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CLIMATE CHANGE JOURNALISM IN PAKISTAN

Ethical Deliberations

Muhammad Ittefaq, Shafiq Ahmad Kamboh, and Ayesha Ashfaq

Background and Context

According to climate scientists, climate change is not only threatening to vast ecological systems but also posing great risks of accelerated extinctions, resulting in “forced human migrations from low-lying lands, diminished food resources for a growing population,” and will cost more than \$10 trillion to the world in the next 50 years (Ward, 2009, p. 14). Because of the enormous impact of global warming, it is crucial that journalists move beyond just simply stating the impact of climate change or sharing shocking statistics to readers specifically in the Global Southern countries like Pakistan, where human sufferings are increasing due to rising temperature, frequent floods, and air pollution. Climate, science, technology, and health journalists need to take ethical responsibilities to not only sensitize the general public and policymakers on the ongoing and upcoming effects of global warming but to also put their share to report it in a more responsible way to bring worldly attention to their people’s sufferings. Furthermore, “journalists should begin to help people not only understand climate change, but also understand the paths forward by leading with how we can still make a difference” (Verma, 2019, para. 11). In this context, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) provided ethical principles for journalists in relation to climate change in 2017. These guidelines are useful for decision-making, policy formulation, and other actions related to climate change globally.

Ethical climate change communication refers to the “moral aspects of interaction, either way, between an expert (communicator) and the audience (for example decision-makers, local officials, jury, legislators, students, public, etc.)” (Behl, 2016, pp. 624–625). Ethical issues in climate-related discussions may arise when the experts (scientists and journalists) seek to present information, inform and educate the audience, demonstrate the existence and relevance of a societal issue, persuade readers concerning the importance and magnitude of the crisis, influence policymakers, advocate a solution, and promote actions. The UNESCO’s (2017) Article 4 of the *Declaration of Ethical Principles in relation to Climate Change* (DEPCC) states, “[G]lobal engagement that mobilizes governments, international organizations, including the United Nations system, private sector, civil society, and other relevant actors may be beneficial” (p. 130), and “pertinent actors should facilitate and encourage public awareness, and participation in decision-making and actions by making access to

information and knowledge on climate change” (p. 130). Similarly, deliberation’s concept originates from rhetoric which argues that social issues should be resolved based on logic and reason by involving all stakeholders in the society (Dietz, 2013). Ethical deliberation on climate change and UNESCO’s ethical principles are useful to make sense of current climate change journalism in Pakistan. In this chapter, we shed light on climate change journalism in Pakistan and its ethical deliberations through the lens of UNESCO’s ethical principles, coupled with ethical deliberations concept.

We start this chapter by discussing UNESCO’s guidelines and ethical deliberations. Then highlight the role of five actors/stakeholders (i.e., industrial pollution, transportation, agriculture, poverty and population, and climate journalism) who are directly or indirectly involved in climate crisis in Pakistan. These actors not only contribute to environmental degradation and air pollution by ignoring the warnings of scientists about the dangers of the climate in Pakistan, though they have a strong ability to mitigate the effects of climate crisis. We argue that, for journalists, ethical deliberations and UNESCO’s ethical guidelines can play an important role in covering climate change in Pakistan. Moreover, we contend that these guidelines should be adapted at the local level and countries should amend principles which are culturally, socio-politically, financially, and emotionally appropriate to their local journalism and academic cultures to address climate change crisis. We conclude our chapter by suggesting some guidelines for the normative role of media and government in responding to the climate change crisis in Pakistan.

UNESCO Guidelines and Climate Change Ethical Deliberations

The UNESCO has devised and adopted a DEPC in the year of 2017. These comprehensive principles of well-devised 18 articles assign responsibilities to various stakeholders to address the challenge, while setting ethics the focal point of the climate change discussion. For instance, to highlight the significance of enhancing public awareness through various communication channels, Article 12 aptly assigns media, among others, certain responsibilities and recommends: “promote awareness regarding climate change and the best practices for responding to it, through strengthening social dialogue, and communication by the media, scientific communities, and civil society organizations, including religious and cultural communities” (UNESCO, 2017, p. 132). This study considers DEPC’s articles as a framework for climate and environmental ethics and argues how contemporary Pakistani journalism can comply with these principles in order to create awareness and educate the public on the effects of climate change and persuade policymakers to take concrete actions. Certainly, these guidelines are not new to climate scientists but complement the idea of ethical deliberations.

In order for the policy decisions to be accepted and implemented, it is critically important to gain support from all stakeholders. For instance, in issues such as climate change, which involves technical as well as scientific knowledge, stakeholders, such as industrialists, public, farmers, transporters, and media workers, sometimes are ill-informed or lack in education to make healthy choices about the environment. Since the climate change issue is unique in its characteristics and entails unequal distributions of damages and benefits within a country, intergenerational effects, and risks and uncertainties around the costs and benefits of policy interventions, therefore this issue needs careful attention and deliberation (Cavalier et al., 2008; Stern, 2006). In order to mitigate the effects of climate change, policymakers need to weigh economic impacts and lifestyle changes. To make informed decisions, the media can mirror this situation and make people aware of the dangers of rising sea level and frequent

heat waves. *Deliberations* is “collective and/or individual weighing involving discussion, reflection, or both” (Cavalier et al., 2008, p. 10). In addition, during the deliberation process, the discussions should be informed and be based on factual claims. For instance, the relationship between climate change and human activities has been established based on scientific facts (Maibach et al., 2014). *Deliberation* also means that arguments should be balanced; stakeholders should respect and listen to each other; claims should be judged based on merit, not on who is delivering them; and arguments should receive comprehensive attention. In information-rich societies, mass media is still one of the most popular medium of information for the general public (Kamboh et al., 2022). In order to diffuse ethical debate among all stakeholders, the media need to cover climate change as a problem that affects everyone in society.

Climate, science, technology, and health journalists should translate the complex findings of scientific studies and explain to the audience what they meant by the impact of climate change on agriculture, poverty, climate refugees, heat waves, epidemics, food production, industries, air pollution, economic development, and people in society. Oversimplifying scientific concepts may lead to misunderstandings and misinterpretations on the part of journalists. Such constructions challenge journalists’ duty of fidelity to their audience (Valentine, 2009). In general, audiences rely on journalists to bridge a gap between climate change issues and common knowledge about the issue. In this regard, public attitude is important for the support of public policies, which can mitigate the effects of climate change. In the next section, we discuss how various actors/stakeholders have contributed to climate change in Pakistan, and what local media and the government need to do to tackle this acute challenge.

Stakeholders Responsible for Climate Change Crisis in Pakistan

Industrial Pollution and Waste Management

The industrial sector is the backbone of the economic development in Pakistan, as it is the second largest sector (18.7%) that contributes to GDP, but untreated effluents are wreaking havoc with the ecosystem of the country (O’ Neil, 2022). Besides the vehicular emissions that cause almost 45% of air pollution, industrial chemicals and wastes are equally responsible for environmental degradation in Pakistan (Mehdi, 2019). However, no serious efforts have been made by any stakeholder in the country, especially the government. The broad-based industrial sectors of Pakistan include textile, fertilizers, agriculture, leather, pharmaceuticals, chemicals, cement, metal, non-metallic minerals, steel, automotive, tobacco, automobile, electrical goods, paper, light and heavy engineering, and food processing industries. These sectors generate huge precarious solid waste, harmful gaseous chemicals, liquid pollutants, and various health- hazardous emissions. Due to the lack of policy directions or legislation for the management of industrial waste in the country, solid waste placed on low-lying land or burned pollutes groundwater and causes dust and toxic chemicals, all of which are mainly detrimental to human health and the environment. Research suggests that the accumulation of anthropogenic greenhouse gases in the atmosphere is the main driver of climate change (Demeneix, 2020). Some of the pollutants like heavy metals released from unchecked industrial dumping sites end up polluting natural resources, including seawaters, fresh groundwater, rivers, and fertile agricultural land. According to the Pakistan Council of Research in Water Resources, drinking water in 17 major cities in the country is harmful for human

consumption, and 70% of drinking water is contaminated in Lahore (i.e., the second largest city in Pakistan) only because of industrial pollutants (Mehdi, 2019).

Pakistan has an environmental protection act, but the lack of the will of all the stakeholders, including government and the citizens, to follow and implement the directions remain a major challenge (Huma, 2018). Pakistan has signed the Basel, Stockholm, and Rotterdam conventions, but poor institutional capacity is a hurdle in the implementation of these international agreements toward controlling the industrial pollution and environmental degradation. The state needs to pay serious attention to curbing the threats to the environment due to the rapid industrial expansion, which is almost missing. National environment quality standards must be revised. The development of renewable energy sources can substantially reduce biodiversity loss, chemical waste, and air pollution. The concerned stakeholders must design a system to monitor and properly manage industrial effluents before the discharge to save aquatic and human life from serious environmental damages. For reducing GHG emissions in Pakistan, no policy or technology will be able to improve the situation unless the mitigation alternatives and solutions are implemented, by adding the industrial waste sector as an integral part. Moreover, a large number of common effluent treatment plants must be constructed to meet the needs of the industrial areas, and cleaner production centers must be expanded and strengthened properly. Awareness, trainings, and capacity building of all the stakeholders must be prioritized to change public attitude toward environment-friendly industrial waste management. Finally, in bringing stakeholders together, public policies should be centered on mitigation of climate change effects, and the media should report on this aspect more to frame it as one of the biggest threats the country is facing over the last few decades.

Transportation System, Vehicular Emissions, and Air Pollution

The transportation system relying on old infrastructure and motor vehicles is considered as one of the major sources of economic development in Pakistan, as it contributes 10% of the GDP and helps generate 6% of the total employment opportunities in the country (Khan & Majeed, 2019; Sohail et al., 2021). Contrary to its positive role in economic growth, it has also become one of the highest sectors of carbon emission and fossil fuel consumption in Pakistan (Chaudhry, 2017). The rapid growth of modern economies and the consequent pressure on the urban transport have created a plethora of environmental and climate issues and are a major threat to rising air pollution in Pakistan, with large cities like Lahore and Karachi ranking among the most polluted worldwide (Khan, 2021). Air pollution is generally considered as an urban problem, but with the expansion of industries and the persisting trend of vehicle usage, it has also been penetrated into the rural areas of Pakistan.

According to Punjab Development Statistics (Fareedi, 2021), almost 19.7 million vehicles have been registered in Punjab (i.e., the largest province of Pakistan) alone, but at present, air pollution monitoring and control actions in Pakistan are both insufficient and only centered for large cities. In Pakistan, the urban residents largely either own their private vehicles or two-wheelers or rely on public transport. This has led to a tremendous growth in private motor vehicle ownership. Similarly, the number of two-stroke vehicles, outdated infrastructure, and poorly maintained public/private transports, including auto-rickshaws, minibuses, jeeps, coaches, station wagons, cabs/taxis, and trucks, in Pakistan has been more than doubled over the last decade. Among these, rickshaws and motorcycles, due to their two-stroke engines, and diesel vehicles using crude diesel oil, emitting excessive

carbon/visible smoke, are of the most serious concern (Khan, 2009; Yaqoob et al., 2021). They are becoming a serious threat to climate and health in almost all large and small cities by contaminating the air.

On the one hand, the pollution from the growing traffic and poorly maintained transportation has increased significantly; on the other, the evident negligence of the government and the concerned authorities in adopting necessary transport policies and encouraging sustained investments in the public transport system has exacerbated the situation. These challenges evidence the critical need to introduce a systematic national transportation policy with more sustainable green energy paths. The concerned authorities need to take drastic measures to curb air pollution and implement several policies ranging from halting the import of low-quality fuel to mandating refineries and industries to install emissions-reducing technology. Similarly, the authorities must ban poorly maintained and outdated vehicles on roads. Recently, the government ordered a switch to the Euro 5 emissions standard for all new vehicle approvals in Pakistan from January 2021 to control air pollution, but only less than 5% of cars conform to the standard (Khan, 2021). Therefore, following the vision 2030 of the National Transportation Policy, proper planning and policy directions for a sustainable and environment-friendly transportation system in Pakistan are required to meet the challenges of inadequate infrastructure, lack of resources, governance structure, and overall irresponsible attitude of the concerned authorities and the general public toward climate change and air pollution.

Agriculture Sector

Globally, agriculture is the largest contributor to methane (CH₄) emission, which is a powerful greenhouse gas primarily emitted by human activities, such as rearing livestock, rice cultivation, and residue burning (Ritchie & Roser, 2020; Smith et al., 2021). In Pakistan, the agriculture and livestock sector accounts for as much as 44.8% of the national GHG emissions, eventually making it the second largest contributor after the industry and transportation sector (Mir et al., 2017). Being as a potent cause of global warming, methane is mostly emitted at dairy farms from the mouths of buffaloes, calves, and cows. It is produced in the bovine animal's stomach during the digestion process, also referred to as enteric fermentation (Bačėninaitė et al., 2022). In Pakistan, it is estimated that methane contributes to 70.6% of the total livestock sector annual emissions. Local breeds of buffaloes produce maximum methane, followed by cattle, goats, sheep, and poultry. Farm animals' enteric methane averaged 63.4% of the total CH₄ emissions, followed by 25% from manure degradation (Habib & Khan, 2018). The second methane source is manure, that is, animal dung used for fertilizing land (Khan et al., 2021). Methane from manure is generated when livestock waste is heaped in open places by farmers to be used further for fertilizing crops (Cárdenas et al., 2021).

Scientists have recommended to improve farm animal diet and cow/buffalo breeds to lower methane emissions from the dairy sector (Bačėninaitė et al., 2022). A recent study by Pakistani scientists estimated that by improving fodder quality or digestibility of poor-quality feed and by enhancing the genetic potential of animals, methane emission per unit of milk can be reduced to around 43% compared to baseline, with an associated benefit of 100% increase in milk production (Habib & Khan, 2018). Similarly, methane emissions from manure can be reduced by adopting proper storage and processing techniques or by using it to produce biogas (Cárdenas et al., 2021; Smith et al., 2021).

In terms of agriculture, rice is one of the most important cash crops in Pakistan, meeting a major portion of the dietary needs of the local population (Mir et al., 2017). However, its cultivation in agricultural fields is responsible for somewhat 10% of global methane emissions (Umali-Deininger, 2022). In fact, flooded paddy fields produce methane due to the low-oxygen environment of water-logged rice fields. Scientists suggest that instead of keeping their fields continuously flooded, farmers should drain rice paddies two to three times during the growing season. This alternate wetting and drying can reduce methane emissions from paddy rice fields by almost half (Smith et al., 2021). Apart from rice cultivation, rice stubble burning also releases CH₄ and CO₂ through incomplete combustion of biomass, which causes emergency-level air pollution in India and Pakistan (“Emergency-level Air,” 2022). Experts suggest promoting zero-tillage agriculture, biomass used as animal feed, bio-composting, biomass-based thermal power plants, and mushroom cultivation (“Emergency-level Air,” 2022). In short, these practices can increase rice productivity, improve climate resilience, and reduce GHGs (Umali-Deininger, 2022).

In addition to the aforementioned supply-side measures to reduce GHG emissions, interventions on the demand side are highly recommended by experts (Smith et al., 2021). For instance, a significant reduction in food waste is direly needed, keeping in view the fact that food waste is common at wedding ceremonies and at various hotel banquets (Mughal, 2018). Given the elevated meat-based food consumption trends in Pakistan (Afzal et al., 2022), awareness campaigns are required to shift the community to a plant-based diet (Smith et al., 2021). Last but not the least, the role of mass media can be vital in terms of educating rice and livestock farmers. Recent studies recommend that apart from dairy extension and technical public services, “dairy farmers’ training should include the effective use of electronic media so that they may equip themselves with advanced dairy production information” (Asghar et al., 2021, p. 489). Kamboh et al. (2022a) recommends that “to make future journalism more inclusive of environmental discourse, civic advocacy groups should aim at influencing the existing media studies’ curriculum development process to add to the latest environmental health and advocacy journalism debates in various course contents” (p. 2,661).

Population, Poverty, and Environmental Degradation Nexus

Pakistan is on the verge of two volcanic eruptions (Ali, 2019). One is rapid population growth, and the other is environmental degradation due to population explosion. More than half of the country’s population resides in rural areas and relies heavily on the quantity and quality of natural resources, whose status has begun to deteriorate with every passing day. It is imperative to control unabated population growth, because the findings of many scientific studies inform that the increasing population and poverty rate has greatly contributed to environmental degradation in Pakistan (Khan et al., 2019; Zaman et al., 2011). However, in defiance of scientists’ caution that “humans alter the climate by emitting greenhouse gases” (Cohen, 2010, p. 163), various conservative religious leaders serve as one of the main hurdles in the way of population planning and control efforts in the country (“Pakistan Birth,” 2017).

Understanding this connection between environment and poverty helps countries achieve the United Nations Sustainable Development Goals (SDGs), which require a more solution-oriented approach to solve climate change issues. To that end, media in countries like Pakistan can play an active role in disseminating information, imparting education, and establishing

the link between poverty, overpopulation, and environmental degradation. Media can also sensitize common people their ethical responsibilities to curtail the country's population within the resources. Since environmental degradation impacts agricultural productivity, the media can educate people and eventually play an important role in poverty alleviation. At the local level in Pakistan, broadcasting messages on TV and writing long reports in newspapers on the effects of climate change can have a wider and immediate impact on how sectors like agriculture and dairy farming can utilize that knowledge. The media needs to make a connection between these aforementioned issues and sensitize all stakeholders so that they may come together and have relevant discussions to make informed decisions. Some studies found that media coverage of global warming affects people's attitude for a short period of time; however, the media needs better and effective communication of global warming and its impact on all aspects of their life in order to have sustainable change in their attitude and lifestyles.

Climate Journalism

In the summer of 2022, climate-fueled disaster hit Pakistan that affected 10% of Pakistan's land; 33 million were impacted and 7.9 million were displaced, 1.7 million homes were destroyed, more than 1,700 people died, thousands of animals got killed, and estimated damage was \$10–40 billion (Wyns, 2022). Pakistan as a whole received 243% more rainfall than usual during this period. These devastating events were covered extensively not only in Pakistani media but also in international media (Kamboh & Ittefaq, 2023a). Most of the media reporting was about human sufferings, extreme floods due to GHG emissions, and climate justice issues (Reed & Bokhari, 2022).

Many scholars have recently examined how Pakistani journalists cover climate change in Pakistan. Scholars have discussed journalists' challenges, influences, environmental issues coverage in editorials during Covid-19, environmental journalism education, and China Pakistan Economic Corridor (CPEC) and climate change (Ejaz et al., 2022; Hussain et al., 2022; Jamil & Bhujju, 2022; Kamboh et al., 2022a; Qusien & Robbins, 2022; Sharif & Medvecky, 2018). Sharif and Medvecky (2018) documented the challenges journalists face in order to provide adequate coverage to climate change issues in the Pakistani news media. By using interviews, their study found that most of the journalists noted that their reporting on climate change is event-oriented, journalists only pay attention to this issue when it gets highlighted in international media, climate journalism does not bring advertisement to media companies, and journalists cover politics more than any other issue in the country. Similarly, Ejaz et al. (2023) analyzed ten years' media coverage of climate change in the three largest English-language newspapers in Pakistan. By using computational content analysis approach, the study found that Pakistan's media coverage falls into six themes, including climate politics, climate governance and policy, climate change and society, climate change impacts, climate science, and climate solutions. In addition, overall, climate change news coverage in Pakistan has substantially increased between 2010 and 2021. Both studies show that news media still cover political news, but if media report on climate change, it only talks about the political aspect of it. Climate science and solution are the least-covered topics; this means that newspapers do not pay heed toward climate change solutions. Ethically, the media should be reporting more on this aspect of climate change.

In Pakistani media, climate change reporting has several problems, such as lack of financial and organizational support (Wadud, 2022), lack of expertise and education, influences

of advertisers and corporations (Ejaz et al., 2022), scant culture of specialized treatment of environmental news (Sharif & Medvecky, 2018), lack of responsibility from journalists and organizations (Hussain et al., 2022), and expert knowledge and the journalists' ability to frame environmental stories in an effective manner (Jamil & Bhujju, 2022). In addition, some studies show that Pakistani newspapers cover human development issues inadequately (Kamboh & Ittefaq, 2023b; Kamboh & Yousaf, 2020). These inadequacies may lead toward low-quality and less-critical media coverage. For instance, Kamboh et al. (2022a) examined the editorial coverage of environmental issues in mainstream English newspapers of four majority world countries (i.e., Pakistan, India, Bangladesh, China) amid the Covid-19 pandemic. Their results suggest that "in relation to advocating environmental issues, the editorialists either ignored linking environmental issues to the pandemic or, if they established a link, gave negligible coverage, hence seem to have failed to perform their normative role" (p. 2,646).

Summary

Global warming is a serious threat to humans, societies, and ecosystem, and it needs systematic research to understand its effects. This multidimensional crisis faced by every country on Earth needs a comprehensive response which is based on financial, cultural, psychological, and educational aspects. Although scientists are playing a key role in influencing policymakers, engaging with the public, and researching its links with poverty, frequent epidemics, increasing poverty in developing countries, low production in agriculture, increasing populations, and environmental degradation, non-profit organizations are also playing their vital role in creating awareness among the masses about the determinantal effects of climate change globally. Overall, researchers have taken a predominantly empirical, positivistic, and critical approach to investigating the various facets of climate journalism and environmental communication.

In summary, scholarly research related to climate journalism has increased significantly during the last few years in Pakistan. In addition, research suggest that news coverage is also increasing despite having various problems and influences on journalism in Pakistan. However, still today, most of the environmental and climate change-related stories are based on news releases. Due to the lack of expert knowledge and resources, reporters prefer not to go into the field and do in-depth reporting on these climate change issues. Because media organizations do not encourage and provide required resources to their reporters to undertake in-depth and extensive reporting on climate justice issues, climate racism, climate ethical violations, and climate and poverty, most of the climate reporting is based on self-interest and self-motivation of the reporters to do good for the society. Because of routine journalistic pressures to produce content for multiple platforms, journalists do the bare minimum in reporting climate change-related stories. Due to the nature of climate journalism, it requires long-form stories, which take months to produce, to get a viewpoint of scientists and read complex findings of the empirical research. Climate journalists have lost their passion for climate reporting due to a lack of support from their organizations. Audiences demonstrate a keen interest in accessing science-related content, yet the prominence of other content categories, including showbiz, sports, and politics, often relegates climate, health, education, and other issues relevant to the general public to a lower editorial or reporting priority. Consequently, it becomes crucial for the media to assume a heightened ethical and moral responsibility in addressing this urgent issue in Pakistan.

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