

Environmental Challenges and the Role of Media

Tinatin Zakarashvili

Doctor, Professor
Georgian National University SEU

Tamar Narindoshvili

Doctor, Associate Professor
Georgian National University SEU

Rusudan Machaidze

PhD student, assistant professor
Georgian National University SEU

Abstract

The document "Environmental Challenges and the Role of Media" explores the critical role media plays in addressing global environmental issues, emphasizing the importance of sustainable development as outlined by the United Nations' 2030 Agenda. It discusses the significant impact of climate change and related natural disasters, using examples such as the landslide in Shovi and the flooding in Guria and the explosion in Kakhovka., to illustrate the urgency of effective media coverage. It investigates the media's role in informing the public about climate change and environmental crises, identifying gaps in coverage and the media's tendency to focus on sensational events rather than preventive measures. Through in-depth interviews with field experts, journalists, and surveys of Georgian citizens, the research reveals a need for more comprehensive, accurate, and preventive reporting on environmental issues. Recommendations include enhancing journalists' training, improving public education, and developing specific media standards to better address and communicate environmental challenges in Georgia.

Keywords: Climate Change, Environmental Challenges, Ecological Crises, Media Role, Media Standards, Public Awareness, Environmental Education

Introduction

Highlighting environmental problems and seeking solutions are among the most pressing issues worldwide. The United Nations' main objective is to achieve sustainable development, which entails economic benefits without environmental degradation. Sustainable development is fundamental for achieving economic benefits with minimal ecological problems. On September 25, 2015, 193 UN member countries agreed on the sustainable development agenda document titled "Transforming Our World: The 2030 Agenda for Sustainable Development," which includes 17 goals and 169 targets.¹

One of the significant issues in this regard is climate change, known as global warming, and the resulting natural disasters. For example, the natural disasters in Racha (Shovi) and Guria in Georgia and the explosion in Kakhovka during the Russia-Ukraine war, which attracted worldwide attention. Awareness raising, environmental education and the role of the media in all these are very important in relation to environmental challenges. The media, which can significantly influence society, must highlight environmental issues. In the informational era, the media plays a critical role in providing timely and accurate information about significant events worldwide. Given this advantage, the media's timely and appropriate involvement in environmental issues becomes essential. Due to the specific nature of environmental issues, it is vital to develop certain standards for covering these issues in the media and identify any shortcomings for further improvement. Therefore, it is interesting to understand the

¹ "Sustainable Development Goals", United Nations in Georgia, https://ungeorgia.ge/geo/sustainable_development_goals [l. s. 10.10.2024].

perspectives and opinions of field experts, media representatives, and the audience on how competently and relevantly Georgian media covers these topics—whether it gives them proper attention and presents them as significant global ecological problems.

This study aims to comprehensively highlight the media's role in covering environmental processes and making these issues more prominent in the media. It also aims to develop specific media standards around this issue, assess the quality of existing norms' implementation, share recommendations from ecology experts, and present the views of media representatives and the audience on environmental issues. Achieving this goal is possible through interviews with experts and media representatives and by studying public attitudes using surveys. In-depth interviews with field specialists and ecology experts within the study provide significant information around the issue.

Based on the research objectives, the following research questions were formulated:

- What role does the media play in covering environmental issues?
- According to experts and media representatives, what are the main challenges in covering environmental issues?
- What are the main public demands regarding environmental challenges and their coverage in the media?
- A research hypothesis was also developed:
- The media's role in covering environmental issues is more crucial than the quantity of coverage suggests.
- When covering environmental issues, the media primarily focuses on the tragedy during the initial stage of a natural event, while less time is devoted to preventive measures.

Environmental protection encompasses multiple directions, and the study focuses on global challenges, including climate change, the natural disaster in Racha, and the explosion at the hydroelectric station in New Kakhovka, which is currently a pressing issue. These examples further illustrate that environmental problems are among the most significant challenges of modern life.

As mentioned, the study aims to determine the standards for covering ecological issues in the media and understand public attitudes toward the media in the context of global environmental challenges. During disasters, citizens rely heavily on the media, and it is interesting to assess how timely and accurate the information they receive is, particularly from the perspective of specialists working on environmental issues.

1. Global Environmental Problems

The list of global environmental problems that manifest in our contemporary world is extensive. One of the key issues is climate change, known as global warming. Other serious problems include deforestation, water pollution, waste, and air pollution, compounded by natural phenomena. The main part of the study will emphasize the impact of each problem on our environment. It is evident that this study cannot analyze all issues related to ecology, but it is necessary to present basic information on several of them.

Today, global warming is one of the primary environmental problems, around which debates and discussions continue.² Global warming can be defined as the continuous increase in the average annual temperature of the Earth's atmosphere, near-surface layer, and the world ocean.³ In this paper, the author notes that the global warming process is also indicated by the rise in the world ocean's level and the melting of snow and ice cover in the Arctic.

² Drake, F., "Global Warming", London, 2014.

<https://www.taylorfrancis.com/books/mono/10.4324/9780203785041/global-warming-frances-drake> [l. s. 10.10.2024].

³ Khatiaashvili, T., "Climate change and the threat of global warming", TSU, 2020.

The greenhouse effect, referred to as global warming or climate change, involves changes in meteorological conditions - temperature, precipitation, humidity, and other meteorological characteristics - over a long period.⁴ The result can be changes in environmental conditions, which may become warmer, drier, or more humid. It is essential to note that the climate on Earth has always changed, but over the last 150 years, it has been changing at a rapid pace.

It is interesting to see how the climate has changed in Georgia over the past few years. The publication "Climate Change, Adaptation, Impact"⁵ notes that the average air temperature in Georgia increased almost everywhere in 1986-2015 compared to 1956-1985, ranging between 0.25-0.58°C on average. As noted above, a characteristic of global warming is the change in precipitation patterns, which is also observed in Georgia. Over the past 30 years, the amount of precipitation in Western Georgia has increased by 5-15%, while in Eastern Georgia, it has decreased by approximately the same proportion. As a result, the frequency and intensity of extreme meteorological events in Georgia are increasing, which may lead to natural disasters. Also, glacier areas and numbers may decrease, desertification may accelerate, forest degradation may occur, and the frequency of heatwaves may increase, leading to extremely hot weather.⁶

The greenhouse effect, or global warming, affects every person on the planet. There is a recorded temperature increase (G20 and Climate Change). Following the activation of the global warming issue, the question of its impact on biodiversity and future forecasts has become more frequent.⁷

In the worst-case scenario, it could be a matter of extinction, which could be considered one of the most significant extinctions in Earth's history.⁸

It is also interesting to note that global warming can affect the economy. According to Thole (2018), this impact will be negative in the long term. Despite being challenging to quantify, the author believes the impact can be confirmed.⁹

The issue of climate change has also been reflected in the global media. Media researchers were interested in whether the coverage was proportional to the importance and relevance of the issue and what accents were made in the media.

A significant study on climate change coverage has been conducted by Max Boykoff and Timmons Roberts.¹⁰ The researchers studied publications in 40 newspapers from 17 countries. The paper also reviewed attitudes and activities around the issue in various countries. Among the studied countries were the United States, the United Kingdom, Canada, France, Germany, Japan, New Zealand, Australia, Honduras, Mozambique, Jamaica, Sri Lanka, and Zambia. The paper discusses the media's role in covering important issues, including climate change.

The research revealed that the media in the United States and the United Kingdom prepared more material on the greenhouse effect from 1988 to 2006, with an increase in recent years. During the

⁴ Climate change, challenges and solutions, 2021.

https://www.undp.org/sites/g/files/zskgke326/files/migration/ge/undp_ge_ee_climate-change_publication-for-media_2021_geo.pdf [l. s.10. 2024].

⁵ UNDP Georgia, "Climate Change, Impacts, Adaptation," 2021 - <https://www.undp.org/ka/georgia/publications/klimatis-tsvlileba-zegavlina-adaptatsia> [l. s. 10.10.2024].

⁶ see Footnote 4.

⁷ Botkin, D.B., Saxe, H., Araújo, M.B., Betts, R., Bradshaw, R. H. W., Cedhagen, T., Chesson, P., Dawson, Terry P., Etterson, J. R., Faith, D.P., Ferrier, S., Guisan, A., Hansen, A. S., Hilbert, D.W., Loehle, C., Margules, Ch., New, M., Sobel, M.J., Stockwell D., "Forecasting the Effects of Global Warming on Biodiversity, 2007, <https://academic.oup.com/bioscience/article/57/3/227/268444> [l. s. 10.10.2024].

⁸ Bellard, C., Bertelsmeier, C., Leadley, P., Thuiller, W., Courchamp, F., "Impacts of climate change on the future of biodiversity", *Ecology Letters* 15, 2012, 365-377. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1461-0248.2011.01736.x> [l. s. 10.10.2024].

⁹ Tol R., "The Economic Impacts of Climate Change", Volume 23, # 2, 2009, pp. 29-51.

<https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.23.2.29> [l. s. 10.10.2024].

¹⁰ Boykoff, M.T., Roberts J.T., "Media Coverage of Climate Change: Current Trends, Strengths, Weaknesses". https://www.researchgate.net/publication/228637999_Media_coverage_of_climate_change_Current_trends_strengths_weaknesses [l. s. 10.10.2024].

activation of the global warming issue, scientists brought the topic of adaptation into the agenda. From 1988-1990, the media actively prepared materials on climate change, but the same cannot be said about the adaptation issue. This is evidenced by the newspaper publications in the United States and the United Kingdom during those three years, with only 1% of the material dedicated to the adaptation issue. Out of 3293 articles related to climate change, only 0.9% were devoted to adaptation. The researchers reviewed the following print media: Los Angeles Times, New York Times, USA Today, Wall Street Journal, Washington Post, Guardian, Independent, Times, and Financial Times.¹¹

During the activation of the global warming issue, it also held a significant place in political processes. For example, in the United States, George Bush's presidential campaign in 1988 included the issue of global warming.¹²

When discussing environmental problems, the starting point is human activity and its impact on the environment. Stuart Allan, Barbara Adam, and Cynthia Carter focus on public attitudes toward environmental risk and the media.¹³ The authors analyze Ulrich Beck's views, emphasizing that before thinking about global warming, ozone layer depletion, or other problems, nature is polluted precisely due to human activity. The author stressed the identification of nature and culture. Ulrich Beck practically indicated that when we talk about nature, we talk about culture and vice versa. It can be said that nature, with its multifaceted context, is diverse and can change according to societal approaches.

Since the acceleration of the global warming process is directly linked to human activity, anthropogenic impact (Environmental Information and Education Center), it is essential to inform the public about this topic and raise their awareness, which is a significant function of the media.

2. The Role of Media in Environmental Education

When discussing the importance of issues related to ecology, it becomes even more evident how significant the media's influence can be in this direction. It has a powerful tool to provide society with adequate information, set the public agenda, direct public attention to desired topics, and change public attitudes. Here, the media's highly needed and interesting function—raising awareness—must be noted. The media has an educational role in an informational society, helping the audience receive education and correctly set priorities. Here, the term “environmental education” must be introduced. The media has a crucial role in introducing environmental education, which will also help society achieve sustainable development.¹⁴

Therefore, it is essential to analyze the media's functions concerning ecological issues and how much attention Georgian media pays to these topics.

Mass media and non-governmental organizations play a significant role in developing environmental education and raising awareness of environmental issues.¹⁵ Based on the example of Malaysia, the authors conclude that by transmitting environmental messages through the media, the public will have a say, which will contribute to raising awareness and a thoughtful attitude of people to the environment.

¹¹ see Footnote 10.

¹² Peterson, C., “Experts, OMB spar on global warming: ‘greenhouse effect’ may be accelerating, scientists tell hearing”, The Washington Post, 1989, A1 9 May. <https://www.lyellcollection.org/doi/full/10.1144/sp305.3?frame=sidebar> [l. s. 10.10.2024].

¹³ Adam, B., Allan, S., Carter, C., „Environmental risks and the media“, London: UCL, 2000. https://api.pageplace.de/preview/DT0400.9781134610938_A24508027/preview-9781134610938_A24508027.pdf [l. s. 10.10.2024].

¹⁴ “Media for the Environment”, Center for Environmental Information and Education (Georgia), Chapter 2, 2016; <https://www.eiec.gov.ge/News.aspx/Documents/ViewFile/119> (Available only in Georgian), [l. s. 10.10.2024].

¹⁵ Saifudin, M., Saleh, M., „Media and Environmental Non-Governmental Organizations (ENGOS) Roles in Environmental Sustainability Communication in Malaysia“, vol. 8, no.1, pp.90–101, 2017. https://www.researchgate.net/publication/318147966_Media_and_Environmental_Non-Governmental_Organizations_ENGOS_Roles_in_Environmental_Sustainability_Communication_in_Malaysia [l. s. 10.10.2024].

The media's role is particularly significant in achieving sustainable development and making environmental education accessible. To confirm this, researchers (Katona, Kárász, Leskó, Kosáros)¹⁶ in Hungary conducted a survey among schoolchildren aged 13-17 to find out how much they used media channels for environmental issues and how interested they were in this topic. The authors deliberately chose this age group because, in their assessment, information received through mass media has a substantial impact on adolescents, and this is also the period when young people should start receiving environmental education with the media's support.

Peter Sandman wrote in 1994, that the media did not often show interest in environmental risks.¹⁷ The researcher noted that journalists prepared a small number of materials on environmental crises. The author emphasized not only the quantitative shortage of materials but also their content. He assessed that the media representatives did not broadly cover the issue or relied less on evidence when covering environmental risks. Similar problems were pointed out by Ann Major and Ervin Atwood, who, after conducting media research, said that journalists prepared a small number of materials on environmental issues.¹⁸ It is interesting to understand why this is so. One reason could be that news usually focuses on the event rather than the main issue or related problems.¹⁹

When emphasizing the media's role in covering environmental issues, the accuracy of terms is essential. Journalists should not only understand relevant terms related to the issue but also have a clear grasp of the appropriate context. It is also important to describe how the media explains environmental risks. Annie Major and Ervin Atwood described how the public and the media perceive environmental risks.²⁰ They raised the question of whether the media, interested in dramatic events, leads the public to overestimate the likelihood of risk. In their scientific article, they cited Singer and Endreny's view that the media generally disseminates damage—the result of a probable event, not the probability of the event. They defined risk as “the probability of harm”. Major and Atwood believe that an actual event or damage is the result of risk, and this is not the risk itself, while risk is defined as actual and potential damage.

When covering large-scale natural events, it is crucial for journalists to maintain a neutral tone and focus on the most important part of the story, which can be understood through Framing Theory. Entman interestingly defines a frame as a method by which a certain aspect of a real fact is highlighted, which is then covered by information channels.²¹ Tewksbury and Scheufele²² explained framing as a phenomenon focused on determining the interpretation of a story. The researchers referred to public opinion researcher Frank Luntz's message in describing the theory: “It’s not what you say, it’s how you say it.”

The publication “Media for the Environment” prepared by the Environmental Information and Education Center notes that the media shows little interest in biodiversity issues.²³ The publication also explains that the media lacks knowledge and experience on the subject, and Georgian TV channels rarely show scientific popular films dubbed in Georgian.

¹⁶ Leskó, G., Katona, I., Kárász, I., “Role of Media in Students' Life and Their Environmental Education: A Survey of Students Aged 13 to 17”, *Journal of teacher*, 2008 –<https://www.semanticscholar.org/paper/Role-of-Media-in-Students'-Life-and-Their-A-Survey-Katona-K%C3%A1r%C3%A1sz/dd0c1c69d51a9d5ebc3bf63e659816078ba9aed6> [l. s. 10.10.2024]

¹⁷ Sandman, PM, *Mass media and environmental risk: Seven principles*, 1994, <https://scholars.unh.edu/cgi/viewcontent.cgi?article=1198&context=risk> [l. s. 10.10.2024].

¹⁸ Major, A M., Atwood, L. E., „Environmental risks in the news: issues, sources, problems, and values“, Volume 13, Issue 3, 2004 – <https://journals.sagepub.com/doi/10.1177/0963662504044557> [l. s.10.10.2024].

¹⁹ Wilkins, L., Patterson, P., „Risk analysis and the construction of news“. 1987. <https://academic.oup.com/joc/article-abstract/37/3/80/4282979?redirectedFrom=fulltext> [l. s.10.10.2024].

²⁰ see Footnote 18.

²¹ Entman, R. M., „Framing: Toward Clarification of a Fractured Paradigm“, 1993. https://www.researchgate.net/publication/209409849_Framing_Toward_Clarification_of_A_Fractured_Paradigm [l. s. 10.10.2024].

²² Scheufele, DA., Tewksbury, D., „Framing, Agenda Setting, and Priming: The Evolution of Three Media Effects Models“, *Journal of Communication* 57, International Communication Association, 2007, pp. 9–20. <https://fbaum.unc.edu/teaching/articles/J-Communication-2007-1.pdf> [l. s.10.2024].

²³ see Footnote 14.

It was confirmed by a media monitoring study conducted by the Media Development Foundation in 2012 that Georgian media paid less attention to environmental issues. According to the monitoring results, “Georgian media interest is more superficial, mainly reportorial, and rarely does the problem receive deep and comprehensive coverage.²⁴ The balance of parties is violated, the journalist’s subjective position is clearly visible, and the language and style do not meet standards“.

From all the above, it is interesting to determine how experts, media representatives, and the public evaluate the media's work today.

3. Research Results

3.1. Methodology

The chosen research methods are in-depth interviews and surveys, which are relevant for achieving the research goals. It is important for the media to recognize its responsibility towards global environmental problems. In-depth interviews were conducted with four experts in the field and four media representatives, and approximately 300 citizens of different ages and genders were surveyed. This number is relevant for presenting opinions in the media field.

In the first stage of the research, in-depth interviews were conducted with field specialists:

1. Nino Chkhobadze, Chairperson of the "Green Movement of Georgia - Friends of the Earth";
2. Nodar Pophoradze, Head of Applied Geology at the Georgian Technical University;
3. Maia Bitadze, Chairperson of the Parliamentary Committee on Environmental Protection and Natural Resources;
4. Tamar Aladashvili, Director of the Environmental Information and Education Center.

Following this, interviews were conducted with journalists who actively cover environmental issues, including natural disasters. The respondents were:

1. Shalva Sumbadze, correspondent for the “First Channel”;
2. Tea Topuria, journalist for “Radio Liberty”;
3. Gela Mtivlishvili, editor of “Mountain News”;
4. Olga Chayko from Ukraine.

Due to the specific nature of the topic, journalists working on environmental issues and covering disasters were chosen, as it was important for the study to analyze how the media covered the explosion in New Kakhovka. An interview was conducted with Ukrainian journalist Olga Chayko, who covered the event on-site. After the explosion in New Kakhovka, questions arose in the media about whether the Black Sea coast was at risk. This issue became particularly relevant during that period, and analyzing respondents' opinions in this direction is interesting. The research participants also discussed the disaster in Racha and its coverage in the media, making this issue part of the research agenda.

In the next stage of the study, 300 respondents were surveyed using a questionnaire. Most questions were closed-ended, with a few exceptions requiring open-ended answers.

3.2. Field Specialists on Environmental Problems and Needs

In-depth interviews with field specialists mainly focused on climate change as one of the most pressing problems of modern times. Some experts directly indicated that despite certain steps taken globally, climate change remains the most significant challenge. The research results show that the most

²⁴ Izoria, 2012. Coverage of environmental issues in the Georgian media, Media Development Fund, available at https://mdfgeorgia.ge/geo/view_research/97 [l. s. 10.10.2024].

important environmental issue is global warming. Field specialists highlight this issue as the main environmental challenge for both the world and Georgia.

It is interesting to see where the field specialists see solutions. According to Nino Chkhobadze, many countries today are taking preventive measures and steps to adapt to climate change. However, these measures have not yet been taken in Georgia, indicating that people in Georgia are not informed about how to adapt to climate change. She believes that such steps will be preventive measures to avoid various tragedies, citing the events in Shovi, Georgia, as an example.

After the tragedy in Shovi in 2023, 112 warns citizens via SMS in case of deteriorating weather. However, experts believe this is not enough. They state that there are different recommendations for citizens during each natural event, and people in Georgia are not informed about them. Therefore, they think it is essential to teach children in schools how to act during natural disasters and for the media to cover such issues, which they say often does not happen. Chkhobadze also emphasizes the need for studies to be conducted in Georgia's regions to precisely determine the specific problems of each area.

Field specialists and media representatives have different views on whether the media shows a significant interest in environmental issues. The study revealed that opinions are divided. Field specialists believe that the media rarely takes an interest in such issues, which journalists do not agree with.

However, both media representatives and field specialists agree that the media plays a crucial role in covering environmental issues. Experts believe that the media can cause significant problems by spreading misinformation. Some cite the explosion in New Kakhovka as an example (Nino Chkhobadze).

During interviews, some respondents openly stated that the media covers environmental issues with less intensity (Nino Chkhobadze, Nodar Pophoradze, Maia Bitadze), which experts attribute to the media often seeking sensation in stories (Nino Chkhobadze).

Tamar Aladashvili focuses on the media's role in covering environmental issues. She explicitly states that public awareness and information are possible precisely through media channels.

She says that according to a study conducted last year by the Environmental Information and Education Center, commissioned by the government, it was found that the public now demands information about environmental challenges. One of the interesting findings is that if certain terms, such as “sustainable development” or “climate change,” were completely unknown to the public years ago, citizens now know about them and want to receive more information.

To create a complete picture, the study will dedicate a separate section to discussing the opinions of media representatives in this direction, which will be presented in the following chapter.

While discussing this topic, Nino Chkhobadze recalled a natural event in Guria and explained that the media covered it, but during the coverage of such natural events, part of the media does not ask why a certain event, such as a flood, occurs and whether it is related to climate change. She notes that many in Georgia still do not believe that climate change has already occurred. Specialists see one solution in bringing this topic to the forefront.

Nodar Pophoradze emphasizes human negative actions towards the environment, which increase the number of disasters and accelerate events. To reduce human negative impacts on the environment, specialists see one solution in raising awareness, including through media channels. They also consider strengthening the geological service important (Nodar Pophoradze, Maia Bitadze).

Pophoradze states in the interview that it is necessary to have a team of geologists in every region to study and monitor the situation, which is not happening in all regions now. Therefore, increasing the number of staff is crucial. He explains that mobile teams in the regions will be in active communication with the population, raise their awareness, explain how to act and how not to act during natural events, where it is possible to build and where it is categorically prohibited to avoid complications in the future.

Bitadze notes that the state relies heavily on the knowledge of foreign experts. Bitadze also explains that to interest young people in geology and obtain knowledge in higher education institutions, the state

supports this interest through scholarships, grants, or certain awards. However, the MP also raised a quite interesting issue regarding the importance of increasing vocational education. Currently, a higher education diploma is required for public service employment, but Bitadze believes it is necessary to start consultations to implement certain changes and allow employment in the public sector in a specific field after receiving vocational education.

In terms of environmental issues, legislation and legal regulation of issues are quite important. Maia Bitadze paid great attention to this topic and mentioned that more than 10 laws have been adopted and about 200 legislative changes have been implemented in recent years.

When discussing legislations or obligations, environmental democracy and its development must be highlighted, emphasizing proactive public information and participation rights. According to the study results, environmental democracy is adequate to the goals of sustainable development. In this context, the state's involvement and steps are important. Maia Bitadze explains that the state consistently implements certain measures outlined in the Association Agreement directives, international agreements, environmental agreements, and sustainable development goals.

In light of all this, it is interesting where state representatives see the main challenge. Maia Bitadze believes the new challenge is more alignment between the economy and ecology and transitioning to a green economy. It is noteworthy that the EU's future 5-year development strategic plan will be based on the development of digital and green economies. Accordingly, Bitadze says Georgia is also trying to keep pace with all this.

Given that several large-scale natural disasters were recorded in Georgia over the past year (on August 3, 2023, a natural disaster occurred in Racha, specifically in Shovi, where a landslide and mudflow killed 32 people, including children; on August 29, a military person died during a rescue operation; on September 8, 2023, a landslide occurred in the Chokhatauri municipality of Guria region, affecting several villages and causing the deaths of three people, including two teenagers, and destroying at least ten houses), it is quite interesting to see what steps are being taken by the state to combat natural events.

The study results show that several disasters can be studied at this stage: floods, mudflows, landslides, rockfalls, avalanches, droughts, and winds. Maia Bitadze mentioned in an interview that this year, 15 million GEL has been spent only on combating natural events and improving early warning systems, using UN, Green Climate Fund, and state resources.

Reviewing scientific literature revealed that one of the most important topics regarding environmental issues is environmental education and its development. This issue was actively discussed during interviews with experts, state structures, and media organizations. In the study results, a separate chapter is dedicated to the public opinion study results, where citizens were surveyed, and they expressed their views on environmental issues and assessed the media's role.

Active communication with the public, conducting training, and taking certain steps at the education system level are important for developing environmental education. According to Tamar Aladashvili, topics related to environmental protection and challenges are included in preschool and school textbooks. Simulative training is also conducted to ensure that schools know how to act in case of natural disasters. Aladashvili also focused on raising awareness in the regions during the interview. As it turns out, practical training has been conducted in municipalities with emergency management plans.

Another crucial issue to note is whether the public understands its role regarding the environment, where the media plays a significant role among other factors.

3.3. Media Representatives on Coverage of Environmental Issues

In-depth interviews were conducted with journalists who actively cover environmental issues, including natural disasters. One respondent is from Ukraine since after the explosion in New Kakhovka, along with other issues, the environmental damage was actively discussed, including whether any threat to the Black Sea coast existed. It was interesting to interview the journalist who covered the event on-site.

The study results show that the frequency of coverage of environmental issues and public interest are quite complex and interrelated topics. Journalists noted that environmental issues are now more or less covered, especially compared to previous years when the media paid no attention to this topic. Gela Mtvlishvili, a journalist from "Mountain News" who often covers environmental issues, notes that the media mainly takes an interest in these issues during disasters, but almost never otherwise. However, Mtvlishvili emphasizes the media's critical role in covering environmental issues, especially given Georgia's challenging terrain. He states that it is important for the media to take responsibility, talk about problems before a disaster occurs, remind the authorities what needs to be done, and provide the public with information about the issue's severity. As an example, he cites the processes that developed in Shovi and focuses on taking preventive measures in this context.

Some media representatives also point out that public interest is low, and people mainly want information on the most pressing issues. An example given by Tea Topuria, a journalist for "Radio Liberty," is the articles she covered on the same topic, stating that if the issue is not highlighted, the audience does not show interest. Another issue that arises is that the media can itself bring the issue to the forefront and introduce it to the agenda. However, since the public today has access to diverse information, they still decide which information to choose. This is where the complexity of the issue emerges. Raising public awareness is important. When the public realizes that environmental issues affect them and that they themselves impact the environment, their interest in obtaining as much information as possible about the environment will increase. In this case, the media will pay more attention to these issues. Media representatives also noted during the interviews that there have been cases where citizens did not want to provide information to the media when working on environmental issues. For example, when discussing houses in landslide-prone areas or the need for evacuation, some citizens refrain from talking. It is also essential to provide citizens with timely and necessary information, in which both the state and the media play significant roles. Therefore, it is crucial that the process of raising public awareness be carried out successfully and with long-term prospects.

When talking about providing timely information and raising public awareness, media representatives also noted that it is important for the public to know how to act during natural events and how to protect themselves during hazards. Gela Mtvlishvili states that most of the population does not have this information. The journalist believes that the media should take responsibility for conveying such issues to the public.

Media representatives also emphasize not only raising public awareness but also their own retraining. Journalists state that it is essential to conduct training and seminars to enhance their knowledge of environmental challenges. They also note that it is crucial to conduct training on the specifics of covering natural disasters. Since covering natural events is associated with significant emotional stress, stress management training is necessary, which should be conducted not only as a preventive measure but also after covering natural events (Shalva Sumbadze, Gela Mtvlishvili, Tea Topuria).

Additionally, journalists emphasize another interesting issue. Most of them believe that there should be a dedicated environmental protection profile in the media, with correspondents working on this specific issue due to its complexity. However, journalists say that this direction is not developed in Georgian media, which they consider problematic.

The main focus of media representatives' interviews was the recent large-scale natural disasters in Georgia - Shovi and Guria. Some media representatives believe that working in extreme situations requires additional resources and energy from journalists, so some journalists may work better under such conditions (Shalva Sumbadze).

The study results show that during natural events, verifying information is crucial. It is clear that verifying information is one of the fundamental principles for the media in general, but it becomes even more critical during crises or disasters. However, as they point out, communication with relevant authorities is difficult during crises, hindering the media's work (Tea Topuria, Olga Chayko).

When discussing natural events, journalists also highlight another important issue. According to media representatives, it is necessary to introduce yourself to respondents. They should also know that their interview will be publicized. Shalva Sumbadze states that during natural events, the emotional

background is so high that people may see the camera and microphone but still not realize that their conversation may be recorded. Therefore, he believes that journalists should definitely explain to citizens that their interviews will be made public.

Media representatives also focus on the appropriate equipment and special gear for covering natural events. Journalists who frequently cover natural events stated during the interviews that they always have a prepared bag with essential items to avoid wasting time on preparation.

It was quite interesting to see the responses from the Ukrainian journalist regarding the explosion in New Kakhovka, how the issue was covered under wartime conditions, how much attention was paid to environmental problems, and specifically which topics journalists focused on. Olga Chayko covered the event on-site but could not move to the area controlled by Russia. Therefore, she considers it a significant problem that the exact information about the damage from the left bank of Kherson region, controlled by Russia, is unknown to them since Ukrainian journalists and international media representatives could not move there.

3.4. Citizens on Environmental Problems and the Role of the Media

Based on the research objectives, 303 respondents were surveyed using a pre-prepared questionnaire. Citizens were sent the questionnaire online, and the received responses were then analyzed. It is important to note that respondents answered both closed-ended and open-ended questions, where they expressed their opinions on environmental issues and assessed the media's work on this topic.

The study involved people aged 18 and older of all ages, but most respondents were young people aged 18-23, mainly students and recent graduates, which is significant since the involvement of the younger generation in caring for the environment is a decisive factor in achieving sustainable development.

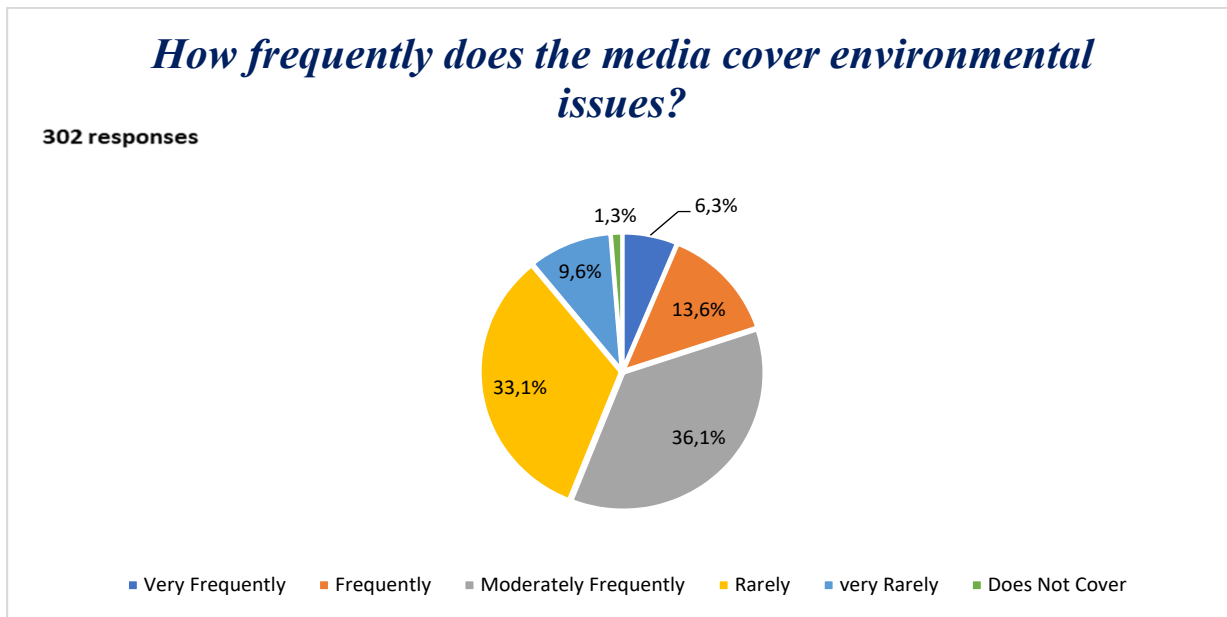
Most respondents were female (67.2%, while males were 32.8%). Additionally, most respondents were employed and also students.

Given the diversity of the study, it was important to get responses from both the capital city and the regions. Most respondents filled out the questionnaire in Tbilisi, but responses also came from regional residents.

Most respondents get information primarily from social networks, followed by television and online media. It is important to note that most respondents choose social networks rather than online media for news.

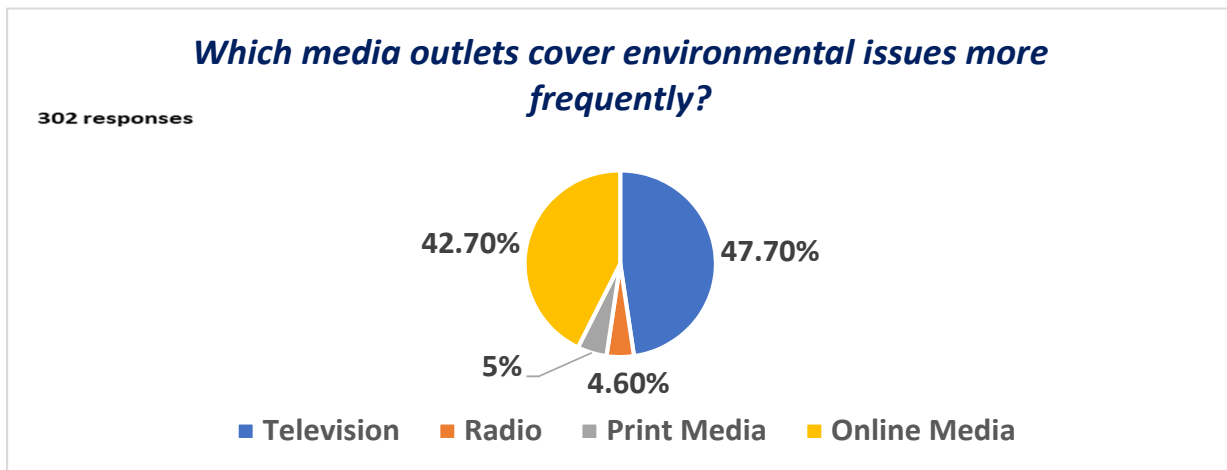
One of the main questions in the questionnaire, based on the research objectives, was how often the media covers environmental issues, according to citizens' assessments. This issue was actively discussed during in-depth interviews with both field specialists and media representatives. Most of them emphasized that the media rarely takes a deep interest in this topic and mainly covers natural events during tragedies. Of course, it is very interesting to see the position of the audience that is the media's consumer. A small number of respondents noted that the media covers environmental issues very often, while most believe that the media covers this topic at a medium frequency or rarely (see Diagram 1 for details).

Diagram 1



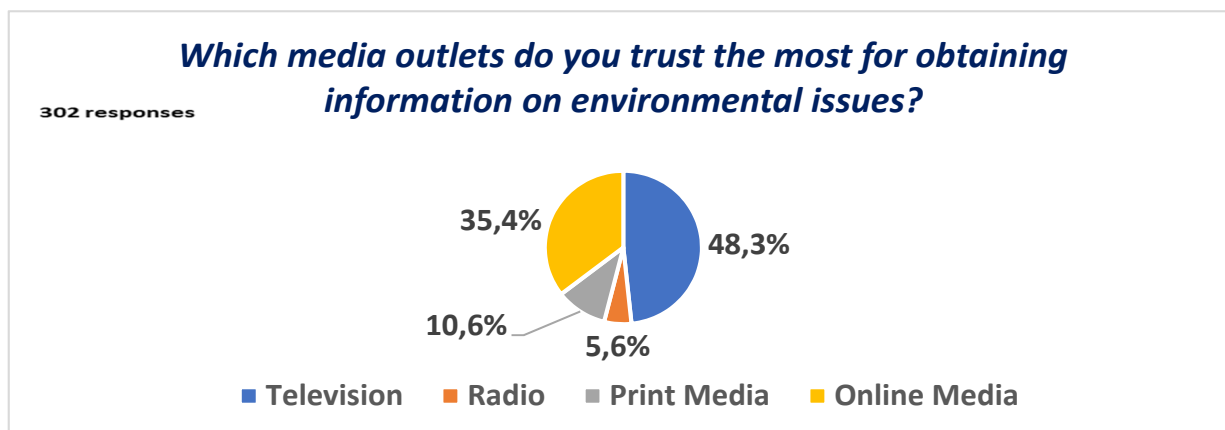
It is also interesting to know which media channels citizens believe cover environmental issues more frequently. As expected, most respondents named television and online media. However, it is also important to note that most respondents do not read print media regularly, making it difficult for them to say precisely how often print media covers this issue (see Diagram 2 for details).

Diagram 2



A rather interesting trend emerged in the question about which media channels citizens trust the most for receiving information on environmental issues. Despite the high number of online media users, most respondents trust television more for receiving information on environmental issues (see Diagram 3 for details).

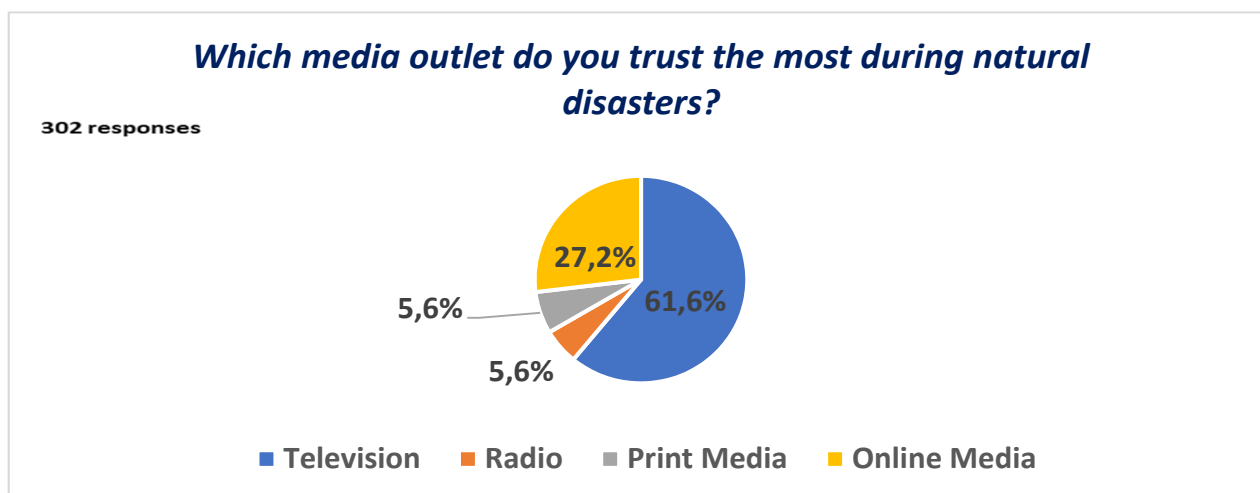
Diagram 3



It is important to note that respondents explained their reasons for trusting the media on environmental issues in open responses. Most indicated that they trusted television more because they were more confident that television would prepare verified information on environmental issues and that the topic would be more in-depth and informative. Online media was named as a fast and operational information provider, which was convenient for them, but they also mentioned encountering fake news and disinformation in online media and believed that online media had a lower verification quality.

Like the general trend of getting information on environmental issues from television, most respondents also rely on television for reliable information during natural events. In terms of trustworthiness, online media is in second place (see Diagram 4 for details).

Diagram 4

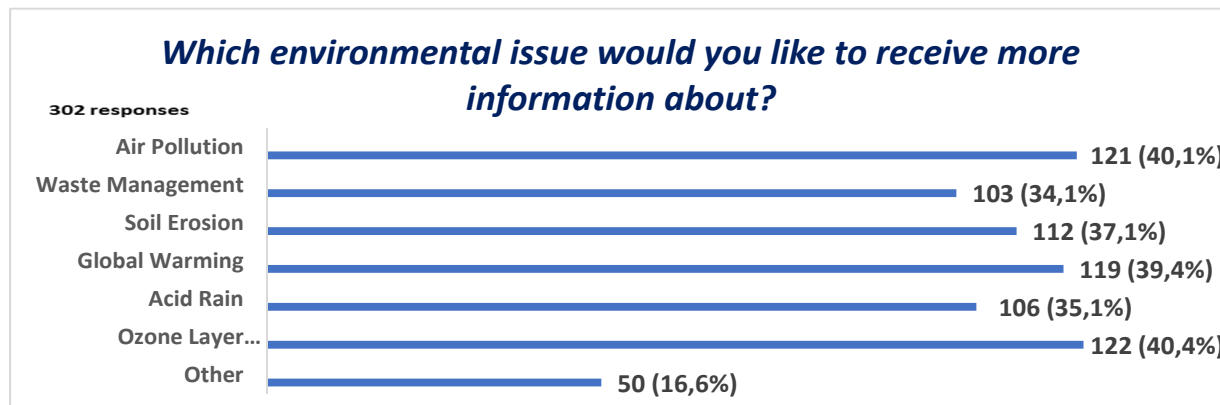


Respondents expressed their views on the reliability of natural event coverage in open responses. Most citizens noted that they needed information quickly during natural events but encountered the problem of spreading fake news in digital media due to the rapidity of information dissemination. However, respondents also emphasized that receiving timely information is crucial during natural events because they want to get updates quickly. Some respondents also noted that they do not trust any media channel during tragedies due to encountering inaccurate information everywhere.

Based on the research objectives, it is important to know whether citizens are familiar with environmental challenges. The study results revealed that most respondents are familiar with the problem of air pollution and, to a lesser extent, with acid rain. Respondents could select multiple answers simultaneously.

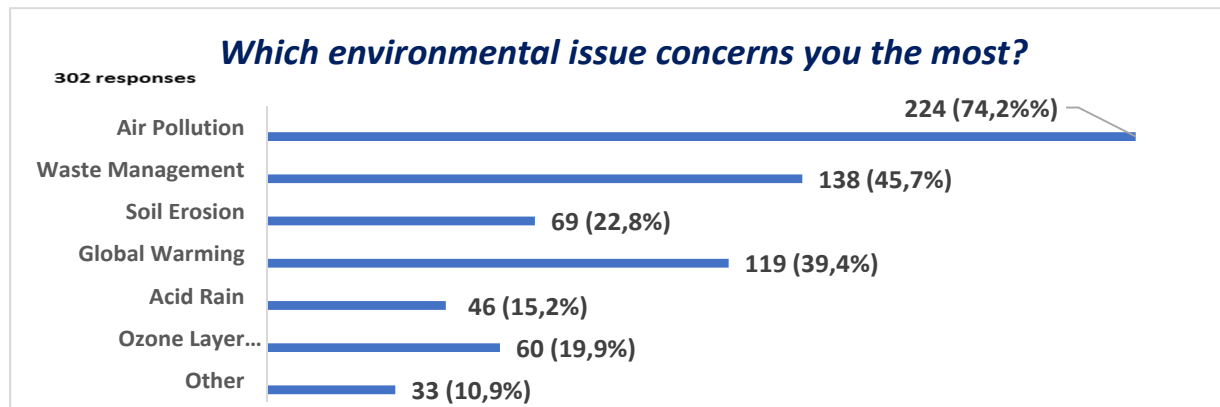
An interesting trend emerged in the question about which environmental challenges citizens would like to receive additional information. Respondents want information on all listed environmental problems. The data is almost evenly distributed. It is important to note that despite knowing some of the listed problems, respondents still want to receive additional information about them. This is quite significant for developing environmental awareness (see Diagram 5 for details).

Diagram 5



The study results show that most respondents are concerned about air pollution, waste, and then climate change. Although scientists consider global warming the main environmental problem, most respondents do not name it as the first challenge. This trend shows that detailed information should be provided to the public about climate change as a major threat to better understand the issue's severity (see Diagram 6 for details).

Diagram 6



When asked how high environmental education is in society, most respondents believe that the level of environmental education is average. It is important for environmental education in society to be very high, which will help increase citizens' involvement in caring for the environment

Conclusion

Both qualitative and quantitative research was conducted based on the study's objectives. The chosen research methods were in-depth interviews and public surveys. Eight in-depth interviews were conducted with specialists, including four media representatives and four environmental specialists. The four media representatives were those who work on environmental issues. In the quantitative research, 303 respondents were surveyed. Citizens were sent a pre-prepared questionnaire online, which included both closed and open-ended questions.

The study answered the research question: What role does the media play in covering environmental issues? All eight respondents emphasized the media's significant role in environmental issues during in-depth interviews. It is important to note that neither media representatives nor field specialists had a different opinion on this issue. Analyzing the interviews, it can be said that the media is one of the main instruments in highlighting environmental problems. If the media prepares more material on the environment, public interest will increase even more. The quantitative research also revealed that some citizens want detailed and in-depth information from the media on environmental issues, which is important for the media to provide. However, one significant detail should be considered: some media representatives noted during the analysis of in-depth interviews that materials on environmental problems have fewer readers than other topics, sometimes signaling the media on which topics to introduce into the agenda. But this is where the importance of the media as a factor in raising environmental awareness, which respondents emphasized in the interviews, should be highlighted.

The study answered the question: According to experts and media representatives, what are the main challenges in covering environmental issues? Experts believe that the media should bring environmental issues to the forefront at the preventive level and not only when the situation has already become extremely difficult, a shortage observed in Georgian media. According to specialists, global problems such as climate change should be actively included in the media's agenda. They also believe it is essential for the state to take steps alongside the media to raise public awareness. Interviews revealed that citizen involvement in caring for the environment is particularly important, but this process's success relies significantly on the state, non-governmental organizations, and the media. According to experts, Georgian media covers news quite promptly during natural events. Field specialists focused on the natural disasters in Shovi and Guria, stating that Georgian media mainly covered the facts accurately. However, they found it difficult to say the same about covering possible threats after the explosion in Kakhovka. According to specialists, despite no threat to Georgia's coastline, some media's sensational coverage caused public fear and panic. It is important for the media not to sow fear in society.

Some media representatives believe that the media actively covers environmental issues, while others think the coverage frequency is not high due to low public interest in the topic. However, all journalists agreed that the media should cover environmental issues more frequently and in-depth. They noted the difficulty in finding relevant respondents and conducting interviews on environmental problems and that it is challenging to get citizens to agree to interviews. They recalled cases where people had to leave their homes during natural disasters or other environmental challenges but did not want to talk about it publicly.

Media representatives also discussed the need for specific equipment for covering natural events. They stated that journalists should be adequately prepared and equipped. Media representatives highlighted the importance of emotional stability for correspondents. They recalled the tragic event in Shovi and noted that reporting news from the place was associated with quite a lot of stress. Ukrainian journalist Olga Chayko also talked about the stressful environment she faced while covering the explosion in Kakhovka under wartime conditions. Therefore, journalists emphasize the need for psychological training both before and after covering natural events. They state that it is important to establish a practice where respondents have the opportunity to receive appropriate psychological or other training after covering natural disasters. Journalists also focus on the need for frequent seminars on environmental challenges. They also noted that media organizations should have a dedicated environmental direction with specific journalists working on it due to the issue's complexity.

The study also answered the question: What are the public's main demands regarding environmental challenges and their coverage in the media? Most respondents stated that the media should work more on environmental issues. They want to receive additional information on global environmental challenges such as global warming, air pollution, and ozone layer depletion. Most respondents try to get news on environmental challenges from television, despite generally getting information from social networks and online media. However, they trust television more for news on environmental issues. In open responses, they also noted that it would be better for the information to be more detailed and comprehensive.

The study confirmed the hypothesis that the media primarily focuses on the tragedy during the initial stage of a natural event while devoting less time to preventive measures when covering environmental issues. This issue was emphasized by field specialists during in-depth interviews and also emerged in the open responses of surveyed respondents. Therefore, it can be said that Georgian media mainly focuses on the initial stage of natural events rather than preventive measures when covering environmental problems.

Based on the study results, certain recommendations were developed:

- The media should actively and in-depth cover environmental problems;
- The media should maintain the accuracy of news along with promptness during natural events;
- The media should cover environmental problems not only during disasters but also at the preventive level;
- Correspondents working on environmental problems should conduct interviews with relevant respondents;
- It is crucial to increase public involvement, raise awareness, and support environmental education, which should be significantly contributed by state structures, non-governmental organizations, and the media;
- Journalists should have appropriate clothing and equipment during natural events (if necessary);
- Journalists should receive psychological training both before and after covering natural events.

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