

---

## Environmental Communication Publications in Indonesia's Leading Communication Journals. A Systematic Review

Mira Rochyadi-Reetz<sup>1</sup>, Jens Wolling<sup>2</sup>

<sup>1,2</sup>Technische Universität Ilmenau Germany

Corresponding author, ✉ [mira.rochyadi-reetz@tu-ilmenau.de](mailto:mira.rochyadi-reetz@tu-ilmenau.de)

### Article History:

Received 2022-08-31

Accepted, 2023-01-30

### Keywords:

environmental communication, meta-analysis, systematic review, communication journal

---

### Abstract

*As an emerging country, Indonesia is facing many environmental problems, with some of the most critical being plastic waste, severe deforestation, and climate change. Under such conditions, communication science plays an important role in pointing to the best way to inform the public so as to stimulate engagement and action to solve these problems. In this article, a systematic literature review of papers on environmental communication published in three leading communication journals in Indonesia was conducted. The findings show that despite the severe environmental problems in Indonesia, a limited number of studies on environmental communication have been published, and only a few methods and designs have been used. Therefore, more attention from communication scholars and intellectuals in Indonesia is needed to address environmental problems in their research. Creating an environmental communication division in existing communication associations is proposed as a practical solution, among others, and is discussed in the outlook section of this study.*

### Aim and Relevance of Systematic Review

As the biggest country in the Southeast Asian region in terms of economic power and inhabitants, Indonesia is facing severe environmental problems that can be attributed to its economic development (Ilham, 2021; Robbi, Ismail, & Hoetoro, 2020). The list of environmental problems that the country faces is long. Specifically, Indonesia is among the largest plastic waste polluters in the world (The World Bank, 2021), and in the last two decades, the nation lost around 18% of its tree cover, which is equivalent to 28.6 Mha or 19.7 GT of CO<sub>2</sub> emissions (Global Forest Watch, 2021). Meanwhile, the combination of the rising sea level and the massive extraction of groundwater for daily use for the more than 10 million inhabitants in the capital city, Jakarta, have made it the fastest sinking city in the world (Lin & Hidayat, 2018). In 2021, Indonesia was named one of the most vulnerable nations suffering from a climate crisis (Eckstein et al., 2021). Such severe environmental

problems should be receiving significant attention in the media to accommodate the urgency of passing important information to the public and to politically motivate the country to react against the environmental disaster. Information from a reliable source is pivotal to generating willingness to act in times of environmental crisis (Wolling, 2016). Since media and communication tend to shape our worldviews on a topic or problem (Luhmann, 2000), conducting research into how environmental problems are communicated in Indonesia is highly relevant.

Environmental communication is a scholarly discipline that is acknowledged as entailing the “intersections of communication, media, society, and the environment” (Takahashi et al., 2022, p. 3). In a chapter on the conceptualization of environmental and communication research, Takahashi et al. (2022) describe how the development of environmental communication as a research field emerged mostly in Europe and the United States in the 1970s. The first Conference on Communication and Environmental Communication (COCE) in 1991 was considered the landmark of environmental communication as a research field. The conference is regularly organized as a biannual event dedicated to the sharing of research findings, projects, and practical expertise on environmental communication. The community surrounding the COCE then established the *Environmental Communication* (EC) journal in 2007 and the International Environmental Communication Association (IECA) in 2010, which marked the formal institutionalization of the field. The COCE and EC journals have been continuously organized by the IECA. Since then, international conferences, such as those held by the International Communication Association (ICA) and the International Association of Media and Communication Research (IAMCR), have established divisions or working groups concentrating on environmental communication research. Whereas the environmental divisions of the ICA and IAMCR concentrate on academic research, the IECA has opened the field to practitioners and artists who are also working on environmental issues.

Table 1. Milestone in the field of environmental communication

Year	Milestone
1988	First session of the environment, science and risk communication working group in International Association for Media and Communication Research (IAMCR)
1991	The first conference on Communication and Environmental Communication (COCE)
2007	First publication of the Environmental Communication (EC) journal
2010	Establishment of International Environmental Communication Association (IECA)
2013	Establishment of Environmental Communication division in International Communication Association (ICA)

When it comes to the analytical framework for observing environmental communication, Hoppe and Wolling (2017) have described that it could take place in four different levels of observation. The starting point of all levels is the real world in which environmental events take place, which are caused naturally or by human activities. An example of such an environmental event is the place in the Pacific Ocean, where an island of plastic waste is located, or a melting glacier in a mountain of Switzerland.

The *first level* of the analytical framework for environmental communication consists of a report based on direct observation of environmental conditions in the real world.

Communication on this level could take place in the form of a report or press release from scientists who are conducting research on environmental phenomena. An example of this first level of communication practice is the publication of the sixth Assessment Report (AR 6) from the climate scientists of the Intergovernmental Panel on Climate Change (IPCC) in 2021 (IPCC, 2021). The *second level* of analysis consists of mediated communication, as in the case of journalists writing an article in a newspaper on the results of scientific research published on the first level. An example of environmental communication on the second level would be an article published in a newspaper on the report of AR 6 from the IPCC. The *third level* for analyzing environmental communication is communication science research, which investigates how the first-level observations are communicated by the second and what kind of impact such communication may have. An example of an analytical framework on this level is the media frame analysis of climate change in Indonesia by Wiratmojo and Samorir (2012). In this research, the authors analyzed media coverage from two national newspapers, *Kompas* and *Republika*, and press releases from three political actors in Indonesia during the United Nations Climate Change Conference in 2007 in Bali. The study describes problems and solution on climate change presented by the media and by political actors in Indonesia. Based on their empirical findings, the authors argue that the Indonesian government did not appropriately provide information on climate change to the media despite their responsibility to consider environmental dimension in their policies.

The *fourth level* in this framework could also be called the meta level. On this level, researchers systematically observe scientific work on environmental communication that is generated on the third level. Research on the meta-level aims to reflect on existing research, identify research gaps, and make suggestions for future research in the field. An example of such research is the systematic review of peer-reviewed literature on environmental communication conducted by Comfort and Park (2018). Their meta-level analysis shows that as a research field, environmental communication has exhibited an increasing trend toward diversity in methodologies in recent years. They also found that scholars in the field have shifted their focus from general environmental risk to the issue of climate change in the last decade. Another important result of the study is the dominance of research coming from North American and European countries. For example, only one out of 504 peer-reviewed articles was about or from Indonesia (p. 872).

The dearth of research on environmental communication from Indonesia identified by Comfort and Park (2018) might be the result of the fact that only journal articles in English were included in their analysis. This means that peer-reviewed publications by Indonesian scholars written in Bahasa (Indonesian language) were not included in such international meta-analyses of the field. This is problematic since, as the fourth most populous country in the world, with its own unique historical and cultural background (350 years of colonialism and more than 300 tribal groups and traditional languages), Indonesians might have a different strategy for communicating environmental problems and policies than those in the global north. The distinct post-colonial history of a country should be considered in the research on environmental communication in poor developing countries, which is still rather overlooked in the field (Takahashi et al,2022).

Communication studies in Indonesian higher education already existed as a field of study in 1950. At that time, Gajah Mada University (UGM) offered a bachelor's degree in journalism. The field was commonly known under the term *publisistik* or mass communication, which, as the name suggests, concentrates more on journalism and mass media studies (Sadono & Chasanah, 2016). Communication science as a major offered in higher education was formally institutionalized in 1983 through presidential decree no.

107/82. The official institutionalization of communication science or study degree by the state also marked the development of Indonesia's communication scholars. In 1983, an association of Indonesian communication scholars, Ikatan Sarjana Komunikasi Indonesia (ISKI), was established. The rise of communication science as a field of study rapidly increased in the 1990s, following the development of private televisions in Indonesia in the same era. In 2007, the Association for Higher Education in Communication Studies (ASPIKOM) marked another milestone in the development of communication science in Indonesia. ASPIKOM currently has more than 300 higher education institutions as members that offer communication as a study program, and ISKI has more than 600 members. Both ISKI and ASPIKOM host several peer-reviewed journals on communication science and studies that are quite distinguished in Indonesia. These positive developments marked the professionalization of communication science in the country. Therefore, it is not unreasonable to demand that the field turn its attention toward environmental issues, as these are among the most pressing problems faced by society today.

Research on environmental communication in the country may also have flourished over the last few years, but the trend has gone unnoticed since, at least as far as the authors know, there has not been a systematic literature review on environmental communication published in Indonesian scientific journals. Based on the rationales outlined above, this study aims to conduct an empirical examination of the development of publications on environmental communication in Indonesia from leading peer-reviewed communication journals in the country. We argue that knowing the state of the research on environmental communication in Indonesia is of great importance for two reasons: first, such a study shows how much attention communication scholars in Indonesia pay to this field of inquiry. The summarized results can be used to guide NGOs, political actors, and institutions in their communication work. Knowing how the media covers environmental issues and how this affects the public can help develop appropriate communication strategies that can influence public awareness, attitudes, and pro-environmental behaviors in Indonesia. Second, the study could identify research gaps and deficits in the field and suggest a research agenda that can adequately address current and future challenges of communicating about environmental issues.

To reach the research objective it follows several studies in related disciplines, such as the review by Schäfer and Schlichting (2014) on media representation of climate change and Comfort and Park's (2018) work on environmental communication. The next section will describe the systematic literature search process, and the results section will present an overview of the research on environmental communication in Indonesia. An outlook and suggestions for future directions in the field will be presented in the discussion.

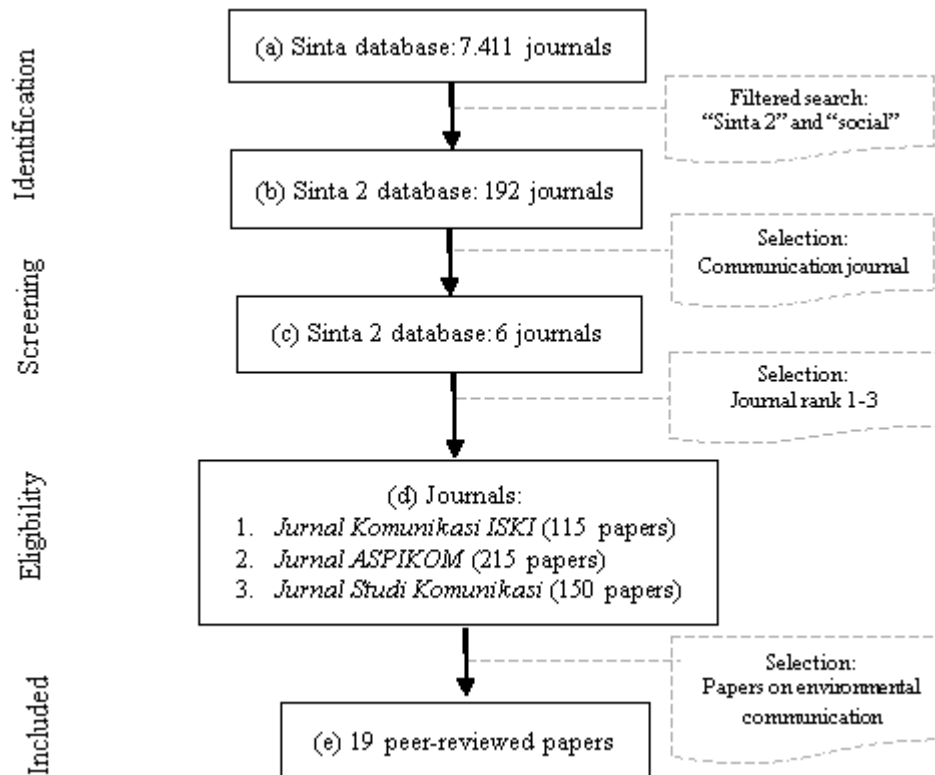
## **Methods**

### **Steps in data selection**

The review in this study follows a systematic approach that provides an "evidence base upon which future research can build" (Comfort & Park, 2018, p. 865). Petticrew and Roberts (2012) have pointed out that such a study must define a clear, inclusive, and comprehensive search process to be conducted with objectivity and transparency. Since this study aims to present a systematic review of scholarly studies of environmental communication from peer-reviewed journals, it excludes books or edited anthologies related to environmental communication published in Bahasa, since a book repository for the systematic selection of such publications in Indonesia is currently unavailable. This, of course, will be among the limitations to be considered in the discussion section.



Diagram 1. Process of data selection



The steps in the selection process of this study were adapted from the process used by Moher et al. (2009), which is described in Diagram 1. We used a multidisciplinary database named Sinta (Science and Technology Index), developed by the Ministry of Education (Kemdikbud). The platform offers fast and easy access to measure the performance of researchers, institutions, and journals in Indonesia.

To perform the search, the authors first opened the database of journals, which contained more than 7,000 Indonesian journals from all disciplines. The authors then refined the journal search using the filter "social" for the subject area. Since we wanted access to top journals in the field, we filtered the rank by selecting "Sinta 1." Within the Sinta system, journals are ranked into six categories: Sinta 1 for journals with a very high impact, and Sinta 6 for those with the least impact. Within this search, there were 18 social science journals with a Sinta 1 impact, but none belonged to communication science. The authors repeated the step using a filter for "Sinta 2" and "social" and found 192 journals listed in this category. We proceeded with the steps by checking all 192 journals and found six on communication science. Due to time and resource constraints, the authors selected three journals ranked as having the highest impact factors: *Jurnal Komunikasi ISKI* (impact factor: 5.7), *Jurnal ASPIKOM* (impact factor 3.7), and *Jurnal Studi Komunikasi* from Dr. Soepomo University Surabaya (impact factor: 3.1). The authors went to each journal's website and accessed all publications available online in their archives. Archives for *Jurnal Komunikasi ISKI* dated 2016, *Jurnal ASPIKOM* from 2010, and *Jurnal Studi Komunikasi* from 2017. In total, 480 peer-reviewed papers were content analyzed in the next step.

### Coding procedures

Information on the collected papers was coded using an electronic code sheet. A codebook was developed to systematically collect information on the publication itself (title, journal, author(s), and publication date), the research object, publication type (empirical study, essay,

literature review, or book review), methodology, and research design, when applicable. Nine variables, which similar to those used in the research from Schäfer and Schlichting (2014), were included in the analysis of the codebook, which can be seen in Table 2.

Table 2. Overview of the coded variables

Var. Nr.	Variable name	Var. Type	Variable codes
1	Place of publication	#	<i>Jurnal Komunikasi ISKI, Jurnal ASPIKOM, Jurnal Studi Komunikasi</i>
2	Year of publication	####	Year in which it was published
3	Title of publication	Text	Title of publication
4	Environmental communication	#	"Yes" (Peer-reviewed papers on/related to sustainable development, biodiversity, animal welfare, climate change, waste, forest fires, pollution, renewable energy, and other environmental disasters or conflict caused by human activities. Environmental disasters, such as volcanic eruptions and earthquakes, were not included in this category.), "No" (Not related to an environmental issue.)
4.1	Language	#	"Bahasa," "English"
4.2	Type of publication	#	"Empirical research," "essay," "book review," "other"
4.3	Object of research	Text	Short description of the research object
4.4	Methodology used in the coded paper	#	"(Predominantly) quantitative," "(predominantly) qualitative," "mixed (equally quantitative/qualitative)"
4.5	Research design of coded study	#	"Case study," "comparative study," "longitudinal study," "not clear"

Two different coders conducted the coding of variables 1–4 from the 480 peer-reviewed papers collected in the dataset. The first author served as the first coder, and the second coder was a graduate student in communication science. To code the paper, the coders had to carefully read the abstracts. If the coders could not get a clear picture of the paper based on the abstract, then it was necessary to read the whole paper and code or classify it as one on environmental communication. Before coding all papers, coder training was conducted by both coder with 10 papers from *Jurnal ISKI*. The codebook was revised after the training to accommodate input on the definition of the study of environmental communication. Afterwards, intercoder reliability was calculated with the remaining 105 papers published by *Jurnal Komunikasi ISKI*. In this step, two coders disagreed only on the classification of one paper. This disagreement was discussed, and both coders came into agreement on the classification of the paper and revised the definition of the study of environmental communication in the codebook. Afterwards, the first coder coded all papers from *Jurnal ASPIKOM* (215 articles), and the second coder coded all papers from *Jurnal Studi Komunikasi* (150 articles). Further content analysis of variables 4.1–4.5 (see Table 2) in the 19 peer-reviewed papers selected in step (e) (see Diagram 1) was conducted only by the first coder. This approach followed the steps of the systematic review of media coverage on climate change by Schäfer and Schlichting (2014). Both coders used Microsoft Excel to organize and document the whole coding process.

## Results and Discussion

From a total of 480 articles published in top Indonesian communication journals, only 19 papers (3.9%) were classified as in the field of environmental communication. *Jurnal Komunikasi ISKI* and *Jurnal Studi Komunikasi* each published seven of these articles. Only five peer-reviewed papers on environmental communication were published in *Jurnal ASPIKOM*. The descriptive results of the content analysis of the 19 peer-reviewed articles can be seen in Table 3. The analysis shows that almost half of the publications were written in English, which shows the efforts of Indonesian communication scientists to share their work with the international scientific community. Writing a research publication in English for Indonesian scientists requires huge effort, as English is not the primary language taught in the Indonesian education system. Most Indonesians learn English as a third language after their traditional/tribal language and national language (Bahasa).

When it comes to the object of the investigation, there was no single environmental problem that dominated as a study object. However, four papers out of the 17 empirical studies dealt with waste issues (see Annisa, 2019; Gumelar, 2018; Lubis & Pohan, 2021; Nugraheni & Widyaningrum, 2019) and other environmental issues, such as forest fires, mangrove conservation, and wildlife protection, were studied in papers by Abrar (2018), Widyaningrum and Nugraheni (2019), and Agustin et al. (2018), respectively. Two other studies concentrated on evaluating the communication strategies of environmental NGOs (Aji, 2019; Ramadani et al., 2015). As journal publications are an important indicator of the relevance of scientific discussions and deliberations, the number of publications on waste, which account for almost a quarter of all publications, shows that the waste problem is a very important topic in the field of environmental communication in Indonesia. The results of these publications provide insights for both the scientific community and practitioners. Based on these findings, it is possible to design effective messages or communication strategies that could promote public willingness to reduce, reuse, or recycle plastic or household waste. In addition, communication research on wildfire, mangrove, and wildlife conservation and on how these issues are perceived by different segments of society can expand our understanding of the problem and provide guidance on how to carry out better communication strategies to promote public engagement on the issue.

Against the backdrop of international tendencies to increase research on climate change in the field of environmental communication (see Agin & Karlsson, 2021; Comfort & Park, 2018), there was no study on climate communication in Indonesia found in these top Indonesian journals. The only study published on climate communication was from Pacoma (2019) on media coverage of climate change in the Philippines. This is a dreadful result, as it indicates the scant attention and interest of Indonesian communication scientists in conducting research on one of the most challenging problems of humankind (United Nation TV, 2018), especially since Indonesia is declared to be among the most vulnerable nations suffering from climate change (Eckstein et al., 2021). However, this result mirrored the general media's attention to climate change in Indonesia. Existing studies on media attention show that climate change is a minor issue in Indonesian media in comparison with other urgent problems, such as corruption or terrorism (Rochyadi-Reetz & Teng'o, 2022; Wahyuni, 2017).

Table 3. List of publications on environmental communication from leading Indonesian journals

Year	Authors	Language	Object of study	Type	Method and design
2015	Ramadani et al.	Bahasa	Evaluation of the communication strategy of Friends of the Earth Indonesia in Yogyakarta	Empirical research	Qualitative, case study
2016	Darmastuti et al.	Bahasa	Traditional communication pattern of social movement to oppose the construction of cement factory in the district of Sukolilo, Central Java	Empirical research	Qualitative, case study
	Hapsari	Bahasa	The role of the communication network in social movement for environmental conservation	Essay	-
2018	Abrar	English	Analysis of storytelling on the coverage of forest fires in 2017 in Riau Post	Empirical research	Qualitative, case study
	Agustin et al.	English	Case study on how the management of the Bandung Zoo communicates internal conflict on animal welfare in their zoo	Empirical research	Qualitative, case study
	Gumelar	Bahasa	Media effect on persuasive messaging to reduce the use of plastic bags	Empirical research	Quantitative, case study
	Yenrizal	Bahasa	Interpretation of environmental aspects in an inscription from Sriwijaya Kingdom in the 7th century	Empirical research	Qualitative, case study
2019	Annisa	Bahasa	Case study on post engagement in the United Nation's campaign on "Beat the Plastic"	Empirical research	Mixed, case study
	Aji	English	Examination of social media use by four Indonesian NGOs to support their social movement for animal protection in the country	Empirical research	Qualitative, case study
	Nugraheni and Widyaningrum	Bahasa	Public acceptance on waste management program established as CSR program from a state-owned electricity company in Gunung Anyar district	Empirical research	Quantitative, case study
	Pacoma	English	Analysis on climate change in Philippines media between 2015–2016	Empirical research	Quantitative, comparative
	Wahyuni	English	Conceptual framework from Niklas Luhmann to understand ecological and natural disaster in Indonesia	Essay	-
	Widyaningrum and Nugraheni	Bahasa	Explorative study on the understanding of triple line bottom concept applied in the mangrove conservation area of Gunung Anyar in the Surabaya district	Empirical research	Qualitative, case study
	Yasir et al.	Bahasa	Case study on communication strategy to develop sustainable tourism in Bengkalis district	Empirical research	Qualitative, case study
	Yuliarti and Jatimurti	English	Study on online media coverage on biodegradable products in Indonesia	Empirical research	Qualitative, case study
2020	Mihardja, Agustini, and Kuntarto	English	Analysis of media coverage on Ciletug Geopark	Empirical research	Qualitative, case study



Year	Authors	Language	Object of study	Type	Method and design
2021	Avicenna and Febriani	English	A literature review on public acceptance of renewable energy	Essay	
	Lubis and Pohan	English	Case study on government communication strategy in Medan city (Sumatera) to increase public awareness of household waste	Empirical research	Qualitative, case study
	Hermanto and Nugroho	English	Measuring the impact of community empowerment for springs and forest preservation in the Arjuna mount area	Empirical research	Mixed, case study, discussion

Several studies written in Bahasa deeply investigated local and traditional understandings of how Indonesians understand the concept of environment and sustainability, such as a study by Yenrizal (2018) and another by Darmastuti et al. (2016). The first study describes the understanding of environmental concepts found in an old inscription dated to the 7th century in a kingdom located in Sumatra, while the second explores the traditional communication network of the indigenous community (*Samin*) in central Java during their protest against the construction of a cement factory in their region. However, since both studies are written in Bahasa, the international community has hardly an opportunity to understand this traditional Indonesian perspective on environmental communication. This obstacle reduces the international visibility of Indonesian communication scholars' knowledge. Enabling access to specific cultural knowledge from Indonesia in the field of communication studies could support the movement to de-westernize communication studies and would thus also be a response to the corresponding critique #CommunicationSoWhite articulated by many communication scholars (Chakravartty, Kuo, Grubbs, & McIlwain, 2018; Waisbord, 2016).

In terms of research methodology and design, the majority of the papers used qualitative methods, and almost all of the empirical research papers employed a case study approach. This finding is consistent with the general trend in Indonesian communication research, which is strongly rooted in a qualitative research tradition. Qualitative methods can provide deep insight into the specific characteristics of the objects studied and help us understand developments and communication processes. A good example of this type of research is the study conducted by Darmastuti et al. (2016). They identified the high value and appreciation of agriculture, as opposed to trade, as the most important motive for the people of Samin in Central Java to oppose the proposed construction of a cement factory in their district. Their research showed how these values are related to their appreciation of water, soil, and their natural environment, and how this motivates their engagement against environmental threats to their local community.

Communication scholars and practitioners could learn from these findings how to develop an effective community engagement campaign by linking similar cultural values to other important environmental issues. However, because Indonesia is a culturally diverse nation, this finding may not be applicable to communities on the island of Sumatra, which may have different perceptions of trade. To investigate whether certain values are limited to a particular setting or whether they apply to different subcultures, quantitative approaches could help communication scholars validate their findings. For example, using a nationally representative survey could help identify different perspectives on specific environmental issues and identify specific groups with divergent environmental attitudes, emotions, and behaviors. These groups can then be described in terms of their media use and communication behaviors. This approach can help develop effective communication strategies to promote public engagement. Good examples of such studies include those by

Metag et al. (2017) and (Klinger, Metag, & Schäfer, 2022). Based on two national surveys, they clustered five groups of people in Germany according to their views on climate change and compared their specific communication behaviors at different points in time. They argued that this information could be used by communication practitioners in the country to accurately targeting the public: E.g., different communication strategies are needed for people who are still not convinced about the impacts of climate change than for people who do not doubt the scientific state of research but still do not behave according to these findings. In addition, this information could also be a valuable input for policy making at the national level, as parliament and government should be responsive to people's views and concerns.

In recent years, some quantitative research on environmental communication in Indonesia has also been conducted and published by Gumelar (2018), Nugraheni & Widyaningrum (2019), and Pacoma (2019). Unfortunately these publications contain almost no information about the operationalization of variables, data collection, and data analysis. However, such information is very important for readers to understand the results presented in the papers and the discussion of the findings.

Studies with national surveys on media use and environment are rare in Indonesia. Especially, longitudinal studies require an enormous amount of time and research funding, two aspects that are highly problematic in Indonesia. However, a study using a quantitative approach, such as a national survey, with a longitudinal design could help us identify and understand the interrelation of variables, including media and communication, that might influence the attitudes and engagement levels of the Indonesian public on environmental issues. It should be noted that this argument is *not* a call to replace the qualitative approach widely used by the community. Instead, it is a call for the use of a more diverse methodological approach, both qualitative and quantitative, to obtain rich and robust insights and findings that could help us better understand and explain certain phenomena in communication science.

## **Conclusion and Outlook**

Indonesia faces a long list of severe environmental problems that threaten the livelihoods of its hundreds of millions of inhabitants. However, environmental issues still receive limited media attention, despite their urgency. This study presents a systematic review of peer-reviewed publications on environmental communication in the three most influential journals in Indonesia. The findings show that research on environmental communication in Indonesia is far from receiving enough attention in the top three communication journals in the country. When we compare this result to the number of communication study programs at higher education institutions, which have reached 650 nationwide (Masduki, 2022), there is huge potential to shift more attention to environmental communication in the country. These communication study programs should educate future generations of communication practitioners in Indonesia, including journalists, public relations representatives, and other media and communication-related professions. The current low levels of attention paid by communication scholars or intellectuals in the country to such urgent issues might explain the limited media focus on environmental issues in Indonesia. This study also shows that the research methodologies and designs of the existing published research are limited in their diversity, which limits the ability to compare and generalize findings to gain a broader overview of how to communicate certain environmental issues in Indonesia and what effects can be gained from such communication.

Despite providing valuable insights into the state of the research field on environmental communication in Indonesia, this study has at least two limitations. First, it analyzed only the top three journals in Indonesia. As demonstrated in the search procedure, there are other journals on communication science or studies in Indonesia, including those classified in Sinta 3 and Sinta 4, which are not included in this study. Second, it excludes edited books, reports, and peer-reviewed papers on environmental communication published in international journals. Including these might provide a different picture of the field. Nevertheless, as the review in this study was conducted systematically on three journals with the highest impact score in Indonesia, which belong to the most influential communication scholars associations in the country, it still provides an overview of how much attention to research on environmental communication exists in Indonesia.

The research findings show that this field should receive more attention from communication scholars in Indonesia, so that they are able to conduct more empirical research on environmental issues with diverse research methods and designs. High-quality research on environmental communication in Indonesia could support the practice of political actors, journalists, scientists, NGOs, and civil society in addressing environmental issues in a way that stimulates engagement to mitigate environmental crises. Efforts to attract more attention from Indonesian communication scholars could be formed by creating a division on environmental communication in the two most important communication associations in Indonesia, namely ISKI and ASPIKOM. Both associations have several peer-reviewed journals that could publish special issues on environmental communication to accommodate and stimulate more research in the field. Networks, dialogues, collaboration, and partnerships with scholars from universities abroad are also excellent options to promote joint research and teaching in the field of environmental communication in Indonesia. Finally, to drive the internationalization of the field, cooperation with existing international environmental communication associations, such as the IECA, and the environmental communication divisions from the two main international associations for communication scholars—the ICA and IEMCR—is highly recommended.

### **Acknowledgement:**

We acknowledge support for the publication costs by the Open Access Publication Fund of the Technische Universität Ilmenau. We also thank Chikita Rini Lengkong, for her support as the second coder in the content analysis process.

### **References**

- Abrar, A. N. (2018). Storytelling sebagai cara meyakinkan khalayak dalam jurnalisme lingkungan hidup. *Jurnal Komunikasi ISKI*, 3(2). <https://doi.org/10.25008/jkiski.v3i2.149>
- Agin, S., & Karlsson, M. (2021). Mapping the field of climate change communication 1993–2018: Geographically biased, theoretically narrow, and methodologically limited. *Environmental Communication*, 15(4), 431–446. <https://doi.org/10.1080/17524032.2021.1902363>
- Agustin, H., Sirait, R. A., & Supriadi, D. (2018). The management of negotiation process in the Anilam welfare dispute in Bandung zoo. *Jurnal Komunikasi ISKI*, 3(2), 107–112. <http://dx.doi.org/10.25008/jkiski.v3i2.149>

- Aji, A. P. (2019). The role of social media in shaping the animal protection movement in Indonesia. *Jurnal Studi Komunikasi*, 3(3), 389–401. doi: 10.25139/jsk.3i3.1666
- Annisa, S. (2019). Studi netnografi aksi beat plastic pollution oleh United Nation environment di Instagram. *Jurnal ASPIKOM*, 3(6).
- Avicenna, F., & Febriani, N. S. (2021). Consumer behavior as a potential acceptance of renewable energy source in Indonesia. *Jurnal Komunikasi Ikatan Sarjana Komunikasi Indonesia*, 6(1), 86–95. <https://doi.org/10.25008/jkiski.v6i1.525>
- Comfort, S. E., & Park, Y. E. (2018). On the field of environmental communication: A systematic review of the peer-reviewed literature. *Environmental Communication*, 12(7), 862–875. <https://doi.org/10.1080/17524032.2018.1514315>
- Darmastuti, R., Bajari, A., Martodirdjo, H. S., & Maryani, E. (2016). Gethok Tular: Pola komunikasi gerakan sosial berbasis kearifan lokal masyarakat Samin di Sukolilo. *Jurnal ASPIKOM*, 3(1).
- Eckstein, D., Künzel, V., & Schäfer, L. (2021). *Global climate risk index 2021: Who suffers most from extreme weather events? Weather-related loss events in 2019 and 2000-2019*. Retrieved August 29, 2022 from <https://www.germanwatch.org/en/19777>
- Global Forest Watch (2021). Country profile: Indonesia. Retrieved August 29, 2022 from <https://www.globalforestwatch.org/dashboards/country/IDN/>
- Gumelar, G. (2018). Persuasi pengurangan penggunaan kantong plastik melalui narasi dan persepsi resiko. *Jurnal ASPIKOM*, 3(4).
- Hapsari, D. R. (2016). Peran jaringan komunikasi dalam gerakan sosial untuk pelestarian lingkungan hidup. *Jurnal Komunikasi ISKI*, 1(1), 25. <https://doi.org/10.25008/jkiski.v1i1.33>
- Hermanto, Y. B., & Nugroho, M. (2021). Communicating the springs and forest preservation in the Arjuna mount area, Indonesia. *Jurnal Studi Komunikasi*, 5(2), 379–396. <https://doi.org/10.25139/jsk.v5i2.3785>
- Hoppe, I., & Wolling, J. (2017). Nachhaltigkeitskommunikation [Sustainability communication]. In H. Bonfadelli, B. Fähnrich, C. Lüthje, J. Milde, M. Rhomberg, & M. S. Schäfer (Eds.), *Forschungsfeld Wissenschaftskommunikation* [Science communication research field](pp. 339–354). Wiesbaden: Springer VS. [https://doi.org/10.1007/978-3-658-12898-2\\_18](https://doi.org/10.1007/978-3-658-12898-2_18)
- Ilham, M. I. (2021). Economic Development and Environmental Degradation in Indonesia: Panel Data Analysis. *Jurnal Ekonomi & Studi Pembangunan*, 22(2), Layouting. <https://doi.org/10.18196/jesp.v22i2.7629>
- IPCC (2021). *Summary for policymakers in climate change 2021: The physical science basis*. Geneva. Retrieved August 29, 2022 from [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf)
- Klinger, K., Metag, J., & Schäfer, M. S. (2022). Global Warming's Five Germanys – Revisited and Framed in an International Context. *Environmental Communication*, 16(8), 1108–1126. <https://doi.org/10.1080/17524032.2022.2153897>
- Lin, M. M. L., & Hidayat, R. (2018, August 13). *Jakarta, the fastest-sinking city in the world*. Retrieved August 29, 2022 from <https://www.bbc.com/news/world-asia-44636934>
- Lubis, L. A., & Pohan, S. (2021). Household waste communication campaign in the family planning village in Medan city. *Jurnal Komunikasi Ikatan Sarjana Komunikasi Indonesia*, 6(1), 62–71. <https://doi.org/10.25008/jkiski.v6i1.522>



- Luhmann, N. (2000). *The reality of the mass media. Cultural memory in the present*. Stanford, Calif: Stanford University Press.
- Masduki (2022). The dark side of communication studies in higher education in Indonesia. *Jurnal ASPIKOM*, 7(2), 1–14. <http://dx.doi.org/10.24329/aspikom.v7i2.1127>
- Mihardja, E. J., Agustini, P. M., & Kuntarto, G. P. (2020). Knowledge configuration about Ciletuh UNESCO global geopark in mass media. *Jurnal Komunikasi ISKI*, 5(2). <https://doi.org/10.25008/jkiski.v5i2.428>
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
- Nugraheni, Y., & Widyaningrum, A. Y. (2019). Dinamika sikap warga atas program CSR bank sampah Gubung Anyar Surabaya. *Jurnal Studi Komunikasi*, 3(1), 41–56. doi: 10.25139/jsk.3i1.1419
- Pacoma, M. A. (2019). Environmental realities: Evaluating climate change coverage of Philippine online news media. *Jurnal Studi Komunikasi*, 3(1), 1–26. doi: 10.25139/jsk.3i1.1293
- Petticrew, M., & Roberts, H. (2012). *Systematic reviews in the social sciences: A practical guide*. Blackwell Publ.
- Ramadani, D., Lestari, P., & Susilo, M. E. (2015). Audit komunikasi organisasi Wahana Lingkungan Hidup Indonesia (WALHI) Yogyakarta. *Jurnal ASPIKOM*, 2(4), 282–290.
- Robbi, I., Ismail, M., & Hoetoro, A. (2020). Environmental Degradation in Indonesia 1969–2016. In *Proceedings of the 23<sup>rd</sup> Asian Forum of Business Education (AFBE 2019)* (pp. 352–356). Paris, France: Atlantis Press. <https://doi.org/10.2991/aebmr.k.200606.061>
- Rochyadi-Reetz, M., & Teng'o, D. (2022). Prioritizing development, vying for attention: Factors influencing the practice of environmental journalism in the global south. In B. Takahashi, J. Metag, J. Thaker, & S. E. Comfort (Eds.), *The Handbook of International Trends* (pp. 220–231). Routledge.
- Sadono, T. P., & Chasanah, R. N. (2016). Kajian ilmu komunikasi pandangan dan harapan: Studi eksploratif tentang pandangan dan harapan pembelajaran ilmu komunikasi pada mahasiswa 5 PTS di DKI Jakarta. *Bricolage Jurnal Magister Ilmu Komunikasi*, 2(2).
- Schäfer, M. S., & Schlichting, I. (2014). Media representations of climate change: A meta-analysis of the research field. *Environmental Communication*, 8(2), 142–160. <https://doi.org/10.1080/17524032.2014.914050>
- Takahashi, B., Metag, J., Thaker, J., & Comfort, S. E. (2022). Expanding conceptualizations of environmental communication research. In B. Takahashi, J. Metag, J. Thaker, & S. E. Comfort (Eds.), *The Handbook of International Trends* (pp. 3–13). Routledge.
- The World Bank (2021). *Plastic waste discharges: From rivers and coastlines in Indonesia*. Retrieved August 29, 2022 from: <https://www.worldbank.org/en/country/indonesia/publication/plastic-waste-discharges-from-rivers-and-coastlines-in-indonesia>
- United Nation TV (2018, September 10). *António Guterres (Secretary-General) delivers speech on climate change and his vision for the 2019 climate change summit*. Retrieved August 29, 2022 from <http://webtv.un.org/search/ant%C3%B3nio-guterres-secretary-general-delivers-speech-on-climate-change-and-his-vision-for-the-2019-climate-change-summit/5833142929001/?term=guterres&lan=English&sort=date&page=3#t=3m54s>

- Wahyuni, H. I. (2017). Mainstreaming climate change issues: Challenges for journalism education in Indonesia. *Pacific Journalism Review*, 23(1), 80–95.
- Wahyuni, H. I. (2019). Ecological communication in information society: Reflection on Niklas Luhmann's thought in understanding ecological and disaster issue in Indonesia. *Jurnal Komunikasi ISKI*, 4(1).
- Widyaningrum, A. Y., & Nugraheni, Y. (2019). Perempuan dan pemaknaan triple bottom line di kawasan mangrove Surabaya. *Jurnal Studi Komunikasi*, 3(3), 444–459. doi: 10.25139/jsk.3i3.1588
- Wiratmojo, Y. B., & Samorir, D. W. A. (2012). The portrayal on Indonesian political actor's and media perspective on the issue of climate change in the 2007 United Nations climate change conference. *Jurnal Ilmu Komunikasi*. (10), 146–159.
- Wolling, J. (2016). Environmental crises and the public: Media audiences in the context of environmental and natural threats and disasters. In A. Schwarz, M. W. Seeger, & C. Auer (Eds.), *Handbooks in communication and media. The handbook of international crisis communication research* (pp. 236–247). Wiley Blackwell.
- Yasir, Nurjanah, Salam, N. E., & Yohana, N. (2019). Kebijakan komunikasi dalam membangun destinasi dan masyarakat sadar wisata di Kabupaten Bengkalis. *Jurnal Studi Komunikasi*, 3(3), 424–443. doi: 10.25139/jsk.3i3.1548
- Yenrizal (2018). Makna lingkungan hidup di masa Sriwijaya: Analisis isi pada Prasasti Talang Tuwo. *Jurnal ASPIKOM*, 3(5), 832–845.
- Yuliarti, M. S., & Jatimurti, W. (2019). Media and environment: How Indonesia online news portal frames biodegradable issue? *Jurnal Studi Komunikasi*, 3(2), 167–181. doi: 10.25139/jsk.3i2.1586

---

**Copyright holder :**

© Mira Rochyadi-Reetz, Jens Wolling

**First publication right :**

Jurnal ASPIKOM

**This article is licensed under:**

