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Visualising climate change narratives: a comparative analysis of framing strategies on AlMamlaka TV and Jordan TV

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Introduction: Climate change disproportionately impacts developing nations by exacerbating existing vulnerabilities and intensifying extreme weather events, posing significant socio-economic and environmental challenges. This study investigates the framing strategies utilised by two prominent Jordanian television broadcasters, namely AlMamlaka TV and Jordan TV, to shape public perceptions of climate change.

Methods: The study employs a convergent parallel mixed-methods design that integrates quantitative visual content analysis with qualitative inductive thematic analysis. The study examined a total of 108 video clips related to climate change, published by the official YouTube channels of the two broadcasters during 2023. The quantitative analysis focused on the frequency of visual imagery, tone, guest representation, and framing categories. In parallel, a qualitative component was undertaken to explore the symbolic dimensions, affective cues, and editorial logics embedded in the media narratives.

Results: The analysis suggests that both channels tended to adopt problem-oriented frames; however, AlMamlaka TV appeared to place greater emphasis on solutions-focused narratives, expert commentary, and emotionally resonant imagery. In contrast, Jordan TV maintained a more neutral and fact-driven approach. Their coverage emphasises governmental perspectives and local impacts. These variations highlight divergent institutional strategies and their implications for audience engagement.

Discussion: The findings illustrate the complex role of media institutions in mediating climate change discourse within the Jordanian context. The differences between AlMamlaka TV and Jordan TV indicate how editorial policies and institutional identities shape framing practices. This has broader implications for how audiences interpret climate risks and possible responses. Moreover, these results suggest that the presence of solutions-oriented narratives may enhance public trust and engagement with climate communication.

KEYWORDS

climate change communication, media framing, visual analysis, Jordanian television, environmental journalism

1 Introduction

Research on news framing is well-established within media and communication studies (De Vreese, 2005; An and Gower, 2009; Giles and Shaw, 2009; Jungblut and Zakareviciute, 2019). Framing refers to the selective presentation of information to emphasise specific aspects of an issue while omitting others, thereby shaping audience perceptions and influencing public discourse (Gitlin, 1980; Güran and Özarslan, 2022; Santos et al., 2022). The framing process

is inherently shaped by journalistic routines, editorial policies, institutional dynamics, and broader ideological currents. Understanding how these factors influence the construction of media narratives is relevant when examining complex, transnational challenges such as climate change.

The digital era has transformed journalism by pushing traditional broadcasters to adopt multi-platform strategies and digital technologies. This shift has been driven by changing audience behaviours, technological advancements, and increasing competition in the media landscape. Television channels now extend far beyond scheduled programming, expanding into websites, YouTube, and various social media platforms to maintain relevance amid rapid digital convergence (Lunga and Musvipwa, 2021; Prihatmadi, 2024; Becker, 2012). In Jordan, as elsewhere, legacy media have leveraged digital technologies to reach audiences who increasingly consume news via mobile and online platforms, mirroring global media trends (El Takach et al., 2022; Tapsell, 2017). This convergence has led to the integration of traditional formats with digital storytelling techniques, resulting in innovative journalism that combines text, video, and real-time audience interaction (Fauzi et al., 2023; Zhaxylykbaeva et al., 2024). As media organisations continue to navigate these changes, their ability to adapt digitally has become essential for survival and growth (Gissani et al., 2024; Suwanto, 2023; Ahmad et al., 2022).

Climate change constitutes a global challenge, yet its impacts are unevenly distributed; the Middle East, Jordan in particular, is acutely vulnerable, facing intensifying water scarcity, soaring temperatures, regional instability, and more frequent extreme weather events (Tamang, 2024; Tan, 2024; Salameh and Abdallat, 2020; Khresat, 2016; Nawafleh, 2022; Qtaishat et al., 2022; Samuels et al., 2011; Pink, 2018). However, despite the urgent need for scientifically informed public discourse, media coverage in the region often struggles to convey the complexity and local relevance of climate change. This is due in part to institutional limitations and reliance on simplified narratives that prioritise immediate appeal over depth. As a result, the framing of climate issues may dilute the perception of urgency and hinder public engagement and policy response (Ahmed and Khalid, 2011; Zhaxylykbaeva et al., 2024).

While this study focuses on institutional and top-down framings in mainstream broadcast media, it is critical to acknowledge that climate change communication is not limited to one-way dissemination from experts, governments, or journalists to a passive public. A substantial body of research now highlights the significance of bi-directional and participatory forms of environmental communication, wherein local actors, schools, rural associations, and art-based initiatives contribute stories, experiential knowledge, and alternative framings (Hofman-Bergholm, 2022; Murphy et al., 2016; Roig, 2024; Tysczuk, 2021). These approaches enable climate narratives to enter into dialogue with diverse community voices, fostering grassroots engagement, agency, and innovative responses to the climate crisis. Although civil society and local initiatives are less visible in mainstream Jordanian television coverage, this broader communicative ecology must be recognised to fully appreciate the dynamics of climate change discourse in Jordan and elsewhere.

Against this backdrop, the field of climate change communication has grown in prominence, aiming to inform the public, policymakers, and stakeholders about the causes, impacts, and solutions to climate change (Hansen, 2017; Canon et al., 2022). Notably, recent years have witnessed a convergence between climate communication and digital

journalism, as media practitioners increasingly employ interactive, multi-platform strategies to engage broader audiences and enhance public understanding (Linh et al., 2024).

Within this evolving communicative landscape, the present study investigates how two leading Jordanian television broadcasters AlMamlaka TV and Jordan TV, frame climate change. The study also focuses on their editorial strategies and their use of visual imagery as well as their narrative logics. As principal sources of environmental information in Jordan, these channels offer a distinctive comparative case for examining the intersection of local framing practices and global climate discourses, which is a perspective that is underexplored in existing scholarship.

Situated within the acute environmental realities of the Middle East and Jordan's pronounced vulnerability to climate change, especially in the form of chronic water scarcity, this research is both timely and significant. By systematically analysing the approaches of these two broadcasters, the study advances theoretical understanding of media framing in non-Western contexts while offering empirical insights into the construction and dissemination of climate change narratives. Importantly, this contextual focus not only illuminates the distinctive priorities and communicative strategies adopted by Jordanian media but also enriches broader academic discourse on the interplay between regional media practices and global environmental challenges. In doing so, the study responds to calls for greater scholarly attention to comparative, visual, and regional perspectives in climate change communication research.

2 Objectives and research questions

This study pursues three main objectives: (1) to compare the framing strategies of AlMamlaka TV and Jordan TV in their representations of climate change; (2) to elucidate the narrative, visual, and editorial logics underpinning each broadcaster's approach; and (3) to examine the implications of institutional identity and editorial mission for climate communication in Jordan. Accordingly, this research is therefore guided by the following questions:

- 1 How do AlMamlaka TV and Jordan TV differ in their framing of climate change in terms of problem, cause, solution, and responsibility?
- 2 What narrative and visual strategies distinguish each broadcaster's coverage, and how do these reflect institutional priorities?
- 3 How does the selection of sources, guests, and imagery shape public perceptions of agency, accountability, and possible responses to climate change?

3 Climate change communication

Climate change communication (CCC) has evolved significantly in recent years, driven by both the escalating climate crisis and the rapid transformation of the media landscape (Abdullah, 2023). One of the central challenges in CCC is the inherent complexity and abstract nature of climate change itself. As climate change unfolds over extended periods and produces widespread global impacts, individuals often find it challenging to relate to the issue on a personal level

(Markowitz and Guckian, 2018). These characteristics pose a significant challenge for communicators, especially journalists and activists, who must translate these scientific realities into accessible and urgent narratives for the public. In Jordan, however, these challenges are compounded by the country's acute vulnerability to environmental degradation and water resource scarcity. Jordan is ranked among the world's most water-scarce nations and faces recurrent droughts, rising average temperatures, and rapid urbanisation, all of which amplify the urgency of effective climate communication (Salameh and Abdallat, 2020; Khresat, 2016; Qtaishat et al., 2022). In recent years, these impacts have become increasingly tangible for ordinary Jordanians, as extreme heatwaves, water shortages, and deteriorating crops now affect daily life across urban and rural communities. Against this backdrop, Jordanian television remains the primary and most trusted source of news for the majority of citizens (Jordan Media Institute, 2022). Coverage of climate change in national broadcast media is thus shaped not only by the technical and narrative challenges of the issue itself, but also by institutional structures. This dual context of environmental urgency and media centralization provides a critical lens for understanding the comparative framing strategies of AlMamlaka TV and Jordan TV explored in this study.

The role of journalism in communicating climate change has become increasingly vital (Schäfer and Painter, 2021; Okoliko and de Wit, 2023; Abdikappar, 2024). As highlighted by Schäfer and Painter (2021), climate journalism plays a pivotal role in shaping public understanding of the causes, consequences, and potential solutions to climate change. However, the evolving media ecosystem, with its shifting economic conditions and the rise of digital and social media platforms, has changed the way climate change is covered (Okoliko and de Wit, 2023). Traditional climate journalism is facing declining resources and specialised reporters, especially in the Global South, where the coverage of climate issues remains scarce (Schäfer and Painter, 2021). Journalists' roles have shifted from gatekeeping to curating content, often amplifying voices from a broader range of stakeholders, including activists and policymakers, thereby reshaping the narratives around climate change (Abdikappar, 2024).

It is important to note that in Jordan and more broadly across Arab media, local civil society and grassroots climate action are rarely featured independently in television coverage (Abdellatif, 2023). Instead, environmental stories are typically mediated through expert or institutional perspectives. When local or community-led initiatives are included, they often appear as extensions of official campaigns rather than as autonomous actors in the climate narrative.

In addition, climate movement actors, especially on social media, have increasingly taken on a direct role in framing the climate discourse (Murugan et al., 2023; Hart et al., 2024). As Chen et al. (2022) emphasised that social media, particularly X, previously Twitter, has become an essential platform for advocating climate action, especially in youth-led movements. An example of these movements are Fridays for Future, Sunrise Movement and Extinction Rebellion. These movements shared one overarching goal, which is the focus on raising awareness about climate change and taking action on the ground regarding political and policy changes. Research discourse on these platforms is somewhat politicised, with a strong focus on attributing blame to political figures and industries for inaction (Chen et al., 2022). So far, many mainstream media channels tend to shed light on global leaders' inaction as well as the economic consequences

of climate change (Aarya, 2023). While only few studies focus on the political engagement from the public (Hügel and Davies, 2020).

On the other hand, research has indicated that there are several challenges in communicating the implications of climate change to the public. One of the most prominent challenges in climate change communication is the public's perception of the issue as psychologically distant, and although strategies based on Construal Level Theory can reduce this distance and heighten concern, such shifts do not consistently result in increased engagement or pro-environmental behaviour (Kim, 2023). Also, the cultural polarisation surrounding climate change complicates efforts to communicate the urgency of the crisis (Levine and Kline, 2017). In particular, the issue has become politically charged, with partisan divides shaping individuals' perceptions of both the problem and potential solutions. This cultural divide necessitates that communicators tailor their messages to specific audiences, as a uniform, one-size-fits-all approach is unlikely to achieve the desired impact (Markowitz and Guckian, 2018).

Within media studies, the concept of "framing" is especially important for understanding these challenges and responses. A "problem-oriented frame" refers to coverage that emphasises the negative impacts, risks, or immediate threats associated with climate change, often focusing on disaster and crisis (De Vreese, 2005; Knowles and Scott, 2020). Conversely, "solutions journalism" seeks to highlight positive responses, constructive action, and opportunities for societal engagement (AbdelGhaffar, 2024). The effectiveness of climate communication is closely tied to how these frames are constructed, who is included as a source or protagonist, and whether narratives engage both attitudinal and behavioural dimensions of public response.

While traditional media and movement actors may raise awareness, the framing of the issue itself is what determines how effectively individuals engage with the topic. Research has shown that framing climate change in terms of immediate risks to personal wellbeing, such as health or food security, may increase public concern; however, it may not necessarily translate into political action (Levine and Kline, 2017). This suggests that communicators need to consider both attitudinal shifts and behavioural changes when framing climate-related messages.

4 Conceptual meaning of framing theory in the context of climate change

Media plays a vital role in shaping how the public understands and responds to global challenges such as climate change (Geschke et al., 2010; Olausson, 2011; Jingala and Chaudhry, 2023; Abdikappar, 2024). In this context, framing theory provides a useful conceptual lens for examining how media narratives influence public perception and policy discourse. As de Vreese (2005) explains, frames are "persistent patterns of cognition, interpretation, and presentation" that simplify complex issues and offer interpretive shortcuts for audiences. Through this mechanism, media coverage can subtly shape not only how climate change is understood but also how its societal and policy implications are evaluated (Nimegeer et al., 2019; Khanya, 2024).

Scholars such as Gitlin (1980) and Song (2024) have highlighted the role of journalistic framing in selecting which aspects of an issue

to emphasise and which to de-emphasise. These frames, whether oriented around catastrophe, solutions, or economic loss, function as cognitive templates that guide public interpretation. In climate coverage, this can range from dramatic portrayals of extreme weather to narratives focused on adaptation and innovation (Painter et al., 2023). The choice of frame, therefore, may either elevate public concern or, in some cases, diffuse it by normalising risk or overstating uncertainty (Chong and Druckman, 2007).

For instance, Knowles and Scott (2020) examined how media narratives about climate risk affected perceptions within the ski tourism industry. Their study identified common frames such as the economic frame, focusing on financial implications, and the disaster frame, which highlighted existential threats to ski infrastructure. While these framings were effective in raising visibility, the authors caution that a narrow focus on economic loss can obscure the broader environmental urgency of the crisis. Similarly, Hemker's (2020) comparative study of U.S. and German news coverage found frequent use of risk amplification and dramatisation. Although such strategies may capture attention, they may also distort the complexity of climate issues, inadvertently reducing audience engagement with long-term solutions.

Existing research suggests that the framing of climate change in media coverage can significantly influence public emotional responses. For instance, Maran and Begotti (2021) found a positive correlation between media exposure and climate anxiety, particularly among younger audiences. Media outlets that frequently spotlight extreme weather events or dire predictions from scientists may inadvertently contribute to a sense of helplessness. Yet, paradoxically, such emotional responses can also serve as a motivational force: individuals who feel alarmed may become more inclined to believe in their capacity to contribute to climate mitigation efforts. This illustrates the dual role that media can play not only amplifying concern but also fostering a sense of agency and engagement.

Relatedly, the perceived quality and framing of media coverage appear to shape how the public evaluates proposed responses to climate change. According to Wicke and Taddicken (2021), many audiences express a preference for solution-oriented journalism coverage that provides concrete examples, diverse viewpoints, and actionable paths forward. This stands in contrast to more sensationalist portrayals, which often emphasise catastrophic scenarios without outlining practical alternatives. As Wicke and Taddicken argue, reframing climate change as a challenge that can be addressed, rather than an inevitable disaster, may increase public engagement by making the issue feel both comprehensible and solvable.

The political orientation of media outlets also plays a notable role in shaping climate narratives. In their analysis of television coverage of the IPCC's, 2021 report, Painter et al. (2023) observed a shift in focus from scientific scepticism to what they term "response scepticism." This latter form, often prevalent in conservative media environments, reflects doubt not about the science itself but about the feasibility or cost-effectiveness of proposed policies. While this type of framing does not necessarily deny climate change, it may weaken policy momentum by fostering public hesitation or resistance.

Another critical dimension involves how responsibility and ethical imperatives are framed in climate discourse. As Olausson (2011) and Painter et al. (2023) note, media narratives often vary in whether they assign responsibility to states, corporations, individuals, or global institutions. The inclusion or omission of moral appeals can

shape how audiences understand both agency and accountability. This study, therefore, pays particular attention to how themes of responsibility and ethical obligation are presented (or excluded) in Jordanian television coverage, and how these patterns may influence public willingness to support climate action.

5 Arab media coverage of climate change

When discussing climate change within the context of the Middle East, a question has to be taken into consideration. Is the region being studied a natural resource-rich or poor region? Jordan, for example, is considered a country with a chronic water scarcity problem (Eskjær, 2017). This problem, which is arguably due to climate change and the rising temperatures, is affecting farmers and the water used daily in regular Jordanian households. Therefore, in terms of the media coverage regarding climate change issues in the Arab world, it varies depending on the location of the country and the most relevant issues that matter to people in that country and the issues that they feel are tangibly affecting their lives.

So most Arab media outlets operate within complex and varied political and economic environments in a region that is always suffering from ongoing wars and migrations that are now felt by many as chronic crises. Such environments often shape how climate change is represented in national discourse. In some countries, news coverage tends to emphasise global developments and reports on international events and summits while giving comparatively limited attention to domestic climate realities (Al-Tahat, 2024). This tendency may be partly attributable to broader regional priorities, where political stability and economic development continue to take precedence. As a result, climate change is often framed through the lens of international agreements, such as the Paris Agreement, which may not always resonate with the lived environmental concerns of local communities (Abdellatif, 2023).

However, recent years have witnessed what appears to be a gradual pivot towards more solutions-oriented climate journalism across parts of the Arab world. This shift has coincided with high-profile climate summits, most notably COP27 and COP28. This could reflect a growing recognition of the value of highlighting constructive responses to environmental challenges. Solutions journalism, with its emphasis on actionable strategies and success stories, has gained traction as a way to reframe climate discourse in ways that inspire engagement rather than despair (AbdelGhaffar, 2024). Media outlets in Jordan, whether print, audio, or televised, are also making an effort to make citizens aware of the urgency of the matter. Climate coverage is becoming somewhat regular and taking up more space in the news. Many news outlets present successful stories around water-saving strategies and irrigation methods that promote the consumption of less water.

In countries like the United Arab Emirates, media outlets focus on reporting local and regional solutions which they are pioneering in such as their advanced development in renewable energy infrastructure and water management initiatives, and international partnerships targeting environmental resilience. This kind of media coverage is sort of uplifting when thinking about the climate crisis. However, since this research is concerned with television coverage of climate change, there is the caveat that television sometimes lacks dramatic or aesthetically

compelling footage, which may lead to the climate issue being covered not being well represented (León and Erviti, 2015).

6 Methodology

6.1 Research design

This study employs a convergent parallel mixed-methods design that integrates both quantitative and qualitative content analysis to explore how AlMamlaka TV and Jordan TV construct climate change narratives and frames in their coverage. This dual approach was selected to provide a more comprehensive understanding of media discourse around climate. Framing analysis serves as the central analytical framework for this research for several reasons. First, framing theory offers a well-established conceptual lens for examining how media selectively organise and present environmental issues in ways that may influence public interpretation and potential action (Gitlin, 1980; De Vreese, 2005; Olausson, 2011; Jungblut and Zakareviciute, 2019). Second, given the centralised nature of Jordan's media environment and the strong influence of state institutions, framing analysis is particularly useful in interrogating both overt messages and the institutional, political, and cultural dynamics that shape environmental communication (Abdellatif, 2023; Zhaxylykbaeva et al., 2024).

The use of framing theory in this context was not intended to produce exhaustive theoretical generalisations, but rather to provide a structured lens through which patterns of emphasis, attribution, and solutions could be observed and interpreted. This framework is helpful in identifying both manifest and latent elements of media messaging and has proved to be a suitable foundation for exploring the specificities of climate discourse in the Jordanian context.

Within this mixed-methods structure, quantitative content analysis was used to enable a systematic comparison of framing elements investigated in the study. These frames included the frame “problem,” “cause,” “solution,” “responsibility” and guest selection across both television broadcasters. This approach is considered appropriate for identifying general trends and producing replicable findings that could serve as a foundation for policy-relevant decisions as well as media research on the subject (Jungblut and Zakareviciute, 2019).

For the quantitative component, a comprehensive census sampling strategy was used. All videos related to climate change that were uploaded by AlMamlaka TV and Jordan TV on their YouTube platforms throughout 2023 were included in the dataset. The inclusion criteria were: (a) explicit focus on climate change or directly related environmental issues; (b) public availability on the channels' official YouTube platforms; and (c) broadcast within the 2023 calendar year. This approach aimed to ensure that the dataset captured the full range of climate-related coverage during the study period while minimising selection bias and enhancing reliability.

However, the study recognises that quantitative analysis alone cannot capture the full richness of narrative, rhetorical, or visual strategies, nor does it account for the distinctive features of different genres, such as news, documentary, or talk show formats. The lack of explicit textual or genre-based analysis constitutes a methodological limitation. Genre, in particular, shapes how stories are told, the tone of the narrative, and the visual-symbolic conventions that structure audience interpretation (Hansen, 2017). Future research might benefit from the incorporation of close textual analysis and genre theory to

develop a more granular understanding of how climate change narratives are constructed across different program formats. In this study, an effort was made to partially address this gap through the use of qualitative thematic analysis, which aimed to explore latent meanings, symbolic strategies, and the editorial rationales guiding visual and narrative framing.

The qualitative part of the study was intended not to replace, but rather to complement the quantitative analysis by offering deeper interpretive insights, particularly in surfacing recurring patterns that might elude frequency-based coding (Braun and Clarke, 2006; Hansen, 2017). However, given the constraints of space and scope, this dimension should be viewed as exploratory rather than exhaustive.

A purposive sampling approach was used to select video segments that represented thematic diversity, variation in program type, and narrative tone across both broadcasters. This strategy sought to capture the editorial heterogeneity within the dataset while maintaining analytical coherence and feasibility. All sampled segments were systematically transcribed and coded to enable in-depth thematic interpretation and direct quotation in the analysis.

Hence, the quantitative component identifies observable patterns and trends in visual and verbal framing devices, while the qualitative component explores the underlying meanings, symbolic strategies, and editorial logics through an inductive thematic analysis. This dual approach ensures a more nuanced interpretation of the channels' climate change discourse.

6.2 Data collection

The dataset consists of 108 climate-related video segments uploaded by AlMamlaka TV ($n = 82$) and Jordan TV ($n = 26$) on YouTube during the year 2023. These channels were selected based on three criteria: (1) their national prominence and influence on public discourse in Jordan; (2) their contrasting editorial identities, with AlMamlaka TV adopting a public service, semi-independent approach and Jordan TV reflecting a more institutional state-aligned perspective; and (3) the availability of well-structured, searchable YouTube archives, enabling consistent and transparent data collection. Other local television channels were excluded due to limited coverage of climate change, lack of archival continuity, or content not aligned with the study's analytical focus. Videos were retrieved through a purposive keyword search (e.g., “climate change,” “global warming,” “pollution,” “renewable energy”) and were selected based on their explicit relevance to environmental and climate-related topics.

In total, the 108 selected videos offered a substantial dataset for both the quantitative and qualitative components of the analysis. Descriptive statistics revealed that the average video duration was 2.88 min ($SD = 1.412$). Notably, content from AlMamlaka TV tended to be somewhat longer ($M = 3.17$, $SD = 1.332$) compared to that of Jordan TV ($M = 1.96$, $SD = 1.280$), a difference that may suggest diverging editorial strategies, perhaps reflecting varying levels of emphasis on narrative depth or pacing.

One point that warrants further attention is the limited presence of civil society actors, grassroots initiatives, and local community voices in the sample. This relative absence may be attributable to editorial preferences, but it might also reflect structural characteristics of the broader Jordanian media system, where institutional and expert perspectives tend to dominate climate discourse (Abdellatif,

2023). This underrepresentation underlines the value of future research focusing on non-mainstream or alternative media platforms, potentially through ethnographic or participatory methods to uncover more pluralistic and locally grounded forms of environmental engagement.

6.3 Coding scheme and quantitative content analysis

The initial coding categories were developed in response to recurring visual and narrative patterns observed in the dataset and were then interpreted with reference to existing theoretical frameworks in visual communication and media framing (e.g., Gitlin, 1980; De Vreese, 2005; Painter et al., 2023). This inductive process, while grounded in the data, was also informed by established literature, allowing for a flexible yet theoretically coherent analytical framework. The aim was to strike a balance between data-driven coding and interpretive alignment with broader scholarly debates.

Quantitative coding focused on the following dimensions:

- Types of visual imagery (e.g., droughts, wildfires, renewable energy, deforestation)
- Framing orientation (e.g., problem-oriented, solution-oriented, or neutral)
- Tone and language intensity (alarmist, neutral, optimistic)
- Guest representation (scientific experts, government officials, NGOs, media figures)
- Geographic and temporal focus (local vs. global; immediate vs. long-term impacts)

Each video was reviewed segment by segment, and codes were assigned accordingly. Descriptive statistical techniques were employed to determine the frequency, distribution, and comparative patterns of these elements between the two channels. These metrics provided a foundational overview of how climate issues were constructed and prioritised in each outlet.

6.4 Qualitative component: inductive thematic analysis

Complementing the quantitative strand, a qualitative inductive thematic analysis was conducted to uncover the underlying symbolic, affective, and narrative structures within the climate change coverage. Following Braun and Clarke's (2006) six-phase model, the researcher engaged in a detailed interpretive process:

- 1 Familiarisation: Repeated viewing of video segments and review of transcripts to become immersed in the material.
- 2 Initial Coding: Open coding was used to identify salient patterns in visuals, tone, and narrative.
- 3 Theme Development: Codes were grouped into broader conceptual themes based on semantic similarity and relevance.
- 4 Reviewing Themes: Themes were refined and cross-checked for internal coherence and external distinctiveness.

5 Defining and Naming Themes: Clear definitions were developed for each theme, reflecting both empirical patterns and interpretive insights.

6 Writing the Narrative: The final themes were embedded into a cohesive account of how each broadcaster constructs climate discourse.

No qualitative analysis software was used. Instead, coding was conducted manually to allow for deeper immersion in the multimodal material and to maintain an interpretive sensitivity to the interplay between imagery, tone, and spoken content. Given the visual nature of the data, manual analysis was a more appropriate approach.

Importantly, themes were not derived directly from the quantitative frequencies but rather emerged through iterative and interpretive engagement with the video content. For example, while the quantitative data showed that AlMamlaka TV frequently featured scientific experts, the theme of science and expertise emerged by interpreting how expert authority was visually framed and rhetorically emphasised across different segments. In this way, the thematic analysis was data-driven and grounded in meaning-making, not statistical regularity.

6.5 Integration of quantitative and qualitative data

The two strands of analysis were brought together in the discussion phase to triangulate findings and offer a more layered understanding of media framing. While the quantitative data mapped observable media patterns (e.g., which types of frames or guests were most common), the qualitative themes captured the editorial logic, symbolic framing, and affective tone behind these patterns.

This integrative strategy enabled the researcher to move beyond surface-level coding and engage with the discursive functions of media representations, i.e., how imagery, tone, and narrative collectively shape public understanding and emotional response to climate change.

6.6 Intercoder reliability

To ensure the rigour and replicability of both quantitative and qualitative coding, the following protocol was implemented.

6.6.1 Coder recruitment and training

Two coders with backgrounds in media studies and prior experience in content analysis were recruited. Coders participated in two 2-h training sessions, reviewing the codebook, discussing theoretical underpinnings, and piloting 15 video clips (approximately 14% of the dataset). Ambiguities and disagreements in the pilot phase were resolved, resulting in the refinement of the codebook and clarification of category boundaries.

6.6.2 Double coding and sample size

Both coders independently coded 40% of the total dataset ($n = 43$ out of 108 videos), which exceeds the typical recommended threshold

of 20–30% and optimism. The remaining 65 videos were coded by one coder, with random spot checks performed on an additional 10% ($n = 11$) by the second coder to monitor consistency.

6.6.3 Reliability assessment

For categorical variables (e.g., frame type, guest type, tone), Cohen's kappa was calculated. Acceptable agreement was defined as $\kappa \geq 0.70$. In this study, Cohen's kappa values ranged from 0.74 to 0.89 across variables (mean $\kappa = 0.81$), indicating substantial to almost perfect agreement. For emergent qualitative themes, intercoder agreement was measured as percentage agreement, achieving an average of 87% on theme assignments. Discrepancies were discussed in biweekly meetings, and a third senior researcher was consulted for unresolved cases (3% of coded instances).

7 Results

The following section presents the findings derived from both the quantitative content analysis and the qualitative thematic analysis of climate change coverage on AlMamlaka TV and Jordan TV.

7.1 Distribution of climate change coverage by television program

Table 1 illustrates the distribution of climate change coverage across different programs on AlMamlakah TV and Jordan TV. Short reports were a common format for both channels, accounting for 19.4% of the total sample. News bulletins were particularly dominant on Jordan TV, comprising 61.5% of its total

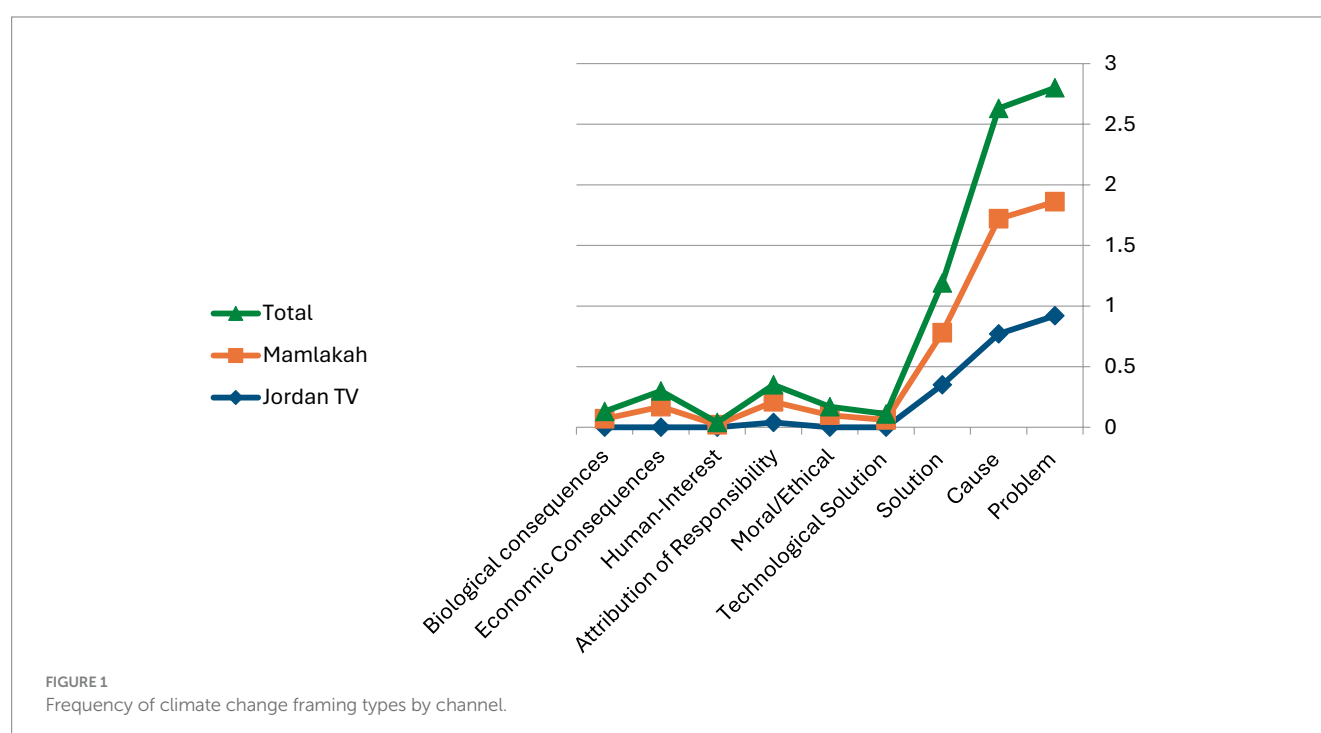
coverage, while AlMamlakah TV contributed only 2.4% to this format. Notably, “The Kingdom’s Morning Program” and “The Six O’Clock Program” were exclusive to AlMamlakah TV, together making up 48.8% of its total coverage. Jordan TV’s coverage of climate change appears to include some targeted programming through shows like Sixty Minutes (7.7%) and This Evening (3.8%), which may reflect a selective use of extended formats to address environmental issues.

Additionally, the average length of video clips varied considerably between the two broadcasters. While the overall mean was 2.88 min (SD = 1.412), AlMamlakah TV’s clips were somewhat longer on average ($M = 3.17$, SD = 1.332), potentially suggesting a stronger commitment to in-depth reporting. In contrast, Jordan TV’s clips averaged 1.96 min (SD = 1.280), which may indicate a more concise, fast-paced approach, perhaps intended to appeal to general news audiences.

7.2 Comparative frequency of climate change framing types on AlMamlaka TV and Jordan TV

Figure 1 presents a comparative overview of how frequently different climate change frames appear in the coverage of AlMamlaka TV and Jordan TV. The x-axis displays nine framing categories such as “Problem,” “Cause,” and “Solution,” while the y-axis denotes their frequency across both broadcasters.

The data appears to suggest that both channels place greater emphasis on the “Problem” and “Cause” frames, with Jordan TV seemingly prioritising them more prominently. By contrast, AlMamlaka TV shows a somewhat stronger inclination towards the “Solution” frame, possibly reflecting a more action-oriented editorial



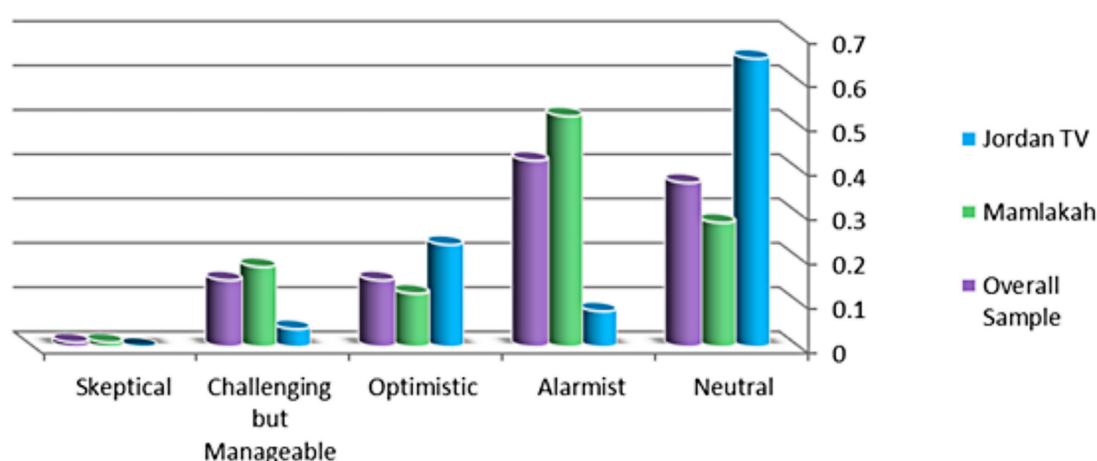


FIGURE 2
Distribution of tone and language intensity in climate change coverage.

stance. Interestingly, both channels devote minimal attention to “Technological Solution,” “Moral/Ethical,” and “Human-Interest” frames, which may indicate a relatively limited focus on innovation, ethical discourse, and personal narratives in their respective climate coverage.

7.3 Thematic focus: local, global, and sector-specific climate impacts

Table 2 offers a preliminary view into how climate change coverage is distributed across the two channels, with an emphasis on local versus broader impacts. Local issues appeared to dominate the narratives overall, with a mean frequency of 0.57 (SD = 0.497). Jordan TV seems to have placed relatively more focus on local topics (M = 0.65, SD = 0.485) when compared to Almamlaka TV (M = 0.55, SD = 0.501), possibly reflecting its editorial alignment with community-based reporting priorities. Global impacts were moderately addressed, averaging 0.39 (SD = 0.490), with Almamlaka TV scoring slightly higher (M = 0.41, SD = 0.496) than Jordan TV (M = 0.31, SD = 0.471). Sector-specific impacts, such as the effects on agriculture or energy, were the least covered focus, averaging 0.34 (SD = 0.532). Almamlaka TV again provided more attention to these issues (M = 0.39, SD = 0.491) than Jordan TV (M = 0.19, SD = 0.634). This disparity highlights Almamlaka TV’s broader narrative approach, which integrates diverse aspects of climate change, while Jordan TV’s coverage remains more concentrated on local contexts.

7.4 Distribution of narrative tone and language intensity in climate change coverage

Figure 2 illustrates the frequency of tone categories used in the climate change coverage by Jordan TV and Almamlaka TV. The x-axis represents different tone categories: “Skeptical,” “Challenging but Manageable,” “Optimistic,” “Alarmist,” and “Neutral.” The y-axis shows the frequency of each tone type across the two channels.

The data indicates that both channels primarily use a Neutral tone, with Jordan TV showing a higher frequency of neutral coverage compared to Almamlaka TV. The Alarmist tone is more prevalent in Almamlaka TV’s coverage, where it is notably higher than both Jordan TV and the overall sample. Optimistic and challenging, yet manageable tones appear less frequently across all channels, while the Skeptical tone is almost negligible.

7.5 Representation of key voices and guest actors in climate coverage

Table 3 provides an analysis of the primary guest actors or voices featured in climate change coverage. Scientific experts were the most frequently included, averaging 0.52 (SD = 0.502) across both channels. Almamlakah TV relied significantly more on scientific experts (M = 0.60, SD = 0.493) compared to Jordan TV (M = 0.27, SD = 0.452). Government officials were also a prominent guest category, particularly on Jordan TV (M = 0.73, SD = 0.452), compared to Almamlakah TV (M = 0.33, SD = 0.473), contributing to an overall average of 0.43 (SD = 0.497). The inclusion of corporate representatives was unique to Almamlakah TV (M = 0.12, SD = 0.329), as Jordan TV did not feature them at all. NGO representatives or activists were another notable guest category, with Almamlakah TV showing higher representation (M = 0.18, SD = 0.389) than Jordan TV (M = 0.04, SD = 0.196). Other guest categories, such as community leaders and journalists/media figures, appeared infrequently, with averages of 0.04 or lower across the sample. These findings highlight Almamlakah TV’s tendency to diversify guest voices, while Jordan TV’s focus on government officials aligns with its institutional nature and priorities.

7.6 Visual strategies and symbolic imagery in climate change narratives

Table 4 explores the use of visuals and symbolism in climate change coverage on Almamlakah TV and Jordan TV. Overall,

TABLE 1 Distribution of climate change coverage by program and channel.

Name of show	Channel					
	Jordan TV		AlMamlaka TV		Total	
	N	%	N	%	N	%
Short report	5	19.1%	16	19.5%	21	19.4%
The six o'clock program			21	25.6%	21	19.4%
The kingdom's morning program (Sabah AlMamlaka)			19	23.2	19	17.6%
News bulletin	16	61.5%	2	2.4%	18	16.7%
The ten o'clock program			10	12.2%	10	9.3%
Voice of the kingdom program (Sawt AlMamlaka)			6	7.3%	6	5.6%
The week's news program			4	4.9%	4	3.7%
After the news program			2	2.4%	2	1.9%
The economic Sunday program			2	2.4%	2	1.9%
Sixty minutes program	2	7.7%			2	1.9%
This evening program	1	3.8%			1	0.9%
Good morning program (Yesed Sabahak)	1	3.8%			1	0.9%
Between the lines program	1	3.8%			1	0.9%
Total	26	100%	82	100%	108	100%

TABLE 2 Focus of climate change coverage.

Coverage focus	Channel					
	Jordan TV		AlMamlaka TV		Total	
	M	SD	M	SD	M	SD
1. Local impact	0.65	0.485	0.55	0.501	0.57	0.497
2. Global impact	0.31	0.471	0.41	0.496	0.39	0.490
3. Sector-specific impact	0.19	0.634	0.39	0.491	0.34	0.532

TABLE 3 Primary Guest Actors or Voices Featured in Climate Change Coverage.

Guest	Channel					
	Jordan TV		AlMamlaka TV		Overall sample	
	M	SD	M	M	SD	M
1. No guest	0.12	0.326	0.17	0.379	0.16	0.366
2. Scientific expert	0.27	0.452	0.60	0.493	0.52	0.502
3. Government official	0.73	0.452	0.33	0.473	0.43	0.497
4. Corporate representative	0.00	0.000	0.12	0.329	0.09	0.291
5. NGOs/activist	0.04	0.196	0.18	0.389	0.15	0.357
6. Community leader	0.00	0.000	0.05	0.217	0.04	0.190
7. Journalist/media figure	0.04	0.196	0.04	0.189	0.04	0.190

segments without images were more frequent on Jordan TV ($M = 0.42$, $SD = 0.504$) compared to AlMamlakah TV ($M = 0.29$, $SD = 1.048$), which relied more on visuals to enhance storytelling. Among specific imagery, droughts were more prominently featured on AlMamlakah TV ($M = 0.38$, $SD = 0.488$) than Jordan TV

($M = 0.12$, $SD = 0.326$). Similarly, AlMamlakah TV depicted natural disasters and pollution at higher rates ($M = 0.10$, $SD = 0.299$ and $M = 0.09$, $SD = 0.281$, respectively) compared to Jordan TV, which did not include these visuals. Wildlife, ecosystems, and renewable energy sources were primarily

TABLE 4 Visuals and symbolism in climate change coverage.

Visuals	Channel					
	Jordan TV		AlMamlaka TV		Total	
	M	SD	M	SD	M	SD
1. No images	0.42	0.504	0.29	1.048	0.32	0.946
2. Droughts	0.12	0.326	0.38	0.488	0.31	0.467
3. Pollution	0.00	0.000	0.09	0.281	0.06	0.247
4. Natural disasters	0.00	0.000	0.10	0.299	0.07	0.263
5. Wildlife and ecosystems	0.00	0.000	0.10	0.299	0.07	0.263
6. Renewable energy sources	0.15	0.368	0.01	0.110	0.05	0.211
7. Deforestation	0.00	0.000	0.06	0.241	0.05	0.211
8. Community gathering	0.00	0.000	0.10	0.299	0.07	0.263
9. Glacial retreat	0.00	0.000	0.02	0.155	0.02	0.135
10. Cities submerged by floods	0.04	0.196	0.07	0.262	0.06	0.247
11. Plastic waste in oceans	0.00	0.000	0.01	0.110	0.01	0.096
12. Wildfires	0.08	0.272	0.18	0.389	0.16	0.366
13. Heatwaves and rising temperatures	0.12	0.326	0.24	0.432	0.21	0.411
14. Crops and plantations	0.00	0.000	0.16	0.367	0.12	0.327
15. Heavy rain falls	0.00	0.000	0.01	0.110	0.01	0.096
16. World leaders	0.35	0.485	0.00	0.000	0.08	0.278
17. Water shortage	0.00	0.000	0.02	0.155	0.02	0.135

TABLE 5 Temporal framing of climate change coverage.

Temporal	Channel					
	Jordan TV		AlMamlaka TV		Total	
	M	SD	M	M	SD	M
1. Immediate impact	0.81	0.402	0.79	0.408	0.80	0.405
2. Long-term outlook	0.38	0.496	0.35	0.481	0.36	0.483

highlighted by AlMamlakah TV, with limited or no representation on Jordan TV.

Other visuals, such as wildfires ($M = 0.18$, $SD = 0.389$) and heatwaves ($M = 0.24$, $SD = 0.432$), were more frequently featured on AlMamlakah TV than Jordan TV, indicating the former's focus on visually impactful representations of climate change. Scenes depicting global phenomena, like cities submerged by floods or plastic waste in oceans, also appeared more often on AlMamlakah TV ($M = 0.07$, $SD = 0.262$ and $M = 0.18$, $SD = 0.389$, respectively). These findings appear to reflect a notable divergence in how the two channels employ visual elements. AlMamlakah TV seems to leverage dynamic and emotionally resonant imagery to craft more compelling narratives. By contrast, Jordan TV adopts a relatively neutral and informational style of reporting, one that relies less heavily on visual storytelling and more on factual exposition.

7.7 Temporal emphases: immediate versus long-term climate framing

Table 5 provides an overview of how the two channels frame climate change in temporal terms, contrasting short-term impacts with longer-term narratives. Both broadcasters seem to give greater weight to immediate consequences, which may reflect a preference for more urgent and relatable storylines, with similar averages (Jordan TV: $M = 0.81$, $SD = 0.402$; AlMamlakah TV: $M = 0.79$, $SD = 0.408$), resulting in an overall mean of 0.80 ($SD = 0.405$). These figures highlight a focus on short-term consequences which could reflect an editorial preference for urgent and relatable narratives, particularly those concerning extreme weather events and their immediate impact on affected communities.

In contrast, long-term outlooks were less prominently featured, averaging 0.36 ($SD = 0.483$) across both channels. AlMamlakah TV scored slightly lower ($M = 0.35$, $SD = 0.481$) compared to Jordan TV ($M = 0.38$, $SD = 0.496$), suggesting a marginally greater focus on the broader, long-term implications of climate change by Jordan TV. These findings indicate that while both channels highlight immediate consequences to engage audiences, there is limited exploration of the sustained, long-term challenges posed by climate change, which could reduce public awareness of the broader scope of the issue.

8 Qualitative analysis and identified themes

The qualitative analysis of climate change coverage on AlMamlaka TV and Jordan TV builds upon the coded quantitative data to uncover

the symbolic, emotional, and narrative dimensions shaping each broadcaster's framing of climate change. While the quantitative results provide important descriptive patterns, the qualitative dimension reveals how these patterns work together to construct meaning and influence audience perceptions. The five themes discussed below encapsulate recurring visual and narrative strategies identified across the two channels. The analysis draws on systematically transcribed video excerpts from 2023 broadcasts to explore both commonalities and points of editorial divergence. This approach enables a comparative understanding of how each broadcaster visually constructs the climate change narrative.

8.1 Crisis and urgency

A dominant theme across the coverage of both channels AlMamlaka TV and Jordan TV is arguably the framing of climate change as an urgent and escalating crisis. The coverage of AlMamlaka TV may suggest that it deploys alarmist visuals which include footage of wildfires, droughts, floods, and glacial retreat, alongside a language that emphasises crisis and immediacy. This narrative of urgency could indicate that intense visual framing amplifies emotional engagement and public concern (Brantner et al., 2011). Aljalabneh (2024) also argues that visual content, especially when emotionally resonant, may play part in how audiences remember, interpret, and respond to climate-related misinformation.

"The earth, the sea, and everything in it are changing, and the weather forecast is repeating itself again. A warning comes in what is seen this year: a record in temperature degrees. The effects have become clear and are reflected in the form of storms, floods, and heavy rains." (AlMamlaka TV, "The Tenth | Climate Change... Warnings Repeated by Climate Experts Once Again", 12 Jul 2023, 22:13, 0:00–0:17).

Jordan TV, by contrast, maintains a more neutral crisis narrative, focusing on factual descriptions of environmental problems without resorting to heightened emotional appeals.

"Climate change is considered one of the most prominent challenges of the current era and it's a world problem due to its negative impacts on all developmental sectors... Especially in our region and in Jordan... We are experiencing the effects of climate change... manifested primarily in rising temperatures... reduced rainfall... This directly affects agriculture, water supply for citizens, and economic activity..." (Jordan TV, "This Evening | Minister of Environment Dr. Muawieh Al-Radaydah", 29 Jan 2023, 0:00–2:05).

While both channels underline the urgency of climate change, AlMamlaka TV's emotionally charged and visually rich reporting seeks to galvanise action. Research on climate communication indicates that emotional appeals, even negative ones, can be more effective than purely factual messages in driving behavioural change and heightening concern (Hong and Jeon, 2025). In contrast, Jordan TV's rational, policy-oriented tone aims to inform without inciting alarm, a style consistent with official communications that prioritise the dissemination of national strategies and institutional responses

(United Nations Framework Convention on Climate Change, 2022; United Nations Development Programme, 2023). This difference in emotional resonance can lead to varying degrees of public engagement and perceived urgency.

8.2 Science and expertise

The second theme centres on the use of scientific authority and expertise to legitimate climate narratives. AlMamlaka TV prominently features scientific experts and environmental specialists, positioning climate change as a scientifically grounded issue requiring urgent attention.

"Now I would like to welcome my guest from Tunisia, the President of the African Coalition for Environmental Justice and the Arab League for the Environment, Dr. Najwa Bouraoui... Unfortunately, climate change has become a phenomenon. Everyone on this planet has seen climate change in any country..." (AlMamlaka TV, "The Tenth | Climate Change... Warnings Repeated by Climate Experts Once Again", 12 Jul 2023, 22:13, 0:57–2:00).

Jordan TV, while also featuring experts, balances these voices with governmental officials, reflecting a more institutional framing that ties climate action to national governance.

"The President of Al al-Bayt University, Dr. Osama Nasir, stated that we need independent science related to crises and disasters through reliance on scientific foundations and principles... The conference included presentations of working papers and some examples on the reality of crises and disasters in the region and the world within peer-reviewed scientific studies..." (Jordan TV, "Conclusion of the activities of the Third International Conference on Climate Change and Natural Hazards at Aal al-Bayt University", 27 Nov 2023, 0:13–0:36).

AlMamlaka TV draws on a diverse set of scientific and civil society voices, occasionally including criticism of official responses, whereas Jordan TV anchors scientific expertise within the framework of state and academic authority, rarely presenting independent or dissenting viewpoints. This thematic emphasis features the channels' differing institutional priorities (Al-Jalabneh, 2020). AlMamlaka TV seeks to bolster credibility through scientific authority, while Jordan TV emphasises state responsibility and governance frameworks.

8.3 Solutions and innovation

A striking difference between the channels emerges in the solutions-oriented framing. AlMamlaka TV integrates substantial coverage of renewable energy initiatives, technological innovations, and climate adaptation projects, which provides viewers with an aspirational and hopeful narrative alongside crisis coverage.

"The rising temperatures have caused damage to many crops, especially vegetables, prompting farmers to take many preventive measures to avoid any harm to their crops... Farmers have started using shading nets, ventilating greenhouses, and doubling

irrigation to cope with the heat.” (AlMamlaka TV, “Significant Effects on the Agricultural Sector Due to Rising Temperatures”, 31 Jul 2023, 0:00–1:12).

Jordan TV, in contrast, presents solutions primarily through a national or governmental lens, focusing on official strategies and state-driven technological progress.

“About 29% of our electricity mix comes from renewable sources... We have a significant percentage of electric and hybrid vehicles... The Conference of the Parties is an opportunity for the world to reconsider itself in order to limit the phenomenon of climate change...” (Jordan TV, “A major role for Jordan in confronting climate change”, 5 Dec 2023, 0:36–1:58).

AlMamlaka TV’s approach fosters public optimism and agency through stories of grassroots adaptation and innovation, echoing the benefits of solutions journalism in inspiring climate action (Ghazal, 2023). Conversely, Jordan TV emphasises institutional success and policy achievement, foregrounding the state as the primary driver of climate solutions, a framing consistent with observed ‘strategy’ frames in other Jordanian media promoting government plans (Abuhasirah and Salameh, 2024).

8.4 Governance and responsibility

The theme of governance and responsibility is particularly pronounced on Jordan TV, which frequently features government officials and emphasises national policy responses. Jordan TV’s top-down narrative positions the state as the primary actor in addressing climate challenges, reflecting the channel’s institutional identity and its role in communicating official positions.

“We discussed the challenges of climate change and Jordan’s participation, under the leadership of His Majesty our King, in the COP28 Climate Summit in the United Arab Emirates... The most notable event was the participation of His Majesty the Hashemite King and the speech he delivered at the opening of this conference, as well as the participation of the Prime Minister and relevant ministers...” (Jordan TV, “The Minister of Environment is a guest on the ‘Yesed Sabahak’ program”, 15 Dec 2023, 0:00–0:45).

AlMamlaka TV, while not ignoring governance, expands the narrative by including NGO voices and corporate actors, thereby presenting climate governance as a shared societal challenge involving multiple stakeholders.

“The Ministry of Environment has been preparing a long-term strategy for reducing carbon and resisting climate change in Jordan... Today, we will get to know the features of this strategy, its most prominent conclusions, and the extent to which it can be implemented on the ground...” (AlMamlaka TV, “Sawt Al Mamlaka | What Has Jordan Done to Face Climate Change?”, 12 Jul 2023, 23:04, 1:29–2:11).

Jordan TV reinforces hierarchical, government-led solutions with frequent references to royal leadership and parliamentary initiatives, mirroring a broader tendency in Jordanian media to emphasise governmental ‘strategy’ and official sources in climate discourse (Abuhasirah and Salameh, 2024). Conversely, AlMamlaka TV fosters a more participatory discourse, with broader framing of climate governance that includes private sector and civil society actors, aligning with calls for ‘inclusive approaches’ and ‘grassroots mobilisation’ within Jordan’s evolving climate action framework (Hussein, 2025; Halaseh, 2024).

8.5 Local versus global framing

The channels differ notably in their geographic framing of climate change. AlMamlaka TV frequently situates local climate events within a global context, emphasising international agreements, cross-border environmental impacts, and global solidarity.

“The Rhine River, one of Europe’s important rivers, is today a witness to climate change... Today, the world is seeing a recurrence of factors that have historically led to the collapse of civilisations: war, political tensions, and most importantly, climate change.” (AlMamlaka TV, “The Tenth | Climate Change Dries Up Rivers in Europe”, 14 Aug 2023, 0:00–1:16).

Jordan TV, by contrast, concentrates on local impacts and national responses, underscoring the immediate relevance of climate change to Jordanian society and using global forums to highlight national achievement.

“The United States Embassy, as President of the Environmental Capitals Forum, announced Amman as the first environmental capital in the Middle East... The forum, which was launched, aims to enhance and organise efforts... to support the environmental sector through promoting sustainability and greening initiatives in Jordan and reducing global warming...” (Jordan TV, “Amman declared the first environmental capital in the Middle East”, 6 Oct 2023, 0:00–0:41).

AlMamlaka TV’s cosmopolitan framing encourages viewers to identify with global challenges and solutions. It reflects its mandate as a public service broadcaster with a global reach and commitment to diverse perspectives. Jordan TV prioritises a national narrative which positions Jordan as an exemplary actor within both the region and the world. This approach also emphasises its contributions to global efforts (United Nations Framework Convention on Climate Change, 2022; United Nations Development Programme, 2023).

9 Discussion

The findings of this study suggest that both AlMamlaka TV and Jordan TV tended to frame climate change predominantly through “Problem” and “Cause” lenses. This observation appears to be consistent with established trends in environmental journalism (Weathers and Kendall, 2016; Turnhout et al., 2019; Qtaishat et al.,

2022). Both channels frequently emphasised the immediate risks associated with extreme weather events, particularly environmental degradation and water scarcity. For example, several segments from AlMamlaka TV incorporated vivid imagery of wildfires and drought-stricken areas, often accompanied by emotionally evocative music and language. Such portrayals described the climate crisis as “a looming catastrophe” and “a threat to future generations,” which may be intended to heighten audience urgency and emotional involvement. This narrative approach appears to align with earlier findings that emotionally charged visual framing can amplify public concern (Brantner et al., 2011; Salazar et al., 2022; Duan and Bombara, 2022). It is worth noting that these representations may influence public perception, especially when media coverage foregrounds tangible environmental impacts (Knowles and Scott, 2020; Miller and Rice, 2025). The study data also revealed some variation in how the two channels framed potential solutions. While Jordan TV’s treatment of solutions towards climate have put forward some strides but it remained not as much as needed for such an urgent climate crisis the world is undergoing. AlMamlaka TV embraced a more solutions-oriented narrative, featuring segments on renewable energy, technological innovation, and climate adaptation initiatives.

Notably, the conceptual distinction between “cause,” “attribution of responsibility,” and “moral/ethical” framing is particularly relevant in understanding how climate change narratives construct agency and shape public responses (Olausson, 2011; Jang, 2013). While both channels emphasised causes and immediate risks, explicit attribution of responsibility was more prevalent on Jordan TV, typically focusing on state actors. AlMamlaka TV, by contrast, more often diversified responsibility through inclusion of NGO and private sector voices. Moral and ethical considerations such as justice, intergenerational equity, or global solidarity were largely absent or only implicit. The absence of these frames may restrict the extent to which media foster a sense of shared obligation or promote more dialogic, participatory engagement with climate solutions.

The qualitative data included several illustrative segments in which scientific experts discussed potential strategies for mitigating climate impacts. These appearances found on both AlMamlaka TV and Jordan TV seemed to underline a view of climate change not only as an urgent threat but also as a solvable challenge. This emphasis could arguably be aligned with a broader global trend towards solutions-oriented narratives in climate communication (Wicke and Taddicken, 2021). That said, the two channels differed in how prominently they advanced such narratives. Jordan TV’s coverage appeared to centre more narrowly on identifying problems and their immediate causes, often relying on official government statements that focused on national policy responses. Broader or more innovative solutions were rarely explored in depth. AlMamlaka TV, by contrast, seemed to adopt a more proactive editorial strategy, aiming to cultivate public optimism and engagement by highlighting actionable responses. These distinctions were also apparent in the tonal qualities of their coverage, with AlMamlaka TV conveying a more hopeful and mobilising tone, while Jordan TV maintained a comparatively neutral and institutional framing of climate issues.

Additionally, the findings of this study suggest that AlMamlaka TV often adopted a more alarm-oriented tone to convey a heightened sense of urgency. This was particularly evident in emotionally

charged segments that highlighted the catastrophic consequences of rising temperatures and extreme weather conditions. Such framing appears to align with previous scholarship suggesting that alarmist narratives may be effective in stimulating awareness and urgency (Maran and Begotti, 2021). In contrast, Jordan TV seemed to maintain a more neutral tone, relying on consistent factual reporting and restrained visual language. This editorial stance may reflect an intention to build audience trust through objectivity and institutional credibility.

Visual strategies also reflected these editorial distinctions between the two institutions. AlMamlaka TV appeared to rely more on emotionally resonant imagery, such as footage of glacial retreat and drought-impacted agricultural areas. This can be seen as a plausible way to enhance audience engagement and emotional identification with the climate problem. It is also matched with previous research highlighting the role of evocative visuals in fostering public concern (Brantner et al., 2011; Aljalabneh, 2024). Jordan TV, on the other hand, tended to limit its visual framing to community-based initiatives or government-led events, which reinforces its preference for an informational rather than emotionally driven approach.

Furthermore, the findings suggest notable differences in the inclusion of sources across the two channels. AlMamlaka TV appeared to give more space to scientific experts, who offered insights into the complexities and implications of climate science. Their presence arguably contributed to an enhanced perception of urgency and credibility, particularly through discussions that spanned both immediate and long-term climate impacts. This editorial strategy supposedly reflects a broader media tendency to foreground expert voices to bolster legitimacy (Painter et al., 2023). Jordan TV, by contrast, relied somewhat more on governmental officials, whose contributions tended to emphasise current policy initiatives and the role of the government in addressing environmental issues.

Differences in geographic framing also emerged from the qualitative analysis. AlMamlaka TV frequently situates Jordanian climate challenges within a global context, often referencing international climate accords and shared responsibilities. This approach indicates an effort to frame local issues as part of a collective global narrative. In contrast, Jordan TV’s coverage focused more narrowly on domestic concerns, such as water scarcity and agricultural productivity, thus positioning climate change primarily as a national policy issue rather than a transnational crisis.

This study has given a slightly more weight to quantitative content analysis, with the qualitative component serving to contextualise and interpret statistical patterns. While this mixed-methods design provided a broad view of framing practices, a more balanced or integrated approach incorporating detailed textual, genre, or multimodal analysis would yield richer insights into narrative construction, audience reception, and the affective power of visual strategies (Braun and Clarke, 2006; Hansen, 2017; Jungblut and Zakareviciute, 2019). Future research should thus pursue more granular analysis of symbolic forms, genre conventions, and interactive dimensions, possibly through the use of advanced software or participatory audience studies.

10 Conclusion

This study explored the climate change coverage presented by two of Jordan’s leading television broadcasters, AlMamlaka TV

and Jordan TV. While both channels addressed key environmental challenges, the findings suggest that they did so through noticeably different editorial strategies. AlMamlaka TV appeared to prioritise urgency, often incorporating alarmist visuals, expert commentary, and narratives oriented towards actionable solutions. This approach reflects an effort to engage viewers emotionally while reinforcing the need for immediate response. In contrast, Jordan TV adopted a more restrained, factual tone, with a stronger emphasis on governmental sources and institutional messaging. These editorial distinctions appear to illustrate broader institutional priorities and highlight the media's influential role in shaping public understanding of climate change. This study combined quantitative content analysis with qualitative thematic interpretation. It has provided a multi-layered understanding of media framing in the Jordanian context. This study contributes to visual communication scholarship by demonstrating how visual framing techniques shape audience perceptions and potential behavioural responses to climate challenges. This analysis necessitates the need for Jordanian media and policymakers to foster more inclusive, participatory, and solutions-focused climate communication. Such kinds of solutions could incorporate both expert and grassroots voices. By doing so, they can enhance public trust, expand the range of possible responses, and support the development of locally resonant climate strategies. Scholars should continue to explore the intersections of media, policy, and civil society. Scholars may employ innovative methodological approaches to capture the evolving complexity of climate change discourse in the region.

11 Recommendations

- 1 Media outlets should enhance solutions-oriented coverage, highlighting innovations and community resilience strategies to foster public optimism and proactive engagement.
- 2 Training for journalists should encompass both climate science communication and emotional framing techniques, facilitating impactful storytelling and public understanding.
- 3 Broadcasters should balance urgent, emotionally compelling narratives with factual credibility to maintain audience trust and motivate constructive climate action.
- 4 Cross-sectoral collaboration between media organisations, regulatory bodies, and academic institutions should promote regular audits of climate coverage to ensure balanced and comprehensive representation.
- 5 Future research should investigate audience reception of various framing strategies, assessing their impacts on climate-related behavioural intentions and civic engagement.

References

- Aarya, A. K. (2023). Global eco-politics: media discourse and conflicting climate change frameworks. Netherlands: Springer Nature, 189–214.
- AbdelGhaffar, N. N. (2024). Solutions journalism and climate change journalistic narratives: comparative insights from Egypt and the United Arab Emirates (Master's Thesis, the American University in Cairo): AUC Knowledge Fountain.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

AA: Validation, Software, Data curation, Visualization, Resources, Formal analysis, Conceptualization, Writing – review & editing, Project administration, Investigation, Supervision, Methodology, Writing – original draft, Funding acquisition.

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- Abdellatif, M. (2023). Framing climate change on TV news websites: a study of Nile News, Sky News Arabia, and CGTN Arabic. *Arab Media Soc.* 21–38. doi: 10.70090/mama22fc

- Abdikappar, M. (2024). Climate change and media influence. *Habarşy* 72, 146–154. doi: 10.26577/hj.2024.v72.i2.14

- Abdullah, K. H. (2023). An analysis of publications on climate change communication using a bibliometric lens. *Front. J. Soc. Technol. Environ. Sci.* 12, 354–371. doi: 10.21664/2238-8869.2023v12i3.p354-371
- Abuhasirah, R., and Salameh, R. (2024). Digital Jordanian daily newspapers coverage of climate change. *Stud. Media Commun.* 12, 223–231. doi: 10.11114/smc.v12i1.6623
- Ahmad, A. K., AL-Jalabneh, A. A., Mahmoud, A., and Safori, A. (2022). “Covid-19 and the resurgence of the hypodermic needle theory applicability in times of crises” in International conference on business and technology. (Cham: Springer), 1423–1436.
- Ahmed, A., and Khalid, D. (2011). Exploring news in the digital age: an overview. *Indian J. Appl. Res.* 4, 18–20. doi: 10.15373/2249555X/FEB2014/99
- Aljalabneh, A. A. (2024). Visual media literacy: educational strategies to combat image and video disinformation on social media. *Front. Commun.* 9:1490798. doi: 10.3389/fcomm.2024.1490798
- Al-Jalabneh, A. A. S. H. (2020). The role of television and social media news videos in raising the socio-political awareness of Jordanian university students (Doctoral dissertation). University of the West of England, Bristol, United Kingdom: Retrieved from UWE Bristol Research Repository. Available at: <https://uwe-repository.worktribe.com/output/1491266>
- Al-Tahat, O. M. (2024). The degree of dependence of local satellite channels on the Jordan news agency bulletin from the point of view of Jordanian journalists. *Zarqa J. Res. Stud. Human.* 24, 166–188. doi: 10.12816/0061768
- An, S. K., and Gower, K. K. (2009). How do the news media frame crises? A content analysis of crisis news coverage. *Public Relat. Rev.* 35, 107–112. doi: 10.1016/j.pubrev.2009.01.010
- Becker, B. (2012). Convergence vs. diversity: rethinking the quality of TV news. *Brazil. Journal. Res.* 8, 44–63. doi: 10.25200/BJR.v8n2.2012.470
- Brantner, C., Lobinger, K., and Wetzstein, I. (2011). Effects of visual framing and evaluations of news stories on emotional responses about the Gaza conflict 2009. *J. Mass Commun.* Q. 88, 523–540. doi: 10.1177/107769901108800304
- Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa
- Canon, C. R., Boyle, D. P., and Hepworth, K. J. (2022). Mapping pathways to public understanding of climate science. *Public Underst. Sci.* 31, 766–783. doi: 10.1177/09636625221079149
- Chen, K., Molder, A. L., Duan, Z., Boulianne, S., Eckart, C., Mallari, P., et al. (2022). How climate movement actors and news media frame climate change and strike: evidence from analyzing twitter and news media discourse from 2018 to 2021. *Int. J. Press/Politics* 28, 384–413. doi: 10.1177/19401612221106405
- Chong, D., and Druckman, J. N. (2007). Framing theory. *Annu. Rev. Polit. Sci.* 10, 103–126. doi: 10.1146/annurev.polisci.10.072805.103054
- De Vreese, C. H. (2005). News framing: theory and typology. *Inf. Des. J.* 13, 51–62. doi: 10.1075/ijdd.13.1.06vre
- Duan, R., and Bombara, C. (2022). Visualizing climate change: the role of construal level, emotional valence, and visual literacy. *Clim. Chang.* 170:1. doi: 10.1007/s10584-021-03291-x
- El Takach, A., Nassour, F., and Hejase, H. J. (2022). Digital transformation of media companies in Lebanon from traditional to multiplatform production: an assessment of Lebanese journalists' adaptation to the new digital era. *Žurnalistikos tyrimai* 16, 152–173. doi: 10.15388/zt/jr.2022.6
- Eskjær, M. F. (2017). “Climate change communication in Middle East and Arab countries” in Oxford research encyclopedia of climate science. Oxford, United Kingdom: Oxford University Press. doi: 10.1093/acrefore/9780190228620.013.484
- Fauzi, F., Marhamah, M., and Rahmani, S. (2023). Transformation and challenges of digital journalism in Aceh. *Komunikator* 15, 41–53. doi: 10.18196/jkm.16614
- Geschke, D., Sassenberg, K., Ruhmann, G., and Sommer, D. (2010). Effects of linguistic abstractness in the mass media. *J. Media Psychol.* 22, 99–104. doi: 10.1027/1864-1105/a000014
- Ghazal, M. (2023). Surmounting climate doom and gloom: solutions journalism in Jordan and beyond. The Jordan Times. Available online at: <https://jordantimes.com/opinion/mohammad-ghazal/surmounting-climate-doom-and-gloom-solutions-journalism-jordan-and-beyond/> (Accessed April 15, 2025).
- Giles, D., and Shaw, R. L. (2009). The psychology of news influence and the development of media framing analysis. *Soc. Personal. Psychol. Compass* 3, 375–393. doi: 10.1111/j.1751-9004.2009.00180.x
- Gissani, M., Sanusi, N., and Yulianti, A. (2024). Ardan radio convergence as an adaptation of private radio in the digital era. *Jurnal Komunikasi* 10, 66–79. doi: 10.30997/jk.v10i2.13040
- Gitlin, T. (1980). The whole world is watching: mass media in the making and unmaking of the new left. Berkeley, California, United States: University of California Press.
- Güran, M. S., and Özarslan, H. (2022). Framing theory in the age of social media. *Seçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 48, 446–457. doi: 10.52642/susbed.1142562
- Halaseh, R. (2024). Assessing climate vulnerability and adaptation priorities in Jordan [Research report] Carnegie Endowment for International Peace. Available online at: <https://carnegieendowment.org/research/2024/05/jordan-climate-change-adaptation-commitments?lang=en> (Accessed April 10, 2025).
- Hansen, A. (2017). “Methods for assessing visual images and depictions of climate change” in Oxford research encyclopedia of climate science (Oxford, England: Oxford University Press). doi: 10.1093/acrefore/9780190228620.013.491
- Hart, P. S., Feldman, L., Choi, S., Chinn, S., and Hiaeshutter-Rice, D. (2024). Climate change advocacy and engagement on social media. *Sci. Commun.* 47, 385–412. doi: 10.1177/10755470241284934 Original work published 2025
- Hemker, S. (2020). Increasing climate change risk portrayal: A comparative framing analysis of selected US and German news on the portrayal of climate change (Bachelor's thesis): University of Twente.
- Hofman-Bergholm, M. (2022). Storytelling as an educational tool in sustainable education. *Sustainability* 14:2946. doi: 10.3390/su14052946
- Hong, J., and Jeon, C. Y. (2025). Linking perceptions, emotions, and actions: how psychological distance, media framing, and guilt about climate crisis promote communication and pro-environmental behavior. *Sustainability* 17:2409. doi: 10.3390/su17062409
- Hügel, S., and Davies, A. (2020). Public participation, engagement, and climate change adaptation: a review of the research literature. *Wiley Interdiscip. Rev. Clim. Chang.* 11, 1–20. doi: 10.1002/WCC.645
- Hussein, H. (2025). Toward inclusive climate action in Jordan [research report]. Arab Reform Initiative. Available online at: <https://www.arab-reform.net/publication/toward-inclusive-climate-action-in-jordan/> (Accessed April 28, 2025).
- Jang, S. M. (2013). Framing responsibility in climate change discourse: ethnocentric attribution bias, perceived causes, and policy attitudes. *J. Environ. Psychol.* 36, 27–36. doi: 10.1016/j.jenvp.2013.07.003
- Jingala, N., and Chaudhry, N. (2023). Media's role in global ecopolitics: unravelling climate change narratives and fostering informed dialogue. Netherlands: Springer Nature, 215–237.
- Jordan Media Institute. (2022). JMI releases first ever “local media confidence index”. The Jordan Times. Available online at: <https://jordantimes.com/news/local/jmi-releases-first-ever-%E2%80%98-local-media-confidence-index%E2%80%999/> (Accessed April 20, 2025).
- Jungblut, M., and Zakareviciute, I. (2019). Do pictures tell a different story? A multimodal frame analysis of the 2014 Israel-Gaza conflict. *J. Pract.* 13, 206–228. doi: 10.1080/17512786.2017.1412804
- Khanya, R. (2024). Influence of media framing on public perception of climate change. *J. Commun.* 5, 1–13. doi: 10.47941/jcomm.1972
- Khresat, S. (2016). “Practicing conservation agriculture to mitigate and adapt to climate change in Jordan” in EGU general assembly conference abstracts, Munich, Germany: European Geosciences Union. EPSC2016-685.
- Kim, K. (2023). A review of CLT-based empirical research on climate change communication from 2010 to 2021. *Environ. Commun.* 17, 844–860. doi: 10.1080/17524032.2023.2259625
- Knowles, N. L. B., and Scott, D. (2020). Media representations of climate change risk to ski tourism: a barrier to climate action? *Curr. Issues Tour.* 24, 149–156. doi: 10.1080/13683500.2020.1722077
- León, B., and Erviti, M. C. (2015). Science in pictures: visual representation of climate change in Spain's television news. *Public Understand. Sci.* 24, 183–199. doi: 10.1177/096366251350019
- Levine, A. S., and Kline, R. (2017). A new approach for evaluating climate change communication. *Clim. Chang.* 142, 301–309. doi: 10.1007/s10584-017-1924-z
- Linh, P. T., Chu, H. D., Tam, V. T. M., Tien, T. V., Minh, N. T., and Duong, T. T. (2024). Content characteristics of the trend of infographics on environment and climate change adaptation in Vietnamese online newspapers. *VNU J. Sci. Policy Manag. Stud.* 40. doi: 10.25073/2588-1116/vnupam.4516
- Lunga, C. M., and Musvipwa, R. (2021). “Analysing how Zimbabwe broadcasting corporation (ZBC TV) and Eswatini TV (ESTV) are adapting to the digital era” in Television in Africa in the digital age (Cham: Springer International Publishing), 189–210.
- Maran, D. A., and Begotti, T. (2021). Media exposure to climate change and the impact on climate anxiety in Italian youth. *Int. J. Environ. Res. Public Health* 18:9358. doi: 10.3390/ijerph18169358
- Markowitz, E. M., and Guckian, M. L. (2018). “Climate change communication: challenges, insights, and opportunities” in *Psychology and climate change: Human perceptions, impacts, and responses*. (Eds.) S. Clayton and C. Manning. Elsevier Academic Press. 35–63. doi: 10.1016/B978-0-12-813130-5.00003-5
- Miller, L. B., and Rice, R. E. (2025). Psychological distance and pro-environmental behavior: insights from wildfire-affected PCT hikers. *Front. Psychol.* 16:1481964. doi: 10.3389/fpsyg.2025.1481964
- Murphy, D., Wyborn, C., Yung, L., Williams, D. R., Cleveland, C., Eby, L., et al. (2016). Engaging communities and climate change futures with multi-scale, iterative scenario building (MISB) in the Western United States. *Hum. Organ.* 75, 33–46. doi: 10.17730/0018-7259-75.1.33
- Murugan, S. P., Devika, R. J., Govindaraju, V., Narasimhaiah, R., Babu, H. L., Kandasamy, R., et al. (2023). “Role of social media in Greta Thunberg's climate and sustainability action” in Global perspectives on social media usage within governments. eds. C. Chavadi and D. Thangam (Hershey, PA, USA: IGI Global Scientific Publishing), 97–111. doi: 10.4018/978-1-6684-7450-1.ch007

- Nawafleh, A. (2022). Climate change adaptation in West-Asia region: case study of Jordan. *Disaster Adv.* 15, 34–46. doi: 10.25303/1507da034046
- Nimegeer, A., Patterson, C., and Hilton, S. (2019). Media framing of childhood obesity: a content analysis of UK newspapers from 1996 to 2014. *BMJ Open* 9:e025646. doi: 10.1136/bmjopen-2018-025646
- Okoliko, D. A., and de Wit, M. (2023). Climate change, the journalists and “the engaged”: reflections from South Africa, Nigeria, and Kenya. *J. Pract.* 19, 1–28. doi: 10.1080/17512786.2023.2200744
- Olausson, U. (2011). “We’re the ones to blame”: citizens’ representations of climate change and the role of the media. *Environ. Commun. J. Nat. Cult.* 5, 281–299. doi: 10.1080/17524032.2011.585026
- Painter, J., Ettinger, J., Holmes, D., Loy, L., Pinto, J., Richardson, L., et al. (2023). Climate delay discourses present in global mainstream television coverage of the IPCC’s 2021 report. *Communications Earth & Environment*. 4:118. doi: 10.1038/s43247-023-00760-2
- Pink, R. M. (2018). “The Middle East: Egypt, Israel, Jordan” in *The climate change crisis: solutions and adaption for a planet in peril*, Cham, Switzerland: Palgrave Macmillan. 185–216. doi: 10.1007/978-3-319-71033-4_8
- Prihatmadi, S. (2024). Digital convergence and value creation: TVONE’S strategic adaptation to the digital landscape. *Int. J. Adv. Technol. Eng. Inf. Syst. (IJATEIS)* 3, 252–264. doi: 10.55047/ijateis.v3i4.1080
- Qtaishat, T., El-Habbab, M., Bumblauskas, D., and Tabieh, M. (2022). The impact of drought on food security and sustainability in Jordan. *GeoJournal* 88, 1389–1400. doi: 10.1007/s10708-022-10702-8
- Roig, A. (2024). Our future stories: approaches to collective storytelling for climate futures and action through an integrative review. *Environ. Commun.* 19, 337–350. doi: 10.1080/17524032.2024.2393776
- Salameh, E., and Abdallat, G. (2020). The impacts of climate change on the availability of surface water resources in Jordan. *J. Geoscience Environ. Prot.* 8, 52–72. doi: 10.4236/gep.2020.810004
- Salazar, G., Monroe, M. C., Ennes, M., Jones, J. A., and Verissimo, D. (2022). Testing the influence of visual framing on engagement and pro-environmental action. *Conserv. Sci. Pract.* 4:e12812. doi: 10.1111/csp2.12812
- Samuels, R., Smiatek, G., Krichak, S., Kunstmann, H., and Alpert, P. (2011). Extreme value indicators in highly resolved climate change simulations for the Jordan River area. *J. Geophys. Res.* 116, 1–9. doi: 10.1029/2011JD016322
- Santos, Í., Carvalho, L. M., and Portugal e Melo, B. (2022). The media’s role in shaping the public opinion on education: a thematic and frame analysis of externalisation to world situations in the Portuguese media. *Res. Comp. Int. Educ.* 17, 29–50. doi: 10.1177/17454999211057753
- Schäfer, M. S., and Painter, J. (2021). Climate journalism in a changing media ecosystem: assessing the production of climate change-related news around the world. *Wiley Interdiscip. Rev. Clim. Chang.* 12, 1–20. doi: 10.1002/WCC.675
- Song, Q. (2024). Framing in media and communication studies: a bibliometric analysis. *Insight-News Media* 7:674. doi: 10.18282/inm674
- Suwanto, S. (2023). Journalistic convergence of the MetroLima Depok tabloid in the Covid-19 pandemic era. *Jurnal Pustaka Komunikasi* 6, 369–383. doi: 10.32509/pustakom.v6i2.3133
- Tamang, B. B. (2024). Global climate change: challenges, opportunities, and multilateral strategies for sustainable development. *NPRC J. Multidis. Res.* 1, 65–76. doi: 10.3126/nprcjmr.v1i4.70947
- Tan, S. (2024). The effects of climate change on the global meteorological system and trend analysis. *Interdis. Human. Commun. Stud.* 1, 1–6. doi: 10.61173/7b26qs93
- Tapsell, R. (2017). The political economy of digital media. In: *Digital Indonesia: Connectivity and Divergence*, ed. E. Jurriens. Singapore: ISEAS Publishing. 56–72. doi: 10.1355/9789814786003-010
- Turnhout, E., Tuinstra, W., and Halffman, W. (Eds.) (2019). *Environmental expertise*. Cambridge, United Kingdom: Cambridge University Press. doi: 10.1017/9781316162514
- Tyszczuk, R. (2021). Collective scenarios: speculative improvisations for the Anthropocene. *Futures* 134:102854. doi: 10.1016/j.futures.2021.102854
- United Nations Framework Convention on Climate Change. (2022). Updated submission of Jordan’s 1st Nationally Determined Contribution (NDC). Bonn, Germany: UNFCCC Secretariat. Available online at: <https://tinyurl.com/4p4ytujb> (Accessed April 12, 2025).
- United Nations Development Programme. (2023). Jordan’s fourth national communication on climate change [report]. UNDP Jordan: UNDP Country Office. Available online at: <https://www.undp.org/jordan/publications/jordans-fourth-national-communication-climate-change> (Accessed April 12, 2025).
- Weathers, M. R., and Kendall, B. E. (2016). Developments in the framing of climate change as a public health issue in US newspapers. *Environ. Commun.* 10, 593–611. doi: 10.1080/17524032.2015.1050436
- Wicke, J., and Taddicken, M. (2021). I think it’s up to the media to raise awareness.” Quality expectations of media coverage of climate change from the audience’s perspective”. *Stud. Commun. Sci.* 21, 47–70. doi: 10.24434/j.scoms.2021.01.004
- Zhaxylykbaeva, R., Burkitbayeva, A., and Kabylgazina, K. (2024). Journalistic ethics in the age of the internet: challenges and opportunities. *Herald Journal*. 74:6. doi: 10.26577/hj.2024.v74.i4.6