in Rio de Janeiro). Then it decreased in the 1990s and re-emerged in the 2000s, with a specific focus on climate change (HANSEN, 2019). This coverage connects to the notion of environmental issues or of the environment as a social problem that emerged on the public agenda in the 1960s and consolidated itself in the following decades (BUELL, 2005). The 1960s was, therefore, a prolific decade for the environmental movement. The year 1962, for instance, marks the publication of *Silent Spring*, considered one of the main books of the environmentalism. Written by Rachel Carson, the piece, which presents the effects of the indiscriminate use of pesticides, attracted significant public attention to the environmental cause.

Another internationally famous publication that spotted environmental issues in the 1960s was *The Population Bomb* (EHRlich, 1968), which studied the effects of population growth on the environment. The author predicted that the world population would face famine in the 1970s and the 1980s due to overpopulation. Indeed, during those decades, famine struck the population of Ethiopia, Bangladesh, Cambodia, Uganda, Mozambique, and Sudan. Nevertheless, those countries did not face famine because of overpopulation itself. Droughts, flooding, civil wars, and economic and political instabilities were some of the causes for starvation in those places. Even though Ehrlich's (1968) predictions were inaccurate, the author managed to attract public attention to the sensitive link between the world population and the environment. This delicate relationship remains a topic that concerns environmentalists worldwide, being part of the environmental cyclical media coverage.

Hansen (2019, p. 25) states that the result of cyclical themes and lack of fit between media coverage and global demands is two-fold. First, continuous interest about an environmental issue may not be enough to guarantee space on the media agenda, as unexpected or more newsworthy events may arise. Second, the amount of coverage does not relate to the importance of the issue and its disappearance from the media is not a result of its solution. Thus, topics with important outcomes may receive less coverage because they may not look attractive nor easily manageable to news media gatekeepers.

Beyond Hansen's (2019) findings, a study conducted by Schmidt, Ivanova and Schaefer (2013) about the newspaper coverage of climate change in 27 countries, between 1996 and 2010, showed a cyclical coverage with ups and downs. To Hansen (2015, p. 211), "media attention

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6 "At the meeting – which became known as Rio-92, Eco-92 or Earth Summit –, which took place 20 years after the first conference of its kind in Stockholm, Sweden, countries recognized the concept of sustainable development and began to shape actions with the aim of protecting the environment". Available at: <https://www.senado.gov.br/noticias/Jornal/emdiscussao/rio20/a-rio20/conferencia-rio-92-sobre-o-meio-ambiente-do-planeta-development-sustentavel-dos-paises.aspx>. Accessed on: Aug. 31, 2020

to climate change has increased significantly in an overall upward trend across all countries”. Complementary studies about the subject show that, like other global issues, it suffers filtering processes that influence the attention that these concerns receive and the ways that their structures operate (ENTMAN, 1993; GANDY, 1982; SCHEUFELE, 1999).

Pioneer in the investigations about cyclical coverage, Downs (1972) studied the attention cycle about domestic issues such as poverty, racism, public transportation, education, and unemployment in the USA. The author noticed the public only has temporary interest in subjects related to social issues. Intriguingly, he predicted that environmental issues tend to sustain media attention for longer periods than other social topics. The author identified five possible reasons for that behavior: 1) environmental issues have better visibility and cause more risks than other social problems; 2) most of them can be solved through technology; 3) environmentalism encloses several areas and supersedes political constraints; 4) industry can be blamed for environmental problems; and 5) companies can profit from environmental products and services.

Some of Downs’ (1972) explanations for news media’s attraction to environmental issues became obsolete, as the studies on environmental communication developed and new data on environmental issues emerged. Consequently, we need to approach Down’s arguments with caution. For instance, technological intervention has proven to be insufficient in preventing environmental degradation, as it needs a broader approach that encompasses behavioral change and society’s engagement. Moreover, several environmental issues are a consequence of political inabilities, and industries do not carry the sole responsibility for environmental destruction. A good example is the link between deforestation rates and governmental interests, as environmental destruction tends to increase under liberal economics<sup>7</sup>. In spite of using arguments that eventually became inconsistent, Downs (1972) showed that his projection still has validity, because the interest in the environment has not declined through time.

An analysis (AYKUT; COMBY; GUILLEMONT, 2013) of news media coverage of climate change in France, for example, corroborated Downs’ (1972) perceptions on environmental coverage, as it disputed concerns over the attention cycle, showing that the coverage increased steadily from 1990 to 2010 and reached exceptional levels in the 2010s.

## Final considerations

This article presented the main discussions, characteristics and challenges experienced by environmental journalism in recent decades, from the perspective of authors and experiences from other countries. The purpose of the compilation was to bring to the debate elements that allow us to reflect on the international context, observing some of its convergences and divergences.

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<sup>7</sup> Economic doctrine developed in the 1970’s that defends free market and the minimum of state intervention in the economy.

The close relationship between the field of environmental journalism and the political and economic fields highlighted some difficulties that have led to a decrease in the number of professionals who cover environmental issues, to shorter space and time to present content whose nature is complex, and to less investment in education and production of news on the subject. Economic constraints in the media sector serve as a global standard that also affect environmental journalistic content. Although environmental journalism still seeks recognition and a specific place within the journalistic field itself, the aforementioned authors point to a social role assigned to it, aimed at promoting public awareness of environmental issues and encouraging engagement related to defense of the environment. Public engagement, as we have seen, is a characteristic of “radical journalism” (CHRISTIANS *et al.*, 2009), which differs from the procedures of more traditional journalistic production, guided by objectivity and the search for balance between sources, characteristics that are still predominant in the current environmental journalism presented in this article.

Despite its considerable importance, environmental communication research, thus, remains marginal with disjointed contributions from communication science and uncertain limits with other areas like risk and science communication, and communication of disasters (BONFADELLI, 2010).

In this article, the examples focused on three main topics: impacts caused by the financial resources of media companies, public relations activities, and journalistic roles and routines in environmental coverage. Other sub-themes were also relevant, such as the perception of the environment as an urgent social problem, studies on media coverage of the topic, as well as advances in quantitative and qualitative areas. In addition, the effects of the media on the public have been gaining prominence. However, the main area of investigation of environmental research, as seen above, has been journalistic coverage of environmental issues and controversies.

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## Authors' contribution

Juliana Sampaio Pedroso de Holanda, Pietari Käpä e Luciana Miranda Costa actively participated in all stages of the manuscript's preparation.

## Conflict of interest

The authors declare no conflict of interest.

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