

MEDIA'S ROLE IN CLIMATE LITERACY: CHALLENGES AND OPPORTUNITIES FOR PAKISTAN

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Abstract

This study examines the critical role of media in promoting climate literacy in Pakistan, employing the agenda-setting theory. The study argues that despite the increasing frequency and severity of climate-related events in Pakistan over the years, a significant lack of climate coverage exists within its media landscape. Through a qualitative and analytical methodology, this research explores how expanded climate journalism can effectively generate awareness and engage the public in dialogues and actions on climate change. Findings reveal the influential role of media in agenda-setting on climate issues. The study concludes by advocating for a more substantial commitment to climate journalism, highlighting the importance of supporting capacity-building efforts for journalists and fostering collaboration between media organizations, civil society, and policymakers. By addressing the identified challenges and harnessing the power of media, Pakistan can better address the climate crisis and advance towards a more sustainable and equitable future.

Keywords: *Media, Climate literacy, Agenda setting, Public perceptions, Climate journalism*

Introduction

The contemporary global landscape is defined by a plethora of problems predominated by non-traditional security challenges. Beginning in the late 20th and early 21st century, climate change, climate security, and climate change adaptation and mitigation have emerged as urgent concerns. Despite contributing minimally to the problem, small island states and developing countries face existential

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threats due to unregulated emissions primarily from the Global North. This disparity underscores the pressing need for international cooperation and equitable solutions to address the climate crisis and safeguard the most vulnerable populations from its far-reaching consequences.

The earth's temperature has risen by approximately 1.1°C since the 1800s, primarily due to human-induced activities such as burning fossil fuels. Despite international efforts outlined in the Paris Agreement to limit global warming to well below 2°C above pre-industrial levels, with aspirations to cap it at 1.5°C, the current trajectory indicates a shortfall in meeting these targets. The 2023 UNEP Climate Change Synthesis Report emphasizes this gap, warning of the dire consequences of surpassing the 1.5°C threshold, considered crucial for avoiding the worst fallout from climate change.¹ The years 2015-2019 have been recorded as the five warmest years on record, with the decade spanning from 2010 to 2019 as the warmest decade observed to date.² These statistics highlight the gravity of the crisis that the international community must deal with in the coming years.

Equally, climate change presents an acute barrier to social, environmental, and economic growth in developing nations like Pakistan. The repercussions of this global phenomenon are already seen in the country, which has witnessed a significant increase in the frequency of droughts and flooding, irregular weather patterns, changes in agricultural patterns, a decline in fresh water supplies, and a loss of biodiversity.³ Unfortunately, projections indicate that these impacts will only escalate in the coming decades. Pakistan Country Climate and Development Report of 2022 suggests that climate-related events, environmental degradation, and air pollution could collectively contribute to a significant economic downturn, with Pakistan's GDP projected to shrink by 18-20% by the year 2050.⁴ Therefore, Pakistan needs to take substantial action to ensure social, ecological, and environmental stability.

A multifaceted strategy that includes sustainable practices, conservation measures, adaptation strategies, etc., needs to be

¹ "Climate Change 2023: Synthesis Report," UNEP - UN Environment Programme, n.d., <https://www.unep.org/resources/report/climate-change-2023-synthesis-report>.

² United Nations, "Key Findings United Nations," United Nations, n.d., <https://www.un.org/en/climatechange/science/key-findings#temperature-rise>.

³ National Climate Change Policy (Islamabad: MoCC & EC, 2012), <https://mocc.gov.pk/Policies>

⁴ Juan D. Barón Saher Asad and Juan D. Barón Saher Asad, "Turning Concern into Action: Understanding Climate Change Attitudes in Pakistan," *World Bank Blogs* (blog), December 19, 2023, <https://blogs.worldbank.org/endpovertyinsouthasia/turning-concern-action-understanding-climate-change-attitudes-pakistan>.

implemented in Pakistan to address this growing problem. More importantly, initiatives to promote awareness and create resilience at the community level are critical for minimizing the effects of climate crises, such as ecosystem loss and water, food, and energy insecurity. Identifying the media's significant eminence as the "*fourth estate*,"⁵ and an instrument for shaping public opinion, there is a strong case for Pakistan's mainstream media to put climate journalism on its agenda. Given the media's ability to shape perceptions, establish priorities, and disseminate knowledge, it has the potential to play a critical role in shaping public behavior in both adapting to and mitigating the effects of climate change.⁶ Hence, climate change education and awareness is an important step that needs to be initiated in Pakistan to ensure community-level engagement to thwart the effects of climate change.

The research hypothesizes that a higher level of climate coverage in the media correlates with increased climate literacy in Pakistan which in turn, can contribute to the development of robust climate policies. Conversely, in Pakistan's case, a substantial lack of climate literacy is attributed to low climate change coverage in the media. It is therefore imperative that the media's ability to educate and raise awareness in the masses regarding climate change should be utilized effectively. By fostering a more informed and engaged citizenry, media platforms have the potential to influence public opinion and policymaking processes, leading to more comprehensive and sustainable climate action at the national level.

The methodology employed in this research includes interviews with journalists and experts on climate change and document analysis of secondary sources. It aims to provide a holistic understanding of the intersection between climate journalism and climate literacy. Interviews with journalists and experts allow for firsthand insights into the challenges and opportunities faced in communicating climate change to the public. These perspectives are necessary for understanding the dynamics of media coverage, the framing of climate issues, and the effectiveness of communication strategies. Additionally, the analysis of secondary sources such as articles from environmental journals, policy assessments, and reports from various organizations contribute new insights to the field, which may assist policymakers, academia, journalists, and professionals working in the field of environment to inform evidence-based policy decisions aimed at improving climate literacy and communication strategies.

⁵ A term initially coined by Edmund Burke in a parliamentary debate in the House of Commons in 1787.

⁶ Sanaullah Khan and Raja Muhammad Khan, "Role of Media In Tackling Climate change Issue-A Case Study Of Pakistan," *Margalla Papers* 20, no. 1 (2016): 184-99.

Theoretical Framework

The agenda-setting theory of mass communication, introduced by Maxwell McCombs and Donald Shaw, provides a framework for understanding the influence that media has on public discourse. The media influences how issues are presented in the news, affecting public opinion. The media's selection and presentation of news shape the public's perception of what is important and what is not by giving priority to some issues over others through techniques such as news placement, emphasis, duration, space, and repetition.

Maxwell McCombs identifies three models of the Agenda Setting Theory, i.e, the Awareness Model, Salience Model, and Priorities Model. According to the Awareness Model, an issue comes onto an individual's agenda once it is viewed in the media. Individuals are unlikely to consider it significant if the media does not cover an issue or topic. The priorities model is a method of identifying the public's priorities. In other words, the media sets the agenda for public discussion and prioritizes some issues over others. Individuals are likely to prioritize the same concerns highlighted as significant by the media. The salience model falls in between the awareness and priority models. According to this model, individual preferences do not perfectly match those of the media. However, some issues that are constantly covered in the media will get to the top of people's priority lists.

Political and traditional security issues dominate the Pakistani media, whereas coverage of issues related to climate change does not find salience. In Pakistan, where climate change poses significant risks, the media's ability to set the climate agenda is vital to fostering climate literacy. By highlighting the urgency of climate change and its hazardous effects on Pakistan, the media can shape public discourse, which also puts pressure on policymakers to adopt climate-resilient policies that are in line with national interests. In this study, we argue that the agenda-setting function of the media positively impacts climate literacy which in turn, is associated with effective climate change policies at the national level. As per the awareness model, the Pakistani media can shape public understanding and knowledge on climate change, influence public discourse towards effective adaptation as well as mitigation of climate change in the long term, and thereby contribute towards policy-making and initiatives regarding climate change.

Literature Review

The need for climate change literacy has emerged as a critical component in the adaptive response to the ongoing environmental crisis. While there has been a discernible rise in knowledge about climate change over the past decade, the present levels of climate literacy in Pakistan remain dismally poor. Given Pakistan's increased susceptibility to the

consequences of climate change, a heightened emphasis on developing climate awareness within the general public has become imperative. With this backdrop, media appears as a potent medium for disseminating information, given its vast potential to reach an extensive audience simultaneously. Leveraging media channels can help foster a better understanding of climate change and the critical need for adaptation and mitigation actions amid the looming crisis. This literature review explores the existing research on climate literacy in Pakistan and places the current study within the broader research context by filling in hitherto unexplored gaps, i.e., the role of media in enhancing climate literacy and the challenges to effective climate journalism in Pakistan.

Azam Jan, Tariq Anwar Khan, and Muhammad Imran Mahsud explore the underlying reasons behind the lack of success of government-led climate-related policies and laws in Pakistan in their work, "The Climate Change Awareness and Literacy in Pakistan: Role of Media and Social Actors."⁷ The study utilizes the Cultural Theory of Risk to assess the role of various social actors in promoting climate literacy in Pakistan, including educational institutions, civil society, local government, health workers programs, and the media. Employing a qualitative, descriptive, and analytical methodology, it identifies inadequate climate literacy as one of the key reasons for the failures of such policies. Additionally, poor climate awareness is attributed to the paucity of political will, absence of a climate curriculum, lack of a national program for climate awareness, and insufficiency of media initiatives. Although the research highlights the role of various social actors in generating climate literacy, it does not undertake a detailed analysis of the role of the media nor its associated challenges in promoting climate literacy in Pakistan.

Similarly, Komal Ahmed underscores the role of media and education in creating climate awareness in "Role of Media in Creating Awareness with Respect to Climate Change,"⁸ wherein she conducts a survey of 199 respondents to collect data on climate literacy and the role of media. The findings highlight climate illiteracy and ignorance amongst the general public, educated groups, and key players. Based on the findings of the survey, the author advocates for dedicated segments to generate the public's climate awareness but also warns against the oversaturation of such types of content in the media. The study is largely a measure of public perception regarding the risks of climate change. However, it fails to

⁷ Azam Jan and Tariq Anwar Khan, "The Climate Change Awareness and Literacy in Pakistan: Role of Media and Social Actors," *Liberal Arts & Social Sciences International Journal* 4, no. 2 (December 28, 2020): 256-66, <https://doi.org/10.47264/idea.lassij/4.2.20>.

⁸ Komal Ahmed, "Role of Media Creating Awareness with Respect to Climate Change," *Pakistan Journal of Humanities and Social Sciences* 10, no. 1 (February 13, 2022): 77-88, <https://doi.org/10.52131/pjhss.2022.1001.0176>.

highlight the challenges faced by the media and climate journalists in Pakistan and the requisite measures that need to be undertaken to address these challenges.

“Understanding Influences, Misinformation, And Fact-Checking Concerning Climate Change Journalism in Pakistan,” authored by Waqas Ijaz, Muhammad Ittefaq, and Muhammad Arif uses a qualitative study design characterized by semi-structured interviews to identify three themes i.e. pervasive influences on climate journalism, perception of misinformation as low priority topic and the inconsistency in use of fact-checking. They find that various influences shape climate journalism in Pakistan, varying from a lack of journalist expertise, influence of western models of climate journalism, and self-censorship because of advertisers and corporations.⁹ More so, there is a lack of fact-checking among climate journalists because of the perception among them that misinformation doesn't exist.¹⁰ Whereas, the research assesses the influences on climate journalism and the prevalence of misinformation due to a lack of fact-checking, it does not focus on the role of media on climate literacy and the impact of these challenges on climate awareness in Pakistan.

Sajid Manzoor and Arshad Ali gather detailed insights from journalists on climate reporting in Pakistan using a qualitative interviewing approach in their work, titled “Media and Climate Change in Pakistan: Perception of the Journalists in Mainstream Media.”¹¹ They find that this subject is underreported and is dealt with reactively instead of assuming a proactive stance towards it. The authors also outline various challenges faced by journalists in climate reporting, such as inadequate resources and training, lack of access to reliable data, and deficit of structural support from media houses to climate journalists.¹² While the study sheds light on the major impediments faced by journalists regarding climate reporting, the study does not link it with climate literacy in Pakistan.

Sanaullah Khan and Raja Muhammad Khan's co-authored research titled “Role of Media in Tackling Climate Change Issue - A Case Study of Pakistan.” employs a qualitative approach to analyze the complexities surrounding climate change. It utilizes the agenda-setting theory to explain the influence of media on public opinion regarding climate change

⁹ Waqas Ejaz, Muhammad Ittefaq, and Muhammad Arif, “Understanding Influences, Misinformation, and Fact-Checking Concerning Climate-Change Journalism in Pakistan,” *Journalism Practice* 16, no. 2-3 (August 31, 2021): 404-24, <https://doi.org/10.1080/17512786.2021.1972029>.

¹⁰ Ibid.

¹¹ Sajid Manzoor and Arshad Ali, “Media and Climate Change in Pakistan: Perception of the Journalists in Mainstream Media,” *Journal of South Asian Studies* 9, no. 2 (August 31, 2021): 133-41, <https://doi.org/10.33687/jsas.009.02.3786>.

¹² Ibid.

and highlights its potential to influence climate action in Pakistan.¹³ The study concludes that media is a potent tool in shaping public opinion on climate change and driving environmental action towards climate sustainability.¹⁴ While Khan and Khan's work provides useful insights, by employing the agenda-setting theory, more current and targeted research is needed to fill the gap by diving into the current state of climate literacy in Pakistan, with a focus on the media's role in it. The article also demonstrates how media can strategically cover climate change to increase its significance in the public mind, thus implicitly utilizing the agenda-setting theory's salience model. This strategy emphasizes how important it is for the media to get more involved in promoting awareness and action on climate-related issues in Pakistan.

An overview of the existing literature emphasizes the need for increased climate change literacy in Pakistan given its acute vulnerability. Prior studies point towards the media's critical role in fulfilling this responsibility, given its ability to disseminate information and create awareness on issues of public concern at a large scale. This study however goes further by establishing the link between climate journalism and climate literacy in Pakistan. The study utilizes the awareness model to analyze the role of media in creating awareness in the general public and how the media's increased coverage of climate change issues can enhance the public's climate literacy levels. It also assesses the challenges faced by climate journalists and suggests possible pathways to address them thereby contributing to a new dimension of study within the existing body of research.

Pakistan's Vulnerability to Climate Change:

Over the past two decades, Pakistan has consistently featured among the top 10 most vulnerable countries to climate change.¹⁵ The country faces rates of warming considerably above the global average with a potential rise of 1.3°C–4.9°C by the 2090s over the 1986–2005 baseline. Projections indicate a greater number of people likely to be affected by flooding, with an increase of around 5 million people exposed to extreme river floods by 2035–2044. Moreover, there is a risk of around 1 million people being exposed annually to coastal flooding by 2070–2100,

¹³ Sanaullah Khan and Raja Muhammad Khan, "Role of Media in Tackling Climate change Issue—A Case Study Of Pakistan," *Margalla Papers* 20, no. 1 (2016): 184–99.

¹⁴ Ibid.

¹⁵ Jumaina Siddiqui, "Pakistan's Climate Challenges Pose a National Security Emergency," United States Institute of Peace, July 7, 2022, <https://www.usip.org/publications/2022/07/pakistans-climate-challenges-pose-national-security-emergency>.

according to a 2021 report by the World Bank Group and the Asian Development Bank Climate Risk Country Profile of Pakistan.¹⁶

In recent years, Pakistan has experienced severe heat waves, with temperatures soaring above 120 °F in certain areas, breaking the record for more than six decades. In 2022, the extreme rise in temperature triggered widespread flooding and infrastructure damage in Gilgit-Baltistan while exacerbating water shortages in Karachi and other parts of the Sindh province.¹⁷ Future climate change projections, based on the Intergovernmental Panel on Climate Change Fifth Assessment Report (IPCC-AR5) Representative Concentration Pathways (RCPs) scenarios, show that the average rise in temperature over Pakistan, by the end of the century, will be about 1°C higher compared to the global average.¹⁸ These trends underscore the urgent need for Pakistan to implement comprehensive climate adaptation strategies to safeguard its people and economy from escalating climate risks.

The IPCC's sixth assessment report (AR6) found that regions and people with considerable development constraints have a high vulnerability to climatic hazards. This illustration of individual studies of risks to living standards and the conditions under which they could become severe in terms of aggregate economic output, poverty, and livelihoods found that Pakistan is a highly vulnerable state.¹⁹ The University of Notre Dame's ND-GAIN country index ranking also observed that Pakistan has a high vulnerability and poor preparedness score, reflecting a critical need for greater investment and innovation to improve preparedness.²⁰ These findings highlight Pakistan's urgent need for targeted investments and innovative strategies to enhance its resilience and preparedness against climate risks.

Over the past decades, increased extreme weather occurrences such as floods, droughts, glacial lake outbursts, cyclones, and heat waves have impeded social and economic development in Pakistan.²¹ Pakistan

¹⁶ "Climate Risk Country Profile: Pakistan," World Bank Group and Asian Development Bank, 2021, <https://www.adb.org/sites/default/files/publication/700916/climate-risk-country-profile-pakistan.pdf>.

¹⁷ Ibid.

¹⁸ Hafiz Muhammad Azeem, "Climate Change: Causes, Outcomes in Pakistan and a Way Forward," Daily Times, September 24, 2019, <https://dailytimes.com.pk/472217/>.

¹⁹ Intergovernmental Panel on Climate Change, *Climate Change 2022 – Impacts, Adaptation and Vulnerability*, 2023, <https://doi.org/10.1017/9781009325844>.

²⁰ University of Notre Dame, "ND-GAIN Country Index," Notre Dame Global Adaptation Initiative, n.d., <https://gain.nd.edu/>.

²¹ Zakir Hussain, "Climate Change in Pakistan: Impacts, Strategies, and the Way Forward," *Pakistan Languages and Humanities Review* 6, no. I (March 31, 2022), [https://doi.org/10.47205/plhr.2022\(6-i\)16](https://doi.org/10.47205/plhr.2022(6-i)16).

has seen significant flooding occurrences since 2010, particularly in 2010 and 2022. One-fifth of the nation was impacted by the 2010 floods, which caused over 6 million people to be displaced and about 2,000 fatalities.²² The 2022 floods that devastated the country resulted in damages exceeding USD 14.9 billion and total economic losses of around USD 15.2 billion. The floods harmed 33 million people and caused more than 1730 fatalities.²³ The flood waters remained stagnant in many regions, with more than 8 million displaced people facing a health emergency. Torrential downpours and flash floods in March 2023 caused massive damages and fatalities in the province of Khyber Pakhtunkhwa.²⁴ Destructions were reported in June 2023 in the regions of Bannu, Lakki Marwat, Dera Ismail Khan, and Karak as a result of high winds, lightning strikes, and heavy rain.²⁵ Additionally, storms in Balochistan Province in April of the same year triggered flash floods in several districts.²⁶

In August 2023, high-level floods were witnessed in the Sutlej River in the district of Vehari which rendered thousands homeless, and disconnected land routes of various settlements.²⁷ High-level flooding occurred in Kasur, Okara, Pakpattan, Minchanabad, Bahwalnagar and Chishtian. Around 100 villages in Pakpattan district were inundated and 20,000 settlers faced evacuations.²⁸ At present, heavy rainfall has affected southern Pakistan, caused floods, and led to casualties and damage. According to media reports, multiple deaths and injuries were reported due to severe flash flooding in Karachi City, Sindh Province.²⁹

These extreme weather events, including heatwaves, droughts, floods, and cyclones, are occurring more frequently in Pakistan as a result

²² Urooj Fatima Zaidi, "WWF Reports Differences between 2010 and 2022 Floods," *The Diplomatic Insight*, September 7, 2022, https://thediomaticinsight.com/wwf-reports-differences-between-2010-and-2022-floods/#google_vignette.

²³ Mariam Altaf, "Pakistan: Flood Damages and Economic Losses Over USD 30 Billion and Reconstruction Needs Over USD 16 Billion - New Assessment," Press release, October 28, 2022, <https://www.worldbank.org/en/news/press-release/2022/10/28>.

²⁴ Richard Davies, "Pakistan - 11 Dead as Rain and Flash Floods Cause Houses to Collapse in Khyber Pakhtunkhwa," April 3, 2023, <https://floodlist.com/asia/>.

²⁵ Richard Davies, "Pakistan - Flash Floods and Strong Winds Leave over 20 Dead in Khyber Pakhtunkhwa," June 12, 2023, <https://floodlist.com/asia/>.

²⁶ Richard Davies, "Pakistan - Deadly Floods in Balochistan Province," May 1, 2023, <https://floodlist.com/asia/>.

²⁷ Shahid Mirza, "Sutlej Flooding Renders Thousands Homeless in Vehari," *The Express Tribune*, August 24, 2023.

²⁸ "High Flood in Sutlej River Inundates Villages, Farmlands," *The News International*, August 28, 2023, <https://www.thenews.com.pk/print/1104476-high-flood-in-sutlej-river-inundates-villages-farmlands>.

²⁹ "Daily Flash," n.d., <https://erccportal.jrc.ec.europa.eu/ECHO-Products/Echo-Flash#/daily-flash-archive/4995>.

of climate change. Floods are among the extreme weather occurrences that climate change has made more recurrent and severe in Pakistan. Changes in temperature, precipitation patterns, and the melting of glaciers in the Himalayas - the source of the majority of the nation's rivers, are already being felt in the country.³⁰ The alarming vulnerability statistics and recurrent disastrous catastrophes in Pakistan show the urgent need for comprehensive measures for mitigating the effects of climate change and strengthening resilience across the country.

TABLE 4. Selected indicators from the INFORM 2019 Index for Risk Management for Pakistan. For the sub-categories of risk (e.g. "Flood") higher scores represent greater risks. Conversely the most at-risk country is ranked 1st.³¹

Flood (0-10)	Tropical Cyclone (0-10)	Drought (0-10)	Vulnerability (0-10)	Lack of Coping Capacity (0-10)	Overall Inform Risk Level (0-10)	Rank (1-191)
8.9	3.8	5.1	5.7	5.0	6.2	18

Source: Climate Risk Country Profile: Pakistan – WB and ADB ³¹

Climate Literacy in Pakistan

Climate literacy is recognized to have a critical role in reducing emissions and adapting to climate change. Hence, it is critical to disseminate information about the anthropogenic causes and the impacts of climate change. Such awareness not only improves individual comprehension but also increases the ability of both human and institutional resources to effectively address environmental deterioration.

The National Oceanic and Atmospheric Administration, a key U.S. federal agency, defines climate literacy as.

"... the profound comprehension of one's impact on climate and the reciprocal influence of climate on individuals and society. A climate-literate individual possesses a foundational understanding of the Earth's climate system, possesses the ability to critically evaluate scientifically credible climate information, communicates about climate change with efficacy, and is equipped to make informed and responsible decisions affecting the climate."³²

The importance of climate literacy is also resonated by the United Nations' Sustainable Development Goals in SDG 13, Target 13.3, which argues explicitly for improved education, awareness-raising, and human

³⁰ Zakir Hussain, "Climate Change in Pakistan: Impacts, Strategies, and the Way Forward," *Pakistan Languages and Humanities Review* 6, no. 1 (March 31, 2022), [https://doi.org/10.47205/plhr.2022\(6-i\)16](https://doi.org/10.47205/plhr.2022(6-i)16).

³¹ "Climate Risk Country Profile: Pakistan," Asian Development Bank, May 24, 2021, <https://www.adb.org/publications/>.

³² "What Is Climate Science Literacy?" NOAA Climate.gov, n.d., <https://www.climate.gov/teaching/what-is-climate-science-literacy>.

and institutional capacity in areas like climate change mitigation, adaptation, impact reduction, and early warning systems.³³ Climate change literacy is a central component for building human and institutional capacity to reduce the adverse consequences resulting from climate change.

A 2021 report by UNICEF “Rising to the Challenge: Youth Perspectives on Climate Change and Education in Pakistan,” showcased the low levels of climate literacy in Pakistan.³⁴ The report found that only 27% of respondents in Pakistan could explain climate change whereas, 73% of the respondents were unaware of the phenomenon. The survey that compared people’s knowledge about climate change across all South Asian countries found that climate literacy in Pakistan was well below the regional average of 36 % and the lowest amongst all the reporting countries. These numbers underscore significantly low levels of literacy among the general public of Pakistan, reiterating the fact that the government needs to take substantial steps toward climate sustainability.

The low climate awareness and literacy in Pakistan are attributed to a lack of political will and commitment. Despite global concerns about climate change, the country lacks a national-level program dedicated to climate awareness. Additionally, the education system, considered the foundation for public awareness, has not adapted to address emerging needs, with climate change notably absent from the national curriculum.³⁵ As part of the Clean Green Pakistan Movement, WaterAid Pakistan in association with the Federal Directorate of Education and the Ministry of Climate Change has started the Clean Green School Programme (CGSP) in Islamabad, to bring climate literacy and environmental education into schools through innovative and relevant action-based learning.³⁶ UNESCO published a guidance report in 2024 on the importance of greening curriculum and how it can transform climate action.³⁷ Pakistan's education system primarily emphasizes job-oriented aspects, neglecting broader

³³ “Sustainable Development Goal 13,” *United Nations Department of Economic and Social Affairs Sustainable Development*, n.d., https://sdgs.un.org/goals/goal13#targets_and_indicators.

³⁴ “Rising to the Challenge: Youth Perspectives on Climate Change and Education in Pakistan,” UNICEF, April, 2021, <https://www.unicef.org/rosa/media/13991/>.

³⁵ Azam Jan and Tariq Anwar Khan, “The Climate Change Awareness and Literacy in Pakistan: Role of Media and Social Actors,” *Liberal Arts & Social Sciences International Journal* 4, no. 2 (December 28, 2020): 256–66, <https://doi.org/10.47264/idea.lassij/4.2.20>.

³⁶ “Clean Green School Programme,” Water Aid Pakistan, n.d., <https://www.wateraid.org/pk/clean-green-school-programme>.

³⁷ “Greening Curriculum Guidance: Teaching and Learning for Climate Action,” UNESCO, June 6, 2024, <https://www.unesco.org/en/articles/greening-curriculum-guidance-teaching-and-learning-climate-action>.

environmental concerns.³⁸ Thus, taking robust policy measures to integrate climate education is a necessity in the case of Pakistan.

Low climate change literacy in Pakistan is a major problem that requires immediate action. Inadequate knowledge of climate change issues impedes effective adaptation as well as mitigation measures. Enhanced climate literacy is critical for raising awareness and promoting informed action to combat the country's rising climate change consequences. Improved education and awareness initiatives are essential for empowering communities, politicians, and individuals to make informed decisions, promote sustainable behaviors, and build resilience to the challenges posed by climate change.

Role of Media in Climate Literacy

The news media, particularly in developing nations plays a crucial role in increasing people's understanding, as well as their ability to make informed decisions and participate in civic activities, by providing access to information and knowledge. The media greatly influence perceptions of the public and their willingness to take action. By disseminating accurate and timely information, media can enable individuals to make informed decisions about their personal, political, and social actions.³⁹ This is particularly crucial in the context of the climate crisis, where informed decision-making is vital for effective adaptation measures and mitigation in the long run.

Digital media, especially in the current age is a powerful tool for disseminating information and raising awareness regarding climate change. A survey conducted in 2021 by the UNDP, Viamo, and the Ministry of Climate Change found that 43% of young people (ages 19 to 34) who had digital access showed a high level of understanding of climate change. This rate fell to 10% for individuals without cell phones, underlining the importance of digital access for climate literacy.⁴⁰ The findings highlight the importance of information availability and electronic media in raising youth's awareness about climate change. While mainstream media has often been found lacking in assuming the responsibilities of climate literacy, social media has played a relatively more constructive role in improving youth engagement on climate change. With greater access to information through digital platforms, young people are increasingly engaged in discussions on climate issues, learning about global efforts and

³⁸ Azam Jan and Tariq Anwar Khan, "The Climate Change Awareness and Literacy in Pakistan: Role of Media and Social Actors," *Liberal Arts & Social Sciences International Journal* 4, no. 2 (December 28, 2020): 256-66, <https://doi.org/10.47264/idea.lassij/4.2.20>.

³⁹ Rafay Alam, interview by Fizza Hameed Khan, December 15, 2023.

⁴⁰ Huma Yusuf, "Climate Discourse," *Dawn*, August 8, 2022.

multilateral engagements, and advocating for action on climate change.⁴¹ The findings highlight the importance of information availability and electronic media in raising the youth's awareness about climate change. However, climate coverage has been limited in Pakistan due to the low interest of viewers in this topic. Over the years, there has been a practice in Pakistan that news that does not promote sensationalism and improve TRP ratings for TV channels is often filtered out in the process of gatekeeping.⁴² Consequently, climate change receives minimal coverage in the Pakistani media, highlighting the need for a shift in priorities to address this crucial environmental issue.⁴³ Climate journalism may successfully push climate action to the fore by continuously spreading the word regarding the crisis to promote sustainable action among communities.⁴⁴

The media's role in increasing climate literacy amplifies public pressure to resist unsustainable policies and practices. The shift in Saudi Arabia's stance on the fossil fuel agreement at COP28 underscores the influential role of media, particularly social media, in shaping governmental policies and decisions on critical issues such as transitioning away from fossil fuels.⁴⁵ The Saudi government was faced with considerable pressure when its reluctance was met with public opposition through social media and it was reported in international media outlets such as the New York Times, Guardian, BBC, etc, compelling Saudi Arabia to maneuver itself out of the situation. Likewise, the plans for the Adani Carmichael coal project in Australia⁴⁶ and the Keystone XL oil pipeline from Canada to the US,⁴⁷ were met with intense public opposition owing to environmental concerns, leading financial institutions to withdraw support and governments annulling project permits respectively, indicating the influence of popular opposition to unsustainable schemes. These cases demonstrate how public pressure and backlash in the media sphere can compel governments and institutions to reconsider their positions and ultimately take action aligned with public sentiments and international agreements. Thus, the media can shift the discourse in favor

⁴¹ Zofeen Ebrahim, Freelance Environmental Journalist, interview by Fizza Hameed Khan, December 11, 2024.

⁴² Rafay Alam, interview by Fizza Hameed Khan, December 15, 2023.

⁴³ Ibid.

⁴⁴ Laura Quiñones, "Five Ways Media and Journalists Can Support Climate Action While Tackling Misinformation," *UN News*, October 3, 2021, <https://news.un.org/en/story/2022/10/1129162>.

⁴⁵ Rafay Alam, interview by Fizza Hameed Khan, December 15, 2023.

⁴⁶ Matthew Hall, "Adani's Carmichael Coal Mine Controversy Explained," *Mining Technology*, July 27, 2020, <https://www.mining-technology.com/features/>

⁴⁷ Melissa Denchak and Courtney Lindwall, "What Is the Keystone XL Pipeline?" *Natural Resources Defense Council*, March 15, 2022, <https://www.nrdc.org/stories/>.

of sustainable climate action and create a bottom-up pressure to move Pakistan towards ecological sustainability. Pakistan needs to invest in public awareness campaigns; both media campaigns as well as in-person awareness sessions, to enhance public understanding on climate change. The public needs to be made aware of the specific impacts of global warming, such as rising sea levels, melting glaciers, and increasingly severe storms, to alter their assessment of the severity of the problem.⁴⁸ Therefore, media has a major impact on promulgating climate knowledge to various communities and can reach multiple zones simultaneously.

Challenges to Climate Journalism in Pakistan

Climate journalism in Pakistan encounters numerous challenges leading to a significant lack of reporting on environmental issues and thereby impeding the formation of a strong narrative on environmental concerns in Pakistan's media landscape. Traditionally, Pakistani mainstream media was primarily focused on issues related to politics, security and economics. Focus on climate change stories increased marginally with time, which is attributed to extensive climate journalism in international media, but there is still a lack of significant emphasis on this issue. The importance of this subject has increased in the past two decades with growth in column space and air time, but unfortunately, the reporting has been disaster-centric and it remains a difficult subject to write on.⁴⁹ Climate journalism surged in Pakistan abruptly after the floods of 2010. Some climate stories published were nuanced, but testimonial journalism and quotative reporting prevailed, covering what federal authorities were narrating, instead of thorough climate journalism.⁵⁰ Hence, climate journalism and the media's role in climate literacy has remained marginal ultimately resulting in a reduced knowledge of climate change.

Episodic Framing of Climate Stories

The general public is reliant on the media for the events happening around them as it does not have direct access to primary information about climate-related occurrences. This dependence provides space for the newsroom to frame an issue in a way that influences the audience in a

⁴⁸ Sarah Pralle, "Agenda-Setting and Climate Change," *Environmental Politics* 18, no. 5 (September 1, 2009): 781-99, <https://doi.org/10.1080/09644010903157115>.

⁴⁹ Zofeen Ebrahim, Freelance Environmental Journalist, Interview by Fizza Hameed Khan, December 11, 2024.

⁵⁰ Afia Salam, Environmental Journalist, Interview by Fizza Hameed Khan, January 13, 2024.

particular manner, limiting the public debate on it accordingly.⁵¹ "In their study 'Pakistani Print Media and Climate Literacy: A Study of Formal-Stylistic Frame Analysis During 2018-19,' Saleem and Rahman provided significant insights into the framing strategies used by the Daily Jang and Dawn papers and found that the predominant framing approach used in both Dawn and Jang newspapers for climate and environment news articles is episodic, with 87.4% in Dawn and 98.6% in Jang. Meanwhile, the thematic framing approach constituted only 12.6% of Dawn's and 1.4% of Jang's. The news articles categorized under episodic framing focused on providing information about the impact of climate-related incidents on people's lives and infrastructure.⁵² The frames that media selects to broadcast climate stories should be thematic and technical, and they should be framed in a manner to describe the interdependency of various issues with climate change as well. This is because episodic framing and reactive reporting of climate disasters do not enhance climate awareness among the masses. Desensitized Media Gatekeepers.

Editors and producers often overlook climate-related news because of their limited knowledge about the issue. There is a lack of emphasis on investigative journalism for climate stories, thereby leading to reduced investigative reporting and feature writing on climate change.⁵³ Afia Salam, a Pakistani environmental journalist highlights the editorial dichotomy between reporters and editors. She contends that while efforts are directed towards reporter training, insufficient awareness among editors and directors is leading to frustration among the reporters, with climate stories sometimes allocated inappropriate time slots or subjected to harsh editing. Salam calls for reforms in journalism standards, arguing that sensitizing editors to climate change is critical as it would lead to correct reporter assignment, column space allocation, and airtime allotment for climate-related topics.⁵⁴ Therefore, investment towards sensitizing directors and editors needs to be made to ensure more

⁵¹ Sajid Manzoor and Arshad Ali, "Media and Climate Change in Pakistan: Perception of the Journalists in Mainstream Media," *Journal of South Asian Studies* 9, no. 2 (August 31, 2021): 133-41, <https://doi.org/10.33687/jsas.009.02.3786>.

⁵² Syed Muhammad Saqib Saleem and Bushra Hameedur Rahman, "Pakistani Print Media and Climate Literacy: A Study of Formal-Stylistic Frame Analysis during 2018-19," *Research Journal for Societal Issues* 5, no. 1 (April 1, 2023): 113-37, <https://doi.org/10.56976/rjsi.v5i1.61>.

⁵³ Sajid Manzoor and Arshad Ali, "Media and Climate Change in Pakistan: Perception of the Journalists in Mainstream Media," *Journal of South Asian Studies* 9, no. 2 (August 31, 2021): 133-41, <https://doi.org/10.33687/jsas.009.02.3786>

⁵⁴ Afia Salam, Environmental Journalist, Interview by Fizza Hameed Khan, January 13, 2024.

informed and aware gatekeepers can circulate climate knowledge among the public thereby enhancing the levels of climate literacy in Pakistan.

Corporate Monopoly

News channels trying to avoid castigation at the hands of corporations also impact climate coverage. As businesses try to control and exercise influence over media narratives to safeguard their interests, this leads to a pattern of self-censorship regarding ecologically detrimental behaviors to avoid associated costs. In a study titled "Understanding Influences, Misinformation, and Fact-Checking Concerning Climate Change Journalism in Pakistan," Ejaz and Ittefaq concluded that advertisers and corporations have a certain level of influence over climate journalism.⁵⁵ Advertisers and corporations significantly influence the news stories on environmental issues, as they have a monopoly over resources that the media organizations rely on. Advertisers have the power to shape media coverage that aligns with their interests, potentially leading to biased or favorable portrayals of certain topics or entities. However, the media landscape has transformed in recent times as a greater number of audiences are moving away from traditional media towards digital media. With this transformation, many journalists have also shifted towards digital media, where they are independent of corporate advertisements.⁵⁶ Journalists now have new avenues for climate journalism where feature writing and investigative journalism on climate change is feasible. Therefore journalists and media personnel must put immense effort into navigating corporate monopoly to effectively diffuse climate knowledge to the masses and create climate change awareness in Pakistan.

Barriers to Scientific Data on Climate Change

Restricted access to information and the lower news value of environmental topics, eclipsed by political domination act as two major barriers to journalists' thorough reporting. Access to valid and verifiable data is a major problem for climate journalists as organizations working on climate change usually hold data close to their chest and academic research is not openly accessible to journalists, leading to stories lacking substance.⁵⁷ Therefore, technological and interaction hurdles must be effectively overcome to capacitate journalists with access to information and experts on climate change. There also exists a gap of understanding

⁵⁵ Waqas Ejaz, Muhammad Ittefaq, and Muhammad Arif, "Understanding Influences, Misinformation, and Fact-Checking Concerning Climate-Change Journalism in Pakistan," *Journalism Practice* 16, no. 2-3 (August 31, 2021): 404-24, <https://doi.org/10.1080/17512786.2021.1972029>.

⁵⁶ Afia Salam, Environmental Journalist, Interview by Fizza Hameed Khan, January 13, 2024.

⁵⁷ Ibid.

between the journalists and experts. A shared understanding of the intersectionality of climate-related issues hinders journalist-scientist collaboration.⁵⁸ Journalists working on the science of climate change, have to deal with the inability of the majority of the experts, to communicate to the journalists at the level of their understanding. Journalists are unable to understand the technical jargon of the people of science. Thus, there needs to be some kind of bridge to allow the journalists to not only understand the science and the actual conversation about climate change but also to enable them to make it more comprehensible for the audience as well.”⁵⁹ By doing so, we are creating a coherence in the flow of information from the experts to the public via climate journalists.

Way Forward for Pakistan

Pakistan is among the most vulnerable nations to climate change. According to the worldwide climate index, Pakistan ranks as the eighth most vulnerable country to the effects of climate change despite its meager contributions to global emissions.⁶⁰ Thus, the enormity of the climate crisis, particularly for Pakistan, requires a holistic strategy in journalism as well. Pakistan's mainstream and new media can augment the importance of issues related to climate in public discourse through recurrent coverage. Persistent featuring of nuanced climate-related reports, for instance, media coverage of extreme weather occurrences, climate change policy debates, debates on scientific reports, and events that are interconnected with the issue of climate change, will influence the audience's perception of the importance of these topics.

Climate illiteracy cannot be viably addressed through individual reporting by a single media organization. Collective journalism is an effective strategy for overcoming corporate monopolistic exercise over media coverage and increasing the salience of climate change among the public of Pakistan.⁶¹ By collectively investigating and exposing instances of pollution, deforestation, and other environmentally harmful activities, media outlets can create pressure, for corporations to adopt more sustainable practices. The Engro Thar Block II Power Plant project is an example of effective collective journalism. The power plant construction received criticism and opposition, largely because it relied on coal, which raised environmental concerns about air pollution, deforestation, and the impact on nearby communities. As the project was extremely controversial, with environmentalists and local people opposing it,

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ “Environment and Climate Change,” UNDP, <https://www.undp.org/pakistan/environment-and-climate-change>.

⁶¹ Zofeen Ebrahim, freelance environmental journalist, Interview by Fizza Hameed Khan, December 11, 2024.

consequently Engro was compelled to invest in social responsibility activities i.e. funding education, healthcare, and infrastructure initiatives to show a commitment to the well-being of the community affected by the project. Similarly, collective journalism on various media channels can encourage corporate accountability in Pakistan, prevent castigation, and increase issue salience on the public's agenda. Thus, consistent media advocacy can lead to positive consequences.

The collaboration between media outlets and international organizations like the United Nations, NGOs and civil society organizations dedicated to climate advocacy is a key step in incentivizing increased climate journalism. A cohort of young journalists was formed by WaterAid, where they had to engage in writing pieces on WASH-related issues in Pakistan. This fellowship not only provided financial incentives to the journalists but also heightened their interest in continuing to write on this topic.⁶² Thus, collaborations of this kind can simultaneously address the problem of inadequacy of resources while also providing avenues to train groups of journalists to work on climate and environmental advocacy.

Reporters can present verified data where different narratives are voiced to allow the audience to comprehend and build an opinion on the issue at hand. Climate reports can be linked with other issues such as health, economy, or social justice, highlighting their interdependence, thus drawing the attention of the masses.⁶³ Journalists can creatively present climate news by linking them with topics that attract the interest of the general public. In addressing pertinent subjects like climate change, it is critical to strike a balance between pessimistic and solution-based reporting.⁶⁴ While it is necessary to emphasize the gravity and potential repercussions of environmental concerns, concentrating entirely on doom and gloom might instill sentiments of despair and disempowerment in the audience. Incorporating solution-based reporting not only gives a broader perspective but also enables individuals and communities to take positive action.

More so, a critical distinction between the impacts of climate change and the consequences of environmentally unsustainable practices, particularly in the context of urban infrastructure and management, needs to be emphasized for public consumption. While climate change undoubtedly contributes to irregular weather patterns and extreme events such as heavy rains, it is essential to recognize that local factors, such as inadequate urban planning, poor infrastructure maintenance, and negligent municipal authorities, can exacerbate these challenges. In instances where choked sewerages lead to flash flooding, the root causes

⁶² Ibid.

⁶³ Afia Salam, environmental journalist, Interview by Fizza Hameed Khan, January 13, 2024.

⁶⁴ Ibid.

may indeed be more closely tied to local governance failures and insufficient infrastructure rather than solely attributed to climate change.⁶⁵ Addressing these issues on media platforms will enhance targeted interventions, such as improving drainage systems, investing in sustainable urban development, and enhancing disaster preparedness and response mechanisms.

Environmental and climate issues should not merely be published in the form of news articles or debates. Instead, media channels can utilize compelling visuals, like the film “Erin Brockovich” to reach all of our demographics.⁶⁶ Through visual storytelling, documentaries, like David Attenborough: A Life on Our Planet, creative news reports, and educational programs, media outlets can raise awareness about the urgency of the climate crisis and educate the public about climate change, its causes, and its potential impacts on Pakistan's environment, economy, and society.

Conclusion

Pakistan is highly vulnerable to the devastating effects of climate change, ranking as the eighth most vulnerable country worldwide. Over the last two decades, the country has experienced severe climate-related disasters such as heat waves, floods, droughts, and cyclones, which have killed thousands of people and caused billions of dollars in economic losses. Future climate projections show that Pakistan's temperature will rise faster than the global average by the end of the century.

However, a significant impediment to effective climate action in Pakistan is a lack of climate literacy among the general public. The media plays an important role in increasing climate literacy in Pakistan. However, climate journalism in the country faces several challenges, including episodic framing of climate stories, desensitized media gatekeepers, a corporate monopoly on media narratives, and limited access to scientific data. These factors have resulted in a significant lack of environmental reporting and hampered the development of a strong narrative on climate concerns in Pakistan's media landscape.

To address these challenges, Pakistan needs to invest in public awareness campaigns, including both media campaigns and in-person awareness sessions. The media should continue to cover nuanced climate-related stories, including extreme weather events, climate policy debates, scientific reports, and events related to climate change. Collective journalism can also be an effective strategy for overcoming corporate monopolistic influence over media coverage and raising the salience of climate change among the public. Pakistan can take a significant step

⁶⁵ Afia Salam, environmental journalist, Interview by Fizza Hameed Khan, January 13, 2024.

⁶⁶ Ibid.

toward resilience and adaptation to the escalating climate risks it faces by addressing climate literacy barriers and increasing public awareness through timely and effective media strategies. To protect the country's people and economy, urgent action is required to introduce climate literacy at the national level as well as implement comprehensive climate adaptation as well as plans.

