Climate Change Disinformation

Bi-annual report

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Introduction

Disinformation has emerged as one of the most pressing global risks, as highlighted for the second consecutive year in the World Economic Forum's Global Risks Report 2025[1], underscoring its profound impact on democracy, public trust, and crisis response. Climate change disinformation, in particular, presents a significant challenge, obstructing informed decision-making and undermining efforts to address one of the most critical existential threats of our time. Misinformation and deliberate distortion of climate science hinder policy implementation, delay action, and contribute to public confusion, further exacerbating the climate crisis.

This bi-annual report, developed in the framework of the Adaptation AGORA project, provides a comprehensive overview of the evolving landscape of climate change disinformation in the first half of 2024. This report consists of two parts: the first provides insights into the most prevalent climate change disinformation narratives, drawing from fact-checking organizations, think tanks, and research institutions, while the second presents a comprehensive overview of the research on the topic.

This report is developed within the Adaptation AGORA project, which supports climate adaptation efforts by engaging communities and regions through best practices, innovative approaches, and policy instruments. As part of this initiative, Adaptation AGORA is developing four digital tools: the AGORA Community Hub, two Digital Academies, a Digital Handbook, and a Mobile App. One of these, the Digital Academy against Climate Change Disinformation, equips users with reliable climate information and fact-checked data to counter misinformation, enhance media literacy, and promote evidence-based decision-making.

[1] Global Risks Report 2025 | World Economic Forum

1. The state of climate change disinformation

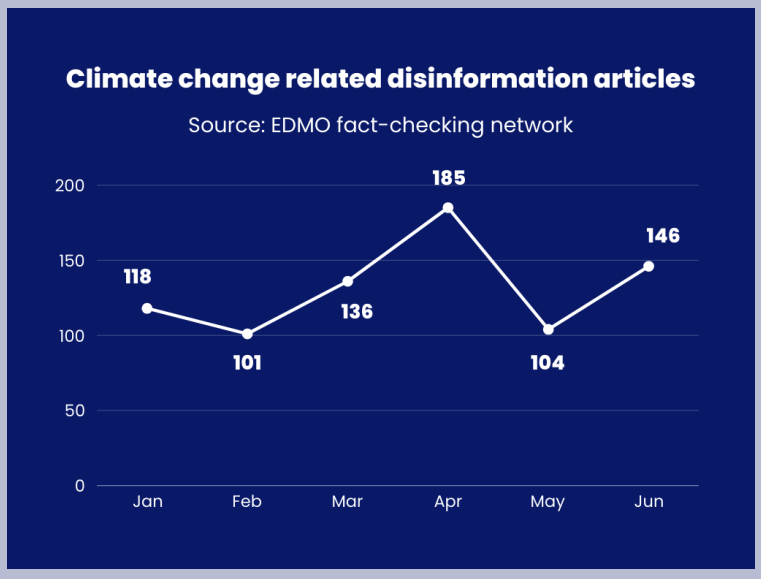
By Spyridoula Markou, Athens Technology Center

Adam Doulgerakis, Athens Technology Center

In this section, we provide insights into the most prevalent climate change disinformation narratives based on EDMO data and the EFCSN's Climate Facts Europe project. For this analysis, we examined data from EDMO's Fact-checking Monthly Briefs, covering the period from January 2024 to June 2024, to identify key disinformation trends and narratives across Europe, as well as the number of articles reported each month. Additionally, we focused on reports published on the EFCSN website, which provide a detailed analysis of these narratives and how they were distributed.

We also included a selection of articles from organisations that are not members of either EDMO or EFCSN but which we believe deserve special mention, as they offer additional insights into the disinformation and dominant narratives that shaped the first half of 2024.

8% of Fact-Checking Articles Focused on Climate Narratives (January–June 2024)



The European Digital Media Observatory (EDMO) reports indicate a consistent presence of climate change-related disinformation throughout the first half of the year, with notable fluctuations in the number of reports and contributing organisations. On average, approximately 8% of fact-checking articles focused on climate change disinformation.

In detail, January saw 118 fact-checking articles on climate change disinformation, accounting for 8% of the total fact-checking articles published that month. February experienced a decline to 101 articles (7% of the total), followed by an increase in March with

136 articles (8%). The number rose significantly in April to 185 articles (11%), before dropping to 104 articles (6%) in May. In June, the volume increased again to 146 articles (8%).

Influencers on the call

According to a CNN report[2], an emerging trend involves wellness influencers who previously spread pandemic-related conspiracies now pivoting to climate misinformation. These influencers exploit their large online followings, promoting narratives about weather manipulation, chemtrails, and distrust in science, merging health-related fears with broader disinformation campaigns. Their influence contributes to public confusion, undermining trust in climate action and amplifying polarization.

1.1 Climate change disinformation narratives

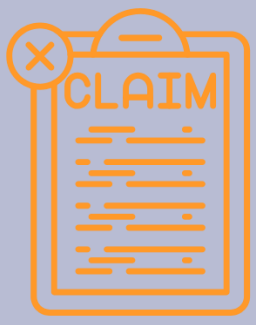
Beyond the numbers, the reports highlight consistent patterns and evolving strategies in climate change disinformation. Denialism, conspiracy theories about "climate lockdowns," and the misrepresentation of data remain persistent themes. Notably, urban concepts such as the "15-minute city" are frequently misconstrued, fuelling conspiracy theories that resonate with corona-sceptic and climate denial communities.

Additionally, extreme weather events are weaponised to push narratives blaming governments and EU policies. Industry-driven misinformation, particularly from the fossil fuel and plastics sectors, further complicates the discourse, undermining renewable energy technologies and deflecting accountability. These narratives not only polarise public opinion but also intersect with broader disinformation ecosystems, including anti-vaccine and pro-Russian networks, amplifying their reach and impact.

A key driver of these disinformation trends is the exploitation of localised events. Extreme weather incidents, such as floods in Italy and droughts in Spain, are frequently used to reinforce both longstanding and emerging conspiracy theories. These include misleading narratives about government responsibility for disasters, as well as claims that dams or chemtrails are being used to manipulate the climate.

[2] Wellness influencers fueled pandemic misinformation. Now they're targeting another crisis | CNN

Below are the thematics areas, accompanied by selected examples of fact checks produced by fact-checking organisations within the EDMO network as well as organisations outside it.



Denial of human-caused climate change

Persistent narratives claim that human activity does not contribute to climate change[3]. Examples include assertions that CO2 is not a factor in global warming[4] or that climate fluctuations are primarily due to natural phenomena such as solar activity[5]. These narratives are refuted by scientific consensus and fact-checking organisations.

Conspiracy theories

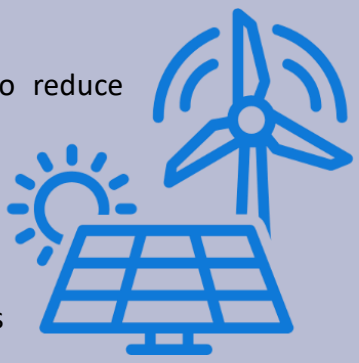
A significant portion of climate change disinformation revolves around conspiracy theories. One common example is cloud seeding, with claims that it has caused extreme weather events, such as rainfall in Dubai[6]. Another persistent theory involves chemtrails[7], alleging that aircraft contrails are deliberately used to manipulate the weather. Similarly, weather modification programmes are frequently cited in disinformation narratives, suggesting that air sprays or antenna systems[8] or HAARP project[9] are being used to influence both weather patterns and public health.

[3] Deutschlands Anteil an der Erderwärmung ist größer, als dieser AfD-Politiker sagt - GADMO
[4] Norwegian contribution does not refute that CO2 has an impact on global warming - EDMO Belux
[5] No, the sun is not responsible for the recent global warming trend | Logically Facts
[6] Όχι, η σπορά νεφών δεν προκάλεσε τα ακραία καιρικά φαινόμενα στο Ντουμπάι, λένε οι ειδικοί - MEDDMO
[7] Los "chemtrails" no son un plan para provocar la sequía
[8] Nein, mit Radaranlagen und Mobilfunkmasten lässt sich nicht das Wetter beeinflussen | Faktencheck
[9] Αυτή η φωτογραφία δεν δείχνει τον αμερικανικό ερευνητικό σταθμό HAARP, ο οποίος δεν προκαλεί κλιματική αλλαγή | ελληνικό Fact Check

Misrepresentation of climate data

Disinformation often includes distorted interpretations of historical data, such as claims that high temperatures in 1974[10] disprove climate change or that Earth's current temperature is among the lowest in 9,500 years. There is no evidence of sea-level rise in before and after photos (i.e., from the past and present) from some locations. Therefore, sea-level rise is not occurring or causing negative impacts[11].

Misinformation about renewable energy



Disinformation narratives often target technologies designed to reduce emissions, aiming to undermine public trust in sustainable solutions. Wind turbines[12] are frequently misrepresented, with false claims suggesting they cause droughts or even contribute to global warming. Similarly, electric vehicles[13] are portrayed as unreliable, particularly in cold weather, with misleading assertions that they fail to operate efficiently in low temperatures. EVs burn or explode more easily than others and other false claims.

Emerging narratives and polarization

One prominent example is the climate lockdown conspiracy theory, which misinterprets urban planning concepts such as the 15-minute city[14]. This narrative fuels fears of government control and restrictions on movement, often overlapping with

[10] Nein, hohe Temperaturen im Jahr 1974 widerlegen nicht den Klimawandel - GADMO
[11] Sea levels have risen for over 100 years, despite misleading photos shared on social media - Science Feedback
[12] Nein, Windräder verursachen nicht weitläufig mehr Trockenheit und Dürre - GADMO
[13] A (false) song of Ice and Fire: disinformation narratives on electric vehicles – EDMO
[14] Las narrativas conspiranoicas en torno al concepto de 'la ciudad de 15 minutos' - Maldita.es

disinformation communities linked to corona-scepticism and broader anti-government sentiments.

Additionally, political exploitation of climate disinformation is on the rise, with misleading narratives being used to deepen divisions in public debate. EU climate policies are frequently targeted, with disinformation blaming governmental or EU measures for natural disasters such as floods and droughts[15].

1.2 Climate change narratives connected to industry interests

The fossil fuel and plastics industries have been one of the contributors to the circulation of misleading information surrounding climate change over several decades. Through persistent lobbying and carefully created public communication efforts, these sectors have worked to reduce public awareness of the environmental consequences of their activities and to cast doubt on well-established scientific evidence.

In the fossil fuel sector, companies have backed initiatives that aim to slow down regulatory responses, question climate research, and present renewable energy options as unrealistic or economically burdensome. Likewise, actors within the plastics industry have promoted messages that focus on the limitation of recycling schemes, while shifting attention away from structural production practices and assigning responsibility for plastic pollution primarily to individual consumers.

Taken together, these strategies contribute to confusion in public debate, hinder effective policy development, and enable the protection of industrial interests at a time when global demands for climate responsibility and environmental regulation continue to intensify.

The Fraud of Plastic Recycling

The report The Fraud of Plastic Recycling[16] examines how the plastics and petrochemical industries have systematically promoted misleading narratives around recycling as a solution to plastic waste. According to the report, these industries have long been aware that recycling

[15] La Comisión Europea no prevé "restricciones de agua" para todos
[16] https://climateintegrity.org/projects/plastics-fraud

is largely ineffective at addressing the scale of plastic pollution, yet they have continued to present it as a viable remedy. Despite sustained investments and public-facing recycling initiatives, the proportion of plastic that is successfully recycled worldwide remains extremely low, with only a small fraction of all plastic ever produced being recycled.

The report further identifies coordinated advertising and lobbying efforts as key mechanisms used to transfer responsibility for plastic waste from producers to consumers, reinforcing the notion that increased recycling at the individual level is sufficient. This narrative enables continued large-scale plastic production while diverting attention away from the broader environmental and climate impacts of plastics. The findings emphasise that recycling alone cannot match the volume of plastic entering the market and stress the need for structural solutions, including reducing plastic production, promoting alternative materials, and ensuring greater corporate accountability for disinformation practices and their contribution to the climate crisis.

2. Comprehensive review of research on climate change disinformation

By Dmitry Erokhin, International Institute for Applied Systems Analysis

Nadejda Komendantova, International Institute for Applied Systems Analysis

The first half of 2024 saw a significant number in research addressing climate change disinformation. This review synthesizes findings from 29 studies published between January and June 2024, highlighting the pervasive impact of misinformation and disinformation on public perception, behavior, and policy, as well as proposed strategies to combat these challenges. The studies were selected from the Scopus and Web of Science databases 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.

Misinformation in climate change education and perception

Finnegan and d'Abreu (2024) introduced the "Hope Wheel" model in climate change education. The mis-/disinformation guardrail of this model emphasizes the need for educators to develop learners' digital and research literacy to counteract climate-related misinformation. Johnson et al. (2024) stressed the importance of understanding epistemic beliefs to enhance science education's role in mitigating climate change misinformation effects. Wilkins et al. (2024) emphasized the crucial role of K-12 educators in disseminating accurate knowledge. Oliveira et al. (2024) conducted a systematic review of educational interventions, such as debunking, prebunking, and nudging, while Danielson et al. (2024) supported inoculation strategies for addressing misconceptions.

Social media and misinformation amplification

Corsi (2024) evaluated Twitter's algorithmic amplification of low-credibility content, finding that tweets containing misinformation about climate change received significantly higher visibility. Elroy et al. (2024) examined climate change narratives on social media, identifying how conspiracy theories and misinformation thrive in online echo chambers. Pereira and Ha (2024) highlighted the prevalence of misleading environmental information on TikTok, stressing the need for science education to enhance users' critical evaluation skills. Kresin et al. (2024) further examined how students assess the credibility of scientific information on social media.

Climate change denial and conspiracy theories

Piva (2024) analyzed climate change denial through the lens of conspiracy theories, demonstrating how such narratives fragment scientific understanding and impede collective action. De Nadal (2024) observed a shift from outright denial to “post-denial” narratives on YouTube, where influencers acknowledge climate change but criticize policies and movements through cultural and political rhetoric. Thapa Magar et al. (2024) utilized actor-network theory to analyze the production and dissemination of climate change misinformation in the U.S., emphasizing the complex networks involved.

Public perception and behavioral impacts

Ejaz et al. (2024) identified trust in information sources as a key determinant of susceptibility to climate change misinformation. Magistro et al. (2024) explored how conspiracy beliefs contribute to free riders in climate mitigation efforts. Arnot et al. (2024) focused on how children perceive climate risks and their strategies to navigate misinformation on social media.

Misinformation in environmental policy and urban planning

Lee et al. (2024) advocated for a systems approach to climate communication due to the complex interplay of misinformation and human activities. Marquet et al. (2024) discussed public backlash against urban planning initiatives like the 15-minute city due to misinformation. Gritsenko (2024) emphasized international governance challenges in counteracting climate misinformation.

Dynamics of misinformation and modelling approaches

Daume (2024) reviewed impacts of misinformation during extreme weather events linked to climate change, highlighting that misinformation on social media merges diverse public interests, spans different temporal and geographical scales, varies by event type, and requires tailored countermeasures. Alinejad and Honari (2024) examined the politicization of science on Twitter, identifying different modes of politicization that contribute to the spread of misinformation. Balcarova et al. (2024) analyzed Twitter discussions on the Green Deal, providing insights into public perceptions and misinformation.

Perspectives on misinformation and trust

Elabbar (2024) explored how scientific expertise can be misused to undermine moral agency, while Chuey et al. (2024) examined the influence of epistemic language in news headlines on readers' perceptions. Amazeen et al. (2024) examined how individuals from underrepresented communities engage with and perceive science misinformation. They found that distrust in authority figures contributes to susceptibility, highlighting the need for culturally sensitive interventions. Robson et al. (2024) investigated the relationship between belief in implausible claims and cognitive processing

styles. They found no strong evidence that belief in false information is due to a generally lazy evaluative style, suggesting that interventions promoting analytical thinking may not effectively reduce such beliefs.

Strategies and interventions against misinformation

Shreedhar et al. (2024) introduced the concept of "brown sludge" highlighting barriers to pro-environmental behaviors like confusing eco-information and disinformation campaigns. Lopes et al. (2024) argued for promoting scientific literacy to combat misinformation effectively, while Mata et al. (2024) linked belief in climate change to news consumption habits and awareness of misinformation in online communication.

Conclusion

The comprehensive review of research conducted between January and June 2024 underscores the multifaceted nature of climate change misinformation. The studies reveal that misinformation significantly influences public perception, behavior, and policy, often by exploiting gaps in scientific literacy, trust in information sources, and social media dynamics. The reviewed works also highlight the proliferation of climate denialism and conspiracy theories, complicating efforts to build consensus on climate action. Nonetheless, the research presents promising strategies, from enhancing digital literacy and refining educational interventions to fostering international cooperation in policy communication. Addressing these challenges requires a holistic and collaborative approach, combining effective education, strategic communication, and targeted policy frameworks to mitigate the harmful impacts of climate change misinformation.

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