

Telling Nature's Story: Journalistic Role Perceptions and the Ecology of Information in Biodiversity Reporting from Sindh

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ABSTRACT

The province of Sindh in Pakistan is experiencing a state of biodiversity crisis as a result of habitat degradation, illegal animal killings, polluted water, and insufficient law enforcement. Despite the fact that they do not receive sufficient credit, journalists are seen as highly important individuals in discussions concerning the environment in this region, which is susceptible to the effects of climate change and is politically unstable. The purpose of this study is to analyse the perceptions and behaviours of regional journalists regarding their responsibilities in communicating information about biodiversity. There were fifteen semi-structured interviews conducted with journalists from six different divisional headquarters located all throughout Sindh selected by applying Purposive Sampling technique. These interviews were conducted using a qualitative interpretative technique. The research, which makes use of Journalistic job Theory and the Ecology of Information Model, demonstrates that journalists who work from a distance perform a multifaceted job that includes translating, monitoring, advocating, and educating news audiences. Their institutions do not care about them, they

do not have sufficient funds, and they are unable to access the findings of scientific examinations. Researchers found that different regions had different approaches to reporting, which were influenced by factors such as the local natural constraints, the requirements of the audience, and the political climate. The study's findings suggest that institutional modifications, including environmental journalism beats, technical training, and more collaboration with scientists and non-governmental groups, should be instituted. This helps environmental communication expand in the Global South by showing that journalists are important players in protecting biodiversity.

Keywords: Biodiversity, Sindh, environmental communication, hybrid journalistic roles, Journalistic Role Theory, Global South, conservation.

INTRODUCTION

Biodiversity Decline in Sindh, Pakistan

Sindh, located southeast of Pakistan, has diverse ecosystems like the Indus River delta, wetlands, mangroves, and deserts that house endangered species like the Indus dolphin, houbara bustard, and fishing cat (Ghalib et al., 2018). Unfortunately, all these ecosystems are under threat more than ever from habitat loss, poaching, pollution, and freshwater depletion (Ogidi et al., 2022). Coastal mangroves are vanishing because of industrial effluents and urban encroachment (Sharma et al., 2021). while climate change acts as an additional threat to biodiversity and local livelihoods

(Reid et al., 2005). Despite his commitments to uphold biodiversity internationally, poor enforcement and inadequate public involvement have impeded conservation efforts in Pakistan (Afridi, 2025). In such a respect, journalists will play a vital role mediating environmental knowledge and shaping responses from the public and the policymakers (Jain et al., 2024).

Importance of Environmental Communication

Environmental communication acts as a bridge linking science, policy, and public comprehension while informing societies on how to interpret and act on ecological challenges. Journalists help simplify complicated ecological data into easy-to-understand tales that focus on local consequences and promote awareness in Sindh, where people don't know much about the environment and the government isn't very good (Jamil et al., 2024).

Role Theory and Ecology of Information Model

The study draws on journalistic role theory and the ecology of information model to comprehend how journalists perceive and enact their roles (Mellado, 2019). According to Oxford Research Encyclopaedia of Communication contains this information. The term "role theory" refers to professional identities that are frequently fluid and ever-changing in the Global South (Singleton, 2023). Some examples of these identities include "informer," "watchdog," and "adamant advocate." Journalism is positioned within a larger system that is moulded by scientific, institutional, and political factors, and the ecology of information places

journalists inside this system. Within the confines of the structural limits, these frameworks and environmental communication approaches of framing and agenda-setting work together to create a comprehensive and unified understanding of how journalists affect the discourse on biodiversity (Hunt, 2025).

Research Gap

There is a lack of research on how journalists in Pakistan, particularly those working in biodiversity-sensitive regions such as Sindh, comprehend and carry out their duties, despite the fact that environmental communication is gaining more and more popularity. Most studies look at cities or, at best, look at patterns in content. This is therefore observed that regional journalists who work on the front lines are seldom give coverage (Newell et al., 2018).

Research Objectives

- To assess journalists' perception of role in biodiversity and environmental reporting in Sindh.
- To identify the priority communicative functions.
- To examine contextual influences (institutional, political, ecological) upon the enactment of journalistic roles.
- To evaluate how journalists perceive their own contributions in raising public awareness and influencing biodiversity legislation.

Research Questions

RQ1. In what capacity journalists in Sindh see their role in covering biodiversity and environmental sustainability?

RQ2. How they prioritize the content of reporting?

RQ3. What constraints and opportunities affect the media-ecological context of their reporting in Sindh?

RQ4. How do journalists perceive their influence on public engagement with and policy on biodiversity?



Figure 1: Conceptual Consideration

Figure-1 The conceptual consideration underneath this study bridges an intersection where the journalist stands all alone in as far as biodiversity communication is concerned. The perceptions of roles - as educator, watchdog, advocate, and translator go a long way in determining how journalists look at environmental issues. In tandem with these perceptions of roles are contextual factors such as institutional support, political freedom, and public ecological literacy. All of these make it possible to mould what a given output by a journalist can do concerning increased public awareness, involvement by citizens, and responsiveness to government policy.

LITERATURE REVIEW

When it comes to environmental journalism, the goal is to make sense of extremely intricate ecological challenges, specifically biodiversity and climate change, in order to motivate people to take action (Khan, et al., 2024). The foundational functions that journalism fulfills are discussed in Weaver and Wilhoit's (1996) role theory, which was developed in 1996. In addition to being a watchdog, a contextual translator, a public mobilizer, and an impartial source of information, these responsibilities include being a source of information. A great number of factors, including personal views, societal norms, and the structure of institutions, are responsible for influencing each of these points of view. At the nexus of science, public policy, and public discourse is where environmental journalism operates. Journalists, particularly those working in the Global South, are said to be actively participating in media ecologies, according to researchers such as Schafer and Painter (2021). Their influence can be seen in the political,

institutional, and cultural realms as a result. It is especially true for journalists who operate in countries that are considered to be in the Global South. There is a lot more that journalists do in Sindh than just report the news. Sindh is a region that is ecologically fragile yet not well-represented. They also engage in lobbying, education, and the recruitment of individuals to participate in civic activities. To add insult to injury, Sindh is a region that does not receive sufficient attention.

According to the findings of a study conducted by Klemm and colleagues in 2019, the majority of journalists working in politically constrained regions such as Pakistan would be willing to accept hybrid roles that entail both lobbying and civic education. There is a heightened sense of urgency regarding hybridity in environmental reporting as a direct result of an increase in ecological challenges. Adaptable and overlapping solutions that are dictated by strategy are required, which is the reason for this.

As a result of funding constraints, freelance and regional reporters who report on investigations in the field have additional challenges. Hassan et al. (2024) state that journalists run the risk of being censored or punished for their reporting due to political sensitivity, which includes the poaching or land grab of elites. Links between biodiversity issues and people's day-to-day lives were extremely difficult to establish, particularly in rural areas such as those in Sindh, due to the lack of public participation and socio-economic priorities.

According to Van Witsen et al. (2018), environmental journalists assist the general public in comprehending scientific concepts by educating them

about them. In addition to this, they press for conservation and policy changes, as well as report on ecological infractions and regulatory failures (Mellado, 2023). (Schafer et al., 2021) Finally, they make technical facts not just understandable but also meaningful to individuals in their local communities. When journalists in under-resourced places like Sindh evaluate actual reporting against people's involvement and moral obligation, these jobs would frequently overlap. This is especially true in rural areas.

Journalists working in impoverished nations confront a great deal of resistance when covering topics connected to biodiversity. This is owing to political involvement, commercial financing of news coverage, and disinterest from editors (Nguyen et al., 2019). Therefore, coverage is less commonly published, even when there are major ecological dangers. According to Van Witsen et al. (2018), media professionals have limited or no access to scientific data and are unable to pursue formal training, which hinders their ability to evaluate and report on complicated environmental issues. There is a relatively low level of environmental coverage in Pakistan, and the majority of vernacular channels only provide a limited amount of information regarding biodiversity (Anwar et al., 1992).

There is a significant role that the media plays in encouraging people to take an interest in environmental concerns. This suggests that at the subnational level, the media may also have stronger accounts through local champions and environmental injustices. It frequently reacts to occurrences, which implies that this is the case. In order to shed light on

editorial choices and framing strategies, Meitei et al. (2023) argue that it is necessary to determine which ecological problems are prioritized for amplification and which are neglected. As a consequence of this, journalism emerges as a viable tool for the development of environmental discourses that are not only inclusive but also meaningful from a cultural perspective. While national media in English and Urdu reveal their respective coverage, regional and rural platforms-levels closer to actual ecological degradation-are resource-poor and do not easily access environmental data.

RESEARCH DESIGN

This research makes use of a qualitative interpretative approach within the constructivist framework in order to analyze the ways in which journalists in Sindh comprehend and carry out their tasks in the reporting of biodiversity. As a result of the design's emphasis on subjective experiences and communication aims, such as informing, advocating, and questioning, it is possible to gain substantial contextual insights that are closely tied to the conceptual framework of the study and research enquiries.

Sampling and Participants

15 journalists were selected using a method known as purposive sampling. These journalists were selected from the six divisional headquarters of Sindh, which are located in Karachi, Hyderabad, Sukkur, Larkana, Mirpurkhas, and Shaheed Benazirabad. It was determined that the journalists were chosen because of their close connection to issues

pertaining to biodiversity and their active participation in environmental journalism. Eligibility required experience of a minimum of 3 years and association with recognized media (Print & Electronic,) in Sindhi, Urdu, and English. This ensured consideration for both ecological and geographical diversity in the different reporting contexts of coastal, arid, and riverine regions.

Data Collection

Data were gathered through in-depth semi-structured interviewing done at an approximate interval of 45 to 70 minutes and between March and June of 2025. Thematic interview guides journalists' ideas of their roles: educative, advocacy, watchdog, and translator, as well as the institutional restraints they face, the professional motivations behind them, or what impact along the public they feel they have. The interviews were conducted in the participant's language of choice and on their deserved time, and recorded with the consent of the participants, and were guided to encourage long and reflective answers.

Data Analysis

Using the approach created by Braun et al. (2022), the interviews were written down, translated as needed, and then analyzed thematically. Deductive coding was based on theories about the function of journalists and environmental communication, whereas inductive codes came from the stories told by participants. This study employed hybrid methodologies

for coding. The NVivo tool made it easy to code and come up with new topics.

Ethical Considerations

It was ensured that every single piece of data was kept and handled in a manner that was extremely secure in accordance with the ethical standards of researchers. All of the participants were provided with information regarding the objectives of the study, they provided their written informed consent, and they agreed to maintain the confidentiality of their names by use the letter "J" in the coding.

RESULTS & FINDINGS

Journalists' Role Perceptions in Biodiversity Reporting

Table 1.

Journalists' Role Perceptions in Biodiversity Reporting

Role	Frequency	Description
Educator	12 of 15	Increasing public awareness in areas with low literacy rates can be accomplished by simplifying and explaining environmental science and biodiversity.

Watchdog	10 of 15	Under the threat of political repercussions, conduct investigations into environmental infractions and expose policy failures.
Advocate	9 of 15	Support initiatives to conserve the environment, bring attention to legal loopholes, and advocate for ecological justice.
Translator	11 of 15	The process of translating scientific facts into tales those are easily accessible and culturally meaningful.

Priority Communicative Functions

Table 2.

Communicative Functions in Biodiversity Reporting

Function	Sub-Functions	Description
Informing & educating	Explaining biodiversity; raising awareness	Aim to make biodiversity relatable and relevant, especially in low-literacy areas.
Investigating	Exposing illegal hunting, deforestation	Act as watchdogs uncovering violations despite political sensitivities.

Advocating	Pushing for reforms, restoration	Engage morally through journalism to promote conservation.
Amplifying Voices	Representing local communities	Highlight lived experiences and environmental impacts from marginalized groups.

Regional Biodiversity Threats and Journalistic Responses

Journalists are having a difficult time meeting their growing need to adapt the way they present the news to the environmental issues that are prevalent in their communities. For this purpose, they employ a wide variety of strategies, including lobbying, cooperation, and investigative journalism.

Table 3.

Regional Biodiversity Issues and Journalistic Strategies

Region	Key Issues	Journalistic Response	Description
Karachi	Mangrove degradation; coastal pollution	Investigative reporting with NGO support	Focus on industrial impacts on marine ecosystems.

Hyderabad	Pesticide overuse; habitat disruption	School campaigns; youth education	Promote long-term awareness through youth outreach.
Sukkur	Forest encroachment; river pollution	Community storytelling	Amplify local voices affected by biodiversity loss.
Larkana	Illegal hunting by elites	Investigative reporting	Face political risks exposing poaching.
Mirpurkhas	Desert degradation; groundwater pollution	Data journalism; literacy campaigns	Make science accessible to public and policymakers.
Shaheed Benazirabad	Wetland loss; bird decline	Field interviews; data access challenges	Document biodiversity loss but face data limitations.

Key Insight: In light of this result, it appears that reporting formats that are specified locally and contextually are compatible with particular ecological and political circumstances that are distinctive to a region.

Legal-Political Contradictions: Tilor (Houbara Bustard) Hunting Case

This overturning of the hunting prohibition demonstrated the contradiction that exists between laws protecting biodiversity and the interests of elites.

Table 4.

Journalistic Reflections on the Tilor Hunting Ban

Issue	Details	Description
Hunting Ban	Banned in 2015 by the Supreme Court	Seen as a milestone for biodiversity protection.
Reversal	Overturned due to Gulf state influence	Reflected compromise of legal principles under elite pressure.
Media Restrictions	Censorship of elite hunting coverage	Journalists face editorial suppression when challenging powerful interests.

Key Insight: The case of Tilor provides evidence of how political power overrides any legal or journalistic attempts to protect biodiversity.

Challenges Faced by Journalists

The inability of journalists to produce good coverage on biodiversity is hampered by a number of factors, including institutional neglect, economic difficulties, and technical limits.

Table 5.**Barriers in Biodiversity Journalism**

Category	Barriers	Description
Institutional	No environmental beats; editorial disinterest	Environmental stories not prioritized unless linked to crises.
Economic	Lack of funding; poor salaries	Reporters cannot afford to cover remote biodiversity issues.
Technical	Limited access to data; no training	Lack scientific knowledge and tools for in-depth reporting.

DISCUSSION

Journalists in Sindh are responsible for a wide variety of tasks, including teaching, monitoring events, advocating for individuals, and translating written material. However, they are also confronted with challenges such as the fact that institutions do not care about them, that they do not have sufficient funds, and that they do not have sufficient access to data. It is vitally crucial for public ecological literacy, policy discussions, and the protection of biodiversity that they participate in, despite the fact that their actions are extremely circumscribed. The reform of the media, the growth of capacity, and the collaboration between many sectors will be essential

in order to successfully disseminate information regarding the issues that the region faces in terms of biodiversity.

The purpose of this study was to conduct an in-depth analysis of the perspectives and roles that journalists in Sindh, Pakistan, play in relation to issues concerning biodiversity communication. By employing journalistic role theory and the ecology of information model, it becomes apparent that journalists working in ecologically vulnerable regions take on a variety of responsibilities, including those of educators, monitors, advocates, and translators, in order to bridge the gaps that exist between research, public comprehension, and policy.

Role Performance

- **Educator & Translator:**

Journalists will inform and educate the public about biodiversity loss and the sustainability of the environment. The journalists, in this low ecological education region, simplify complex environmental data and policies into culturally relevant narratives. J3 made the following statement: "We report so that people place value on what is being lost." As a result of this, it is abundantly obvious that the organization is committed to fostering a deeper comprehension of environmental concerns throughout the community. It is possible to compare the function of a journalist to that of a translator, in which the journalist acts as a mediator between the dissemination of scientific knowledge and the public

discourse. When it comes to regions in which people do not have a great reading ability, this position is of the biggest importance.

- **Watchdog Function:**

A substantial number of journalists take on the role of an investigator when it comes to environmental crimes such as illegal poaching, deforestation, or pollution. One example of such a crime is the destruction of forests. These transgressions are brought to light by them. The statement that J9 is claimed to have made, which is "I exposed illegal hunting in a so-called sanctuary," exemplifies how dangerous it can be for journalists to do their profession in settings where politics play a large role. Even when they are exposed to censorship and intimidation, reporters have the obligation of functioning as watchdogs, which is vital for ensuring that the governance of biodiversity is transparent and accountable. This role is essential for ensuring that biodiversity.

- **Advocacy and Moral Engagement:**

Journalists may also perceive themselves as moral agents. J11 illustrates the quantity of individuals who perceive journalism as a conduit for civic responsibility, stating, "Occasionally, I express my views through my reporting." This implies that journalism encompasses more than only conveying information. Furthermore, it entails assuming a more proactive role in advocating for environmental preservation, legislative change, and grassroots conservation initiatives. Their passion for ecological justice implies that the individual is an advocate.

- **Amplifying Local Voices:**

In fact, as **J5** stated, "Locals know the change, we just report their pain," emphasizes the journalists' role in advocating for marginalized societies, particularly those who suffer from environmental degradation firsthand. Thus, it comprises the community-centring approach which again reinforces relevance as it connects the two significant translation and advocacy roles, amplifying local knowledge to wider audiences and policymakers as well.

Regional and Structural Insights

The evidence of the study strongly states that biodiversity journalism in Sindh adapts the conditions that are found in different areas. While trying to get a counter issue in the mangrove degradation or coastal pollution, reporters in Karachi mostly depend on the support of NGOs. However, it is different in Hyderabad where it is reporting concerned with environmental education and youth campaigns under prevention in schools. Sukkur and Mirpurkhas reporters make their connection between biodiversity loss to livelihood correlating it with storytelling and data journalism to show the environmental effects on communities. However, Larkana is more dangerous in terms of watchdog journalism because wildlife crimes fall under powerful elites, exposing journalists to intimidation and political pressure. Meanwhile, reporters in Nawabshah collect field interviews to store information pertaining to biodiversity use

but are also challenged by a lack of already established reliable ecological references. In all these cases, these are unique approaches that reporters prefer rather than using the same methods used by other reporters in Sindh, tailoring their respective reporting practices in relation to localized ecological threats, fixed political constraints, and even available resources.

Institutional and Political Barriers

This study was able to establish that Sindhi journalists have a triple burden with great detriment to biodiversity reporting. Journalism neglected environmental tales due of institutional indifference. J1 states, "The environment is not 'breaking news'." J10 said, technical deficiencies still exist with poor training and lack of scientific resources, forcing journalists to use shallow or unreliable sources. According to J4, "We need more than Google to report biodiversity," there is an urgent need for capacity building and integration into expert networks. This argument highlights the urgency of the situation. As a result, the audience role of journalists is diminished not just in terms of journalism education but also as watchdogs and champions in biodiversity communication. This is because all of the overlapping difficulties also weaken the audience function.

Legal-Political Contradictions: The Case of Tilor

A case that illustrates how law, politics, and the freedom of the press may often come into conflict is the Tilor (houbara bustard) hunting case. At first, the restriction was regarded as a victory for conservation; but, when it was overturned by the courts, it demonstrated how pointless

environmental rules may be. With the words of J6, "Khawaja gave hope, and the next bench crushed it," When matters of this nature are covered by the media, it is common for them to be portrayed in a negative light when they are associated with feudal or foreign elites. "These stories are blocked at editorial desks," which is a quotation from J2, demonstrates how editorial gatekeeping prevents journalists from doing their duties as watchdogs and also prevents critical stories about biodiversity from being told.

Theoretical Implications

As to the journalists' role theory, journalists in Sindh do not adhere to the stringent professional norms that are prevalent in many Western countries. Instead, they move between professions based on the nature of the problem, the location, or the degree of institutional support that is available to them. It would appear that this hybridity represents a flexible and professional approach within the context of a constrained journalistic environment. The Ecology of Information Model is utilized in this study to provide an illustration of how journalists operate within a precarious information environment. This environment is characterized by power dynamics, institutional interests, and access to scientific discourse. In spite of these constraints, journalists make it possible for anyone to become involved and raise awareness about environmental issues through the reporting they do.

CONCLUSION

In a nutshell, wildlife journalists in Sindh are skilled in conducting interviews with those operating in hazardous environments where there are little resources. Ethical obligations, political limits, regional ecological issues, and a substantial duty to represent local populations in the context of environmental justice all play a part in shaping the multiple roles that journalists play as educators, watchdogs, activists, and interpreters.

Recommendations

According to the findings of the study, newsrooms should establish environmental beats, provide funding for field-based journalism, provide journalists with technical training and access to scientific data, and enhance collaboration among journalists, scientists, and non-governmental organizations (NGOs) in order to improve communication regarding biodiversity and more effectively influence policy. These kinds of modifications to the system will enable journalists to do more than merely cover stories; in addition, they will be essential in protecting Pakistan's biodiversity.

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