journalism and media

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Conceptualizing Sustainable Media: An Integrated Model for Environmental Journalism in Iran

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Abstract

The climate crisis and environmental degradation have intensified ecological, social, and economic challenges in Iran, increasing the need for environmental communication that supports public engagement, policy development, and long-term environmental governance. However, environmental reporting remains largely episodic and constrained by political, legal, organizational, and professional limitations. This study develops an empirically grounded conceptual model of sustainable media using a grounded theory approach based on interviews with Iranian journalists, media managers, documentary filmmakers, communication scholars, and environmental experts. The findings conceptualize sustainable media as a model comprising causal, contextual, intervening, strategic, and consequential components. The model proposes that sustainable media can be maintained through the interaction of institutional capacities, including legal protection, economic independence, organizational resilience, scientific expertise, and professional development, with communicative capacities such as agenda-setting, audience orientation, transparency, editorial independence, and collaboration among journalists, scientists, and environmental stakeholders. These capacities support continuous, context-sensitive, and solution-oriented environmental journalism. The study contributes to environmental communication scholarship by integrating perspectives on environmental communication, mediatization, and hybrid media systems into a unified framework in a West Asian context and offers practical insights for strengthening environmental journalism and long-term environmental governance in an ecologically vulnerable and politically constrained environment.

Keywords: climate change communication; environmental Journalism; Iran; media strategies; sustainable media; environmental awareness

Check for updates

Academic Editor: Patrick D. Murphy

Received: 22 July 2026
Revised: 25 September 2026
Accepted: 30 September 2026
Published: 5 October 2026

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1. Introduction

Environmental crises are increasingly recognized not only as ecological challenges but also as communicative challenges. Public understanding of the climate crisis, water scarcity, biodiversity loss, and environmental degradation depends not simply on scientific evidence or environmental policy but also on how environmental problems become visible, are framed, and remain present within public discourse (Garde-Hansen, 2021). News media play a central role in this process by shaping public attention, constructing environmental meanings, and influencing which responses and forms of environmental action gain legitimacy. Yet environmental communication is often shaped by competing

political, economic, and institutional priorities that can limit sustained public engagement with ecological problems (Luedecke & Boykoff, 2017; Anderson, 2017; Chen et al., 2019). As Murphy (2017) asserts, contemporary media simultaneously cultivate environmental awareness while reproducing commercial, political, and developmental logics that may undermine environmental sustainability. This tension suggests that sustainable environmental communication depends not only on the environmental orientation of media content but also on the institutional, professional, legal, and managerial capacities that enable media organizations to produce credible, continuous, and socially responsible environmental journalism. Sustainable media, therefore, cannot be understood solely in terms of what media communicate; it also depends on the organizational capacities that make sustained environmental communication possible. This raises an important question: how can news media organizations develop the institutional and communicative capacities required to support long-term environmental journalism and environmental sustainability? Addressing this question is particularly important in politically constrained media systems such as Iran, where environmental journalism faces significant legal, organizational, and professional constraints.

Environmental degradation has become one of Iran's most pressing societal challenges. Increasing water scarcity, prolonged droughts, ecosystem degradation, biodiversity loss, dust storms, and climate-related pressures have intensified concerns about the long-term integrity of the country's ecological systems (Fallah et al., 2017; Yazdanpanah et al., 2013; Shahi, 2019; Madani et al., 2016). However, these environmental challenges unfold within a media landscape characterized by political regulation, economic pressures, institutional constraints, and limited journalistic autonomy. Previous studies indicate that environmental issues in Iran are frequently communicated through episodic reporting, technical explanations, and individualized narratives of responsibility, while broader questions of environmental governance, institutional accountability, and ecological justice receive comparatively limited attention (Ayandeban, 2017; M. L. Khaneiki et al., 2024; H. Khaneiki & Mousavi, 2019; Astaneh et al., 2019; Amiraslani & Dragovich, 2021; Rahmanian & Afkhami, 2021). Consequently, public engagement with environmental issues often remains fragmented and short-lived despite the growing severity of environmental problems.

Existing studies have substantially advanced understanding of environmental communication by demonstrating how media shape the visibility, framing, and circulation of environmental issues across both traditional and digital communication environments. Research on mediatization explains how media increasingly structure public communication and influence the visibility of environmental problems (Couldry & Hepp, 2017), while studies of environmental communication show how media framing shapes public interpretations of environmental responsibility, risk, and governance (Nisbet & Newman, 2015; Schäfer & Schlichting, 2018; Goodman et al., 2022). Research on hybrid media systems further demonstrates that environmental narratives emerge through interactions among legacy media, digital platforms, journalists, activists, and audiences rather than through traditional news institutions alone (Chadwick, 2017). Collectively, these perspectives explain how environmental meanings are constructed and circulated. However, they provide comparatively limited explanation of the institutional capacities through which media organizations sustain independent, ethical, and long-term environmental journalism under conditions of political and organizational constraint.

Building on this limitation, the present study conceptualizes sustainable media through the relationship between the institutional conditions required to sustain environmental journalism and its communicative contribution to environmental sustainability. This perspective shifts attention from environmental communication as a product of media content toward the conditions that enable such communication to be sustained over

time. Against this background, this study asks: How can sustainable media be conceptualized within the institutional, political, and professional realities of Iran in ways that strengthen both the institutional capacity of media organizations and their communicative capacity to support environmental sustainability? To address this question, the study employs Grounded Theory based on interviews with Iranian journalists, media managers, documentary filmmakers, environmental experts, and communication scholars. Rather than testing an existing theoretical framework, it develops an empirically grounded conceptual model explaining how organizational structures, professional practices, media management, and communication processes interact to enable—or constrain—sustainable environmental journalism.

The resulting conceptual model provides a framework for understanding how sustainable media develops through the interaction of institutional and communicative capacities under conditions of political, organizational, and environmental constraints. Beyond the Iranian context, the framework offers a basis for future comparative research while providing practical guidance for media organizations, journalism educators, environmental institutions, and policymakers seeking to strengthen long-term environmental journalism and environmental communication.

2. Research Context: The Iranian Media Environment

Iran provides a distinctive context for examining sustainable media because environmental journalism operates within one of the most centralized media systems in West Asia. National radio and television broadcasting is monopolized by the Islamic Republic of Iran Broadcasting (IRIB), which operates 17 national television channels, 30 provincial channels broadcasting in different local languages, and nine international television channels broadcasting in eight foreign languages (Zanconato & Sabahi, 2019). In accordance with the Iranian Constitution, private radio and television broadcasting is prohibited, and the head of IRIB is appointed directly by the Supreme Leader for a five-year term (Talebian, 2020). Alongside state broadcasting, Iran has 48 national news agencies and more than 5000 local news agencies, although many operate within political, institutional, or governmental networks that influence editorial practices (Talebian, 2020). Within this centralized and highly regulated media system, environmental journalists face additional political, legal, and organizational constraints, together with limited institutional support and insufficient environmental expertise, all of which shape the practice of environmental journalism in Iran (Mahoozi, 2025). Over the past two decades, digital media have substantially expanded the country's communication landscape. Platforms such as Telegram and Instagram have become important sources of news, public discussion, and everyday communication, offering alternative channels alongside state broadcasting. At the same time, online communication has developed within a highly regulated environment characterized by platform filtering, internet restrictions, and periodic disruptions of digital access (Zanconato & Sabahi, 2019; Sohrabi, 2021). The result is a hybrid media environment in which centralized state broadcasting coexists with digitally mediated communication under continuing political and regulatory control. These characteristics make Iran an important case for studying sustainable media. Environmental journalism develops within a communication system where institutional regulation, political oversight, and limited editorial autonomy shape both journalistic practice and public communication. Understanding this media environment is therefore essential for interpreting the institutional challenges identified in this study and for explaining how sustainable media can be conceptualized under conditions of political and organizational constraint.

3. Conceptual Foundation

The relationship between media and environmental sustainability involves interconnected communicative, journalistic, and institutional dimensions. Environmental communication provides the broadest framework for understanding how environmental issues and human relationships with the natural world are constructed, communicated, and negotiated (Pezzullo & Cox, 2025; Hansen, 2018). Within this field, sustainability communication further emphasizes the role of communication in shaping understandings of sustainability and possibilities for environmental and social change (Weder & Dobrić, 2021). Environmental journalism locates these processes within professional journalistic practice, focusing specifically on reporting and communicating issues concerning the relationship between human societies and the natural environment (Neuzil et al., 2018). Together, these perspectives establish the communicative and professional foundations of the present study.

Building on these perspectives, this study asks a further question: what conditions allow environmental journalism and its public functions to endure over time? Scholarship on sustainable journalism has similarly emphasized the need to consider the economic, social, and environmental dimensions of journalism together, linking the long-term viability of the field with its broader societal and ecological responsibilities (Berglez et al., 2017). The present study develops this connection through two interrelated dimensions of sustainable media. The first concerns the institutional capacity to maintain journalistic practice, including its organizational, managerial, professional, and economic foundations. The second concerns the capacity to maintain credible environmental communication, public awareness, and continued engagement with ecological issues.

These two dimensions connect processes operating at different levels, from environmental communication and journalistic practice to media organizations and the wider environments in which they operate. Their interpretation therefore draws on complementary theoretical perspectives. Environmental communication provides the primary lens for understanding the communicative processes identified in the model. Mediatization situates media practice within broader social processes through which issues acquire visibility and public relevance (Couldry & Hepp, 2017), while hybrid media systems theory draws attention to the interactions among legacy media, digital platforms, journalists, institutions, and networked actors through which environmental information circulates (Chadwick, 2017). Perspectives on the sustainability of journalism and media institutions further inform the organizational dimension of the model. The distinctive contribution of the proposed model lies in bringing these levels into a common analytical configuration and specifying the relationships among them identified within the Iranian context. These perspectives provide interpretive lenses for the empirically developed model, while the analytical categories themselves emerged through the grounded theory analysis.

Finally, a distinction is necessary between green media and sustainable media. Green media was used during the interviews as an accessible term referring broadly to media concerned with environmental issues and protection, particularly given participants' diverse professional and disciplinary backgrounds. It therefore served as an interview prompt rather than the final analytical concept. As the grounded theory analysis developed, the emerging categories extended beyond environmentally oriented media content to encompass the organizational, managerial, professional, legal, and communicative conditions associated with its continuity. Sustainable media was consequently adopted as the central analytical concept because it better captured the relationship between sustaining journalistic practice and sustaining environmental communication.

4. Methodology

This study adopted a grounded theory approach informed by the Straussian tradition of Strauss and Corbin (1998). Grounded theory was considered appropriate for the purposes of this study because the research sought not only to identify factors associated with environmental media practices in Iran but also to develop an empirically grounded conceptual model explaining how these factors are related. Data were collected through semi-structured, open-ended interviews. Consistent with the Straussian approach, data collection and analysis proceeded iteratively, and the analytical process involved open, axial, and selective coding. Two principles of grounded theory were particularly important to the research process: constant comparison and theoretical sampling (Suddaby, 2006). Rather than treating data collection and analysis as separate sequential stages, interview data were progressively analyzed as data collection continued. Emerging concepts and categories were compared within and across interviews and used to refine the developing analytical framework. This iterative process continued throughout data collection until the categories and their relationships were sufficiently developed and theoretical saturation was reached.

Participants were recruited using purposive and snowball sampling, with attention to the relevance of their knowledge and experience to the developing analysis. Initial participants were selected based on their involvement in environmental, media, communication, or academic activities relevant to environmental issues and media practices in Iran. At the end of each interview, participants were invited to recommend other individuals with relevant expertise or professional experience. Data collection and analysis proceeded concurrently. As the analysis developed, emerging concepts and categories informed subsequent recruitment and enabled the researcher to incorporate perspectives from different professional and academic positions relevant to the developing categories. In this way, purposive and snowball recruitment operated within the iterative logic of theoretical sampling characteristic of grounded theory. The final sample consisted of 20 participants from diverse environmental, media, and academic backgrounds across several Iranian cities. Participants included individuals with substantial professional experience as well as students in environment- and media-related fields. Table 1 presents the participants' professional profiles, geographical distribution, and relevant experience.

Table 1. Characteristics and distribution of study participants.

Professional Domain	Participant Profiles	Geographic Distribution	Relevant Experience	N
Environmental	Environmental activists, educators, employees of environmental organizations	Tabriz, Tehran, Isfahan, Gorgan, Bandar Anzali	≈10–30 years	8
Media and communication	Environmental journalists, documentary filmmakers, media managers	Tehran, Tabriz, Chabahar	≈7–20 years	6
Academic	University professors and undergraduate/postgraduate students in media-related and environmental fields	Tehran, Rasht, Tabriz, Arak, Yazd, Urmia	Professors: ≈15–25 years Students: ≈3–9 years	6

Note: Participants with experience across multiple domains were classified according to the primary role most relevant to their participation in the study.

Interviews lasted approximately 45 min on average and followed a semi-structured, open-ended format. The interview guide addressed participants' experiences and percep-

tions of environmental issues, media and communication practices, and the conditions influencing sustainable media in Iran. The complete semi-structured interview guide is provided in Appendix A, together with a clarification of the terminology used during the interviews. The open-ended format allowed participants to elaborate on their experiences and enabled the researcher to pursue relevant issues that emerged during the interviews. Before each interview, participants were informed about the purpose of the study and the voluntary nature of their participation. Informed consent was obtained verbally or in writing prior to participation. Participants were also assured that the information they provided would be treated confidentially and used solely for research purposes.

Interview data were analyzed using MAXQDA 2020 following the open, axial, and selective coding procedures of the Straussian grounded theory approach. Open coding generated 293 initial codes, which were continuously compared within and across interviews to identify similarities, differences, and recurring patterns. Conceptually related codes were then grouped into subcategories and subsequently refined into broader analytical categories. During axial coding, relationships among the categories were examined and organized according to the emerging analytical framework, including causal conditions, contextual conditions, intervening conditions, strategies, and perceived consequences. Selective coding then integrated these categories around the central phenomenon. Sustainable media emerged as the core category because it provided an integrative representation of the relationships identified across the major categories. The final conceptual model was developed by systematically relating the core category to the other analytical categories. To make this progression transparent, Table 2 provides illustrative examples showing the analytical pathway from verbatim interview excerpts to initial codes, subcategories, and final categories. The broader coding structure underlying the five components of the model is provided in the Supplementary Materials (Tables S1–S5).

Table 2. Illustrative examples of the analytical progression from interview data to the final conceptual model.

Verbatim Interview Excerpt	Open Coding: Initial Code	Axial Coding: Subcategory	Model Component
"The main reason for the need for media that supports environmental sustainability is to educate its audiences."	Public education for environmental awareness	Media requirements	Causal conditions
"We live in a world where environmental issues have received global attention for about the last decades."	Strengthening the understanding of climate change as a global problem	Globalization	Contextual conditions
"The media needs the support of judicial authorities when addressing issues involving conflicting interests and threats to the media."	Access to judicial support mechanisms	Political and legal factors	Intervening conditions
"Media organizations should engage in capacity building and empowerment of journalists and media teams."	Professional empowerment of journalists and media teams	Human resource empowerment	Strategies
"Green media, without taking a particular side, can present social realities alongside expert analysis. It should not focus only on rumors or what the public prefers, but should address such claims and examine them through expert discussion so that public literacy and awareness can increase."	Increasing audience media literacy	Sustainable prevention	Consequences

As data collection progressed, material from each interview was compared with the existing codes, subcategories, and categories. Theoretical saturation was considered to have been reached when additional interview data no longer generated substantively new categories or properties relevant to the developing framework and instead primarily reinforced concepts and relationships already identified in the analysis. On this basis, data collection concluded after 20 interviews.

The trustworthiness of the qualitative analysis was assessed in accordance with the criteria proposed by Lincoln and Guba (1985). To enhance the credibility of the findings, the emerging findings were shared with four experts who had participated in the study, allowing them to assess their appropriateness in relation to the issues addressed in the interviews. In addition, the interview material, codes, and developing categories were reviewed by the co-authors and an academic expert to examine the consistency between the empirical material and its analytical interpretation. These procedures provided opportunities to identify inconsistencies, reconsider interpretations, and refine the developing categories and their relationships.

5. Findings

The analysis of the 20 interviews generated 293 initial codes, which were progressively organized into five analytical components: causal conditions, contextual conditions, intervening conditions, strategies, and consequences. Sustainable media emerged as the central phenomenon around which these components were organized following the Straussian paradigm model. Causal conditions represent the circumstances associated with the emergence of and need for sustainable media. Contextual conditions describe the social, cultural, legal, and media setting in which the phenomenon occurs and within which relevant strategies are developed. Intervening conditions refer to broader facilitating or constraining factors that may shape the implementation of these strategies. Strategies represent the actions and responses adopted in relation to the central phenomenon and its surrounding conditions, while consequences refer to the outcomes associated with the implementation of these strategies. The following sections examine each component in detail.

5.1. Why Sustainable Media Becomes Necessary?

The analysis identified three interrelated causal conditions associated with the emergence of sustainable media in Iran: environmental risks, social demands, and media requirements. Environmental risks constitute the first of these conditions, reflecting the growing intensity and visibility of environmental challenges. Climate change, water scarcity, air pollution, ecological degradation, biodiversity loss, and other environmental crises increasingly affect everyday life, public health, economic activities, and environmental governance. As these pressures intensify, so does the need for communication that can enhance public understanding of environmental change, foster environmental responsibility through relevant and accessible content, and encourage informed responses to its longer-term implications.

These environmental pressures are accompanied by social demands for accessible, reliable, and scientifically grounded information. Citizens, environmental activists, civil society organizations, and other social actors increasingly require communication that supports informed participation and institutional accountability, extending its role beyond awareness-raising toward sustained public engagement with environmental issues.

These demands, however, are not always matched by prevailing reporting practices. Environmental coverage is often episodic and crisis-oriented, leaving the structural causes and long-term implications of environmental problems underexplored. An environmen-

tal activist involved in environmental education and the promotion of environmental responsibility described the implications of this discontinuity:

> *"Without comprehensive and sustained reporting, environmental crises appear distant, affecting 'other countries or the future,' rather than Iran itself."*

This observation points to the third causal condition: media requirements. The need for sustainable media emerges from the gap between escalating environmental and social demands and the capacity of prevailing reporting practices to address them continuously and meaningfully. Within the model, sustainable media responds to this gap through continuous, evidence-based, and socially relevant environmental journalism.

5.2. Contextual Conditions Shaping Sustainable Media

The analysis identified four contextual dimensions that characterize the environment in which sustainable media takes shape and its strategies are situated: globalization, media and communication contexts, socio-cultural frameworks, and legal and governmental contexts.

Globalization situates environmental journalism within an increasingly interconnected ecological and communicative environment. Many environmental challenges extend beyond individual communities and national boundaries. Climate change, transboundary dust storms, and pressures on shared water resources, for example, connect local environmental experiences to wider regional and global processes. This transboundary character places environmental issues within a framework of shared ecological concerns and collective responsibility, while requiring environmental communication to relate local realities to developments beyond national borders. The communicative environment has similarly expanded beyond a media system dominated by traditional outlets. Digital and social platforms now coexist with television, print, and other established media, creating a dispersed, multi-platform landscape in which environmental information is produced and circulated. A digital media manager described this changing environment:

> *"Environmental media should not be limited to a single platform. They need to make use of the capacities of different media—from social networks and digital and video platforms to television and print—to reach diverse audiences. Each platform can draw on its particular strengths to present environmental content in forms and styles suited to its audiences."*

Within this diversified landscape, the media and communication context in Iran is marked by a gap between the expanding possibilities of a multi-platform environment and the capacities available for environmental journalism. The analysis points to a need for stronger connections between local, national, and international environmental concerns, greater adaptation of content to different audiences, and more accessible forms of communication. It also reveals limitations in interdisciplinary expertise, creative reporting practices, transparency, and the integration of emerging technologies into environmental journalism. These features characterize a media environment in which the technological possibilities for environmental communication have expanded, while the professional and communicative capacities needed to make effective use of them remain uneven.

The socio-cultural context is characterized by limited and fragmented integration of environmental concerns into everyday social and cultural life. The analysis points to a need for more systematic attention to cultural values, social norms, and everyday practices, together with sustained environmental education from an early age. Dialogue, critical thinking, public participation, and social justice also emerged as areas requiring greater integration. This context therefore reflects a broader gap between environmental communication and the cultural and social processes through which environmental responsibility can become embedded in everyday life.

Legal and governmental contexts describe the institutional setting surrounding both environmental governance and journalistic practice. This setting is marked by fragmented

environmental legislation, uneven regulatory enforcement, limited legal safeguards for journalists, and political-economic influence. A forestry expert involved in environmental conservation illustrated how gaps in environmental regulation can become particularly consequential when media attention is directed toward ecologically sensitive areas:

> *"Tourism documentaries and media coverage that introduce pristine natural areas—without sufficient educational framing and in the absence of protective environmental regulations—can unintentionally turn these regions into targets for non-local visitors and investors, leading to villa construction and environmental degradation."*

The account highlights a gap between media visibility and the regulatory capacity to protect the environments brought to public attention. The institutional setting of journalism is also shaped by political and commercial interests, particularly where environmental reporting challenges economically powerful actors. A media manager described this dimension through coverage of the environmental and health risks associated with the Sungun copper mine:

> *"When the media reported on the environmental and health risks of the Sungun copper mine, the investor tried to silence further coverage by holding press events and offering money to journalists—essentially using informal bribes to stop investigative reporting."*

5.3. Conditions Shaping the Implementation of Sustainable Media Strategies

Whereas contextual conditions define the broader setting in which sustainable media operates, intervening conditions more directly shape the implementation of its strategies by enabling or constraining journalistic action. The analysis identified four interrelated dimensions: political and legal, human and social, environmental, and managerial and organizational.

Political and legal protection emerged as particularly important to journalists' ability to investigate sensitive environmental issues and maintain critical reporting. Legal uncertainty, limited institutional support, and concerns over personal security can discourage sustained scrutiny and increase the professional risks of environmental journalism. An environmental journalist described the consequences of inadequate legal protection:

> *"A photographer was detained for three days for covering the drying of a protected international wetland. We need whistleblower protections to safeguard environmental journalists. Currently, we are often arrested and imprisoned under national security charges. The Constitution and the Press Law must guarantee our rights."*

Human and social factors capture the relationships between media organizations and the wider network of actors involved in environmental communication. Audience engagement and two-way communication strengthen connections between media and local communities, while access to diverse and reliable information sources supports more informed environmental reporting. This dimension also includes social responsibility for the use and protection of natural resources and the contribution of non-governmental organizations to environmental communication. Another important element is institutional openness, particularly the willingness of authorities to engage with environmental reporting and respond constructively to criticism. These relationships create a broader social environment in which environmental journalism can develop and maintain public engagement with environmental issues.

Environmental factors extend this perspective to the structures and conditions surrounding environmental issues themselves. Working groups involving environmental activists and subject-matter experts bring relevant knowledge and experience into environmental communication, while sustainable development offices within environmental institutions can help maintain attention to ecological concerns. The analysis also high-

lighted the growing scale and complexity of environmental crises and their implications for wider social conditions. Recognizing these connections is important for presenting environmental problems as broader societal concerns and strengthening public awareness of environmental degradation and climate change.

Managerial and organizational factors concern the internal capacities of media organizations to sustain environmental journalism over time. Editorial independence, financial stability, professional management, and organizational expertise affect whether media organizations can allocate resources to specialized and investigative reporting, maintain coverage over time, and withstand political or commercial pressure. An environmental academic illustrated this concern by pointing to the limited depth and continuity of environmental reporting:

> *"Investigative reporting has become a neglected aspect of journalism. Media outlets often cover environmental issues only reactively, without historical context or structural analysis. For instance, they fail to investigate whether national migration plans align with regional climate challenges."*

The observation points to a structural tension between the temporal demands of environmental issues and the organizational logic of routine news production. Environmental change often unfolds through cumulative and interconnected processes whose significance becomes visible over extended periods, while sustained reporting on these processes requires media organizations to commit time, professional expertise, and editorial resources beyond immediate news cycles. Financial stability provides greater capacity to maintain specialized journalists and invest in reporting whose value may not be immediately visible or commercially rewarding; editorial independence allows such coverage to continue when it conflicts with political or commercial interests; and professional management can preserve continuity by integrating environmental issues into longer-term editorial planning rather than treating them as occasional news events. Together, these conditions contribute to organizational resilience—the capacity of a media organization to maintain environmental journalism despite short-term financial, political, and news-cycle pressures. In this sense, resilience affects not only whether environmental issues remain visible over time, but also whether journalists have the institutional space to trace their development, investigate underlying causes, and connect them with broader social and structural processes.

5.4. Strategic Approaches to Sustainable Media

While the preceding sections establish the conditions surrounding sustainable media, the strategic dimension concerns the actions and practices through which the central phenomenon is pursued. Five interrelated strategies emerged from the analysis: human resource development, media discourse, agenda-setting, audience orientation, and transparency and media independence. These strategies operate at different points in journalistic practice, from developing professional capacity to shaping environmental narratives, defining media priorities, engaging different publics, and safeguarding the credibility and independence of environmental information.

Human resource development emerged as a strategy for building the professional capabilities required for environmental journalism. Rather than relying on journalists to acquire environmental knowledge informally, this involves systematic environmental education, specialized journalism training, and interdisciplinary learning that brings journalistic expertise into closer contact with environmental science and related social and policy fields. Such investment broadens the knowledge and skills available within media organizations and strengthens their capacity to deal with environmental issues whose complexity exceeds the boundaries of generalist reporting.

Environmental media discourse represents a different strategic dimension, concerned with how environmental responsibility is constructed and communicated. The analysis indicates that environmental narratives can become counterproductive when responsibility is repeatedly displaced onto others—whether governments, citizens, institutions, or external actors—leaving environmental action to be understood as primarily dependent on someone else. A more constructive discourse instead emphasizes participation, shared responsibility, and cooperation while recognizing that different social and institutional actors do not necessarily have equal capacities or obligations. Developing environmental media discourse therefore involves making the roles and relationships of different actors more visible and constructing environmental problems as matters of shared, though differentiated, responsibility rather than as problems whose solutions always lie elsewhere.

Agenda-setting addresses a related strategic question: what aspects of environmental problems are brought into sustained public attention. Rather than concentrating the media agenda on the recurrence of crises themselves, environmental journalism can extend attention to the processes, consequences, and possible responses surrounding them. This includes the connections of environmental change with livelihoods, migration, public health, social relations, cultural practices, economic activity, and political decision-making. An environmental expert highlighted the limitations of an agenda dominated by intermittent crisis coverage and problem identification:

> *"Persian-language broadcasters based outside Iran usually report environmental crises in Iran by constantly comparing them with other countries, while domestic media also tend to address these crises only sporadically. In both cases, the focus is mainly on highlighting problems rather than offering solutions or practical guidance for different segments of society. This kind of coverage does not empower people; instead, it creates feelings of frustration, stress, and despair among audiences."*

Addressing these limitations requires diversifying the environmental agenda to encompass the social, cultural, economic, political, and ecological dimensions of environmental change, alongside possible responses and pathways for action. By generating multiple angles through which environmental issues can become newsworthy and relevant to different audiences, this strategy reduces dependence on crises as the principal trigger for environmental coverage.

Audience orientation concerns how environmental communication is differentiated in relation to the publics it seeks to engage. Rather than approaching the public as a homogeneous audience, this strategy recognizes differences in age, environmental knowledge, social experience, cultural context, and communication practices. It includes developing forms of environmental education appropriate to younger audiences, adapting language and formats to different social groups, and creating opportunities for interaction among citizens, experts, policymakers, and other relevant actors. Audience orientation therefore shifts environmental communication from the generalized transmission of information toward forms of engagement designed around the different ways in which environmental issues are encountered and understood across society.

Transparency addresses the credibility of environmental information within an increasingly fragmented information environment. Scientific evidence, official statements, journalistic accounts, and popular narratives circulating through social media may coexist and compete for public attention, making the basis of environmental claims difficult to assess. An environmental activist involved in wetland and protected-area conservation illustrated the potential consequences when widely circulated environmental messages become detached from ecological knowledge:

> *"Social networks have blurred the line between official and unofficial sources of environmental information. Influencers or celebrities, such as actors or public figures, often*

promote behaviors like showing kindness to wild animals. While well-intentioned, these actions can disrupt local ecosystems by creating a dependency of wildlife on humans. Some international Persian-language broadcasters also amplify these behaviors, which further confuse the public and create contradictions between accurate scientific information and popular but ecologically harmful practices."

Transparency operates strategically through fact-checking, source verification, and critical evaluation of environmental information. Making the origins and evidentiary basis of environmental claims visible allows journalists to distinguish scientifically grounded information from unsupported or misleading narratives. It also supports critical engagement with competing claims rather than their unexamined circulation, strengthening the credibility of environmental communication in a fragmented information environment.

Media independence emerged as a strategy for reducing the financial, political, and informational dependencies of environmental media. This involves developing diversified and sustainable sources of revenue, strengthening expertise in media economics, and improving the financial security of journalists, while reducing dependence on political interests that may shape media priorities. Collaboration with environmental organizations, scientific experts, and sustainability offices can further broaden access to specialized knowledge and information. Political pressures, institutional dependencies, and competing media priorities can otherwise restrict which environmental issues are addressed and how fully they are reported, with censorship representing one manifestation of these constraints. An environmental activist working on environmental education and youth empowerment described how such restrictions can influence audiences' information choices:

"People are eager to hear the news in the field of environment, but because we face the phenomenon of censorship in the domestic media, they tend to the media that provides more complete news. These media include Persian-language foreign networks. More data will satisfy the audience; however, unprofessional data in the news of these media will cause false culture and serious damage to the environment."

5.5. Consequences of Sustainable Media Strategies

The strategies identified in the preceding section were associated with four interrelated consequences: restoration and reconstruction, coping and adaptation, sustainable prevention, and forecasting. Together, they indicate what sustainable media can contribute when its professional, communicative, and institutional strategies are put into practice: rebuilding capacities for collective environmental action, strengthening adaptive capacity, supporting ecological risk prevention, and developing greater preparedness for emerging environmental challenges.

Restoration and reconstruction refer to rebuilding the social and communicative capacities required for collective environmental action. The findings suggest that sustainable media can contribute to this process by creating shared knowledge, strengthening environmental responsibility, and establishing the cultural and social conditions through which large-scale environmental initiatives can gain public participation. An environmental activist working in environmental education and media literacy drew on an earlier national experience to illustrate how coordinated communication can provide such a foundation:

"At the time when the government decided to develop gas energy for domestic use, there was extensive media coverage. The media played a big role in this and did its mission well. TV shows, TV commercials, radio, and newspapers worked together in this direction. Continuous information, education, and cultural promotion were provided, and the benefits of gas energy were introduced. The media prepared citizens to use this energy, which was being developed and prepared for the infrastructure of home use."

Although referring to an earlier media environment, the example was presented as a model for future environmental transitions. Its significance lies in the coordinated mobilization of the communication capacities available at the time: different media, formats, and genres contributed simultaneously to public education, cultural preparation, and the social acceptance required for a nationwide change in everyday practice. Applied to contemporary environmental challenges, this example illustrates how coordinated media strategies may contribute to rebuilding the social foundations for collective environmental action.

Coping and adaptation concern the development of adaptive capacity in response to environmental pressures that are already unfolding. Access to timely, credible, and locally relevant information can support individuals, communities, and institutions in assessing changing conditions, adjusting practices, and making informed decisions under ecological uncertainty. The consequence is greater societal resilience: the capacity to accommodate environmental change while reducing vulnerability in everyday and institutional life.

Sustainable prevention concerns risk reduction before ecological pressures translate into avoidable or irreversible harm. It represents a potential consequence of applying sustainable media strategies—particularly scientific verification, transparency, and the translation of specialist knowledge into publicly relevant communication. An environmental activist involved in wetland conservation highlighted the need for this preventive role by describing a situation in which media advocacy may itself encourage ecologically inappropriate action:

> *"Sometimes, some media outlets make demands that must be seen as true or not. The media, for example, considers that wetland migratory birds are malnourished, while experts believe that manipulating nature and feeding wild birds could have irreparable consequences. This is where green media, with its unbiased expert analysis, can inform the public."*

The concern raised here identifies the point at which sustainable prevention can operate. When environmental claims are professionally verified and scientific knowledge is translated into practical guidance, public concern can be directed toward lower-impact and ecologically responsible practices rather than actions based primarily on good intentions. Within the model, such informed behavioral shifts are understood as contributing to the reduction in human-induced pressures and the prevention of avoidable ecological damage.

Forecasting represents the anticipatory capacity to recognize emerging risks, opportunities, and information needs before they become immediate concerns. The findings connect this consequence with horizon scanning for emerging ecological challenges, communicating sustainable technologies and green investment opportunities, anticipating the information needs of different publics, and relating present communication to longer-term socio-ecological trajectories. Forecasting thus extends the contribution of sustainable media from responding to known risks toward improving societal preparedness for environmental futures.

Figure 1 integrates the causal, contextual, intervening, strategic, and consequential dimensions identified in the analysis around sustainable media as the central phenomenon, illustrating their relationships within the Straussian paradigm model.

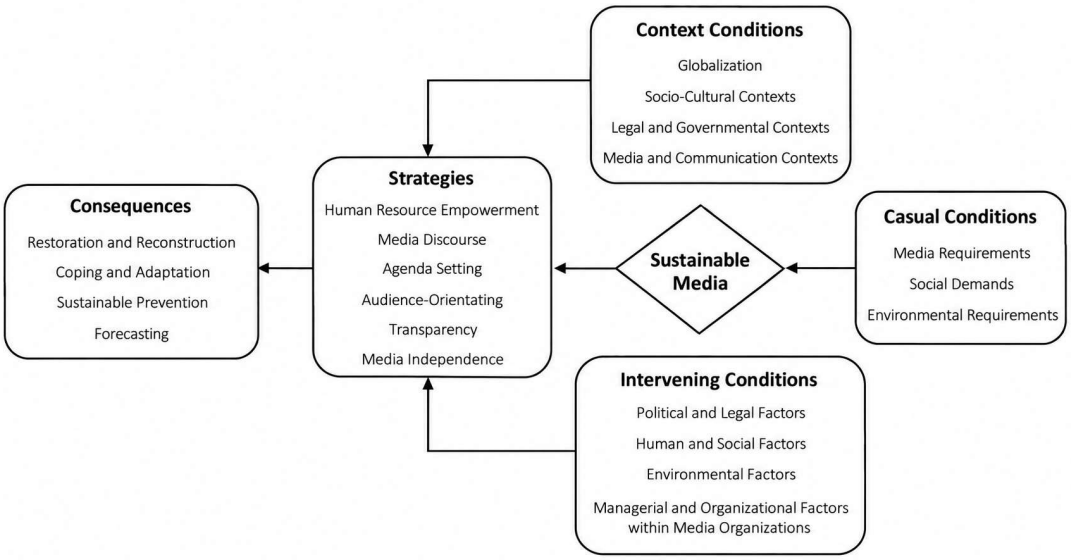


Figure 1. Grounded Theory Model of Sustainable Media in Iran.

6. Discussion

The principal theoretical contribution of this study lies in bringing into a common analytical model two dimensions of sustainability that have often been addressed through relatively distinct strands of media scholarship: the sustainability of media institutions and the contribution of journalism and communication to environmental sustainability. The grounded theory analysis positions these dimensions as interdependent rather than parallel. Institutional sustainability concerns the organizational capacity to maintain journalism over time, while communicative sustainability concerns the capacity to sustain credible, socially relevant, and environmentally meaningful communication. The theoretical significance of the model therefore lies less in the individual components it identifies than in the relationships it specifies among institutional sustainability, communicative capacity, and the wider conditions in which environmental journalism operates.

This relational perspective creates a closer conceptual link between environmental communication and media sustainability. A substantial body of scholarship has examined how ecological concerns are framed, interpreted, contested, and brought into public debate through processes such as agenda-setting, audience engagement, evidence-informed reporting, and participation (Anderson, 2017; Nisbet & Newman, 2015; Schäfer & Schlichting, 2018; Goodman et al., 2022; Pezzullo & Cox, 2025). The Iranian data situate these established practices within a broader institutional configuration, highlighting their connections with professional security, financial viability, managerial competence, legal protection, and organizational resilience. This relationship also works in the opposite direction: the continuity of a media organization does not by itself amount to sustainable media unless it can support journalism that remains credible, publicly relevant, and responsive to environmental concerns over time. The proposed framework therefore brings two analytically distinct forms of sustainability into an interdependent relationship: the institutional conditions that enable journalism to endure and the journalistic functions through which environmental concerns remain meaningfully represented in public life. This interpretation also resonates with broader concerns in the literature regarding the potentially contradictory relationship between media and environmental sustainability (Murphy, 2017).

This relationship also offers a particular way of reading the model alongside mediatization and hybrid media scholarship. Mediatization draws attention to the increasing embedding of media in the processes through which social reality is constructed and negotiated (Couldry & Hepp, 2017), while hybrid media theory explains how legacy media,

digital platforms, institutions, and networked actors interact within increasingly interconnected communication environments (Chadwick, 2017). The Iranian findings suggest an important distinction between the expansion of mediated and hybrid communication and its sustainability. Greater platform diversity and circulation may widen the visibility of environmental issues, yet the data point to persistent constraints within this environment, including fragmented coverage, uneven professional standards, political and economic pressures, and variable access to scientific expertise. The theoretical implication is that a media environment can become more hybrid and extensively mediated without necessarily becoming more sustainable. In the present model, sustainability therefore concerns whether these expanded communicative opportunities can be supported institutionally and translated into credible, socially relevant, and sustained environmental journalism.

The Iranian context is central to this interpretation because the relationships identified in the model are embedded in its particular institutional, political-economic, socio-cultural, and media conditions. The model therefore offers a contextually grounded account of these interdependencies, which can be examined comparatively in other media systems.

7. Conclusions

This study offers a contextually grounded account of sustainable media in Iran by connecting the continuity of media institutions with their capacity to sustain meaningful environmental journalism. Its contribution lies in showing how these dimensions become analytically significant through their relationships with one another and with the wider conditions of media practice.

The model also brings environmental communication and media sustainability into closer dialogue with mediatization and hybrid media perspectives. It highlights an important distinction between the expansion of communicative opportunities and the capacity to sustain environmental journalism: greater platform diversity and information circulation do not necessarily correspond with continuity, credibility, or meaningful public engagement. Sustainable media therefore requires attention to both the changing communication environment and the institutional and professional conditions within which environmental journalism operates.

The empirical basis of the model is limited to the Iranian context, and its applicability to other media systems remains to be examined. Future comparative research could investigate the relationships identified here across media environments characterized by different degrees of political and economic influence, media independence, ownership structures, governance arrangements, and institutional stability. Comparative studies across Western, African, and other media contexts could examine which relationships recur under different institutional configurations, which remain context-specific, and whether additional dimensions emerge.

Supplementary Materials: The following supporting information can be downloaded at https://www.mdpi.com/article/10.3390/journalmedia7040204/s1: Table S1: Causal Conditions; Table S2: Contextual Conditions; Table S3: Intervening Conditions; Table S4: Strategies; Table S5: Consequences of Sustainable Media.

Author Contributions: Conceptualization, Y.M. and M.A.; methodology, Y.M. and M.A.; software, Y.M.; validation, Y.M., M.A. and A.L.; formal analysis, Y.M.; investigation, Y.M.; resources, Y.M. and A.L.; data curation, Y.M.; writing—original draft preparation, Y.M.; writing—review and editing, Y.M. and A.L.; visualization, Y.M.; supervision, M.A. and A.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the principles of the Declaration of Helsinki. The research consisted of voluntary semi-structured interviews with adult participants and involved no intervention. At the time the study was conducted, formal Institutional Review Board (IRB) approval was not required for this type of independent qualitative research conducted outside the framework of a medical sciences institution. All participants provided informed consent prior to participation, and all interview data were anonymized to protect participants' privacy and confidentiality.

Informed Consent Statement: Participation was voluntary, informed consent was obtained from all participants.

Data Availability Statement: The data are available from the corresponding author upon reasonable request. The data are not publicly available because they contain confidential interview materials.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

The following questions guided the semi-structured interviews. Because the concept of "sustainable media" may be interpreted differently across disciplinary contexts, the term green media was used during the interviews to facilitate participants' understanding and to emphasize the environmental focus of the discussion. During data analysis, however, the broader concept of sustainable media emerged as the central phenomenon of the grounded theory model.

1. From your perspective, what are the key characteristics of green and environmentally friendly media?
2. Why do you think establishing green media is important in Iran? What factors might convince policymakers, media professionals, and other stakeholders of its importance?
3. In your opinion, what conditions are necessary for the successful establishment of green media in Iran?
4. What factors could facilitate or hinder the effective establishment and operation of green media in Iran?
5. What strategies do you think media organizations and journalists should adopt to support and sustain green media in Iran?
6. What consequences do you anticipate if green media were successfully established in Iran?

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