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Climate Change Coverage in the Hungarian News Media
(2014—2024)

The Impacts of Youth-Led Climate Activism on the Media Agenda

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DOCTORAL DISSERTATION

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1. INTRODUCTION

“What steps are you taking to attract the attention of the mainstream media?” — “Honestly... I just believe in a cause and do everything I can.” I recall this conversation with a teenage climate activist who was an active member of Fridays for Future Hungary. The question of how much impact this movement has had on society, particularly on younger generations, and what kind of media phenomenon it has become, has intrigued me for years. Later, through a large-scale research project at Charles University in Prague, I had the opportunity to establish personal connections with both Hungarian and Czech activists and gain a glimpse behind the scenes. Although the movement is no longer as visible in the form in which the world first encountered it, its emergence represents a watershed moment in climate communication, marking a new phase in the public and media visibility of climate change.

The September 2019 Global Climate Strike, organized by Fridays for Future and inspired by Swedish activist Greta Thunberg, was one of the most significant environmental protests to date. Over the course of a single week, more than 7 million people took to the streets in over 150 countries and 4,500 locations worldwide, making it the largest climate mobilization ever recorded (Hurrelmann & Albrecht, 2021). The scale and visibility of these protests brought the issue of climate change to the forefront of global public debate.

The emergence of the new climate movement soon attracted scholarly attention. Research has examined the organization, communication strategies, digital presence, and the political and environmental attitudes of young people (Buzogány & Scherhauser, 2022; Johnston & Holland Bonnett, 2023). Less attention, however, has been paid to its longer-term relationship with media agendas, particularly changes in the frequency and framing of climate change coverage.

Over the past decades, climate change has evolved from a largely scientific concern into a widely mediated and politically contested issue (Han, Sun & Lu, 2017). Since the late 1980s, the topic has gradually moved onto mainstream media agendas, while climate communication has expanded beyond science to include political, economic, moral and

cultural dimensions (Boykoff, 2011; Nisbet, 2009). Media visibility and framing consequently play an important role in shaping how climate change is understood by the public (Stecula & Merkley, 2019; Stoddart et al., 2023; Vikström et al., 2023).

Media attention to climate change, however, remains uneven. Coverage often increases around major international summits, extreme weather events and other agenda triggers before declining again, reflecting the dynamics of the *issue-attention cycle* (Downs, 1972). A notable shift occurred in 2018 with the emergence of Fridays for Future and Extinction Rebellion. Through mass demonstrations, highly visible protest tactics and digital communication, these movements generated renewed attention to climate change and connected scientific warnings with moral and generational claims (Fischer, 2019; Kovács-Magosi & Hammond, 2023; Fabel et al., 2024).

These developments are particularly relevant in Hungary, where the rise of climate activism coincided with substantial changes in the media environment, including increasing ownership concentration and political influence over parts of the news landscape. At the same time, Hungarian climate communication has been shaped by international climate commitments, debates around the European Union's green transition, and increasingly visible regional climate impacts.

This dissertation examines how *new climate activism* (Buzogány & Scherhauser, 2022) intersects with the Hungarian media landscape. Drawing on agenda-setting and framing theories, it investigates how climate change appeared on Hungarian news agendas between 2014 and 2024, how its visibility and framing changed over time, and how activist mobilization became part of this process.

1.1 Rationale and research gaps

Much of the research on climate change media coverage has focused on Western media systems, including the United Kingdom, the United States, Germany, and the Scandinavian countries (Hase et al., 2021). This geographical concentration limits our understanding of how climate change becomes visible within media systems characterized by different

political, institutional, and journalistic conditions. Examining a wider range of national contexts is therefore important, and Hungary offers a relevant case in this respect.

A growing body of Hungary-focused scholarship has examined different dimensions of climate communication, including early patterns of climate change coverage (Székely & Polgár, 2008), climate knowledge, discourse and localization (Jankó et al., 2011), climate and energy policy in news discourse (Vancsó, 2024), and the media representation of extreme events (Hafenscher & Jankó, 2022). Other studies have addressed youth climate attitudes (Kovács-Magosi & Székely, 2022) and environmental activism within Hungary's changing political environment (Vancsó & Kovács-Magosi, 2024; Buzogány, Kerényi & Olt, 2022), as well as the political framing and counter-framing of protest movements in the Hungarian media (Susánszky, Kopper & Zsigó, 2022; Mikecz, Böcskei & Vasali, 2023). While these studies provide important insights into specific dimensions and periods of Hungarian climate communication, systematic longitudinal research examining changes in the volume of climate change coverage across multiple Hungarian online news outlets remains limited.

The *contribution* of this dissertation lies in combining several dimensions of climate communication that are often examined separately. First, it strengthens the geographical representation of Central and Eastern Europe in climate communication research through an in-depth study of the Hungarian media environment. Second, it provides a systematic longitudinal analysis of climate change coverage across multiple Hungarian online news outlets over a ten-year period, allowing both long-term developments and shorter fluctuations in media attention to be examined. Third, it connects these changes to the structure of the Hungarian media system and to the emergence of climate activism as a potential agenda trigger, examining how visibility and framing vary across outlets and over time. Finally, interviews with newsroom professionals provide insight into the agenda-building processes behind the observed patterns. The dissertation therefore moves beyond a conventional media coverage study by integrating longitudinal media attention, framing, climate activism, media-system differences, and newsroom practices within a single analytical framework.

The *rationale* for this study lies in the need to understand climate change communication as a long-term and context-dependent process rather than as a series of isolated media events.

Hungary provides a particularly relevant case because changes in climate communication have unfolded within a substantially transformed media environment and alongside the emergence of new forms of climate activism. Examining these developments over an extended period makes it possible to understand not only when climate change gains media attention, but also how its visibility and framing interact with the media system, activist mobilization and newsroom agenda-building processes.

1.2 Research questions and hypotheses

Building on the identified research gaps, the following tables summarize the research questions and hypotheses:

Nr. of RQ	Research questions
RQ1	How has the distribution of climate-related key terms evolved between 2014 and 2024 in the Hungarian media?
RQ2	How has the framing of climate change in Hungarian news media evolved between 2014 and 2024?
RQ3	To what extent did international climate movements (e.g. Fridays for Future, Extinction Rebellion) receive media attention in the Hungarian news media between 2014 and 2024?
RQ4	How does youth-led climate activism, particularly Fridays for Future and Extinction Rebellion, influence the frequency of climate change in Hungarian media coverage?

Table 1: Research questions (RQ1–RQ4) examining climate change in Hungarian news media, 2014–2024

Nr. of H	Hypotheses
H1	Climate change coverage is strongly event-driven and dominated by intensifying emergency framing patterns.
H2	Media framing of climate change becomes more urgent following the emergence of climate activism in 2018.
H3	Climate change media coverage differs systematically across government-aligned, independent, and critical news outlets in Hungary.
H4	Increases in media attention associated with climate activism are predominantly short-lived rather than sustained over time.

Table 2: Hypotheses (H1–H4) on climate change media coverage

1.3 Aims of the thesis

The dissertation pursues the following objectives:

- To identify and interpret patterns of media attention to climate change over time, including periods of heightened coverage, decline, and relative absence (issue fatigue periods) from the news agenda.
- To analyze how the framing of climate change in Hungarian media has evolved throughout the period under investigation.
- To examine how periods of intensified climate activism – particularly those associated with the movements *Fridays for Future* and *Extinction Rebellion* – relate to changes in the visibility and media framing of climate change in Hungarian news coverage between 2014 and 2024.
- To provide insight into agenda-building mechanisms in climate change coverage by examining the perspectives and experiences of newsroom professionals.
- To contribute to scholarship on environmental and climate communication by bringing together perspectives from activism research, agenda-setting, and framing within a longitudinal mixed-method research design.

1.4 Scope and limitations

The study focuses only on Hungarian national online news media between 2014 and 2024. International media and developments outside this time period fall beyond the scope of the analysis.

Boundary/ Delimitation	Application in this study (included in the analysis)	Excluded from the analysis
Geographical	The dissertation focuses only on the Hungarian national news media system.	International media; social media platforms; activist-self-published media (social platforms, websites etc.)
Temporal	The case covers the period 2014–2024, allowing for the examination of long-term trends before, during, and after periods of intensified climate activism.	Media coverage prior to 2014 and developments after 2024
Empirical	The content analysis is limited to journalistic news articles published by news media outlets.	Television, radio and social media content, and non-journalistic texts
Analytical	The content analysis focuses on media visibility and framing of climate change over time.	Activist strategies, actor intentions, audience reception, and media effects

Table 3: Limitations of the analysis

Empirically, the study is limited to journalistic content published by online news outlets and does not include television, radio, print-only publications or other non-journalistic communication. Analytically, it focuses on the visibility and framing of climate change within professional news coverage. It does not examine audience reception or media effects, nor does it seek to explain changes in coverage solely through climate activism. Rather, activism is treated as *one* potential agenda trigger alongside political, environmental and societal events.

A further delimitation concerns social media. Although social media played an important role in the mobilization and communication of movements such as Fridays for Future and Extinction Rebellion, their social-media communication is not systematically analyzed in this dissertation. Preliminary examination conducted during the development of the research

indicated that the movements' social media and especially posting activity was limited and inconsistent over time, particularly towards the end of the study period, with extended periods of little or no activity.¹ More importantly, the purpose of this research is not to analyze activist communication itself, but to examine long-term climate change coverage in professional news media and to consider climate activism as one potential trigger of media attention. Incorporating a systematic analysis of activist social-media communication would therefore have substantially broadened both the methodological and conceptual scope of the study.

Consequently, the dissertation does not examine intermedia agenda-setting between activist social media and professional journalism or make causal claims about whether social-media activity generated subsequent news coverage. Such questions would require a different research design and systematic longitudinal data from both environments. The exclusion of social media therefore reflects the analytical boundaries of the dissertation rather than an assumption that social media are unimportant to contemporary climate activism.

These boundaries also limit the interpretation of the findings. The identified patterns of attention and framing apply to the selected online news outlets and should not be generalized to the Hungarian media system as a whole. Similarly, temporal associations between climate activism, other events and changes in coverage do not establish causality. The semi-structured interviews provide additional insight into newsroom practices and editorial decisions but represent the perspectives of the participating journalists rather than Hungarian news organizations as a whole.

Finally, the study is subject to limitations related to the availability of archived online content, corpus construction and the sampling used for the qualitative framing analysis. These methodological limitations are discussed in greater detail in the Methodology chapter.

¹The relatively low level of activity is also reflected in the number of Instagram posts: between 2020 and 2026, Fridays for Future Hungary published 511 posts and Extinction Rebellion Hungary 351. Posting was also highly uneven over time, with months of limited or no activity.

1.5 Key concepts

This dissertation draws on key concepts from climate communication, agenda-setting and framing research. These concepts provide the analytical framework for examining changes in the visibility of climate change in professional news media, the ways in which climate change is framed, and the processes through which issues and actors enter the media agenda.

Media and news media. Media are broadly understood as communication channels through which content is distributed to spatially dispersed audiences through technical means (McQuail, 2005). Contemporary media environments encompass both established forms of mass communication and newer digital and interactive forms of communication (Van Dijk, 2010). Online news media form part of this wider environment and have become particularly important to climate communication (Schäfer & Schlichting, 2014). In this dissertation, however, the term *news media* is used in a more specific sense to refer to professional journalistic organizations that produce and distribute news content. Empirically, the study focuses on the online news content of selected Hungarian professional news outlets. Social media platforms, activist-owned communication channels and user-generated content are therefore not part of the empirical corpus unless they become objects of reporting within professional news coverage. This distinction is important because the study examines how climate change and climate activism become visible within institutional journalistic agendas rather than communication about these issues across the wider media environment.

Climate communication. Climate communication refers to the processes through which information, meanings and public understanding about climate change are constructed and circulated across media and social contexts. This research field explores how climate-related knowledge, narratives and interpretations are communicated through journalism, political discourse and public debate. While closely related to environmental communication, climate communication focuses more specifically on the societal interpretation of climate science, policy responses and the forms of public engagement that emerge around them (Cox & Pezzullo, 2026).

Media agenda and agenda-setting. The media agenda refers to the set of issues that receive sustained attention in news coverage at a given time. According to agenda-setting theory, the media influence perceptions of issue importance by selecting and repeatedly covering particular topics (McCombs & Shaw, 1972; Dearing & Rogers, 1996). In this sense, the media agenda reflects the outcome of a competitive process in which different issues compete for limited space and journalistic attention. The amount of space available for reporting—the *news hole*—places practical constraints on this process and consequently on the attention that can be allocated to individual issues (Boykoff, Daly & McAllister, 2021). For this dissertation, the concept of the media agenda provides the basis for examining how the amount of attention devoted to climate change changes over time and whether identifiable periods of intensified attention coincide with climate activism or other relevant political, environmental and societal events.

The study also draws on the related concept of *agenda-building*, which shifts attention towards the processes through which the media agenda itself is constructed. Rather than treating news attention as an autonomous media outcome, agenda-building considers the interactions among journalists, news organizations and external actors seeking to draw journalistic attention to particular issues. This perspective is particularly relevant to the qualitative component of the dissertation, in which semi-structured interviews with journalists and newsroom professionals provide insight into editorial decision-making, journalistic routines and the factors perceived by journalists as shaping climate change coverage.

Media attention, frequency and visibility. Frequency of coverage refers to how often an issue appears in media content within a given period and provides a basic quantitative indicator for tracing changes in media attention over time (Boykoff, 2011; Brüggemann & Engesser, 2017). In this dissertation, media attention refers to the amount of journalistic attention devoted to climate change over time, with frequency of coverage serving as its principal quantitative indicator. The amount of coverage devoted to an issue is itself a meaningful dimension of the construction of social problems in media discourse, even though it does not reveal how the issue is framed or which actors are represented within that coverage (Su & Hu, 2021). Longitudinal climate communication research similarly uses changes in the

amount of coverage to trace variations in media attention over time (Schmidt, Ivanova & Schäfer, 2013; Hase et al., 2021).

The term *visibility* is used in this dissertation in a closely related sense, referring to the extent to which climate change is present in professional news coverage and how this presence changes over time. Research on environmental communication has emphasized that analysis should consider not only periods in which environmental issues attract substantial attention but also those in which they receive little or no coverage (Lester, 2015; Maia, 2009). Related research on social movements likewise treats gaining or failing to gain media coverage as an important dimension of media visibility (Andrews & Caren, 2010). In the present study, patterns of visibility are therefore examined through longitudinal changes in the frequency of climate change coverage, including periods of intensified attention as well as periods in which climate change receives comparatively little coverage. Visibility does not refer here to the placement or visual prominence of individual articles, since these dimensions are not measured in the empirical analysis.

Peaks and declines in media attention. Media attention to climate change tends to fluctuate substantially over time, producing identifiable periods of increased and declining coverage (Tana, Eirola & Nylund, 2020; Grundmann & Scott, 2014). Comparative and longitudinal research has similarly demonstrated considerable variation in the amount of climate change coverage across time and media contexts (Schmidt, Ivanova & Schäfer, 2013; Hase et al., 2021). Such fluctuations may coincide with international climate negotiations, political developments, scientific reports, extreme weather events, protests or other events capable of directing renewed journalistic attention towards climate change. Saunders, Grasso and Hedges (2018), for example, examine political and meteorological events as potential news prompts in explaining peaks and troughs in climate coverage. This is particularly relevant to the present study because temporal correspondence between an event and increased coverage does not in itself establish that the event caused the increase.

The concept of the *issue-attention cycle* provides a broader framework for interpreting these fluctuations. Originally proposed by Downs (1972), the model describes the cyclical rise and decline of attention to policy issues, particularly environmental problems. Although climate

change does not necessarily follow a single or uniform attention cycle, the concept helps explain why a persistent societal problem may nevertheless move in and out of more intensive media attention. One possible contributing process is *issue fatigue*. Repeated exposure to the same topic over an extended period may contribute to declining interest and willingness to engage with it (Schumann, 2022). Issue fatigue is not treated as a central explanatory mechanism in this dissertation, but it provides one possible interpretive perspective when discussing periods of declining attention.

Framing. While the analysis of media attention examines how much coverage climate change receives and how this changes over time, it does not indicate how the issue is represented within that coverage. Framing therefore constitutes a second analytical dimension of the study. In communication research, framing refers to the ways in which particular aspects of an issue are selected and emphasised, thereby shaping its interpretation (Entman, 1993). Applied to climate communication, framing research examines the different interpretive perspectives through which climate change, its causes, consequences, actors and possible responses are presented in media discourse (Nisbet, 2009). In this dissertation, framing analysis complements the longitudinal examination of media attention by investigating how climate change is represented across selected periods of coverage.

1.6 Brief overview of methods

This dissertation adopts a longitudinal case study design to examine climate change coverage in Hungarian online news media between 2014 and 2024, with particular attention to climate activism as a potential agenda trigger. Methodologically, it follows a *sequential explanatory mixed-methods design* (Creswell & Plano Clark, 2011), combining quantitative media agenda analysis, qualitative framing analysis and semi-structured interviews.

The first phase uses a large-scale media monitoring dataset compiled by OBSERVER Kft. to identify long-term trends, peaks and changes in the volume of climate change coverage. The second phase uses qualitative framing analysis of a sample of climate-related articles to examine dominant interpretative frames and their development over time. Finally, four semi-structured interviews with journalists and newsroom professionals provide additional insight

into the agenda-building processes behind the observed patterns, including editorial decisions and factors influencing climate change coverage. The interviews are used to contextualize and interpret the media analysis rather than to establish causal relationships.

1.7 Novelty of the study

The novelty of this dissertation lies in its systematic and integrative examination of climate change communication in Hungary over an extended period. By focusing on a Central and Eastern European, post-socialist context, the study contributes to broadening the geographical scope of climate communication research, which remains largely dominated by Western perspectives. At the same time, it situates climate communication within the specific political and structural characteristics of the Hungarian media system, including the substantial changes it underwent during the period examined.

The dissertation provides a systematic longitudinal analysis of Hungarian online news media between 2014 and 2024, allowing long-term changes in both media attention and framing to be examined across different segments of the media environment. Rather than studying these dimensions separately, it integrates agenda-setting and framing perspectives with the analysis of climate activism as a potential agenda trigger. The media analysis is further complemented by interviews with newsroom professionals, adding insight into the agenda-building processes behind the observed patterns. The study's novelty therefore lies primarily in bringing together longitudinal media analysis, framing, climate activism, media-system differences and newsroom perspectives within a single research design.

1.8 Structure of the dissertation

The dissertation is organized into seven main chapters.

Chapter 1 – Introduction introduces the research problem and establishes the rationale for the study. It identifies the main research gaps, presents the research questions and hypotheses, defines the aims and scope of the dissertation, and outlines its novelty and methodological approach.

Chapter 2 – Literature Review positions the study within the relevant fields of scholarship. It introduces the main theoretical perspectives and synthesizes previous research from climate communication, agenda-setting, framing, media studies and climate activism, providing the theoretical basis for the research questions and hypotheses.

Chapter 3 – The Hungarian Context provides the background necessary to understand the Hungarian case. It introduces the main characteristics of the Hungarian media system, relevant environmental and climate attitudes, and the development of climate activism in Hungary during the period under study.

Chapter 4 – Methodology describes the research design and methods. It explains the construction of the media corpus, the quantitative media agenda analysis, the qualitative framing analysis, and the semi-structured interviews with journalists and newsroom professionals, together with the analytical procedures and methodological limitations.

Chapter 5 – Results presents the empirical findings in three parts. The first examines long-term patterns, peaks and declines in media attention; the second presents the findings of the qualitative framing analysis; and the third reports the interview findings, providing insight into journalistic practices, editorial decisions and agenda-building processes.

Chapter 6 – Discussion interprets the findings in relation to the theoretical framework, research questions and previous research, and considers their broader implications for climate communication, media agenda-setting and framing.

Chapter 7 – Conclusion summarizes the main findings and contributions of the dissertation, reflects on its limitations, and identifies directions for future research.

2. LITERATURE REVIEW

This chapter reviews the academic literature that provides the theoretical and empirical foundation of the dissertation, following a narrowing logic from broader perspectives to its specific research focus. It first situates the study within environmental and climate communication and introduces agenda-setting and framing theory, followed by research on trends in climate change coverage and the factors shaping media attention, with particular attention to post-communist contexts. It then examines climate change framing and major frame typologies before turning to environmental and climate activism and its relationship with the media. Particular attention is given to youth-led movements, especially *Fridays for Future* and *Extinction Rebellion*, and their relationship with media attention and agenda-setting. The chapter concludes by synthesizing the literature and establishing the basis for the research questions and hypotheses.

2.1 Environmental and climate change communication²

The topic of this dissertation can be approached from several disciplinary perspectives, including political communication, media studies, youth studies, and protest studies. However, its primary disciplinary context is environmental and climate communication, interdisciplinary fields that incorporate overlapping theoretical and methodological approaches.

Environmental communication (EC) emerged as a distinct area of communication research from the 1970s onward and became increasingly institutionalized as a subfield of communication studies by the 1990s (Milstein, 2009; Katz-Kimchi & Goodwin, 2015; Antonopoulos & Minos-Athanasios, 2020; Hansen & Cox, 2023). Broadly, it examines the communicative processes through which environmental issues are defined, represented and contested across journalism, political and institutional communication, public participation and environmental activism (Cox & Pezzullo, 2017; Comfort & Park, 2018). Research on

² Both terms – climate change communication and climate communication – are used interchangeably in the scholarly literature and are generally accepted. In many cases, the field is abbreviated as CC while environmental communication as EC. (Author's note)

climate change media coverage developed alongside this broader field and has since become one of its most prominent areas of scholarship (Cox, 2007; Anderson, 2015; Antonopoulos & Karyotakis, 2019; Comfort & Park, 2018).

Climate communication (CC) examines how climate change is represented and interpreted, how different actors participate in its communication, and how communication shapes public awareness and engagement (Gifford & Comeau, 2011; Clayton, 2024; Cantillo, Astorino & Tsana, 2025). Major strands include research on media representation and framing (Nisbet, 2009; Lakoff, 2010; Carvalho, 2012), public responses to climate messages (Gifford & Comeau, 2011), and climate skepticism and denial (Bloomfield & Tillery, 2019; Mendy, Karlsson & Lindvall, 2024). More recently, political polarization, digital media and youth-led climate activism have further transformed the climate communication environment (Fisher, 2019; Hornsey & Lewandowsky, 2022; Stoddart et al., 2023; Fabel et al., 2024).

This dissertation is positioned within the media-oriented strand of environmental and climate communication research. It approaches climate communication primarily as a media and journalistic phenomenon, while recognizing that professional news coverage operates within a wider communication environment involving political actors, scientists, activists, institutions and publics.

2.1.1 Structural biases and research gaps in the field

Alongside the rapid expansion of environmental and climate communication research, scholarship has continued to identify persistent blind spots within the field. One of the most consistently identified concerns is its uneven geographical distribution. Research has historically been concentrated in the United States and Western Europe, while other regions remain considerably less represented (Hansen & Cox, 2023). Recent evidence suggests that this imbalance persists: a review of 505 articles published between 2020 and 2022 found that 93% of authors were affiliated with institutions in the Global North, which also accounted for 67% of the geographical focus of the research, while Global South-affiliated authors represented only 7% of the sample (Bera, Vilchez & Muenster, 2025). Similar geographical and platform-related imbalances are visible in research on climate change and social media,

which has expanded substantially but remains strongly concentrated on platforms and national contexts, especially Twitter and the United States (Sultana et al., 2024). These patterns suggest that the diversification of climate communication research across media environments has not been matched by comparable geographical diversification.

Another concern relates to the strong emphasis on media content. Studies of media representations and framing have been central to climate communication research, but considerably less attention has been paid to how frames and media agendas are produced and to the actors and processes behind them (Comfort & Park, 2018; Guenther et al., 2024). Earlier scholarship similarly called for research to move beyond media texts alone and to consider the roles of journalists, policymakers, activists, NGOs, corporations, and other institutions in shaping environmental communication (Cox, 2007; Anderson, 2015; Katz-Kimchi, 2018). This issue has become increasingly important as digital and networked communication environments have created more complex flows of information between actors, platforms, and professional news media (Schulz, 2020).

Methodologically, longitudinal approaches have become more established, but large-scale studies covering extended periods remain less common than shorter-term analyses. Longitudinal research is particularly valuable because it can reveal not only periods of heightened attention but also longer-term shifts, declines, and periods in which an issue receives comparatively little coverage (Hase et al. 2021, Meier and Eskjær, 2024).

This latter point relates to another less frequently examined dimension of environmental communication. Lester (2015) drew attention to the relative neglect of issue invisibility: research has tended to focus more strongly on how environmental issues become visible in public discourse than on the conditions under which they recede from attention or remain marginal. In climate communication research, periods of declining attention and possible issue fatigue may therefore be as informative as major peaks in coverage.

These gaps are directly relevant to the present dissertation. By focusing on Hungary, the study examines climate communication within a Central and Eastern European and post-socialist media context that remains comparatively less represented in international research.

It combines a ten-year longitudinal analysis of climate change coverage with qualitative framing analysis and semi-structured interviews with journalists and newsroom professionals. This design allows the study to examine both longer-term patterns of media attention and framing and, through the interviews, to provide insight into the journalistic practices and agenda-building processes behind climate coverage.

2.2 Climate change on the media agenda

“We live in embattled times regarding media reporting on climate change.”

— McAllister et al. 2021

This subchapter examines the role of the media in communicating climate change. It provides a historical perspective on the development of climate change coverage and discusses broader global trends in a rapidly changing media environment. It then turns to the theoretical foundations of media agenda research, focusing on how media attention to climate change changes over time and on the events that may contribute to peaks in coverage. Finally, the discussion moves from these broader trends to the regional context in which the Hungarian media operate.

2.2.1 The role of the media in communicating climate change

The study of climate change media coverage has become a central strand within environmental communication research (Wonneberger, Meijers and Schuck, 2020; McAllister et al., 2021). Environmental issues do not simply appear in the public sphere on their own. As Cox and Pezzullo (2017) note, they gain social and political relevance when journalists and news organizations bring them into public discussion and frame them in particular ways.

One of the main reasons scholars continue to pay close attention to media coverage is its influence on how individuals perceive climate change and its urgency, as well as on their attitudes and behavioral intentions (Friedman et al., 1986; Moser, 2010; Nisbet et al., 2002; Wonneberger, Meijers and Schuck, 2020; Hase et al., 2021; McAllister et al., 2021; Clayton, 2019, 2024; Ergun, Karadeniz and Rivas, 2024; Rosenthal and Ai, 2024; Ahmed and Ahmed, 2026). Media reporting also contributes to agenda-setting processes and structures public

debate (Nisbet et al., 2002; McAllister et al., 2021). At the same time, communicating climate change poses particular challenges for journalists. Climate change is often described as an “unobtrusive” phenomenon because many of its causes and consequences cannot be directly perceived in everyday life and unfold over long periods of time and across large geographical scales (Rogers & Dearing, 1996; Ader, 1995; Carvalho, 2010; Dahlstrom and Scheufele, 2010). This increases reliance on mass media for information and for interpreting complex environmental risks (Boykoff, 2008b; Cheval et al., 2022).

The role of news media in climate communication should not, however, be understood in deterministic terms. News media contribute to the visibility and interpretation of climate change but operate within a wider communication environment in which multiple actors compete for public attention. Although scientific assessments emphasize the urgency of mitigation (IPCC, 2023), media attention is also shaped by competing events and issues (Stecula & Merkley, 2019; Stoddart et al., 2023; Vikström et al., 2023). Media coverage can therefore contribute to keeping climate change on the public agenda, but increased visibility does not in itself imply greater awareness, changes in attitudes or behavior, or support for climate policy.

News media also provide an important arena for climate governance, in which environmental organizations, businesses, political actors, scientists, and other stakeholders promote competing interpretations of climate problems and possible responses (Steffek, 2009). Which of these actors and interpretations become visible is shaped by journalistic practices and professional constraints, including competition for audience attention, the complexity of climate science and politics, newsroom resources, and journalistic norms (Bolsen & Shapiro, 2018; Vujović & Ilić Krstić, 2022; Lewandowski et al., 2024; Elishar, 2025).

One particularly influential debate concerns the journalistic norm of balance. While balance traditionally serves the professional ideals of fairness and objectivity, climate communication research demonstrated that giving similar weight to scientifically unequal positions could distort the representation of scientific knowledge. Boykoff and Boykoff (2004) described this as “*balance as bias*”: climate-sceptic or contrarian claims received disproportionate visibility in news coverage despite the growing scientific consensus on anthropogenic climate change.

Subsequent research, however, suggests an important shift in climate journalism. Brüggemann and Engesser (2017) found that journalists across several national contexts had increasingly moved beyond conventional false balance, often contextualizing or challenging contrarian claims rather than presenting them as scientifically equivalent positions.

Recognizing the agenda-setting and interpretative role of news media does not necessarily imply that journalism should function as climate activism. Rather, it acknowledges that journalistic choices concerning selection, prioritization, sourcing, and framing shape the public representation of climate change. This distinction is particularly important when considering the normative role of journalism: the capacity of news media to influence the visibility and interpretation of climate change should be distinguished from the more contested question of whether journalism should actively seek to promote particular behavioral or policy outcomes.

These processes also have a production-oriented dimension. Climate reporting operates under structural and professional constraints, including intense competition for audience attention, the scientific and political complexity of the issue, limited newsroom resources and specialized training, and changing journalistic practices (Vujović & Ilić Krstić, 2022; Elishar, 2025). These factors shape which aspects of climate change become newsworthy, which actors gain access to coverage, and how the issue is presented. Despite growing recognition of climate change as a systemic risk, challenges therefore remain in developing newsroom practices capable of communicating the issue accurately and effectively.

Finally, these challenges unfold within a rapidly changing information environment (Boykoff, Daly and McAllister, 2021). Climate change competes with public health crises, wars, disasters, political conflicts, and numerous other issues for limited media attention, while the proliferation of disinformation and fragmentation of media audiences further complicate climate communication (O'Neill & Boykoff, 2011; Boykoff, Daly and McAllister, 2021). Climate change has therefore had to compete for sustained visibility within an increasingly crowded and fragmented media agenda.

2.2.2 Agenda-setting theory

Agenda-setting theory provides a central theoretical framework for understanding how issues gain and lose attention in the media. Originating in McCombs and Shaw's (1972) study of the 1968 U.S. presidential election, the theory established a relationship between the prominence of issues in news coverage and the importance attributed to them by the public. Its central proposition is that, while the media do not necessarily determine what people think, they can influence what people think about by directing attention towards particular issues (McCombs, 2005; McCombs & Reynolds, 2002; Wanta & Ghanem, 2007; McCombs, Shaw & Weaver, 2014).

Agenda-setting research has subsequently developed into a multi-level theoretical framework. First-level agenda setting concerns the relative prominence of issues on the media and public agendas, while second-level agenda setting shifts attention to the attributes emphasized in their coverage (Ghanem, 1997; McCombs et al., 2000; McCombs, 2005; Weaver, McCombs & Shaw, 2004). The latter therefore shares conceptual ground with framing, as both approaches are concerned with how particular aspects of an issue are emphasized, although framing is treated separately in this dissertation. More recently, network agenda setting has extended the theory to relationships among issues and attributes rather than examining their prominence in isolation (Guo, 2012; Guo & Vargo, 2015).

The transformation of the media environment has also challenged the traditional conception of agenda setting as a predominantly top-down process from news media to the public. In contemporary networked communication environments, media agendas interact with multiple actors and channels, creating more reciprocal processes of agenda formation (Russell Neuman et al., 2014; Conway, Kenski & Wang, 2015). Professional news media nevertheless remain important participants in these processes, particularly through their selection, prioritization, and sustained coverage of public issues.

In the present dissertation, agenda-setting theory provides a framework for examining changes in media attention to climate change over time. The empirical analysis focuses specifically on the media agenda – particularly the frequency and temporal distribution of

climate change coverage – rather than testing corresponding effects on public issue salience. This perspective allows the study to examine when climate change gains or loses media attention and provides the theoretical basis for the subsequent analysis of longer-term attention cycles and agenda triggers.

2.2.3 The issue-attention cycle

The issue-attention cycle provides a useful theoretical lens for understanding fluctuations in public and media attention to social problems. Introduced by Downs (1972) in *Up and Down with Ecology: The Issue-Attention Cycle*, the model proposes that attention to social issues tends to rise and fall over time rather than remain stable. Issues may move from relative obscurity to intense public and political attention before gradually declining as the costs of action become clearer or competing issues emerge.

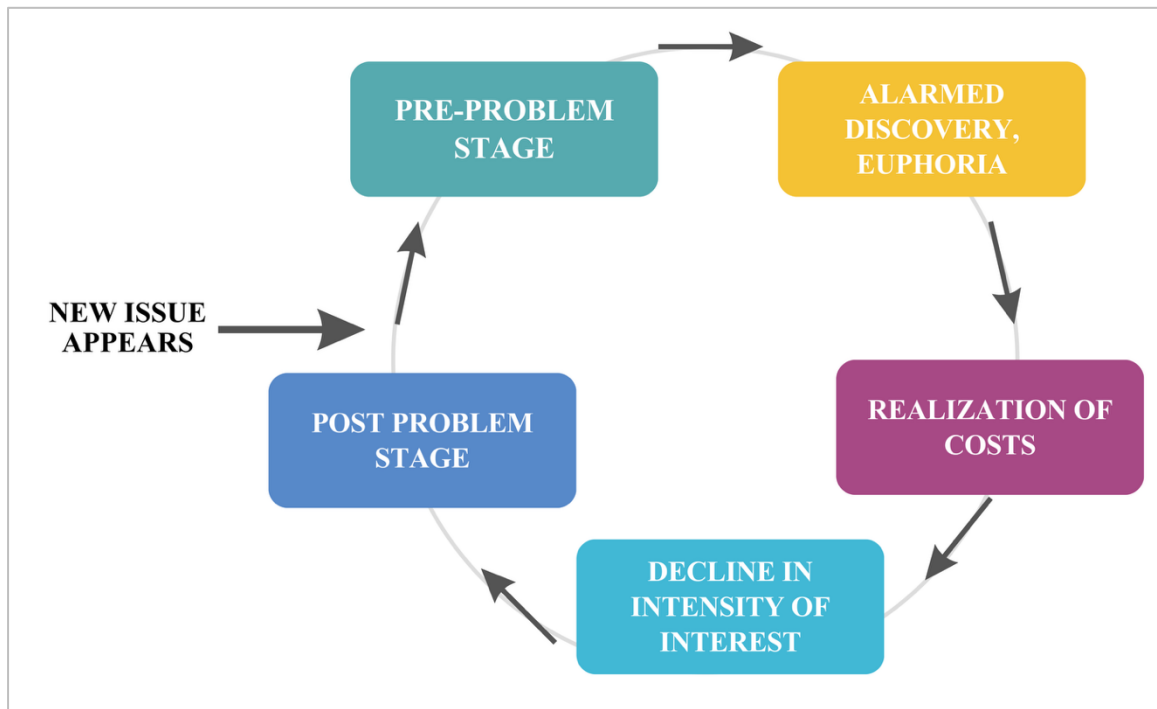


Figure 1: Downs' Issue-Attention Cycle illustrating the rise and decline of public and media attention to social issues (re-designed by the author, 2026)

Downs distinguishes five stages: the *pre-problem stage*, in which a condition exists but attracts limited public attention; *alarmed discovery and euphoric enthusiasm*, when attention

risers rapidly and expectations for solutions increase; *realizing the cost of significant progress*, when the economic, political or social costs of addressing the problem become more apparent; the *gradual decline of intense public interest*; and the *post-problem stage*, in which attention remains lower even though institutions or policies developed earlier may persist.

Although developed in relation to environmental problems, the model has subsequently been applied in policy, political communication and media research (Peters & Hogwood, 1985; Petersen, 2010). These studies also suggest that attention cycles are neither uniform nor mechanically predictable: their timing, intensity and consequences vary across issues, and institutional responses may continue after public attention has declined.

This limitation is particularly important in climate communication research. Anderson (2009) argues that fluctuations in environmental attention cannot be explained by a single predictable cycle, since media routines, political agendas, scientific actors and strategic stakeholders all contribute to the rise and decline of public attention. The issue-attention cycle is therefore better understood as an interpretative framework than as a fixed sequence through which every issue necessarily passes.

2.2.4 Drivers and triggers of media attention

Media attention on climate change is often sparked by specific events. Previous research has identified several categories of such events that influence the frequency and intensity with which climate change is covered in the news. These events often act as catalysts, temporarily raising the spotlight on climate change within the media agenda.

One important trigger is extreme *weather events*, which link local experiences to broader narratives about climate change (Anderson, 2009; Boykoff, 2011). Heatwaves, floods, hurricanes, and large-scale wildfires, for example, provide journalists with concrete examples through which they can communicate the abstract phenomenon of climate change to the public. Hurricane Katrina in 2005 is a prominent example of an extreme weather event that generated enormous media attention worldwide. More recently, the Australian bushfires (also referred as the “Black Summer”) of 2019–2020 received extensive national and international media coverage, with dramatic images of burning landscapes, affected

communities, and wildlife contributing to the visibility of the disaster (Mocatta and Hawley, 2020; Thomson, 2021). Consequently, the connection between bushfires and climate change also became substantially more prominent in Australian news coverage than during previous major fire events (Siegen and Vogler, 2025).

Another important category of triggers consists of major *international political summits*. The most prominent of these are the annual Conferences of the Parties (COP), which are organized under the United Nations Framework Convention on Climate Change (UNFCCC). These meetings represent the most visible global forum for climate policy negotiations and regularly attract substantial media attention. Empirical research confirms that such political events generate peaks in climate change coverage across national media systems (Hase *et al.*, 2021). Similar effects have been observed in relation to other high-profile international gatherings where climate change is on the political agenda, such as UN Climate Action Summits and G7, G8, and G20 leaders' summits.

Policy developments are also important drivers of media attention. For example, negotiations surrounding major international agreements can stimulate substantial increases in reporting as governments debate policy responses and future commitments. For example, the negotiation of the Kyoto Protocol in 1997 produced a significant surge in climate-related reporting in many countries (Anderson, 2009). Similarly, high-profile political decisions may temporarily intensify international media attention (e.g., the United States' announcement of its withdrawal from the Paris Agreement in 2017).

In addition to political developments, *scientific assessments and reports* often set the agenda. Publications by major scientific institutions, particularly the Intergovernmental Panel on Climate Change (IPCC), often lead to increases in climate reporting by presenting new evidence about climate risks and policy implications (Boykoff & Pearman, 2019; Wozniak *et al.*, 2021). For instance, the release of the IPCC Special Report on Global Warming of 1.5°C (SR15) in October 2018 was followed by a substantial surge in global media attention. Climate-related stories increased by around 43 percent worldwide compared to the previous month (Boykoff, Daly and McAllister, 2021; Pearman *et al.*, 2021). This surge occurred within a broader context of increased climate communication and several concurrent events

that captured public attention, such as Hurricane Dorian, the UN Climate Action Summit, global youth climate strikes, and the “*Covering Climate Now*” media initiative.

Political figures and *celebrities* may also influence media attention. For example, individual political initiatives or high-profile advocacy efforts can trigger international media coverage. One such effort was the 2006 film ‘*An Inconvenient Truth*’, associated with former U.S. Vice President Al Gore, as well as U.S President Trump’s withdrawal from the Paris Agreement in 2020. Similarly, prominent celebrities have contributed to raising the visibility of climate issues through public advocacy and media campaigns. Similarly, celebrity advocacy has at times contributed to the visibility of climate issues in the media (for example Leonardo DiCaprio’s climate activism and documentary initiatives).

Recent research has highlighted the role of *global youth-led climate activism* in driving media attention. Climate activism has been identified as a major factor contributing to recent peaks in climate coverage. Movements such as Fridays for Future, initiated by Greta Thunberg, as well as activist organizations such as Extinction Rebellion, generated unprecedented levels of media attention between 2018 and 2020. Several studies suggest that climate change received some of the highest levels of global media attention recorded in recent decades during this period (Barkemeyer *et al.*, 2017; Lochner, Stechemesser and Wenz, 2024; Thomas-Walters *et al.*, 2025)

Beyond discrete events, broader structural and contextual factors also shape climate change coverage. National characteristics, including political cultures, ideological environments, media systems, and journalistic norms, play an important role in how climate issues are reported across countries (Hase *et al.*, 2021). Comparative research suggests that, although journalistic norms display considerable similarities across media systems, differences in framing and coverage patterns often reflect broader social and political contexts. Vu, Liu and Tran argue that the socioeconomic, environmental, and political characteristics of a country may influence how journalists interpret and frame environmental issues in the news (Vu, Liu and Tran, 2019). These contextual differences also affect which climate-related events acquire local relevance and become salient on national media agendas.

Localization can therefore play an important role in triggering media attention. Climate change is a global and long-term phenomenon whose effects are not always directly visible or easily connected to everyday experience. Without localization, it may remain distant and compete with other, more immediate issues for media and public attention. The question of climate change visibility is therefore particularly important: while climate change cannot necessarily be directly observed in individual weather events, it can be made visible and meaningful through locally experienced changes and their communication (Rudiak-Gould, 2013). Locally experienced environmental events and disasters can increase the newsworthiness of climate change by bringing its impacts onto national and local media agendas. These may include floods, storms and wildfires, as well as locally experienced heatwaves, drought and water scarcity. Hafenscher and Jankó (2022) similarly emphasize the important role of localization in effective climate communication, arguing that climate change needs to be connected to locally experienced consequences and impacts on everyday life.

More broadly, climate reporting is shaped by the interaction of multiple social and institutional factors. As Boykoff et al. (2021) note, media coverage of climate change reflects a combination of political, environmental, economic, and professional influences. Consequently, fluctuations in media attention should be understood as the result of both event-driven triggers and broader structural conditions. These dynamics will be examined in the empirical analysis presented in the following chapters.



Figure 2: Agenda triggers/focusing events (Own editing, 2025)

According to Hansen and Cox (2023, pp. 3-5), the primary *actors* involved in producing environmental information include scientists, environmental organizations and NGOs, think tanks and policy institutes, activist networks and protest movements, media professionals, as well as citizen scientists and citizen journalists. Despite the role of such actors and recurring triggering events, peaks in climate change coverage are often short-lived. Media attention typically declines once the immediate event that stimulated reporting has passed (Anderson, 2009). International research consistently demonstrates that media attention to climate change is irregular rather than stable over time (Schmidt, Ivanova and Schäfer, 2013; Brüggemann and Engesser, 2017). Longitudinal monitoring projects such as the Media and Climate Change Observatory (MeCCO) similarly indicate substantial fluctuations in coverage across countries and media systems.

Over the past decades, scholars have repeatedly observed that media attention to climate change tends to be event-driven and reactive rather than continuous. For example, Lochner, Stechemesser, and Wenz (2024) provide longitudinal evidence from the German press based on approximately 90,000 newspaper articles published between 1990 and 2021. Their analysis shows that UN climate summits and climate protests generate the most pronounced

and sustained peaks in media attention, whereas extreme weather events rarely trigger comparable levels of coverage unless explicitly framed in relation to climate change. Anderson (2014) emphasizes that climate communication is influenced by multiple interacting factors, including the complexity of climate science, competition from other news stories, issue saturation, ideological conflicts, and the mobilization of advocacy resources. The rise of digital communication technologies has further transformed how climate issues are reported and circulated within contemporary media systems (O'Neill and Boykoff, 2011; Parry, McCarthy and Clark, 2022). Climate change coverage also competes with other issues for limited space in the news. When major crises dominate the media agenda – such as wars, economic downturns, or the COVID-19 pandemic – attention to climate change tends to decline (Stoddart *et al.*, 2023). As a result, periods of intense coverage are often followed by phases of reduced visibility.

As one journalist interviewed by Anderson notes, “climate change is becoming an increasingly hard topic to sell in much of the media... editors are simply bored with what they think is an old story they have heard before” (Kirby, cited in Anderson, 2009, p.42). This observation reflects the structural tension between the long-term nature of climate change and the short-term logic of news production.

2.2.5 The emergence of climate change on the media agenda

Climate change, as it is conceptualized today, is a relatively recent idea within public discourse (Boykoff, 2011). Although environmental concerns have existed for centuries, they were not historically articulated in the way in which climate change is discussed today. Earlier public debates tended to address environmental issues more broadly under the umbrella of “the environment” or environmental protection, without distinguishing climate change as a separate topic. This section therefore provides a historical overview of how environmental discourse gradually evolved and how climate change eventually emerged as a distinct issue within the media agenda.

Hansen and Cox (2023) note that the environment became a major public and political concern from the 1960s onwards, as environmental discourse developed its own vocabulary, frames, and thematic focus. The news media played a central role in this process by making

environmental problems publicly visible and connecting scientific knowledge with political and societal debate. (Okoro Ferdinard, 2014; Hansen and Cox, 2023).

Before the 1980s, however, media coverage of climate change was highly sporadic. Early forms of mass communication and scientific inquiry into climate developed in parallel during the late eighteenth and nineteenth centuries. During this period, the Industrial Revolution introduced carbon-based technologies and laid the foundations of the modern carbon economy, while Western Europe became a center of innovation in both science and media (Weart, 2008). News coverage occasionally linked weather conditions to agricultural productivity and food supply – for instance, reports of poor harvests attributed to cold weather – but such references remained isolated and were rarely connected to broader climatic processes. Thus, developments in mass communication, climate science, and observations of environmental change progressed simultaneously but without yet forming a coherent public narrative about climate change (Boykoff, 2011).

In the twentieth century, both scientific knowledge and media infrastructures expanded rapidly. At the same time, significant advances in climate science – often supported by military-funded research – contributed to the foundations of modern climate studies. As scientific understanding developed, media coverage gradually shifted from a narrow focus on weather events, agriculture, and food supply towards reporting on emerging scientific research about the Earth’s climate system (Boykoff, 2011).

Early discussions of anthropogenic climate change began to appear in the media during the 1950s and gained some visibility around the International Geophysical Year in 1957. Nevertheless, media attention remained limited in the following decades. Scientific conferences and research findings occasionally generated news stories, but climate change had not yet become a prominent media issue. During this period, environmental awareness began to grow more broadly. Influential moments such as Rachel Carson’s *Silent Spring* (1962), the first Earth Day in 1970, the global oil crises, and the emergence of international environmental conferences gradually increased public concern (Weart, 2008; Boykoff, 2011).

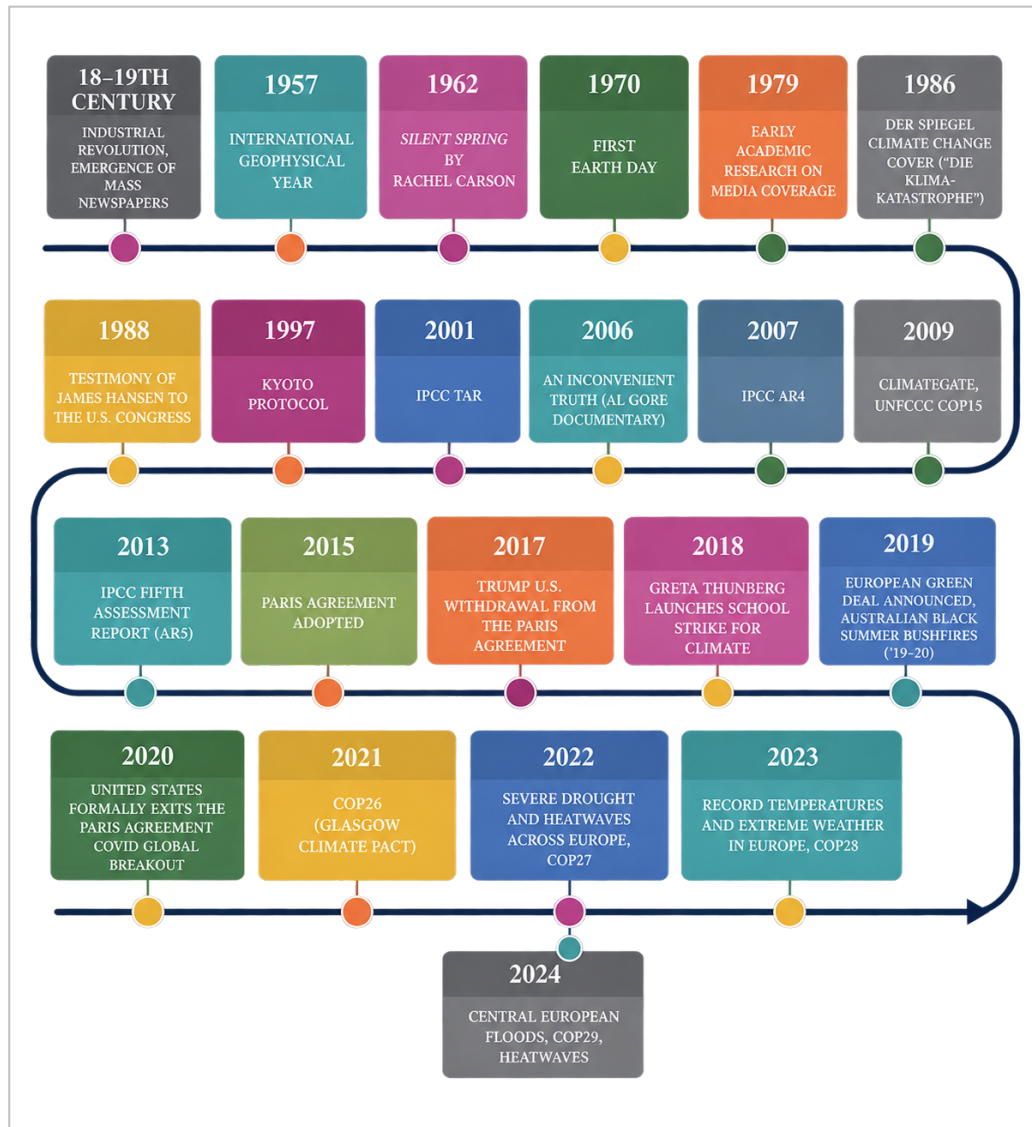


Figure 3: Timeline of major events shaping climate change awareness and media coverage (Own editing, 2026)

By the 1980s, climate change was beginning to gain greater visibility as a distinct issue in mainstream media. An often-cited milestone was the 1986 cover of the German news magazine *Der Spiegel*, which depicted Cologne Cathedral partly submerged by rising water under the headline *Die Klima-Katastrophe* (“The Climate Catastrophe”). The cover provided a dramatic visual representation of the possible consequences of global warming and has subsequently been regarded as an iconic moment in German media communication of climate change.

The late 1980s represented a further turning point in the media visibility of climate change. Several developments converged to elevate the issue on the public agenda, including the 1988 congressional testimony of NASA scientist James Hansen, which received extensive media attention, and Margaret Thatcher's speech on environmental issues to the Royal Society in the same year. These events coincided with notable ecological phenomena such as droughts and heatwaves and with institutional developments, most importantly the establishment of the Intergovernmental Panel on Climate Change (IPCC), which helped bring climate science and governance into broader public debate. Together, these developments contributed to the transformation of climate change from an intermittent scientific concern into an increasingly recognizable public and political issue.

At the same time, scholarly interest in environmental communication expanded, with studies addressing topics such as nuclear power debates (Mazur, 1984), media framing of environmental issues (Gamson and Modigliani, 1989), communication during environmental crises (Nommo and Combs, 1985; Walters et al., 1989), environmental journalism (Lowe and Morrison, 1984), and science communication in the media (Friedman et al., 1986; Nelkin, 1987) (Hansen and Cox, 2023). Although media coverage increased significantly during this period, attention fluctuated during the 1990s due to political inertia, economic recession, and the difficulty of maintaining news interest in a long-term issue such as global warming. Nevertheless, scientific developments and major policy milestones, including the Kyoto Protocol negotiations in 1997, continued to generate periodic peaks in media attention (Anderson, 2014).

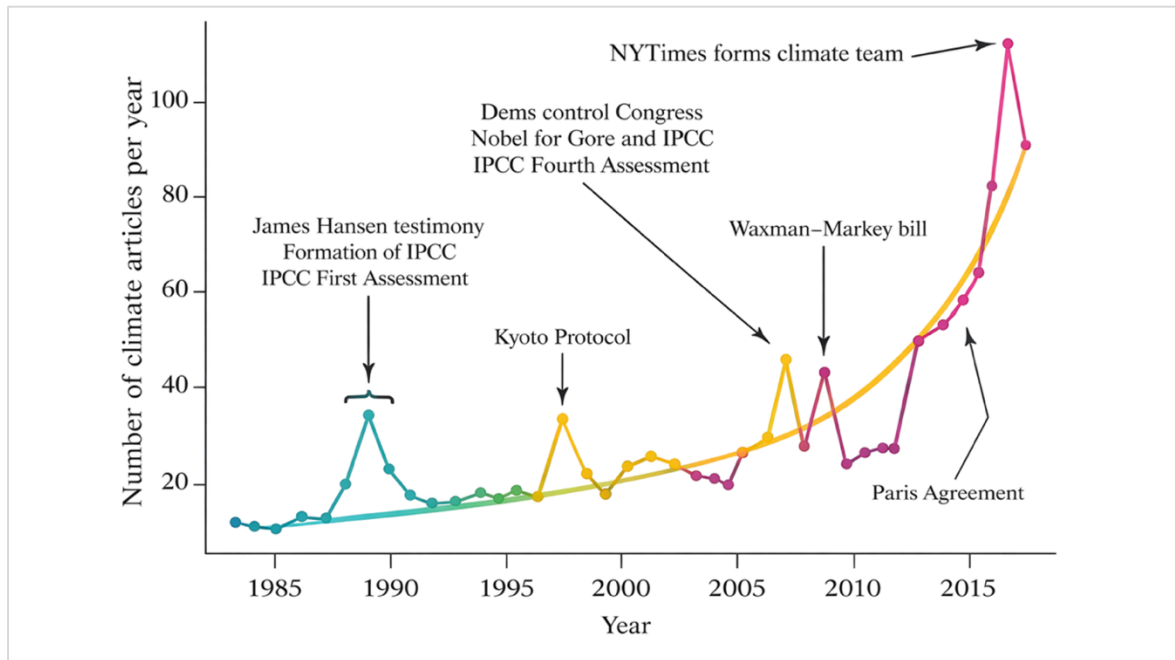


Figure 4: Redesigned visualization of the number of climate-change articles published annually in *The New York Times* (1980–2017) (Adapted from Romps, UC Berkeley, 2019)

Since the early 1990s, a growing body of research has examined how media represent climate change across different national contexts, focusing particularly on framing, agenda-setting, and the role of journalism (Carvalho and Burgess, 2005; Boykoff, 2008b; Hase et al., 2021; Swain, 2025; Weathers et al., 2025). Media attention increased substantially during the 2000s, when several major scientific and media events brought climate change to increasingly broad audiences. The publication of the IPCC Third Assessment Report (TAR) in 2001 provided an important scientific reference point for media discussion of climate change and attracted greater media attention than its predecessor in at least some national contexts.

Climate change gained further public visibility in the middle of the decade, notably through Al Gore’s documentary *An Inconvenient Truth* (2006), which brought climate science and its potential consequences into popular media and public debate. This period of heightened attention coincided with the publication of the IPCC Fourth Assessment Report (AR4) in 2007, another major milestone in the public communication of climate science. Collectively, these scientific assessments and high-profile forms of popular climate communication contributed to the growing mainstream visibility of climate change during the 2000s.

However, media attention did not follow a linear trajectory. Around 2009–2010, coverage declined following a series of controversial events, including the so-called *Climategate* scandal and the COP15 climate summit in Copenhagen, which failed to produce a binding international agreement on greenhouse gas emissions. Although the overall quantity of coverage decreased during this period, media reporting frequently focused on contested aspects of climate science and governance, including debates surrounding the IPCC Fourth Assessment Report. Over time, media framing evolved from predominantly scientific explanations towards broader political, economic, and policy-oriented interpretations, accompanied by increasing politicization of the debate (Ruiu, 2021). Although the overall volume of coverage has expanded – particularly with the migration of mainstream media to online platforms – this growth has not necessarily translated into greater public impact and may even contribute to issue fatigue and fragmented attention (Ungar, 2014). Climate change reporting also continues to compete with other major global issues for limited space within the news agenda (Boykoff, Daly and McAllister, 2021). Overall, the development of climate change coverage demonstrates a pattern of fluctuating attention in which the issue gradually shifted from a primarily scientific topic to a broader political and societal concern involving a wider range of actors (Anderson, 2014).

The media environment in which climate change competes for public attention has also changed substantially over the past two decades. While traditional mass media, particularly television and newspapers, played a dominant role in climate communication in the early 2000s (Boykoff, 2008a), digital news platforms and social media have since become increasingly important spaces for climate communication. This transformation has expanded the number of channels through which climate change can enter the public agenda and has contributed to a more immediate and continuous climate discourse (Goodman, McNatt & Boykoff, 2023; Schäfer, 2025).

Recent research also suggests that the patterns of climate change coverage have changed substantially. Goodman, McNatt and Boykoff (2023) note that in the years leading up to 2014, coverage of climate change in legacy media declined, while digital and social media platforms increasingly filled this communicative space. At the same time, scholars emphasize that contemporary climate communication is deeply embedded in digital cultures (Baran and

Stoltenberg, 2023; Paek, Oh and Hove, 2024; Luebke *et al.*, 2025). As Schäfer (2025) observes, we are living through momentous times as we fundamentally grapple with issues surrounding digital cultures and communications about climate change. The immediacy of digital communication reinforces the sense that climate change itself is a pressing “*here and now*” issue.

According to Goodman, McNatt and Boykoff (2023, pp. 300-302), there are four key trends that characterize contemporary climate reporting. First, climate change stories increasingly appear across different sections of newspapers – i.e. not only in science or environment sections but also in business, sports, and other news categories. Second, the media increasingly presents climate change as a complex issue connected to multiple dimensions of everyday life rather than as a single isolated problem. Third, a growing number of public figures – including political leaders, policymakers, and cultural actors – are speaking publicly about climate issues, thereby attracting greater media attention. Finally, the increasing visibility of extreme weather events and the tangible impacts of global climate change have contributed to the growing prominence of climate-related coverage.

Compared with framing, the frequency of climate change coverage has received less systematic attention in the literature and is often examined in relation to major agenda-setting events or other triggers. One important source of longitudinal data is the Media and Climate Change Observatory (MeCCO), which systematically tracks changes in climate-related media attention across countries. Coordinated by Maxwell T. Boykoff, MeCCO monitors climate change and global warming coverage across newspapers, television and radio and publishes monthly and annual data on changes in media attention. Its longitudinal approach makes it particularly useful for identifying periods of increasing or declining climate visibility and comparing patterns of issue attention across national media systems.

Longitudinal and comparative research shows that media attention to climate change varies substantially across countries and over time. These differences cannot be understood simply as a continuous increase in climate visibility. Keller et al. (2020), for example, found a substantial long-term increase in Indian newspaper coverage between 1997 and 2016, while comparative studies demonstrate considerable variation between national media systems in

both the amount and development of climate attention. Climate coverage also changes in response to scientific, political and societal developments, while the themes associated with climate change evolve alongside changes in the broader public and political agenda (Schäfer & Schlichting, 2014; Su & Hu, 2021; Meier & Eskjær, 2024).

Major climate-related events can generate particularly visible peaks in media attention. The publication of the IPCC Special Report on Global Warming of 1.5°C (SR15) in October 2018, for example, was followed by a 43% increase in global media mentions of climate change compared with the previous month. A similar surge occurred around the 2015 Paris climate negotiations, when coverage increased by approximately 40%. Such peaks, however, are rarely attributable to a single event. Boykoff and Pearman (2019) argue that changes in climate attention emerge from the interaction of scientific, political and societal developments. International climate negotiations, scientific reports, youth climate activism and media initiatives such as *Covering Climate Now* together contributed to particularly high levels of climate attention in the late 2010s.

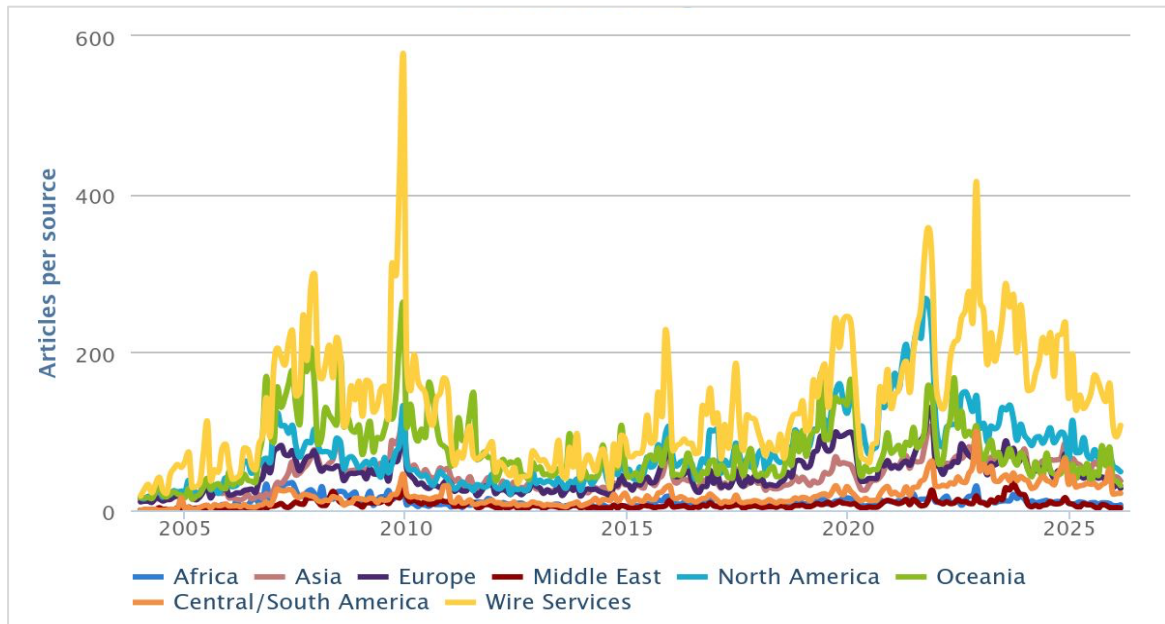


Figure 5: World newspaper coverage of climate change or global warming, 2004–2026. (Aoyagi et al. 2026, Media and Climate Change Observatory (MeCCO)).³

At the same time, climate change competes with other major issues for limited media attention. This became particularly visible with the outbreak of the COVID-19 pandemic in early 2020. As the pandemic came to dominate national and international news agendas, media attention to climate change declined sharply. Climate coverage subsequently recovered, but later developments – including the war in Ukraine and the associated European energy crisis – created further competition for media visibility. The evolution of climate coverage therefore demonstrates that even when climate change has become an established media issue, its visibility remains highly sensitive to competing crises and major agenda-setting events.

These fluctuations are illustrated in Figure 5. Following the sharp decline in 2020, global climate coverage gradually recovered, particularly throughout 2021, with renewed peaks associated with major climate events and international negotiations such as COP summits. Attention increased further around 2022–2023, reaching some of the highest levels of the

³ The figure track newspaper coverage of climate change or global warming in 127 sources (across printed newspapers, radio and TV) across 58 countries in seven different regions around the world. Updated through February 2026.

post-pandemic period before declining again in the mid-2020s. Overall, the pattern shows that climate change regained substantial media visibility after the pandemic, while attention continued to fluctuate considerably over time.

2.3 Framing climate change in the news media

“It’s not what you say, it’s how you say it”
— Frank Luntz

The aim of this chapter is to further deepen the theoretical framework of the research through the introduction of framing theory and its application within the field of climate communication. In addition to reviewing the relevant scholarly literature and current research trends, this section also presents the most widely used climate change framing typologies and presents how climate change has been framed over time within the news media.

Media coverage can be examined through both quantitative and qualitative indicators. While visibility or frequency measures provide a macro-level perspective on the position of climate change within the broader media landscape, framing analysis represents a qualitative, micro-level approach that focuses on the details of coverage – how climate change is presented and structured in news stories, for example as an urgent crisis, a political debate, a social conflict, or a moral issue etc. Both agenda-setting and framing shape public attitudes by not only telling audiences what to think about but also by highlighting specific aspects of an issue and influencing how it is interpreted. In the context of climate change, these processes may also contribute to public cynicism, which can act as a barrier to engagement (Davidson, 2024).

An important delimitation of this research is that it does not examine audience-level processes, that is, how members of the public perceive, interpret, or respond to particular frames. Nor does it engage with psychological, cognitive, or linguistic approaches to framing. The primary focus of the research is on media frames and the framing of climate change within news coverage. However, through the semi-structured interviews, the study also addresses aspects of frame-building, particularly how climate activists construct and communicate interpretative frames and how they perceive their interaction with the news media.

Further conceptual clarification is required regarding the distinction between framing and media representation. Media representation broadly refers to how people, groups, events, or issues are portrayed in the media through language, imagery, symbols, and recurring representational patterns, often in relation to social categories such as gender, race, class, or age (Wheatley, 2024). Framing, in contrast, concerns how particular aspects of an issue are selected, emphasized, and organized into interpretative structures within news discourse. An important distinction in this research is therefore that the analysis does not primarily examine how climate activists themselves are represented in the media—for example, as heroes, rebels, or troublemakers. Rather, it investigates how climate change as an issue is framed in news coverage and how activist actors may contribute to, challenge, or influence these broader media frames.

2.3.1 Framing theory

Framing analysis is one of the most widely applied theoretical approaches in communication studies and has also become central to environmental communication. Cox (2013, p. 56) identifies Erving Goffman and Robert Entman as key scholars in its conceptual development. Goffman (1974, p. 21) introduced frames as interpretive structures through which individuals organize experience and make sense of social reality. Entman (1993, p. 52) subsequently adapted the concept to media studies, defining framing as the selection and emphasis of certain aspects of an issue in ways that promote particular problem definitions, causal interpretations, moral evaluations, and potential solutions. Frame analysis therefore seeks to identify the interpretive structures through which issues are presented rather than to assess whether particular representations are accurate or appropriate (Hulme, 2019, p. 43).

Framing research has developed through different theoretical traditions, particularly sociological and psychological approaches (Pan and Kosicki, 1993; Borah, 2011). Psychological approaches examine how individuals process framed messages (Kahneman and Tversky, 1979, 1984), whereas sociological approaches focus on how communication constructs the meaning of public issues. This distinction is reflected in the differentiation between *media frames* and *audience frames*. Media frames are organizing principles through which journalists and media institutions select and structure information, while audience

frames are “mentally stored clusters of ideas” through which individuals interpret information (Entman, 1993, p. 53; Scheufele, 1999).

Framing provides a multidimensional approach to examining news coverage (Duan and Miller, 2021). Although research traditionally concentrated on verbal and textual framing (Pan and Kosicki, 1993; Reese, Gandy and Grant, 2001), increasing attention has been paid to *visual and multimodal framing*, recognizing that images and their interaction with textual elements also contribute to meaning-making (Wozniak, Wessler and Lück, 2017; Moernaut, Mast and Pauwels, 2018). In news framing, journalistic selection is particularly important because news cannot reproduce reality in its entirety. Gamson and Modigliani (1989) conceptualized such structures as “interpretive packages” through which media organize public issues. These processes remain relevant in the digital media environment, where journalistic content and its embedded frames circulate beyond their original publication contexts across digital networks (Lecheler and De Vreese, 2018).

Frames should also be distinguished from *topics*. A topic identifies what a news story is about, whereas a frame provides a broader organizing structure that shapes how that topic is interpreted by highlighting certain aspects while backgrounding others (Reese, 2010). Framing analysis therefore extends beyond identifying the frequency of themes or words by examining the interpretive structures through which issues acquire meaning.

A further distinction is made between *generic and issue-specific frames*. Generic frames can be applied across different topics and events; Semetko and Valkenburg (2000), for example, identify conflict, responsibility, economic consequences, human interest, and morality as recurring generic news frames. Issue-specific frames, by contrast, emerge within particular policy domains or social debates (de Vreese, 2005). Climate communication research has consequently developed framing typologies specifically tailored to climate change, which are discussed in the following section.

This distinction also relates to the methodological difference between *deductive and inductive frame analysis*. Deductive studies apply predefined generic or issue-specific frame categories to empirical material, whereas inductive approaches identify frames through close

engagement with the material without beginning from predetermined categories (de Vreese, 2005; Matthes and Kohring, 2008).

Frames should finally be distinguished from *narratives*. Frames provide an interpretive perspective by emphasizing particular aspects of an issue, whereas narratives connect elements into meaningful sequences through temporal and causal relationships, characters, and other storytelling structures (Wozniak, Lück and Wessler, 2015; Tenenboim-Weinblatt, Hanitzsch and Nagar, 2016).

Media framing is particularly consequential for complex public issues because news coverage can shape how problems, responsibilities, and possible solutions are understood (Boykoff and Rajan, 2007; D'Angelo *et al.*, 2019). Frames may also differ across national media contexts: for example, Brossard, Shanahan and McComas (2004) found differences between Chinese and U.S. climate coverage, particularly regarding conflict and scientific uncertainty. Moreover, competing actors may seek to promote particular frames in order to influence news coverage and public debate (Cox and Pezzullo, 2017, p. 67). This is especially relevant to climate change, where scientific complexity, political contestation, and competing actors make framing a central component of media discourse.

2.3.2 Shifting frames in climate change communication

Environmental debates in contemporary media are increasingly organized around climate change. As Boykoff and Pearman (2019, p. 287) observe, climate change has become “a stand-in and a defining symbol of our collective relationship with the environment.” During the 1980s and much of the 1990s, environmental coverage addressed a broader range of concerns, including global warming, ozone depletion, and air pollution (Weingart, Engels and Pansegrau, 2000). By the end of the 1990s, however, the topic of climate change had moved toward the center of political and media agendas, increasingly framing public discussion of environmental problems.

This development was accompanied by a more strategic use of language in political communication. Martins, Weaver and Lynch (2018, pp. 98–99) recall Republican pollster Frank Luntz’s recommendation to use “climate change” rather than “global warming,” since

the former sounded less alarming and immediate. On the Democratic side, cognitive linguist George Lakoff similarly emphasized the political importance of framing. In *Don't Think of an Elephant* (2004) and later in *Why It Matters How We Frame the Environment*, he argued that facts are interpreted through cognitive frames connected to existing values and beliefs. As he puts it, “One cannot avoid framing. The only question is, whose frames are being activated” (Lakoff, 2010, p. 71). Effective environmental communication therefore depends not simply on providing information, but on how that information is embedded within broader narratives and values. This marked an important shift in climate communication: the debate increasingly moved beyond whether and how climate change should be communicated toward questions of how the issue was linguistically and politically framed.

Lakoff's approach has been criticized for potentially placing too much emphasis on linguistic reframing. Sullivan (2023), for example, warns that framing strategies can become overly “mechanistic” and “shallow” when reduced to slogans rather than broader forms of collective engagement. This criticism points to a central question in climate communication: whether changing terminology is sufficient to alter public understanding and engagement.

At the same time, changes in media framing were not limited to terminology. They also reflected changing representations of climate science itself. U.S. news coverage in the early 2000s frequently presented climate change as an issue characterized by scientific disagreement, despite growing scientific consensus (Boykoff and Boykoff, 2004). By the mid-2000s, the emphasis increasingly shifted toward anthropogenic climate change, reinforced by prominent interventions such as Al Gore's *An Inconvenient Truth* (2006). The growing prominence of the concept of the “Anthropocene,” describing an era in which human activity has become a dominant force shaping the Earth system, similarly reflected this changing understanding (Ellis, 2018).

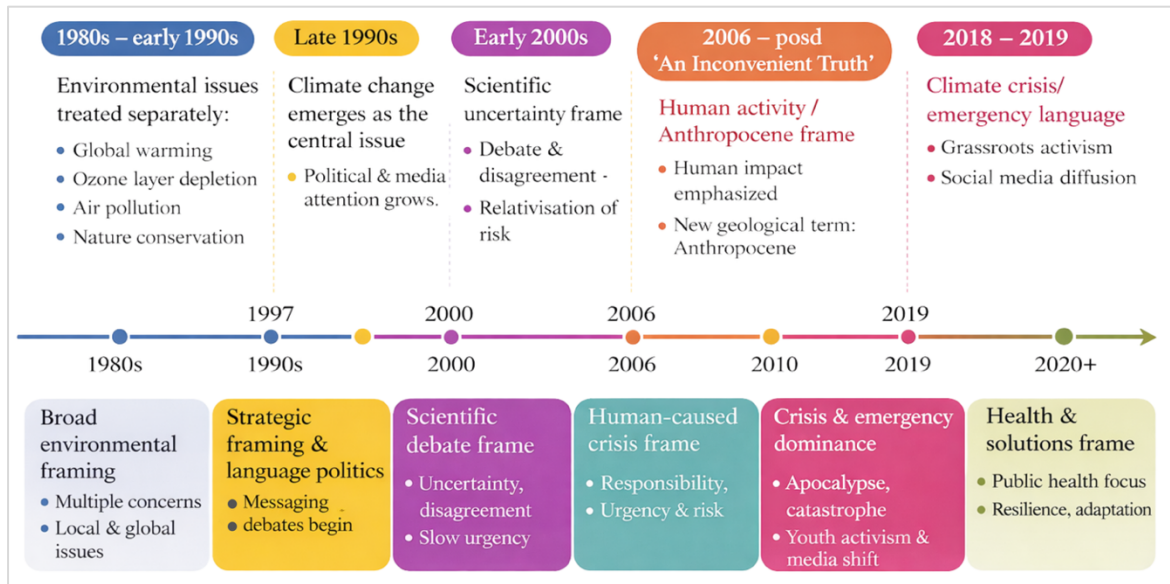


Figure 6: Shifts in climate change discourse and media framing from the 1980s to the 2020s (Source: Own editing based on Weingart et al. (2000); Lakoff (2010); Martins et al. (2018); Ellis (2018); Zeldin-O’Neill (2019) and Haines and Ebi (2019) (2025)).

A further shift became visible during the late 2010s, when the language of urgency became increasingly prominent in climate communication. Grassroots and youth-led climate activism popularized expressions such as “climate crisis,” “climate emergency,” and “climate catastrophe,” which subsequently entered mainstream media discourse. In 2019, *The Guardian*, for example, revised its style guide to encourage terms such as “climate crisis” and “climate emergency” instead of the more neutral “climate change” (Zeldin-O’Neill, 2019). Lloyd and Hazelhurst (2025) similarly identify an increase in crisis- and catastrophe-related language in climate reporting, reflecting a broader shift toward framing climate change as an immediate emergency.

Earlier studies highlighted the possibility that threatening or catastrophic representations may contribute to helplessness, denial or disengagement (Norgaard, 2006; O’Neill and Nicholson-Cole, 2009; Moser, 2010), while Reser and Bradley (2017) cautioned that the available evidence was insufficient to conclude that climate-related fear appeals were either effective or ineffective. More recent research further complicates this picture. Fear-inducing messages can increase perceived threat but may also provoke psychological reactance, while interactive forms of fear communication may reduce reactance and increase climate-action intentions

(Bilfinger, Brummernhenrich and Jucks, 2024). Fear-based climate communication therefore appears to be neither inherently ineffective nor universally effective; its effects depend on the communication context and message design.

The use of so-called catastrophic language in climate communication has a longer history than the recent emergence of the “climate emergency” frame. Jankó, Móricz and Papp-Vancsó (2011) examine the “language of climate catastrophe,” linking it to the communicative role of fear and tipping-point narratives. Drawing on Risbey (2008)⁴, they distinguish between “alarmist” and “alarming” climate discourse: while the former presents climate change as catastrophic, irreversible and ultimately unavoidable, the latter communicates the seriousness of the threat while maintaining the possibility of effective intervention. Rather than rejecting urgency or warning, they argue against an oversimplified and polarized climate discourse and call for a more complex understanding of climate change.

Doyle (2024) similarly questions the dominance of urgency, alarm and crisis in environmental communication, describing it as a “crisis discipline.” Rather than denying the urgency of ecological crises, she argues for greater attention to care, agency and justice. In a related commentary, she also calls for moving beyond apocalyptic and spectacular environmentalism toward collective responsibility, hope and meaningful opportunities for action.

Alongside crisis-oriented communication, alternative approaches have also gained prominence. One influential example is the health frame, which presents climate change as a public health challenge affecting human well-being. This perspective has become increasingly prominent over the past decade and was further reinforced during the COVID-19 pandemic (Watts et al., 2015; Haines and Ebi, 2019).

⁴ Risbey, J.S. (2008) ‘The new climate discourse: Alarmist or alarming?’, *Global Environmental Change*, 18(1), pp. 26–37. <https://doi.org/10.1016/j.gloenvcha.2007.06.003>

2.3.3 Media frame typologies used in climate change communication

Over the past decades, framing research has produced a wide range of typologies for identifying recurring interpretive patterns in media discourse. A common distinction is made between generic frames, which can be applied across issues, and issue-specific frames, which are developed for particular policy domains or debates (de Vreese, 2005).

One influential generic typology is Iyengar's (1991) distinction between *episodic* and *thematic framing*. Episodic framing presents issues through specific events or individual cases, whereas thematic framing places them within broader social and political contexts. These forms of presentation can influence responsibility attribution: episodic coverage tends to encourage individual explanations, while thematic coverage draws attention to structural causes. Semetko and Valkenburg (2000) proposed another widely used generic typology consisting of five news frames: conflict, human interest, economic consequences, morality, and responsibility. Its clearly operationalized categories have made it particularly influential in quantitative content analysis.

Climate change research has also developed more issue-specific typologies. Nisbet (2009) identifies eight recurring frames: social progress, economic development and competitiveness, morality and ethics, scientific and technical uncertainty, catastrophe, public accountability and governance, middle way/alternative path, and conflict and strategy. These frames emphasize different dimensions of climate change and its possible solutions. For instance, catastrophe framing foregrounds potentially irreversible consequences, while scientific uncertainty emphasizes disputes over scientific knowledge and may contribute to questioning the urgency of climate action.

Subsequent research has identified further framing patterns in climate communication. O'Neill et al. (2015) examine the framing of the IPCC's Fifth Assessment Report in traditional and social media, while Rebich-Hespanha et al. (2015) focus on visual framing in print news. Other studies investigate strategic actors and uncertainty: Schlichting (2013) examines industry framing strategies, while Schmid-Petri and Arlt (2016) analyze scientific uncertainty in European print media. Broader reviews, including Schäfer and O'Neill (2017)

and Guenther et al. (2023/2024), demonstrate the considerable diversity of frame typologies used in climate communication research. This diversity also illustrates framing's role as a "bridging concept" connecting different theoretical and methodological approaches.

2.3.4 Cross-national examples on climate change framing

The publication of the IPCC Special Report on Global Warming of 1.5°C (SR15) in 2018 marked an important moment in climate communication. Boykoff and Pearman (2019) show that media coverage frequently translated its findings into more dramatic and urgency-driven narratives, including the widely circulated "12-year deadline". This illustrates the broader tension between scientific communication and the media's tendency to emphasize urgency and dramatic consequences.

International research on climate change framing demonstrates that media representations of the issue vary significantly across countries, media systems, and political contexts. Olausson (2009), for example, found that Swedish newspapers predominantly employed a collective action frame and rarely emphasized scientific uncertainty, whereas Zehr (2000) identified scientific uncertainty as a dominant feature of U.S. coverage.

Research also highlights the role of journalistic practices in frame-building. Moernaut, Mast and Pauwels (2018) found a strong relationship between journalists' cognitive frames and those appearing in Belgian news coverage, while institutional pressures tended to encourage particular anthropocentric interpretations. Similarly, McAllister et al. (2021) found that although approximately 90% of climate articles across five Anglophone countries accurately reflected the scientific consensus, interpretive choices and political orientation continued to influence how climate science was represented.

Comparative studies further demonstrate how national political and cultural contexts shape climate framing. Su and Hu (2021) found that U.S. coverage more frequently emphasized political conflict and catastrophic consequences, whereas Chinese media highlighted public accountability, governance and economic development. Lück et al. (2018) similarly show that even when comparable issue frames occur across countries, they can be embedded in culturally and politically distinct narratives. Climate skepticism has also evolved within these

contexts, increasingly shifting from questioning the causes of climate change towards contestation over its consequences and policy responses (Ruiu, 2021).

Recent studies conceptualize framing as a dynamic process in which actors adapt frames to different communication contexts and audiences (Guenther et al., 2024). Comparative research on climate futures further identifies recurring frames ranging from distant threats to solution-oriented narratives addressing both climatic and social consequences (Guenther et al., 2023). Importantly, journalists' own perspectives do not necessarily translate directly into published frames. Kirchner, Guenther and Brüggemann (2024) demonstrate that newsroom routines and institutional constraints play an important role in determining which interpretations ultimately appear in climate coverage.

Media structure and political orientation provide another important source of variation. Research on Chinese newspapers shows differences between party-sponsored and market-oriented outlets in their use of sources and frames (Duan & Miller, 2021). Similarly, McAllister et al. (2021) found that right-leaning outlets in Anglophone media systems were more likely to provide less accurate representations of anthropogenic climate change and devote less attention to the issue. These findings indicate that climate framing is shaped not only by journalistic practices but also by media ownership, political orientation and broader institutional contexts.

Finally, the production of climate frames remains an important question. Robbins (2020) draws attention to the interactions between political actors, media advisers and journalists through which frames are produced, while also showing that political actors themselves do not necessarily follow coherent or consistent framing strategies.

2.4 Climate change media coverage in the CEE region and post-communist countries

Research in environmental communication has long pointed to a geographical imbalance in the field, with climate communication and media research largely concentrated on Anglophone and Western media systems (Comfort & Park, 2018; Hansen & Cox, 2023). Within the European context, Central and Eastern Europe (CEE) has received less attention

in climate communication research than Western European countries. Ocelík (2022) argues that the region deserves greater scholarly consideration because its historical dependence on heavy industry and established pro-industrial discursive traditions create a distinctive context for climate politics and communication.

In addition to this quantitative gap in research, conceptual limitations are also present. Drieschova (2024) argues that commonly used global frameworks – particularly the North–South dichotomy – fail to adequately capture the historical and structural position of CEE. The region’s political-economic trajectories, the legacies of post-socialist transformation, and the specific characteristics of its media systems complicate simplified global categorizations. As Drieschova (2024) suggests, CEE occupies a “liminal” position shaped by ongoing domestic transitions and its economic location in the semi-periphery of the global system.

An early attempt to overcome the limited geographical scope of climate communication research was conducted by Schmidt, Ivanova and Schäfer (2013), who analyzed media attention to climate change in 27 countries between 1996 and 2010. They found that climate coverage increased across all examined countries, although both its level and growth varied considerably between national contexts. One of their most important findings was that the rise in media attention cannot be explained solely by environmental vulnerability: countries particularly affected by climate change do not necessarily receive more media coverage of the issue. Instead, coverage was shaped by national political and economic conditions, with particularly high attention in carbon-dependent countries facing emission-reduction commitments under the Kyoto Protocol. This points to an important distinction between climate vulnerability and communicative visibility: greater exposure to climate impacts does not automatically make climate change a more prominent news issue.

In parts of Southern Europe and Central and Eastern Europe – where rapid industrialization produced significant environmental degradation – environmental concerns have often been framed more as *local grievances* than as expressions of global environmental consciousness. In CEE, environmental concerns have historically centered on concrete problems affecting people’s immediate surroundings and livelihoods, including industrial pollution, power

plants, radioactive waste and large infrastructure projects (Drieschova, 2024). In Hungary, for example, environmental mobilization around the Gabčíkovo–Nagymaros dam project linked environmental protection to the defense of a particular place and community.

This distinction between local environmental visibility and broader climate visibility remains relevant in contemporary media coverage. Nistor’s (2023) analysis of Romanian online news coverage of drought between 2016 and 2022 shows that drought was rarely explicitly connected to climate change, with reporting focusing more strongly on its immediate consequences. Thus, even a locally experienced phenomenon closely associated with climate impacts does not automatically become represented as a climate change issue. Such findings further demonstrate that the media visibility of climate change depends not only on physical exposure, but also on whether locally experienced environmental problems are connected to the broader climate issue in media discourse.

From this perspective, it is less surprising that climate change does not consistently emerge as a dominant agenda topic in CEE media systems. As Drieschova (2024) suggests, the position of climate issues cannot be explained only by cyclical patterns of public attention but is also shaped by the structural characteristics of semi-peripheral media environments. Climate policy may be perceived as an *external* initiative associated with the European Union and consequently become embedded in broader political debates over economic interests, national sovereignty and European integration. Empirical studies similarly indicate that climate change has often remained an episodic and relatively weakly institutionalized media topic across several post-communist contexts (Kleinberga, 2022; Drieschova, 2024).

Climate skepticism provides another example of how climate discourse varies across media systems. Research does not support a straightforward East–West divide. Historically, the disproportionate representation of climate-sceptic voices was particularly characteristic of Anglo-American media, where journalistic norms of balance contributed to the visibility of contrarian positions (Boykoff & Boykoff, 2004). Comparative research later indicated a gradual move beyond this form of “false balance”, as mainstream journalists increasingly contextualized rather than simply juxtaposed contrarian claims (Brüggemann & Engesser, 2017).

In CEE, however, climate skepticism has developed within different political-economic and historical contexts. Ocelík's (2022) analysis of Czech newspaper coverage between 2009 and 2018 identifies former president Václav Klaus as the central skeptical actor and shows how elements of the Anglo-American model of climate skepticism were transferred into the post-communist context. Skeptical counter-framing targeted not only climate science but also the credibility and motivations of climate scientists and advocates of climate policy. The Czech case therefore illustrates how internationally circulating skeptical arguments can be adapted to specific national political contexts.

At the same time, CEE should not be treated as a homogeneous climate-sceptic region. Císař, Kolářová and Profant (2025), examining economic climate discourse in Czech newspapers, find that it is neither dominated by skepticism nor structured primarily around a denial–alarmism divide. Adaptation and climate change as an economic opportunity also constitute important strands of the debate. These findings suggest that the more relevant distinction may increasingly concern how climate action is contested – through denial, policy skepticism, delay or obstruction – rather than a simple geographical opposition between Eastern and Western European climate discourse.

Country-specific studies provide additional insight into how climate change is framed in these media contexts. In Montenegro, a mixed-method study examining coverage on major online news portals during the 2021 United Nations Climate Change Conference found that reporting on climate change tended to remain superficial and episodic (Ružić *et al.*, 2023). Based on a content and discourse analysis of 268 online articles combined with interviews with journalists covering the topic, the authors argue that media coverage rarely attempts to educate audiences or deepen public understanding of environmental issues. The study also links this pattern to broader environmental literacy challenges within Montenegrin society.

In Serbia, research focusing on journalism students highlights a somewhat different dimension of the issue. Survey results suggest that young aspiring journalists are generally well informed about climate change and perceive it as a serious problem (Vujović and Ilić Krstić, 2022). However, the study also points to a lack of specialized professional training related to climate reporting, indicating that while awareness may be relatively high among

future journalists, practical skills for covering climate issues in depth remain underdeveloped.

Research examining online news portals in Croatia and Slovenia reveals notable differences in how climate-related topics are framed in the two media environments (Vukić and Jurišić, 2025). A study finds that actors and events associated with climate activism – such as the activities of Greta Thunberg – are interpreted differently across the two countries’ online media landscapes. Related research on Croatian online media also highlights ongoing concerns about the quality of climate communication, emphasizing that reporting should rely more consistently on scientific evidence and expert knowledge rather than sensationalist framing (Šarić and Trnavac, 2026).

Studies from the Baltic region point to another structural bias in climate reporting. According to Kleinberga, Palkova and Dace (2023) media coverage in the Baltic states frequently draws on international developments and pre-produced information sources rather than domestically specific reporting. This has been described as a form of “*counter-domestication*,” in which climate change is primarily presented through global or geopolitical narratives instead of being framed a national policy issue. As a result, climate change often appears as a distant global phenomenon rather than an immediate domestic policy challenge.

Research from Romania also indicates that climate change receives relatively limited attention in the media. A study combining a content analysis of European media coverage of climate change in 2016 with survey data collected in Romania and China examined both the volume and frequency of climate-related reporting. The findings suggest that media attention devoted to climate change remained relatively limited. The authors conclude that media institutions have not fully fulfilled their potential role as intermediaries between the state and the public in communicating environmental issues, highlighting a broader need for more consistent reporting (Dumitrașcu et al., 2026).

Studies from Slovakia and Slovenia further show how national media structures and journalistic practices shape climate visibility. In the Slovak quality press, natural scientists

are the most prominent sources, followed by politicians, while activists and NGOs receive considerably less visibility (Profant, 2023). Climate coverage can also decline when competing with major events such as the COVID-19 pandemic and the Russia–Ukraine war (Majerský & Kačínová, 2024). In Slovenia, journalists identify newsworthiness, audience appeal and commercial pressures as important constraints on climate coverage, alongside limited contextualization and tendencies toward dramatization and event-driven reporting (Jontes, Pušnik & Šiša, 2024).

At the same time, these limitations do not capture the full picture of climate communication in CEE. Poland, for example, has developed a notable tradition of *long-form environmental journalism*, including multimedia reportage and ecoreportage. In contrast to the shorter and more event-driven formats of daily news coverage, these forms allow environmental and climate-related issues to be explored in greater depth and connected to specific places and lived experiences. Onet’s⁵ *Wysychamy*, for example, addresses climate change through drought and water scarcity in Poland, combining written reportage with photography, video, expert testimony and multimedia storytelling. Its *Baltyk* project similarly uses a long-form multimedia format to examine environmental changes affecting the Baltic Sea and to connect these changes to a place with strong relevance for Polish audiences.

The importance of long-form environmental journalism is also reflected in Polish scholarship on ecoreportage. Żyrek-Horodyska (2024), analyzing the works of Jan Mencwel and Michał Książek⁶, describes ecoreportage as a form of documentary and intervention journalism that enables environmental problems to be examined in depth and approached as ethical and social issues. These examples show that the quality, depth and localization of environmental communication cannot be inferred from the overall volume of climate news alone.

⁵ *Onet* is one of Poland’s major online news portals and part of the country’s mainstream digital media landscape that has also produced multimedia long-form journalism on environmental issues.

⁶ Michał Książek is a Polish writer, journalist, forester and ornithologist known for his engagement with nature conservation, while Jan Mencwel is a Polish writer, publicist and urban environmental activist, and a co-founder of the Warsaw-based civic movement *Miasto Jest Nasze* (“The City Is Ours”).

Continuing this line of research, Hungary represents a particularly relevant case within the CEE context. The Hungarian media system has undergone substantial structural transformation over the past decade. Media ownership has become increasingly centralized, most notably through the establishment of the Central European Press and Media Foundation (KESMA), which brought numerous national and regional outlets under a unified ownership structure and further reinforced divisions between government-aligned and independent media actors (Bajomi-Lázár, 2019; Polyák, Urbán & Szávai, 2022). The Hungarian media landscape is also characterized by varying degrees of political influence and substantial differences between media sectors and outlets (Urbán, 2024; see Section 3.5).

Research on Hungarian climate communication provides important insights into how climate change has been represented across different periods and media contexts. An early study by Székely and Polgár found (2008) that Hungarian media coverage tended to present climate change in a negative context while providing relatively superficial explanations of its causes and consequences. Reporting frequently concentrated on recurring and highly newsworthy phenomena rather than exploring the more complex relationships underlying climate change.

On the other hand, other Hungarian scholars highlight the importance of localization in climate communication. Comparing Hungarian and Australian media representations of the 2019–2020 Australian bushfires and the COVID-19 pandemic, Hafenscher and Jankó (2022) demonstrate how geographically distant crises are represented differently across national media contexts. Their analysis emphasizes the challenge of making climate change locally meaningful and shows how extreme events such as the Australian bushfires can provide opportunities to visualize climate change and connect an abstract global phenomenon to observable consequences.

Vécsey (2020) examined *Index.hu* coverage during the *Covering Climate Now* initiative and found that responsibility and consequences were the dominant frames, while conflict was particularly visible in articles focusing on Hungarian political polarization and differences between the Visegrád countries and Western Europe. Mikecz, Böcskei and Vasali (2023) similarly demonstrate the importance of political context, showing how climate activism in pro-government discourse was framed as politically and ideologically motivated. Rather than

primarily denying climate change itself, this discourse sought to delegitimize climate activism by associating it with liberal or left-wing political agendas.

More recent research shows how climate change can become embedded in broader political narratives. Vancsó (2024), analyzing Hungarian news media discourse on the climate crisis and climate and energy policy between July 2021 and March 2022, finds that climate change does not operate through a distinctive and autonomous discursive framework. Instead, it is predominantly incorporated into pre-existing political narratives, particularly those concerning Hungary's relationship with the European Union. Climate and energy issues are consequently connected to domestic debates about national sovereignty, the role of nation-states and European integration. Climate policy can also become linked to debates about energy prices and economic costs, shifting the focus towards political conflict over the consequences and distribution of the costs of climate and energy policies.

2.5 The media-activism nexus

“I want you to panic.”

— Greta Thunberg, *World Economic Forum*, 2019

This section examines the complex relationship – which I refer to as nexus⁷ – between climate activism and the media, which is a key perspective for understanding the central arguments of this dissertation.

As discussed in Chapter 2.3.4 multiple factors shape whether and how climate change enters the media agenda. Among these, climate activism has emerged as a particularly influential driver. A growing body of research shows that periods of heightened activist mobilization often coincide with increased media attention of climate issues, highlighting the strong link between protest activity and news coverage (Boykoff and Pearman, 2019; Wozniak, Wessler

⁷ The term “*nexus*” is particularly appropriate here not only for conceptual but also for etymological reasons. Derived from the Latin “*nectere*” (“to bind” or “to tie together”), *nexus* originally referred to a binding or interlinking of elements (Lewis & Short 1879; Oxford English Dictionary). In contemporary scholarly usage, the concept implies a dense web of connections rather than a simple or linear relationship.

and Lück; Krüger, Eichenauer and Gailing, 2022; Lochner, Stechemesser and Wenz, 2024; Pezzullo and Cox, 2026).

Importantly, the relationship between activism and the media is not one-directional but reciprocal. Activists strategically seek media attention to amplify their claims, influence public discourse, and pressure political decision-makers. At the same time, media institutions frame activist actions through editorial perspectives and political orientations, which influences how these movements are represented in public discourse. In this sense, activism and the media operate as mutually constitutive arenas, jointly influencing how climate change is communicated and debated in the public sphere.

2.5.1 Contextualizing the climate movement

The *climate movement* can be understood as a specific branch of the broader environmental movement and, more generally, of social movements. Social movements involve collective action through which individuals and organizations pursue shared goals and seek social, political or cultural change. Within this broader landscape, environmental movements mobilize around ecological protection and sustainability and operate through grassroots initiatives, NGOs, advocacy groups and political organizations (Rootes, 2009; Sturgeon, 2009). Castells (2009) describes environmental movements as “locally rooted, globally connected networks” that seek to influence policy and public opinion.

In recent decades, climate change has become increasingly central to environmental mobilization, contributing to the emergence of movements specifically focused on mitigation, adaptation, climate justice and broader systemic change (Goodman, 2022). Climate activism operates within the public sphere through protests, campaigns and symbolic actions intended to influence both political decisions and public understandings of climate change (Cox & Pezzullo, 2026).

The modern environmental movement developed from the 1960s onwards and became increasingly institutionalized through organizations such as Greenpeace and Friends of the Earth (McCormick, 1992; Rootes, 2009). Climate-related protest emerged in Western

countries in the early 1990s and expanded considerably during the 2000s (Parks, 2025). Newer groups increasingly adopted confrontational but nonviolent forms of direct action and strategically used media visibility to advance their claims (Rootes, 2009). A new wave of climate activism gained momentum around 2018. Often described as “new climate movements” (Buzogány & Scherhauser, 2022), these movements combine digital organization and transnational coordination with mass demonstrations, school strikes and nonviolent civil disobedience. They frequently draw on climate justice, generational narratives and emergency framing (Fisher & Nasrin, 2021). As shown in Table 4, this wave includes Fridays for Future (FFF), Extinction Rebellion (XR), the Sunrise Movement, Youth for Climate and several other initiatives. FFF and XR are examined more closely in this dissertation because of their international visibility and their presence in Hungary. Protest and civil disobedience have again become central tools of environmental activism (Buzogány & Scherhauser, 2022). Building on tactics used by earlier environmental movements, contemporary climate activism combines mass demonstrations with more disruptive forms of action, such as road blockades and highly mediatized protest events designed to increase public and media visibility (Boucher et al., 2021; Berglund, 2025; Nylund, Thai & Hornsey, 2025).

Among the movements that emerged in the late 2010s, Fridays for Future and Extinction Rebellion stand out because of their high visibility and international reach. As environmental movements develop differently across national contexts (Rootes, 2009), their branches may

adapt global narratives and strategies to local conditions. Since both movements established branches in Hungary, they are particularly relevant to this dissertation.

MOVEMENT	COUNTRY / YEARS	TYPE	MAIN TACTICS	DIGITAL COMMUNICATION & SOCIAL MEDIA
 FRIDAYS FOR FUTURE (FFF)	Global / 2018–	Youth-led transnational climate movement	School strikes, global climate strikes, mass demonstrations	• Hashtags: #FridaysForFuture, #ClimateStrike, #SchoolStrike4Climate • Platforms: Instagram, Twitter/X, TikTok Global coordination of strikes via social media • Personal storytelling and protest selfies/photos • Viral spread of protest signs and youth climate narratives • International network of local chapters communicating online
 EXTINCTION REBELLION (XR)	UK → Global / 2018–	Decentralized climate civil-disobedience movement	Nonviolent civil disobedience, road blockades, public space occupations	• Hashtags: #ExtinctionRebellion, #TellTheTruth, #ActNow • Platforms: Instagram, YouTube, TikTok, Twitter/X • Highly visual protest performances • Livestreaming of actions and arrests • Strong visual branding (XR hourglass symbol)

Table 4: Fridays for Future and Extinction Rebellion (international) and their digital communication strategies (Source: own editing based on the official websites and social media channels of the listed movements (2025))

Protest and civil disobedience have again become central tools of environmental activism (Buzogány and Scherhauser 2022). While earlier environmental movements – for instance Greenpeace – laid important foundations and did similar actions, the rapid transformation of climate activism after 2018 surprised many observers (Boucher *et al.*, 2021). In 2019, more than seven million people participated in coordinated climate demonstrations across 185 countries, making it the largest protest events in history. However, at the same time, contemporary climate activism is not limited to large-scale demonstrations. In the past few years, protest repertoires have also expanded to include more disruptive forms of action, such as road blockades and highly mediatized protest events (Berghlund, 2025) – examples include activists throwing tomato soup at Vincent van Gogh’s Sunflowers in actions carried by Just Stop Oil and Letzte Generation. These tactics are intended both to disrupt everyday routines and to increase the public and social media visibility of climate protest (Nylund, Thai and Hornsey, 2025).

Among the movements that emerged in the late 2010s, Fridays for Future and Extinction Rebellion stand out due to their high visibility, extensive media coverage and ability to mobilize large numbers of participants. As environmental movements develop differently across national political and social contexts (Rootes, 2009), their national branches may also adapt global climate narratives and strategies to local conditions. Since both Fridays for Future and Extinction Rebellion have established branches in Hungary, they provide particularly relevant cases for examining how global climate movements operate within the Hungarian media environment.

2.5.2 Fridays for Future (FFF)

Fridays for Future (FFF) is a youth-led climate movement that emerged in August 2018, when then 15-year-old Greta Thunberg began striking outside the Swedish Parliament to protest political inaction on climate change. By documenting her protest on social media, the initiative quickly went viral and inspired students worldwide to join the “school strike for climate.” The movement organized regular Friday demonstrations and rapidly developed into a global demonstration. Within a year, coordinated climate strikes were taking place in thousands of cities, engaging millions of participants worldwide (Fridaysforfuture.org 2024). The global climate strikes of September 2019, involving an estimated seven million participants across more than 150 countries, became the largest climate protests in history (De Moor *et al.*, 2021; Hurrelmann and Albrecht, 2021).

The rise of FFF coincided with the publication of the IPCC Special Report on Global Warming of 1.5 °C and played an important role in communicating its findings to broader publics (Boykoff and Pearman 2019). By linking scientific evidence with moral urgency and intergenerational responsibility, the movement helped reframe climate change as an immediate political and ethical issue rather than a distant environmental concern. Through this framing, FFF brought climate change into mainstream political and media debates and influenced discussions at international forums such as the UN Climate Action Summit and subsequent COP conferences (Buhre, 2025).

The rapid rise of the movement is closely connected to the visibility of Greta Thunberg and is often described as the “*Greta Effect*” (Hayes and O’Neill, 2021; Gan, Hayes and

Whitmarsh, 2024). At the same time, FFF cannot be understood simply as a leader-driven movement. Research emphasizes its decentralized and participatory character, for instance Oliveira *et al* (2023) describe Fridays for Future as a fluid, digitally mediated movement whose identity is constructed through networked communication, intertextual connections, and participatory discourse on platforms such as Twitter. While Thunberg became the symbolic face of the protests, her activity on social media was at first relatively limited; nevertheless, her posts generated exceptionally high engagement and visibility (Oliveira *et al.*, 2023).

This structure places FFF between grassroots and transnational activism. The movement originated from local initiatives but rapidly evolved into a globally networked mobilization coordinated through digital communication (Oliveira *et al.* 2023). Its decentralized organization and diverse voices further suggest that it functions as a democratic social movement rather than a centralized campaign (Buhre 2025). Scholars therefore describe Fridays for Future as occupying a space between moderate and more radical environmental imaginaries: it calls for systemic change while simultaneously engaging with existing political institutions (Koop-Monteiro, Stoddart and Tindall, 2025).

Research also indicates that the movement has shaped public perceptions of climate politics and encouraged civic engagement. Survey results from Switzerland, for example, showed generally positive attitudes toward Thunberg and the movement, alongside increased pro-environmental behavior among respondents (Fritz *et al.*, 2023). More broadly, Fisher (2019) argues that Fridays for Future contributed not only to climate policy debates but also to democratic participation by mobilizing a new generation of politically engaged citizens.

2.5.3 Extinction Rebellion (XR)

Extinction Rebellion (XR) is another transnational environmental movement founded in the United Kingdom in 2018 by Roger Hallam and Gail Bradbrook (Extinction Rebellion 2019). The movement was created in response to what its founders perceived as insufficient political action on the climate and ecological crisis. XR focuses on climate change and biodiversity loss and formulates three central demands: governments must “tell the truth” about the

climate emergency, “act now” to halt biodiversity loss and reduce greenhouse gas emissions and establish citizens’ assemblies to guide climate policy (Slaven and Heydon, 2020).

In contrast to the large-scale demonstrations as Fridays for Future, XR relies on disruptive but non-violent civil disobedience. Its repertoire of action includes road blockades, occupations of public spaces, disruptions of commuter traffic, and highly visible protest performances designed to attract media attention. These protest elements – such as “die-ins,” or activists attaching themselves to infrastructure – are often amplified through social media campaigns and hashtags such as #TellTheTruth and #ActNow (Catanzaro and Collin, 2023; Hadler *et al.*, 2025; Jansma *et al.*, 2025). The movement’s visual identity is also strongly associated with the hourglass symbol, representing the urgency of the ecological crisis (Shim, 2023; Gürlesin, 2024).

Scholars describe XR as a complex and decentralized movement that combines horizontal democratic structures with elements of strategic coordination (Carvalho and Gardner, 2025). Its confrontational repertoire reflects frustration with political inaction and represents a more radical strand within contemporary climate activism (Pickard, 2022). Through disruptive protest and high public visibility, XR seeks to generate a social tipping point in support of decisive climate policy (Gunningham 2019; Svensson & Wahlström, 2023).

Following large-scale protests in London in 2019, XR quickly expanded into a global network of local groups. By 2022, the movement reported more than 1,100 local groups active in over 80 countries (Extinction Rebellion 2019). This rapid international diffusion illustrates how contemporary climate activism combines local initiatives with transnational coordination and media-oriented protest strategies.

2.5.4 Digital and networked youth climate activism

Back in 2009, Christopher Rootes reflected on the limits of environmental movements, noting that

The absence of a developed global polity presents even greater obstacles to the formation of a global environmental movement. Although international agreements

and agencies encouraged the development of transnational environmental NGOs, the latter are not mass participatory organizations and, outside the North, rarely have deep roots in civil society. (Rootes 2009, p.1432).

Since then, however, the rapid diffusion of digital media technologies – particularly social media platforms – has demonstrated that transnational activism can emerge and expand even in the absence of centralized political systems.

MOVEMENT		COUNTRY / YEARS	TYPE	MAIN TACTICS
YOUTH4 CLIMATE		Belgium, France / 2019	Student-led national initiative	Weekly strikes, lobbying EU institutions
SUNRISE MOVEMENT		United States / 2017–	Political youth movement	Campaigning for the Green New Deal, demonstrations
EARTH STRIKE		International / 2019–2020	Labour-solidarity climate movement	Worker strikes, mass protests
ENDE GELÄNDE		Germany / 2015–	Radical environmental activist network	Coal-mine occupations, infrastructure blockades
LETZTE GENERATION		Germany, Austria / 2021–	Civil-disobedience collective	Road blockades, glue-on protests
INSULATE BRITAIN		United Kingdom / 2021 –	Climate civil-disobedience campaign (Extinction Rebellion offshoot)	Motorway blockades, traffic disruption
JUST STOP OIL		United Kingdom / 2022–	Environmental civil-resistance group	Art-targeting actions, transport blockades

Table 5: Examples of contemporary climate movements and their main tactics (Source: own editing based on information published on the official websites and social media channels of the listed movements (2025))

Contemporary climate movements increasingly rely on digital media as core organizational infrastructure. Rather than depending on formal membership structures, they operate through decentralized networks that combine elements of collective and connective action (Bennett and Segerberg, 2013). In this “*networked logic*” of activism, digital platforms enable participatory, flexible, and often spontaneous forms of mobilization that can scale rapidly across national contexts (Bennett and Segerberg 2013). As a result, movements such as FFF and XR are frequently described as digital, networked, or “*hashtagged*” movements.

The growth of these movements has also stimulated a rapidly expanding body of academic research. A mixed-methods systematic literature review of 138 peer-reviewed studies by Baran and Stoltenberg (2023) shows that digital environmental and climate activism has developed into a distinct field of inquiry within media and communication research, although the literature remains geographically concentrated in Western contexts. Within this field, digital activism is generally understood as “online practices that involve political, civic, social, or cultural action oriented toward social change or transformation” (Vancsó and Kovács-Magosi, 2024, p.4)

Research has particularly focused on how movements such as FFF and XR utilize social media platforms to mobilize supporters and circulate their messages (Sindermann, 2024). Platforms such as Instagram and X/Twitter enable activists to coordinate protests, disseminate information, and construct a shared digital identity that connects geographically dispersed participants. In this sense, social media has facilitated new forms of environmental communication and collective action, including the global diffusion of the #FridaysForFuture protests (Gan, Hayes and Whitmarsh, 2024).

At the same time, different platforms shape activist communication in distinct ways. Platform affordances, gatekeeping practices, and ownership structures influence the tone, reach, and strategic choices of climate activists. For example, Stoddart, Koop-Monteiro, and Tindall (2025) analyze Instagram as a specific arena of climate communication during COP26. Using discourse network analysis of 2,417 Instagram posts, they show how the platform enabled the circulation of counter-discourses emphasizing climate justice, Indigenous rights, and critiques of international climate governance.

Digital media also influence how climate movements are organized. Sorce and Dumitrica (2023) use the concept of “*connective leadership*” to describe Greta Thunberg’s role within Fridays for Future. Although the movement has no formal leadership structure, her strong media visibility made her an important symbolic figure connecting activists and local groups. This shows how media visibility can itself become a source of influence within decentralized movements. Digital platforms therefore support not only mobilization but also communication and coordination within transnational climate movements.

2.6 COVID-19 and climate activism

The COVID-19 pandemic significantly disrupted climate activism by restricting street protests and shifting public attention toward the global health crisis. Climate movements that had reached unprecedented levels of mobilization in 2019 experienced a decline in visibility and participation, while climate activism increasingly moved into digital spaces (Kovács-Magosi & Székely, 2022; Repke et al., 2024; Bechtoldt & Schermelleh-Engel, 2025).

Fridays for Future adapted by maintaining its climate message online while incorporating the pandemic into its communication. Social media became less important for organizing physical mobilization and more important for maintaining visibility, sharing information and articulating responsibility and policy demands (Sorce & Dumitrica, 2023; Fernández-Zubieta et al., 2023). However, studies also indicate that online activism could not fully replace the mobilizing power and visibility of street protests (Soler i Martí, Ferrer-Fons & Terren, 2020; Haßler et al., 2023).

The pandemic therefore temporarily changed rather than ended climate activism. As physical mobilization declined, movements relied more strongly on digital communication and later increasingly returned to disruptive and visually striking protest tactics designed to regain media attention.

2.7 Activists as an agenda-builders

One of the most important sources for this dissertation in understanding how modern, youth-led climate activism influences the media agenda is the study by Thomas-Walters and colleagues, conducted within the *Yale Program on Climate Change Communication*. The authors review 50 empirical studies examining the impacts of climate activism and conclude that activism consistently increases media coverage of climate change, making media attention a central mechanism through which activism shapes public discourse, as shown in Figure 7. As illustrated in their conceptual model, climate activism strongly influences media coverage, which in turn affects public opinion and can indirectly shape political attention, voting behavior, and policy change. The review also highlights that the tone and quantity of media coverage depend on protest tactics: moderate and legal actions tend to receive more

favorable coverage, while disruptive actions may receive more negative coverage but can still broaden the range of politically acceptable climate positions through the “*radical flank effect*.” Overall, the study demonstrates that climate activism reliably elevates climate change on the media agenda and thereby influences broader political and social processes, making it a key reference point for understanding the relationship between activism, media attention, and public discourse.

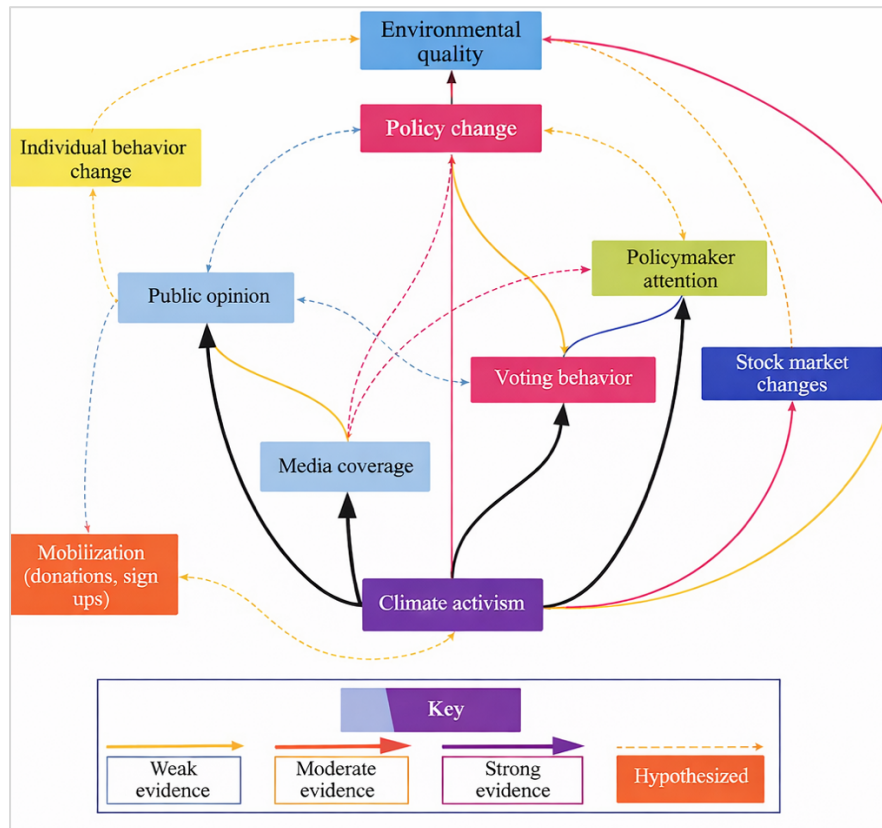


Figure 7: Map representing the strength of evidence for linking climate activism to various outcomes based on the reviewed literature Thomas-Walters et al., 2025, p2, author’s redesign)

Earlier generations of environmental movements, such as Greenpeace and Friends of the Earth, operated largely within the framework of “*media logic*” (Miller, 1982), in which access to traditional mass media was a precondition for broader political influence. Their protest repertoires were therefore often designed to spark the media’s attention: visually striking actions such as ship blockades, banner drops, and symbolic confrontations were not only forms of protest but also performances intended to secure news coverage (Hansen *et al.*, 2025). These organizations were typically more centralized and professionalized, relying on

communication specialists to shape how environmental issues appeared in television and print news (Cox 2010).

Contemporary climate movements, by contrast, operate in a hybrid media environment in which traditional news media and digital platforms are closely intertwined. In this context, they are no longer dependent exclusively on conventional gatekeepers to gain visibility. Rather, they function through what Bennett and Segerberg (2013) describe as the “logic of connective action,” in which digital communication enables decentralized, personalized, and transnational forms of mobilization. Hashtags, memes, short videos, livestreams, and user-generated content allow activists to organize protests, build collective identity, and circulate frames across borders at high speed. Attention, in this sense, is no longer produced only through institutional media access but also through their networks (Oliveira et al. 2023).

This shift is crucial for understanding activists as agenda builders. Agenda building refers not simply to gaining attention but to influencing which issues become publicly salient and how they are interpreted. Social movements rarely control the media agenda in a stable way, yet they can shape it indirectly by producing events, frames, and narratives that journalists subsequently adopt and translate. Eide and Kunelius (2021), drawing on in-depth interviews with young climate leaders from 23 countries, argue that youth activists have brought a distinct “added value” to global climate communication. They show that young activists act as ambassadors for scientific consensus by translating the findings of climate science into moral and political language. From the activists’ point of view, climate communication becomes effective when scientific evidence is connected to lived experience, emotion, and intergenerational responsibility. As they write, the movement connects “personal and local experiences and emotions with climate science” (Eide and Kunelius 2021, p.1).

Climate activists contribute to agenda building not only by attracting media attention but also by shaping how climate change is discussed. FFF, for example, combines scientific claims with narratives of generational and global inequality and uses emotionally charged communication to politicize climate change (Buhre, 2025). More broadly, social movements use frames to define problems, attribute responsibility and promote particular solutions (McAdam et al., 1996). Environmental organizations can successfully circulate such frames

and claims through mainstream media (Graham & Robinson, 2025), while digital platforms provide additional opportunities to communicate them through slogans, images and other shareable content (Fernández-Zubieta et al., 2023; Zurru, 2022).

Climate activism therefore operates within a hybrid media environment in which activist and mainstream media communication interact. While online activist communication tends to emphasize moral and climate justice perspectives, mainstream news remains more strongly shaped by institutional and elite-centered frames (Chen et al., 2023). Protest itself can also generate broader climate attention. Lochner, Stechemesser and Wenz (2024) find that climate protests, particularly those associated with FFF, produced some of the strongest increases in German climate coverage. Similarly, both grassroots protests and elite events such as COPs can temporarily synchronize climate attention across countries, although national media routines continue to shape coverage (Wozniak et al., 2023).

Differences between climate movements also matter. FFF and XR use distinct frames and agenda-building strategies. FFF generally remains closer to established political institutions, emphasizing urgent action while expecting governments and other institutions to respond, whereas XR more strongly emphasizes ecological collapse (Buzogány & Scherhauser, 2022). Media coverage reflects this distinction. Huttunen (2024) finds that XR was relatively successful in bringing its core demands into Finnish news coverage, although the broader context of the climate crisis was often missing. FFF has similarly been highly successful in generating climate attention, while its emphasis on science and institutional action may make its demands more compatible with mainstream media discourse (Svensson & Wahlström, 2023).

Overall, climate activists act as agenda builders by generating events, frames and narratives that shape media attention. However, their influence remains mediated by journalistic routines, platform logics and national political contexts.

2.8 Media representation of youth climate activism

The relationship between media and climate activism is reciprocal. Activists seek mainstream media visibility, while news organizations shape how activists and their claims are publicly

represented. Although activist representation is not the primary focus of this dissertation, it is relevant because portrayals of climate activists also reflect broader ways in which climate change is framed. Activists may be presented as legitimate political actors or, conversely, as disruptive, naïve or threatening figures, depending on journalistic and political contexts (Brehm & Gruhl, 2024; Marquardt, 2020; Hayes & O'Neill, 2021; Chen *et al.*, 2023; Koop-Monteiro, Stoddart & Tindall, 2025).

Research shows that media coverage often emphasizes protest tactics and activist behavior, particularly in the case of disruptive protests, sometimes shifting attention from climate change itself to the legitimacy of activists and their methods (Köhler *et al.*, 2025; 2025; Dablander, Wimmer & Haslbeck, 2025; Scheuch *et al.*, 2024). Coverage can also depoliticize environmental issues by emphasizing individual actors, local initiatives or technological solutions rather than broader political conflicts and structural causes (Magnusson *et al.*, 2021; Matejova, 2023).

Youth climate activists are particularly vulnerable to delegitimizing representations. Studies have identified age-based stereotypes portraying activists as pupils, dreamers, inexperienced or politically naïve actors (Bergmann & Ossewaarde, 2020; Vochocová *et al.*, 2024). Greta Thunberg and FFF have also been represented through nationalist, conspiratorial and gendered narratives in right-wing media (Vowles & Hultman, 2021). Similarly, Von Zabern and Tulloch (2021) find that German coverage frequently focused on school absenteeism, Thunberg and other peripheral controversies rather than FFF's political demands, thereby limiting the political agency attributed to young protesters.

In contrast to such negative mainstream representations, digital media provide alternative spaces where activists can challenge dominant narratives about their activities and motivations. Social media may therefore offer a partial way out of the protest paradigm that has traditionally shaped news coverage of social movements.

At the same time, mainstream media representations may themselves be changing. Gan, Hayes and Whitmarsh (2024) identify a shift from predominantly negative portrayals toward

an intergenerational justice framing, in which young and female protesters are increasingly represented through their agency, moral authority and demands for systemic change.

2.9 Research questions and hypotheses

Climate activism has become an important part of climate communication, with movements such as Fridays for Future and Extinction Rebellion contributing to the public and media visibility of climate change (Eide & Kunelius, 2021; Pickard, 2022; Chen *et al.*, 2023). However, climate protests may generate substantial but temporary peaks in coverage, raising questions about their relationship with longer-term media attention and framing (Boykoff *et al.*, 2021; Lochner, Stechemesser & Wenz, 2024).

Against this background, the study examines Hungarian online news media between 2014 and 2024, focusing on three interconnected dimensions: changes in the frequency of climate coverage, changes in climate framing, and the media visibility of climate activism. The longitudinal period allows these patterns to be examined before and after the emergence of the new wave of climate activism around 2018.

Based on these considerations, the following research questions and hypotheses are formulated.

RQ1: How has the distribution of climate-related key terms evolved between 2014 and 2024 in the Hungarian media?

RQ2: How has the framing of climate change in Hungarian news media evolved between 2014 and 2024?

RQ3: To what extent did international climate movements (e.g. Fridays for Future, Extinction Rebellion) receive media attention in the Hungarian news media between 2014 and 2024?

RQ4: How does youth-led climate activism, particularly Fridays for Future and Extinction Rebellion, influence the frequency of climate change in Hungarian media coverage?

In addition to these research questions, the study also formulates hypotheses based on findings in the existing literature.

H1: Climate change coverage is strongly event-driven and dominated by intensifying emergency framing patterns.

Research on climate activism further indicates that the emergence of youth-led movements around 2018 significantly influenced public climate communication. FFF introduced strong emergency language and intergenerational justice narratives (Eide and Kunelius 2021; Svensson and Wahlström 2023). These developments suggest that the rise of climate activism may also have influenced how climate change is framed in news coverage.

H2: Media framing of climate change becomes more urgent following the emergence of climate activism in 2018.

H3: Climate change media coverage differs systematically across government-aligned, independent, and critical news outlets in Hungary.

Finally, research on media attention indicates that increases in coverage associated with protest events are often temporary. Activist mobilizations can generate significant peaks in media attention, but these increases in visibility frequently decline once the protest event cycle passes (Wozniak et al. 2023; Lochner, Stechemesser and Wenz 2024). Based on this event-driven logic of media attention, the following hypothesis is proposed.

H4: Increases in media attention associated with climate activism are predominantly short-lived rather than sustained over time.

These research questions and hypotheses provide the analytical framework for examining the interaction between climate activism and media coverage in the Hungarian online news environment. By combining the analysis of media agenda research with the examination of framing processes and activist visibility, the study aims to contribute to a better understanding of how global climate movements interact with national media systems and how activism shapes the visibility of climate change in the news.

3. CONTEXTUALIZING THE CASE: HUNGARY

3.1 Climate change and related attitudes in Hungary

Hungary is a landlocked country located in Central Europe, situated in the Carpathian Basin with no direct access to the sea. It is a member state of several major international organizations, including the European Union (EU), North Atlantic Treaty Organization (NATO), the Organization for Economic Co-operation and Development (OECD), and the United Nations (UN). The country also participates in the Schengen Area, allowing unrestricted internal border crossing with most EU states. Hungary's total population is estimated to be around 9.6 million people, according to the United Nations Population Division.⁸

Hungary's climate is temperate continental, influenced primarily by continental air masses, with minor oceanic and Mediterranean effects. The country experiences hot summers and cold winters, while precipitation varies regionally, being higher in the west and southwest and lower in the eastern plains. These climatic patterns shape both the agricultural potential and climate-related risks across regions (Hungarian Meteorological Service, n.d.). Agriculture remains an important sector in the Hungarian economy, although its direct share of national output has declined over time as the economy has structurally shifted toward services and industry. According to World Bank data, which compile officially recognized national statistics, the value added by agriculture, forestry, and fishing accounted for approximately 2.37 % of Hungary's GDP in 2024 (TheGlobalEconomy.com, 2024). This indicator reflects the net contribution of primary production activities (such as crop cultivation, livestock, forestry, and fishing) to the economy. Although the agricultural sector forms a relatively small portion of GDP compared to service and industrial sectors in Hungary, it continues to play a strategic role in rural employment, land use, and export-oriented production. The sector benefits from a large share of agricultural land, fertile soils, and established production of cereals, oilseeds, fruits, and other crops (Hungarian Central Statistical Office, 2024).

⁸ <https://www.worldometers.info/world-population/hungary-population/>

Focusing on Hungary rather than global averages, instrumental temperature records clearly indicate that the country has experienced its most intensive warming during the past three decades. According to climatological analyses by Bartholy and Pongrácz (2020), the magnitude and persistence of recent temperature increases exceed those observed in earlier measurement periods, confirming a pronounced acceleration of warming trends at the national scale. Climate model projections suggest that average temperatures in Hungary may increase by up to 3 °C by the end of the twenty-first century, indicating a substantial intensification of warming trends at the national level (Vasárus, Lennert and Koós, 2024). These changes are also becoming increasingly tangible through locally experienced extreme events. Hafenscher and Jankó (2024) highlight the 2022 drought as a particularly visible manifestation of climate change in Hungary, where its impacts can otherwise be difficult to directly observe.

Empirical climate research further demonstrates that seasonal patterns in Hungary have already shifted, with the combined duration of spring and summer increasing by approximately 25 days within a single human generation. As a result, these two seasons now account for nearly two-thirds of the calendar year, reflecting a profound transformation of the country's climatic conditions (HVG, 2025).⁹ These changes are spatially uneven and are closely associated with growing regional disparities in drought frequency and severity, particularly affecting settlements located in the Great Hungarian Plain, which exhibit heightened climate vulnerability. Importantly, existing research highlights that regions most exposed to the impacts of climate change often overlap with areas characterized by persistent

⁹ A closer examination of the past decade suggests that Hungary's environmental challenges have taken multiple, intersecting forms. On the one hand, the period has been marked by a series of large-scale, human-induced environmental incidents, including the long-term illegal storage and leakage of carcinogenic chemical waste in densely populated urban areas; sewage discharges causing severe ecological damage to small water bodies; oil contamination affecting protected sections of the Danube; the emergence of extensive illegal waste deposits; and environmentally destructive development projects in legally protected natural areas. On the other hand, the same decade has also seen an increasing exposure to climate-related natural hazards. National climate assessments document recurrent river flooding, inland excess water, prolonged droughts, and increasingly frequent heatwaves in the past couple of years with measurable impacts on agriculture, water management, and public health (Tóth – Siposné Kecskeméthy, 2017). Considered together, these developments indicate that the environmental conditions of the past ten years cannot be understood through isolated events alone, but rather as an accumulation of both structural climate risks and locally materializing forms of environmental harm.

social and economic inequalities, indicating that climate risks are not distributed evenly across society. Although farmers increasingly perceive the effects of climate change on working conditions and labor productivity, adaptation in this domain remains largely implicit rather than consciously planned, pointing to a pattern of limited strategic awareness in climate-related labor adaptation (Kovács et al., 2024).

Hungary's climate and energy policy is primarily shaped by the transformation of the energy sector, with a strategic emphasis on the phasing out of fossil fuels – particularly coal –, the expansion of nuclear energy (notably the Paks II. project), and the increasing role of renewable energy sources, especially solar power. These objectives are embedded in the broader commitment to achieving climate neutrality by 2050, defined as net zero greenhouse gas emissions. The pathway toward this goal is outlined in the revised National Energy and Climate Plan (NEKT)¹⁰ adopted in 2023, which sets concrete targets for emission reductions and for increasing the share of renewables by 2030 (Nemzeti Energia- és Klímaterv, 2024).

Regarding public attitudes, Hungarian studies indicate that climate change is widely recognized as a serious issue, although concern does not necessarily translate into individual action. Jankó et al. (2018) found that respondents perceived climate change as a current and urgent problem, while its impacts were often regarded as geographically distant and the relationship between concern and concrete action remained relatively weak. A representative survey conducted between 2017 and 2020 further showed a decline in climate-related concern, although this decrease was smaller among younger, more highly educated respondents and residents of Budapest (Bogáromi, Hortay and Pillók, 2020). Research focusing on Hungarian youth similarly highlights the growing relevance of environmental and climate awareness among younger generations (Kovács-Magosi and Székely, 2022). More recent Eurobarometer data indicate that climate concern remains widespread: 81 per cent of Hungarians consider climate change a “very serious” problem, while 96 per cent support climate neutrality by 2050 and 95 per cent consider national renewable energy targets important (European Commission, 2025).

¹⁰ https://ec.europa.eu/clima/sites/its/its_hu

3.2 Temporal scope of the study

As noted above, the dissertation covers the period between 2014 and 2024, a transformative decade in climate reporting. Goodman et al. (2022) identify 2014 as a turning point, when digital and social media increasingly began to reshape climate communication. Starting in 2014 also provides a baseline before the emergence of highly visible youth climate movements such as Fridays for Future and Extinction Rebellion, allowing subsequent changes in media attention to be examined alongside both climate activism and broader transformations in the media environment.

From a Hungarian perspective, the year 2014 is analytically significant because it marks the beginning of a new governmental term for the Fidesz–KDNP coalition, which had already been in power since 2010. This political continuity is relevant not only for environmental and climate policy, but also for understanding developments within the Hungarian media system. Through changes in media regulation and ownership structures, the governing coalition reshaped the media landscape in ways that directly affected agenda-setting processes and the visibility of public issues (Urbán, 2024). These structural changes form an important contextual background for understanding patterns of climate change coverage in the Hungarian media during the period under study.

At the global level, the Intergovernmental Panel on Climate Change published the Fifth Assessment Report, which explicitly emphasized the anthropogenic causes of climate change and incorporated this perspective into the scientific and policy-related discourse (IPCC, 2014). In the same year, the United Nations Climate Summit placed climate change on the global political agenda and contributed to the preparatory process of the Paris Agreement (United Nations, 2014). From the perspective of climate activism, The People’s Climate March in September 2014 constituted the first large-scale, globally coordinated climate demonstration and is commonly cited as an early instance of coordinated climate mobilization preceding later waves of activism (Foderaro, 2014).

Over this ten-year period, climate change coverage evolved in a media environment shaped by a series of major global and regional events. The period includes key international

milestones such as the adoption of the Paris Agreement in 2015 and subsequent Conference of the Parties meetings, including COP21, COP24, and COP26, which periodically increased media attention to climate change. Media visibility was also shaped by extreme weather events and climate-related disasters, such as the European heatwaves of 2018 and 2022, major wildfires in Australia (2019–2020), and recurrent flooding events across Central Europe (Donatti et al., 2024). At the same time, climate change increasingly competed with other dominant agenda-setting crises, including the COVID-19 pandemic beginning in 2020 (World Health Organization, 2020), the Russia–Ukraine war, and the subsequent energy crisis that reshaped political and media discourse in Hungary and across Europe (International Energy Agency [IEA], 2022). These concrete episodes illustrate how climate change coverage fluctuated within a crowded and crisis-driven media agenda, reinforcing the need for a longitudinal analytical perspective.

In addition, the period under study encompasses several major scientific and policy milestones that intermittently reshaped media attention to climate change. These include the IPCC Special Report on Global Warming of 1.5 °C (2018) and the Sixth Assessment Report cycle (2021–2023), as well as the introduction of the European Green Deal and the Fit for 55 legislative packages. Together, these developments contributed to a media agenda characterized by episodic peaks of attention embedded within an increasingly crowded and crisis-driven news environment.

Finally, the ten-year time frame is justified on methodological grounds. Longitudinal media analyses require extended observation periods to distinguish short-term fluctuations from more durable patterns of media attention and change (Plano Clark *et al.*, 2015). A decade-long period is sufficient to capture baseline conditions, attention peaks, and longer-term shifts, while remaining analytically manageable. Ending the analysis in 2024 allows the study to assess developments following the peak of youth-led climate mobilization and to examine climate coverage in a media environment shaped by overlapping crises, while providing a coherent and complete longitudinal dataset.

3.3 Investigative focus: youth-led climate activism

Media agendas are shaped by a wide range of structural, political and contextual factors, and climate activism represents only one of the forces that may influence media attention. The decision to focus specifically on climate activism was partly inspired by the systematic review of Thomas-Walters et al. (2025), conducted within the Yale Program on Climate Change Communication. Reviewing ten years of research, the authors found strong empirical evidence of a relationship between climate activism and media coverage (p. 2). This dissertation takes this finding as a point of departure and examines how this relationship manifests itself in the Hungarian media context.

The focus is not on the internal dynamics, organizational structures or strategic intentions of climate movements, but on their relationship with media visibility and framing. Among the various climate movements that emerged during the period examined, particular attention is given to Fridays for Future and Extinction Rebellion. Both developed an organizational presence in Hungary and engaged in repeated public mobilization, making them the most relevant movements for examining the relationship between climate activism and the Hungarian media agenda.

3.4 Youth-led climate activism in Hungary

To better understand the relationship between climate activism and the media in the Hungarian case, it is necessary to briefly situate climate activism – and environmental activism more broadly – within a historical context.

Although environmental thinking in Hungary can be traced back to the 1960s and 1970s, the socialist regime prohibited the formation of independent civil movements. During this period environmental issues were monopolized by state administrative bodies, and information about environmental problems reached the public only in a filtered, partial, and often distorted form. The ruling party actively blocked the dissemination of environmental information, and party documents of the Hungarian Socialist Workers' Party (MSZMP) in the 1970s explicitly claimed that autonomous environmental protection was unnecessary under socialism, as the socialist economy would allegedly ensure environmental protection

automatically. Citizen-initiated ecological groups were not permitted, and emerging initiatives were restricted by police surveillance and control (Loss, 2001, p. 278).

Following the 1972 Stockholm Conference on the Human Environment, state-led environmental programs were introduced in Hungary; however, genuine grassroots environmental activism only began to take shape during the late socialist period. Environmental clubs and initiatives emerging at the end of the socialist era typically pursued ecological rather than explicitly political goals. Among the various alternative organizations, the most significant initiative was the Duna Kör (Danube Circle). Founded in 1984, Duna Kör became a central actor in the protests against the Bős–Nagymaros dam project, symbolizing the emergence of an environmental civil society in Hungary. Other notable initiatives included the Levegő Munkacsoport (Clean Air Action Group, founded in 1988), as well as regional organizations such as Zöld Alternatíva and Védegylet. Following the regime change of 1989–1990, environmental activism became one of the early forms of citizen self-organization and played a significant role in expanding the public sphere. Several former environmental activists subsequently entered institutional politics, contributing to the formation of green political actors, including LMP and Zöld Alternatíva. At the turn of the millennium, Hungarian environmental activism entered a new phase with the establishment of Greenpeace’s national office in 2002, which introduced new repertoires of mobilizations and forms of public visibility into the Hungarian public sphere (Mikecz, 2018).

From 2010 onwards, institutional arrangements surrounding environmental policy were restructured under the Fidesz–KDNP government, resulting in a stronger centralization of environmental governance and a reduction in autonomous institutional representation (Buyse, 2018). As part of these changes, the independent Ministry of Environment was abolished, while new institutional bodies were created, including a Ministry of Energy and the Ombudsman for Future Generations, whose mandate encompasses the protection of citizens’ constitutional rights to a healthy environment and long-term environmental sustainability.

At the level of public discourse, research indicates a growing tendency to frame environmental and climate-related issues in political and ideological terms, including narratives that associate climate change with questions of national sovereignty rather than

approaching it primarily as a scientific issue (Vochocová *et al.*, 2024).¹¹ During the same period, the regulatory environment affecting foreign-funded non-governmental organizations became more restrictive. Although environmental organizations in Hungary continue to exhibit a degree of formal autonomy from political and economic subsystems, existing studies suggest that they operate within a power structure that offers limited institutional support for advocacy and protest-oriented influence (Gerő *et al.*, 2020; Mikecz, 2020).

A further and more pronounced shift occurred in the mid-2010s with the emergence of the contemporary climate movement. The establishment of the Hungarian branches of Fridays for Future and Extinction Rebellion in 2018 marked the beginning of a new phase in environmental activism, characterized by generational renewal and increasingly hybrid, media-oriented, and transnational forms of mobilizations (Mikecz and Oross, 2022).

In the Hungarian context, the activities of Fridays for Future and Extinction Rebellion became closely intertwined, often organizing protest events together. From 2018 onwards, the core events of the movement were the Friday school strikes, organized primarily by secondary school students. These actions were aligned with the broader objectives of the international climate movement, including demands to reduce greenhouse gas emissions and to uphold commitments formulated at the 2015 UN Climate Change Conference.

Alongside environmental and climate-related goals, the Hungarian climate movement also incorporated a generational dimension. Young participants frequently articulated responsibility for the climate crisis in generational terms, attributing the emergence of unsustainable economic and production systems to earlier cohorts (Kovács-Magosi & Hammond, 2023).

The most intensive phase of mobilizations occurred in 2019, when Hungarian FFF and XR groups closely followed the international protest calendar. National actions were organized

¹¹ One explanation for this political and ideological framing is that climate activists themselves do not approach climate change merely as a scientific issue but explicitly integrate it with a broader range of social and political causes. In their longitudinal study, (Neag and Nainová, 2025) examine the activities activists pursue on social media platforms and show that these actors strongly promote LGBTQ-related issues as well as explicitly pro-abortion positions. From this perspective, the responses of the Hungarian government appear to be directed not solely at climate change as a natural-scientific problem, but at the wider ideological agenda associated with contemporary climate activism.

in connection with the Global Climate Strikes held on 15 March, 24 May, and 27 September. The September mobilization coincided with the first Global Climate Week (20–27 September), during Table 6).

Based on fieldwork conducted during these protest events, Mikecz and Oross (2019) report that participation largely reflected the social composition of the mobilization context: women and young people were overrepresented, with the majority of participants aged between 15 and 19. Mikecz suggests that among Hungarian students, limited interest in institutional politics combined with dissatisfaction with democratic processes may contribute to environmental activism being framed less as conventional political participation and more as an alternative form of engagement (2024, p.476).

Longitudinal research by (Mikecz and Oross, 2022), following members of the Hungarian and Czech branches of Fridays for Future over three years, further highlights the high level of commitment among core activists. Participants described their engagement in the movement as extending well beyond episodic or leisure-oriented activity. Core members occupied clearly defined functional roles – such as overseeing Instagram communication or managing organizational websites – and committed sustained levels of time and responsibility, treating their involvement as equivalent to professional work.

DATE	EVENT	LOCATION(S)	NOTES
Mar 15, 2019	Global Climate Strike (FFF)	Budapest (Deák Ferenc tér → Kossuth tér)	First major Hungarian participation in the global school strike movement with several hundreds of participants
May 24, 2019	Second Global Climate Strike	Budapest + several regional cities	Coordinated actions in Budapest and provincial cities; part of global mobilisation
Sep 20, 2019	Global Climate Strike (Week for Future)	Budapest (Széll Kálmán tér)	Peak period of youth climate mobilization, marches and speeches
Sep 27, 2019	Climate protest / symbolic action (FFF and XR)	Budapest	Performative protest (“die-in”), strong visual elements
Nov 29, 2019	Global Climate Strike (COP25-related)	Budapest (smaller-scale)	Limited mobilization compared to September 2019
2020 (spring–autumn)	—	—	No major street protests due to COVID-19 restrictions – online actions only
Mar 25, 2022	VII Global Climate Strike	Budapest (Deák Ferenc tér → Kossuth tér)	First major post-COVID street mobilization with several hundred participants
Sep 23, 2022	VIII Global Climate Strike (FFF and XR)	Budapest (Batthyány tér → Kossuth tér)	Mobilization linked to global strike day
Oct 7, 2022	Climate strike / follow-up action	Budapest	Smaller follow-up demonstration linked to global mobilization

Table 6: Overview of key climate activism events in Hungary (2019–2022)

With the outbreak of COVID–19 pandemic, climate movements both globally and locally faced a turning point. The sudden disruption of in-person mobilization posed substantial challenges for them worldwide, requiring rapid adaptation to an unprecedented situation. As Rákos (2022) notes, the pandemic prompted the development of diverse adaptive strategies, with digital platforms becoming central arenas for coordination, communication, and continued activist engagement.

3.5 The Hungarian media environment as research context (2014-2024)

The Hungarian media system has undergone significant transformation since the democratic transition of 1989, when the country moved from a state-controlled media structure to a pluralistic environment. This development was similar to broader trends in East-Central Europe, where post-socialist countries aimed to create more pluralistic and democratic media systems (Hallin and Mancini 2012; Polyák 2019). Over time, the Hungarian media market became more diverse, combining public service media, commercial outlets, and a growing digital sector. At the same time, it continued to be shaped by changes in ownership and the influence of political and economic actors.

Despite early progress in democratization, Hungary – similarly to several other countries in the region – has been described as part of a *politicized media model*, where political actors maintain a notable presence in shaping media structures and content (Bátorfy 2022). In this context, the Hungarian media system is often interpreted as a *hybrid model*, combining market-based elements with varying degrees of political influence (Bátorfy 2022; Urbán). This political influence has a longer historical trajectory: Bajomi-Lázár (2013) conceptualizes the attempts of political parties to extend control over media institutions and resources as the “party colonization” of the media. More recent scholarship suggests that these tendencies intensified after 2010 and developed into a more systemic process of media capture (Urbán, 2024).

The political context is essential for understanding developments between 2014 and 2024. This period coincides with the continued governance of the Fidesz–KDNP coalition, which has held power since 2010 and maintained a parliamentary supermajority following the 2014, 2018, and 2022 elections. During this decade, the Hungarian media system underwent

notable structural changes, including ownership transformations, mergers, acquisitions, and institutional reconfigurations, which are frequently discussed in connection with broader political developments. Rather than interpreting these developments as isolated changes, Urbán (2024) describes them as interconnected elements of systemic state intervention in the media market, involving ownership restructuring, restrictions on competition, the market-distorting effects of state advertising, and pressure on independent media. Their cumulative and mutually reinforcing character is therefore central to understanding the transformation of the media system after 2010.

These developments are most often described critically by media scholars. For instance, Bátorfy (2022) notes that public service broadcasting has undergone substantial transformation, while several private media outlets have either changed ownership or ceased operations. Prominent examples include the closure of *Népszabadság* in 2016, the restructuring of *Origo.hu*, the sale of *TV2* to government-linked actors, and the transformation of *Index.hu* in 2020 (Bátorfy, 2022).

These processes have also been linked to broader changes in the structure of the public sphere. Some authors suggest that they may contribute to a situation in which certain political narratives gain greater visibility and reach, potentially influencing the dynamics of public communication and opinion formation (Benedek 2024). At the same time, these interpretations remain part of an ongoing academic debate.

Between 2014 and 2024, the Hungarian media landscape was characterized by significant ownership restructuring and increasing levels of concentration. A key development in this process was the establishment of the *Central European Press and Media Foundation (KESMA)* in 2018, which integrated approximately 500 media outlets into a single organizational structure. This development has frequently been discussed in relation to media pluralism and market competition. Empirical data from the Media Ownership Monitor (2023) illustrate the distribution of influence across different media sectors: pro-government influence reaches approximately 93% of the radio market, 52% of evening television news, 35% of online news, 48% of national daily newspapers, and 100% of regional daily newspapers, as well as around 20% of weekly magazines. These data suggest that influence

is more pronounced in traditional media sectors, while relatively greater diversity persists in the online sphere. This distinction is particularly relevant to the present research, which focuses on online news media: the digital sphere retains greater structural diversity than several traditional media sectors, while remaining embedded in the broader processes of political alignment and ownership restructuring described above.

Independent media actors continue to operate, particularly in digital segments. These include outlets such as *Telex*, *444.hu*, *24.hu*, *HVG*, and *Népszava*, as well as alternative platforms like *Partizán*. The Hungarian media system is also frequently characterized by a relatively high degree of political parallelism, meaning that media outlets may reflect broader political alignments. This characteristic is shaped by a combination of institutional arrangements, ownership structures, and economic factors, including the distribution of public resources, which influence market conditions and, indirectly, editorial practices (EUI). At the same time, the distinction between government-aligned and independent media should be treated as an analytical simplification rather than a strict binary division. Polyák, Urbán and Szávai (2022) identify a specific category of “grey-zone media” that may appear to increase the diversity of the media landscape while remaining strongly politically dependent. Their findings therefore indicate that the formal availability of multiple news sources does not necessarily correspond to an equivalent degree of effective media pluralism.

Economic and regulatory factors have also played an important role in shaping the Hungarian media system. One frequently discussed element is the allocation of state advertising, which has been identified as a factor influencing market competition. Some scholars argue that this distribution may favor certain media actors, thereby contributing to differences in financial sustainability across the sector (Polyák 2019). Economic pressures have also contributed to ownership changes. For example, declining revenues in parts of the media market played a role in the restructuring of *Index.hu* in 2020.

The Hungarian media environment is widely accessible. According to the Nézőpont Institute (2024), 99.9% of the adult population consumes media regularly, with television continuing to play a central role, reaching 78% of the population (approximately 6.2 million people). At the same time, digital media and online news platforms have become increasingly important

sources of information. Survey data also suggest that audiences consume a variety of media sources: approximately 71% of respondents report using government-critical media, while 64% consume pro-government outlets, and relatively few rely exclusively on one type. In addition, the number of government-critical outlets has increased from 36 in 2010 to 61 in 2024, indicating continued activity and entry in the media market (Nézőpont 2024). However, the number of available outlets should not be equated directly with effective media pluralism, as it does not capture differences in audience reach, political dependence, financial resources, or the capacity of individual outlets to influence the public agenda (Polyák, Urbán and Szávai, 2022).

These findings suggest that, despite structural concentration in certain segments, a degree of pluralism persists at the level of media consumption. At the same time, the coexistence of different media segments contributes to a more segmented public sphere, where audiences rely on different sets of sources.

International indicators also reflect changes in the Hungarian media system over the past decade. According to Reporters Without Borders (RSF), Hungary's position in the World Press Freedom Index declined from around 23rd place in 2010 to approximately 67th in 2024 and 68th in 2025. Within the European Union, Hungary is among the lower-ranked countries in terms of press freedom. This development reflects a longer-term trend rather than a single turning point. While the most notable decline occurred in the late 2010s and early 2020s, recent data suggest a relative stabilization. At the same time, some analyses emphasize that journalists in Hungary are generally able to work without formal censorship and that the legal framework aligns with European standards (Nézőpont 2024).

Overall, the Hungarian media system between 2014 and 2024 can be described as a complex and evolving environment in which elements of pluralism coexist with increasing levels of concentration and political alignment, resulting in a dynamic but uneven media landscape.

4. METHODOLOGY

This chapter presents the methodological framework of the study. It begins by outlining the overall research design and introducing the empirical case on which the analysis is based. It then details the procedures applied for data collection and data preparation, including the steps of data cleaning. This is followed by a presentation of the analytical strategies adopted in the study, addressing both quantitative and qualitative methods. The discussion concludes with an assessment of the methodological limitations of the research.

4.1 Research design and method

From a research design perspective, this dissertation employs a longitudinal case study approach to examine the media coverage of climate change in the Hungarian media between 2014 and 2024, with particular attention to the role and influence of climate activism. As Yin (2018) notes, such a design is especially suitable for analyzing a single case across multiple points in time, allowing for the systematic observation of change rather than static comparison. Covering a ten-year period, the longitudinal design enables the analysis to trace not only fluctuations in the visibility of climate change on the Hungarian media agenda, but also more enduring patterns and turning points. This approach responds to a key gap identified in environmental communication research. As Hansen (2015) argues, content-focused studies examining patterns of media coverage over extended periods have received relatively limited scholarly attention, despite their considerable potential for advancing our understanding of the dynamics of environmental communication. Longitudinal analyses of media portrayals of environmental issues make it possible to move beyond short-term event effects and to capture processes of meaning-making, reframing, and agenda drift as they unfold over time.

Motivated by the nature of the research problem rather than by methodological pluralism alone, the study further employs a sequential explanatory mixed-methods design (Creswell & Plano Clark, 2011: 69–71), as illustrated in Figure 8 below. The design is sequential in the sense that the quantitative phase is conducted first (Phase I), consisting of a media agenda analysis that identifies patterns and trends in climate change coverage over time. This is

followed by a qualitative phase (Phase II), which involves an in-depth media framing analysis and is explicitly informed by the findings of the initial quantitative phase. The design is explanatory as the quantitative results guide both the selection of cases and the analytical focus of the qualitative analysis. This allows the study to interpret how meaning-making processes in media coverage relate to observed agenda-level trends. This type of design – i.e. the combination of a longitudinal case study and a sequential explanatory mixed-methods is justified by the need to analyze change over time while maintaining sensitivity to context-specific media dynamics. A purely cross-sectional design would not capture temporal shifts in media attention, while a single-method approach would limit the analysis either to patterns of visibility or to interpretative claims without empirical grounding. The chosen design therefore provides an empirically necessary balance between temporal scope and analytical depth.

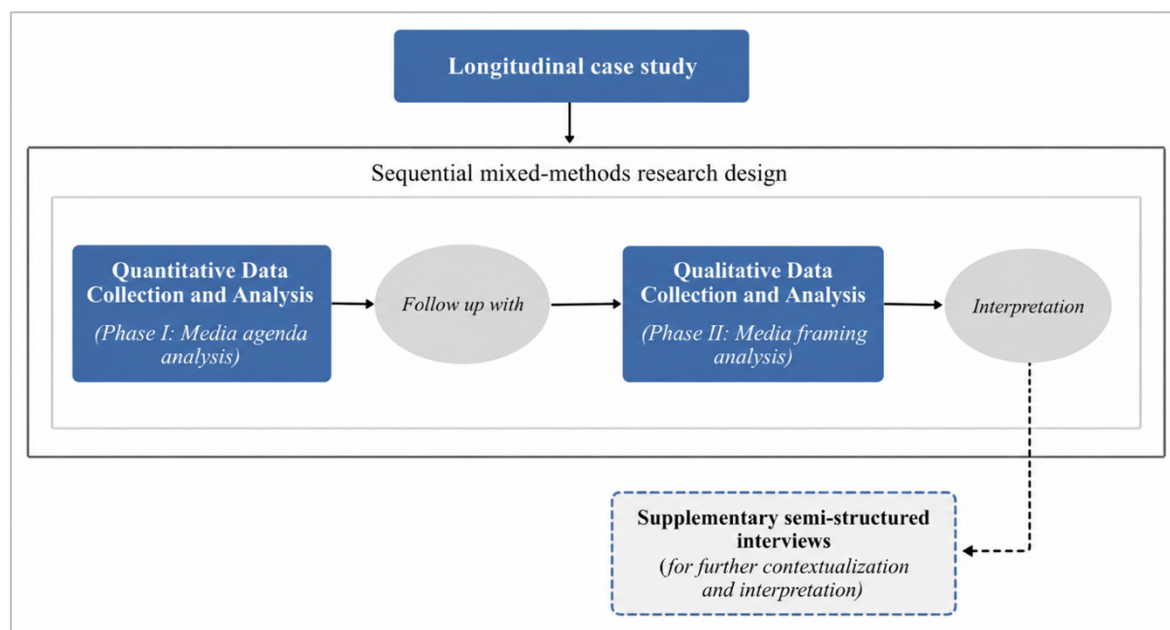


Figure 8: The logic of sequential mixed-methods research design based on Creswell & Plano Clark (2011) (Own editing, 2025)

Phase I: Quantitative Media Agenda Analysis

The first phase consists of a quantitative media agenda analysis which aims to map the temporal changes of climate change coverage in the Hungarian online news media. The aim of this phase is to identify patterns of media attention over time by analyzing the frequency,

volume, and timing of climate-related reporting, and by detecting major peaks, declines, and longer-term trends in coverage. The primary analytical question guiding this phase is: when, how frequently and where does climate change appear in Hungarian news media over time?

Methodologically, the analysis follows well-established practices in large-scale media agenda research and longitudinal media monitoring regarding keyword-based data collection and automated retrieval of climate-related news content, as applied by the Media and Climate Change Observatory (MeCCO, 2025).¹² Empirically, Phase 1 relies on the full OBSERVER Kft. media monitoring dataset, which contains key metadata such as publication date, media outlet, relevance scores, and article titles. The dataset was generated through keyword-based scraping using a predefined list of climate-related terms (the detailed description of the data collection is presented in Chapter 4.3).

Phase 2: Qualitative Media Framing Analysis

Building on the agenda-level patterns identified in Phase 1, the second phase employs qualitative media frame analysis. Moving beyond questions of frequency and volume, this phase focuses on the substantive content of news articles and the dominant interpretative frames through which climate change is constructed across different media outlets and time periods. The guiding analytical question of this phase is: How is climate change framed in media coverage?

The qualitative analysis is conducted manually on a randomly selected sample of climate-related news articles retrieved using the keyword “climate change”. The sample is drawn from the full study period (2014–2024) and is analyzed using a pre-determined climate

¹² The Media and Climate Change Observatory (MeCCO) is a long-standing international research initiative composed of leading scholars in environmental and climate change communication. They systematically tracks climate change coverage across major news media worldwide, building on longitudinal content analysis of prominent print and broadcast outlets across multiple continents. Over several decades, MeCCO has produced one of the most comprehensive time-series datasets on climate change media attention, enabling the examination of issue-attention cycles, agenda dynamics, and cross-regional variations in climate discourse. Its large-scale quantitative media monitoring framework – particularly its emphasis on frequency tracking and longitudinal trend analysis – provided direct methodological inspiration for the design of *Phase I* of the present study, which similarly maps agenda-level developments in climate change coverage over time (<https://mecco.colorado.edu>).

change frame typology. The analytical framework and coding procedures are presented in detail in Chapter 4.4.5.

Supplementary semi-structured interviews

As a qualitative follow-up to the content analysis, semi-structured interviews were conducted with newsroom professionals to contextualize and further interpret the empirical findings. Rather than constituting a separate empirical phase, the interviews served a supplementary and interpretive function, providing an inside perspective on agenda-building processes and allowing the patterns identified in the first two phases to be examined against journalists' own accounts of newsroom practices. The interview material was thus used to explain and nuance the quantitative findings, as well as to identify instances in which journalists' accounts supported or challenged the patterns observed in the content analysis.

4.2 Data sources: OBSERVER media monitoring database

This study is based on media monitoring data from the OBSERVER Kft. media monitoring database. The same large-scale dataset, which systematically tracks news coverage in Hungary, is used for both the quantitative and qualitative analyses.

The media appearance data used in the research were collected between June and July 2025, and were provided by OBSERVER Kft.¹³, which has several decades of media monitoring experience. OBSERVER service provides the opportunity to conduct keyword-based searches related to the research topic (climate change, climate movements) within articles and news programs published in printed newspapers, online portals, as well as television and radio news broadcasts. The service supports the identification of relevant media appearances and provides information on selected metadata of the articles, including the date of publication, author, language, advertising value equivalency, and other related indicators.

Full-text materials are also available in the OBSERVER database (including online articles, printed press publications, and full transcripts of radio and television broadcasts). These materials are accessible exclusively for on-platform viewing and only for the duration of the

¹³See further at <https://observer.hu>.

subscription period. The separate export, full-text use, citation, or reproduction of these materials is not permitted. As a result of this restriction, framing analysis could not be conducted on full-text print and audiovisual materials; consequently, these materials fall outside the analytical scope of the study. By contrast, articles published on online news portals – which were subjected to framing analysis – remain fully accessible online to this day. These items were easily identifiable and retrievable based on the downloaded data tables that contained metadata.

The OBSERVER database operates using a keyword-based scraping method, which requires the researcher to compile a predefined list of keywords and keyword combinations (discussed in detail in the following section). In addition to entering keywords, the search interface allows the researcher to apply filters such as year of publication, media type (online, print, audiovisual), media outlet and relevance score. The raw data exported from the database in Excel format include the following variables (see Table 7):

- Relevance score
- Title
- Source (name of the media outlet)
- Date of publication.

	A	B	C	D
	Relevancia/ relevance score	Cím/Title	Forrás/Source	Megjelenés dátuma/ Date of publication
1				
2	260	Holland valóság - rablásért felfüggesztett, autó hírek.sk		2024.12.26 13:57:27
3	222	Az Országos Bírói Tanács döntése ellen, a bírói hu.euronews.com		2024.12.11 14:19:05
4	249	Nagy-Britannia a világelső a szélsőséges klíma hu.euronews.com		2024.12.11 11:48:33
5	290	Így olajozzák a biztosítótársaságok az éghajlat amiidonk.hu		2024.10.29 09:28:07
6	123	Az akarat optimizmusa: ökoszocialista álmodó amiidonk.hu		2024.10.17 12:28:13
7	327	Újra őrizetbe vették a klímaváltozás Jeanne d' 168.hu		2024.10.07 10:14:00
8	322	Demonstráció	Magyar Narancs	2024.09.12 03:00:00

Table 7: Example of the raw dataset exported from the OBSERVER database, including relevance score, article title, source, and date of publication (Own editing, 2025)

Following the description of the variables contained in the downloaded datasets, it is necessary to clarify how the relevance score used by the OBSERVER database is calculated and interpreted. The OBSERVER database applies a keyword-based retrieval process

grounded in Boolean logic. Media items are retrieved if they satisfy predefined search queries formulated using logical operators such as AND, OR, and NOT (Huang, Zhu and Guo, 2020). This initial retrieval step produces a binary outcome, whereby documents are either included in or excluded from the dataset.

For the retrieved items, the system subsequently assigns a relevance score, reflecting the strength and contextual prominence of the search terms within each article.

The relevance score is determined by three main factors:

- (1) the frequency of a given keyword within the article,
- (2) the inverse document frequency of the keyword across the entire media corpus¹⁴, and
- (3) the length of the document in which the keyword appears.

To illustrate this logic, an article in which the term ‘climate change’ appears multiple times in the headline and lead paragraph will receive a higher relevance score than an article where the same term appears only once in passing within a longer text. Similarly, an article focusing explicitly on Fridays for Future will be ranked as more relevant than a general political article that mentions the movement only incidentally.

Based on Kowalski (2011), the model assigns higher relevance scores to articles in which climate-related terms appear frequently, are uncommon in the wider media corpus, or occur in prominent positions such as the title or lead. As a result, relevance-based filtering supports the selection of media items in which climate change constitutes a substantive focus rather than a marginal reference. The very same filtering logic was used to guide the construction of the final corpus for the framing analysis, as discussed in more detail in the subsequent sections.

¹⁴ Inverse document frequency captures how distinctive a keyword is within the overall media database: terms that appear in many articles carry less informational value than terms that occur in relatively few texts.

4.3 Data collection

4.3.1 Keyword-based data collection

Technological developments have substantially expanded the possibilities of large-scale media analysis. Advances in digital data storage, computational capacity, and automated text processing have made it increasingly feasible to collect, organize, and analyze extensive repositories of media content spanning long time periods (Manovich, 2012). As a result, communication and media scholars have increasingly relied on large-scale digital news databases and keyword-based retrieval techniques to examine longitudinal patterns in media coverage.

Keyword-based data collection also offers important advantages for longitudinal research designs. By applying the same set of search terms across an extended time frame, it becomes possible to trace shifts in media attention, identify periods of heightened or low visibility, and compare patterns across different media outlets under consistent retrieval conditions. At the same time, this method requires careful operationalization, as keyword selection directly shapes the boundaries of the empirical corpus and determines which forms of media content are included or excluded from the analysis.

As no prior large-scale study had examined the relationship between climate activism and the media agenda in a systematic way, no existing keyword list could be directly adopted. Consequently, the author developed a tailored keyword list based on a synthesis of the relevant literature. The keywords were organized into three categories, each serving a distinct analytical purpose.

- 1.) *Core issue-related keywords*: This category follows well-established precedents in international climate communication research. Most large-scale media monitoring projects and studies rely on direct equivalents of the terms “climate change” and “global warming” as core issue identifiers (for example Boykoff 2011; Han et al. 2017). Major initiatives such as the Media and Climate Change Observatory (MeCCO) similarly use these terms as the primary basis for tracking climate-related media coverage over time. In line with this literature, these keywords form the backbone of the present study, ensuring that the retrieved articles engage explicitly

with climate change as a public issue rather than with environmental topics more broadly.

- 2.) *Activism-related keywords*: The second category includes terms directly referring to climate protests and prominent activist actors (for example Fridays for Future, Extinction Rebellion, (Greta) Thunberg). These keywords were selected to systematically retrieve media content that is explicitly connected to youth-led climate activism.
- 3.) *Interpretative and framing-related keywords*: To capture variations in how climate change is discursively framed, the search strategy also included rhetorically intensified expressions, also referred to as “emergency language” such as “climate crisis” or “climate catastrophe”. The inclusion of these terms was theoretically motivated by the literature (for example Hodder and Martin, 2009; Feldman and Hart, 2021; McHugh, Lemos and Morrison, 2021) which shows that climate activism has played a key role in introducing and normalizing more urgent and evaluative climate-related language in public and media discourse.

Keyword category	Hungarian keyword	English equivalent	Number of hits
Core issue terms	klímaváltozás	climate change	191 976
	éghajlatváltozás	climate change (alt.)	77 612
	globális felmelegedés	global warming	55 565
Framing-sensitive terms	klímaválság	climate crisis	10 756
	klímakrízis	climate crisis (alt.)	768
	klímakatasztrófa	climate catastrophe	5 040
	klíma apokalipszis	climate apocalypse	61
Activism-related terms	klímatüntetés	climate protest	275
	klímasztrájk	climate strike	687
	klímamozgalom	climate movement	371
	klímaaktivista	climate activist	2 575
	Fridays for Future	Fridays for Future	2 050
	Extinction Rebellion	Extinction Rebellion	1 546
	(Greta) Thunberg	Greta Thunberg	6 110
	Just Stop Oil	Just Stop Oil	574
	Letzte Generation	Letzte Generation	326

Table 8: Keyword categories and search terms applied in data collection (Own editing, 2025)

The aim of the keyword selection process was not to exhaustively cover every possible climate-related or activism-related term. Instead, the objective was to develop a focused and analytically meaningful keyword set suitable for large-scale longitudinal analysis. Keywords focusing on environmental topics such as biodiversity loss, waste management, air pollution, or nature conservation were excluded unless these issues were explicitly linked to climate change. Likewise, articles addressing energy prices, fuel costs, or energy security were excluded when these topics appeared in isolation and without explicit reference to climate change. While such issues are often politically and economically salient, their inclusion would have conflated climate discourse with broader energy and economic debates, thereby reducing analytical clarity.

In line with this approach, positive or affirmative expressions related to climate protection (e.g., “climate action” or “climate protection”) were also not included in the keyword set, as the analysis focused specifically on terms associated with climate activism. Such expressions occur widely across policy, institutional, and educational contexts and therefore cannot be reliably interpreted as indicators of activism.

Table 8 presents the final list of keywords used in the study. This list was finalized after multiple rounds of pilot searches. Keywords and keyword combinations that yielded fewer than 30 results over the ten-year period were excluded from the final list. Such low-frequency occurrences were considered insufficient for drawing generalizable conclusions and therefore unsuitable for systematic analysis.

4.3.2 Language-specific considerations

All searches were conducted in Hungarian, as the OBSERVER media database operates exclusively in Hungarian. Due to specific characteristics of the Hungarian language, certain methodological considerations were necessary. In Hungarian, a single phenomenon may be referred to using multiple expressions. For example, “climate change” has more than one commonly used Hungarian equivalent (“klímaváltozás” and “éghajlatváltozás”). In such cases, searches were conducted using all relevant Hungarian variants, and the resulting datasets were retrieved accordingly.

Another linguistic characteristic concerns the recent introduction of climate-related terminology into Hungarian public discourse over the examined period. Several expressions entered the language directly through English-language media and activist discourse, such as “climate crisis” (Kovács-Magosi, 2023). These terms often coexist in two forms: a loan translation retaining the English lexical structure (e.g. “climate crisis” – “klímakrízis”) and a fully Hungarian equivalent (e.g. “klímaválság”). In such cases, searches were conducted for both variants, and all corresponding results were included in the dataset.

Based on these considerations, the final keyword list included terms that were relevant in the Hungarian media context and consistent with terminology used in international climate communication research.

4.3.3 Database filters and data retrieval

The OBSERVER media monitoring database allows the application of several built-in filters at the query stage, such as the time period, media outlet, and content type. At this stage of the data collection process, the following filters were applied directly within the database: time frame (1 January 2014 – 31 December 2024) and media type (online news articles).

No additional filtering criteria were applied within the database itself. All further refinement of the dataset was carried out during the subsequent data cleaning and preprocessing phase (see Section 4.3).

Each keyword included in the study was entered as an independent search query, and the results of each query were exported as separate data files. Subsequently, all keyword-specific datasets were merged into a single consolidated corpus (‘master table’).

Full-text versions of the articles were not downloaded directly from the OBSERVER database. Instead, article texts were retrieved manually by the author using the available metadata and URLs, ensuring access to the complete published content for qualitative analysis.

4.3.4 Data cleaning procedures

The raw dataset consisted of more than 300 000 media items published between 2014 and 2024, representing the full set of articles retrieved through the initial keyword-based search,

prior to any data cleaning or relevance filtering. To ensure the reliability of both analyses, the database was subjected to a multi-step data cleaning procedure, and the resulting cleaned dataset was used for both the quantitative and qualitative analyses. The following section presents these steps and decision rules in detail.

1. Removal of records with missing titles

As a first step, all records lacking an associated article title were removed from the dataset. Entries with missing titles typically result from technical errors, unsuccessful content loading, or non-interpretable records, and therefore cannot be considered valid media items. This step ensured that only analytically meaningful articles remained in the database.

2. Exclusion of non-Hungarian domains (.hu domain filtering)

Since the study focuses explicitly on climate change coverage within the Hungarian media system, only articles published on websites with a .hu domain were kept. Websites such as hu.euronews.com, although publishing content in Hungarian, are technically not Hungarian domains and were therefore treated as a separate category and excluded from the analysis. This filtering step ensured territorial and media-system coherence in the dataset.

3. Removal of MTI content

Content originating from the Hungarian News Agency (MTI) was excluded from the dataset. MTI materials are typically syndicated wire reports that are automatically republished across multiple outlets rather than the result of independent editorial decision-making. Since the aim of the study is to examine agenda-setting processes shaped by editorial choices, maintaining MTI content would have artificially inflated media volume by counting identical news items replicated across numerous outlets.

4. Exclusion of low-relevance articles

The OBSERVER database assigns a Boolean-based relevance score indicating the degree to which an article is related to climate change. Articles with relevance scores between 0 and 39 primarily reference climate only incidentally without containing meaningful climate-related content. The threshold of 40 was determined through empirical validation, rather than subjective judgement. The OBSERVER relevance metric is a predefined, system-embedded

tool that measures the semantic proximity of an article to the climate domain. Content within the 0–39 range overwhelmingly consists of metaphorical, incidental, or contextually non-environmental uses of the term ‘climate’, whereas articles scoring 40 or above reliably contain substantive climate-related reporting.

To verify the appropriateness of the relevance threshold, random samples were drawn from articles scoring above and below the selected cut-off (40). It showed that low-relevance items were predominantly off-topic, while articles scoring ≥ 40 consistently demonstrated meaningful engagement with climate-related issues. In addition, sensitivity analyses applying alternative thresholds (≥ 30 , ≥ 40 , ≥ 50) further confirmed that the choice of 40 does not alter temporal trends or outlet-level distributions, indicating that the dataset is robust to reasonable variations in cut-off values.

In addition, lexical study of the text revealed that climate-specific terminology (e.g. climate change, climate crisis, emissions, mitigation) is concentrated almost exclusively within the 40–100 relevance range, whereas the lower range captures linguistic noise and rhetorical usages unrelated to environmental issues, particularly in political discourse. Taken together, these checks demonstrate that the 40-point cut-off constitutes a methodologically valid threshold.

5. Handling duplicate content

The raw dataset contained a substantial number of duplicate records, including identical titles, identical publication instances, or content republished word for word across multiple outlets. Duplicate records were identified and handled according to the following rules:

- a) In cases where identical article titles appeared across multiple records, the version with the highest relevance score was retained, ensuring that the most substantively climate-related instance remained in the dataset.
- b) If multiple records shared both identical titles and identical relevance scores, the record with the earliest timestamp (measured at second-level precision) was retained. This choice reflects the most methodologically defensible assumption that the earliest publication represents the original appearance of the article.

6. Removal of duplicate KESMA-affiliated¹⁵ media content

County-level newspapers belonging to the KESMA media portfolio frequently republish centrally produced articles (for example originating from Magyar Nemzet) with identical content and timestamps. Without correction, this practice would have resulted in the same article being counted multiple times – often across 10–18 county-level outlets –, thereby artificially inflating media volume and disproportionately weighting government-aligned media content.

During the data cleaning process, these replicated records were automatically filtered out, as they shared identical titles, content, and publication times and were therefore treated as a single media item. For methodological transparency, the Table 9 presents a screenshot illustrating how the same article appeared simultaneously across fourteen county-level portals and how these instances were automatically identified as duplicates.

Relevancia	Cím	Forrás	Megjelenés dátuma	DUPLIKÁCIÓ?
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	kemma.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	nool.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	boon.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	zaol.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	feol.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	bama.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	szoljon.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	duol.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	teol.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	delmagyar.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	sonline.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	szon.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	haon.hu	7/9/22	DUPLIKÁCIÓ
58	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	veol.hu	7/9/22	DUPLIKÁCIÓ
57	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	kisalfold.hu	7/9/22	DUPLIKÁCIÓ
57	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	beol.hu	7/9/22	DUPLIKÁCIÓ
57	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	baon.hu	7/9/22	DUPLIKÁCIÓ
57	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	vaol.hu	7/9/22	DUPLIKÁCIÓ
57	„Népfelkeléstől” tart Timmermans, ha a télig nem sikerül kezelni az európai energia	heol.hu	7/9/22	DUPLIKÁCIÓ

Table 9: Example of duplicate KESMA content in the database (Own editing, 2025)

The structural characteristics of the KESMA – presented in Chapter 3.5 in detail – media portfolio are methodologically relevant. Content reproduction within this system does not reflect independent content production or editorial prioritization but rather centralized redistribution (Benedek, 2024). As such, multiple appearances of the same article do not

¹⁵ The Central European Press and Media Foundation, CEMPMF – Közép-Európai Sajtó és Média Alapítvány, KESMA, was established in 2018, consolidated many pro-government media outlets under a single foundation-based ownership and governance structure, for example *Origo*, *Hír TV*, *Mandiner*, *Magyar Nemzet*, etc.

constitute additional informational value or independent agenda-setting signals. Removing duplications in this context therefore represents not merely a technical cleaning step but a necessary correction for structural distortion, enabling a more accurate examination of agenda-setting dynamics.

4.4 Data Analysis

This section introduces the structure of the data analysis by outlining the two analytical phases of the study. To enhance transparency, Table 10 provides an overview of the research phases, their objectives, datasets, and analytical approaches. This table serves as an orienting framework that summarizes how the longitudinal analysis is organized and how the different components of the study relate to one another.

	Phase 1: Quantitative media agenda analysis	Phase 2: Qualitative news frame analysis	Supplementary semi-structured interviews
Aim	To measure when, how often and where climate change appears in the Hungarian online news media (2014–2024). Identifying peaks, declines, and longitudinal trends.	To examine how climate change is represented in online news articles by identifying dominant frames and thus giving interpretive depth.	To contextualize and further interpret the findings by providing an inside perspective on journalistic agenda-building processes.
Data source	OBSERVER Kft. monitoring database. The datasets were generated through keyword-based scraping, based on a list of predetermined climate-related terms.		24.hu, Telex, HVG, Mandiner
Sampling	Not applicable	random sampling	Not applicable
Corpus	Cleaned general climate-related media corpus (2014–2024) (only item metadata)	randomly selected full-length online news articles, N=300	Four semi-structured journalist interviews.
Analytical focus	Frequency, volume and timing of climate-related media coverage	Frame change over time	Journalistic and newsroom practices related to agenda-building
Output	Frequency analysis, temporal aggregation, peak and issue fatigue detection	Frame coding, interpretive and comparative analysis across time periods and media outlets	Contextual interpretation of findings and newsroom-level insights into agenda-building.
Strengths	High reliability due to large-N data; captures long-term structural trends and patterns invisible at the article	Interpretive depth; insight into frame construction	Explain, support or challenge the empirical findings
Limitations	Cannot explain why media cover climate change in certain ways; limited insight into framing.	Not generalizable to the entire dataset.	Limited number of interviews (N=4), includes journalists only and does not capture the perspectives of other newsroom professionals.

Table 10: Quantitative and qualitative analytical phases of the research (Own editing, 2025)

4.4.1 Data type and unit of analysis

The dataset consists of online news content collected from Hungarian digital media outlets. The unit of analysis is the individual media item, operationalized as a single online news article, including all types of online journalistic content such as news reports, opinion pieces, commentaries, and feature articles. The analysis is restricted to online media content, while

print newspapers, radio broadcasts, and television materials are excluded. The focus on online news media is justified by the central role of digital platforms in contemporary news production and consumption, as well as their continuous publication, rapid reaction to public issues, availability and suitability for long-term media agenda analysis (Chadwick, 2017). This shift reflects a broader global trend in which print media have been steadily losing importance since the emergence of online media, a pattern also confirmed in the Hungarian media landscape (NMHH, 2022).

For the supplementary qualitative analysis, the interview transcripts constituted the empirical material, with each interview treated as a unit of analysis. The transcripts were analyzed thematically to identify recurring themes and explanations that helped interpret the media analysis findings.

4.4.2 Top 10 (+1) media outlets included in the analysis

Relying on a single media source in media monitoring research, rather than drawing on a range of sources, is highly problematic, as it limits the ability to observe variation in coverage patterns and framing across different media outlets (Woolley, 2000). In this study, media diversity was easily achievable, as the OBSERVER Kft. database covered the full range of Hungarian online news outlets. At the same time, it was necessary to decide how to narrow the focus to a manageable set of media outlets while still preserving sufficient diversity. There were two possible ways to construct the list of media outlets.

The first option was to identify those outlets that published the highest number of articles on the selected topics, based on the applied keywords (e.g. climate change, climate activism, Fridays for Future etc.). While this approach would have reflected topical intensity, it would have resulted in a constantly shifting list of outlets over time, making consistency and comparability difficult to maintain.

The second option was to rely on external rankings produced by independent organizations and industry reports, which identify the most prominent Hungarian online news outlets based on readership and reach. This approach offers greater stability and allows outlet selection to be grounded in broader media relevance rather than topic-specific fluctuations.

Before finalizing the media list, several contextual factors had to be considered. First, given that the study covers a ten-year period (2014–2024), it was unrealistic to rely on a single, fixed outlet list throughout the entire timeframe. Second, the Hungarian media landscape underwent substantial structural changes during this period, including ownership transformations, shifts in editorial orientation, the closure of some outlets, and the emergence of new ones. To address these challenges, the ten-year timeframe was divided into sub-periods. The media landscape corresponding to each sub-period is presented during the data analysis, providing contextual background for the interpretation of the results.

Due to the inconsistent publication of rankings across the investigated period, it was not possible to rely on a single source. The next section introduces the reports and organizations whose rankings were used to construct the media outlet lists, along with a brief overview of their methodological approaches.

The National Media and Infocommunications Authority of Hungary (NMHH)¹⁶ published a series of Media Market Reports between 2022 and 2025, measuring online media consumption based on data from the Digital Audience Measurement Council and Gemius (Gemius–DKT). The reports (2022, 2024, 2025) present rankings of the ten most visited domestic online news outlets between 2019 and 2024, as well as daily visit metrics for the online platforms of print media products over the same period. While these data provide a robust and standardized overview of online media reach, they do not cover the full timeframe examined in this study.

To complement this source, data from the Reuters Institute for the Study of Journalism, operating in collaboration with the University of Oxford, were also used. The Reuters Institute Annual Digital News Reports systematically monitors the online news media landscape, including Hungarian data since 2016, offering a consistent basis for identifying the most influential domestic news outlets. Methodologically, these reports rely on an annual online survey conducted by YouGov, based on nationally representative samples of approximately 2,000 respondents in Hungary, stratified by age, gender, education, and

¹⁶ Nemzeti Média- és Hírközlési Hatóság (NMHH), <https://nmhh.hu>

region.¹⁷ Based on survey data, the Reuters Institute compiles annual lists of the most relevant online news outlets, using average weekly news use and reach as key indicators. When considered over time, these data identify the most prominent Hungarian online news outlets for each year between 2016 and 2024.

The most recent report, published in June 2025, examines media use in 2024 and early 2025 and is therefore particularly relevant to the present study. Its findings indicate that online news media had already become the primary source of news in Hungary by 2016, while the role of print and television news declined steadily in the subsequent years.

Building on the combined evidence provided by the Reuters Institute Digital News Reports and the Media Market Reports of the National Media and Info Communications Authority of Hungary (NMHH), this study applies a consistent approach to media outlet selection across the 2014–2024 period. Given the lack of a single ranking that would cover the entire timeframe, outlet selection relies on the joint consideration of audience-based indicators of use and reach, allowing for comparability across years while remaining sensitive to changes in the media landscape.

Based on these sources, outlets were ranked on an annual basis using the available indicators, and the resulting rankings were aggregated within each sub-period. This procedure made it possible to identify those outlets that were consistently prominent within the Hungarian online news market, rather than those whose relevance was limited to shorter time spans. To maintain a clear analytical focus, platforms without a public affairs orientation – such as purely sports or entertainment websites – were excluded from the sample.

The final selection consists of ten outlets for each sub-period, reflecting the main political and structural divisions of the Hungarian media system. The selected outlets include independent or government-critical news organizations, pro-government outlets, a primarily economic-focused news site, and a high-reach tabloid outlet. This composition ensures

¹⁷ [Methodology | Reuters Institute for the Study of Journalism](#)

sufficient diversity in editorial orientation and audience reach, while keeping the scope of the analysis manageable.

The following section presents the selected online news outlets by sub-period and situates them within the Hungarian online media landscape between 2014 and 2024. Across the full timeframe, the analysis covers eleven major online news outlets, while each sub-period includes ten outlets, reflecting changes in audience relevance and media structure over time. The section provides a comparative overview of the outlets – Index, 24.hu, Telex, 444.hu, Origo, HVG, Magyar Nemzet Online (MNO), Mandiner, Blikk, Portfolio, and Hirado.hu – across three analytical periods. Each outlet profile briefly outlines editorial characteristics, ownership background, and political orientation, drawing on academic literature, regulatory reports, and international comparative media research.

The composition of the outlet lists reflects both long-term audience relevance and structural change within the Hungarian online media system. While several outlets remained influential throughout the decade, others entered or exited the top ten because of ownership changes, editorial realignments, or the emergence of new actors. Telex.hu does not appear in the earlier period because it was founded only in late 2020, while Hirado.hu – the online news portal of Hungary’s public service media – was among the most widely accessed platforms during the first half of the examined period and therefore forms part of the top ten in those years. These shifts reflect broader changes in the media system rather than methodological inconsistency.

Index.hu

Index.hu was one of the most widely used general-interest online news portals in Hungary during the 2010s. It combined daily news coverage with investigative reporting and opinion content, and for much of the period played a central role in the Hungarian digital public sphere. Until July 2020, academic research generally classified Index.hu as editorially independent (Bátorfy, 2017; Bajomi-Lázár, 2019).

In July 2020, changes in the ownership and governance structure led to the resignation of most of the editorial staff. Following this development, the outlet’s editorial orientation shifted, and subsequent analyses have described Index.hu as operating within a government-aligned media environment (Bátorfy, 2020). At the same time, some studies characterize the

platform as part of the so-called “grey zone” media, meaning that while it shows a degree of alignment with government narratives, it may still provide limited space for critical perspectives and critical voices (Polyák, Urbán, and Szávai 2022).

24.hu

24.hu operated throughout the examined period as one of the largest commercial online news portals in Hungary. It provided broad coverage of public affairs, politics, and social issues, and consistently ranked high in audience reach. Academic mappings of the Hungarian media system classify 24.hu as editorially independent, with no identified ownership or orientation change between 2014 and 2024 (Polyák, 2019). Audience surveys report stable use and medium-to-high trust levels, particularly among urban and younger users (Reuters Institute).

Telex.hu

Telex.hu was launched in October 2020 by former journalists of Index.hu. From its foundation, it operated under a mixed funding model based on subscriptions, reader donations, and advertising. Part of its funding comes through project-based grants from international organizations, including the Google News Initiative, the European Journalism Centre, and the IJ4EU – Investigative Journalism for Europe fund. International surveys conducted since 2021 regularly identify Telex.hu as one of the most trusted Hungarian online news outlets. Academic analyses classify it as editorially independent, with a strong emphasis on transparency and audience accountability (Urbán, 2021; Reuters Institute).

444.hu

444.hu has operated as a digitally native online news outlet since 2013. Its profile is defined by political and public affairs reporting, with a strong focus on investigative journalism. 444.hu is financed through a mixed revenue model that includes advertising income, reader contributions, and project-based grants from international journalism support programs (European Commission and foundations). Throughout the examined period, no ownership or editorial orientation change was identified. Academic literature consistently classifies 444.hu as an independent, government-critical outlet with a stable but more limited audience reach compared to mass-market portals (Bátorfy, 2020).

HVG.hu

HVG.hu is the online edition of the weekly magazine HVG and combines daily news reporting with political and economic analysis. During the entire 2014–2024 period, it remained one of the most influential online news outlets in Hungary. Academic sources consistently classify HVG.hu as editorially independent. Surveys regularly place it among the most trusted Hungarian news outlets, particularly among highly educated audiences (Bajomi-Lázár, 2019; Reuters Institute).

Origo.hu

Origo.hu underwent significant ownership and editorial changes in the mid-2010s. From 2015 onward, academic research consistently classified it as government-aligned (Bátorfy, 2017). In 2018, Origo.hu became part of the Central European Press and Media Foundation (KESMA). While it retained high audience reach throughout the examined period, international surveys report comparatively low levels of trust (Bátorfy & Szabó, 2022; Reuters Institute).

Magyar Nemzet Online

Magyar Nemzet Online has operated as the digital edition of Magyar Nemzet since the early 2000s. Prior to 2018, it functioned as an established conservative online news outlet. In April 2018, the print edition ceased publication and was later relaunched under new ownership. From 2018 onward, academic analyses classify Magyar Nemzet Online as part of the government-aligned media system and integrated into KESMA (Polyák, 2019; Media Pluralism Monitor).

Mandiner.hu

Mandiner.hu operates as a right-wing opinion-oriented online outlet, focusing primarily on political commentary and analysis. Its audience is smaller than that of mass-market news portals but remains stable and politically engaged. Ownership changes around 2018–2019 strengthened its integration into the government-aligned media sphere. Since then, academic

literature has classified Mandiner.hu as a conservative, government-aligned outlet (Bátorfy & Szabó, 2022).

Hirado.hu

Hirado.hu is the online news portal of Hungary's public service media and was among the most widely used online news platforms during the first half of the examined period. Throughout the 2010s, it ranked high in audience reach, largely due to its institutional visibility and connection to state-funded broadcast media. Academic research consistently classifies Hirado.hu as government-aligned (Bátorfy, 2017; Polyák, 2019). Although Hirado.hu maintained high reach in the earlier years, its relative importance within the online news market gradually declined from the late 2010s onward, as audiences increasingly turned to commercial and digitally native outlets (Reuters Institute; NMHH).

Blikk.hu

Blikk.hu is a tabloid-oriented online news portal and remained one of the highest-reach websites in Hungary throughout the examined period. Its content primarily focuses on non-political topics, including entertainment and human-interest stories. While political content became more visible over time, surveys consistently report low trust levels regarding political news. In 2024, Blikk.hu underwent an ownership change, while maintaining its mass-market profile (Reuters Institute; NMHH).

Portfolio.hu

Portfolio.hu specializes in economic and financial journalism and functioned as Hungary's leading digital business news outlet throughout the 2014–2024 period. No ownership or editorial orientation change was identified. Academic and industry sources consistently classify Portfolio.hu as politically neutral and professionally oriented, particularly in its coverage of economic policy and financial markets (Reuters Institute).

4.4.3 Periodization as analytical device

The ten-year time period covered by the analysis was divided into shorter analytical sub-periods. By dividing the decade into analytically coherent phases, the study can contrast

fundamentally different modes of climate communication, including a low-visibility pre-activism phase, a period of heightened attention driven by climate mobilization, and a later phase characterized by relative stabilization rather than continued escalation. Without periodization, these qualitatively distinct patterns would be blurred together, limiting the analytical capacity to identify how and why media attention intensified, shifted, stabilized or faded at different points in time. The boundaries between the analytical periods were defined based on relevant academic literature and empirically observable agenda-setting triggers.

Three analytical periods were identified:

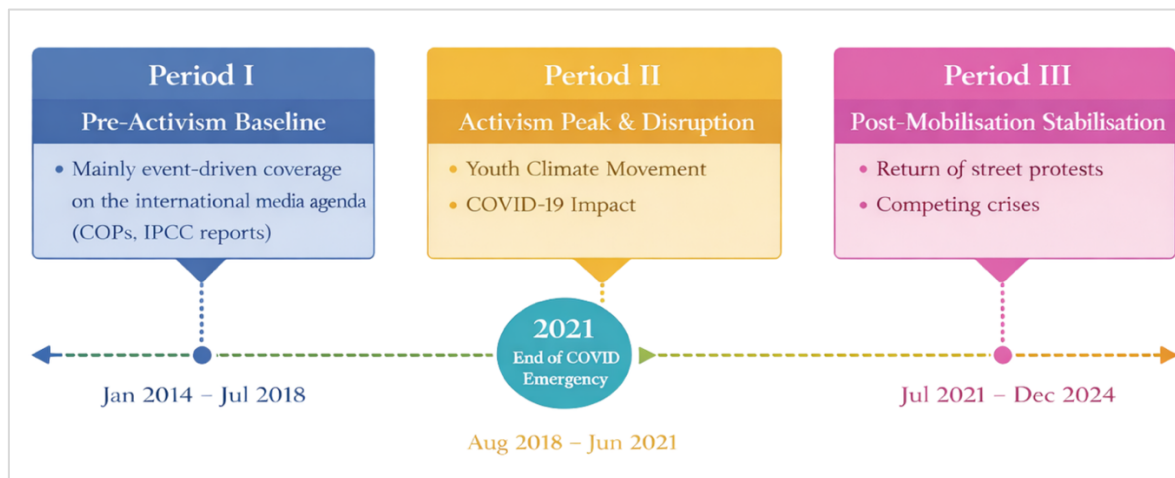


Figure 9: Analytical periods of the study (Own editing, 2025)

Period I (January 2014 – July 2018): Pre-activism baseline

Environmental communication scholarship identifies 2014 as a turning point in climate reporting, as political and policy shifts in key countries, the release of major scientific reports, and the occurrence of notable extreme weather events collectively increased the global visibility of climate change (Boykoff, McNatt, & Goodman, 2023). This makes 2014 an appropriate starting point for the present analysis. In the Hungarian online media context, however, this period functions as a pre-activism baseline, characterized by relatively low and fragmented climate coverage that was largely episodic and driven by international climate summits, scientific reports, or isolated weather-related events. Organized climate activism – particularly youth-led mobilization – was largely absent from the media agenda during this

phase, allowing it to serve as a reference point for assessing later changes in media attention and framing.

Period II (August 2018 – June 2021): Activism peak and disruption

This period begins in August 2018, when Greta Thunberg initiated her school strike in front of the Swedish Parliament, an event widely recognized in the literature as the symbolic and organizational catalyst of the global youth climate movement. From this point onward, climate activism emerged as a recurring and newsworthy trigger within the media agenda, contributing to a marked increase in the visibility of climate change. The period captures the peak of activist-driven media attention while also encompassing a major structural disruption caused by the COVID-19 pandemic, which from early 2020 temporarily displaced climate issues within the media agenda and constrained forms of physical mobilization. The phase concludes on June 1, 2021, corresponding to the termination of the COVID-19 state of emergency in Hungary, signaling a broader shift in agenda priorities and public communication dynamics (Portfolio, 2021).

Period III (July 2021 – December 2024): Post-mobilization stabilization and competing crises

This phase begins after the gradual decline of the COVID-19 crisis, when opportunities for organizing street demonstrations and public protest slowly re-emerged. However, rather than marking a return to the conditions of the pre-pandemic period, this phase represents the onset of a qualitatively new media and political context shaped by multiple, overlapping crises. From 2022 onward, the Russian–Ukrainian war, the ensuing energy crisis, escalating economic pressures, and later the Israeli–Gaza conflict became dominant drivers of media attention, significantly restructuring agenda priorities. Within this crowded crisis environment, climate change increasingly competed with other high-salience issues for visibility, and activist-driven mobilization operated under altered conditions. The end point of December 2024 is selected to provide a rounded and analytically coherent time frame that allows for the examination of longer-term post-mobilization patterns in media attention and framing.

Following the periodization of the analysis, Table 11 provides an overview of how the political orientation and editorial positioning of the media outlets included in the study altered over the three analytical periods. The table illustrates that the Hungarian online media landscape was not static over the 2014–2024 period, but underwent notable shifts in ownership structures, political alignment, and editorial profiles. Mapping these changes is essential for the interpretation of media agenda and framing patterns, as shifts in outlet orientation may shape both the visibility of climate change and the ways in which climate activism is covered. The table¹⁸ is included to contextualize the analysis, not to make direct causal claims about media behavior.

Outlet	Period I (Jan 2014– July 2018)	Period II (Aug 2018– June 2021)	Period III (July 2021–Dec 2024)
Index.hu	Independent	Transitioning → government-aligned	Government-aligned
24.hu	Independent	Independent	Independent
Telex.hu	– (not active)	Independent	Independent
444.hu	Independent / critical	Independent / critical	Independent / critical
Origo.hu	Government-aligned	Government-aligned	Government-aligned
HVG.hu	Independent / critical	Independent / critical	Independent / critical
Magyar Nemzet Online (MNO)	Government-aligned	Government-aligned	Government-aligned
Mandiner.hu	Government-aligned	Government-aligned	Government-aligned
Blikk.hu	Tabloid / (non-ideological)	Tabloid	Tabloid
Portfolio.hu	Non-partisan (economic)	Non-partisan (economic)	Non-partisan (economic)
hirado.hu	Government-aligned	Government-aligned	Government-aligned

Table 11¹⁹: Overview of the political orientation of selected Hungarian news outlets across the three analytical periods (2014–2024) (Own editing, 2025)

¹⁸ Origo.hu underwent considerable tabloidization during the examined period, particularly through the increasing prominence of sensational and click-driven content. Previous research reflects this dual character, describing Origo as a “tabloid-like portal” because of its substantial entertainment content, while noting that its journalistic style is more professional than that of conventional tabloids, particularly in political coverage (Hajdu et al., 2016). From its launch, however, Origo had a broad editorial profile encompassing political news alongside sport, business, culture, science, technology, and other thematic content (Matáv, 1998). Its development during the examined period is therefore better understood as the increasing tabloidization of a politically oriented online news outlet rather than its straightforward transformation into a conventional tabloid. This development is considered when interpreting outlet-level patterns in the present study, but Origo is not treated as a conventional tabloid or reclassified as such during the longitudinal analysis.

¹⁹In this study, the terms “*pro-government*” and “*government-aligned*” are used interchangeably. In the Hungarian media system during the examined period, the boundaries between different forms of political

4.4.4 Phase I: Quantitative media agenda analysis

This section outlines the analytical steps of the first phase of the research, which consists of a quantitative media agenda analysis. The purpose of this phase was to map the visibility and temporal dynamics of climate change–related coverage in Hungarian online news media between 2014 and 2024. Rather than analyzing the content or meaning of individual media texts, this phase focuses on identifying aggregate patterns of media attention over time.

The analysis adopts an agenda-level perspective rooted in the first level of agenda-setting theory, which conceptualizes media influence in terms of issue visibility and salience (McCombs & Shaw, 1972; McCombs, 2004). Accordingly, the analysis examines how often and how intensively climate change appears in the media, without addressing interpretative or framing-related aspects at this stage.

The quantitative analysis proceeded through the following steps:

First, frequency counts were calculated based on the publication date of each article. Although the dataset records articles at the daily level, the analysis relies on monthly, quarterly, and annual aggregates in order to capture both short-term fluctuations and longer-term trends in media attention. Aggregation at multiple temporal scales allows the identification of peak attention periods while also revealing broader structural patterns in agenda visibility over time. Daily data were used to identify the highest-coverage individual days, monthly data were used for interrupted time-series analysis, quarterly data were used to examine broader peak periods, and annual data were used to compare terminology patterns and outlet-level distributions over time.

Second, outlet-level comparisons were conducted to examine how climate change visibility differed across selected major Hungarian online news outlets. This step made it possible to

alignment are often blurred, making it difficult to draw a clear distinction between formally affiliated outlets and those that consistently reflect government-supportive editorial positions. The two expressions are therefore used here as broad analytical labels.

assess whether observed patterns were driven by a small number of highly active outlets or reflected broader system-level dynamics.

Third, the analysis relied on predefined keyword selections and keyword combinations to ensure consistency across the entire ten-year period. The same retrieval logic was applied throughout the dataset, allowing for direct comparison across time and between outlets.

Fourth, period-to-period comparisons were carried out based on the previously defined analytical phases. By aggregating coverage within each period, the analysis contrasts structurally different phases of media attention and assesses shifts in overall visibility and intensity across time.

Fifth, the descriptive longitudinal analysis was supplemented with statistical analyses to assess the observed changes in media attention more systematically. While the descriptive analysis shows how the volume of climate change coverage developed over time, the additional analyses served three complementary purposes: to examine whether theoretically relevant points in the observation period were associated with structural changes in the visibility trend, to assess whether the observed patterns were robust to relevant characteristics of the dataset, and to identify periods of unusually high media attention relative to the overall long-term trend. Accordingly, interrupted time-series (ITS) modelling, robustness checks, and a detrended peak-identification procedure were applied.²⁰ These analyses were used to strengthen and refine the interpretation of the descriptive longitudinal patterns rather than to establish causal effects.

First, an interrupted time-series (ITS) model was estimated to examine whether the longitudinal visibility trend showed structural changes around two theoretically relevant interruption points. The dependent variable was the monthly number of online news articles containing the keyword “*klímaváltozás*” [climate change]. The ITS analysis was

²⁰ The statistical analyses reported in this section, including the interrupted time-series models, robustness checks, and detrended peak-identification procedure, are also presented in Kovács-Magosi, O. (in press), “From the Periphery to the Mainstream: Climate Change Visibility in Hungarian Online News Media, 2014–2024,” *Romanian Journal of Communication and Public Relations*.

deliberately restricted to two interruption points rather than testing multiple events retrospectively. August 2018 marks the beginning of the youth climate mobilization period, which is central to the research questions of this dissertation, while March 2020 corresponds to the outbreak of the COVID-19 pandemic, an external disruption that substantially altered media agendas. The purpose was therefore not to identify every possible event associated with fluctuations in climate coverage, but to examine whether the longitudinal visibility trend changed around these two substantively justified points. Other periods of unusually high media attention were captured separately through the peak-identification procedure and were not introduced as additional interruption points in the ITS model.

For each interruption point, both a level-change variable and a post-interruption trend variable were created. This specification allows the analysis to distinguish between immediate shifts in article volume and changes in the longer-term trajectory of media visibility. The segmented regression model included the following predictors: time, level change after August 2018, trend change after August 2018, level change after March 2020, and trend change after March 2020.

Second, robustness checks were conducted to assess whether the patterns identified by the model remained when relevant characteristics of the dataset were considered. The model was re-estimated with month fixed effects, using January as the reference category, to account for recurring seasonal differences in coverage. In addition, a restricted model excluding Telex.hu was estimated. This check was necessary because Telex.hu entered the Hungarian online media landscape in 2020 and was therefore not present throughout the full 2014–2024 observation period. Its inclusion increased the number of outlets in the later part of the series and could therefore contribute to an increase in overall article volume. Re-estimating the model without Telex.hu made it possible to assess whether the main longitudinal pattern remained when this change in the outlet sample was taken into account.

Durbin–Watson statistics were examined to assess residual autocorrelation. Since positive autocorrelation remained present, the ITS findings are interpreted as evidence of structural changes in media visibility rather than as causal estimates.

Third, a detrended peak-identification procedure was used to distinguish unusually high periods of media attention from increases that simply reflected the general long-term growth in coverage. Monthly article counts were first aggregated to the quarterly level. Quarterly article counts were then regressed on a linear time trend, after which the unstandardized residuals from the trend model were standardized. Quarters with detrended Z-scores above 1.5 were classified as statistically elevated visibility periods. By accounting for the overall upward trend in climate coverage, this procedure identifies periods in which article volume was unusually high relative to the long-term trajectory rather than simply high in absolute terms. These statistically elevated periods were used as analytical markers for interpreting fluctuations in media attention and were not treated as evidence of causal effects.

Reporting of media agenda data

The quantitative media agenda analysis relies primarily on descriptive statistics to map the visibility and temporal development of climate change coverage. These descriptive analyses are supplemented by statistical procedures, including interrupted time-series modelling, robustness checks, and detrended peak identification, as described in the previous section. The purpose of these supplementary analyses is to assess structural changes and unusually high periods of media attention more systematically, rather than to establish causal relationships.

Descriptive statistics remain central to the analysis because the dataset represents a near-complete corpus of relevant climate change-related articles from the selected Hungarian online news outlets during the examined period, rather than a probabilistic sample drawn from a larger population. The results therefore primarily describe patterns within the media corpus itself rather than supporting probabilistic generalizations beyond it (Riffe, Lacy and Fico, 2014; Neuendorf, 2017).

The analysis relies predominantly on raw frequency data to examine climate-related terminology and issue salience over time. This approach is consistent with established practice in climate communication research, including the work of Maxwell T. Boykoff, where absolute article counts are used to trace changes in the volume of climate change

coverage over time. From an agenda-setting perspective, increases and decreases in publication volume indicate changes in the amount of media attention devoted to the issue.

The main outputs of the quantitative media agenda analysis include:

- monthly, quarterly, and annual frequency distributions,
- longitudinal trends in media attention,
- outlet-level comparisons,
- peaks and periods of intensified or declining attention,
- comparisons across analytically defined periods,
- interrupted time-series estimates and robustness checks.

4.4.5 Phase II: Media framing analysis

The purpose of Phase II is to complement and deepen the findings of the quantitative agenda analysis conducted in Phase I by examining how climate change is framed in the coverage. The three analytical periods (identified based on the quantitative agenda analysis) – pre-activism baseline, activism peak and disruption, and post-mobilization stabilization – serve as the temporal and interpretative framework for the qualitative analysis as well. In this sense, Phase I does not merely precede Phase II, but provides its empirical foundation: the periodization tested and validated through agenda-level patterns enables meaningful longitudinal comparison at the level of media framing.

This phase explores shifts in dominant frames across the three periods, with particular attention to activism-related frames and counter-narratives. Preliminary observations suggest that peak periods of activist mobilization are associated not only with increased media attention, but also with more emotionally charged and dramatized coverage (“emergency framing”), a stronger emphasis on destructive and harmful impacts, and the emergence of counter-framing – particularly in opinion-oriented outlets.

Phase II employs a qualitative, manual content analysis to examine how climate change is framed in Hungarian online media. As established earlier in the Literature review (Chapter 2), media framing research focuses on how news coverage foregrounds certain aspects of an

issue while downplaying or excluding others, thereby structuring interpretation rather than merely reflecting events. As Entman (1993) define:

“to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation” (Entman, 1993, p. 53).

This definition is relevant for the present study because it conceptualizes framing as a process of selection and emphasis in media texts, providing a general theoretical foundation for analyzing how certain interpretations of climate change are foregrounded while others are marginalized. While the study does not operationalize Entman’s four framing functions as analytical dimensions, the definition offers a useful conceptual point of departure for examining framing as a structured process of meaning construction rather than as a purely stylistic feature of news content.

Because content analysis and framing analysis are often used interchangeably in media research, it is important to briefly clarify the conceptual and analytical distinction between the two approaches to avoid methodological overlap. While content analysis primarily records the presence or frequency of specific topics, references, or keywords within media texts, framing analysis focuses on how these elements are organized into broader interpretative structures. Rather than asking whether certain aspects of climate change—such as economic considerations—are mentioned, framing analysis examines whether they function as the dominant lens through which the issue is constructed and made meaningful for the audience. An economic frame, for example, is identified not simply when economic references appear, but when financial costs, competitiveness concerns, industrial impacts, or energy price implications structure the overall narrative logic of the article. This includes the prominence of such considerations in headlines and leads, the dominance of economic actors, and causal narratives linking climate action to costs or macroeconomic risks. In these cases, economic reasoning does not merely supplement the coverage but organizes the interpretation of climate change itself, thereby constituting the dominant frame.

In addition, media framing refers to the ways in which news media represent social issues through interpretative schemas that organize meaning and guide audience understanding

(Reese, Gandy and Grant, 2001). Through framing, media do not merely report facts or events but actively shape how these are interpreted by highlighting certain perspectives, causal explanations, and evaluative standpoints. As a result, media frames play a central role in influencing public awareness and interpretation by determining not only which issues receive attention (agenda-setting), but also how these issues are presented and understood through recurring interpretative patterns.

As presented in Chapter 2.4.3, within media framing scholarship, several typologies have been proposed to capture these processes. A commonly used distinction differentiates between emphasis framing, equivalency framing, framing through word choice and labelling, and narrative framing (Otmakhova, Khanezhzar and Frermann, 2024). Emphasis framing refers to the selective foregrounding of aspects of an issue while backgrounding competing interpretations. Equivalency framing involves presenting substantively identical information in alternative evaluative formulations, while labelling framing operates through connotative lexical choices. Narrative framing, in turn, structures meaning through storylines, character roles, and implicit plot structures.

The present study aligns primarily with emphasis framing. Its analytical focus lies in identifying which substantive aspects of climate change – such as economic consequences, environmental risks, political conflict, or youth activism – are foregrounded in Hungarian news coverage, and how this selective salience structures the overall interpretation of climate change as a public issue. By focusing on emphasis framing, the analysis captures shifts in interpretative priorities across the three analytical periods, rather than changes in wording or rhetorical style alone.

4.4.5.1 Analytical focus

This study applies media framing analysis and distinguishes it from other interpretive approaches such as discourse analysis and narrative analysis. While discourse analysis focuses on hegemonic and marginalized discursive structures and narrative analysis examines storytelling elements such as plot and character roles, framing analysis examines which aspects of reality are foregrounded or backgrounded in media texts and how this selective emphasis structures issue interpretation (Van Hulst et al., 2025).

On this basis, the analysis concentrates on identifying the primary interpretative lens through which climate change is presented in each article. Accordingly, each article was assigned a single dominant frame rather than multiple frames or sub-frames. This decision was made due to the relatively short length of most online news articles.

4.4.5.2 Sampling strategy

The framing analysis is based on a random sample of $N = 300$ online news articles. Full-text versions of all selected articles were analyzed to enable close reading and manual frame assignment. The steps of the sampling process are illustrated in Figure 10 below.

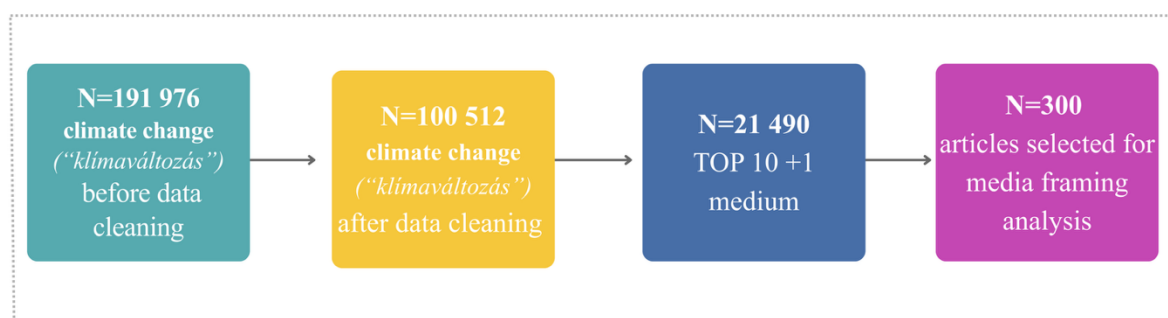


Figure 10: Overview of data reduction and sampling steps for the media framing analysis (Own editing, 2025)

The size of the sample reflects the demands of manual framing analysis. Unlike quantitative content analysis, which often counts how frequently specific words or references appear, framing analysis involves reading each article several times to understand its overall meaning and context. A text may repeatedly mention a particular term while its main interpretative focus lies elsewhere. Identifying this dominant frame therefore requires close, contextual reading, which naturally limits the size of the qualitative sample.

To ensure longitudinal and outlet-level comparability, *stratified random sampling* was used. The corpus was first divided by analytical period and media outlet. Within each analytical period, ten articles were randomly selected from each of the ten outlets, resulting in 100 articles per period and 300 articles in total. No separate quota was applied by year; therefore, within each analytical period, years with higher overall levels of climate change coverage could contribute more articles to the sample. Random selection was carried out in Microsoft Excel using the RAND() function. Each eligible article within an outlet-period group was assigned a random number, and the articles were then sorted according to these values. The

first ten eligible articles from each group were selected for the framing analysis. Articles that did not meet the inclusion criteria were excluded and replaced by the next eligible article in the randomized list.

Across the full corpus, 21,490 climate-related articles were identified in the eleven most relevant online news outlets. Hirado.hu was included in the qualitative sample only in the first analytical period; in the second and third periods, it was replaced by Telex. The composition of the sample by outlet type also varied across periods. In the first and third periods, the sample consisted of 40 government-aligned, 40 independent, 10 economic, and 10 tabloid articles. In the second period, the distribution shifted to 30 government-aligned, 50 independent, 10 economic, and 10 tabloid articles. The transitional status of Index.hu was not considered in the second period but was considered in the third period, where it was classified as government-aligned.

The qualitative framing analysis required a clearly defined set of media texts that could be meaningfully compared in terms of format, genre, and interpretative depth. To achieve this, article selection followed a set of explicit inclusion and exclusion criteria that delineate both the scope of the analyzed material and the boundaries of the qualitative sample. These criteria focus the analysis on journalistic texts that allow for the identification of dominant frames, while excluding formats that do not provide a sufficiently coherent textual basis for interpretative analysis. Table 12 summarizes the criteria applied during sampling and outlines which types of media content were included in the analysis, and which were excluded.

INCLUSION CRITERIA	EXCLUSION CRITERIA
Articles published by the top 10 Hungarian online news outlets during the examined period (including pro-government, independent, economic, and tabloid profiles)	Television and radio content, as well as other broadcast formats
Online news media content only	Audiovisual broadcast materials not available in textual form
Text-based articles	Photos, videos, audio materials, and multimedia storytelling contents
Multiple journalistic genres included (news reports, opinion pieces, commentaries, analyses, interviews)	Content produced by activists or activist organizations (blogs, campaign materials, self-published activist communication)
Articles meeting the relevance threshold in the database	Items scoring below 40 relevance in the database following data cleaning

Table 12: Criteria used to determine which articles were included in or excluded from the dataset (Own editing, 2025)

4.4.5.3 Framing typology

Media framing research encompasses a wide range of approaches, from classical conceptual frameworks (e.g. Entman, 1993; Gamson and Modigliani, 1989; Iyengar, 1990) to more issue-specific typologies. As discussed in the literature review, several framing frameworks have been developed specifically for climate change (e.g. Semetko and Valkenburg 2000; Boykoff 2008a; Nisbet 2009; Hulme et al. 2018), for social movements more generally (e.g. Benford and Snow 2000; Caiani 2023), and for climate movements (e.g. Mikecz 2020). Building on this body of research, the coding framework applied in this study was developed by adapting and combining elements from existing framing typologies, most notably the synthesis by Guenther et al. (2024). While global climate coverage shows recurring patterns in terms of content and triggering events, such as COP meetings or IPCC reports, framing is also shaped by national media contexts. Accordingly, the frame typology was tailored to the specific characteristics of the Hungarian media environment.

The initial intention was to build the analysis on Nisbet's framing typology (2009), given its widespread use in climate communication research. However, this framework was developed nearly two decades ago and reflects the specific conditions of the US media environment at

that time. For this reason, the present study instead draws primarily on the literature synthesis by Guenther et al. (2024), which consolidates climate change frames identified across approximately twenty-five years of research. Given the central focus on youth-led climate activism, the study was also informed by Mikecz (2020), whose work highlights the political contextualization of climate activism in media coverage. While the present analysis does not focus on the media representation of activists per se, this perspective helped to account for the framing effects associated with activist interventions.

The present study adopts a hybrid framing approach, leaning toward the deductive end of the inductive–deductive spectrum. The analysis starts from frame categories established in previous research but does not apply them unchanged. Existing categories were adapted and, where necessary, new categories were introduced to capture recurring patterns in the empirical material and the specific Hungarian media context.

4.4.5.4 Final climate frame typology

Frame	Definition	Example
Climate action	Climate change is framed in terms of solutions, mitigation, adaptation, or transition pathways.	Coverage of emission reduction targets, renewable energy investments, or lifestyle changes addressing climate change.
Climate policy	Climate change is presented as a governance or policymaking issue.	Reporting on climate legislation, policy debates, or international negotiations (e.g. COP).
Scientific consensus	Climate change is framed as scientifically established and supported by expert knowledge.	Articles citing scientific reports, research findings, or IPCC assessments.
Science denial, uncertainty, or distant threat	Climate change is framed as uncertain, exaggerated, or distant in time or space.	Claims that climate change is natural, disputed, or not an immediate threat.
Economic development, competitiveness and benefits	Climate change or climate action is framed as an economic opportunity.	Coverage highlighting green jobs, innovation, or economic gains from the energy transition.
Economic risks of climate protection	Climate change is framed as economically costly or harmful.	Reporting on rising energy prices, economic burdens, or industrial losses.

Harmful impacts, risks and destruction of nature²¹	Climate change is framed through its environmental and social consequences.	Articles on extreme weather, droughts, biodiversity loss, or climate-related disasters.
Moral duty / climate justice	Climate change is framed as an ethical issue involving responsibility and fairness.	Discussions of intergenerational justice or responsibility toward vulnerable groups.
Responsibility, accountability & political conflict	Coverage emphasizes blame attribution or political conflict over climate policy.	Reporting on partisan disputes or accusations regarding climate responsibility.
Climate activism (YES/NO)	Indicates whether climate activists or movements appear in the article.	Mention of protests, school strikes, or movements such as Fridays for Future.
<i>Applied only if the article discusses climate activism or climate movement actors:</i>		
Legitimate civic action	Activism is portrayed as legitimate democratic participation.	Coverage presenting protests as valid civic engagement.
Disruption / deviance	Activism is framed as disruptive, illegal, or socially problematic.	Reporting on traffic disruption, policing, or protest-related disorder.
Politicisation / partisan tool	Activism is framed as politically motivated or ideologically driven.	Coverage portraying activists as partisan actors or political instruments.
Youth/ generational frame	Coverage emphasizes youth participation or generational conflict.	Articles focusing on student strikes or youth climate movements.
Strategic media performance	Activism is framed as performative action aimed at attracting media attention.	Coverage highlighting symbolic protest actions or media stunts.

Table 13: Final typology of climate change frames used in the content analysis, including definitions (Own editing, 2025)

²¹Methodological note: To distinguish event-driven coverage from more general reporting on climate impacts, articles coded under the “*Harmful impacts, risks and destruction of nature*” frame were additionally classified according to whether they referred to a specific identifiable event. Articles focusing on a particular extreme weather event or climate-related disaster were marked as event-based, while articles discussing climate impacts more generally, such as long-term drought trends or biodiversity loss, were classified as non-event-based.

The final frame set distinguishes between solution-oriented frames (Climate action; Climate policy), knowledge-related frames (Science consensus; Science denial, uncertainty, or distant threat), economic frames (Economic development, competitiveness and benefits; Economic risks of climate protection), impact-oriented frames (Harmful impacts, risks and destruction of nature), normative frames (Moral duty and climate justice), and conflict-oriented frames (Responsibility, accountability, and political conflict). This structure allows for analytically meaningful comparisons while preserving conceptual coherence with the international literature. Importantly, frames are defined and assigned based on the dominant organizing logic of each article rather than on isolated references or keywords. Each article is therefore coded for one dominant issue frame, reflecting the primary way in which climate change is constructed and interpreted in the text.

4.4.5.5 Coding

Manual coding of the full sample was carried out by the author following a rigorously developed coding protocol²² designed to ensure analytical consistency and reliability across the dataset. A second independent coder was involved only for a *sub-sample* of the material to assess intercoder reliability. Manual coding was necessary because the identification of interpretative frames depends on contextual reading and analytical judgement rather than on the detection of explicit lexical markers. Automated content analysis tools remain limited in their capacity to capture latent framing structures, particularly in politically and culturally embedded media texts. Given the interpretative complexity of the coding scheme and the medium-sized qualitative sample, automated approaches would have risked oversimplifying framing patterns and obscuring narrative nuance.

Each article was assigned a unique identification number and recorded as a separate row in an Excel coding sheet, with the coding variables organized in separate columns. This allowed the results to be compared and summarized across analytical periods and media outlets.

²²The coding rulebook and the related coding materials can be accessed through the link provided in the Appendix. The coding sheets can also be made available by the author upon request.

The unit of analysis was the individual online news article. Basic metadata were recorded for each item, including publication date, article title, media outlet, time of publication, analytical period, and geographical focus, distinguishing between domestically oriented (Hungarian) and globally oriented coverage. Outlet-level information was recorded based on the ten selected online news platforms included in the qualitative sample.

Frame analysis was conducted through close textual reading. A frame was considered dominant when it structured the headline and lead and organized most of the narrative interpretation of climate change. In rare cases where multiple frames appeared with comparable weight, the interpretative perspective that most strongly defined problem definition, causal attribution, and evaluative emphasis was selected. Counter-frames were coded only where the text explicitly engaged in delegitimizing or reframing discourse directed at climate science or activist actors.

In addition to categorical coding, in some cases illustrative textual excerpts were extracted from selected articles. These quotations are used in the results chapter to contextualize the longitudinal framing patterns identified across time periods and media outlets.

Prior to the main coding phase, a pilot coding was conducted on a sub-sample representing ten per cent of the analytical material. The purpose of this pilot phase was to assess whether the predefined frame categories could be applied clearly and consistently to Hungarian online news coverage. Based on the pilot results, some refinements were introduced. Conceptual boundaries between closely related frames were clarified, and economically and politically oriented frames were further differentiated into opportunity-centered and burden-centered variants. These adjustments were incorporated into the coding framework before the full sample was coded by the author.

In addition to dominant issue frames, climate activism was treated as a separate analytical dimension rather than as an independent frame category. During the first stage of coding, each article was annotated for the presence or absence of climate activism. Where activism appeared, this dimension was subsequently coded in greater analytical detail. This decision reflects both theoretical and empirical considerations. In Guenther et al.'s original

framework, activism-related elements were situated within the broader “human touch” category, primarily capturing personalized narratives centered on individual actors such as Greta Thunberg. However, pilot coding indicated that within the Hungarian media context, references to protests, youth movements, and activist organizations rarely function as stand-alone interpretative frames. Instead, activism most often appears as actors, triggers, or discursive reference points embedded within other dominant frames, such as policy conflict, moral evaluation, or impact-focused narratives. Coding activism separately therefore made it possible to capture the media visibility of movements such as Fridays for Future or Extinction Rebellion without conflating activist presence with the dominant interpretative framing of climate change itself.

4.4.5.6 Intercoder reliability

To assess intercoder reliability, a random subsample of 50 articles was selected from the full sample of 300 articles and independently coded by a second coder with a background in economics, ESG, sustainability, and quantitative research. Prior to coding, the second coder received the coding manual and rulebook, which contained detailed definitions of the frame categories and instructions for their application. The coding rules and frame categories were also discussed in advance to ensure a common understanding of the coding procedure. As in the main analysis, the coder was instructed to identify only the dominant frame in each article rather than assigning multiple frames or sub-frames. The second coder was involved exclusively in the intercoder reliability assessment and did not participate in coding the full sample. The results of the double coding were compared with the author’s coding, and cases of disagreement were discussed, with particular attention to categories showing lower levels of agreement. Where necessary, the author reviewed the original coding decisions, and the final dataset reflects the author’s coding following this review.

Intercoder agreement was assessed using Cohen’s kappa, a widely used reliability coefficient in content analysis that accounts for agreement occurring by chance (Neuendorf, 2017).

Based on the initial independent coding, the resulting Cohen’s kappa coefficient was $\kappa = 0.65$, indicating *substantial agreement* according to the interpretation proposed by Landis

and Koch (1977). The reliability test therefore indicates an acceptable level of consistency in the application of the frame categories across the two coders.

Following the reliability assessment, the results of the two coders were compared, and cases of disagreement were discussed, with particular attention to differences in the interpretation of frame categories. Based on these discussions, the author reviewed the original coding decisions and revised them where necessary. The second coder was involved only in the intercoder reliability assessment and did not participate in coding the full sample. The final dataset therefore reflects the author's coding after this review process.

4.5 Supplementary semi-structured interviews

The interviews were conducted during the summer of 2026. Participant recruitment took place in July, followed by the interviews, transcription, and analysis in August. Recruitment proved challenging, partly because it coincided with the summer holiday period and partly because of limited human-resource capacities in Hungarian newsrooms. The changing political and media environment also affected access to potential participants. Following the change of government in 2026, several formerly government-aligned right-wing media outlets underwent substantial organizational and personnel changes, including dismissals, which made it difficult to recruit journalists from these news organizations (HVG, 2026).

Ultimately, four semi-structured interviews were conducted with journalists from 24.hu, Telex, HVG, and Mandiner. The sample was not intended to provide systematic representation of all ten media outlets included in the content analysis, but rather to provide supplementary insights into journalistic practices and editorial processes from within newsrooms.

Following the principles of semi-structured interviewing (Brinkmann, 2014) the interviews were organized around a predefined set of themes while allowing sufficient flexibility to pursue issues that emerged during the conversations. The main themes concerned journalistic and editorial practices, news selection and agenda-building, the framing and political context of climate reporting, climate activism, long-form climate journalism, and changes in climate coverage over time. The open-ended format allowed participants to elaborate on newsroom-

specific experiences and to introduce perspectives that had not been anticipated in the interview guide.

Following transcription, the interviews, which were conducted and recorded in Hungarian, were translated into English and analyzed using a thematic summary approach structured around the main topics of the interview guide. Each transcript was read in full to identify the participants' main observations and explanations concerning the predefined themes, as well as relevant issues emerging beyond the interview guide. The responses were then organized and summarized under the corresponding thematic areas, allowing for comparison across interviews and the identification of recurring observations, differences in newsroom experiences, and relevant explanatory insights. Rather than applying detailed line-by-line coding, the analysis focused on participants' substantive accounts and their relevance to the findings of the content analysis. The interview guide and anonymized transcripts are provided in the Appendix.

4.6 Limitations of the methods

The study has several methodological limitations. Social media, intermedia agenda-setting, and network agenda-setting are outside its scope. Youth climate activism was selected as one potential agenda-building factor because it emerged as a new and highly visible phenomenon during the period studied. Other possible agenda triggers, such as COP summits, extreme weather events, or major policy developments, were not examined systematically.

The qualitative framing analysis is based on a sample of articles rather than the full corpus. It focuses on dominant issue frames and does not systematically examine other dimensions, such as episodic versus thematic framing, tone, visual framing, or differences between journalistic genres.

The qualitative analysis relied on manual coding and close textual reading, which limited the amount of material that could be analyzed in depth. Future research could use computer-assisted methods to examine larger datasets and additional textual patterns.

The database and keyword-based retrieval strategy also have limitations. Relevant articles may have been omitted because of archival coverage, retrieval criteria, or the selected keywords. Specific aspects of climate discourse, such as climate denial, may therefore not be captured systematically.

The supplementary interviews were conducted only with journalists and consequently reflect newsroom perspectives rather than those of activists, political actors, or other agenda-building actors. Finally, the observed relationships between climate activism and media attention cannot establish direct causality, as media coverage is shaped by several concurrent factors.

5. RESULTS

This chapter presents the empirical findings of the study. In line with the sequential mixed-methods design, the analysis is presented in two stages. It first outlines the results of the quantitative media agenda analysis (Phase I), followed by the findings of the qualitative framing analysis (Phase II), before bringing the two strands of evidence into an integrated interpretative discussion.

Throughout the chapter, particular attention is paid to the three analytical periods introduced earlier in the dissertation (Period I, Period II, and Period III), which serve as recurring reference points in the presentation and interpretation of the results.

As for the structure, the chapter begins with an overview of longitudinal trends in climate change coverage, followed by comparisons across the three analytical periods and individual news outlets. It then examines outlet-specific agenda and framing patterns, complemented by interviews with journalists to provide insight into newsroom processes. Finally, the chapter focuses on the visibility and agenda-building role of climate activism in Hungarian online news coverage.

5.1 Results of data cleaning by keyword (2014–2024)

Hungarian keyword	English equivalent	Total counts	Cleaned counts	Retention after cleaning (%)
klímaváltozás	climate change	191 976	100 512	52.36%
éghajlatváltozás	climate change (alt.)	77 612	45 394	58.48%
globális felmelegedés	global warming	55 656	31685	56.93%
klímaválság	climate crisis	10 756	6363	59.16%
klímakrízis	climate crisis (alt.)	768	497	64.71%
klímakatasztrófa	climate catastrophe	5 040	3 336	66.19%
klíma apokalipszis	climate apocalypse	61	49	80.33%
klímatüntetés	climate protest	237	157	66.24%
klímasztrájk	climate strike	687	485	70.60%
klímamozgalom	climate movement	371	190	51.21%
klímaaktivista	climate activist	2 575	1 643	63.81%
Fridays for Future	Fridays for Future	2 050	1 381	67.37%
Extinction Rebellion	Extinction Rebellion	1 546	958	61.96%

(Greta) Thunberg	Greta Thunberg	6 110	3 820	62.53%
Just Stop Oil	Just Stop Oil	684	455	66.52%
Letzte Generation	Letzte Generation	367	266	72.48%

Table 14: Keyword-based article counts after data cleaning (2014-2024)

Following the data cleaning procedures described in Section 4.3.4, Table 14 summarizes the keyword-level outcomes of the data cleaning process.

After the data cleaning, 60-70% of the original articles were retained. The primary reasons for removal included low relevance, duplicate articles (identical headlines published by the same media), and articles from non-Hungarian websites. Generally, the greater the initial number of articles, the more articles are removed during cleaning, as duplicates and low-relevance entries are more common with broader keywords.

The cleaned counts reported here constitute the analytical input for all subsequent quantitative figures and were also used as the sampling frame for selecting articles for the qualitative framing analysis. Across the full study period, “climate change” emerges as the dominant keyword, exceeding both its Hungarian synonym/alternative (‘éghajlatváltozás’) and “global warming” (‘globális felmelegedés’) in overall frequency. Given this clear prevalence, the longitudinal analysis presented in the dissertation focuses primarily on the visibility trajectory of the climate change keyword itself, examining how its frequency evolves over time, including major peaks and declines in media attention. Regarding the activism-related terms, the name “(Greta) Thunberg” appears most frequently across the corpus, occurring more often than the climate movement Fridays for Future that she founded.

5.2 Phase I: Quantitative results: agenda-level analysis

First, the section provides an overview of overall climate change coverage across the full ten-year period, capturing long-term trends in media attention. Second, peak periods of heightened coverage are identified to highlight moments of intensified agenda salience. Third, the results are presented for the three analytically defined sub-periods, enabling systematic comparison across different phases of the study period. Finally, more specific results are reported for activism-related coverage and outlet-level differences, offering a

more fine-grained perspective on how climate change and climate activism were distributed across the Hungarian online news media landscape.

5.2.1 Overall visibility across the full period (2014-2024)

Figure 11 provides an overview of the longitudinal visibility of climate change coverage across the full study period (2014–2024), based on the *daily frequency* of articles containing the keyword “climate change”. The data indicate notable ups and downs in media attention across the timeline, with extended periods of relatively low day-to-day coverage broken by sudden peaks when climate change moved higher on the public and political agenda. These peaks show days on which the Hungarian online news media produced an exceptionally high volume of climate-related content. Rather than reflecting gradual agenda shifts, the pattern suggests that climate coverage is strongly event-driven, with attention surging in response to major international policy developments, extreme weather events, activist mobilization, or high-profile political decisions.

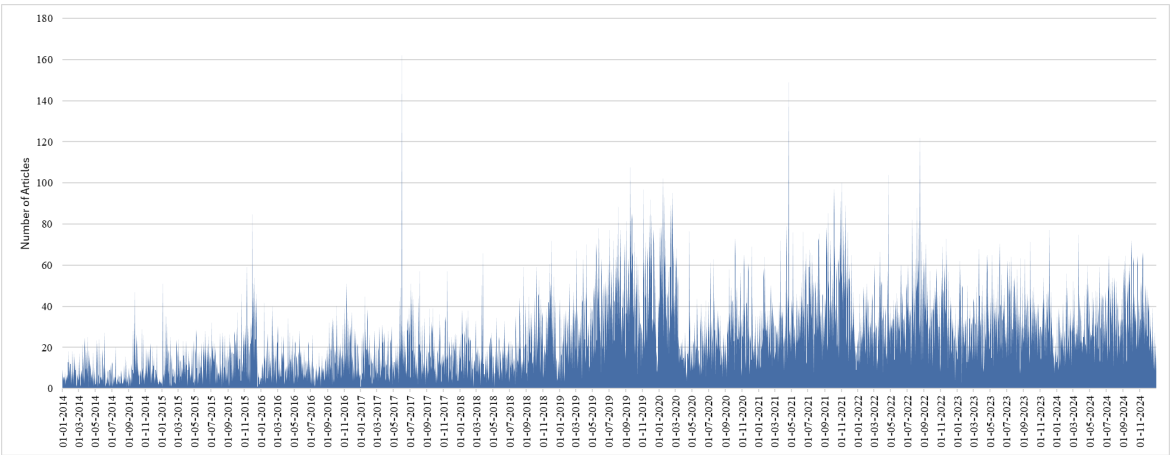


Figure 11: Daily frequency of climate-related articles in the dataset between 2014 and 2024

To contextualize these visibility spikes, Table 15 lists the ten highest-coverage days recorded during the ten-year period, based on aggregated output from the ten selected online news outlets included in the qualitative sample. For each peak day, the table identifies the dominant triggering event and the corresponding number of published articles. These events indicate that the most intensive coverage moments were closely tied to global climate milestones and political developments. These include international climate summits (e.g., COP-related reporting), major policy decisions such as the United States’ withdrawal from the Paris

Agreement, and Earth Day. Notably, the peaks suggest that Hungarian media coverage is driven predominantly by international climate events.

Rank	Day	Event	Number of Articles
1	6/2/2017	US announcement to withdraw from the Paris Agreement	181
2	4/22/2021	Peak in climate-related media coverage on Earth Day	149
3	8/16/2022	Jane Goodall’s message and national drought projections in Hungary	122
4	9/18/2019	Parliamentary debate on the climate crisis in Hungary	114
5	4/22/2022	Earth Day	104
6	11/5/2019	Official US withdrawal from the Paris Agreement	104
7	1/16/2020	Announcement of Hungary’s climate strategy goals	102
8	11/3/2021	Glasgow Climate Change Conference (COP26)	100
9	12/2/2019	UN Climate Change Conference COP25	99
10	2/21/2020	EU budget summit in Brussels	98

Table 15: Top climate coverage peaks and related events

Figure 12 provides an overview of the *annual* development of climate- and activism-related keyword frequencies across the full study period. The figure makes clear that climate change is not only the most frequently used term overall, but also the dominant issue label from the very beginning of the time series. In other words, media attention does not emerge from a zero baseline: the topic was already present prior to the study period, although it appeared through a relatively narrow set of well-established keywords.

Between 2014 and 2018, coverage follows a gradual upward trajectory. All three core issue labels – “climate change” (klímaváltozás), its Hungarian synonym éghajlatváltozás, and “global warming” (globális felmelegedés) – increase steadily, indicating a slow but consistent expansion of visibility.

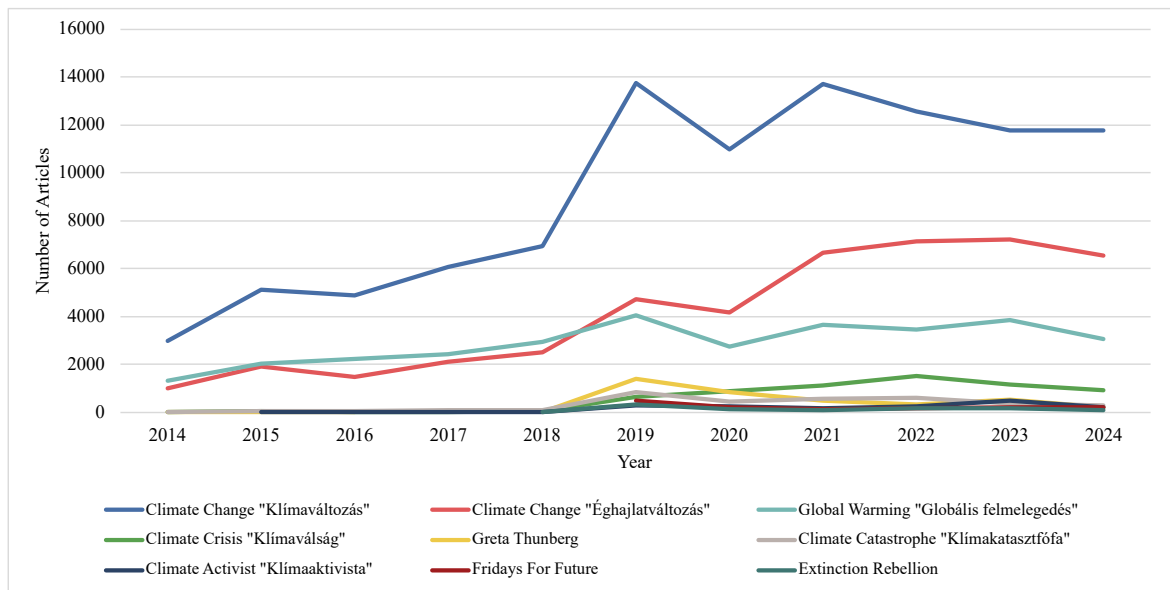


Figure 12: Climate- and activism-related keyword frequencies, 2014-2024 (N= 195,074)

The most notable change occurs around 2019, when the pattern shifts from episodic climate attention toward a more sustained level of visibility. The rapid growth of *Fridays for Future*, *Greta Thunberg*, and *Extinction Rebellion* coincides with a sharp increase in climate coverage, suggesting that the rise of youth climate activism became part of a broader change in the media agenda. Importantly, although attention subsequently declined, it did not return to pre-2019 levels.

What follows after 2021 is therefore not simply stagnation, but a new baseline of climate visibility. At the same time, the vocabulary of coverage changes: “global warming” gradually loses prominence while “climate crisis” becomes more visible. The longer-term pattern thus points to two parallel developments: climate change becomes more firmly established on the media agenda, while the language used to describe it shifts toward greater urgency.

5.2.2 Fluctuations, peaks, and declines in attention



Figure 13: Quarterly volume of articles mentioning 'climate change' 2014-2024; circles highlight peaks

Examining the *quarterly* data provides a more fine-grained view of climate change coverage and reveals distinct periods of heightened media attention. As shown in Figure 13, these short-term peaks occur within a broader upward trend across the study period.

The fitted linear trend ($y = 64.896x + 823.98$; $R^2 = 0.6159$) indicates an average increase of approximately 65 climate-related articles per quarter, equivalent to around 260 articles per year. However, this overall trend masks an important change in direction. Coverage grows dynamically between 2014 and 2019, reaches its highest levels in 2019, and then shows an overall decline from 2020 onwards. Descriptively, 2019 therefore marks a turning point, separating a period of rapid growth from a subsequent period of declining media attention.

Figure 13 places the quarterly peaks in the context of major events occurring during the same periods, including climate summits, protest waves, extreme weather events and energy-related crises. These overlaps help contextualize the short-term fluctuations in climate coverage without suggesting a direct causal relationship.

Table 16 identifies the major focusing events corresponding to the quarterly peak periods observed in the agenda analysis. While policy summits and activist mobilization are clearly represented, a closer look at the distribution reveals that a substantial share of peak moments is linked to crisis- or emergency-type developments. Several spikes coincide with extreme weather events – including heatwaves, bushfires, and regional flooding – while others align with systemic crises such as the onset of COVID-19 or the Ukraine war–related energy crisis. These developments often intersect with climate reporting through risk, vulnerability, and

security-oriented narratives. In contrast, institutional policy moments such as COP21 and COP26 appear less frequently, though they continue to function as important agenda-setting anchors.

Peak period	Focusing event/agenda-trigger	Type	Emergency framing
2015 Q4	COP21 (Paris Agreement)	Policy summit	–
2018 Q2	European heatwaves	Extreme weather	✓
2018 Q3	Greta Thunberg and school strikes	Activism	–
2019 Q1	FFF global strikes	Activism	–
2019 Q3	Global Climate Strike	Activism	–
2020 Q1	Australian “Black Summer” bushfires; COVID-19 onset	Health crisis	✓
2021 Q4	COP26 (Glasgow)	Policy summit	–
2022 Q1–Q2	Severe droughts in Hungary; Ukraine war & energy crisis	Geopolitics / energy	✓
2023 Q3	Heatwaves & wildfires	Extreme weather	✓
2024 Q3–Q4	Drought period in Hungary; Central European floods & heatwaves	Extreme weather	✓

Table 16: Major focusing events corresponding to identified peak periods (2014-2024)

The distribution suggests that emergency-oriented developments constitute one of the most consistent drivers of intensified climate visibility in Hungarian media coverage. Climate change therefore enters the news agenda not only through planned political or activist events, but also through crisis framing, where the issue is communicated via immediate threat, disaster, or systemic risk narratives. This pattern provides an important interpretative bridge to the qualitative framing analysis that follows, where the discursive construction of climate risk and urgency is examined in greater depth.

Beyond these descriptive findings, a supplementary statistical analysis was used to identify unusually pronounced peaks in climate change coverage. Peak quarters were also identified using detrended Z-scores to distinguish unusually high levels of media attention from the general temporal trend in coverage. Quarterly article counts were regressed on a linear time trend, and standardized residuals above 1.5 were classified as elevated visibility periods (Table 17).

Peak quarter	Article count	Linear trend residual	Detrended Z-score	Likely agenda-trigger / contextual event
2019 Q3	4,457	2,140.222	3.252	Greta Thunberg UN speech; global climate strike wave
2019 Q4	3,710	1,328.301	2.018	Continued youth climate mobilization; COP25-related coverage
2020 Q1	4,108	1,661.381	2.524	Australian bushfires; heightened pre-COVID climate attention
2021 Q3	3,881	1,044.860	1.587	Renewed climate visibility; IPCC AR6 / post-pandemic agenda recovery
2021 Q4	4,018	1,116.940	1.697	COP26 Glasgow; renewed international climate policy attention

Table 17: Statistically identified peak quarters based on detrended Z-scores

***Note.** Peak quarters were identified using standardized residuals from a linear quarterly trend model. Quarters with detrended Z-scores above 1.5 were classified as statistically elevated visibility periods. Event labels are interpretive and should be finalized based on the article-level/contextual analysis.*

The statistically identified peaks cluster around 2019–2021, confirming that the strongest deviations from the long-term trend occurred during the period of youth climate mobilization, major international climate events, and overlapping crisis dynamics. The highest peak appears in 2019 Q3, corresponding to Greta Thunberg’s UN speech and the global climate strike wave. COP26 also appears as a statistically elevated quarter, while earlier events such as COP21 may remain contextually important but do not qualify as detrended statistical peaks under this procedure.

To complement the descriptive quarterly trend and to test whether major agenda-shifting moments corresponded to statistically identifiable structural changes, an interrupted time-series model was estimated on the monthly “*klimaváltozás*” article count series.²³ The model

²³ The statistical analyses reported in this section (Table 18), including the interrupted time-series models, robustness checks, and detrended peak-identification procedure, are also presented in Kovács-Magosi, O. (in press), “From the Periphery to the Mainstream: Climate Change Visibility in Hungarian Online News Media, 2014–2024,” *Romanian Journal of Communication and Public Relations*.

tested two interruption points: August 2018, associated with the rise of youth climate mobilization, and March 2020, associated with the outbreak of the COVID-19 pandemic (see Table 18).

Predictor / model statistic	Model 1: Baseline ITS	Model 2: ITS with month fixed effects	Model 3: ITS excluding Telex.hu
Constant	259.501***	231.183***	259.501***
Time	5.242**	5.154***	5.242**
Level change: August 2018	-17.628	-55.611	-17.628
Trend change after August 2018	50.168***	53.506***	50.168***
Level change: March 2020	-661.114***	-684.321***	-668.000***
Trend change after March 2020	-53.019***	-56.453***	-53.163***
Month fixed effects	No	Yes	No
Telex.hu included	Yes	Yes	No
R ²	.783	.837	.784
Adjusted R ²	.774	.815	.775
F	90.715***	37.007***	91.503***
Durbin–Watson	1.185	1.051	1.201
N monthly observations	132	132	132

Table 18: Interrupted time-series regression models for monthly climate change visibility, 2014–2024

Note. Dependent variable in Models 1–2: monthly number of articles containing *klimaváltozás* [climate change]. Dependent variable in Model 3: monthly number of *klimaváltozás* articles excluding Telex.hu. Unstandardized coefficients are reported. The interruption points are August 2018 and March 2020. January is the reference category in the month fixed-effects model. *** $p < .001$, ** $p < .01$, * $p < .05$.

The results show that the August 2018 interruption was not associated with a significant immediate level change, but it was followed by a significant positive trend change, indicating an acceleration in climate change visibility after the rise of youth climate mobilization. By contrast, March 2020 was associated with a significant negative level change and a negative

post-interruption trend change, suggesting that the COVID-19 pandemic temporarily displaced climate change from the online news agenda. The main pattern remained stable when month fixed effects were included and when Telex.hu was excluded from the series, indicating that the results were not driven by seasonality or by the later inclusion of Telex.hu.

These dynamics become particularly visible when quarterly peaks are contextualized through focusing events. From an agenda-setting perspective, the timeline links observed spikes in media attention to identifiable external developments capable of temporarily amplifying coverage. The correspondence between peak periods and climate summits, protest waves, extreme weather events, and energy-related crises suggest that short-term fluctuations are closely tied to exogenous triggers, while the sustained upward trajectory reflects a longer-term structural shift in the salience of climate change within the Hungarian media agenda. Importantly, the rising trend line also indicates that the baseline level of coverage increases over time, meaning that attention does not return to earlier levels following major events.

5.2.3 Results by analytical periods (Period I vs. Period II vs. Period III)

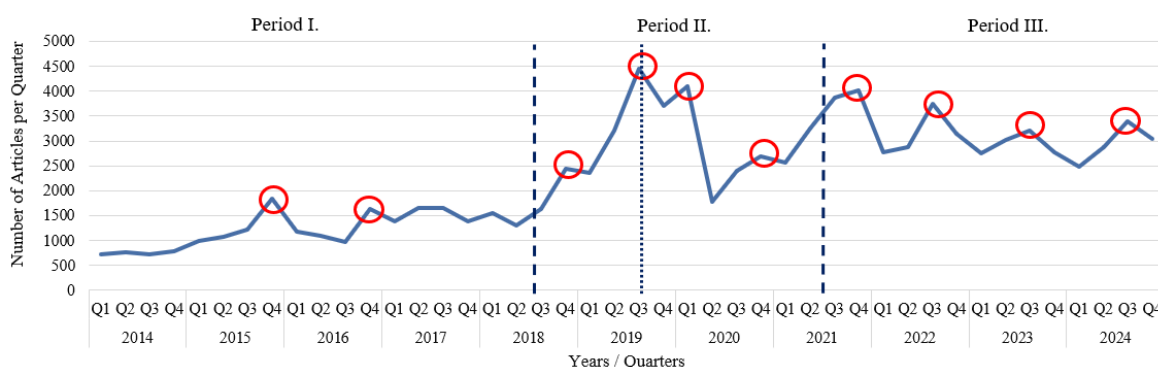


Figure 14: Quarterly volume of articles per Period mentioning 'climate change' 2014-2024

Figure 14 shows the three analytical periods separated by dashed vertical lines, with the dotted line highlighting 2019 Q3 and marking Greta Thunberg's address at the United Nations on 23 September 2019. This quarter constitutes the most pronounced peak in the entire time series, reaching 4 457 climate change–related articles and thus representing the single most intensive period of media coverage across all observed quarters.

Importantly, the temporal distribution of coverage – including the concentration of peak attention around key activism-related moments – provides empirical support for the study's preliminary assumptions regarding the delineation of the three analytical periods.

Period I (2014 Jan – 2018 July): Gradual growth and event-driven peaks

During the first analytical period, media attention to climate change increases gradually, with clear event-driven peaks. The 2015 Paris Climate Conference (COP21) is associated with a marked rise in the number of climate change–related articles. However, this increase is not fully sustained, and coverage declines in the quarters following the summit. A similar pattern can be observed around subsequent COP meetings, including the 2016 conference, which again temporarily boosts coverage. By the end of the period, quarterly volumes stabilize at a higher level than at the beginning of the time series, but without further major peaks. Overall, coverage in this period typically ranges between approximately 800 and 2 000 articles per quarter.

In the later part of Period I (2017–mid-2018), climate change remains a visible topic, but without major surges in attention. Coverage during this phase is shaped by a combination of recurring extreme weather events, international political developments, and domestic policy processes, including the adoption of Hungary’s National Climate Change Strategy (2018–2030)²⁴. While these factors contributed to maintaining media salience – occasionally reinforcing attention levels across multiple quarters – they did not generate sharp, short-term spikes comparable to major global summits.

Period II (2018 August–2021 June): Activism, disruption, and pandemic effects

A pronounced shift occurs with the beginning of Period II. Following the emergence of youth climate activism – most visibly associated with Greta Thunberg – media attention increases sharply. Climate activism becomes institutionalized as a recurring and organized media actor, characterized by strategically planned, media-targeted protest actions. The visibility of school strikes, demonstrations, and transnational mobilization efforts proves highly effective in amplifying news coverage and sustaining agenda salience.

²⁴ Hungary’s *National Energy and Climate Plan (NECP)* is a strategic policy document prepared in accordance with the European Union’s Energy Union governance framework. It outlines the country’s medium-term objectives and measures up to 2030 in the fields of greenhouse gas emission reduction, renewable energy deployment, energy efficiency, energy security, and the internal energy market, thereby contributing to the EU’s overall climate and energy targets.

After a brief post-COP decline following the December 2018 climate summit, coverage rises steeply throughout 2019, culminating in a major peak in 2019 Q3. This peak corresponds to Thunberg’s address at the United Nations on 23 September 2019 and the global wave of climate strikes (20-27 September 2019), representing the most intensive quarter of climate change coverage in the entire time series. Importantly, the post-peak pattern does not constitute a substantive decline. Although coverage moderates slightly following the Q3 boom, average quarterly volumes remain close to peak levels for around three consecutive quarters, staying substantially higher than those observed during Period I. This indicates that activism-driven attention does not disappear immediately but instead stabilizes at an elevated rate.

The beginning of 2020 again shows heightened coverage, likely influenced by major climate-related events such as the Australian bushfires²⁵. However, the outbreak of the COVID-19 pandemic leads to a sharp contraction in climate change–related reporting, as media attention shifts toward the unfolding public health crisis. In agenda-setting terms, the pandemic functions as a competing emergency, temporarily displacing climate change from the forefront of media priorities. This pandemic-related decline is only partially offset by renewed attention around the late-2020 climate summit. By 2021, as pandemic pressures gradually ease and the crisis loses some of its acute emergency character in public and media discourse, climate change coverage begins to recover. Media attention returns to an upward trajectory, though without reaching the exceptional peak levels observed in 2019.

Overall, the COVID-19 period exerts a strong negative effect on the volume of climate-related coverage, temporarily interrupting – but not fundamentally reversing – the activism-driven escalation that defines Period II.

Period III (July 2021 – 2024): Post-pandemic stabilization and competing crises

In the post-pandemic period, climate change coverage stabilizes at a consistently higher level than in Period I. Quarterly volumes typically range between approximately 2,500 and 4,000

²⁵The Australian “*Black Summer*” bushfires (2019–2020), one of the most severe wildfire seasons in the country’s recorded history. The fires burned more than 18 million hectares, caused widespread ecological damage, and generated extensive global media attention, partly due to their scale and their frequent association with discussions of climate change.

articles, representing an almost threefold increase compared to the first analytical period. Within this phase, clear and recurring seasonal patterns can be observed. Between 2021 and 2024, each year shows a concentration of coverage around the annual COP climate conferences, which consistently generate the highest quarterly peaks.

At the same time, while coverage remains elevated, the overall level does not continue to increase further. Instead, the data indicate the emergence of a high-attention plateau, suggesting that climate change has become a regularly covered and structurally embedded topic in Hungarian online news media. Rather than continued growth, this period is characterized by sustained visibility combined with predictable, event-driven peaks.

However, the broader geopolitical and energy context of the period exerts a moderating influence on coverage dynamics. The outbreak of the Russia–Ukraine war and the subsequent energy crisis introduce a continuous, domestically salient emergency that, in agenda-setting terms, frequently supersedes climate change as a priority issue within national news discourse. This competing crisis environment does not eliminate climate coverage but constrains its expansion and contributes to a gradual softening of attention levels over time.

In parallel, the international momentum of youth-led climate activism shows signs of fatigue by the later years of the period. As large-scale protest waves become less frequent and mobilization intensity declines, the activism-driven amplification effect observed in Period II weakens. This shift is reflected in a modest downward adjustment in coverage volumes after 2022. Nevertheless, COP-related peaks remain firmly in place, and the overall level of climate change coverage continues to exceed pre-activism levels by a substantial margin. Thus, despite geopolitical competition and activist demobilization, climate change retains a structurally embedded – if no longer escalating – position within the Hungarian online media agenda.

5.2.4 Activism-specific coverage

While the previous figures documented the overall dynamics of climate change coverage, the following analysis shifts the focus to climate activism as a distinct driver of media attention. By examining activism-related keywords, this section traces how the visibility of key actors and movements develops over time, and how activism-related coverage interacts with

broader political and crisis contexts. This allows for a more detailed evaluation of the role of activism in the changing media agenda, especially during Period II and Period III.

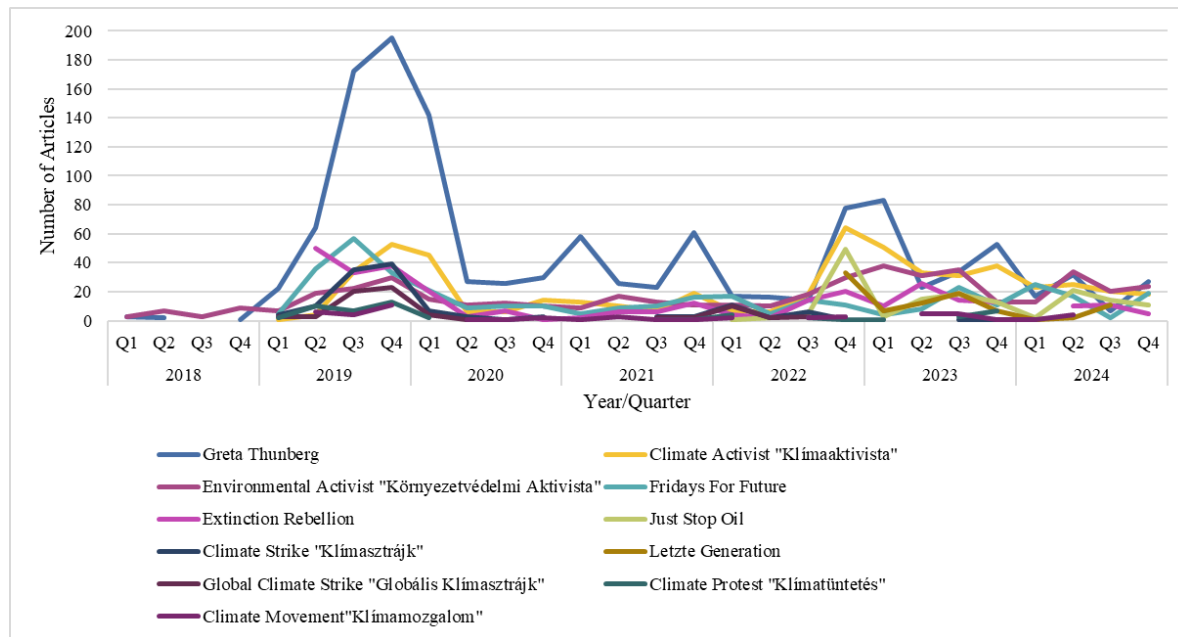


Figure 15: Activism related articles per selected keyword, 2018-2024 (N=3527)

Figure 15 presents the quarterly development of articles containing climate activism-related keywords, focusing on the period from the emergence of youth climate activism onward. The figure shows a clear dominance of Greta Thunberg in the initial phase of activism-related coverage. In 2019, mentions of Thunberg peak sharply, exceeding other activism-related terms by a substantial margin. This pattern reflects the strong personalization of climate activism in Hungarian online news during the early phase of the movement, with Thunberg functioning as the central symbolic figure of youth climate mobilization.

The Fridays for Future movement represent the second most visible activism-related keyword cluster, closely associated with the rise of Greta Thunberg. However, the onset of the COVID-19 pandemic corresponds with a marked decline in both Thunberg- and Fridays for Future-related media coverage. This downturn reflects the broader disruption of street-based protest activity and collective mobilization during the pandemic period, which substantially constrained the public visibility of climate activism.

In the following period, the personal media presence of Thunberg becomes less exclusively centered on climate change. Following the escalation of the Israeli-Palestinian conflict, her

public communication and advocacy agenda increasingly extended to other issues. This thematic diversification of activist messaging may also have contributed to the relative decline in climate-specific media references linked to her name.

Following the gradual easing of pandemic-related restrictions, activism-related coverage partially recovers in late 2022 and early 2023. During this phase, Greta Thunberg again becomes more visible in the media. However, in Period III, activism-related reporting becomes less strongly centered on Thunberg as an individual. Instead, more generalized references to “climate activists,” alongside continued – though more moderate – mentions of the Fridays for Future movement, gain relative prominence. This shift points to a partial depersonalization of climate activism in media coverage, with attention moving from a single high-profile figure toward more collective and diffuse representations of mobilization.

Extinction Rebellion appears only sporadically in the Hungarian online news corpus. Its comparatively low visibility is consistent with the movement’s limited organizational embeddedness in Hungary, as well as the declining intensity of its high-profile international mobilization during the latter part of the study period.

By contrast, new activist formations emerge more visibly from mid-2022 onwards. Groups such as Just Stop Oil and Letzte Generation begin to occupy a more dominant position within international climate activism coverage, including within Hungarian online news reporting. Their protest repertoires – characterized by highly disruptive, media-oriented direct actions contribute to a short-term amplification of coverage related to climate activists.

At the same time, the visibility generated by these movements tends to manifest in concentrated media peaks rather than sustained attention. The highly polarizing and emergency-oriented framing associated with such actions produces episodic surges in reporting, but these are typically followed by rapid declines in coverage intensity. As a result, while these groups temporarily reinvigorate activism-related media attention, they do not generate a prolonged escalation comparable to the activism wave observed during Period II.

5.2.5 Outlet-level distribution of climate coverage

Figure 16 breaks down the overall rise in climate change coverage by the top ten (most read) Hungarian online news outlets. Outlets showing whether the post-2019 increase in attention reflects a broader shift across the media system or is mainly driven by a small number of sources. The figure shows that the sharp growth around 2019, as well as the consistently higher levels of coverage in the following years, can be observed across a wide range of outlets with different profiles and audiences. This indicates that the intensification of climate change coverage is not confined to a single outlet or media segment but represents a more general change in what Hungarian online news treats as a salient issue.

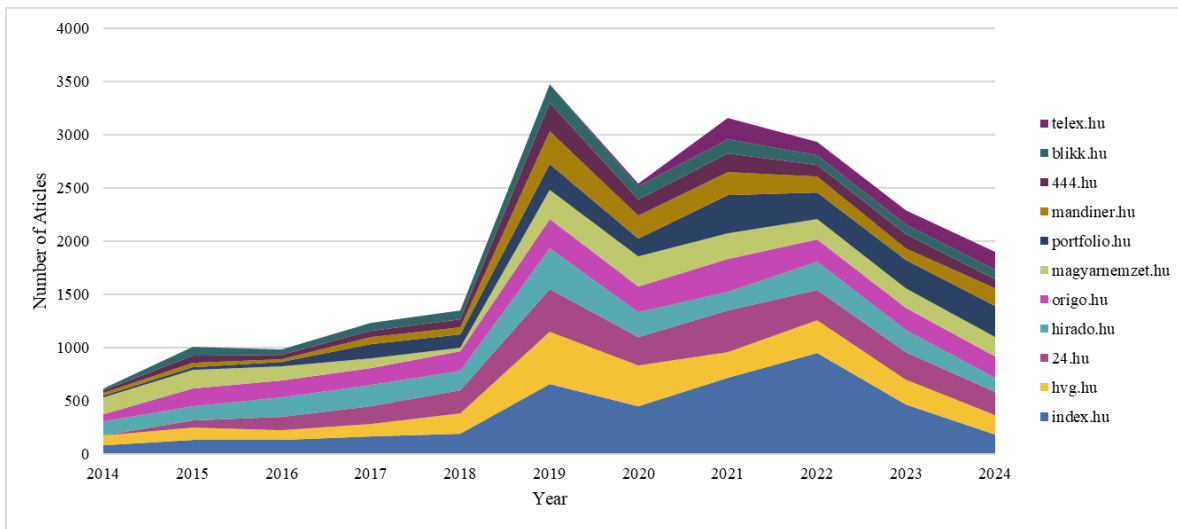


Figure 16: Yearly 'climate change' article counts by outlet, 2014-2024 (N=21,490)

At the same time, the outlet-level patterns reveal clear differences in how strongly individual outlets engage with the topic. Some large and influential portals contribute high volumes of climate change–related articles on a regular basis, while others cover the issue more unevenly, with attention rising mainly around major events and peak periods. These differences suggest that, even within a broader system-wide increase, editorial priorities and institutional characteristics continue to shape how prominently climate change appears in different news environments.

It suggests that the post-2019 rise in climate change coverage is both widely shared across the Hungarian online media landscape and unevenly distributed across outlets. Climate

change thus becomes a more firmly established topic across the system, while still being filtered through outlet-specific editorial logics and patterns of news production.

The temporal pattern does not show a single clearly outstanding year. Instead, 2019 and 2021 emerge as the strongest years in terms of coverage, corresponding to major international climate summits and related news cycles. Overall, the trajectory closely follows the general development of the broader media portfolio, indicating that this outlet’s climate change coverage largely reflects system-wide agenda dynamics rather than a strongly differentiated editorial trajectory.

At the same time, an important divergence becomes visible toward the end of the period. In 2024, the decline in climate change–related coverage is noticeably steeper than the overall decrease observed across the full media corpus. This suggests that, within the mainstream segment of the Hungarian online news landscape, climate change may be losing relative prominence compared to other topics, even as overall news output also contracts.

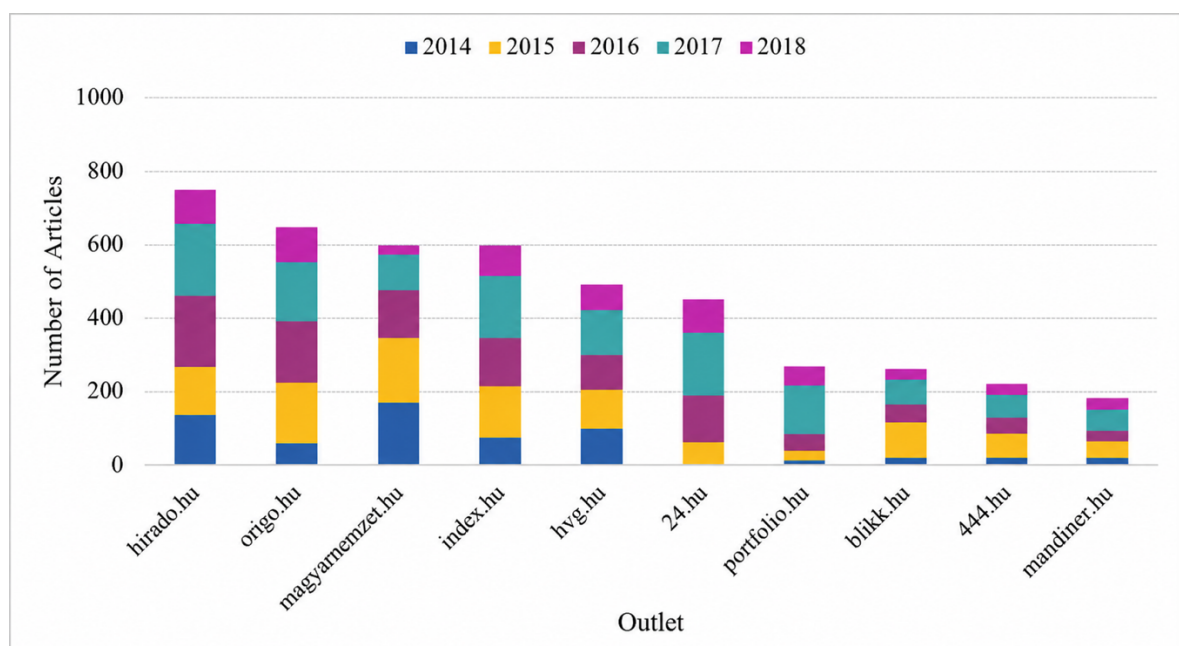


Figure 17: Number of articles on climate change in the top 10 outlet, Period I. (N=4437)

Figure 17 shows the distribution of climate change–related articles across major Hungarian online news outlets during Period I. Overall, the pattern appears relatively balanced across the media landscape, with both government-aligned and independent outlets devoting

comparable levels of attention to the issue. The highest number of articles was published by hirado.hu, the public service news portal. These items are typically short, factual news reports, which partly explains the higher publication frequency.

In general, pro-government and independent outlets produced a similar number of climate-related articles during this phase. However, while the volume of coverage appears relatively balanced, differences in how climate change was framed are discussed in detail in the framing analysis (see Section 5.3.1).

Across the outlets included in the sample, the annual total of approximately 600–800 articles correspond to an average of around two to three articles per day per outlet, indicating a steady but moderate level of media attention to the issue. At the same time, economic and tabloid outlets published roughly half as many climate-related articles as mainstream news portals, suggesting that climate change coverage was primarily concentrated in the general news media during this period.

The temporal distribution also indicates the absence of a single outstanding year. Instead, coverage levels peak modestly in 2015 and again in 2017, corresponding to major international climate summits and related news cycles. Overall, these patterns suggest that, during Period I, climate change is treated as a broadly shared but not highly prioritized issue across different segments of the Hungarian online media, with attention rising temporarily around major international events rather than being driven by sustained editorial emphasis.

The transition to Period II marks a qualitatively different phase in the development of climate change coverage. As shown in the previous figures, this period is characterized by the emergence of climate activism and a sharp intensification of media attention, followed by a temporary disruption during the COVID-19 pandemic. Moving to the outlet level, the following figure examines how this structurally altered agenda environment is reflected across individual news providers. This allows for an assessment of whether the activism-driven surge and subsequent pandemic-related disruption are evenly distributed across the media system or concentrated within specific outlets and media segments.

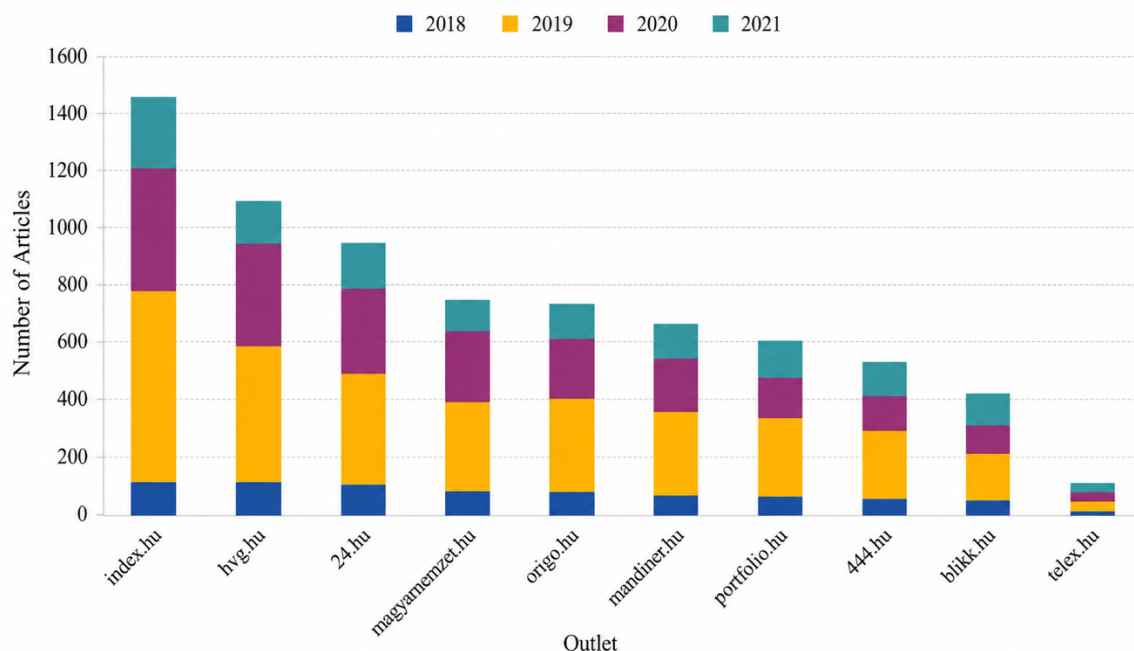


Figure 18: Number of articles on climate change in the top 10 outlet, Period II. (N=8073)

Across nearly all outlets, 2019 emerges as the strongest year, in line with the aggregate trends reported earlier and reflecting the intensification of media attention associated with the rise of climate activism. This pattern confirms that the activism-related surge in coverage is not confined to the overall corpus but is also clearly visible at the level of individual outlets.

Despite structural changes within the media landscape, climate change remains a salient topic for several major outlets. In the case of Index.hu, which underwent ownership and editorial changes in 2020, coverage temporarily declines during the pandemic period but rebounds strongly in 2021. This recovery suggests that, even following institutional and editorial restructuring, climate change continues to occupy a relatively prominent position within the outlet’s news agenda. More broadly, the outlet-level distribution indicates that climate change coverage is more strongly represented within independent media than within government-aligned outlets during this period. This pattern points to systematic differences in editorial prioritization across segments of the Hungarian online media landscape, even as overall attention to the issue increases.

At the same time, notable shifts can also be observed among government-aligned outlets. Mandiner shows a substantial increase in the number of climate change–related articles, moving from a marginal position in the previous period to a more visible role in Period II.

This change suggests a partial broadening of climate change coverage within the pro-government media segment, although overall levels remain lower than in much of the independent press.

Period III captures a post-pandemic phase in which climate change coverage remains structurally embedded at a high level, but under altered thematic and institutional conditions. Rather than a simple “post-activism” phase, this period is characterized by a reconfiguration of activism-related visibility: while the earlier, Thunberg-centered wave loses some of its dominance, new movements (e.g., Just Stop Oil and Letzte Generation) generate episodic peaks in activism-related attention, particularly from mid-2022 into early 2023.

As the overall amount of climate coverage stops increasing – and in some parts of the media system even begins to decline – differences between outlets become more important. Looking at outlet-level patterns helps identify where sustained attention to climate change remains and where coverage becomes more event-driven. The following figure therefore shows how climate change coverage is distributed across outlets in this later period, indicating which parts of the media landscape continue to devote relatively high attention to the issue.

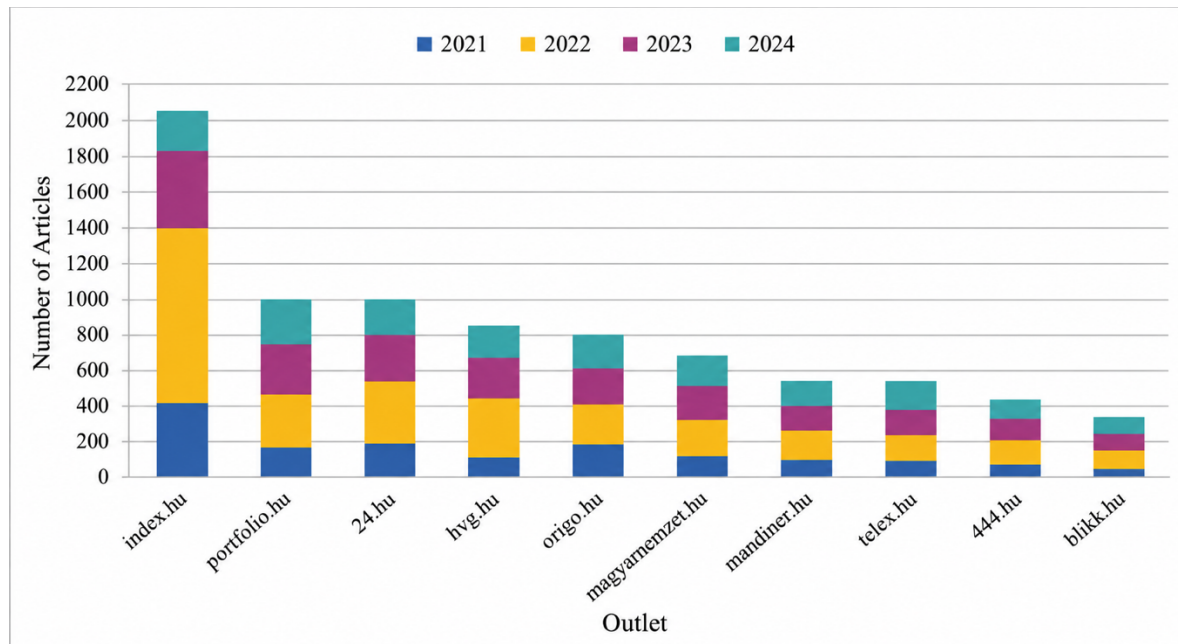


Figure 19: Number of articles on climate change in the top 10 outlet, Period III. (N=8240)

Figure 19 shows that Index.hu clearly dominates climate change coverage in Period III, with particularly high levels in 2022. This sustained prominence suggests that climate change

remains a central topic within the outlet's editorial agenda during the post-activism phase. The qualitative analysis will therefore examine in more detail how climate change is framed in Index.hu during this period, with particular attention to shifts in thematic focus and interpretive framing.

At the same time, while overall climate change–related coverage declines across many outlets, Portfolio.hu shows a notable increase and rises to a leading position within the outlet distribution. This pattern is consistent with a broader discursive shift toward energy and economic policy, suggesting that climate change becomes increasingly embedded in economic and energy-related reporting rather than being treated primarily as an environmental or protest-related issue.

Excluding Index.hu, the distribution of climate change coverage once again appears relatively balanced between government-aligned and independent outlets. This pattern suggests a partial convergence in coverage volumes across media segments. At the same time, the average number of climate change–related articles per outlet have approximately doubled compared to Period I, indicating a structurally elevated level of attention across the media landscape.

Nevertheless, quantitative convergence does not necessarily imply interpretative alignment. Substantial qualitative differences may persist in how outlets frame climate change. For this reason, the qualitative framing analysis plays a crucial role in assessing how the meaning, narrative positioning, and interpretative emphasis of climate coverage evolve in the later phase of the study period – particularly in the context of reconfigured activism dynamics and competing crisis agendas.

Finally, the tabloid outlet Blikk continues to devote comparatively limited attention to climate change. This is notable given that both activism- and disaster-oriented narratives often align well with tabloid news values. The relatively low level of coverage suggests that, in the Hungarian context, climate change remains only weakly integrated into tabloid-style news agendas, despite the potential for sensational or emotionally charged framing.

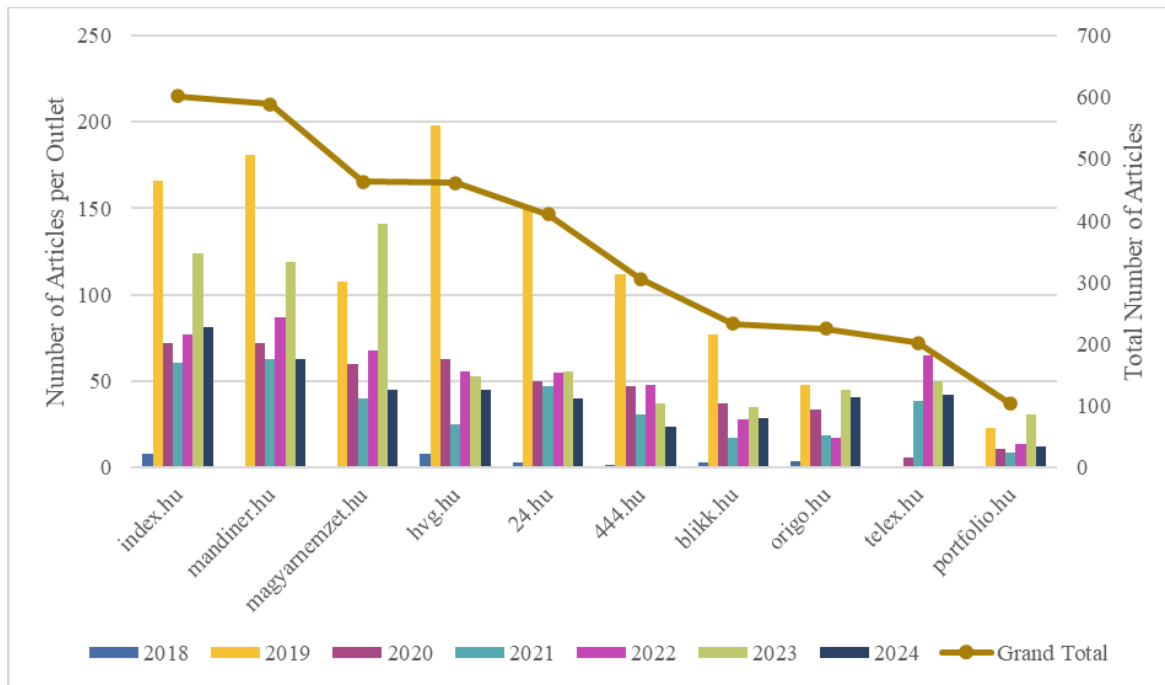


Figure 20:Yearly number of articles with activism related keywords per outlet, 2018-2024 (N=3596)

The distribution of articles containing activism-related climate keywords is highly uneven across outlets. Independent media organizations such as Index²⁶ and HVG produced substantially more coverage than most other outlets during the examined period. Across almost all outlets, 2019 represents a clear peak in activism-related climate coverage, suggesting a strong media response to the global wave of climate strikes during that year. At the same time, a clear divide emerges between independent and pro-government media outlets. While independent outlets consistently produced higher levels of activism-related climate coverage, pro-government outlets such as Magyar Nemzet and Mandiner show comparatively lower and more fluctuating levels of reporting. The cumulative totals further indicate that a small number of outlets account for a disproportionate share of the overall coverage, highlighting a strong concentration of activism-related climate discourse within a limited segment of the Hungarian media landscape. Following the 2019 peak, the level of activism-related coverage generally declines across outlets, suggesting that the heightened media attention surrounding climate activism was not sustained in subsequent years.

²⁶ Index is under transformation during this period

However, some outlets display delayed increases in coverage, most notably Telex, which shows a noticeable rise in activism-related articles after its launch, reflecting the emergence of new actors in the online news environment.



Figure 21: Yearly number of articles with emergency framing related keywords per outlet, 2018-2024 (N=1966)

Like activism-related coverage, emergency framing appears to be strongly concentrated within a limited number of outlets. Index, Mandiner and HVG account for a substantial share of the total number of articles containing emergency-related climate keywords. Across most outlets, the highest values appear in 2019 and 2020, which likely reflects the global intensification of climate crisis discourse during this period. Following this peak, the frequency of emergency-related framing generally declines across outlets, suggesting that the intensity of crisis-oriented climate discourse decreases alongside the waning of climate activism in the media agenda. In other words, the prominence of this language appears to be closely linked to periods when climate activism receives heightened media attention. A similar divide between independent and pro-government media outlets can also be observed in emergency-related climate coverage. Pro-government outlets such as Origo and Magyar Nemzet display lower and less consistent levels of emergency framing compared to several independent outlets. However, Mandiner shows a somewhat different pattern, with relatively

high levels of emergency-related keywords in certain years, which can likely be explained by the outlet's large number of opinion pieces addressing climate debates. Overall, emergency framing appears considerably less frequent than activism-related coverage, as indicated by the substantially lower total number of articles in the dataset. This suggests that Hungarian online media more often report on climate activism as a social phenomenon than frame climate change explicitly as an immediate crisis.

5.3 Phase II: Qualitative results – framing patterns

The chapter begins with an overview of general framing patterns across the full sample, identifying the dominant interpretative lenses of climate reporting. It then compares framing approaches across the three analytical periods to reveal temporal shifts in emphasis. The analysis subsequently examines variation across outlet types – particularly government-aligned and critical platforms – before moving to a more granular assessment of the ten selected outlets included in the qualitative sample. The final section focuses on activism-related framing, exploring how protest movements and activist actors are embedded within broader climate coverage.

5.3.1 Dominant frames across the qualitative corpus

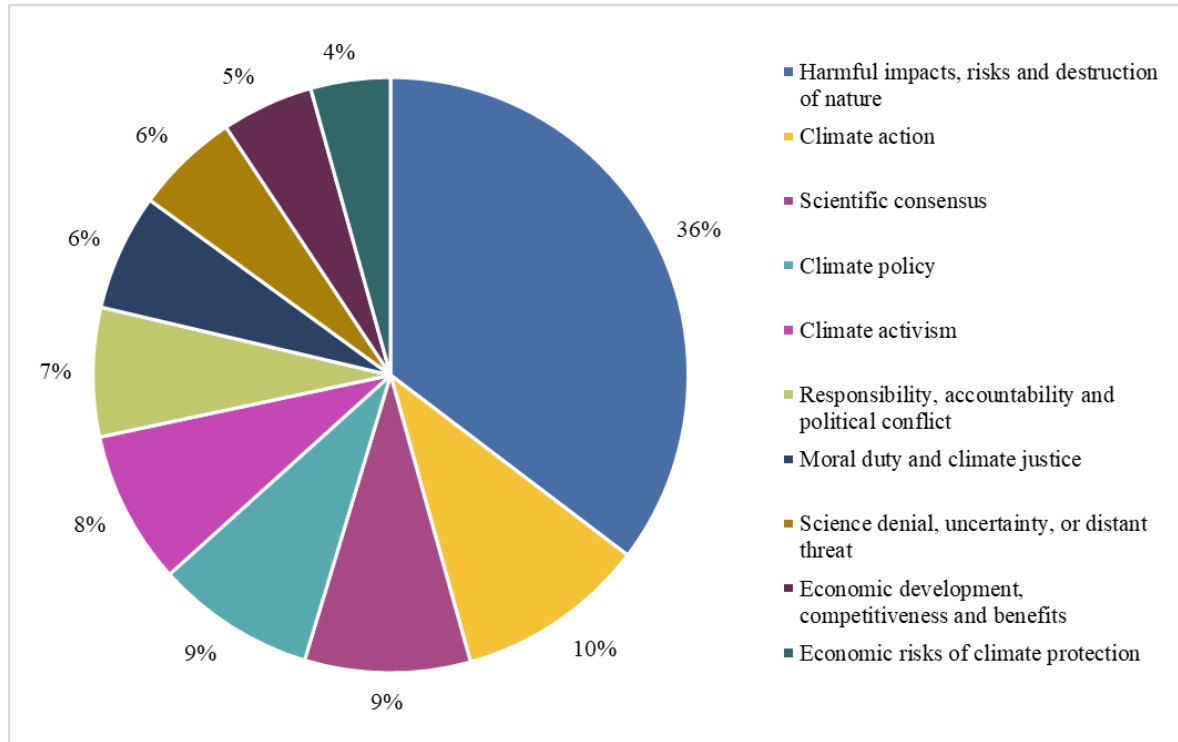


Figure 22: Distribution of frames (N=300)

Within the framing typology, the *harmful impacts, risks and destruction of nature* frame constitutes the largest category, accounting for 36% of the analyzed material (N = 106). The category is analytically broad, including representations that portray climate change as a source of environmental destruction, societal disruption, public health risk, and large-scale crisis. This encompasses disaster reporting, ecosystem loss narratives, biodiversity decline, extreme weather events, and analogical crisis framings, such as COVID-19–climate comparisons. Within this category, articles referring to a specific identifiable disaster or extreme event were additionally coded as event-based. Of the 106 articles assigned to the harmful impacts frame, 16 (15%) were classified as event-based, while the large majority addressed harmful impacts without focusing on a specific disaster or extreme event. This suggests that although event-based reporting forms a visible component of the harmful impacts frame, it does not account for most of the coverage within this category.

Across the analyzed articles, journalists frequently emphasize specific environmental consequences of climate change, including drought-induced wildfires, species extinction,

heatwaves, and ecosystem degradation. Biodiversity loss emerges as a recurring theme, often framed through alarming statistical projections and extinction risk scenarios:

Average insect populations have declined by approximately one quarter over the past decade, and if this trend continues, up to 40% of species could become extinct in the coming decades, with one third entering the endangered category. (Blikk, 2019, author's translation)

Similarly, climate-induced wildfire risk is increasingly articulated not only as a global phenomenon but as a direct national threat affecting Hungary:

Intensifying global warming may trigger processes in Hungary that could make the conditions leading to major wildfires – such as those seen in 2012 and 2022 – up to ten times more frequent in the future. (Telex, 2023, author's translation)

Extreme heat and drought narratives also feature prominently in the coverage, often linked to broader European climate vulnerability:

Meteorologists forecast temperatures exceeding 40°C in several parts of Europe, while the European Commission warned that more than half of the European Union's territory is under drought threat. (HVG, 2022, author's translation)

Beyond environmental and meteorological impacts, the frame frequently extends into civilizational risk and societal collapse imaginaries. These narratives project climate change as a destabilizing force capable of triggering systemic crises:

According to the study, if current trajectories remain unchanged, food riots could erupt in several regions of the world within 20–30 years, while the foundations of modern civilization may begin to destabilize. Escalating water scarcity and crop failures could drive mass migration and social unrest, with researchers warning that mutually reinforcing crises could ultimately contribute to the collapse of the world as we know it. (444, 2015, author's translation)

Authoritative voices are also mobilized to reinforce the perceived normalization of climate crisis conditions:

“The sad reality is that climate change and extreme weather have become the new normal.” (Figueres, cited in Origo, 2021, author’s translation)

Climate action appears in 10% of the analyzed articles, making it a secondary but still visible frame within the overall distribution. This category includes coverage dealing with mitigation efforts, adaptation strategies, technological solutions, as well as behavioral and policy responses aimed at addressing climate change.

Two additional interpretive categories – *scientific consensus* and *climate policy* – each account for 9% of the sample, suggesting a relatively balanced presence of science-based and institutional perspectives in the media discourse. The *scientific consensus* frame focuses on research findings, expert knowledge, and empirical evidence related to climate change processes and impacts, while the *climate policy* frame centers on regulatory measures, international agreements, and governmental responses. Scientific results often appear in the coverage as supporting references that help contextualize environmental risks. Articles frequently cite large-scale empirical studies to illustrate ongoing ecological changes. One example summarizing marine research reports:

According to recent findings based on 632 published studies examining the world’s oceans, climate change is contributing to a decline in marine biodiversity. (Blikk, 2015, author’s translation)

References of this kind show how scientific knowledge is integrated into media reporting, providing empirical grounding for broader discussions about environmental change. Other topics like climate activism, political responsibility, moral issues, science denial, and economic factors also appear, showing that climate change is studied from many different angles.

Frames directly associated with public mobilization and social conflict appear somewhat less frequently. The *climate activism* frame accounts for 8% of the corpus, while Responsibility, accountability and political conflict represent 7%. These categories capture reporting on

climate protests, activist organizations, political disputes, and the attribution of responsibility to governments, corporations, or societal actors.

Normative and ethical interpretations of climate change are present but comparatively marginal. The *moral duty* and climate justice frame constitutes 6% of the analyzed material, reflecting narratives that emphasize intergenerational responsibility, ethical obligations, and questions of global climate justice. Similarly, discursive strategies that downplay the urgency of climate change appear only sporadically: the *science denial, uncertainty, or distant threat* frame accounts for 6% of the corpus.

Finally, economically oriented frames appear least frequently. *Economic development, competitiveness, and benefits* (5%) and *economic risks of climate protection* (4%) together represent a relatively small share of the analyzed material, suggesting that economic arguments – either supportive or critical of climate policy – play a comparatively limited role within the qualitative sample.

Overall, the distribution of frames indicates that climate coverage in the analyzed corpus is strongly dominated by impact-oriented narratives that emphasize environmental risks and damage. Frames focusing on policy responses, scientific authority, and collective action are present but secondary, while economic and denial-oriented frames remain relatively marginal.

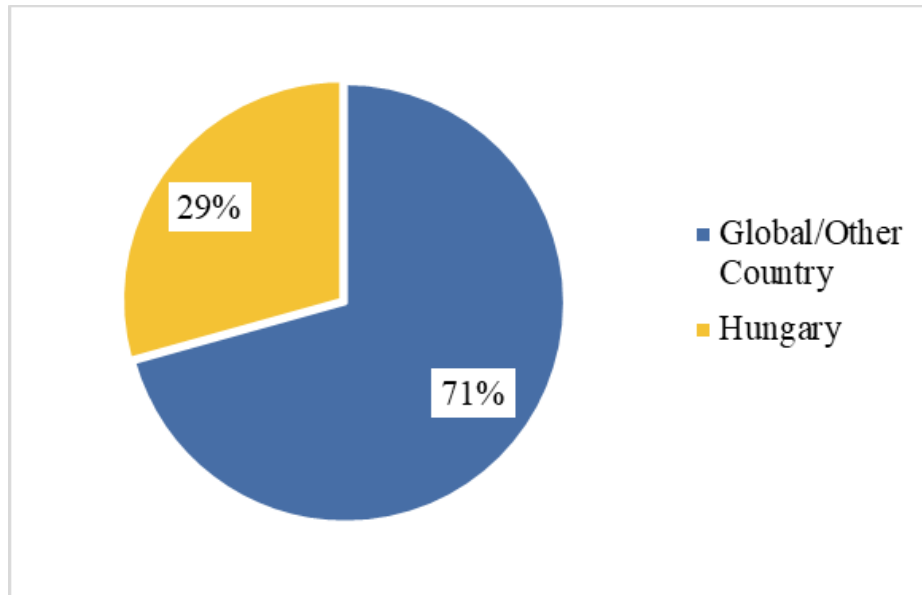


Figure 23: Frame category by geographical focus (N=300)

Figure 23 presents the geographic focus of Hungarian online climate change-related online articles between 2014 and 2018. Although all analyzed pieces were published in online Hungarian media outlets, only 29% focus specifically on domestic climate-related issues, policies, or impacts. These articles typically address topics such as drought, agricultural vulnerability, weather anomalies, water management, and energy security. Coverage related to Hungary frequently appears in connection with political communication, agricultural risk, and environmental governance. Illustrative examples, as reflected in article headlines, include reports on presidential climate diplomacy, land degradation, extreme weather projections, and crop damage:

- “The importance of water management highlighted by Áder at the UN” (Mandiner, 2017)
- “Eight hectares of arable land are lost every minute, says Áder” (Hirado.hu, 2015)
- “Climate change may bring extreme windstorms to Hungary” (Origo, 2021)
- “Spring frosts drastically reduce peach harvest this year” (Telex, 2021)
- “LMP seeks to steer Hungary in a greener direction through referendum initiative” (HVG, 2019)

In contrast, the remaining 71% of articles frame climate change in a global or international context, focusing on planetary systems, transnational impacts, and scientific developments

beyond Hungary. These include coverage of ocean ecosystems, atmospheric processes, and large-scale climate risks:

- “Collapse threatens ocean food chains” (Blikk, 2015)
- “Weakening Atlantic circulation may bring unusual heatwaves and cold spells” (Telex, 2021)
- “A new hurricane category may be created” (24.hu, 2024)
- “The stratosphere is shrinking due to climate change” (Telex, 2021).

5.3.2 Frame variation across analytical periods

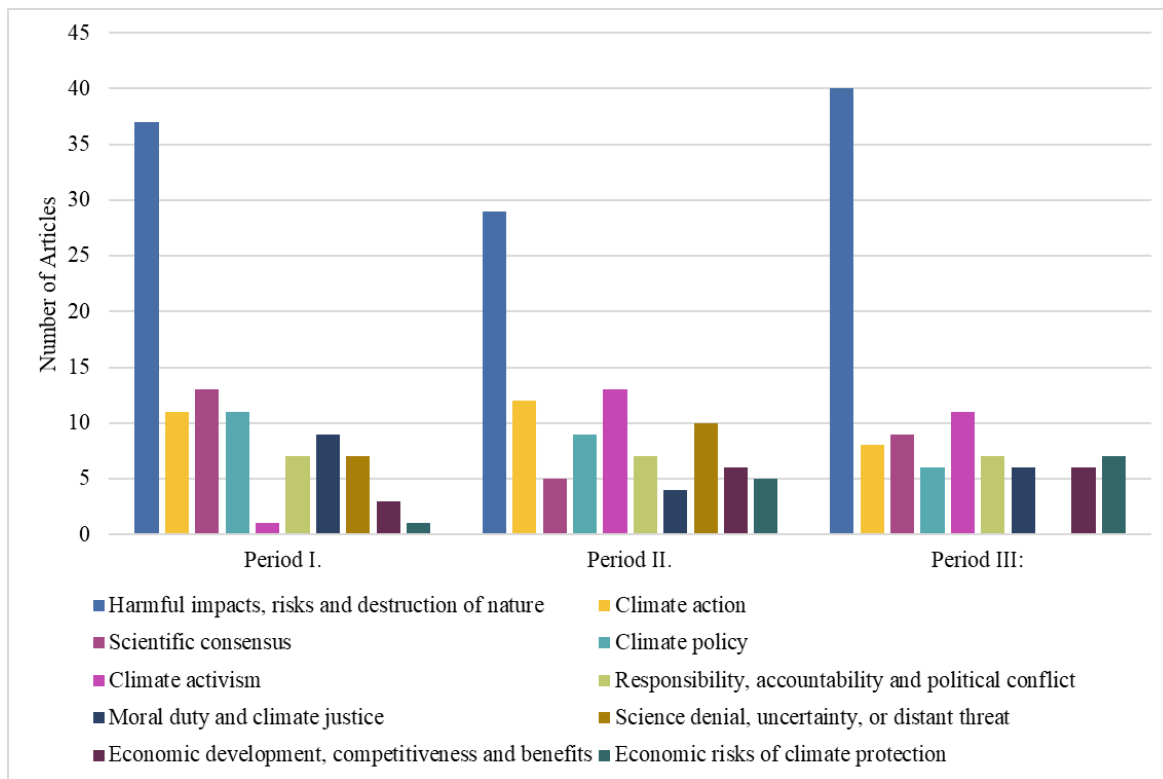


Figure 24: Number of articles by category, Period I-III. (N=300)

When comparing the three analytical sub-periods, a largely stable framing pattern emerges. As already illustrated through several examples in the previous sections, the Hungarian media most frequently presents climate change through the frame of *harmful impacts, risks, and destruction of nature*. This pattern remains consistent across the entire period examined.

As shown in Figure 24, this frame dominates climate coverage in all three periods, although its relative share temporarily declines during Period II. Despite this fluctuation, harmful

environmental consequences remain the most common interpretative lens through which climate change is communicated in the news. Articles frequently highlight extreme weather exposure both in Hungary and globally, including references to simultaneous flood and drought risks.

Hungary must prepare for increasingly extreme weather conditions. The Carpathian Basin – where summer average temperatures have risen more sharply than in other parts of Europe – is particularly exposed to climate change impacts. The country faces both floods and droughts, as seen in recent years. The hydrological cycle has accelerated significantly, resulting in more frequent record-breaking floods. (Mandiner, 2015, author's translation)

Environmental degradation is also framed through ecological transformation, including biodiversity collapse and Anthropocene discourse:

The report argues critically that the current era – marked not only by global climate change but also by the dramatic decline of animal life – should be recognized as a new geological epoch: the Anthropocene, in which human activity has become the dominant force shaping the Earth. (24.hu, 2016, author's translation)

In several cases, risk framing extends into civilizational collapse projections:

According to the study, if current trends continue, food riots could erupt in many parts of the world within 20–30 years, while the foundations of modern civilization may be destabilized. Increasing water scarcity and crop failures could trigger mass migration and social tensions, with mutually reinforcing crises potentially contributing to the collapse of the world as we know it. (444, 2015, author's translation)

Psychological consequences also appear within harm-focused coverage, particularly through the emergence of climate anxiety narratives:

Growing numbers of people are experiencing anxiety about an increasingly uncertain future. Eco-anxiety may become one of the defining socio-psychological challenges

of the postmodern era, as fear linked to environmental destruction drives more individuals to seek professional support. (Mandiner, 2019, author's translation)

Economic risk projections likewise reinforce the destructive framing:

In the future, an increasing number of large-scale natural disasters must be expected. Their economic impacts will need to be treated as a key development factor by the European Union, member states, and regional economies alike. (24.hu, 2021, author's translation)

Notably, the peak of climate activism coincides with this period of intensified emergency discourse. However, within the qualitative sample, activism-related articles do not primarily reproduce catastrophic “end-of-the-world” narratives articulated by activists themselves in protest messaging or social media communication. Instead, Hungarian media coverage tends to situate climate activism within a domestic political context. This pattern is examined in greater detail in a later section focusing specifically on activism-related framing.

In contrast to harm-centered narratives, climate action coverage remains relatively stable across periods, with a modest increase during Period II. Within this category, climate change is framed as a manageable and mitigable challenge, emphasizing technological pathways and policy roadmaps.

For example:

Researchers led by Mark Jacobson of Stanford University have developed transition roadmaps showing how countries could reduce greenhouse gas emissions to zero. According to the study, an 80% transition by 2030 and full transition by 2050 could limit global temperature rise to 1.5°C, in line with the Paris Agreement targets. (24.hu, 2017, author's translation)

Early-period coverage often carries a more optimistic tone regarding reversibility:

If the share of renewable energy sources were tripled or quadrupled by 2050, the catastrophic 2°C temperature increase could still be avoided. (444, 2014, author's translation)

Other categories – including *scientific consensus*, *climate policy*, and *responsibility* – display minor fluctuations across periods but remain broadly stable in volume. Meanwhile, frames such as *science denial* and *economic consequences* appear less frequently overall, though with noticeable variation over time.

Importantly, the *science denial* frame does not typically reject the existence of climate change. Rather, it tends to question specific aspects – most notably its anthropogenic drivers – or reframes climate change as a political or ideological instrument rather than a scientific issue. This interpretive pattern appears most prominently in government-aligned media outlets.

For instance:

Climate panic has become a political tool aimed not at environmental protection but at limiting economic growth and national sovereignty. Donald Trump's actions may put an end to the climate hysteria that has dominated Western public discourse for years. (Mandiner, 2017, author's translation)

Political institutional conflict also surfaces in climate-related reporting:

Although an extraordinary parliamentary session on the climate crisis had been proposed, only opposition representatives attended, as government party MPs boycotted the session, rendering it inquorate. (Blikk, 2019, author's translation)

5.3.2.1 Period I: Dominant frames and notable patterns

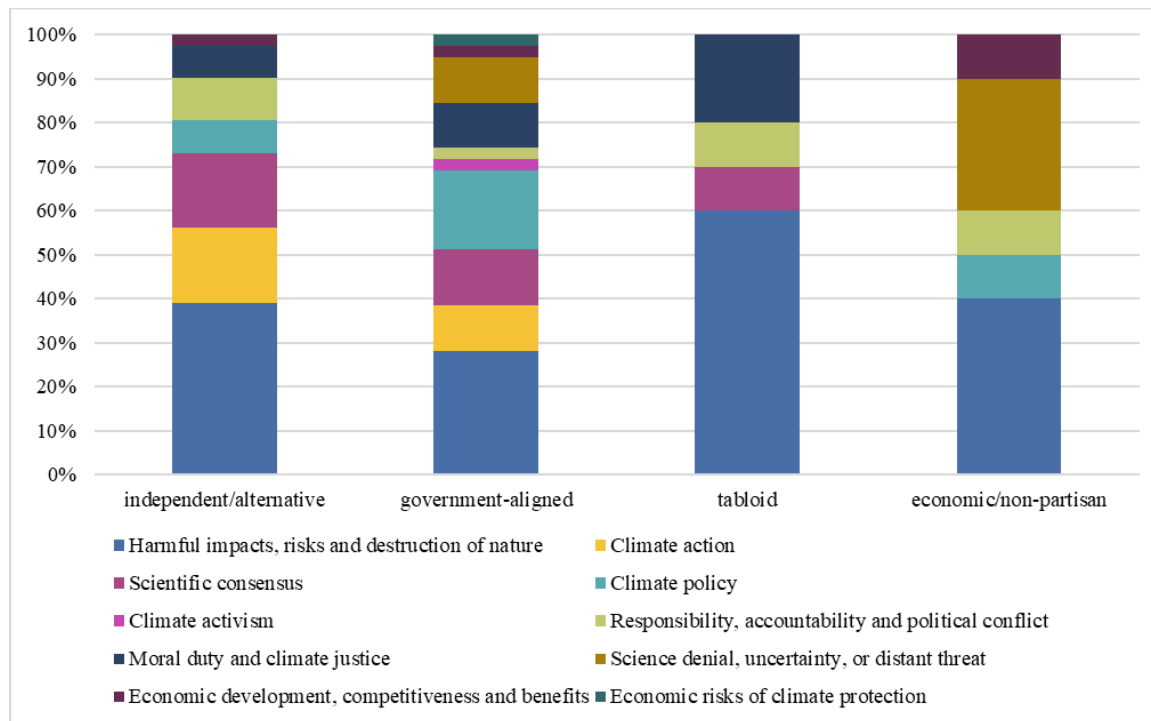


Figure 25: Distribution of frames by outlet type - Period I. (N=100)

Comparing government-aligned/pro-government and independent/alternative articles reveals clear differences in framing patterns. Independent and alternative outlets place stronger emphasis on harmful impacts, scientific consensus, and climate action, suggesting a greater focus on environmental urgency and possible responses to climate change. Several examples illustrating this tendency were discussed in the previous section. Government-aligned media, by contrast, display a somewhat more diverse framing structure, combining references to harmful environmental impacts with frames related to climate policy, responsibility and accountability, and political conflict.

A similar comparison between economic/non-partisan outlets and tabloid media reveals another distinct pattern. Both media types heavily emphasize harmful impacts, risks, and the destruction of nature as the dominant interpretative frame. However, economic outlets also devote relatively greater attention to frames related to science denial, uncertainty, and skepticism. Importantly, this does not necessarily indicate that these outlets promote climate denial themselves. Rather, such articles often highlight the presence of skeptical or denialist voices within the broader media landscape or public debate, thereby framing climate change

through political and epistemic controversy. Climate change thus sometimes appears as a subject of political disagreement rather than purely as an environmental phenomenon. For example, one article reported that:

“Donald Trump has decided that the United States will withdraw from the Paris Climate Agreement. This decision could call into question not only the Paris Climate Agreement but also the potential success of the global effort to combat climate change.”

(Portfolio, 2017, author’s translation)

In another example, coverage highlighted political controversy surrounding climate science when reporting that:

“Donald Trump plans to nominate an environmental adviser who has ties to the fossil fuel industry and who questions climate change.” (MTI, 2017, author’s translation)

In addition, economic outlets are the only category that systematically employs an explicit economic framing of climate change, discussing issues such as economic risks, competitiveness, and the financial implications of climate protection measures. This reflects the editorial orientation of these outlets, where environmental issues are frequently interpreted through economic consequences and policy debates.

Tabloid coverage, in contrast, shows less diversity in framing patterns. Articles typically focus on dramatic environmental consequences and alarming narratives about climate change, which are likely to attract wider readership through emotionally engaging content. A typical example highlights the increasing number of global heat records and the growing public concern about future weather conditions:

“In recent years, heat records have been repeatedly broken around the world, so it is hardly surprising that people are increasingly concerned about forecasts regarding the weather in the coming years and decades. These concerns are well justified, as scientific research on the issue offers little cause for optimism.” (Blikk, 2017, author’s translation)

5.3.2.2 Period II: Dominant frames and notable patterns

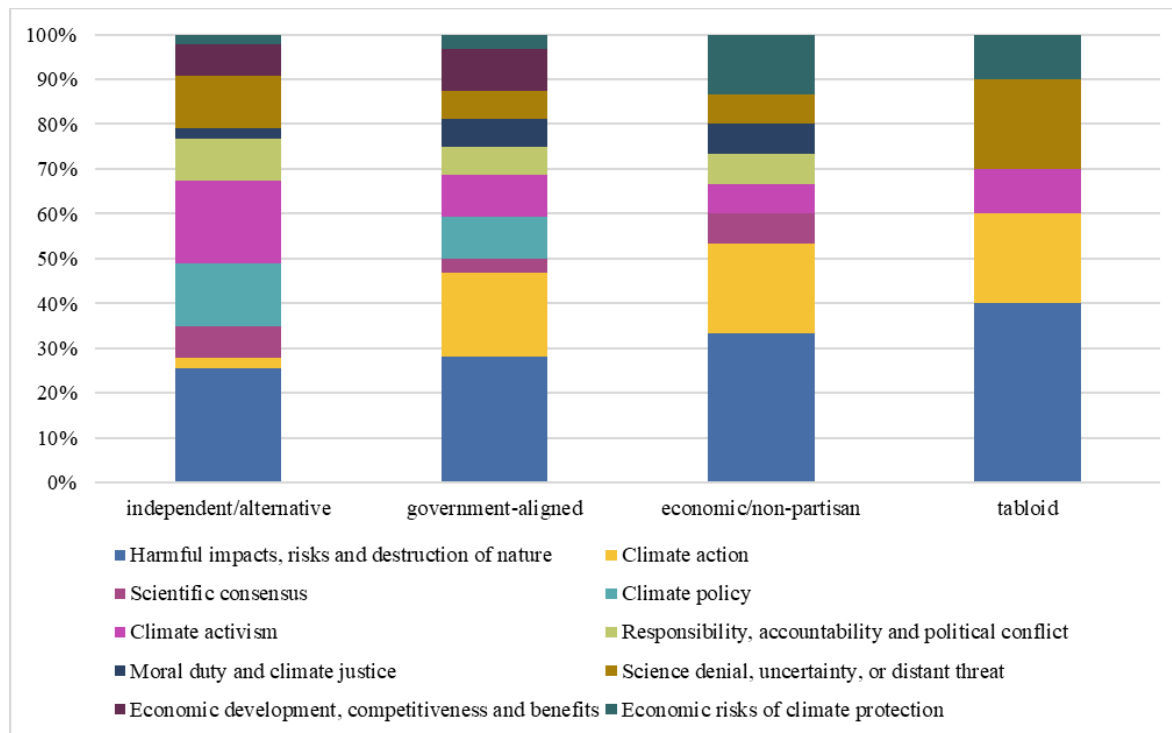


Figure 26: Distribution of frames by outlet type - Period II. (N=100)

In Period II, notable shifts occur across media types compared to Period I. While harmful impacts, risks and the destruction of nature remain an important framing element, the most significant change is the emergence of *climate activism* as a distinct frame across all outlet categories. Unlike in the previous period, references to climate activism appear in every media group, indicating that climate protest and activist mobilization became a visible component of the public discourse on climate change.

This period coincides with the emergence of contemporary climate activism, most prominently marked by Thunberg's school climate strikes, which quickly evolved into a global youth movement. As a result, climate activism gained substantial media attention across the Hungarian news landscape. In terms of frequency, independent and alternative outlets published the highest number of articles covering climate activism, suggesting that these outlets were particularly responsive to emerging forms of youth-led environmental mobilization.

At the same time, the *climate action* frame becomes increasingly prominent across outlet types. In this frame, climate change is presented primarily as a problem that can and should be addressed through mitigation, adaptation, and concrete policy measures. Coverage frequently highlights both institutional and individual forms of action. In addition to policy initiatives and technological solutions, climate action narratives often emphasize everyday behavioral changes such as waste reduction, selective recycling, sustainable consumption practices, or dietary shifts.

Pro-government media also show an increased focus on climate action and climate activism, alongside consistent coverage of harmful environmental impacts. However, the way these outlets frame climate action differs somewhat from independent media coverage.

For example, one article states:

“What is needed in climate protection is not empty words but concrete action. Climate change is a fact that we must adapt to, and protecting the environment is in the interest and responsibility of all of us.” (Maninder, 2020, author’s translation)

Similarly, another article highlights the role of government initiatives in shaping environmental awareness:

“The government does not only talk about environmental protection but intends to make it part of education, everyday life, weekends and summer holidays as well.” (Magyar Nemzet, 2020, author’s translation)

Such narratives emphasize governmental commitment and institutional responsibility in addressing environmental challenges. In this sense, pro-government outlets tend to frame climate action primarily through state-led initiatives and policy programs, rather than through grassroots activism or protest movements.

A comparison between independent/alternative and pro-government outlets therefore reveals not only differences in the frequency of activism-related coverage but also in the interpretation of climate action itself. While independent outlets more often connect

climate action to activist mobilization and civic engagement, pro-government media tend to frame environmental action as the outcome of governmental policy initiatives. These differences in framing are discussed in greater detail in Section 5.3.2, which examines the representation of climate activism across different media types.

5.3.2.3 Period III: Dominant frames and notable patterns

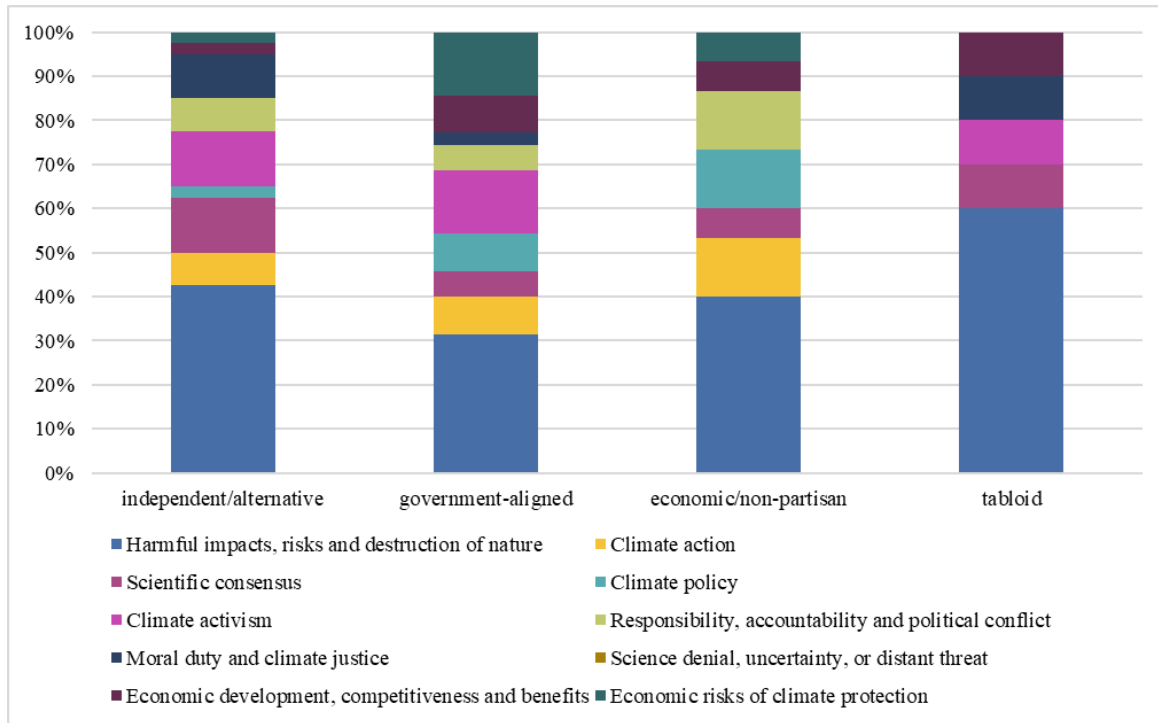


Figure 27: Distribution of frames by outlet type - Period III. (N=100)

In Period III, the framing patterns show further development compared to the previous periods. Independent/alternative outlets maintain a balanced approach, with a continued strong presence of harmful impacts and climate activism, alongside steady attention to scientific consensus and climate policy. This suggests sustained focus on both the urgency of climate change and active responses.

Government-aligned media reduce the emphasis on climate activism compared to Period II but keep a significant share of harmful impacts and climate action frames, indicating a more cautious engagement with activist narratives while still addressing environmental risks and policy.

Economic/non-partisan outlets continue to highlight harmful impacts prominently but show a slight decline in climate action coverage compared to Period II. Science denial remains present but less dominant than in Period I and II, suggesting a gradual shift towards more constructive discourse.

Tabloids maintain a strong focus on harmful impacts and climate activism, similar to Period II, reflecting ongoing interest in dramatic and urgent climate stories to engage readers.

Overall, Period III reflects a stabilization of framing with persistent attention to environmental risks and activism, while pro-government and economic media show more moderate engagement with activist themes than in Period II.

Tabloidization is evident in the consistent prioritization of dramatic and urgent frames, especially harmful impacts and activism, aimed at capturing broad readership. The rise of activism coincides with a slight decrease in the number of distinct frames, suggesting that the urgency of activist narratives may have narrowed the diversity of climate change discourse during Period II before broadening again in Period III. Overall, the media discourse evolves from a primarily impact-focused narrative to one that incorporates social mobilization and policy action, reflecting changing public and political dynamics.

Over the three periods, independent and pro-government outlets show distinct changes in framing. Independent media consistently emphasize harmful impacts and climate activism, with activism gaining strength in Period II and remaining important in Period III, reflecting a growing focus on social engagement and urgent climate action. In contrast, pro-government outlets display a more varied framing, initially including science denial and economic concerns in Period I, then increasing climate action and activism coverage in Period II, before reducing activist emphasis in Period III. This suggests that independent outlets maintain a steady activist and environmental focus, while government-aligned media adapt their framing more strategically, balancing skepticism with growing attention to policy and activism over time.

5.3.3 Cross-period and cross-outlet comparison

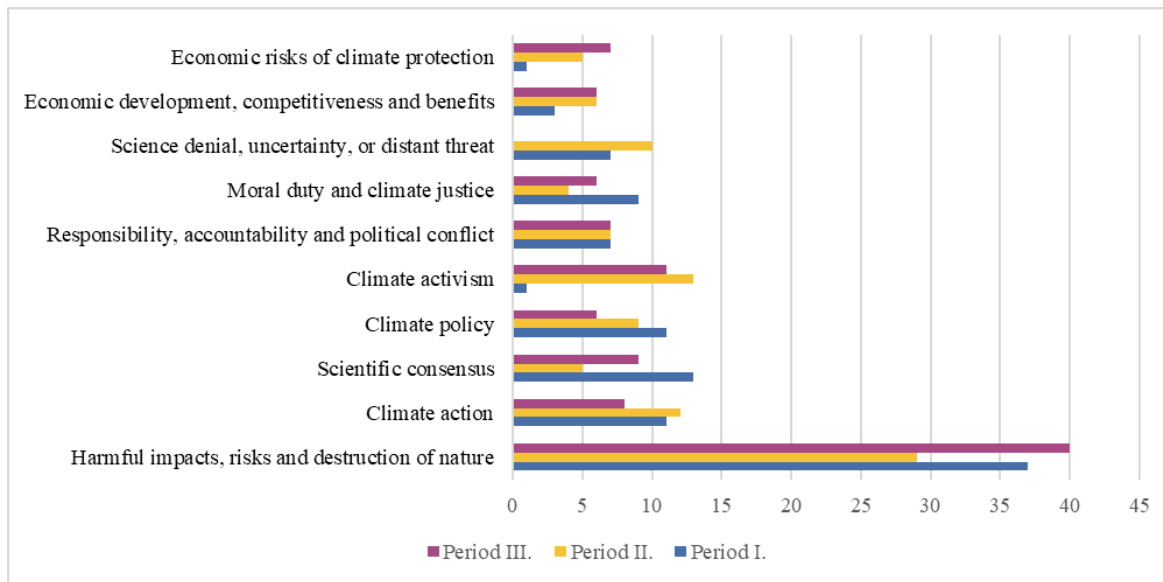


Figure 28: Number of articles per frame category (N=300)

While the previous sections examined the distribution of frames across outlets and outlet types, it is also important to consider how these framing patterns evolve over time.

The three analytical periods allow for a broader view of how climate frames evolve over time. The cross-period comparison reveals both continuity and gradual shifts in the framing of climate change across the analyzed corpus. Across all three periods, the Harmful impacts, risks and destruction of nature frame remain the most dominant category by a substantial margin. However, its relative prominence increases over time, reaching its highest level in Period III. This suggests a growing tendency in climate coverage to emphasize environmental damage, risks, and crisis narratives.

A different pattern can be observed for frames associated with collective responses and mobilization. The Climate activism frame is most prominent in Period II, reflecting the heightened media attention surrounding global climate protest movements during that time. In Period III, however, the frequency of activism-related framing decreases noticeably, indicating that protest-driven climate narratives become less central in the later phase of the analyzed period.

Frames emphasizing scientific authority and policy governance display a somewhat different trajectory. *Scientific consensus* and *climate policy* are relatively more visible in Period I, suggesting that earlier coverage may have relied more heavily on expert knowledge and institutional responses when discussing climate change. In later periods, these frames appear less frequently, as impact-focused narratives become increasingly dominant.

Some frames remain relatively stable across the three periods. Categories such as *responsibility*, *accountability* and *political conflict* show only moderate fluctuations, indicating that political attribution and conflict-related reporting remain a consistent but secondary element of climate discourse.

Finally, frames associated with economic considerations and climate skepticism remain marginal throughout the entire period. Both *economic development*, competitiveness and benefits and *economic risks of climate protection* appear only sporadically, while the *science denial*, *uncertainty*, or *distant threat* frame remains limited across all three periods. Taken together, these patterns indicate that Hungarian media discourse increasingly frames climate change primarily through the lens of environmental risk and damage, while other interpretative frameworks play a more limited role.

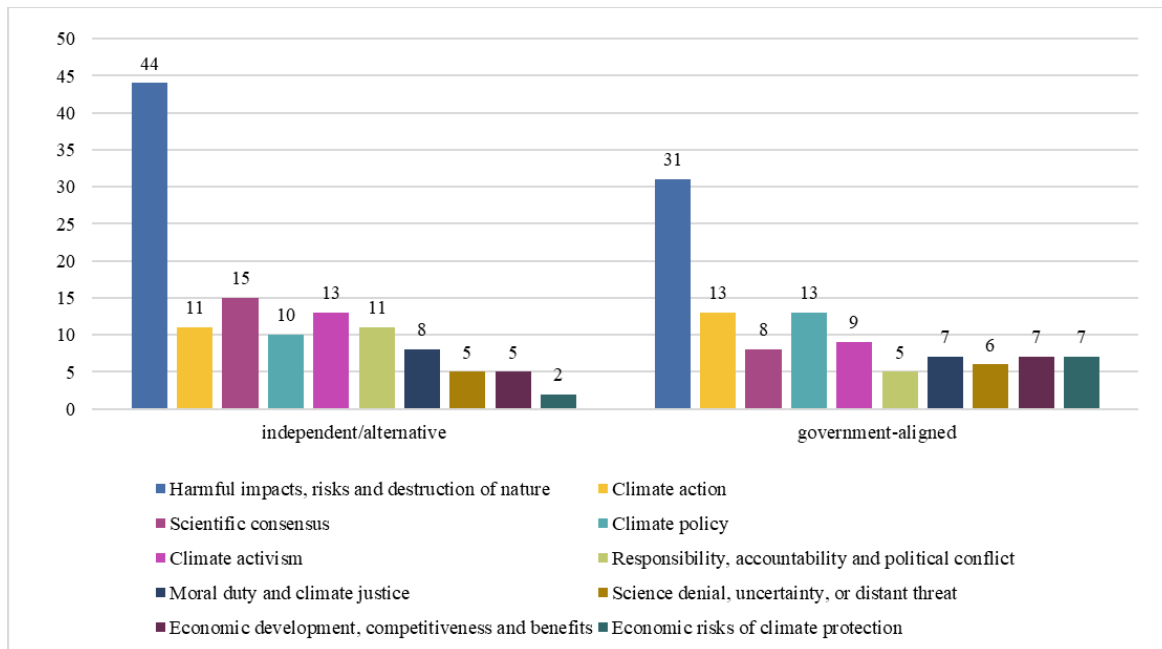


Figure 29: Frame categories by independent/alternative and government-aligned outlets, 2014-2024 (N=230)

This chart compares the framing of climate change articles between independent/alternative and government-aligned outlets based on a qualitative sample of 230 articles. Independent and alternative media place greater emphasis on frames highlighting harmful impacts, scientific consensus, and climate activism, which together suggest a more urgent and problem-oriented interpretation of climate change. These outlets also engage more frequently with normative dimensions of the issue, including moral responsibility, climate justice, and questions of political accountability.

For example, coverage in independent outlets often presents climate change as an ethical responsibility requiring immediate action. One article reports on a speech by Pope Francis urging world leaders to act against environmental destruction:

“Pope Francis called on world leaders to take immediate action to prevent the destruction of God’s created nature in his speech at the UN sustainability summit.”
(HVG, 2015, *author’s translation*)

Similarly, discussions of climate justice appear in connection with broader social inequalities. Independent outlets sometimes highlight how climate change disproportionately

affects vulnerable groups. In one article discussing the public engagement of Canadian author Margaret Atwood, the issue is framed in terms of gender and social justice:

“Atwood’s growing public visibility has enabled her to advocate for issues that receive insufficient attention, such as climate change and the irreversible transformations it may trigger, which are likely to worsen the situation of women and children.” (Index, 2018, *author’s translation*)

These examples illustrate how independent outlets frequently frame climate change not only as an environmental issue but also as a moral and societal challenge requiring collective responsibility.

In contrast, government-aligned outlets emphasize harmful impacts and climate action but show lower overall diversity in framing. Notably, government-aligned outlets give relatively more attention to climate policy and show a somewhat balanced but less activist-oriented narrative, with limited focus on climate justice and moral issues. This difference reflects how outlet type influences the framing priorities in climate change coverage.

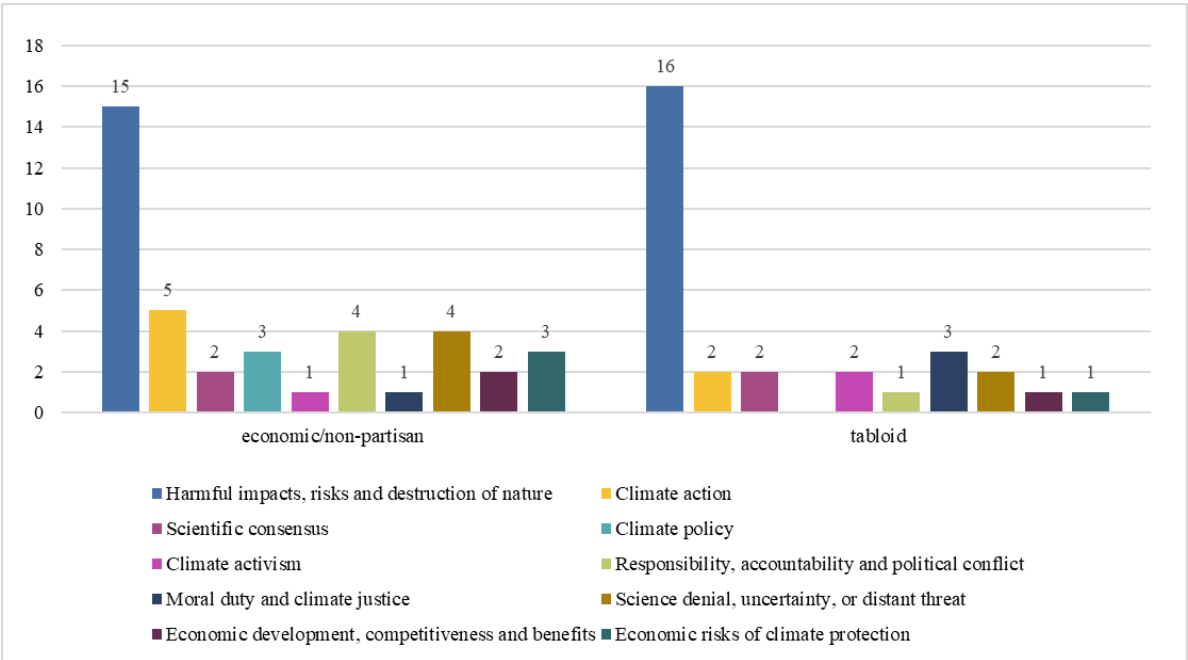


Figure 30: Frame categories by economic/non-partisan and tabloid outlets, 2014-2024 (N=70)

Both economic/non-partisan and tabloid outlets mainly highlight harmful impacts, with tabloids placing even stronger emphasis on this aspect. Economic outlets show a wider variety of frames, including climate action, policy, and economic topics, while tabloids focus more narrowly, with less attention to activism and scientific consensus. Compared to independent and government-aligned media, economic outlets give more space to economic concerns and some skepticism, whereas tabloids consistently stress urgent and dramatic climate issues. These differences illustrate how various media types shape climate change coverage in distinct ways.

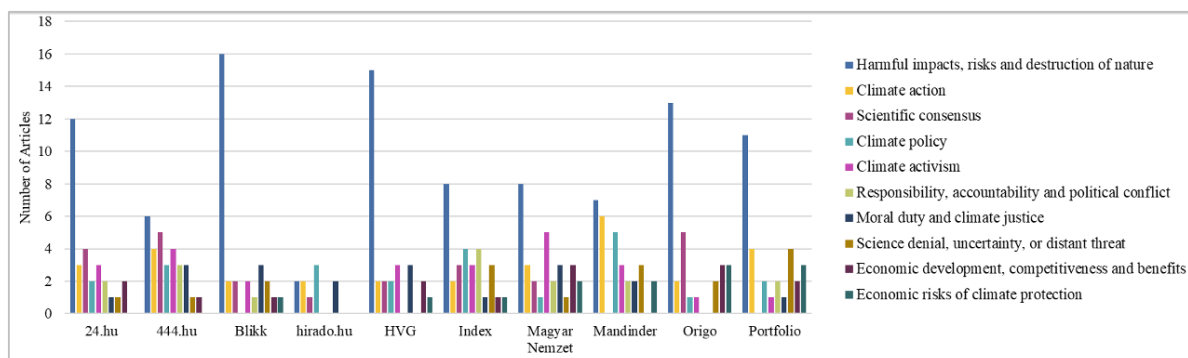


Figure 31: Frame categories by outlets, all periods. (N=300)

Examining the data at the outlet level provides a clearer and more detailed understanding of how individual media shape climate change narratives, complementing the broader patterns identified earlier. Independent outlets such as 444.hu and Telex demonstrate a balanced use of different frames, with some attention to climate activism, consistent with previous findings. HVG and 24.hu, also independent, focus strongly on harmful impacts, reflecting the dominant emergency framing seen across periods and outlet types.

Interestingly, government-aligned outlets like Mandiner and Origo show a relatively stronger presence of climate activism frames compared to independent media, alongside their emphasis on harmful impacts and climate policy. This supports earlier observations that pro-government media engage with activist narratives more than might be expected, while also including elements of science denial and economic concerns. Portfolio, representing

economic/non-partisan media, focuses mainly on economic risks and environmental impacts, with limited activism framing.

Index, transitioning from independent to government-aligned, presents a mixed framing profile balancing emergency and activist themes. Overall, while emergency framing centered on harmful impacts dominates across most outlets, activism appears more frequently in government-aligned media than in independent outlets. This outlet-level analysis deepens the understanding of how editorial orientation and shifts influence not only the diversity of climate change discourse but also the relative prominence of activism and emergency narratives in Hungarian media.

5.3.4 Activism-related framing patterns

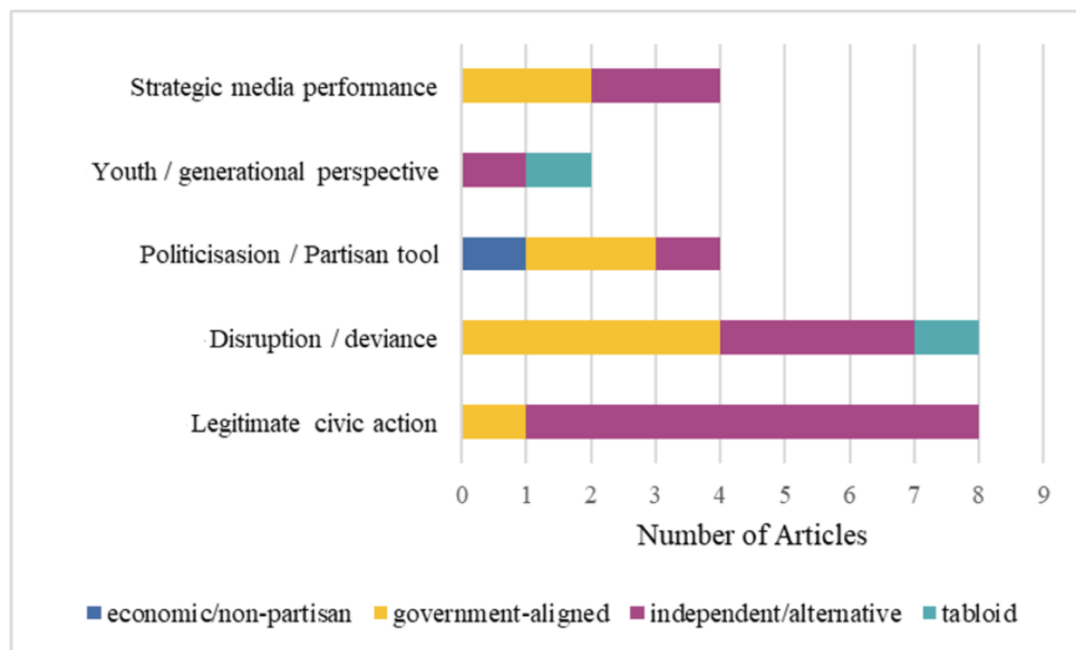


Figure 32: Activism related framing by outlet type, all periods (N=26)

Figure 32 shows how activism-related frames are distributed across outlet types in the qualitative sample. Several differences emerge in the way climate activism is represented across the Hungarian media landscape. The *Legitimate civic action* frame appears most frequently in independent or alternative outlets, where climate protests are typically portrayed as a normal form of democratic participation. In government-aligned outlets, however, this interpretation becomes increasingly rare over time.

In the earlier phase of the examined period (2018–2019), government-aligned media still occasionally reported on climate protests in relatively neutral terms, sometimes reproducing the *legitimate civic action* framing. For example, one report described a large youth climate demonstration in Brussels as follows:

“More than ten thousand young people demonstrated on Thursday in Brussels to demand stronger action against climate change. The participants of the demonstration initiated by the Youth for Climate movement called on the Belgian government to adopt an ambitious climate policy aimed at keeping global warming below 1.5°C compared to pre-industrial levels.” (Mandiner, January, author’s translation)

In independent outlets, similar events were more consistently framed in terms of civic engagement and moral commitment. For instance, coverage of Greta Thunberg’s transatlantic journey emphasized her role as a young activist setting a personal example:

“Greta Thunberg set off from England to New York by boat. The sixteen-year-old activist wants to set an example: it is possible to travel without flying. Instead, she is crossing the Atlantic on a zero-emission racing yacht made from recycled carbon.” (24.hu, 2019, author’s translation)

Independent outlets also tended to portray Thunberg herself in a largely positive light, often presenting her as a symbolic representative of youth activism: “Greta Thunberg says the time for rebellion has come.” (HVG, 2019)

As climate activism became more visible internationally and protest actions also began to appear in Hungary, government-aligned outlets increasingly shifted toward more critical frames. In particular, the *Disruption / deviance* frame became more prominent, portraying activists as actors who cause disturbance, break rules, or endanger others. For example, one report emphasized the disruptive consequences of protest actions blocking traffic:

“(…) despite the shouting of a worried mother and the honking of cars in the other lane, the climate activists continued their march and did not allow a car carrying a sick child to pass.” (Magyar Nemzet, 2023)

Similarly, protests organized by European climate groups were framed through narratives emphasizing obstruction and public inconvenience:

“The organization regularly causes blockades on the streets of Berlin. On Monday a major controversy erupted after one of their blockades prevented an ambulance from reaching a severely injured cyclist.” (Mandiner, 2022)

A related pattern can be observed in the *Politicization / partisan tool* frame, where climate activism is presented as being instrumentalized by political actors or elites. Articles framed activist movements as financially supported by powerful interests or linked to broader ideological agendas:

“Who finances the radical climate activists? The market value of paintings attacked by activists in Western European museums has increased. Their radicalism may criminalize the movement, which is financed among others by the granddaughter of an oil magnate who founded a museum.” (Magyar Nemzet, 2022)

The *Strategic media performance* frame appears in both independent and government-aligned outlets, indicating that journalists sometimes interpret activist actions as deliberate attempts to attract media attention and shape public debate. Coverage of highly visible protest tactics, such as throwing food at artworks, was frequently framed in terms of symbolic media performance:

“Environmental activists poured mashed potatoes on Claude Monet’s painting *Les Meules* in Germany.” (Index, 2022)

Finally, the *Youth / generational perspective* frame appears only occasionally in the sample, but highlights another interpretative angle in which climate activism is discussed in relation to generational tensions and the emergence of youth-led movements. Tabloid coverage, for example, sometimes emphasized the personal story of Thunberg and the psychological burden of climate awareness:

“The more the young girl immersed herself in the topic of climate change, the deeper depression she fell into, which eventually motivated her to start a movement.” (Blikk, 2020)

These patterns suggest that the representation of climate activism is closely linked to outlet type and evolves over time. Independent media tend to frame protests as legitimate civic participation and moral engagement, whereas government-aligned outlets increasingly emphasize disruption, politicization, or strategic motives behind activist actions.

5.4 Supplementary semi-structured interviews²⁷

The interviews provide additional context for the patterns identified in the content analysis by showing how journalists themselves explain changes in climate coverage. Four themes were particularly prominent: competition for newsroom attention, the growing importance of localization, differences in framing, and the barriers affecting explanatory climate journalism.

5.4.1 Newsroom attention, news value and localization

The interviews suggest that climate change did not simply become progressively more prominent in Hungarian online journalism. Rather, its position on the news agenda *fluctuated* considerably. The 24.hu interviewee located the most significant shift around the middle of the decade:

“On a personal level, the turning point was around 2015–2016, but globally and at the newsroom level it was closer to 2017–2018.”

By 2017–2019²⁸, climate change had become considerably easier to place on the news agenda. The interviewee recalled that during this period *“you could write about almost anything and you knew that people would read it or listen to the podcast.”* This changed

²⁷ A more detailed analysis of the interviews is currently being prepared for the winter issue of *Médiakutató* (2026)..

²⁸ Climate movements began to gain momentum during this period.

abruptly with the pandemic: “*COVID changed everything.*” Climate reporting therefore remained highly dependent on competition with other major events rather than following a continuously increasing trajectory.

The Telex interviewee similarly recalled that the period preceding COVID provided a particularly favorable news environment because climate movements continuously generated reportable events rather than only scientific developments. The HVG interviewee placed this competition for attention in the wider context of a *polycrisis*, in which climate change increasingly exists alongside war, pandemic risk, energy insecurity and other crises. As they put it, climate change may eventually become simply “*one crisis among many.*”

The interviews therefore provide an important qualification to the changes observed in the corpus. The visibility of climate change is determined not only by the severity of the climate crisis itself, but also by what other events are competing for the finite attention of newsrooms and audiences at a particular moment.

Within this increasingly competitive news environment, localization emerged as one of the clearest common tendencies across the interviews. The 24.hu interviewee described the shift particularly clearly: whereas almost any climate-related development could attract attention during the pre-COVID peak, today “*domestic relevance is more decisive.*”

The Telex interviewee was even more explicit about the relationship between localization and audience interest:

“We increasingly try to connect these stories to Hungarian circumstances, because otherwise people simply do not read them. They are not interested.”

This was directly associated with what the interviewee described as *climate fatigue*. General climate developments or another scientific study may no longer be sufficient to attract attention unless they can be connected to something readers recognize in their own surroundings:

“Climate change is a difficult topic because if you do not connect it to some current event, you can really feel this phenomenon of ‘climate fatigue’. This became especially apparent when COVID hit. People became very tired of hearing that ‘we are all going to die’, that ‘this is bad’ and ‘that is bad’. [...] As for how much we deal with local issues: increasingly so. Precisely because, due to climate fatigue, people are becoming less interested in the broader trends. Of course, we still report it if another global record is broken or if there is a drought somewhere, because we are a news outlet. But increasingly we try to connect it somehow to Hungarian circumstances, because otherwise people simply do not read it. They are not interested.”

Localization thus functions as a strategy for maintaining the relevance of climate change in an environment in which audiences may have become saturated with repetitive and overwhelmingly negative climate messages. The underlying question increasingly becomes not simply *why* climate change matters, but *what* climate change means for readers in Hungary, here and now.

This logic was not limited to the independent outlets. The Mandiner interviewee similarly identified “*domestic involvement*” and “*geographical proximity*” as important determinants of news value. At HVG, locally recognizable consequences were also regarded as particularly effective news hooks. Low water levels in the Danube, for example, become more immediately relevant when connected to the cooling requirements of the Paks nuclear power plant.

However, the emphasis on immediate relevance can also restrict the explanatory scope of climate journalism. The 24.hu interviewee argued that the media devote considerably less attention to the indirect consequences of climate change:

“I think too little is said about the knock-on effects of climate change. We talk about drought, heat and water scarcity, but much less about why it is also worth supporting adaptation in developing countries: when climate change hits there even more severely — and in reality it already has — millions of people may be displaced and

some may eventually reach Hungary. The press always focuses on the next immediate problem and rarely steps outside that frame to consider what further, butterfly-effect-like consequences a particular impact may trigger. It is understandable that people care about the fact that it is extremely hot and there is no water, but the subsequent social, economic and political consequences should also be placed alongside this.”

This observation points to a central tension in climate reporting. The immediate and local consequences of climate change are often the easiest to translate into conventional news values, yet understanding climate change requires precisely the opposite: connecting individual events to longer and more complex causal chains.

5.4.2 Framing, editorial autonomy and political interpretation

The interviews also clarify how consciously climate framing is managed within newsrooms. Personal positions could be strong, but formal newsroom-level framing strategies were much less apparent. The 24.hu interviewee, for example, recalled that they and a colleague had already interpreted the situation in relatively alarmist terms around 2015–2016. The interviewee rejected the idea that increasingly severe language necessarily constituted journalistic exaggeration: *“Since we are already in a crisis, we can call it whatever we want: reality itself is catastrophic.”*

They later added that *“words may become devalued, but reality is meanwhile fully catching up with them.”*

At Telex, the interviewee explicitly rejected the existence of a centralized linguistic strategy within the newsroom:

“There is no explicit rule, either for me personally or within the newsroom, saying that from now on we should communicate about it in this particular way, or that something should be pushed into the background.”

The same interviewee emphasized considerable autonomy over the production of individual articles: *“There is not much interference in how a journalist writes an article.”* Editorial

intervention was described primarily as a response to factual mistakes or serious disproportionality rather than as an attempt to impose a predetermined climate narrative.

The HVG interviewee described a comparable approach. There was no written newsroom policy prescribing the use of expressions such as *climate crisis*, *climate change* or *global warming*:

“However, there is no such linguistic guideline among our explicitly stated or written principles. Perhaps that is something worth changing.”

Climate framing therefore appears to be decentralized rather than absent. It emerges through the interaction of individual journalistic judgement, professional conventions, editorial review and the broader culture of the newsroom, rather than through a Guardian-style institutional language policy.

Political interpretation nevertheless creates substantial differences between outlets. The Telex interviewee characterized the political communication surrounding climate change during the period under study as a form of “*soft*” relativization:

“In my view, there was definitely a relativization of climate change. The previous government was not explicitly climate-denying, but it was absolutely relativizing the issue. Short-term energy considerations were always treated as the important ones rather than the long-term implications. You could see this kind of ‘soft’ minimization: yes, yes, climate change exists, but we do not really need to concern ourselves with it that much; the situation is not that serious. It was not very ‘hardcore’, but I think it made it considerably more difficult for people to take seriously the fact that there was a real problem.”

The Mandiner interviewee described the outlet's own approach in markedly different terms. Rather than relativization, they emphasized critical distance:

“A critical approach prevailed in Mandiner's values: the objective presentation of news permeated by climate hysteria and climate panic, as well as criticism of climate activism when it was carried out with political intentions.”

These statements are particularly revealing when placed alongside one another. What may be interpreted externally as relativization or skeptical framing can be understood internally as journalistic distance from “*climate panic*” or politically motivated activism. The interviews therefore complicate a straightforward distinction between climate-denying and climate-alarmist media. Political differentiation also concerns how serious the problem is presented as being, which responses are considered legitimate, how activism is interpreted, and where journalists locate the boundary between critical distance and normative commitment.

At the same time, political differences did not necessarily extend to the fundamental existence of climate change. The Mandiner interviewee described a relatively broad consensus regarding basic climatic effects and humanitarian consequences, while locating disagreement more strongly in their political interpretation and proposed solutions. This distinction is important because it suggests that ideological variation increasingly occurs within the framing of climate change rather than simply between acceptance and denial.

5.4.3 Climate activism: agenda-building without editorial endorsement

The interviews also help distinguish the agenda-building effects of climate activism from its editorial reception. Greta Thunberg and movements such as Fridays for Future clearly increased the visibility of climate change, but this did not necessarily mean that newsrooms adopted their political positions.

The 24.hu interviewee estimated that “90–99 per cent” of the outlet's reporting on Thunberg consisted of relatively straightforward news coverage with minimal evaluative context. Yet the interviewee recalled that Thunberg herself was highly divisive inside the newsroom:

“Within the newsroom, in informal conversations, it became clear that she was a very divisive figure. I think the team handled this well, because that division did not appear

at the level of the articles. We wrote about what people were interested in, but we did not conduct a newsroom-wide campaign either for or against her.”

The Mandiner interviewee similarly argued that Thunberg did not fundamentally change the outlet's editorial approach. She did, however, generate a substantial volume of news reports, explanatory articles and opinion pieces, while climate activism also became an object of political criticism.

The HVG interviewee retrospectively described this as part of a broader cycle of media attention:

“There have always been organizations or movements that, for a shorter or longer period, managed somehow to influence, dominate, or even set the agenda of public thinking. But generally there was always a certain decline afterwards.”

Climate activism can therefore be understood mainly as an agenda-building force. Protests, activists and public events gave journalists concrete stories to report on and brought more attention to climate change. This attention did not have to be positive. Even critical coverage of climate movements could increase the visibility of climate change in the news.

5.4.4 Explanatory and long-form journalism

A further recurring theme was the difficulty of sustaining long-form climate journalism. Across the interviews, there was little indication that journalists regarded such work as unnecessary. Instead, the central barriers were time, staffing, readership expectations and the economic aspects of this type of work.

The 24.hu interviewee expressed the problem in particularly concrete terms:

“It is difficult to convince an editor-in-chief that I should spend four weeks working on a piece that gets fewer clicks than a quick news story. Twenty-five thousand people may read the news story and twelve thousand the long article — which in itself is a good result but does not necessarily compensate for the energy invested.”

The interviewee contrasted this with the larger Polish media market and more established subscription models, where a resource-intensive article may be economically defensible if it generates paying subscribers. Long-form journalism, from this perspective, is not simply a question of editorial ambition but of whether the business model allows journalists to spend weeks on a single story.

The Telex interviewee similarly believed that an audience existed for such journalism but emphasized the resources required to produce it:

“I think there would be demand for it. [...] One of the major problems is that even exciting topics are often written about in an extremely technical, extremely long and extremely boring way. I think it is very difficult to find a form that is neither over-explanatory nor patronizing, but also not excessively scientific. [...] I do not think there are sufficient resources for it. It would require a disproportionate amount of work in the current media environment. It would be great if there were time for this.”

The interviewee summarized the practical difficulty even more directly: *“in a smaller newsroom, this is practically impossible to sustain.”* Yet the same journalist identified precisely this form of reporting as one of the gaps in Hungarian climate journalism: *“longer but interesting explanatory articles”* that help readers understand *“why things happen the way they do.”*

This distinction is important. Long-form journalism is not valuable simply because it is long. Its relevance to climate reporting lies in its explanatory capacity: its ability to connect individual events to processes that may otherwise remain invisible in daily news coverage. The HVG interviewee similarly perceived a *“niche demand”* for such journalism but questioned whether advertising- and subscription-funded newsrooms could justify assigning a journalist to one article for several weeks.

This produces a structural paradox: the type of journalism most capable of explaining the complexity of climate change is also among the most difficult to sustain within the economic and temporal constraints of digital news production. Localized, event-driven stories may perform well because they provide immediacy and recognizable consequences, while the

slower explanatory journalism needed to connect those events to wider climatic, economic and political processes requires substantially greater resources.

5.4.5 The future: from specialized climate journalism to general journalistic competence

Finally, the interviews suggest that the future of climate journalism may not simply involve producing a greater number of explicitly climate-focused articles. Instead, climate change may increasingly become integrated into other areas of reporting.

The 24.hu interviewee anticipated precisely such a development:

“I think the media are moving in a direction in which climate change will become a central element of everyday news production even when an article is not one hundred per cent about climate change. An article about energy prices, for example, may naturally include the fact that imported electricity is expensive because climate change is making energy production more difficult in several countries. Over the next ten or twenty years, it will be essential for media professionals to understand the basics of climate change.”

The Mandiner interviewee arrived at a similar conclusion from a different editorial perspective, predicting that *“climate journalism is increasingly breaking out of its specialist quarantine”* and ultimately that *“climate issues are becoming mainstream.”*

The mainstreaming of climate change may therefore have a paradoxical endpoint: it could become increasingly difficult to identify climate journalism as a discrete journalistic category²⁹. If climate change simultaneously affects energy production, agriculture, water management, migration, economics, public health and everyday life, climate literacy becomes less a specialist competence than a component of general journalistic knowledge.

²⁹ The journalists interviewed from *HVG*, *24.hu* and *Telex* specialize in environmental issues, including climate change, energy and nuclear energy, as well as other related topics. They also regularly participate in workshops and professional training organized by environmental organizations, some of which focus specifically on climate communication. The *Mandiner* interviewee, by contrast, is an external contributor whose primary area of expertise is not environmental journalism.

The central challenge is consequently not only whether climate change remains visible on the news agenda, but whether journalists have sufficient knowledge and resources to connect its increasingly visible local manifestations to the broader processes that produce them.

6. DISCUSSION

The findings of this dissertation show that climate change coverage in Hungary between 2014 and 2024 cannot be described either as a linear increase in media attention or as a succession of isolated event-driven peaks. Climate change became considerably more visible in Hungarian online media, but the factors sustaining this visibility changed over time. The late 2010s were strongly associated with youth climate activism and the exceptional visibility of Greta Thunberg and Fridays for Future (FFF), while the later period increasingly connected climate change with direct experiences of climatic impacts.

The longer temporal perspective also complicates a straightforward application of the issue-attention cycle. Although the Hungarian data show repeated increases and declines in attention, climate coverage did not return to its earlier baseline after the exceptional attention of 2019 and the disruption caused by COVID-19. Instead, it stabilized at a substantially higher level. This is consistent with Anderson's (2009) argument that environmental attention is shaped by interacting journalistic, political, scientific and strategic factors rather than by a single predictable cycle. During this period, journalism itself also changed: climate-related issues received greater attention in some newsrooms, while journalists working on these topics developed more specialized knowledge and expertise.

6.1 From attention cycles to sustained climate coverage

RQ1 examined how the use of climate-related key terms changed in Hungarian media between 2014 and 2024. The results show not only that climate coverage increased, but also that climate change became a more established part of the media agenda. In the earlier years, attention often declined relatively quickly after major events. Later in the period, similar peaks still occurred, but coverage generally remained higher between them.

The interrupted time-series analysis found a sharp decline in March 2020, followed by a negative change in the trend. However, this decline was not permanent. Climate coverage later recovered and remained higher than in the earlier years of the study.

This pattern only partly follows Downs' (1972) issue-attention cycle. Attention increased and declined around individual events, but over the full ten-year period it did not simply return to its earlier level. This is particularly clear after 2021. Coverage did not reach the exceptional growth seen in 2019, but climate change also did not return to the lower levels of attention seen at the beginning of the period. This development also needs to be understood in the context of worsening environmental conditions and the increasingly visible and tangible effects of climate change. Compared with a decade earlier, extreme heat, drought and other climate-related impacts have become more directly experienced in Hungary, giving the media more immediate and locally relevant reasons to cover the issue.

COVID-19 shows that even highly visible climate activism, with large numbers of people involved both online and offline, could not prevent climate change from being pushed aside when another major issue that directly threatened people's lives took over the news agenda.

Overall, the results show two patterns at the same time. Climate coverage continued to rise and fall in response to major events, but climate change also became a more regular topic in Hungarian news over the course of the decade.

6.2 The 2019 turning point: a Hungarian “Greta effect”?

RQ3 and RQ4 examined the visibility of international climate movements and the relationship between youth climate activism and the frequency of climate coverage. The findings confirm that 2018–2019 was a critical period, but they also require a careful interpretation of activist influence.

The exceptional media visibility surrounding Greta Thunberg has been described internationally as the “Greta effect” (Hayes & O'Neill, 2021; Gan, Hayes & Whitmarsh, 2024). A similar pattern is visible in Hungary. The extraordinary concentration of climate attention in 2019 coincided with the international climate-strike wave, while Thunberg became by far the most visible individual actor associated with climate activism. It is important to note, however, that this attention did not always translate into greater attention to climate science itself. In the government-aligned press, including *Mandiner*, coverage often focused more on Thunberg as a person – her statements, actions and public image – than on the scientific arguments behind the climate movement.

The interrupted time-series analysis, however, does not identify a statistically significant immediate level change following August 2018. Instead, it identifies a significant positive change in the subsequent trend. This is not surprising, as the movement was still largely concentrated in Western Europe in 2018 and had not yet reached the same level of visibility in Hungary. Youth activism therefore appears to have contributed to a gradual acceleration of climate attention rather than producing a single immediate shift.

This is important because the same period also included the IPCC 1.5°C report, international climate negotiations and extreme weather. The increase cannot therefore be attributed to FFF alone. However, the emergence of climate movements also changed the way climate change was discussed in the Hungarian media. For the first time, a much sharper divide appeared between what were often presented as “climate deniers” and “climate alarmists”. This distinction had been far less visible in earlier coverage. Climate activism also became connected to existing political narratives in government-aligned media, where the movements and their representatives were often interpreted through already established political conflicts.

Greta Thunberg received substantially greater attention than FFF as an organization, while Extinction Rebellion remained much less visible. The interviews similarly suggest that Thunberg could be considered newsworthy even where journalists or editorial environments were ambivalent about her. Media visibility therefore did not necessarily imply agreement with the activist or her message.

6.3 When activism loses the agenda: COVID-19, protest fatigue and competing youth mobilization

The decline in activism-related coverage after 2019 is consistent with previous research showing that media attention to protest movements is often temporary (Wozniak et al., 2023; Lochner, Stechemesser & Wenz, 2024). The visibility of FFF and Greta Thunberg fell considerably after their 2019 peak, particularly following COVID-19, which disrupted the school strikes that had been central to the movement.

The Hungarian context also changed after the pandemic. From 2022 onwards, student protests related to education and teachers’ working conditions became prominent. These

protests were not systematically examined in this study, so the results cannot show whether young people or media attention shifted directly from climate activism to education-related protests.

However, the decline of FFF should not necessarily be understood as a decline in youth political engagement more generally. Young people, including secondary-school students, had already played an important role in Hungarian climate protests. After 2022, education became another major issue around which students mobilized. This suggests that climate activism was increasingly competing with other issues for both youth participation and media attention.

This is also relevant to H4. The high visibility of individual activists and protest movements was relatively short-lived. Greta Thunberg and FFF did not maintain the level of attention they received in 2019, and later climate movements also received attention mainly around particular protest events. Climate change itself, however, remained much more visible in the media than it had been before 2018. The results therefore suggest that the visibility of climate movements was temporary, while the increased attention to climate change was more lasting.

6.4 From distant crisis to domestic reality

The later period also points towards the growing importance of direct climate impacts. The framing analysis reveals a persistent geographical imbalance: climate change was reported predominantly as a global or international issue, while domestic Hungarian stories represented a considerably smaller share of the qualitative sample.

This makes the Hungarian droughts, particularly the severe drought of 2022, important for a different reason than the major quantitative peaks. The 2022 drought was not identified as a *statistically exceptional* detrended peak in aggregate climate coverage and should not be presented as equivalent to the 2019 climate-strike peak. Its importance lies instead in localization, and the interviews reinforce this interpretation. Journalists described domestic relevance and geographical proximity as important considerations in climate reporting. As climate change becomes a more familiar news topic, domestic consequences can provide a clearer answer to the question of why the issue matters to Hungarian audiences.

6.5 Framing climate change: more urgency, but not an emergency

RQ2 examined how the framing of climate change changed during the decade. Here, the development was more gradual than the changes in media attention.

The most persistent finding is the dominance of the *Harmful impacts, risks and destruction of nature frame*. It remained central throughout the qualitative analysis and became more prominent in the later period. Climate change was therefore increasingly communicated through its consequences, including environmental damage, extreme events and anticipated risks.

This indicates greater urgency, but urgency should not be equated with the uniform adoption of explicit climate-emergency terminology. The interviews indicate that Hungarian newsrooms generally did not adopt formal language policies requiring terms such as “climate crisis” or “climate emergency”. Journalists instead described terminology as dependent on professional judgement, editorial conventions and context.

After 2018, FFF brought more activism, youth perspectives and calls for action into climate coverage. However, the harmful-impact frame was already dominant before FFF and remained so even when media attention to activism declined. FFF therefore added new ways of talking about climate change rather than fundamentally changing how it was framed.

H2 is consequently only partially supported. Climate communication became more urgent after 2018, but the results do not support attributing this development *primarily* to activism. Activism intensified an existing trajectory, while the increasing visibility of climate impacts helped sustain urgency after activist attention declined.

6.6 Political parallelism

The clearest political differentiation identified in the study concerns not whether climate change appears in the media, but how its implications are interpreted.

This finding needs to be situated within the Hungarian media environment. During the period examined, the media system was characterized by increasing ownership concentration, strong political parallelism and substantial inequalities in financial and agenda-setting resources. As Polyák, Urbán and Szávai (2022) argue, the existence of multiple outlets does not itself

guarantee effective pluralism when reach, resources and political dependence are distributed unevenly.

The results do not reveal a simple division between independent outlets accepting climate change and government-aligned outlets denying it. Explicit science denial remained relatively marginal. Political differentiation instead concerned the seriousness of climate change, responsibility, legitimate policy responses and the legitimacy of climate activism.

The interviews illustrate this distinction. One independent-media interviewee described earlier government communication as a form of “soft relativization”, in which climate change was not explicitly rejected but its seriousness could be minimized. By contrast, the government-aligned interviewee described critical distance from “climate hysteria” and politically motivated activism as a legitimate journalistic position.

These differences were particularly visible in activism-related framing. Independent and alternative outlets were more likely to represent protest as legitimate civic engagement, while government-aligned outlets more often emphasized disruption, political motivation and strategic behavior. Activists could therefore gain media visibility without controlling how their actions were interpreted.

H3 is supported primarily at the level of framing rather than simple volume. As climate change became a more regular news topic, political differences increasingly concerned how serious the problem was, what should be done about it and which actors and responses were considered legitimate.

6.7 Revisiting the hypotheses

The combined findings allow the four hypotheses to be evaluated more precisely.

H1: Climate change coverage is strongly event-driven and dominated by intensifying emergency framing patterns.

H1 is partially supported. The event-driven component receives strong empirical support. However, while harmful-impact and risk-oriented framing became increasingly prominent, the analysis does not demonstrate a uniform shift towards explicit climate-emergency terminology.

H2: Media framing of climate change becomes more urgent following the emergence of climate activism in 2018.

H2 is partially supported. Post-2018 coverage shows greater emphasis on activism, action and harmful consequences, but the dominant impact frame was already present before FFF and remained central after activist visibility declined. Activism therefore amplified rather than independently produced this development.

H3: Climate change media coverage differs systematically across government-aligned, independent, and critical news outlets in Hungary.

H3 is supported, most clearly at the level of framing. Outlet differences were particularly visible in representations of responsibility, urgency, activism and legitimate responses rather than in a simple acceptance-versus-denial divide.

H4: Increases in media attention associated with climate activism are predominantly short-lived rather than sustained over time.

H4 is partially supported. The visibility of individual activists and protest waves was clearly episodic, but the broader climate agenda did not return to its pre-2018 baseline. Activist visibility was temporary, while the increased visibility of climate change proved considerably more durable.

6.8 Theoretical and empirical contribution

Three broader contributions emerge from the findings.

First, the study shows that event-driven attention and longer-term increases in media salience can occur simultaneously. Climate coverage continued to experience peaks and declines, but repeated periods of attention were accompanied by a *higher baseline* over time. Short-term issue-attention cycles therefore do not necessarily prevent an issue from becoming more firmly established within the news agenda.

Second, the findings clarify the role of climate activism in agenda-building. Activists can contribute to increased issue visibility without maintaining continuous media attention themselves. The Hungarian case shows that the exceptional visibility of Greta Thunberg and FFF declined, while climate change remained more prominent. Activists may therefore have

greater influence over when an issue receives attention than over how long their own visibility lasts or how their actions are interpreted.

Third, the study demonstrates the importance of national media contexts. International climate movements enter a Hungarian media environment already structured by political divisions, ownership patterns and different journalistic cultures. Their media representation therefore cannot be understood independently of these conditions. This is particularly relevant because Central and Eastern European media systems remain less prominent in international climate communication research than Western European and North American cases.

The later period also suggests that the sources of climate newsworthiness may be changing. While activism played a particularly important role in the late 2010s, drought, heat, agriculture and water increasingly provide domestic points of entry into climate reporting. Climate change is therefore becoming connected to other areas of Hungarian news rather than depending exclusively on international events or prominent activists.

6.9 Limitations

Several limitations should be considered when interpreting these findings. First, the temporal association between youth activism and the acceleration of climate coverage does not establish a single causal pathway. Activist mobilization coincided with scientific reports, international climate politics and extreme weather, making it impossible to isolate activism completely from other influences.

Second, the framing analysis identifies dominant patterns within the qualitative sample rather than measuring every frame across the complete corpus. The supplementary interviews similarly provide useful perspectives on newsroom practices but cannot be considered representative of Hungarian journalism as a whole.

Third, the study focuses on professional online news and therefore excludes television, radio and social media. This is particularly relevant to climate activism, given the importance of digital communication to contemporary protest movements.

Finally, youth climate activism was examined as one potential agenda-building factor, while other protest movements and domestic political issues were not systematically coded. The

education-related student protests after 2022 illustrate why this broader protest context deserves further investigation. Future research could examine whether different forms of youth mobilization compete for or reinforce public and media attention.

The same applies to domestic climate impacts. Future studies could examine more systematically whether drought and other extreme events primarily increase the volume of climate coverage or instead change how climate change is geographically and politically framed.

7. CONCLUSION

This dissertation traced a decade in which climate change moved from a relatively intermittent issue toward a more established presence in Hungarian online news. This development was neither linear nor independent of the wider news agenda. Coverage accelerated markedly around 2018–2019, declined sharply with the onset of COVID-19, and subsequently remained more visible than in the earlier years of the period.

Youth climate activism formed an important part of this transformation. The rise of Greta Thunberg, Fridays for Future and Extinction Rebellion coincided with a significant acceleration in climate coverage, but the longer time frame reveals a more complex relationship. Activist visibility declined after its peak, while climate change itself retained a stronger position on the media agenda. Activism therefore contributed to a period of heightened climate attention but cannot alone explain its longer-term development.

The decade also shows how the meaning of climate change evolved alongside its visibility. Harmful impacts and risks became increasingly prominent, while domestic experiences such as drought and extreme heat brought an otherwise global issue closer to Hungarian realities. Yet greater visibility did not produce greater agreement. Political differences remained evident in representations of responsibility, appropriate responses and climate activism, with independent and government-aligned outlets often interpreting the same issue through different political and ideological lenses.

Taken together, these findings point to a broader tension in climate communication. Climate change has become harder for the media to ignore, but its visibility remains vulnerable to competing events and its meaning remains contested. The central challenge may therefore no longer be simply how climate change enters the media agenda, but what happens once it is there: whether attention can be sustained *beyond* exceptional events and whether increasing visibility can develop into meaningful public discussion rather than recurring cycles of crisis and controversy.

The period examined here ends in 2024, but the political and media environment has since entered a new phase. This makes the decade analyzed in this dissertation not only a record of

change, but also a *baseline* or *reference point* against which the next period of Hungarian climate communication can be understood.

7.1 Directions for future research

Several directions for future research follow from this study. The political transition of 2026 provides a particularly important opportunity to continue the longitudinal analysis and examine whether climate coverage changes under the new political and institutional conditions. Future studies could explore whether the differences found between politically aligned outlets remain visible, or whether new patterns of climate reporting emerge. The role of newsrooms also deserves closer attention. The interviews conducted for this dissertation offered some insight into editorial decisions and journalistic practices, but a larger interview study could examine these questions across a wider range of outlets. This could include the role of dedicated climate journalists, editorial strategies, and the importance of climate literacy among journalists who cover climate-related issues as part of other beats.

Future research could also examine climate framing in greater detail. The dominant-frame approach used in this dissertation was useful for identifying broader patterns over time, but it inevitably simplifies articles in which several interpretations may appear at the same time. Narrative, discourse or multimodal analysis could provide a more detailed picture of how responsibility, skepticism and climate activism are represented. Visual communication is especially relevant here, as images of extreme weather, drought, protests and activists may shape the meaning of climate stories in ways that textual analysis alone cannot capture. Comparing these representations across politically different outlets would also help to extend the findings of this dissertation. In this sense, the 2014–2024 period provides a useful reference point for future research: the next question is whether these patterns continue, weaken or change as Hungary’s political, media and environmental context develops.

Publications by the Author Related to the Topic

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Appendix

The appendix is provided as an *Excel file* accessible via an [online link](#) and contains the dataset used during the analysis. It consists of five worksheets: “*Coding rulebook*,” which outlines the guidelines followed during the coding process; “*Codebook*,” which provides definitions and descriptions of the coding categories; “*List of variables*,” which explains all variables included in the dataset; “*Coding*,” which presents the coding results for each analyzed item, and “*Intercoder reliability*,” which summarizes the results of the reliability analysis based on a subsample of the data.

High-resolution versions of the visual elements included in the dissertation are available at the following link:

https://www.canva.com/design/DAG2JOu3xDw/znc5MkQ_OQZ1yTm69vUqDQ/edit?utm_content=DAG2JOu3xDw&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton.