

## **THE PARADOXES OF CLIMATE CHANGE REPORTING: LANDSLIDE NEWS STORIES PUBLISHED IN HINDI LANGUAGE NEWSPAPERS OF HIMACHAL PRADESH, INDIA**

Pradeep Nair

Department of New Media, Central University of Himachal Pradesh, Dharamshala, India,  
*nairdevcom@hpcu.ac.in*

Deepak Kumar Vaishnav

Department of New Media, Central University of Himachal Pradesh, Dharamshala, India,  
*mailtodeepak@gmail.com*

Ankit Tandon

Department of Environmental Science, Central University of Himachal Pradesh, Dharamshala, India,  
*ankittandon.cuhp@gmail.com*

### **Abstract**

The study looks into the existing gaps in the newsrooms of the selected editions of the Hindi language newspapers reporting on the issues of climate change. It analyses how climate change stories especially landslide news are covered and reported and are prioritised in daily reporting assignments. It used cross-sectional, descriptive, exploratory, and qualitative methods. The primary data was collected through in-depth, semi-structured interviews and focus group discussions with the working journalists and editorial staff of the selected newspapers. The study approached content analysis to extract themes in the reportage of issues where the newspapers played a crucial role in developing people's perception about climate change by using their considerable public trust to build acceptance through small narratives. It was observed that the connection between climate change and the local event is seldom made in climate reportage. Although the damage caused was reported extensively, there is little introspection by the newspapers as to the reasons for such catastrophic events. The study finds that there is little to no connection is made to the significance of anthropogenic factors in causing the disaster in all the observed news stories. The attribution to climate change appears mostly in the form of vague throwaway statements or brief quotes from experts.

**Keywords:** climate change, newspapers, Hindi dailies, news coverage, vaccination, newsrooms, journalistic training

### **Introduction**

The hill state of Himachal Pradesh in India is located between 30°22'40" N latitude to 33°12'40" N and 75°47'55" to 79°04'20" E longitude. The state extends over a geographical area of 55,673 square kilometers, which is 1.69 percent of the country's area and 10.54 percent of the Himalayan landmass. The climate varies across the state with the altitude. In the southern low tracks between altitudes of 400-900 meters, it is hot sub-humid type, between 900-1800 meters altitude warm and temperate, between 900-2400 meters cool and temperate, cold alpine and glacial above 2400-4800 meters altitude. During the period from January to February heavy snowfall in higher reaches creates conditions for low temperatures throughout the state making it unpleasant and a series of western disturbances also affect the state.

The geographical regions of Himachal Pradesh is divided into three major parts – the Shivalik ranges, the Colder zone, and the Axis and Crystalline core of the whole system and accordingly the climatic conditions vary from the semi-tropical to semi-arctic and vary from wet humid sub-temperate situation to dry temperate alpine high lands. There are striking variations in the mean annual temperature in the state, higher in western parts and decreasing gradually towards north and eastern parts. Temperature also decreases with increasing altitude. Most of the rainfall in the state originates from the southwestern monsoon, starting in June and stretching up to September and maximum rainfall occurs during the

months of July and August. During winter months, a fairly good amount of rainfall and snowfall is also received from western disturbances throughout the state. Spatially, in general, the rainfall follows altitudinal patterns and increases from the plains to the hills. The state has been witnessing a rise in both maximum and minimum air temperatures across the year and has also been receiving extreme rainfall events in the monsoon season. The state is highly prone to landslides due to heavy rainfall around the year. These landslides have caused heavy state infrastructure losses as well as loss of life and private property.

With this understanding that climate change is “any systematic change in the long-term statistics of climate elements (such as temperature, pressure, or winds) sustained over several decades or longer” (American Meteorological Society) and the climate elements of particular geography are often affected by factors that are a result of environmental degradation activities at the regional, national and global level, it was observed that the small hill state of Himachal Pradesh has also been witnessing the ramifications of global climate change (Welle, 2021). Changes in the temperature and precipitation regime have been observed both in the measures of their central tendencies as well as in the measures of spread. This shift has been reflected in the increased frequency of extreme weather events and has also been manifested in the increase in temperature humidity index (THI) and diurnal temperature range (DTR) (Puri, 2020). This, in turn, has been affecting the traditional rudimentary agricultural practices and livestock grazing. These changes have resulted as a shift in native vegetation with increased dominance of invasive species (Choudhary, 2019). A status report published by H.P. State Centre on Climate Change (HIMCOSTE) in the year 2019 reported a 40% decrease in the density of Ban Oak species of native trees, and a 24% increase in Pine roxburghii species used in the lumber and construction industry (Bharti et al., 2019).

Due to its unique geo-morphological and ecological setting, the landscape in and around Himachal Pradesh has seen changes due to increasing human activities like tourism, and city infrastructure development in the region in the past two decades. At the same time, the state has witnessed natural hazards like earthquakes, landslides, flash floods and wildfires. It can be said with certain confidence that the current process of climate change has increased the frequency of landslides, flash floods and wild-fires (FPJ Editorial, 2021). Poorly planned unscientific human expansions and interventions have made the region more vulnerable for climatic disasters. Combined with ongoing climate change, human activities over higher altitudes like construction of dams and roads for micro hydro-power plants, increase in new settlements and conversion of land-use from forest to agriculture and/or change in tree species (e.g. cedar to pine), have resulted in the alteration of hydrological cycle in the form of increased run-off and depletion of natural springs (Panwar, 2021).

The science of climate change and/or climate variability is a bit complex as various components of the Earth’s climate system are interacting with each other mostly in a non-linear manner involving positive/negative feedback processes (Boyce, 2009). To develop a basic understanding of the science behind climate change, fundamental understanding of basic sciences (both natural and physical) is a prerequisite. Though, global as well as national agencies like the Intergovernmental Panel on Climate Change (IPCC), the World Meteorological Organization (WMO), the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) are actively involved in raising the level of public awareness about climate change through their publications, but their reach is limited to academicians and policy makers. In the mission of spreading climate awareness to the greater depths, mass-media organisations involving electronic (e.g. the National Geographic, the Discovery, the British Broadcasting Corporation and the Cable News Network etc.) as well as print media (e.g. the Washington Post, the New York Times, the Times of India, the Indian Express and the Hindu etc.) are playing a crucial role at global as well as national level. It is pertinent to mention here that the characteristics (form and magnitude) of climate change and its implications at regional level are quite different over different parts of the world (Boykoff & Smith, 2010). Thus, the role of mass media organisations working on regional or state level becomes crucial for disseminating the awareness about climate change related issues to the ultimate stakeholders.

In comparison to big newspapers with an established sophisticated newsroom and trained journalists, the coverage of climate stories is noticeable in state editions of language newspapers, even though the profile of these stories has never been higher. In a hill state like Himachal Pradesh, the public understanding of the subject is low and journalists are no exception as they come from the same community with limited exposure to the issue. The reflection of this can be seen in the stories published

in the state editions of Hindi newspapers. The opinions and views presented in these stories are mostly outdated, driven by spin or simply wrong.

In state editions of Hindi language newspapers published from Himachal Pradesh, stories about climatic hazards/disaster reflected in terms of extreme temperature and extreme precipitation events are often written without a brief introduction that covers what, why and how type of questions about a particular issue like chill or heat waves, cloud burst and flash-floods etc. Moreover, issues as implications of climate change viz. loss of biodiversity, shift in vegetation, migration of species, loss of food security, and increase of insects/vector borne diseases etc. hardly get any space. Many times, disastrous events like earthquakes or flash-floods are covered just like a simple science/environment story. Most of the journalists working in these state editions of Hindi newspapers are graduates in arts or social sciences and are unwilling or unable to have a better understanding of science. Since, climate change now-a-days encompasses the economy, health, security and more, the subject is extremely complex, and easy to get wrong. The foremost challenge in covering climate change stories is the requirement of a strong grasp of the fundamentals of the climate debate. This grasp is often lacking and this has contributed into stories out of facts and false balance. The coverage of a recent event – a flash flood like situation in Dharamshala covered by the state editions of Hindi newspapers was woefully inadequate (Nisbet, 2010). Nearly all the state editions termed the situation as cloud-burst quoting state sources instead of consulting with the qualified scientists which brought chaos and created panic among the state community. The story was quickly picked up by many national TV channels and newspapers, and the visuals of the incident quickly circulated on social media. This is one of the many examples of journalistic balance gone wrong.

The research questions identified for the study are: -

- RQ 1: How climate change is covered and reported in selected state editions of Hindi language newspapers?
- RQ 2: What are the gaps existing in newsrooms of selected state editions of Hindi language newspapers in reference to reporting the issues of climate change?
- RQ 3: How the selected language newspapers validate and scrutinise the climate change information received from different sources and how they were covered and reported on daily basis?

## **Native Journalism and Climate Change**

In this study, we referred to the place attachment theory to develop an understanding of how the notion of state editions of Hindi language dailies has been central to the concept of native journalism. The theory suggests that people have an emotional relationship with specific landscapes (Schweizer et al., 2013). The decision-making processes in journalism practice, especially related to conflicts of interest and ethical pressures in terms of bonding of people to places help to understand how the complexity and dynamics of emotions in a climate change engagement framework work in reporting people, activities or processes in reference to climate change reporting (Altman & Low, 1992; Brown & Perkins, 1992; Bhaskaran et al., 2020). The bonds and different forms of attachment that people have for places, particularly landscapes impacted by climate change are a subject of concern while gathering, packaging, and distributing news at the regional level.

This concept of native journalism emphasises the state news and information about the politics and sociology of communities living in a geography where the newspaper is published and circulated (Richards, 2012). The climate change-mediated stories told locally not only explain the meanings people assign to places but also how these meanings are altered as environmental crises arise (Stedman, 2003). O'Neil and Nicholson-Cole's (2009) study on media representations of climate change reinforces the importance of a physical, place-based connection in the communication of climate change. The study observed that the local stories of climate change make people empowered and thus make a difference. The study insisted that the local context of the climate change stories makes the seriousness of the issue resonant and help people to prepare for a timely response.

The place-based climate change engagement approach in environmental reporting provides a meaningful dialog in a specific place, where people interact with each other and the landscape to develop a deeper understanding of the ecological and social inter-relationships and impacts on the ecosystem

(Schweizer et al., 2013). The theoretical framework of place-based climate change engagement in climate change reporting provides an opportunity for local media outlets to create a public engagement forum to bring changes at the community level to curb anthropogenic climate change impacts. This also changes the public conversation by simplifying and connecting climate change impacts to people's values, personal experiences, and daily lives (Hess et al., 2008). This theory allows media scholars to integrate multiple dimensions of climate change communication and helps to understand the paradoxes of telling the stories of climate change (Zehr, 2000). Mocatta et al. (2022) in her study observed that the local reporting of the issues of climate crisis can bring transformational changes as they are quite capable of reporting and covering the issues at the community level.

The regional and local media representation of the issues of climate change helps the community people to voice their concerns (Bowden et al., 2021). Scannell and Gifford (2013) in their study find that the issues of climate change are best understood by people through local lenses. That is why, local journalism is an important area of inquiry in the broader sphere of mediated communication as they have a profound role in making people aware of issues of concern at the community level (Ornebring et al., 2020). The local editions of native language newspapers play an important role in providing information that helps people to connect and deliberate on climate change affairs (Zelizer, 2013).

There is always a need to communicate and act on cascading environmental harms and here the local editions of language newspapers prove their importance in reporting on the climate crisis (Schafer & Schlichting, 2014). Stories published in the local editions of the newspapers shape the ways that people understand, talk, care, and act about climate change (Gunster et al., 2018, p. 775). In the last two decades, it was always a subject of interest to enquire how local news creates mediatised conversation on climate change by encouraging people's engagement (Hertsgaard & Pope, 2021). In their study on the role of place attachment and local versus global message framing in engagement, Scannell and Gifford observed that the journalism that tells stories about local environmental issues has the potential to make issues of national/global importance relevant in a local context. Local news outlets have a long tradition of taking a role in advocating and championing change and progress. Thus, reporting of climate change through a local lens increases public awareness to take appropriate action on time.

## **Climate Change Reporting**

While doing this study, we observed that there is very limited scientific literature available focusing on regional climate change and associated issues, especially in North-Western Himalayan region (Moser, 2016). Moreover, while writing climate stories in state editions, scientists and experts were rarely consulted and quoted. By ignoring the overwhelming scientific consensus, a number of journalist stories in the state editions offset evidence with emotions, conflict with consensus, and thus confuse and misinform the audience. As most of the climate stories have complex messages, they need to be told with a strong focus on a certain aspect of the story and a clear approach to suit diverse audiences. Most stories analysed for this study published in state editions of Hindi newspapers focus more on the frightening statistics – to move from denial and despair to action rather than on the solutions to climate change and ways to adapt to its effects.

Reporting climate change stories is not the same as covering politics, crime, or sports. They need a larger connection in audiences' minds and to share the voices and concerns of the marginalised, most vulnerable people who have contributed least to the problem but are suffering most from its impact (Ward, 2011). The challenge of covering climate change stories is two-fold: first, presents information valid in scientific scrutiny, and second, it has to understand how and in what ways the vulnerable communities adapt to the impacts of climate change. Unfortunately, this aspect is under-reported. The newspapers have a role to play in empowering communities to make informed choices and to react timely to climate change (Olausson, 2014).

## **The Methodological Approaches and Study Design**

Starting with the hypothesis that language journalism is mostly shaped by the community power dynamics and its influence, the study uses cross-sectional, descriptive, exploratory, and qualitative methods to investigate how the stories of climate change are covered and reported in the selected state

editions of Hindi language newspapers, what gaps exist in the newsrooms of these language newspapers, and how these selected newspapers validate and scrutinise the climate change information received from different sources. It further explores how the newspapers reflect and mediate issues related to the coverage of climate change in terms of frequency and placement.

The primary data were collected through in-depth, semi-structured interviews and focus group discussions. Both open and close-ended questions were used for interviews and focus groups in order to gain in-depth information from the respondents. Ten working journalists on pay-roll from three selected Hindi newspapers and ten editorial staff including the news editors were contacted on purposive basis to facilitate a focus on sharing information about their experience of reporting climate change for their respective newspapers. The selection criteria of the journalists and editorial staff apply to their diverse professional experience and their day-to-day engagement with the stories of climate change in Himachal Pradesh. Journalists for interviews and focus groups were chosen on the basis of their interest to communicate the pressing issues of climate variations to the state people with a commitment to bring behavioural and attitudinal changes for increased action at the community level. The semi-structured interviews and focus group discussions (FGDs) were conducted face-to-face for gaining in-depth knowledge of how these journalists interpret the situation they experience (Mack et al., 2005). The interviews and FGDs were facilitated through the editorial offices of these newspapers in Himachal Pradesh.

The research strategy of the study is a mix of qualitative and quantitative approaches, and the input gained from informants is in the form of experiences, perceptions, actions, and attitudes related to their experience of covering the stories of climate change (Creswell, 2009). The semi-structured interviews and FGDs were conducted in the months of August and September 2021. The interviews ranged between approximately 30-60 minutes and were audio recorded and transcribed. The transcriptions were then coded to identify themes using thematic analysis (Ryan & Bernard, 2003). The recurring themes were identified on the basis of their association with the concepts and activities that appear in interview transcripts in the form of opinions, reflections, conceptualisations, and experiences to explore the role of state editions of Hindi newspapers in informing and communicating climate change and how it has shaped discourse and action in diverse ways at the interface of climate science and policy. The stories crafted on the basis of direct experience, vicarious experience, and social construction shape public perceptions and attitudes toward the issue. Since people's sense of identity ties closely to place, state editions of language newspapers have the potential power to facilitate and visualise climate action as relating directly to people's lives (Hess, 2014). The interviews of the editorial staff were conducted to explore how the newsrooms of the selected Hindi newspapers use this opportunity to mitigate and adapt to climate change issues closer to communities. The purpose of interactions with the editorial staff is also to look into how the news desk improvises and compliments the stories to an extent to increase public engagement on the issue. A place-based framing story offers an opportunity to foster constructive collaborations between media outlets and scientific resources at the state level to help convey the severity of climate change impacts and solutions to reduce risks and enhance resilience to the discourse (Hatcher, 2013).

The study examines the opportunities of state editions of the selected newspapers to negotiate with both public and private agencies of governance and democracy to address the issue and the recurring themes in the news stories which sparked interest in the state community. This study constitutes descriptive content analysis that focuses on certain themes/issues like climate change, environmental stability, resilience, and biodiversity in the reportage by the selected editions of Hindi language newspapers published from Himachal Pradesh, India.

To understand better the nature and quality of reporting on the subject of climate change we conducted a content analysis on three Hindi daily newspapers namely Amar Ujala, Dainik Bhakar & Divya Himachal to. All three newspapers have a dedicated state edition for the state of Himachal Pradesh covering all aspects of political, civil, and social issues of the state as well as climate reportage. The newspaper Divya Himachal is more local in focus and approach. The analysis focused on the stories related to landslide incidents of the state published in the year 2021.

These papers were selected based on their circulation, coverage of stories, and the impact of their journalism on the people of the state. After the selection of these news outlets, news stories were searched for keywords like "land sliding", "flash flood", "cloud burst", "climate change" etc. using the keywords in Hindi for all the three newspapers. The search results were then collected and cleaned

manually to ensure that the articles identified pertained to the coverage of landslide incidents in the state during this period of one year. The content analysis approach was taken to extract reportage of issues where these state dailies played a major role in developing people's perception about the nature of landslide incidents in the state and their relationship with climate change as these newspapers have a considerable public trust and can be crucial in building an understanding of climate change through news coverage (Bowden et al., 2021).

Content analysis is a popular analytical technique for identifying, analysing and reporting themes within a data set (Braun & Clarke, 2006). It is widely used in qualitative research across a range of epistemologies and research questions. Through its theoretical freedom, the content analysis provides a highly flexible approach that can be modified as per the needs of the study (King, 2004). It offers a more accessible form of analysis and provides a comprehensive understanding of an overall experience of an event, series of interactions, or messages within a variety of contexts. The content analysis uses coding of the text to define themes from the data, which is then used to describe the thematic meaning of the written articles (Braun & Clarke, 2006). This approach is used to organise, describe and compare the themes which arise in these articles individually and collectively.

Altogether, 62 news articles/stories related to incidents appeared in three state editions of Hindi language newspapers published from Himachal Pradesh in the year 2021. The newspapers were selected based on their readership and community presence in order to collect the most diverse sample possible. Three Hindi newspapers – Amar Ujala, Divya Himachal and Dainik Bhaskar have a strong state presence in Himachal Pradesh with a collective circulation of 150000 copies per day. These state editions were selected based on their state nature, approach and their privilege of being a language newspaper with wider acceptance. All three selected newspapers have their newsrooms in Himachal Pradesh. After the news outlets were chosen, news stories were searched for keywords like “land sliding”, “flash flood”, “cloud burst”, “climate variations” etc. using the keywords in Hindi for all three newspapers. The search results were then checked to ensure that the articles identified pertained to the coverage of climate change. Those which were not relevant were discarded. The researcher’s discretion was used to determine whether to exclude the news articles/stories which only made mention of climate/weather events or passing references. Later, more news stories about the issue were manually explored from these newspapers to make the corpus complete.

Once the news stories across the three newspapers were collected to make up the corpus of data, the process of content analysis was started. The news-stories were then coded and thematic generation was performed. The identification of themes comes through the process of “careful reading and re-reading of the data” (Rice & Ezzy, 1999, p. 258). Emergent themes were simultaneously coded, analysed and compared (Creswell, 2009). The analysis was undertaken with each theme independently defined and described in context to find out how the scientific stories of climate change are communicated effectively by tailoring the messages to state audiences with greater concern and commitment.

Themes in the news stories were coded with an inductive approach, rather than using prior defined themes. The news stories were axially coded by two coders to find relevant themes (Breen, 2006, p. 472). During the process of coding, the constant comparative method (Strauss & Corbin, 1998) was relied upon to keep it systematic. Relevant themes were finalised and representative quotes were selected after a discussion based on the final coding. We followed a step-by-step process from an ‘open coding’ of concepts to more focused procedures of ‘axial’ and ‘selective coding’ which helped us to build up theoretical statements that are ‘grounded’ in empirical data (Corbin & Strauss, 2008). The content analysis yielded a number of main themes during the process. The main themes observed were – ‘increase in temperature and precipitation’, ‘frequency of extreme weather events’ and ‘natural hazards – land-slides, flash floods and wildfires’ in relation to the media coverage of issues related to climate disasters. These themes were described along with their connection to other themes and additional thematic observations. We are aware that the qualitative studies following an inductive approach are criticised for relying on a small sample size which is difficult to replicate (Hertog & McLeod, 2001) but we took utmost care to ensure that the selected themes must have identifiable conceptual characteristics, a reliable difference from other themes and representative validity (Cappella & Jamieson, 1997). We examined and identified the themes in line with what MacQueen and Namey (2011) and Fereday and Muir-Cochrane (2006) has suggested that how themes shall be examined and identified by the presence and absence of certain keywords, stereotyped images, quotations, catch-phrases, exemplars, and depictions.

## **Observations and Discussion**

The news coverage of climate change in state editions of Hindi language newspapers in Himachal Pradesh is seen as most trustworthy among the state communities. State news-outlets are the most trusted source of gaining access to relevant information. While analysing the state edition stories, it was observed that even though the state news coverage of climate change is different from national news both in terms of frequency of coverage and placement, its impact matters more than one might think (Ward, 2008). In the comparison of state edition stories with the stories published in national newspapers, it was found that at the national level, the shift of climate news coverage reflects pure science-based stories with more statistical evidence whereas; the state stories are less scientific with more emotional appeals. The interviewed editorial staff of the Hindi newspapers revealed that though the coverage of climate change at the national level in recent years was successful in fueling an environmental movement by making the issues state and focusing on what people can gain by taking action, the state edition stories create stronger narratives (Acharya, 2010). This was further supported by a critical review of some recent studies on the role of state news in developing people's perceptions about climate change. The evidence claim that the state editions have the advantage of using their considerable public trust to build state acceptance of climate change through small narratives (Boykoff & Smith, 2010). A majority of the interviewed journalists honestly confessed that there is no doubt that the climate news coverage in state editions of Hindi newspapers lags far behind national coverage in terms of access and impact, but they have an untapped potential to increase public understanding and acceptance of the debate and discourse.

During the interviews, journalists of state editions of the studied newspapers viewed that the problem of covering climate change stories is to grasp the complex nature of themes in covering climate change as it continues to shift towards new dimensions. Training and access to experts is the key requirement for less-resourced journalists working in state newsrooms. The participants were confident that if they get proper training, they can also cover the stories well. They were also aware that it is not beyond them as nowadays, internet-based sources are becoming increasingly important and access can be gained with some extra effort. They admitted that the amazing power of data repositories can make any story possible and common however sophisticated it may be. The state journalists told that during their reporting, several times they realised that the stories told stately show greater concern, commitment, and optimism and have the potential to bring awareness and action at the community level. The editors of the state editions of the selected Hindi newspapers were convinced that by making people realise the challenge of climate change; the state editions have a window of opportunity to negotiate with both public and private agencies of governance and democracy to address the issue (Bolsen, 2017). The massive shifts in policy and in public behaviour help the communities to adapt to the changes and the state editions of newspapers can play an increasing role by sensitising the people towards this (Chand, 2017).

In the last decade, climate change has become an issue of great concern for both developed and developing economies. The responsibilities and respective capabilities of the media in addressing the issue are widely acknowledged (Bacon, 2013). To deal with the risk and impact of climate variations, it is necessary to enhance social and cultural consciousness towards the problem. To make the communities empowered in terms of awareness, understanding and, action, the role of state media and journalists becomes crucial (Ornebring et al., 2020). In order to advocate for more climate change coverage in state editions and other media outlets, UNESCO and other international agencies urge journalists working in small places to empower themselves so that their stories can help people and government to find better state solutions to deal with the climate change crisis.

## **Analysis and Outcomes**

To better understand the perception and understanding created by the state editions of Hindi newspapers on the issues related to climate change, we conducted a content analysis study to look at news reports of climate-related hazards or disasters published by Hindi daily newspapers in the state of Himachal Pradesh.

The Indian Institute of Human Settlement published a handbook for reporting on climate change in South India. The report dealt with the quality and nature of climate reportage done by media

organisations in South Asia. The report highlights the important aspects of climate change that are often neglected while reporting climate change stories. We created a framework based on this handbook to analyse the content of stories related to the issue of landslides.

The framework looked at these stories and analysed the presence and absence of:

- a) Bytes and quotes from responsible government authorities on the incident
- b) Reasons behind the incident
- c) Witness accounts about the incidents
- d) Public and private economic loss incurred by the incident
- e) Expert comments on the incident and its cause
- f) Scientific sources and reports used to expand on the cause of the incident
- g) Correlation between the incident and its relationship with climate change
- h) Highlighting similar incidents to create a broader understating of the issue

**Table 1:** Analysis of the quality and nature of climate reportage in Selected Hindi Language Newspapers

Name of Newspaper /Point of Analysis	Amara Ujala (%)	Divya Himachal (%)	Dainik Bhaskar (%)	Average (%)
Bytes and comments from responsible government authorities on the incident	82.60	19.23	7.69	40.32
Cause of incident	13.04	73.07	15.38	38.70
Witness accounts about the incidents	17.39	15.38	23.07	17.74
Public and private economic and state ecosystem loss incurred by the incident	4.34	34.61	0	16.12
Expert comments on the incident and its cause	8.69	0	15.38	6.45
Scientific sources and reports used to expand on the cause of the incident	8.69	0	7.69	4.83
Correlation between the landslide incident and climate change	8.69	0	7.69	4.83

- a. **Comments and quotes from responsible government authorities on the incident** - Landslide reporting in the state is usually incident centric. Landslide news reports usually deal with damaged public infrastructures like roads as well as private infrastructure like cars, houses, etc. As an incident is reported to the state authorities, concerned departments are subjected to visit the site of the incident and take the required action. Being a small hilly state with a small population, getting access to government authorities for comments is easy and straightforward. Usually, this information is critical as it informs the reader about the steps taken by the government about the incident. This information could vary from information about opening or closing roads for repairs and relief to steps taken by the government in tackling the incident. By asking questions and comments from government authorities, state media organisations play a crucial role in keeping a check on the steps taken by government authorities. Yet in the content analysis, we found that only 40% of news reports on landslide incidents had a quote or comment from the government authorities. State journalists should be encouraged to add comments given by government authorities to improve the quality of climate change reportage on issues like landslide.



- b. Causes of incident** – Incidents of landslides are usually reported in general when there is an aspect of loss of life or damage to public/private property involved. The cause of the incident is vital information that helps in creating a better understanding for the reader. Through this information, readers can be educated about the causes of landslides which in turn help in developing state knowledge both from the perspective of disaster management as well as civil awareness. Information on the cause of the incident can also help a reader in identifying causes that could lead to future landslide incidents around them. Information on the cause of the incident is vital yet was found to be absent in many news stories. Only 38.7% of the news reports on landslide incidents had information about the cause of the incident. This lack of information can lead to a limited understanding of the reader about landslide causes. State journalists should be encouraged to add the causes of landslide incidents to their news reports.
- c. Witness accounts of the incident** – First-hand accounts of the witnesses/victims of any incident of loss of life or property play a key role in creating credible media reportage. When a news story has first-hand witness accounts, it helps the reader in understanding better the intensity/magnitude of an event big or small. It also helps in increasing the credibility of a report as a reader is assured that the journalist interviewed the witnesses/victims and relied on their first-hand accounts for the story by either reaching the site of the incident or by contacting witnesses/victims to know the details of the incident better and not only relying on the government authority's account. Yet only 17.7% of news reports on landslide incidents had witness accounts of the incidents.
- d. Public/private economic and state ecosystem loss incurred by the incident** – Reporting on economic and state ecosystem losses incurred by a landslide is found to be absent from the news reports as only 16.20% of stories on landslides for the selected period had details about economic and state ecosystem loss by the incident. All the stories that discussed economic losses documented the loss of private property from the incident. Damages to public property and the state ecosystem from landslide incidents can be crucial in highlighting the actual losses incurred by the state. This can help in diverting government attention towards proactively working in identifying possible landslide-prone regions and taking steps to avoid such future incidents.
- e. Subject expert's comments on the incident and its cause** – Only 6.45% of the news reports carried quotes and feedback from experts on the incident which again adds to the limited knowledge addition for the reader on the subject. Expert comments on a story or incident are considered an integral part of news reporting especially when it comes to issues like that of climate change. Climate change effects are gradual and are often led by complex factors. Incidents of landslides are often caused by various factors that can be identified with the help of experts on the subject. The absence of expert comment on such news stories could be because of a lack of communication channels between state media organisations and subject experts. Community-building workshops can play a major role in bringing journalists and climate change experts together on a single platform to engage and share information. This could help state journalists in creating a network of subject experts for climate change reporting.
- f. Scientific sources and reports used to expand on cause of the incident** – Only 4.83% of the news reports carried quotes and feedback from experts on the incident which again adds to the limited knowledge addition for the reader on the subject. The role of a journalist is not only to report on a subject but also to expand knowledge of the readers on the subject. Reporting on climate change if left to the virtue of incident reporting will critically limit the knowledge of readers on the subject matter. Discussing scientific sources and sharing additional information about new scientific knowledge that has been added the subject of climate change can be crucial in raising awareness amongst the masses about effects of climate change. This again highlights the need for networking between state journalists and subject experts which can enable scientific resource sharing between state journalists and subject experts.
- g. Correlation between the landslide incident and climate change** – Increase in landslide incidents in the state have been associated with climate change by many reports as heavy and untimely rainfall during monsoon leads to wear and tear of state mountainous geography. But news reports on landslide incidents in the state are observed to have an absence of climate change as an issue. Only 4.83% of the stories discussed issues of climate change in relation to landslide incidents in the state. Furthermore, landslide incidents in the state have been associated

with deforestation and excessive erosion during monsoons. A reason behind this could be seen as a lack of knowledge on the part of state journalists about climate change factors. Workshops with state journalists on the subject of climate change can educate journalists about the issues of climate change and how they can find it in relation to stories covered by them such as that of landslide incidents.

## **Findings**

The public understanding of various issues related to climate change relies heavily on media coverage, thus media plays a pivotal role in shaping the public debate on these issues. News of climate change published in state editions of Hindi newspapers influences decision-making across state levels and over time. Local newspapers have a role in environmental politics as it talks about place and community, state responsibility, governance and how the issues of climate change affect our daily lives (Scannell & Gifford, 2013). At the national level, big newspapers with well-established newsrooms, represent the general scientific consensus on the issue by politicising the issue in a larger context and helping the policymakers to interpret and make sense of the many complexities of climate science and governance. In contrast, the media representation of climate issues in state editions of Hindi language newspapers provides powerful and important links between people's everyday realities and experiences, and the ways in which they are discussed by local people at the community level. The local media help the communities by exploring who speaks for climate and what effects this may have on contemporary climate challenges. Even though the selection and treatment of sources and the representation of viewpoints and evidence in state-edition stories are mostly questionable in terms of fairness, accuracy and balance, they serve the public best and inform communities by empowering people the ability to tune out and care about (Boykoff & Roberts, 2008).

State edition stories of Hindi language newspapers always allow people to get into the characters who tell the story more effectively than the big sweeping generalisations. The mention of state people in stories about what was happening in their small little world makes them more impactful (Hess, 2013). Reporting on climate change impacts, adaptations and mitigation requires a clear engagement with technical understanding and access. At the state scale, both manifestation, as well as implications of climate change happening on a global to regional scale, has influences of state environmental, socio-economical as well as cultural characteristics (Lester, 2010). Considering the uniqueness of these characteristics leading to distinct opportunities and challenges, national and state governments has been setting-up different research & development institutions.

The journalists who participated in this study admitted that in a small hill state like Himachal Pradesh, the working journalists often have a low knowledge base in terms of both the craft of the story telling as well as the content. Training workshops in collaboration with institutions specialised in state environmental opportunities and challenges can help them to develop their capacity in reporting climate change with right information at the right time to ensure greater participation of state people. The advantage of journalists working in state editions of Hindi newspapers is that they are themselves the members of the communities in which they work thus allowing a better information exchange fostering democratic participation (Shanahan, 2007). Being highly interactive and vocal members of indigenous community, state journalists can put forward sustainable solutions to the climate issues based on the enriched traditional knowledge about the state environment. In contrast to climate change communication through mainstream national media with specialist journalists and sophisticated newsrooms, the daily coverage of climate change in state editions of language newspapers is limited but is instrumental in bringing behavioural and attitudinal change at the state level.

The journalists and editorial staff of the selected state editions of Hindi newspapers observed that workshops and training programmes on climate change reporting in collaboration with journalism schools and other institutions of research and learning should be organised to promote the best journalism practices in terms of climate change. They believe that these kinds of training workshops create opportunities for them to learn more about the science of climate change, access scientific data on the subject and explore reporting skills from different angles. Specialised training on technical issues such as climate change, adaptation, mitigation, finance and technology will be very useful for the journalists with limited exposure not only to enhance their reporting skills but also to develop their ability to analyse technical details and statistics to tell good scientific human stories. Professional

training and orientation will help them to deal with the dynamic subject of climate change in a small newsroom with limited resources. They agreed that hands-on-training and assignments not only improves their reporting but also helps them to put their better understanding of climate change into practice by telling the stories from state perspectives (Ward, 2009). An understanding of how the state journalists pitch the stories at state level and how much they understand the multiple aspects of climate change reporting is very helpful to understand how scientific information is interpreted and presented for public consumption (Billet, 2009). The study specifically analysed the news stories of landslides in the selected newspapers but while approaching the other stories related to flash flood, wildfire and cloud burst, it was observed that the connection between climate change and the local event is seldom made in climate reportage. Although, the damage caused by these events were report extensively, there was little introspection by the local editions of the selected Hindi language newspapers as to the reasons for such catastrophic events. Further, little to no connection is made to anthropogenic factors that play a significant role in causing the disaster in all observed news stories. The attribution to climate change appears mostly in the form of either vague throwaway statements or brief quotes from experts.

## **Conclusion**

All the reporters interviewed felt the need for training, education and orientation not only to identify stories, finding state experts, sources and literature and how to read them while reporting climate stories but also to have an increased knowledge and understanding of geography and climate of the region. They strongly believe that this will not only help them to identify environmental problems that could be a result of climate change but also provide them an idea on how to connect the global issues of climate change with state journalistic style stories. It was observed that an understanding of how reporting for environment is different from other news-beats like politics, economics and sports will help the state journalists to pitch a story idea to the editor and also make them confident in conceptualising an approach of writing – an angle for the story, audience, the desired outcomes, experts and sources, consultation of data/scientific information. A further ability to interpret numerical information and data will help them to produce stories and integrate this learning into ongoing practices.

A training course on reporting environmental and climate change recently initiated by Internews and Earth Journalism Network in Philippines in partnership with the Asian Centre for Journalism (ACFJ) at the Ateneo De Manila University provided the selected journalists more knowledge in terms of access to resources, research skills and allowed them to share information and reporting. Similar kind of workshops can also be conducted in Himachal Pradesh in collaboration with international agencies and regional media schools. Teaming up is an effective way to dig into climate change and its intersection with other issues like governance and health. Training programs for journalists of middle- and low-income countries are instrumental in encouraging less resourced journalists to use new and unique media platforms to present and share their state language stories.

While discussing about the training programmes recently offered in Philippines, Sri Lanka and Bhutan by Earth Journalism Network and Internews in collaboration with journalism schools of the universities of the respective countries, the interviewed journalists have shown keen interest in attending a training program like this in Himachal Pradesh with the help of the journalism school of the central and state universities and saw this as an opportunity to widen the scope of their stories, since climate change and the climate crisis cut across other issues – human rights, the environment, politics dealt simultaneously. The interviewed journalists wish to do stories showing the resilience of the state communities in the face of geographical and socio-economic vulnerabilities. In Himachal Pradesh, a lot of resistance to massive hydro-electrical power projects was going on and this provides ample opportunities for the state journalists to catch up on crucial information of community resilience and to strategise this knowledge for better human rights-oriented and scientific or evidence-based stories.

It was further observed during the interviews and focus group discussions that the state journalists are not very much oriented about how the off-grid and energy-poor indigenous communities in this small hill state use collective action to protect themselves against social and environmental injustices. This was perhaps one of the reason that the issues were often under-reported. A further limitation is that the news-rooms of the selected Hindi newspapers lack necessary resources to cover stories like this. Here, a reporting fellowship will be very helpful for the state journalists to bridge the resource gap and in

providing opportunities to work closely with communities. This will be helpful in learning more about the science behind climate change as well as to publish stories across multiple news-platforms.

Grants offered by different agencies working for climate change like Climate Justice Resilience Fund, Earth Journalism Network (EJN), Solution Journalism Network (SJN), Digital Communication Network (DCN), Water and Climate Coalition, Climate Reality Project for journalists to report on impacts of climate change on human health not only finance the field work but also encourage journalists working in small-newsrooms to do stories on potential solutions and address how vulnerable communities are responding to challenges. Financial support at micro level from Centre for Environment Education (CEE), Association for Development Communication (ADC), Centre for Environment Energy and Climate Change (CEECC), Indian Council for Forestry Research and Education, National Mission on Himalayan Studies, Decision Support System for Environmental Awareness can also help the journalists working in small hill states like Himachal Pradesh to communicate good stories on the science of climate change and their effects to the public.

The training and orientation workshop, orientation sessions, short-term courses on media reporting about the alarming issue of climate change for journalists can not only tap the expertise of scientists, science communicators and media experts in a particular region to take views of subject experts while developing climate stories but can also empower the journalists working in the state editions of language newspapers to tell scientific concepts to a broad audience, shaping opinions and engaging the public in taking urgent and appropriate climate action.

The study urges for an increased focus on climate change stories by state newsrooms and advocates for training of local journalists to better understand the increasing complexities of the issues to make their reporting voices more vocal. The study further explores the possibilities of collaboration with media schools, training institutes, research institutions and other stakeholders involved in studying, reporting and researching issues of climate change to ensure a continuous flow of mediated information both at the state, regional as well as national level.

## Acknowledgement and Disclaimer

We are grateful to the anonymous reviewers of the journal, whose comments and questions greatly aided in improving the final argument. The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The author(s) received no financial support for the research, authorship, and/or publication of this article.

## References

- Acharya, K., & Noronha, F. (Eds.). (2010). *The green pen: Environmental journalism in India and South Asia*. Sage Publications India. <https://doi.org/10.4135/9788132107958>
- Altman, I., & Low, S. (1992). *Human behavior and environments: Advances in theory and research*. Plenum Press.
- American Meteorological Society. (n.d.). *Glossary of meteorology*. [https://glossary.ametsoc.org/wiki/climate change](https://glossary.ametsoc.org/wiki/climate%20change)
- Bacon, W. (2013). *A sceptical climate: Media coverage of climate change in Australia*. University of Technology Sydney. <https://www.uts.edu.au/sites/default/files/sceptical-climate-part1.pdf>
- Bharti, H., Panatu, A., Kiran, & Randhawa, S. S. (2019). *Temporal change in tree species composition in Palampur Forest Division of Dharamshala Forest Circle, Himachal Pradesh*. H. P. State Centre on Climate Change (HIMCOSTE). <http://www.hpccc.gov.in/documents/Report%20Writing%20on%20Palampur%20Forest%20Division-Completed.pdf>
- Bhaskaran, H., Sharma, S., Nair, P., & Mishra, H. (2020). Encroachers and victims: Framing of community dynamics by small-town journalists in Dharamshala, India. *Newspaper Research Journal*, 41(3), 333–348. <https://doi.org/10.1177/0739532920950045>
- Billett, S. (2009). Dividing climate change: Global warming in the Indian mass media. *Climate Change*, 99(1-2), 1–16. <https://doi.org/10.1007/s10584-009-9605-3>
- Bolsen, T., & Shapiro, M. A. (2018). The US news media, polarization on climate change, and pathways to effective communication. *Environmental Communication*, 12(2), 149–163. <https://doi.org/10.1080/17524032.2017.1397039>
- Boyce, T., & Lewis, J. (Eds.). (2009). *Climate change and the media*. Peter Lang.
- Bowden, V., Nyberg, D., & Wright, C. (2021). “We’re going under”: The role of local news media in dislocating climate change adaptation. *Environment Communication*, 15(5), 625–640. <https://doi.org/10.1080/17524032.2021.1877762>
- Boykoff, M. T., & Roberts, J. T. (2008). *Media coverage of climate change: Current trends, strengths, weakness* (Human Development Report 2007/2008). United Nations Development Programme. <https://hdr.undp.org/system/files/documents/boykoffmaxwellandrobtsjtimmsonpdf.pdf>
- Boykoff, M. T., & Smith, J. (2010). Media presentations of climate change. In C. Lever-Tracy (Ed.), *Routledge handbook of climate change and society* (pp. 210–218). Routledge.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

- <https://doi.org/10.1191/1478088706qp063oa>
- Breen, E. (2006). Guest editorial. *Library Hi Tech News*, 23(9). <https://doi.org/10.1108/lhtn.2006.23923iaa.001>
- Brown, B. B., & Perkins, D. D. (1992). Disruptions in place attachment. In I. Altman & S. M. Low (Eds.), *Place attachment* (pp. 279–304). Plenum Press.
- Cappella, J. N., & Jamieson, K. H. (1997). *Spiral of cynicism: The press and the public good*. Oxford University Press.
- Chand, S. (2017). Newspaper coverage of climate change in Fiji: A content analysis. *Pacific Journalism Review*, 23(1), 169–185. <https://doi.org/10.24135/pjr.v23i1.310>
- Choudhary, S. (2019, June 26). *Pastoralists of Himachal Pradesh an unusual casualty of global warming*. Livemint. <https://www.livemint.com/news/india/carpet-weavers-of-himachal-pradesh-an-unusual-casualty-of-global-warming-1561488151014.html>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Sage Publications.
- Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Sage Publications.
- Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.
- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80–92. <https://doi.org/10.1177/160940690600500107>
- FPJ Editorial. (2021, July 14). *FPJ Edit: The flash floods in Dharamshala, Himachal Pradesh, are another grim warning for us to stop plundering the Himalayan ecosystem*. Free Press Journal. <https://www.freepressjournal.in/analysis/fpj-edit-the-flash-floods-in-dharamshala-himachal-pradesh-are-another-grim-warning-for-us-to-stop-plundering-the-himalayan-ecosystem>
- Guest, G., Macqueen, K. M., & Namey, E. E. (2011). *Applied thematic analysis*. Sage Publications.
- Gunster, S., Fleet, D., Paterson, M., & Saurette, P. (2018). Climate hypocrisies: A comparative study of news discourse. *Environmental Communication*, 12(6), 773–793. <https://doi.org/10.1080/17524032.2018.1474784>
- Haigh, J. D. (2007). The sun and the earth's climate. *Living Reviews in Solar Physics*, 4, Article number 2, 20–25. <https://doi.org/10.12942/lrsp-2007-2>
- Hatcher, J. A. (2013). Journalism in a complicated place: the role of community journalism in South Africa. *Community Journalism*, 2(1), 49–67.
- Hertog, J. K., & McLeod, D. M. (2001). A multiperspectival approach to framing analysis: A field guide. In S. D. Reese, O. H. Gandy & A. E. Grant (Eds.), *Framing public life: Perspectives on media and our understanding of the social world* (pp. 141–162). Lawrence Erlbaum.
- Hertsgaard, M., & Pope, K. (2021, June 3). *The media is still mostly failing to convey the urgency of the climate crisis*. The Guardian. <https://www.theguardian.com/commentisfree/2021/jun/03/media-climate-change-crisis-emergency>
- Hess, J. J., Malilay, J. N., & Parkinson, A. J. (2008). Climate change: The importance of place. *American Journal of Preventive Medicine*, 35(5), 468–478. <https://doi.org/10.1016/j.amepre.2008.08.024>
- Hess, K. (2013). Breaking boundaries: Recasting the “local” newspapers as “geo-social” news in a digital landscape. *Digital Journalism*, 1(1), 48–63. <https://doi.org/10.1080/21670811.2012.714933>
- Hess, K. (2014). Making connections: “Mediated” social capital and the small-town press. *Journalism Studies*, 16(4), 482–496. <https://doi.org/10.1080/1461670X.2014.922293>
- Jaswal, A. K., Kumar, N., & Khare, P. (2014). Climate variability in Dharamshala – a hill station in Western Himalayas. *Journal of the Indian Geophysical Union*, 18(3), 336–355.
- King, N. (2004). Using templates in the thematic analysis of text. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 256–270). Sage Publications.
- Lauterer, J. (2006). *Community journalism: Relentlessly local* (3rd ed.). University of North Carolina Press.
- Lester, L. (2010). *Media and environment: Conflict, politics and the news*. Polity Press.
- Mack, N., Woodsong, C., MacQueen, K. M., Guest, G., & Namey, E. (2005). *Qualitative research methods: A data collector's field guide*. Family Health International. <https://www.fhi360.org/sites/default/files/media/documents/Qualitative%20Research%20Methods%20-%20A%20Data%20Collector's%20Field%20Guide.pdf>
- Mocatta, G., Mayes, E., Hess, K., & Hartup, M. E. (2022). The trouble with ‘quiet advocacy’: Local journalism and reporting climate change in rural and regional Australia. *Media, Culture & Society*, 45(1), 157–177. <https://doi.org/10.1177/01634437221104686>
- Moser, S. C. (2016). Reflections on climate change communication research and practice in the second decade of the 21st century: What more is there to say?. *WIREs Climate Change*, 7(3), 345–369. <https://doi.org/10.1002/wcc.403>
- National Centers for Environmental Information. (2021). *About NCEI*. <https://www.ncei.noaa.gov/>
- Nisbet, M. (2010). *Climate shift: Clear vision for the next decade of public debate*. American University School of Communication.
- O’Neill, S., & Nicholson-Cole, S. (2009). “Fear won’t do it”: Promoting positive engagement with climate change through visual and iconic representations. *Science Communication*, 30(3), 355–379. <https://doi.org/10.1177/1075547008329201>
- Olausson, U., & Berglez, P. (2014). Media and climate change: Four long-standing research challenges revisited. *Environmental Communication*, 8(2), 249–265. <https://doi.org/10.1080/17524032.2014.906483>
- Ornebring, H., Kingsepp, E., & Moller, C. (2020). Journalism in small towns: A special issue of Journalism: Theory, practice, criticism. *Journalism*, 21(4), 447–452. <https://doi.org/10.1177/1464884919886442>
- Painter, J. (2010). *Summoned by science: Reporting climate change at Copenhagen and beyond*. Reuters Institute for the Study of Journalism, University of Oxford. <https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017->

- 12/Summoned%20by%20Science%20Reporting%20Climate%20Change%20at%20Copenhagen%20and%20beyond.pdf
- Panwar, T. S. (2021, August 20). *Climate change: Unbridled development devastates ecosystem*. NewsClick. <https://www.newsclick.in/Climate-Change-Unbridled-Development-Devastate-Ecosystem>
- Puri, S. (2020, January 27). 'Study on impact of climate change on animals of Himachal Pradesh'. The Times of India. <https://timesofindia.indiatimes.com/city/shimla/study-on-impact-of-climate-change-on-animals-of-himachal-pradesh/articleshow/73660735.cms>
- Rice, P. L., & Ezzy, D. (1999). *Qualitative research methods: A health focus*. Oxford University Press.
- Richards, I. (2012). Beyond city limits: Regional journalism and social capital. *Journalism*, 14(5), 627–642. <https://doi.org/10.1177/1464884912453280>
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85–109. <https://doi.org/10.1177/1525822X02239569>
- Scannell, L., & Gifford, R. (2013). Personally relevant climate change: The role of place attachment and state versus global message framing in engagement. *Environment and Behavior*, 45(1), 60–85. <https://doi.org/10.1177/0013916511421196>
- Schafer, M. S., & Schlichting, I. (2014). Media representations of climate change: A meta-analysis of the research field. *Environmental Communication*, 8(2), 142–160. <https://doi.org/10.1080/17524032.2014.914050>
- Schweizer, S., David, S., & Thompson, J. L. (2013). Changing the conversation about climate change: A theoretical framework for place-based climate change engagement. *Environmental Communication*, 7(1), 42–62. <https://doi.org/10.1080/17524032.2012.753634>
- Shanahan, M. (2007). *Talking about a revolution: Climate change and the media: An IIED briefing*. International Institute for Environment and Development. <https://www.iied.org/sites/default/files/pdfs/migrate/17029IIED.pdf>
- Strauss, A. & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage Publications.
- Ward, B. (2008). *Communicating on climate change: An essential resource for journalists, scientists, and educators*. Metcalf Institute for Marine and Environmental Reporting, University of Rhode Island. <https://www.climamed.eu/wp-content/uploads/files/Communicating-On-Climate-Change.pdf>
- Ward, B., & Richardson, L. J. (2011). *Reporting on climate change: Understanding the science* (4th ed.). Environmental Law Institute. <https://www.eli.org/eli-press-books/reporting-climate-change-understanding-science-4th-edition>
- Welle, D. (2021, September 9). *Climate change and construction combine to disastrous effect in the Himalayas*. The Indian Express. <https://indianexpress.com/article/india/climate-change-construction-effect-himalayas-7498640/>
- Zehr, S. C. (2000). Public representations of scientific uncertainty about global climate change. *Public Understanding of Science*, 9(2), 85–103. <https://doi.org/10.1088/0963-6625/9/2/301>
- Zelizer, B. (2013). On the shelf life of democracy in journalism scholarship. *Journalism*, 14(4), 459–473. <https://doi.org/10.1177/1464884912464179>