Climate Change Disinformation

Bi-annual report

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Introduction

Across the European continent, extreme weather events and climate-related disasters continue to unfold with increasing frequency, creating not only environmental and economic pressures but also an information challenge. For another consecutive year, the Global Risks Report 2025[1] places climate-related risks and the spread of misinformation among the highest global threats. This reflects a growing recognition that climate action is hindered not only by the scale of physical impacts, but also by the erosion of public trust and the distortion of the information environment.

This document is the third report on climate change disinformation produced within the Adaptation AGORA project[2] and published through the Digital Academy against Climate Change Disinformation[3]. Its aim is to identify recurring patterns, map the evolving landscape of climate narratives, and outline how these dynamics appear across Europe. To do so, it draws on material from recognised organisations and research centres, providing both a practical overview of measures taken to address the issue and a theoretical dimension through recent academic work in the field.

A similar direction is reflected in the latest assessment by the International Panel on the Information Environment (IPIE)[4], which argues that the greatest barrier to climate action is no longer the absence of scientific knowledge, but the deliberate distortion of climate information. As Sebastian Valenzuela, Chair of the IPIE's Scientific and Methodology Committee stated "*the integrity of climate information is under systemic attack. When trusted institutions - corporate, political, and media - become the engines of falsehood, they weaken our ability to act in the public interest*".

The IPIE findings align with broader research showing a shift from traditional climate denialism to more strategic efforts that cast doubt on solutions, undermine public confidence, or delay policy implementation. These tendencies coexist with emerging gaps in global coverage, especially in underrepresented regions, and ongoing limitations in access to platform data for independent scrutiny.

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[1] https://www.weforum.org/press/2025/01/global-risks-report-2025-conflict-environment-and-disinformation-top-threats/

[2] https://adaptationagora.eu/

[3] https://agoraclimatedisinfo.eu/

[4] https://www.ipie.info/news/press-release-climate-misinformation-threatens-global-action-says-ipie-assessment

During the same period, the European Fact-Checking Standards Network (EFCSN) introduced EuroClimateCheck[5], a platform designed to support efforts against climate disinformation across Europe. Rather than acting as a standalone solution, it combines AI-assisted tools, a shared database of misleading claims, and practical resources that help fact-checking organisations work with greater consistency. The platform hosts fact-checks, prebunks, and thematic reports, enabling the early identification of emerging narratives and strengthening cross-border collaboration. EuroClimateCheck reflects a gradual shift towards more coordinated infrastructure in the European information space and highlights the need for both technical capacity and collective effort to reinforce the integrity of climate information.

In this context, the present report does not attempt to provide a definitive answer, but rather a clear and structured overview of where the current discussion stands. It situates misinformation as a barrier to adaptation, highlights areas where institutional responses are developing, and notes where further transparency, research access, and regulatory clarity are required. The guiding premise is that effective climate action depends not only on policy targets or technological solutions, but also on the credibility and integrity of the information systems that support them.

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[5] https://euroclimatecheck.com/

1. The state of climate change disinformation

By Spyridoula Markou, Athens Technology Center
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This section offers an overview of the climate change disinformation narratives identified between January and June 2025, based on material from the EDMO Fact-checking Monthly Briefs and fact-checks published by organisations within the EDMO and EFCSN networks. The available findings point to a set of recurring climate-related narratives that appeared across different platforms and countries. These narratives can be grouped into broad thematic patterns, rather than treated as isolated or uniform claims, and their presence suggests areas where climate-related misrepresentation remained visible during this period.

The aim here is not to present a definitive map of climate change disinformation, but to reflect the narrative groupings most consistently identified by multiple fact-checking actors during the first half of 2025, while remaining cautious about interpretation and avoiding conclusions that exceed the available evidence.

In addition to these narrative groupings, the chapter also includes two short subsections on specific themes that are considered relevant to the discussion: one referring to mentions connected to the oil and fossil fuel sector, and a second noting that AI is raised in relation to questions of credibility and verification.

EDMO data: 7% climate related disinformation in early 2025

From January to June 2025, climate change disinformation remained a regular feature of the European fact-checking landscape. It did not dominate the conversation, but it never disappeared either. Over this six-month period, around 7% of all fact-checking articles dealt with climate-related claims, indicating a steady level of activity rather than occasional spikes. These figures are based on the monthly data submitted to the EDMO Briefs by participating organisations.

The year began at a relatively high point. January recorded 150 climate-focused articles (9%), the highest proportion in this period, before activity fell noticeably in February to 63 articles (5%). March marked a return to higher levels with 169 articles (9%), which became the peak in terms of volume. After that, the trend moved gradually downward. April

Climate change related disinformation articles

Source: EDMO monthly briefs
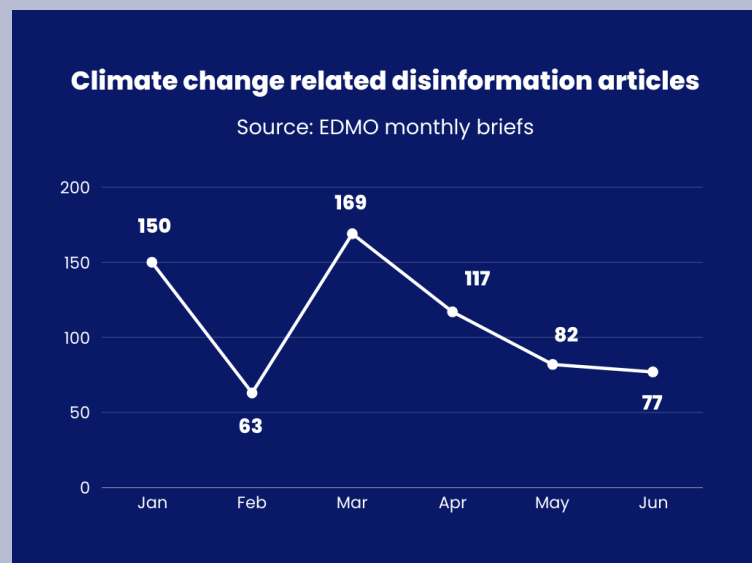
produced 117 articles (8%), while May and June stabilised at lower levels, with 82 and 77 articles respectively, each representing 5% of the total output. Throughout this period, the reporting base remained fairly consistent, with between 31 and 37 organisations contributing monthly data.

In total, fact-checkers published 658 climate-related articles out of 9,719 fact checks. Although the numbers rise and fall, the overall picture is clear: climate narratives continue to circulate in the public sphere, shaped by political developments, seasonal topics, and shifts in media attention.

2024 vs 2025: Climate disinformation in the first half of the year

Compared to the first half of 2024, the first six months of 2025 show a slightly lower overall volume of climate-related fact checks as well as a more stable pattern. In 2024, climate change disinformation represented around 8% of all fact-checking articles, with more visible fluctuations month by month and a clear peak in April (185 articles, 11%). In 2025, the average declines to 7%, with January and March standing out as the strongest months, while the rest of the period follows a more consistent trajectory. Overall, 2024 displays higher peaks and more variation, whereas 2025 reflects steadier levels at a slightly reduced scale, indicating continuity rather than escalation.

It is important to note that these figures are based on the reports submitted to EDMO, and the number of contributing organisations is not the same each month. As a result, the data

shows real trends, but it should be read with the understanding that monthly volumes may also reflect changes in participation, not only changes in disinformation activity.

1.1 Climate change disinformation narratives

During this reporting period, several climate-related disinformation narratives circulated once again in the European information space. Many of them are not new, they repeat ideas already seen in previous months, such as questioning the human contribution to climate change, downplaying the seriousness of the crisis, blaming climate policies for social or economic problems, or linking extreme weather events to conspiratorial explanations.

The repeated appearance of these claims shows how easily older narratives are reused and adjusted to new situations, especially during moments of uncertainty like wildfires, blackouts, or severe weather. Even when the details change, the underlying message remains similar: to cast doubt on scientific evidence, reduce trust in institutions, and weaken support for adaptation and mitigation measures.

Alongside this, there is an increasing use of AI-generated images and edited videos to reinforce these narratives. Fabricated or manipulated visuals are shared in ways that prioritise emotional shock over factual accuracy. This type of content spreads quickly during crises, making it harder for the public to distinguish between documentation and staged material. Emotional triggers like fear, outrage, and scapegoating are central to the way such posts circulate, while geopolitical actors take advantage of these moments to undermine trust in Western institutions, European climate policy, and the media. In these cases, the misleading content is less about isolated rumours and more about shaping a wider atmosphere of doubt.

The following section groups these narratives by theme and reflects how they manifested during this period.

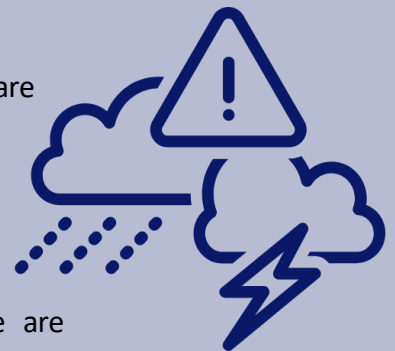## Climate change is exaggerated, not real, or not caused by humans

A consistent narrative suggests that climate change is either overstated, entirely fabricated, or not driven by human activity[6]. Everyday weather patterns, such as snowfall, rain, or colder-than-usual days[7], are often used as supposed evidence that global warming is a hoax. Some claims rely on the idea that past climate fluctuations make the current situation "normal"[8], or argue that additional CO_2 no longer affects temperature[9] beyond a certain point. Although presented as reasonable doubt, these arguments undermine well-established scientific findings and weaken confidence in climate policies and adaptation measures.

Extreme weather events are staged, artificial, or engineered

Major events like wildfires, storms, and nationwide blackouts are increasingly framed as deliberate or manufactured. Narratives refer to "weather weapons", HAARP[10], chemtrails[11], laser beams, or advanced radar systems[12] as the cause of disruption. These claims generally emerge during moments of uncertainty, when people are actively looking for explanations. In cases such as the California wildfires[13] or the Iberian blackout[14], fabricated stories were used to imply hidden agendas, fuelling mistrust in institutions and emergency responses rather than helping the public understand what happened.

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[6] https://gadmo.eu/fachleute-warnen-vor-ki-generierter-publikation-als-klimawandelleugnung/

[7] https://rebaltica.lv/2025/05/atseviskas-aukstas-dienas-nepierada-kaglobalas-sasilsanas-nav/

[8] https://gadmo.eu/30-grad-hitze-in-den-70ern-wie-hei-es-frher-wirklich-war/

[9] https://meddmo.eu/el/paraplhroforhsh-gyrw-apo-to-co-th-sxesh-tou-me-th-thermokrasia-kai-thn-anthrwpogenh-klimatikh-allagh/

[10] https://dpa-factchecking.com/germany/241223-99-411327/

[11] https://www.delfi.lt/news/melo-detektorius/melas/ar-tikrai-trys-jav-valstybines-agenturos-pripazino-chemtreilu-egzistavima-120097031

[12] https://admohub.eu/sl/media/ostro/nato-z-vremenskimi-radarji-ne-more-vplivati-na-padavine/

[13] https://factuel.afp.com/doc.afp.com.36TD2X3

[14] https://www.tjekdet.dk/indsigt/stroemafbrydelse-i-spanien-kan-vejr-og-solstorme-vaere-skyld-i-stroemafbrydelser

Mitigation measures presented as harmful

A recurring narrative reframes climate mitigation measures as harmful. Under this framing, anything intended to reduce emissions or support the green transition is depicted as a threat rather than a solution. Renewable energy[15] is described as unreliable or dangerous, while climate policies are framed as tools to control citizens -for example, through claims about banning cars[16], limiting heating[17], or imposing strict energy standards on houses[18]. Wind turbines are said to cause infrasound-related illnesses[19], and renewable infrastructure is blamed for blackouts or instability in energy systems[20].

Minorities, political opponents, and international actors are blamed for disasters

Scapegoating forms an important part of climate-related disinformation. In the California wildfires, minority groups, migrants[21], or LGBTQ+ communities[22] were falsely accused of starting fires or obstructing responses. In other cases, claims targeted high-profile individuals by alleging that destroyed properties belonged to European[23] or Ukrainian officials[24], implying corruption or hypocrisy. These narratives go beyond climate issues and feed into broader political tensions, encouraging division rather than addressing the causes or consequences of the events.

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[15] https://meddmo.eu/el/anypostatoi-isxyrismoi-peri-prasinhs-energeias-klimatikhs-allaghs-kai-kshrasiwn/
[16] https://www.mimikama.org/ab-2026-nur-ein-auto-in-deutschland-das-ist-fake/
[17] https://belux.edmo.eu/de/ministerin-depraetere-wird-aussage-ber-thermostate-in-den-mund-gelegt/
[18] https://www.mimikama.org/ab-2026-nur-ein-auto-in-deutschland-das-ist-fake/
[19] https://epl.delfi.ee/artikkel/120353401/faktikontroll-tuulegeneraatori-sundroom-ja-vibroakustiline-haigus-pseudoteadus-mis-on-joudnud-ka-eestikeelsesse-inforuumi
[20] https://www.tjekdet.dk/indsigt/stroemafbrydelse-i-spanien-kan-vejr-og-solstorme-vaere-skyld-i-stroemafbrydelser
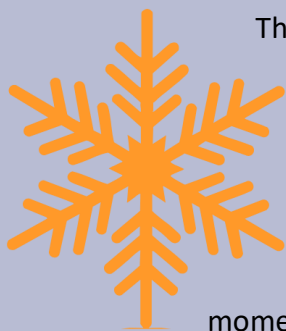[21] https://maldita.es/malditobulo/20250114/ilegal-mexicano-detenido-incendio-soplete/
[22] https://www.factual.ro/declaratii/fals-adela-mirza-despre-incendiile-din-los-angeles/
[23] https://www.logicallyfacts.com/en/fact-check/no-german-chancellor-scholzs-house-did-not-burn-down-during-la-fires
[24] https://www.factchecker.gr/2025/01/12/russian-propaganda-8-mansions-of-high-ranking-ukrainian-military-officials-did-not-burn-down-in-los-angeles/

If ice or snow still exists, climate change cannot be real

This narrative takes isolated or short-term weather conditions and presents them as proof against long-term climate trends. Examples include pointing to temporary increases in ice coverage[25], heavy snowfall in specific regions[26], or water levels in Venice[27] to suggest that global warming is not happening. The focus is on selective, momentary observations rather than consistent scientific data. The result is an argument that sounds simple and intuitive but creates a misleading picture of the overall trajectory.

Media, scientists, and institutions manipulate information

A recurring strand claims that temperature maps[28], scientific studies, and climate reports[29] are intentionally edited to alarm the public. Allegations include broadcasters altering colour scales on weather maps or institutions hiding studies that contradict the scientific consensus. These accusations seek to position institutions as untrustworthy, contributing to a wider sense that information is being controlled.
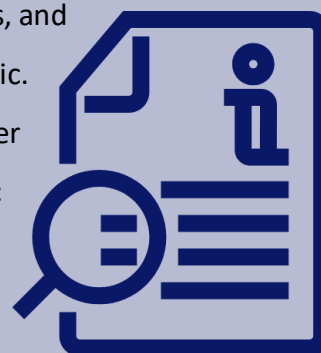
1.2 Industry disinformation on climate change

Industry-linked climate misrepresentation does not always take the form of explicit false claims; it often appears through communication strategies that shape public perception. Recent research from Boston University and the University of Cambridge[30] shows that fossil fuel companies have used native advertising -sponsored content made to resemble independent journalism- to influence readers' views on climate action. The study, which examined

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25   https://demagog.cz/diskuze/ledova-plocha-v-arktide-se-dlouhodobe-zmensuje-nahodile-vykyvy-nejsou-vypovidajici

26 https://faktencheck.afp.com/doc.afp.com.39UQ862

27 https://dpa-factchecking.com/germany/250519-99-903146/

28 https://belux.edmo.eu/fr/non-les-cartes-mto-des-chanes-tv-ne-sont-pas-rougies-pour-exagrer-le-rchauffement-climatique/

29 https://gadmo.eu/fachleute-warnen-vor-ki-generierter-publikation-als-klimawandelleugnung/

30 https://www.cam.ac.uk/research/news/news-article-or-big-oil-ad

ExxonMobil advertorials in The New York Times, found that disclosures help audiences recognise such content as advertising, but do not fully reduce its persuasive impact. In contrast, "inoculation messages" that warn audiences about potential manipulation can limit the effect of misleading narratives.

A complementary perspective comes from the HEAT report[31] by DisinfoLab and Logically, which did not identify direct, coordinated disinformation campaigns by oil and gas companies in Germany, France, or the Netherlands. However, it documented narratives that align with fossil fuel industry interests, such as questioning the reliability of renewable energy or highlighting economic risks of the energy transition, circulating through political networks, anonymous accounts, and state-linked actors, rather than overt corporate channels.

Finally, an investigation by Global Witness[32] highlights risks emerging from generative AI systems. Tools such as ChatGPT, MetaAI, Grok, and Gemini can provide accurate information, but in some cases reproduce greenwashing or "bothsidesism", presenting fossil fuel companies in a disproportionately positive light. The report recommends stronger transparency, safeguards, and regulation to prevent AI systems from unintentionally reinforcing misleading climate narratives.

1.3 AI and climate change disinformation

Artificial intelligence plays a dual role in the climate information ecosystem. The EDMO briefs used for this report confirm that AI-generated content is present across online platforms, influencing discussions on climate policy, the energy transition, and broader climate-related narratives.

More broadly, as noted in the previous section, the way AI models are developed and trained introduces structural risks in the climate information space. Large-scale datasets may include corporate messaging, politicised material, or low-quality sources, which can lead these systems to unintentionally amplify climate-related claims, portray certain actors more positively, or reproduce selective narratives that downplay environmental responsibility. In some cases, generative outputs may even produce misleading or inaccurate statements,

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[31] https://www.disinfo.eu/heat-harmful-environmental-agendas-and-tactics/
[32] https://globalwitness.org/en/campaigns/digital-threats/greenwashing-and-bothsidesism-in-ai-chatbot-answers-about-fossil-fuels-role-in-climate-change/

resulting in accidental disinformation rather than deliberate manipulation. This reflects limitations and patterns within the training data rather than intentional bias.

At the same time, ongoing research examines how AI might also support efforts to counter disinformation, for example through automated monitoring, early-warning mechanisms, and analytical tools used by researchers and fact-checkers. This creates a wider tension in which AI can function both as a contributor to, and a potential resource for addressing, climate-related disinformation.

The next chapter, which reviews academic papers from the period examined, also briefly references the role of AI, indicating that the topic continues there in connection with verification and credibility processes.

2. Comprehensive review of research on climate change disinformation

By Dmitry Erokhin, PhD, International Institute for Applied Systems Analysis

Nadejda Komendantova, PhD, International Institute for Applied Systems Analysis

This review synthesizes findings from 32 studies published between January and June 2025[33]. The studies were selected from the Web of Science database and included the topics of (climate change) and [(misinformation) or (disinformation) or (hoax) or (fake news) or (conspiracy)]. Only relevant English language open-access studies were considered.

Platforms, actors, and the amplification of contrarian narratives

Messaging apps, influencer cultures, legacy news, and platform algorithms shape how climate narratives gain traction. Singapore-based Telegram groups display two recurrent user archetypes in climate talk: "Strategic Disruptors", who sow distrust by recoding green policy as elite profiteering, and "Empirical Enthusiasts", who trade in data-heavy rebuttals. Compared with COVID-19, climate misinformation here pivots less on blanket science denial and more on institutional cynicism (Ligo et al., 2025).

Instagram posts around Greta Thunberg's 2023 arrest show polarized multimodal framings legitimizing activism, delegitimizing it, or muddying boundaries through memes, manipulation, and affect that blur scientific consensus and public sense-making (Carberry et al., 2025). In mainstream print, a longitudinal analysis of the Dutch nitrogen crisis traces denialist frames repeatedly present in right-leaning outlets, mirroring climate-denial playbooks and complicating policy uptake (Hill & Weulen Kranenbarg, 2025). Across Facebook, Instagram, and YouTube from 2018-2022, links to unreliable climate sources consistently draw disproportionately higher engagement than reliable ones, underscoring attention-economy advantages for sensational misinformation (Storani et al., 2025).

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[33] In determining eligibility for the January-June 2025 window, the first online publication date was used. Some articles were subsequently assigned to later journal issues.

Political influencers can bridge online contrarianism into formal institutions. The case of Elsa Widding demonstrates how epistemic skepticism about science and response skepticism about policy are blended to reposition denialist narratives within parliamentary debate (Vallström & Törnberg, 2025). Visual news routines also matter. Spanish coverage of the 2024 DANA floods leaned on decontextualized and stock imagery, risking misattribution and sensationalism. More precise, contextual, human-centered visuals that include solutions are recommended to avoid misleading audiences (Fernández-Castrillo & Ramos, 2025).

Finally, rhetorical analysis shows that climate disinformation deploys formal, analytic language with cues that evoke doubt, minimization, and appeals to (misused) authority, including "conversation-killers" that foreclose deliberation (Leite et al., 2025). A complementary linguistic study cautions that what is labeled "fake" often adopts a revelatory, disruptive register designed to challenge mainstream consensus, so truth labels alone can obscure persuasive stance and genre effects (Baissa et al., 2025).

Cognition, identity, and the social psychology of misbelief

Susceptibility is patterned less by knowledge deficits than by identity, epistemic beliefs, motivation, and personality. U.S. survey evidence shows climate-denialist conspiracies clustering with right-wing identity and anti-establishment worldviews, correlating with obstruction of mitigation and lower willingness to act (Littrell et al., 2025). Epistemic beliefs that treat climate knowledge as tentative, rely on intuition over expertise, and distrust authority predict climate-conspiracy endorsement and weaker policy support, with trust in science mediating these relationships (Nöth & Zander, 2025).

A Bayesian learning account demonstrates that people begin by assuming sources are helpful. When feedback is noisy or ambiguous, biased and deceptive sources exploit that prior, a dynamic highly resonant with online climate rumor ecologies (Schulz et el., 2025). Personality dispositions further modulate amplification. Higher Dark Triad traits and a need for uniqueness increase the likelihood of treating disinformation-sharing influencers as opinion leaders, whereas strong "green identity" appears protective, even when the influencer is an AI persona (Wallace & Buil, 2025).

Audience sense-making studies in Norway find that abstract, fear-centric global frames can produce resignation and skepticism, whereas locally grounded, conflict-clarifying,

solution-oriented reporting supports resilient understanding (Moe et al., 2025). Focus groups with climate actors in Canada trace how disinformation leverages culture-war cleavages and platform logics to entrench distrust. Counter-measures must therefore engage emotion, identity, and belonging alongside facts (Hochachka et al., 2025).

Denialism around insect declines reprises classic climate-denial tactics suggesting shared psychological and rhetorical engines across biodiversity and climate debates (Saunders et al., 2025). Among small businesses across four countries, misinformation, data-quality issues, and asymmetries feed reactance and disengagement. The proposed Business Ecology Nexus emphasizes co-creation, transparency, and knowledge sharing to rebuild trust (Liyanaarachchi et al., 2025).

Youth dynamics reveal social media's dual role. Emotionally resonant, networked strategies can both mobilize pro-environmental action and amplify skepticism. Lessons from vaccine communication including empathy, culturally adapted narratives, influencer partnerships can translate to climate (Orzan, 2025).

Communication strategies and interventions

Corrective formats with data and interactivity show consistent benefits but face limits with entrenched beliefs. A quasi-experiment with Egyptian audiences finds interactive and static data visualizations outperform text-only news for correcting climate misperceptions, especially among lower-knowledge groups, though dissonant priors damp effects (Abdel-Haleem & Alnajjar, 2025). Communicating citizens' assemblies across five European countries yields small reductions in misperceptions, with "voice" slightly improving perceived policy effectiveness and "representation" helping more skeptical publics. Beliefs that policies are harmful are largely unchanged, indicating bounded corrective potential (Suiter et al., 2025).

Practitioner interviews in Australia and Aotearoa New Zealand recommend a four-pillar approach including simple, locally relevant messages, audience segmentation, storytelling, and actionable steps arguing that hope-filled, conversational strategies are superior to alarmism or complexity for sustaining attention and countering disengagement (O'Callaghan et al., 2025).

Two reviews broaden the evidence base. A systematic review of social-media manipulations highlights ideology, conspiracy thinking, and low science trust as drivers, notes

that video-first platforms remain understudied, and finds corrective and literacy approaches promising but under-tested (Herasimenka et al., 2025). A 17-cluster mapping positions climate disinformation as a socio-political as much as communicative problem, recommending prebunking, interdisciplinary literacy, journalist-scientist collaboration, and regulatory and technical tools (Tomassi et al., 2025).

A meta-synthesis goes further, framing climate disinformation as a systemic threat to epistemic welfare that exploits algorithmic amplification and emotional appeals. Responses must extend beyond fact-checking to algorithmic transparency, communicative justice, literacy, and accountability for powerful actors (Essien, 2025). Journalism education in Spain has rapidly scaled courses on disinformation, post-truth, and fact-checking that are necessary but challenged by the speed of AI-mediated information disorders (Murcia-Verdu et al., 2025).

AI, verification, and credibility pipelines

AI appears both as remedy and risk. CLIMINATOR, an LLM-based checker grounded in IPCC/WMO sources and a Mediator-Advocate debate protocol, significantly outperforms general models on expert-annotated climate claims, particularly low-credibility ones, while providing transparent reasoning and citations (Leippold et al., 2025). Reliability, however, varies with prompt context and social framing. LLMs can still produce misleading simplifications when primed with misinformed or politicized cues, and responses shift with demographic framing, implying design needs for stronger consensus grounding and bias-aware safeguards (Aremu et al., 2025).

Comparative audits across English, Russian, and Ukrainian find that ChatGPT generally offers more nuanced and accurate veracity assessments than Bing Chat, but performance is language- and prompt-dependent, requiring transparency and continuous adaptation (Kuznetsova et al., 2025). Beyond claim-level checking, an AI framework that fuses BERT/RoBERTa-style classifiers with stance, sentiment, credibility scoring, and feedback loops shows improved filtering and trend-forecasting for climate-misinfo streams (Shahbazi et al., 2025). In newsroom contexts, machine-learning pipelines can trace framing, plagiarism chains, and narrative flows across Greek and Cypriot outlets to strengthen transparency without automatically "hard-labeling" misinformation (Baltzi et al., 2025).

Policy, adaptation, and decisions under uncertainty and misbelief

Policy rollouts can trigger misinformation waves, and decision systems can be designed to be robust to erroneous beliefs. UK pilots of Bovaer® for enteric methane abatement catalyzed polarized media and consumer narratives illustrating how techno-fixes become disinformation flashpoints absent transparent, relatable communication (Manning et al., 2025).

In coastal flood protection for Manhattan, reinforcement-learning strategies that continuously assimilate sea-level observations outperform static or ad-hoc approaches and explicitly hedge against "negative learning", i.e., systematized adaptation to misinformed beliefs, thereby reducing costs, extreme losses, and regret under deep uncertainty (Feng et al., 2025). At community scale, "truth regimes" around Lower Missouri River flooding emerge from perceived exclusion, entrench mistrust, and obstruct science-based adaptation, underscoring the need for participatory, context-aware engagement (Catalano et al., 2025).

Knowledge infrastructures and institutional capacity

In a crowded, noisy information environment, curated, participatory infrastructures become essential. The weADAPT case argues that trust, usability, inclusivity, and accessibility and not merely more data are required to translate knowledge into action and buffer communities against disinformation's noise (Bharwani et al., 2025). National media-analytics like MediaWatchers4Climate can surface narrative patterns at scale, supporting journalists and the public in diagnosing distortion without defaulting to binary "true/false" labels (Baltzi et al., 2025).

Cross-cutting implications

Three lessons recur across all studies. First, misbelief is mediated by identity, epistemic beliefs, motivation, and personality. Interventions that ignore these substrates underperform, whereas those that build efficacy and belonging with locally relevant, story-driven, actionable messages perform better even if effects are modest.

Second, the attention economy and influencer-institution linkages structurally advantage contrarian narratives. Counter-measures should combine prebunking and literacy with platform-savvy strategies, newsroom transparency tooling, and accountability for organized campaigns.

Third, AI can scale verification and early warning when grounded in authoritative sources, designed for language- and context-sensitivity, and coupled to human oversight. Otherwise, it risks reinforcing biases or being gamed by adversarial prompts.

Practically, institutions should treat misinformation as a structural constraint on climate action, addressable through participatory governance, robust, uncertainty-aware decision systems, and the cultivation of prosocial identities that outcompete conspiratorial worldviews.

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