How to Cite:
Boora, S., Karakunnel, M. T., & Savarimuthu, X. (2022). Environmental communication research. *International Journal of Health Sciences*, *6*(S5), 11453–11468.
https://doi.org/10.53730/ijhs.v6nS5.11110

Environmental communication research: Need for an action-centric paradigm

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***Abstract*---**Climate change and its anticipated dangers have become imminent and face us repeatedly while the philosophy of infinite economic growth and technological triumphalism is promoting a complicit approach towards environmental issues. In the light of this environmental communication (EC), research needs to promote a broader message which would include larger public awareness and engagement. But the EC research is found to be mere academic and media-centric. Given the urgency and complexity of environmental issues, this article presents an overview of the need for a praxis of EC research that is broader and action-centric from social, political and economic perspectives, safeguarding human rights and climate justice and promoting local community actions and comprehensive sustainable living.

***Keywords*---**Environmental communication, context of environmental crises, displacements & migration, human rights, climate justice, social change, sustainability, public education, action-centric paradigm.

1. Introduction

Human economic activity, seemingly an endless endeavor, has reached a maximum level of tolerance with potential potential consequences of extreme weather, rising sea levels, depleting Arctic ice, melting of glaciers, etc that are evident in our daily living. (Intergovernmental Panel on Climate Change [IPCC],

2018). But due to lack of public informedness and personal efficacy to respond to these issues many countries have formulated environmental policies to cut anthropogenic greenhouse gas (GHG) emissions which affect the environment. To promote sustainable environmental behavior, people can be made aware of these policies through public communication channels such as newspapers, television, websites, social media and campaigns. But these efforts are dwarfed by the onslaught of climate change denial lobbies, polarized public opinion and political action. The public understanding of the environment is largely based on the images and paradigms from the polarized and politicized public discourses which are superficial and fragmented far from scientific findings through disinformation machines. So, there is a need for an act of persuasive public messaging, proliferating the facts about the destabilized environment, human costs and the solutions to be followed across the groups (Mann, 2009, 2021).

2. Environmental Communication

The impact of environmental issues and the need to inform and discuss these issues have initiated an environmental communication (EC) which became a dedicated discipline over the years. The term environment has evolved as 'a recognition of pervasive interdependencies, in which everything is connected to everything else' (Schoenfeld, 1983, p. 471). Accordingly, EC communicates the 'intersections and connections', that is, communication which human beings and their institutions maintain with the natural environment (Carson, 2002; Lie & Servaes, 2015). EC brings in socio-political aspects of the environment which are aimed at public discourse (Hansen, 2018) to bring social change through environmental education (Lie & Servaes, 2015).

Multiple studies have shown that media attention to environmental problems has rapidly expanded across various countries in the last 10–15 years (Schäfer et al., 2013). Several external factors have influenced the rapid attention of the media. Liu et al. (2011) categorize these factors as follows:

1. First as 'short-term weather conditions' such as floods, heatwaves and cyclones
2. Second as 'focusing events', in other words, 'high-profile international events' that 'push concern above the noise threshold of other issues' (Liu et al., 2011, p. 406)
3. Third as 'feedback' which refers to 'communications of stakeholders and pressure groups on societal matters' (Schäfer et al., 2013, p. 155).

These categories of factors, in a way, pulled the attention of the media and the resulting public discourse. Though there were fluctuations in media attention on environmental issues annually, a rising trend was evident. Since the introduction of environmental studies in the 1960s, 'the environment has remained firmly established on the media and public agenda' (Hansen, 2018).

3. Environmental Communication (EC) Research

While in the 1960s and 1970s, the subject of the research was concentrated on the emergence of environmental journalism, in the 1980s it focused on risk communication that studied media and its coverage of disasters, environmental

crises and nuclear power. In the 1990s, the field of research got consolidated through a diverse research area which was themed around media and environment published in dedicated journal editions, edited books and monographs (Corner & Schlesinger, 1991). From generalized research around pollution, disasters, resource depletion, controversies and nuclear power in the earlier phase, focused research on global warming and climate change emerged in the later phase. After the year 2000, with a consistent growth in publications, communication processes by public media—drawing the public's attention to the environmental problems—and a growing number of academic curricula, it became a definitive academic discipline leading to the establishment of the Environmental Communication Association 2011 (Hansen, 2017; Moser, 2016). Initially, the research was on conventional news media and their coverage and framing of environmental issues. With the arrival of digital communication technologies, it facilitated the non-linear communication process: from the study of interrelationships between various processes, institutional involvements and systemic impacts, the research became more diverse and broader with a mix of theoretical and disciplinary traditions ranging from the domains of science and technology to the fields of all social sciences and the disciplines of business and management studies (Cox, 2016; Hansen, 2018). The present EC research has gone beyond the study of conventional news media to other media such as movies, short films, cartoons, advertisements, theatre, pamphlets, public campaigns, Internet and social media apps.

3.1 Limits of EC Research

EC research needs to be enquired: '[I]s environmental communication research returning something of value to society? Is it interdisciplinary enough?' (Brevini, 2016, p. 685). The EC research is found to be limited and narrow for mostly studying the conventional media and being merely academic in its orientation. Comfort and Park (2018) pointed out that EC research is mostly about journalistic practices and public perception of climate change and global warming in print and television media. This media-centrism has limited the scholars to study only the isolated behaviors and media texts, without analyzing the interrelationship between environment, political processes and economic systems, and systemic and institutional impacts (Comfort & Park, 2018; Cox, 2016). These studies were not done from the perspective of an environmental victim: 'it seems clear that the field is not speaking much for the people most affected by environmental issues' (Comfort & Park, 2018, p. 873). In this context, EC research needs to be inclusive and pedagogical by placing the research in the context of socio-political and economic processes and their impact on the environment and people (Brevini, 2016). The environment is not just a science, but it is a political and economic issue (The Choice—MSNBC, 2022).

PART I: Context

4. Environmental Communication: Socio-Political and Economic Perspectives

The environmental crisis intersects with social, economic and political conflicts (Sridhar, 2010). Hence, EC actually had its origin as a socio-economic, political

discourse. Rachel Carson's Silent Spring, published in 1962, was the first effort prompting public discourse and policy changes. The concerns of fatal usage of toxic chemicals and pesticides and their consequent adverse environmental impacts urged her to caution the public about 'biocides'. Silent Spring was a deliberate 'product of her unrest' to 'disturb and disrupt' the wisdom of establishments advocating against the usage of toxic chemicals (Linda, 2002) from a socio-economic, political perspective. While Silent Spring was the first publication that spurred the public discussion on ecological crises, there were other prior publications, Walden and A Sand County Almanac written by Henry David Thoreau (1971) and Aldo Leopold (1970), respectively, that were descriptive of imagery and harmony in nature from the perspective of social, ethical and ecological principles.

In the 1970s, some publications such as The Entropy Law and the Economic Process (Georgescu-Roegen, 1971), Limits to Growth (Meadows et al., 1972) and Small is Beautiful: Economics as if People Mattered (Schumacher, 1973) had raised concerns over the depletion of natural resources and pollution of the environment and challenged the illusion of economic development and technological advancement that are responsible for such concerns. These books show a relationship between economic development and the natural environment that has been neglected by the economic models. These publications reconstructed economic development, prioritizing the finiteness of the environment to be at its core (Levallois, 2010) which needs to be seen as stocks to be preserved (Ayres & Kneese, 1969; Levallois, 2010). These early publications popularized the countercultural concepts of sustainable development in the media and public. According to the Corpus of Contemporary American English (COCA), the frequency of the usage of the words sustainable/sustainability has increased from 12.81 per cent in 1990–1994 to 35.91 per cent in 2010–2012, across the corpus of spoken, fiction, magazine, newspaper and academic texts (Goshylyk, 2017).

In recent times, Pope Francis' Laudato Si (2015) was the most influential work for 'caring for our common home' which was issued a few months before the commencement of the Paris Climate Summit. The encyclical, addressing the global audience, framed the climate crises from a moral position, linking the climate crises and global economic inequality (Landrum & Vasquez, 2020). The encyclical aimed at the environmental discourse across politicians, economic organizations, religious leaders, intellectuals, academicians and the common public. These publications, besides giving a foundation to the economic–environmental discourse, had drawn the media attention and the research on the communication of environmental issues and the perspectives.

5. Anthropocentrism and Environment

Over the last few centuries, the physical environment of the earth has been degenerating and is turning to be hazardous for living organisms to live and sustain. With the arrival of industrialization in the eighteenth century, the human demand for new energy sources initiated the deterioration of the environment. The rate of per capita energy consumption per day is hiked to a quarter-million calories from a mere 26,000 calories in 1000 CE to 77,000 calories consumption

in 1850 (Bentley, 2013). In the twentieth century, heavy industrialization and industrialized agriculture brought large chunks of land to cultivation by expanding into marginal lands, wetlands and forest lands, heavily relying on pollution-bound chemical fertilizers and pesticides (Bentley, 2013). Through the dictatorial approach of industrious humans, nature was 'beaten into submission' with an 'almost divine wisdom'.

6. Economic Development and Environment

Economic progress is directly responsible for environmental degradation. Though the economic progress helped in the rise of literacy rate, fall in infant mortality rate, rise in life expectancy of humans and increase in food production, the health of the environment has deteriorated as the economic progress failed to recognize the natural environment as an integral part of the development process. The higher industrial production and infrastructural development increased income generation, thereby creating demand for housing, demand for transport, usage of cars and planes, and demand for electricity resulting in carbon emissions and environmental damages (PwC, 2017). Since the 1970s, the deterioration has become more swift and severe, as private entrepreneurial culture was unleashed by Ronald Reagan and Margaret Thatcher: it left the economies to the private sector and forced the developing nations such as China, India and others to open their economies to global markets with minimal government regulations (Chancel et al., 2021). With every decade, the invasive industrial activity, industrial technologies and energy-intensive infrastructures are putting pressure on the earth's resources, resulting in the depletion of minerals, shrinking of water sources, massive pollution, waning of forests and global warming.

6.1 Depletion of Resources

During the period 1971–2017, the global extraction of raw materials more than tripled, that is, an increase from 27.1 billion tons to 92.1 billion tons at an average increase of 2.6 per cent annually. It needs to be noted that while the average annual extraction rate increase between 1970 and 2000 was 2.3 per cent, between 2000 and 2017, —during the period of information technology—that has been promoted as less intensive on extraction of natural resources—the average annual extraction rate increased to 3.2 per cent (Oberle et al., 2019). This clearly indicates that there cannot be 'technological' solutions to save the environment. To do so, we need to consume fewer natural resources and preserve them. Presently, the exploitation of global natural resources is such that if the entire history is compared to a calendar year, modern human life will have existed for 37 minutes, and we will have used one-third of the Earth's natural resources in the last 0.2 seconds. The rate at which human consumption is increasing, we would require 1.79 planet earths to provide resources and absorb the waste (The World Counts, 2021). From 92.1 billion tons of annual global extraction of natural resources in 2017, is expected to double up around 190 billion tons by 2060 (Global Footprint Network, 2021; Oberle et al., 2019).

6.2 Emissions and Solid Waste

The carbon emissions have increased after the 1990s, around which most of the countries have become corporate-controlled globalized economies. Since the beginning of the industrialization, the carbon emissions were recorded as 1 billion tons in 1850, 11 billion tons in 1950, 35 billion tons in 2000 and 50 billion tons in 2019 (Figure 1). Of the total historical emissions since the year 1850, 46 per cent of the emissions are from the year 1990 (Chancel, 2021), the year around which many developing countries became globalized economies.

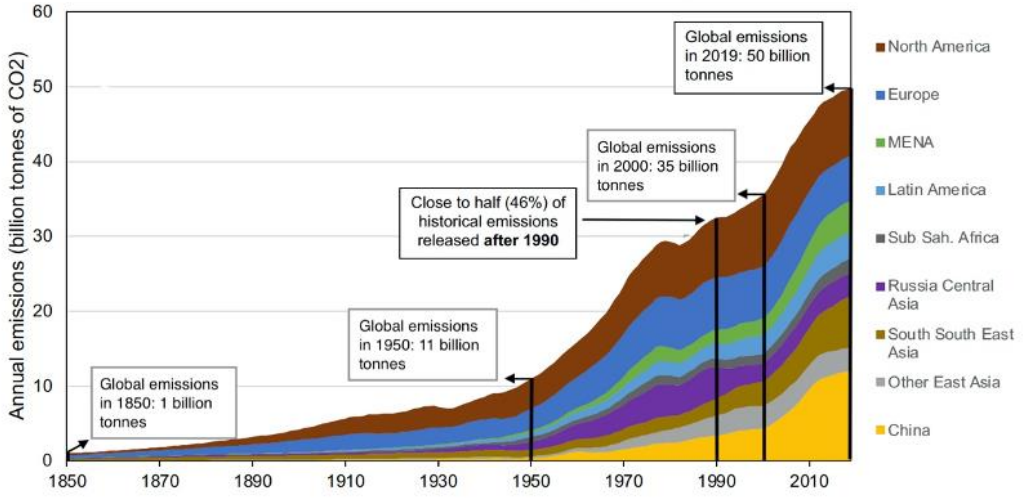

Figure 1. Global Annual CO2 Emissions by World Regions, 1850–2019
Source: Chancel (2021)

According to Olivier & Peters, (2020) the total global GHG emissions (carbon dioxide, methane, nitrous oxide and F-gases) increased to 57.4 gigatons of CO2 in 2019 from about 37 gigatons of CO2 in 1990. Of these total GHG emissions, around 76 per cent is emitted from the energy-related sectors (Climate Watch, 2021). Besides GHG emissions, in 2016 the municipal solid waste of about 2.1 billion tons is generated from the extraction and consumption of resources (Ghosh et al., 2020); this was about 635 million tons in 1965, and which is expected to rise to 3.5 billion tons by the year 2050 (Chen et al., 2020; World Bank, 2021). In 2016, solid waste disposal and treatment were estimated to 1.6 billion tons of CO2 equivalent of GHG emissions, that is, 5 per cent of global emissions (World Bank, 2021). Municipal solid waste will have a serious impact on the environment affecting the health and livelihoods of the people.

6.3 Economic Inequality and Environment

The last two centuries of economic progress has widened the inequality between the haves and have-nots. While a few indulge in wealthy, healthy and happy lives, a large number suffers from living in poverty. According to the 'World Inequality Report 2022' (Table 1), the top 10 per cent captures 52 per cent of the global

income and owns 76 per cent of the global wealth, the bottom 50 per cent gets only 8.5 per cent of the global income and owns only 2 per cent of the global wealth (Chancel et al., 2021). The economic inequality and concentration of wealth have ecological implications, as a few rich would have undue control over natural resources.

Table 1. Global Economic Inequality

Percentage of Global Population	Percentage of Global Income	Percentage of Global Wealth
Top10%	52%	76%
Bottom 50%	8.5%	2%

Source: Chancel et al. (2021).

Chancel et al. (2021) report that the top 1 per cent and 10 per cent of global rich produce 17 per cent and 48 per cent of the global emissions, respectively, totaling 65 per cent of the global emissions, while the poorest 50 per cent produce only 12 per cent of the global emissions (Table 2).

Table 2. Global Economic Inequality and Global Emissions

Percentage of Global Population	Percentage of Global Emissions
Top 1%	17%
Next top 10%	48%
Bottom 50%	12%

Source: Chancel et al. (2021).

It is also observed that even in rich countries, the per capita emissions are marginally low for the poor, contrary to the creamy rich; similarly, in middle-income and poor countries, the per capita emissions from the top rich are very high, contrary to the poor. So, whichever may be the country, it is the rich who are responsible for high emissions, and action needs to be taken to cut the emissions of the wealthy (Chancel et al., 2021).

While the trends of the GHG emissions are increasing in growing economies, in the richer countries there are signs of a decrease in the GHG emissions because the manufacturing units of rich countries have been shifted to growing economies and middle-income countries. In a way, the rich countries have only shifted the location of their emissions, but they are still responsible for the huge chunk of global emissions. The large gap of emissions between the rich and poor should target rich polluters more. Some of the policies have disproportionately impacted the poor, leaving the rich and their habits unchanged. The presented data indicate that unregulated markets and growing economic activities result in environmental deterioration.

6.*4 The Rise in Temperatures*

The anthropogenic emissions are altering the earth's energy balance of incoming and outgoing radiation by interfering with the climate system, thereby resulting in

rise in temperatures. Since 1880, of the 10 warmest years, 9 occurred after 2000 and 5 of them occurred after 2015. The year 2018 recorded the warmest year, followed by 2019, the second warmest year (Olivier & Peters, 2020). The global temperature has increased by 1.18°C between 1880 and 2020. The global temperatures are projected to increase by 4.1°C to 4.8°C by the year 2100 at the current rate of emissions without implementation of any climate policies. It would increase by 2.8°C to 3.2°C with the present implemented policies.

6.5 Natural' Calamities

The changes in climate change result in increasing the average surface temperatures and changes in the pattern of rainfall, wind, melting glaciers and ice caps, rising sea levels and tropical cyclones (Mann, 2009). These calamities, usually perceived as 'natural', are actually the products of human activities modifying the natural systems for rapid urbanization and economic globalization, resulting in environmental degradation (Guha-Sapir & Vos, 2011). These would affect ecosystems and human life, that is, extinction of animal species and plants, loss of food production, droughts, loss of coastlines, wetlands, flooding and spreading of infectious diseases (Mann, 2009). The recent Tonga volcanic explosion on 14 and 15 January 2022 is a clear sign of the humanity being surrounded by the reality of dangers from climate change.

6.6 Environmental Crisis and Migration

The environmental crisis mostly affects the poor and the downtrodden as 'many of the poor live in areas particularly affected by phenomena related to warming, and their means of subsistence are largely dependent on natural reserves and eco-systemic services such as agriculture, fishing and forestry' (Francis, 2015). The protests against the various developmental projects reveal that it is the marginalized who are most affected.

The consequences from energy production, deforestation, extraction of resources and rapid industrialization affect the well-being and quality of the lives of the poor (Lie & Servaes, 2015), resulting in environmental migration. Those forced to leave their homelands, either immediately or eventually, because of the adverse changes in their environment due to toxic emissions, depletion of resources and natural disasters are called environmental migrants. Events such as floods, landslides, earthquakes, volcanoes, extreme temperatures, storms, droughts, forest fires, industrial accidents, pollution, rise in sea level, coastal erosion, salinization, change in rainfall patterns, melting of glaciers, land degradation, deforestation, dams, roads and mining are directly or indirectly responsible for the migration (Millennium Ecosystem Assessment, 2005).

The prediction of the constant occurrence of these events in the twenty-first century would displace large chunks of people (IPCC, 2014). According to an assessment, 'Costs of Inaction: Displacement and Distress Migration', even with the existing mitigation, 37.4 million people and 62.9 million people will be displaced by 2030 and 2050, respectively, in Bangladesh, India, Nepal, Pakistan and Sri Lanka (Singh et al., 2020). According to another estimate done for the World Bank projects, 143 million people will be internally displaced by 2050 in

sub-Saharan Africa, South Asia and Latin American regions According to Global Report on Internal Displacement (2021), between 2008 and 2020, 318.3 million were displaced because of disasters alone. The numbers present only partial data, as the cross-border displacements, displacements from slow onset of disasters and small-scale disasters are underreported or omitted. This available limited data on displacement makes it obvious that it is the poor and the vulnerable from the poor countries who are most affected, and it calls for a 'poor'- centered environmental discourses.

6.7 Environment Crisis and Denial of Human Rights

The environmental crisis is threatening the human rights along with the rights of non-humans and the inanimate, which also have the right to exist. With the growing incidents and environmental violations, humans, non-humans and inanimate are being denied of a basic right (human right)—the right to live—due to visible immediate damages or invisible eventual damages in the form of emissions, industrial activities, industrial accidents, mining activities, irrigation projects and other developmental projects.

Accordingly, the environmental crises and violations need to be addressed from the perspective of human rights and justice for mutual protection as 'human rights depend on environmental protection and environmental protection depends on human rights' (Spieler, 2010, p. 19). This relationship is understood in three ways: (a) environmental protection as a precondition for promotion of human rights; (b) environmental protection as a human right itself; and (c) environmental protection as a result of promotion of human rights (Spieler, 2010).

As a result of negotiations by several international bodies, presently there are about 1,500 climate laws and policies globally (Nachmany & Setzer, 2018). But as some of the corporations are bigger and richer than the governments, the efficacy of these legislations and the legitimacy of human rights are challenged and the recourse to claim justice by the victims is being made hard. It also needs to be observed that while the visible polluters are held responsible for environmental crises, financial institutions such as banks, investors and insurance companies which actually finance these polluters are not pulled to courts, though they are also responsible for major carbon.

Part II: Action

7. Sustainable Development

In the present context of unregulated economic progress resulting in the deterioration of the environment, the solution to protect the environment cannot be technological advancements. The environment can be protected only if the economic growth is decoupled from the extraction of resources and there is reduction in consumption—in a way cutting down the human economic activity.
While economic progress is necessary, it is of utmost importance to promote 'the security, well-being and very survival of the planet' (World Commission on Environment and Development [WCED], 1987, p. 23). Brundtland Commission Report, 1987, calls for an alternative strategy for development, that is,

sustainable development that meets the essential needs of the poor without compromising with the ability to meet the essential needs of the future generations and the consumption standards that have regards for the long-term sustainability (WCED, 1987). Keeping in mind the magnitude of unending anthropocentric stress on the environment, there needs to be a gradual stress from the model of 'conservation' to the model 'preservation'. The 'conservation' is still an anthropocentric idea as the future needs of humans is central, therefore retaining human supremacy. On the contrary, the idea of 'preservation' is about protecting the environment and recognizing its intrinsic value which is central and which we humans depend on for our basic living needs. There had been a body of eco-centric traditions in indigenous groups that guided their existence So, a shift from anthropocentric 'conservation' to eco-centric 'preservation' is required.

In 2015, the General Assembly of UN, highlighting the need for sustainable development, drew a blueprint of 17 Sustainable Development Goals (SDG): to end poverty and hunger; provide good health, education, gender equality, affordable clean energy; conserve life below water and life on earth; promote climate justice; reduce inequalities; climate action—these are interlinked and are aimed to be achieved by 2030 (UNDP, 2015).

8. Need for Public Education & Engagement

It is in this perilous situation and the need for sustainable development that the people are to be educated and engaged in environmental action. Media through its representation of problems and risks related to the environment constructs dispositions of 'action or inaction' to engage with the politics of climate change. Media has played a key role in enhancing the political engagement of citizens with the issues of the environment (Carvalho, 2010). However, there is not enough citizen engagement with environmental issues.

According to a study by the Yale Program of Climate Change Communication (Leiserowitz et al., 2021), while 50 per cent of the Americans are either 'extremely' or 'very' sure of global warming, only 10 per cent of the Americans believe 'a great' (3 per cent) or 'a lot' (7 per cent) of a deal to take action to reduce global warming. This wide gap between the belief in global warming and the need to take action could be understood as a limitation from the way mainstream media framed the issues of environmental crisis. Mainstream media through the framing of 'high-profile intergovernmental meetings and excessive representation of international politics tends to promote the notion that 'global' is the space of action to mitigate climate change (Carvalho, 2010), rather than the local initiatives. Studies on Swedish media (Olausson, 2009) and Japanese media (Sampei & Aoyagi-Usui, 2009) also analyzed that the environmental reportage peaked coinciding with the convening of international summits, presenting a 'transnational' responsibility.

8.1 Local Engagement

International political summits are important for the management of climate change. But it is the national, local issues and events that are the right platforms to prompt awareness into action. The perception of climate change as a 'global

political problem', rather than a localized issue, would make local deliberations and actions by citizens insignificant. In a globalized world, the diffusion of global information is at a global scale. But this global information is always 'appropriated' by individuals who are located at a 'specific spatial-temporal locale' with a 'particular socio-historical context' of their everyday life (Lie & Servaes, 2015). So, the media needs to frame global climate events in localized contexts. Though climate change is a global issue, it is the result of local acts of exploitation. For a critical engagement, locally in the global politics of environment and governance, first, the citizens are helped to recognize the problems, constraints and the need for involvement. There needs to be a strategic use of media to promote behavioral changes and local participation which would further promote the communicative behavior of information seeking, information sharing, information forwarding and problem-solving (Jiang et al., 2019).

8.2 Networking

For efficient mobilization of the public to address the issues, there have to be processes and actions based on a multistakeholder approach to influence policymaking and to cultivate green behavior. The crisis of the environment is dynamic with social, political, economic and cultural impacts, cutting across geographies and times. So, there is need for shared responsibilities and collective efforts (Pacific Islands Forums, 2005) by public, civil societies, academicians, health practitioners, climate scientists, climate activists, legal practitioners and policymakers through building networks of sharing knowledge and dialogues (Lie & Servaes, 2015).

8.3 Ideological Shift

To achieve sustainable behavior and sustainable development, what is required is not just scientific knowledge about climate change but a change in ethical and moral perspectives, attitudes and a shift in political ideology that would promote welfare economics (Landrum & Vasquez, 2020). For many people, as scientific facts could be ideologically inconvenient, the truth is brushed away on political and economic interests and the needed action is opposed (Mann, 2021). The political–economic ideological shift from unregulated usage of resources and consumption would regulate the free-market economy that is responsible for the present environmental crisis. The shift in ethical and moral perspectives would promote environmental behavior of self-restraint on unregulated usage of resources and would help reduce consumption at individual levels, as consumption is central to environmental degradation and climate change.

9. Way forward for EC Research

From the discussed context of impending impacts from environmental dangers evident from the recent volcanic eruption at Tonga, there has to be a scale and speed of communication practices to elicit actions in cutting down the carbon footprint. To promote sustainable development through a political will and widespread public engagement, EC research needs to integrate the issues of the environment as interconnected consequences of social, political, economic and cultural decisions and actions by the governments and people as against isolated

incidents. To stop the dramatic climatic changes, EC research needs to counter the mainstream narrative of technological triumphalism and technological fixes that negate the need for ultimate changes in lifestyle, economy and politics and impel climate investigation into a daily media political coverage (The Choice—MSNBC, 2022).

Although the effects of climate change are global, the issues of the environment need to be studied as the issues of the poor and underprivileged as they are the first and most affected; this calls for study of these issue from the perspective of human rights and climate justice. As the issues of the environment are local in origin and mostly the local communities are affected, the communication needs to be local-centric through participative local media, besides being national and global through mass media. Parallel to the importance of institutional and policy changes, the behavioral changes at community and individual levels to promote concrete environmental actions and alter consumption patterns should be encouraged. Hence, EC research needs to engage with questions of inequalities in sharing resources and power (Brevini, 2016) and needs to shift from publication-centrism to public actions engaging in advocacy to transform society (Gardner & Wordley, 2019).

Author contributions: Shailendra Boora has conceptualised the paper and authored the paper. Meljo Thomas Karakunnel and Xavier Savarimuth, had given inputs on communication and environment and worked on the final draft.

Funding: It's not funded

Declarations: Working on this paper, there are no conflicts of interest.

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