Digital insights on climate
Listening to online conversations in Eastern and Southern Africa

August 2022

Key definitions

Adaptation: Adjustments in response to climate change or its effects that moderate harm or exploit beneficial opportunities.

Audience: Users and accounts that interact with digital content around climate.

Climate change: Long-term shifts in temperatures and weather patterns. Human activities have been a main driver of climate change in the past century, primarily due to burning fossil fuels like coal, oil and gas. Natural processes can also contribute to climate change.

Cognitive bias: Systematic errors in the way people process information that can impact decision-making.

Digital platforms: Electronic tools that allow to exchange information, including digital news websites, social media platforms, search engines, blogs, messaging apps.

Engagement of online conversation: Measure of how many people interact with a specific type of content, includes number of likes, reactions, comments, replies and shares/retweets.

Global warming: Long-term heating of Earth's surface due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in the atmosphere.

Information behavior: How people approach and handle information.

Information gap: Missing information needed to inform decision-making.

Information need: Perception of lack or inadequate information.

Information seeking behavior: Act of actively looking for information to answer a specific question.

Misinformation: False information, regardless of intent to mislead.

Mitigation: Interventions to reduce or prevent emission of greenhouse gases.

Sentiment analysis: Process of identifying and categorizing text to determine attitude towards a specific topic (e.g. positive, negative, or neutral). Net sentiment is calculated as: (#positive posts - #negative posts) / (#positive posts + #negative posts).

Social and Behavior Change: SBC aims to empower individuals and communities, and lower structural barriers that hinder people from adopting positive practices and societies from becoming more equitable, inclusive, cohesive and peaceful. Drawing on various disciplines (from sociology and psychology, to communication and behavioral economics), SBC encompasses any set of strategies and interventions that influences drivers of change and supports local action towards better societies.

Social listening: Process of tracking, analyzing and synthesizing community inputs and conversations, both online and offline, to identify what circulates in a society.

Volume of online conversation: Number of posts or articles about a specific issue published online over a certain period of time.

Vulnerability: Propensity or predisposition to be adversely affected by climate change.

# Index

Introduction

Climate change is a global emergency that threatens the livelihood of hundreds of millions of people. Children are among the most vulnerable to the consequences of the climate crisis, as they face increased risk of malnutrition, water scarcity, infectious diseases, losses in education and collapse of health services.

Children's Climate Risk Index, UNICEF (2021)

The UNICEF Climate Change Risk Index indicates that all countries in Eastern and Southern Africa face medium to extremely high risk, meaning that children are significantly exposed and vulnerable to climate shocks.
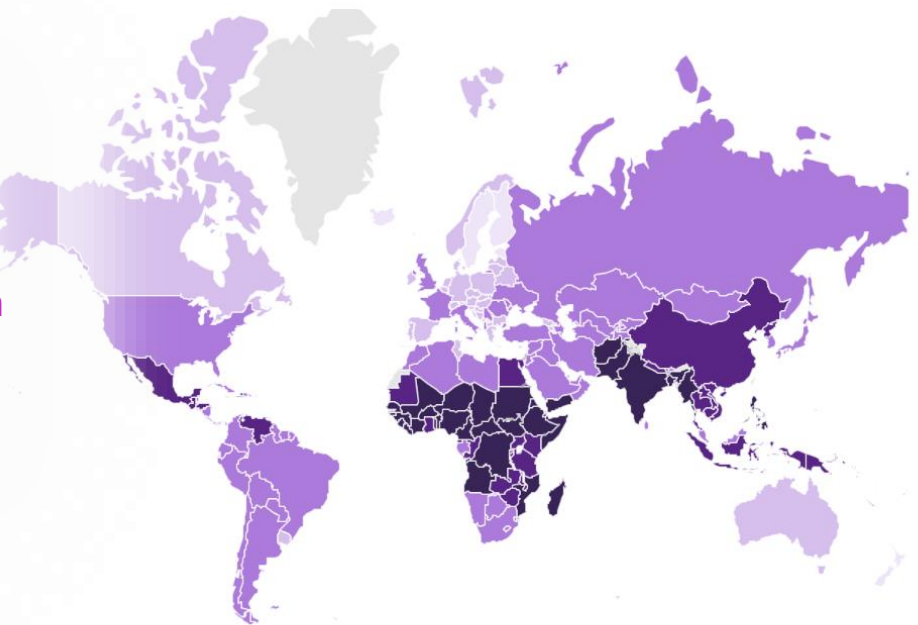
● Extremely High   ● High   ● Medium-High   ● Low-Medium   ● Low   ● No data

In 2022 alone, the Horn of Africa has been hit by the worst drought in 40 years, in Madagascar a series of storms and cyclones affected almost 1 million people, and severe flooding has impacted several countries including Madagascar, Malawi, Mozambique and South Africa.

Rapid and systematic scale-up of climate resilient interventions and investments is one of the two flagship for UNICEF in ESAR, reflecting the urgency for affected communities and the voices of children and young people in the region, who have called for the prioritization of the climate change agenda.

SBC and Climate

Integrating the voices of children in climate action, innovation and programming is part of the change strategy for climate resilience, adaptation and children as identified in the ESA Regional Collaboration for Children 2022–2025. Among the actions recommended to accelerate of change, supporting youth participation in the climate public discourse is key to ensure that advocacy efforts are diverse and inclusive and centered on the needs of children and young people.

Partnering with communities to lead the change process is a key aspect of Social and Behavior Change (SBC) work. Listening to and engaging with communities can not only serve specific social and behavior change outcomes (such as increasing awareness and knowledge on a certain issue) but more importantly creates ongoing dialogue and trust, which can in turn lead to lasting change. In a crisis context, mechanisms to understand community concerns, questions, and behaviors are important to inform rapid adaptation of change strategies and to evaluate interventions.

This report applies one of the SBC implementing strategies, social listening (taking the pulse of public opinions), to provide insights on the digital discourse around climate change in ESAR. The overall goal is to explore which climate-related issues generate interest online, how digital users approach conversations regarding drivers, impacts and solutions to the climate crisis, and to what extent children's rights are voiced.

Ambovombe, Androy region, Madagascar, 2022
©UNICEF/UN0595862/Andrianantenaina

Digital Social Listening

Social listening refers to the tracking, analysis and synthesis of community feedback and conversations around a certain issue, with the goal to identify questions and queries, as well as concerns, complaints and suggestions. Insights from social listening, triangulated with other data sources such as primary research data, can contribute to social and behavioral sciences evidence. This approach can also help identify information gaps, rumours, meaning information that has not been verified, as well as false information (misinformation and disinformation).

As the digital divide narrows and online platforms increasingly become a part of the lives of many people in ESAR, it is important to monitor online conversations to complement the inputs gathered on the ground through community engagement efforts. Online platforms, including social media and instant messaging apps, have also been a key vehicle for spread of false information beyond digital settings.

Types of insights from digital social listening

Understand and change online information behaviors

Measure reach of life-saving information

Provide real-time insights into users' questions

Identify and correct misinformation

Spot and fill information gaps

Insights on Climate

This analysis builds on information ecosystem mapping and social listening tools set up as part of the regional social listening strategy for COVID-19 RCCE. This report aims to provide insights on the digital discourse around climate in Eastern and Southern Africa. The specific research questions guiding the analysis include:

→　What kind of online information behaviors do users display in relation to climate?
→　Which climate-related issues are discussed online?
→　What do online users say when it comes to drivers, impacts, vulnerability, mitigation and adaptation to the climate crisis?
→　What do we know about the online user audience profile?
→　Which misinformation and cognitive biases affect the online conversation about climate?
→　What are the key insights and recommendations for communication?

METHODOLOGICAL NOTE

The report builds on different categories of online signals including search trends, social media content (posts, comments) and digital news articles. Social media and digital news platforms monitored include digital news outlets, Facebook, Twitter, and Instagram (TikTok and Telegram are included but not monitored systematically). Twitter and digital news are mainly monitored using the social listening tool Talkwalker. Facebook and Instagram are mainly monitored using the platform Crowdtangle. Data collected are analyzed to identify key issues, questions or concerns related to climate and are analyzed for volume, engagements generated, tone of conversation and user reactions, as well as themes. For Talkwalker, sentiment analysis is based on deep learning algorithms and advanced pattern recognition embedded in the tool. For Facebook, user reactions represent engagements to a post through the use of emojis. Search trends refer to user search interest on Google and YouTube that is related to climate. These are monitored using Google Trends.

Social Listening Framework

Map & listen

Monitor & analyze

Engage
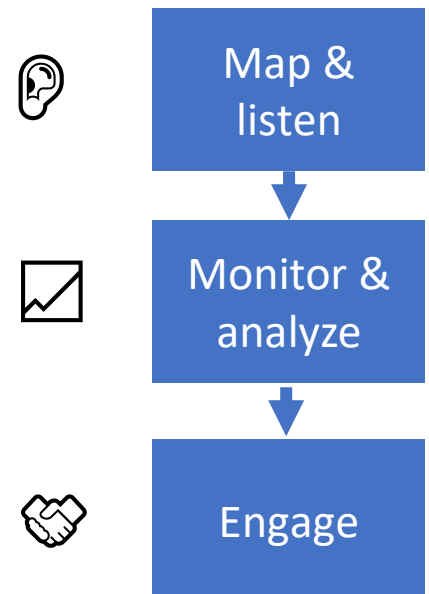
Online Information Behaviors

Information behaviors are related to how people approach and handle information. This includes information seeking such as using search engines, as well as information creation such as posting on social media, information sharing and engagement, such as forwarding a message on WhatsApp or putting a Like on a Facebook post, and information exposure, for example from sponsored content on social media. In these first paragraphs, we look at a series of online signals that can help understand how users in Eastern and Southern Africa approach and handle information about climate.

Search trends

An analysis of search trends on Google and YouTube between January and July 2022 shows that peak of interest in climate issues for all countries for which data were available occurred in the third week of April 2022.This indicates that user interest around climate and related issues centered around Earth Day, which in 2022 took place on Friday April 22nd. Examples of popular search queries on Google and YouTube in 2022 in each country are presented in the next page.

Search interest on "Climate" topic over time, Google
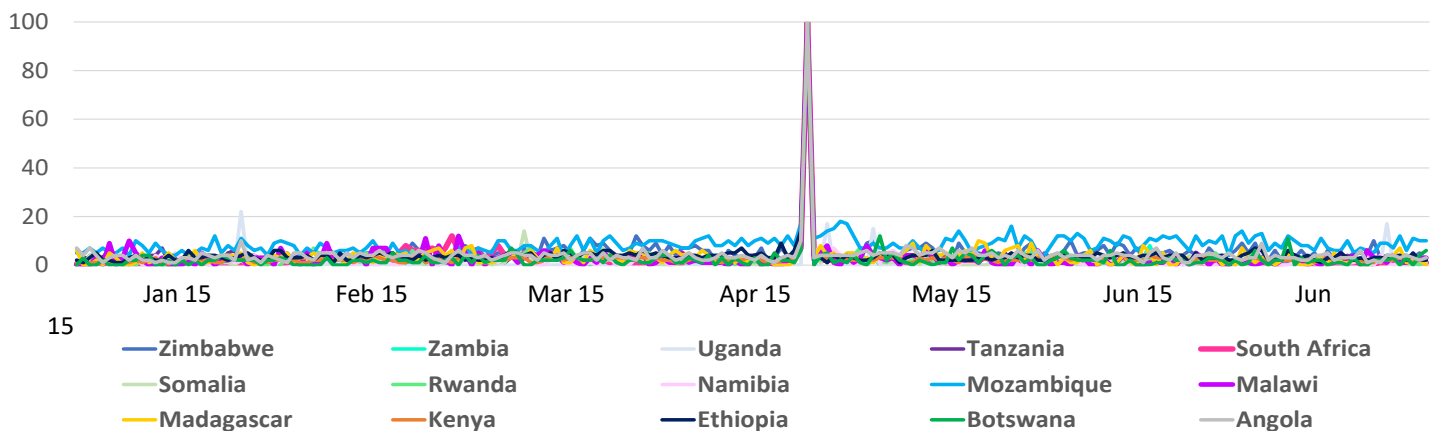
Source: Google Trends, Interest over time. The topic "Climate" is pre-set in the Google Trends dashboard to include various languages and account for spelling variations, as well as multiple names for the same thing. Numbers represent search interest relative to the highest point for a given country in the timeframe Jan-July 2022. A value of 100 indicates the peak popularity for topic. Some ESAR countries were excluded from the analysis due to low search interest. Search results are normalized to the time and location of the query.

Search interest on "Climate" topic on Google and YouTube

| Examples of popular search queries	
Angola	"Changement climatique", "Alterações climáticas", "O que é o clima"
Botswana	"Climate change", "Global warming"
Burundi	"Changement climatique"
Ethiopia	"What is climate change?"
Kenya	"Effects of climate change", "Causes of climate change", "Modified equatorial climate"
Lesotho	"Climate change", "Global warming"
Madagascar	"Climate change"
Malawi	"Climate change", "Causes of climate change"
Mozambique	"Alterações climáticas", "Mudanças climáticas", "Fatores do clima"
Namibia	"What is climate change?"
Rwanda	"Changement climatique", "Greenhouse gases"
Somalia	تغيُّر المناخ, "What is the climate?, "Climate change"
South Africa	"Impact of climate change", "Climate change effects", "Global warming effects", "Drought prevention", "KZN floods", "Effects of flood", "Strategies to prevent droughts"
Tanzania	"Mabadiliko ya tabianchi"
Uganda	"Changement climatique", "What is global warming?", "Causes of climate change", "Causes of global warming"
Zambia	"Causes of climate change", "Greenhouse effect"
Zimbabwe	"Problems caused by climatic hazards", "Ways to prevent climate change", "What is a drought?"

Note: No data are available for rising and top search queries for Comoros, Eritrea, Eswatini and South Sudan.

Queries were similar across countries, with most of the keywords being related to climate change, with users looking for information on what climate change and global warming are, their effects and causes. In South Africa, queries related to the flooding in the KwaZulu-Natal region were also tracked, as well as searches around drought prevention. Queries related to the greenhouse effect were tracked in Rwanda and Zambia.

Information creation and volume of digital content

In terms of behaviors related to information creation, volume and sentiment of the content posted on social media and other digital platforms are indicators that can guide understanding of how users approach climate-related issues. In this section we look at overall volume and sentiment. A total of 250 thousand posts and articles about climate originating from users and news outlets in Eastern and Southern Africa were tracked between January and July 2022. Higher volume was tracked during the month of April, with some of the increase sustained over the course of the following months.

 # social media posts and digital news articles over time
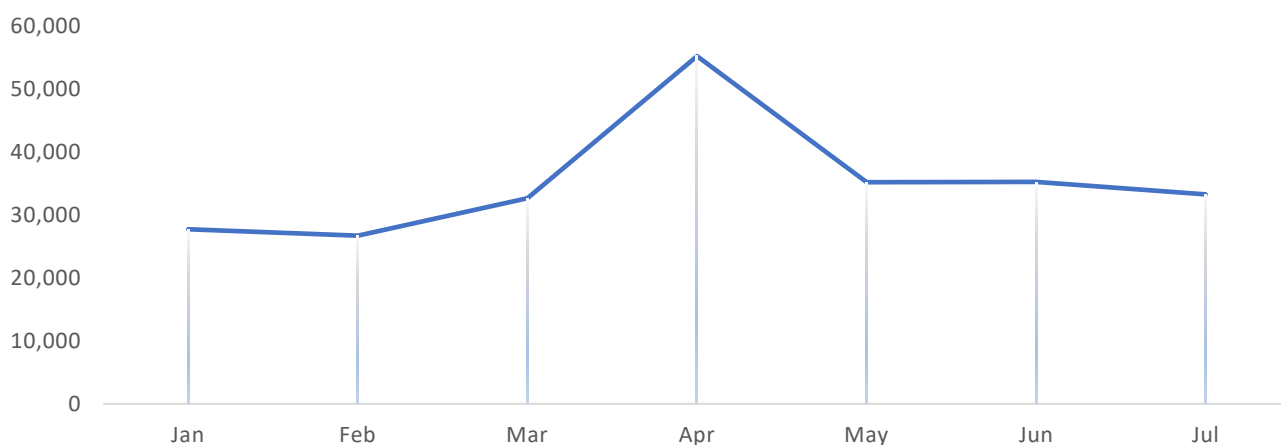
Note: Data include posts on digital news, blogs, forums, Twitter, Facebook and selected Instagram channels in the 21 countries in the ESA region.

The tone of the content around climate posted by users and news outlets in the region during the period January – July 2022 trended negative according to sentiment data from an AI-powered social listening tool. Seventeen percent of total posts and articles identified were attributed negative sentiment, and 15% positive sentiment. Net sentiment, which can range from -100% to +100% (with higher percentage figures meaning more positive tone) was -5%.

Sentiment of content

■ Positive ■ Neutral ■ Negative
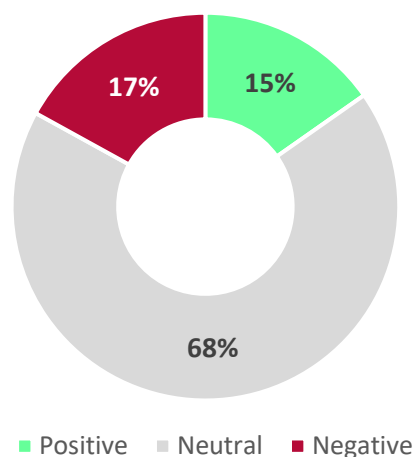
Information sharing and engagement

In this section we look at overall engagement with climate content and other information sharing behaviors, for a breakdown on specific subtopics see p.14. Posts and articles about climate originating from users and news outlets in Eastern and Southern Africa between January and July 2022 generated over 20 million engagements. Most of the engagement tracked was on Facebook (72%), followed by Twitter (17%) and digital news (10%).

Engagement by channel

■ Twitter
■ Online News
■ Instagram
■ Blogs
■ Newspaper
■ Magazine
■ Forums
■ Disqus
■ YouTube
■ Facebook
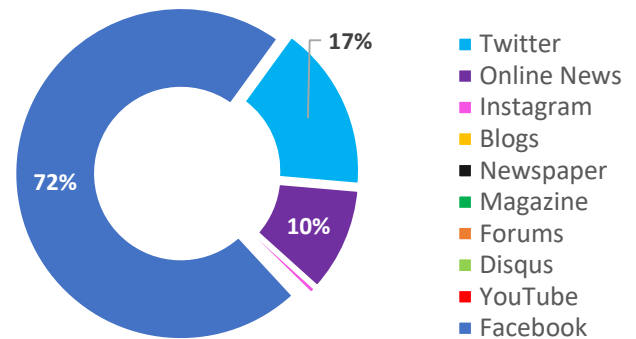
Note: Breakdown by channel is in part a function of the accessibility of each platform by the social listening tools used.

Engagement of social media posts and digital news articles over time
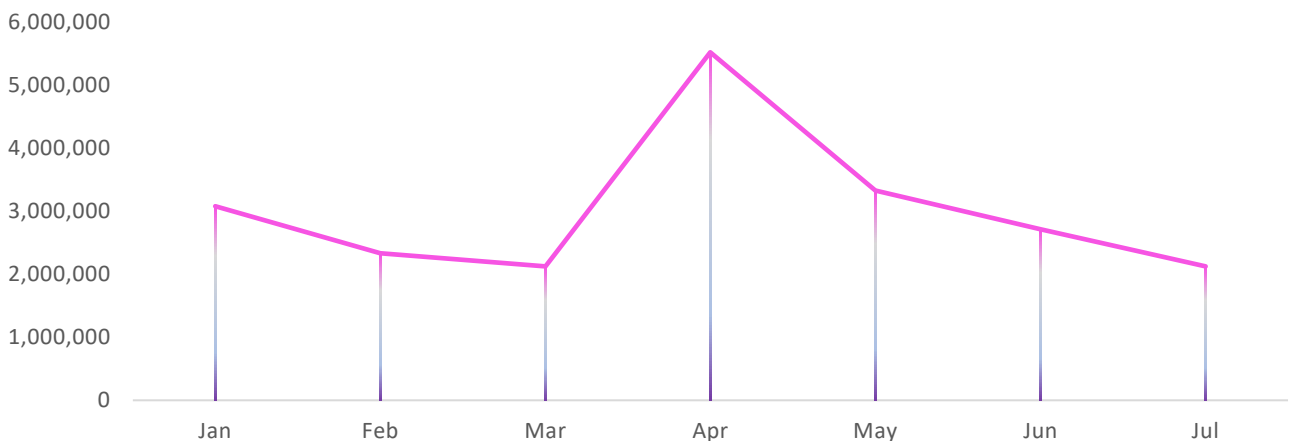
Note: Data include posts on digital news, blogs, forums, Twitter, Facebook and selected Instagram channels in the 21 countries in the ESA region.

Highest engagement was observed during the month of April, following increase in volume of content in part associated with Earth Day and the floodings in KwaZulu-Natal region in South Africa. Frequently shared content was related to the impact of climate change on wildlife and their habitats, floodings in South Africa and Uganda, and the drought in Eastern Africa. Among the most shared videos on Facebook were two videos by the World Health Organizations ("Air pollution causes 13 deaths per minute worldwide" and another titled "Rising temperatures increase the risk of extreme heat"), and videos of South Africa President addressing the nation after the floodings.

Reactions on Facebook are designed as a way for users to engage with content by quickly expressing how they feel about a post on the platform. In the period considered, 38% of reactions to climate-related content classified as "love", while 29% of reactions expressed sadness. Twenty-one percent of reactions were "haha" and the remaining 12% was split between "care", "wow" and "angry" reactions.

Reactions to Facebook posts by type
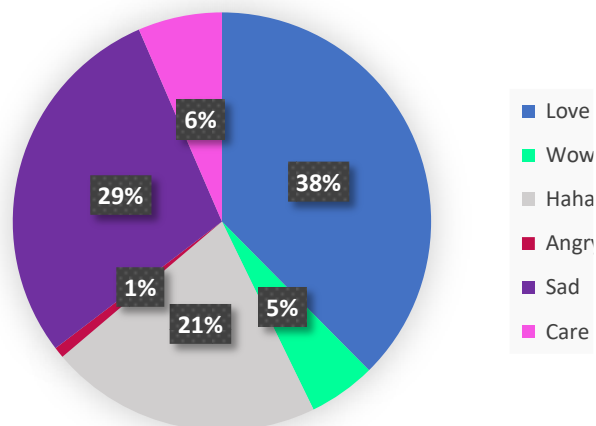
Exposure to sponsored content

The Ad Library is a tool that allows to search for ads that are running across Meta platforms, including Facebook, Instagram and Messenger. The analysis includes a sample of 993 paid advertisements mentioning "climate change" that were running in Kenya, South Africa, or Tanzania in 2022. In the sample, 9 ads had over 1 million impressions (number of times the ad is viewed on a screen) each across all regions where they were run (see next page). The advertisers were all pages based outside of ESA region (in the U.S., Germany, Denmark, Sweden, UK). In terms of volume (or number) of ads around climate change, the top five pages included U-Report Global (asking young people to share how the climate crisis is impacting them ahead of COP27) with 18 ads, ISPI (Italian Institute for International Political Studies, which was promoting a global event on climate and the economy) with 50 ads, and Future of Life Institute (a non- profit based in the US that focuses on AI, nuclear power and climate) with 12 ads.

Number of Facebook ads about climate change per country
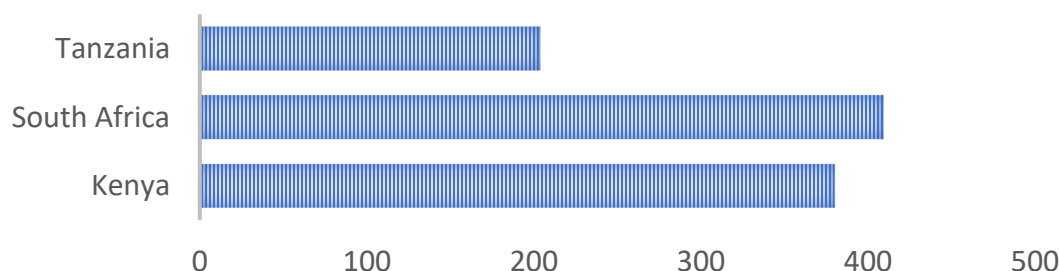
Climate related ads on Meta platform with over 1 M impressions

Bill Gates — Sponsored
2021 has been a year of big transitions for me, but it hasn't changed why I love the work I do. Here are four things I'm thinking about heading into next year.

Bayer — Sponsored
Do you have the feeling that your allergies are getting worse and the pollen is increasing every year? 🌸🌿🐝😊
You might be right- research shows that climate change is having a significant impact on global flowering seasons. The pollen season is getting longer overall and the amount of pollen in the air is also increasing in some countries. You ca...

UNOPS — Sponsored
Climate change is real. Shouldn't the infrastructure of today be resilient to the changes of tomorrow? 🌿
92%
Infrastructure projects affect 92% of targets across all the Sustainable Development Goals.
UNOPS.ORG
Making Small Island Developing States more climate resilient
Learn More

School of Geographical and Earth Sciences, University of Glasgow — Sponsored
>> WATCH IN FULL, link in bio <<
Dr Thorsten Balke explains that through the management of coastal wetlands we can help the fight against climate change, with this week's Postgraduate Taster Lecture.
He covers areas such as Intertidal wetland plant...
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Be part of achieving a sustainable, energy efficient and zero/low carbon future for the maritime industry. Our Maritime Energy Postgraduate Diploma can be completed in one year and offers a comprehensive understanding of different aspects of maritime energy management across the field from ports to shipyards, and from shipping to oceans including decarbonized long-distance shipping....
WMU MARITIME ENERGY POSTGRADUATE DIPLOMA BY DISTANCE LEARNING Classes Begin 19 September
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(PROGRAMME) Maritime Energy
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Devex — Sponsored
Register and join us for a virtual event with policymakers, funders, corporate executives, and civil society leaders on the actions necessary to combat hunger, malnutrition, and food insecurity around the world: https://pages.devex.com/seat-at-the-table-2022-livestream.html?utm_medium=cpc&utm_source=facebook_ad&utm_campaign=eve
#DevexDish #DevexEvent on #FoodSystems
SEAT AT THE TABLE: A DEVEX DISH EVENT April 25 | 2:00 PM ET
PAGES.DEVEX.COM
Seat at the Table: A Devex Dish event
Sign Up

Ocean Generation — Sponsored
Follow @oceangeneration to plant a Mangrove tree for free and help protect our Ocean and planet.
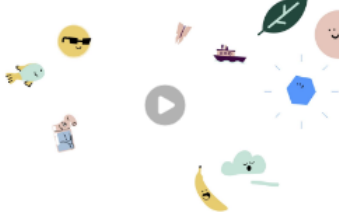Tag a friend and plant event more 🌊
INSTAGRAM.COM
Learn More

CoC Playful Minds — Sponsored
BE OUR FAMILY PANEL 2022! 🇩🇰
Future Play Design challenge is an annual global play design challenge that calls families with children to review and select the best of this year's participating startups. The theme of 2022 is:
WWW.FUTUREPLAYDESIGNCHALLENGE.COM
Family Panel 2022
Sign Up

NowThis Earth — Sponsored
The federal government is leasing out land to fossil fuel companies for as low as $1.50 an acre. Earthjustice is making sure the climate is considered when these deals are made.
Leasing Land for Less Than a Coffee
GO.NOWTH.IS
How the Government Enables Oil Giants With Land Lease Deals
Sign Up

Key Issues

This section analyzes online engagement around climate-related issues by subtopics to understand which specific issues have been driving most interest among users and explore how conversations around drivers, impacts, mitigation and adaptation strategies are approached in digital spaces in Eastern and Southern Africa. The last paragraph analyzes the extent to which vulnerable groups and the social and economic impact on their livelihood are centered in online conversations.

Engagement by area

Using the Intergovernmental Panel on Climate Change framework, the following sections consider five areas of climate change issues and the extent to which they were mentioned in online conversations about climate in the region during the period January to July 2022: drivers, impacts, mitigation, adaptation and vulnerability. Overall, about 40% of the engagement generated by climate-related content on social media and digital news mentioned keywords related to the causes of the climate crisis, such as greenhouse gas emissions, pollution and deforestation. Conversations about mitigation and adaptation, and impacts of the crisis generated about 30% of engagements each.

Engagement by area

- Climate crisis - Causes
- Climate crisis - Mitigation and Adaptation
- Climate crisis - Impacts
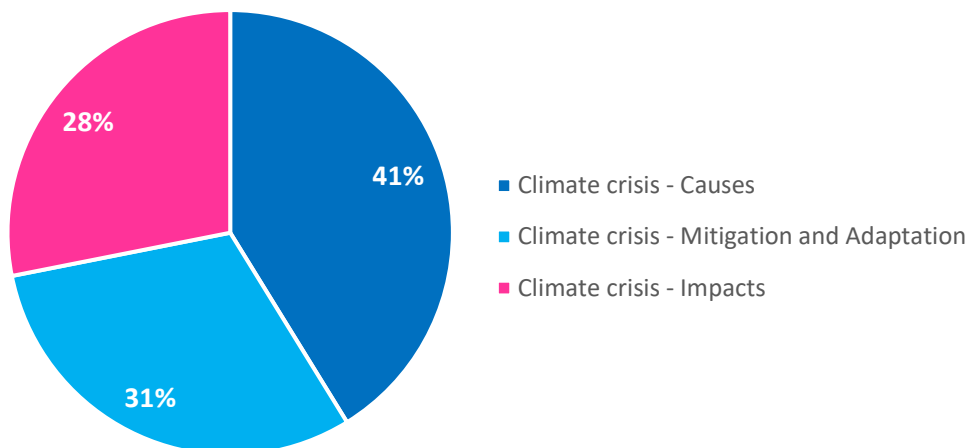
Conversations around drivers and impacts of the climate crisis

While climate change is influenced by natural processes such as modification in solar and volcanic activity that occur over long periods of time, the current crisis is driven by unprecedented rapid warming due to human activities. Most of the engagement generated by content on the human causes of the climate crisis was related to fossil fuels and greenhouse gasses emissions (70%), while 30% of total engagement was related to posts and articles mentioning deforestation and other agricultural practices.

Example issues discussed in relation to the causes of climate crises

Deforestation in Zimbabwe: reports that over 330 thousand hectares of natural woodland were lost in Zimbabwe in one year due to cultivation and energy use.

East African Crude Oil Pipeline (EACOP): climate activists in Uganda and Tanzania have been protesting against the pipeline saying that the project will pose a huge environmental risk and contribute to the climate emergency.

South African scientists condemn offshore oil and gas exploration plans: three scientists published a commentary on the SA Journal of Science saying that additional greenhouse gas emissions from the new oil and gas fields in the country will contribute to break the target 1.5° C set in the Paris Agreement.

Role of plastics in climate crisis: Kenyan and South African activists have been raising the alarm over the impact of plastic waste, which is made from fossil fuels, on human health and the ecosystem.

Tobacco industry contributing to climate change: in occasion of World No Tobacco Day on May 31, social media and digital news published content explaining how tobacco corporations worsen the climate crisis were tracked in Kenya, South Africa and Uganda. Key issues highlighted: contribution to deforestation, significant source of air and water pollution, high water consumption for cigarette production, post-consumption littering.

Responsibility for climate change: At a virtual meeting of the African Union Committee on Climate Change in February, South Africa President Ramaphosa said that Africans are the ones who are bearing the brunt and the cost of the climate crisis, although they are not responsible for it.

Both direct effects on the environment (e.g. extreme weather events) and social and economic impacts on humans (e.g. hunger) were discussed online. However, only around 9% of content about impacts explicitly drew a link with the climate crisis by mentioning keywords such as "climate crisis", "climate change" or relevant hashtags in conjunction with the specific effect mentioned.

Conversations around the impacts of the crisis that generated most engagements over the period considered were related to floodings. The second issue that drew most attention online was the drought and concerns around lack of water. Other issues such as impact on wildlife, wildfires, the impact of climate change on food, other environmental events like tornadoes and storms, rising sea levels and temperatures and impact on human health generated less than 10% of engagement per category.

Percentage engagement around climate by subtopic
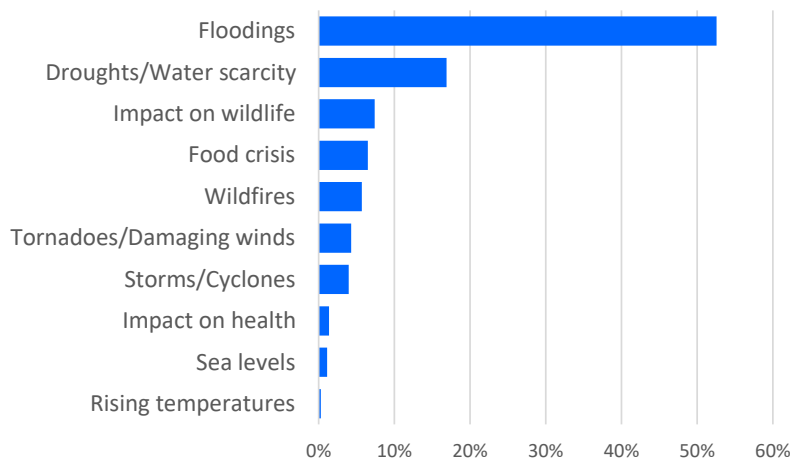
Conversations around floodings accounted for less than 50% of total number of posts and reach but generated over 53% of engagement. Conversely, content about the drought accounted for 23% of total number of posts but generated less than 20% of engagement and reach. For the other subtopics reach, engagement and volume mostly aligned.

Engagement vs reach vs volume, selected subtopics
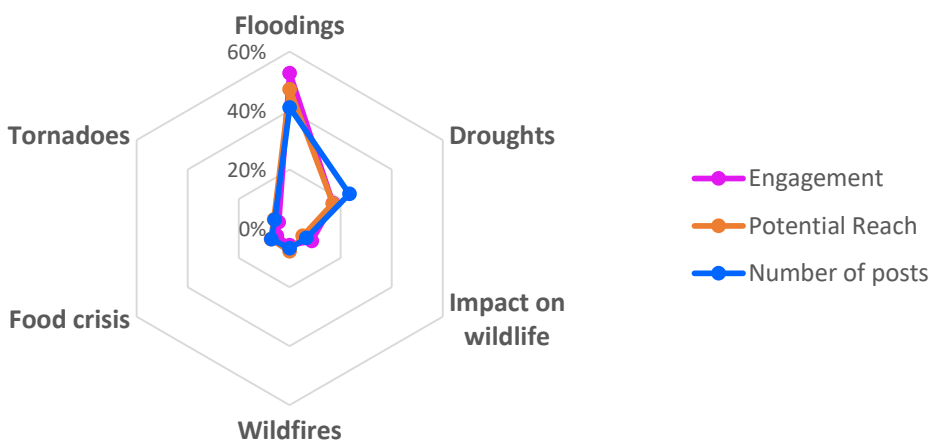
Some examples of posts and articles about floodings and the drought that generated high engagement are shown below. Issues that generated most attention included the floodings in KZN, access to water and hunger in Kenya due to livestock dying because of the drought, and role of climate crisis on elephants' ecosystem.
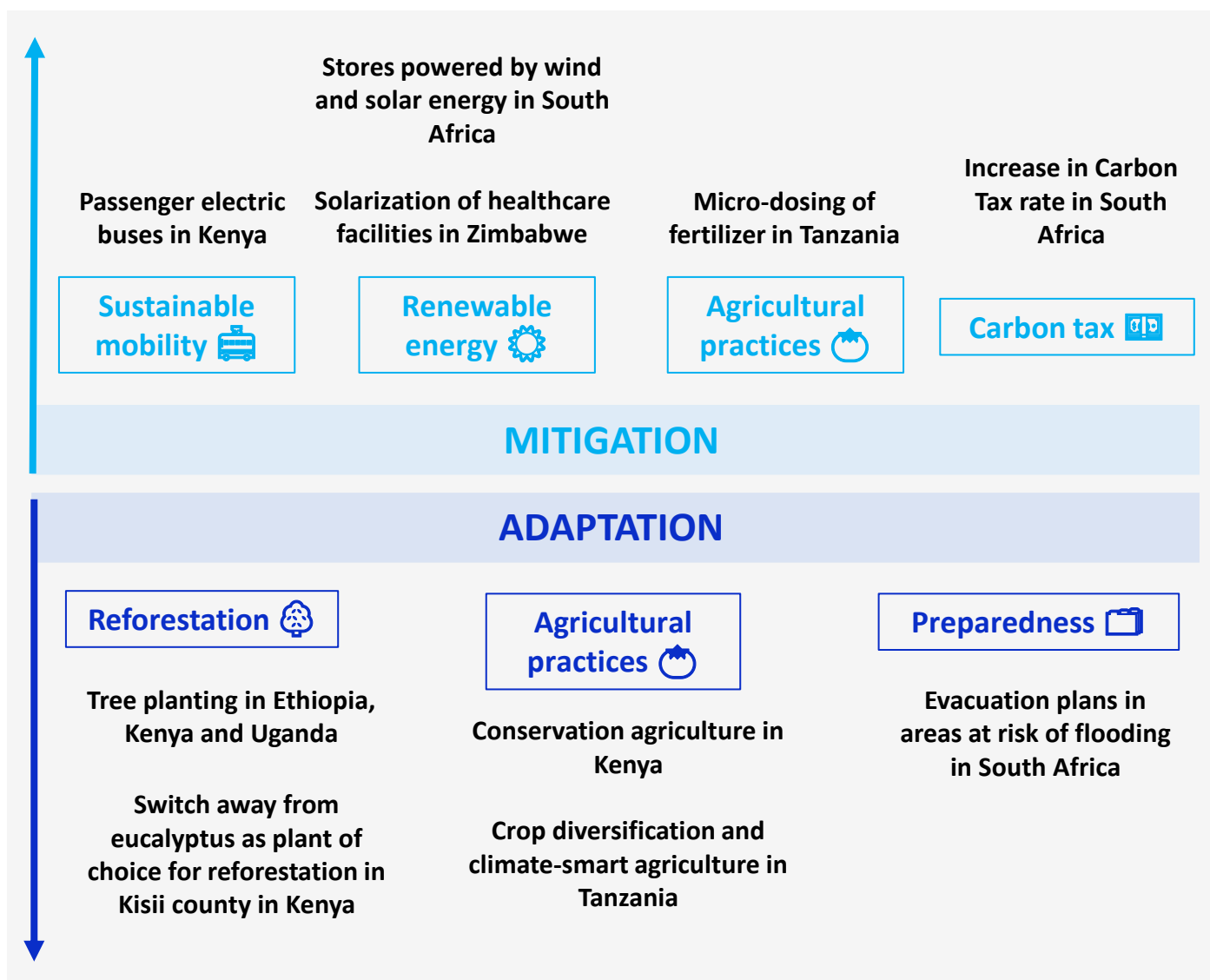
Content about impacts with high engagement
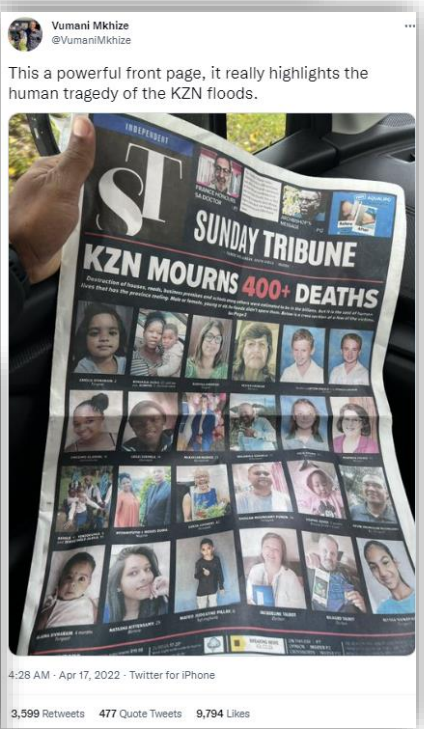
Conversations around mitigation and adaptation

Conversations around mitigation and adaptation measures were also tracked on social media and digital news. Mitigation means making the impacts of climate change less extreme, for example by reducing greenhouse gas emissions. Adaptation refers to strategies to prevent and cope with impacts that cannot be (or are not) avoided under different scenarios of climate change. The graphic below provides some examples of mitigation and adaptation measures discussed in online spaces in ESAR during the period considered. The next page shows some example posts and articles tracked.

Examples of mitigation and adaptation strategies discussed online

Stores powered by wind and solar energy in South Africa

Passenger electric buses in Kenya

Solarization of healthcare facilities in Zimbabwe

Micro-dosing of fertilizer in Tanzania

Increase in Carbon Tax rate in South Africa

| Sustainable mobility 🚌 | Renewable energy ⚙️ | Agricultural practices 🍅 | Carbon tax 🏷️ |

MITIGATION

ADAPTATION

| Reforestation 🌳 | Agricultural practices 🍅 | Preparedness 🗂️ |

Tree planting in Ethiopia, Kenya and Uganda

Switch away from eucalyptus as plant of choice for reforestation in Kisii county in Kenya

Conservation agriculture in Kenya

Crop diversification and climate-smart agriculture in Tanzania

Evacuation plans in areas at risk of flooding in South Africa

Example content on mitigation and adaptation

Conversations around vulnerability

Vulnerability refers to the propensity to be adversely affected by the climate crisis and can refer both to ecosystems and geographical areas or to segments of the population. About 12% of total engagements was generated by climate-related posts that mentioned children and young people and less than 10% of total engagements mentioned women and girls. About 4% of engagement was from content mentioning both groups. Only about 1% of engagement was from posts mentioning migrants and refugees.

Sagalo village, Somali region, Ethiopia, 2022 - ©UNICEF Ethiopia

Top content included:
- ◉ **Story of two sisters unable to continue their studies due economic challenges deriving from the drought** – Kenya, June 2022, Standard Media (link), 30k engagements and 4.4 million reach
- ◉ **12 people, including several children, died of hunger in Guji, Ethiopia, due to the devastation caused by the drought** – Ethiopia, July 2022, Addis Standard (link), 3.3k and 200k reach
- ◉ Post from a climate activist: **"200,000 people are dying of hunger In Garrisa Kenya. Livestock starving due to lack of water. Children and women walking long distances to fetch water."** – Kenya, May 2022, Twitter (link), 9k engagements and 9k reach
- ◉ Post from **Zambia's Vice President about teaching to children in one of the camps set up for families who lost their house during the floodings** – Zambia, February 2022, Facebook (link), 27k engagements and 200k reach
- ◉ **Department of Education in KZN announced that at least 7 students died in the floods – South Africa**, April 2022, Facebook (link), 7k engagements and 500k reach

Climate crisis and COVID-19

About 5% of content around climate also mentioned COVID-19. In several instances, popular content mentioned both the pandemic and the climate crisis as two of the many shocks affecting the lives of people in the region. Some posts discussed flood relief funds in South Africa, making comparisons with the management of COVID-19 response resources. Questions on how recycle masks were also tracked in South Africa after mask mandates were removed.

Example content mentioning COVID-19

UNICEF Uganda ✔
May 17, 2022 at 12:45 AM

A child alert report released today by UNICEF, shows that in spite of rising levels of severe wasting in children and rising costs for life-saving treatment, global financing to save the lives of children suffering from wasting is also under threat. The report dubbed, "Severe wasting: An overlooked child survival emergency" reveals that at least 10 million severely wasted children – or 2 in 3 – do not have access to the most effective treatment for wasting, ready-to-use therapeutic food (RUTF). Severe wasting – where children are too thin for their height resulting in weakened immune systems – is the most immediate, visible and life-threatening form of malnutrition. "Even before the war in Ukraine placed a strain on food security worldwide, conflict, climate shocks and COVID-19 were already wreaking havoc on families' ability to feed their children," said UNICEF Executive Director Catherine Russell.
See less

5.6K   24   9

UJ flood relief fund to go to Gift of the Givers due to lack of trust in government

City Press Yoliswa Sobuwa   SHARE (f) (y) (✉)

"This is from the lessons we learnt from the disappearance of Covid-19 funds. So, Gift of the Givers, as a trusted entity, would be a good one.

News24.com ✔
23 June · 🌐

On Wednesday, health minister Joe Phaahla quietly gazetted a notice that immediately removed any legal obligation to wear a face mask in South Africa.

BUSINESSINSIDER.CO.ZA ✔
Face masks are no longer required. Now, what do we do with all of them? | Businessinsider

👍😂❤ Jon Delinger and 2.9K others   1.6K comments 801 shares

Audience profile

This section analyzes available data on the demographics of users that engaged in climate-related conversations in ESAR and an overview of accounts that were influencing the conversation during the period considered.

User gender and age

Data on user gender and age were available only for 670k Twitter results over the period January to July 2022. Around 63% of climate-related content was posted by male users, compared to 37% from female users. Users between the age of 25 and 34 represented around half of the audience on Twitter. Young adults aged 18-24 represented around 30% of the total.

User content by gender, Twitter
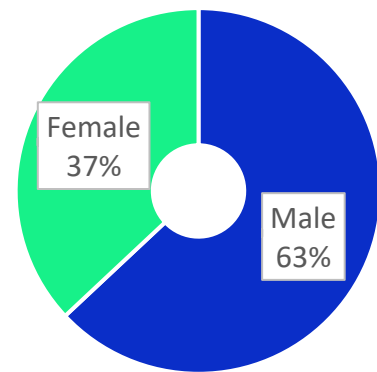
Female 37%
Male 63%

■ Male ■ Female

User content by age group, Twitter

18-24	25-34	35-44	45-54	55-64	65+
29%	47%	17%	5%	2%	0%
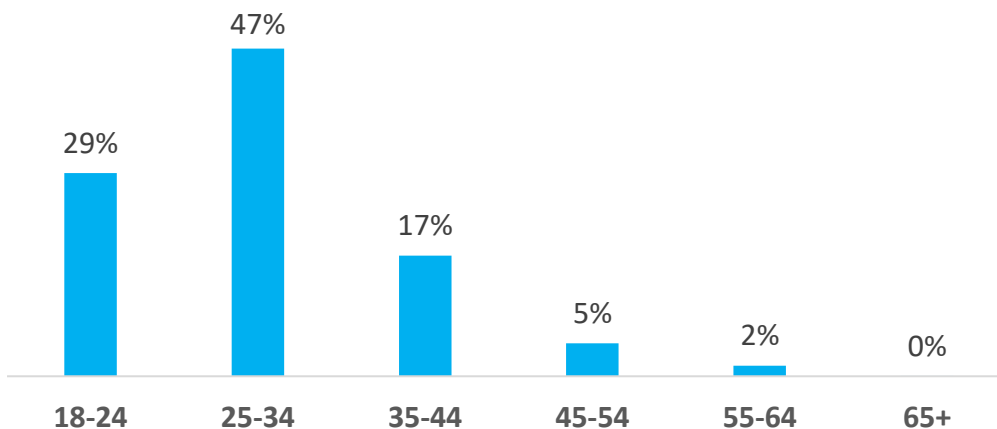
Influencers

Most active and influential authors posting content using climate-related hashtags on Twitter were Dr. Richard Munang, Deputy Director at UNEP Africa, with 420 posts between January and June 2022, and the UNEP official account, with over 52k engagements. The top 10 most influential accounts (generating highest engagement) on Twitter featured three youth activists and one woman, UNEP Executive Director Inger Andersen. On Facebook top 10 most active accounts included eNCAnews, African Farm Resource Center, News24 and Citizen TV Kenya. Most influential accounts included Sheldrick Wildlife Trust, African Farm Resource Center, and NTV Kenya. The graphic below shows the network of accounts that created and/or amplified climate-related content on Twitter during the period considered. The network appears quite fragmented, suggesting an opportunity for more coordinated action and amplification of messages.

Network of influential Twitter accounts using climate-related hashtags

Cognitive biases and misinformation

Despite consensus on the importance of urgent intervention to address the climate crisis, cognitive biases, meaning systematic errors in the way people process information that can impact decision-making, can hinder climate actions. Cognitive biases can also make people more susceptible to misinformation and it can be difficult to distinguish genuinely held misconceptions from intentional disinformation. The analysis shows persistence of some types of cognitive biases and misinformed claims in climate-related conversations in ESAR. Commonly tracked misinformation claims included denial that climate change is real, that it's not man-made but a natural process, that floodings are caused by "weather manipulation" and that nothing can be done to solve the crisis.

Type of biases and examples

Confirmation bias

Tendency to look for information that confirms prior beliefs or discounting information that contradicts them.
Example: Distorting or selectively using information to argue that switch to renewable energy will have dangerous impacts
Example: Claiming that floodings are the results of weather manipulation by cherry picking information about the High-frequency Active Auroral Research Program (HAARP)

Recall bias

Bias caused by inaccurate or incomplete recollection of events.
Example: Falsely recalling the climate crisis to be less severe than it is and a normal natural phenomenon

Present bias

Priority given to issues that are close in terms of time and space than more distant ones
Example: A large part of the online conversation and engagement in ESAR has been driven by users discussing events currently being experienced like droughts and floodings.

Pseudo inefficacy

False sense that actions are not helping in solving the problem
Example: Claiming that it's already too late to do anything about the climate crisis

Examples of misinformation

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cabonena alfred
@alfred_cabonena

Climate change is a hoax designed to starve us.

8:50 AM · Jul 21, 2022 · Twitter for Android

6 Retweets   25 Likes

Bielie Van Die Bosveld
@BielieVan

The climate changes over time. This is natural and it was expected. Nothing that humans do, or can ever do, or don't do, will change this. We are small and insignificant. We come and go, but Earth is a self sustained unit, that will exist fine for longer than we can count.

1:14 PM · Jul 12, 2022 · Twitter Web App

Sizwe sikaMusi
@SizweLo

Tucker Carlson talking about what happened in Ghana when they tried to switch to renewable energy

84.9K views   GHANA HAD ONE OF THE FASTEST GROWING ECONOMIES   TUCKER CARLSON   0:05 / 2:20

7:13 AM · Jul 13, 2022 · Twitter for Android

2,102 Retweets   367 Quote Tweets   2,935 Likes

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eNCAnews ✓
20 July at 09:00 · 🌐

Climate deniers sow weather-map heatwave misinfo
https://www.enca.com/.../climate-deniers-sow-weather-map... ✓

ENCA.COM ✓
Climate deniers sow weather-map heatwave misinfo
Thousands of social media users shared the same image in French, claiming it was evidence of...

JoeBerg @JoeBerg2 · May 31
Replying to @alfred_cabonena

Climate change has always happened on earth. How is paying more tax to the government going to 'fix' the climate? Most solutions proposed to fix the climate leads to even more environmental damage in some other way. We need to become more efficient and sustainable.

#Abuti'Robotics🇿🇦
@realGiven_k

If they managed to create artificial cloud which resulted in rain, i doubt those floods are natural disasters. I don't trust HAARP it was funded by U.S Govt,Air Forces and U.S Navy ✌🏽 #GoeEngineering will end us 🇺🇸📡
#KZNWeather #KZNFlooding

Abbreviation Finder
HAARP
High-Frequency Active Auroral Research Program

SA Gov to 'seed' clouds to fight drought

3:16 PM · Apr 13, 2022 · Twitter for iPhone

1 Quote Tweet   4 Likes

Eddie Moyo! 🇿🇦🇿🇼
@TheKingdomM3

Climate change is hoax , starvation is man made, earth's resources can never finish!

Kelly ✓ @itskellykline · Jul 7
Replying to @elonmusk
Why do you think a shrinking population is a bad thing in a time of climate change, starvation in many countries, and a overconsumption of resources and rare earth materials? Also what happens when jobs become more automated? Do you believe in universal basic income?

11:09 AM · Jul 7, 2022 from Polokwane, South Africa · Twitter for iPhone

5 Retweets   19 Likes

Ngonyama kaMashobana @NKamashobana · Jul 25
Replying to @maDube_

Evolution happens as a result of climate change. Climate change is natural and should not be confused with pollution. Climate change brings new life, new creations and others die. Planets are bone and they will die at some point, why??? Climate change.

Examples of misinformation

Aaron
@LibertarianZA

Climate alarmist misinformation is a thing of evil beauty.

Every flood, drought, hurricane, tornado, heatwave, cold snap can be used to reinforce the agenda and deepen the neurosis.

But fatalities from these events have declined 92% since the 1920s... shhhhh.

8:19 AM · Apr 12, 2022 · Twitter Web App

1 Retweet   6 Likes

Bhuti Dlomo, His Excellency
@TheZingOne

Replying to @NalaThokozane

It has nothing to do with Climate Change. Nature is simply running its course. Perfectly normal. If it was climate change the climate of the whole world would be changing not just the 5 places you mentioned. And if that was happening there would definitely be nothing we can do

2:49 PM · Jan 17, 2022 · Twitter for iPhone

1 Retweet   2 Likes

Wretched @Tallman5442 · Jan 17
Nothing will be better. You can nothing about it.

💬 1   ⟲   ♡ 1

TikTok
@glenviewrungano

cloud seeding

FLOOD QUESTIONS
TASMANIA FLOODS
Hydro Tasmania questioned over cloud seeding before fatal floods
AHEAD: HOW MUCH SHOULD YOU PAY FOR COSMETICS?   DAR 33   7.34

Gold-Stone KN
@Stonendlovu

Weather manipulation is real, climate change is hoax, all in the name of total control of human kind.

Forbes   Subscribe   Sign In

May 10, 2018, 12:15pm EDT

China Is Launching Weather-Control Machines Across An Area The Size Of Alaska

Trevor Nace Senior Contributor ⓘ
Science
Explore More

🕐 This article is more than 3 years old.

A Chinese worker fires rockets for cloud seeding...   [+]

China is launching the world's largest weather-control machine, with the ability to modify the

10:35 AM · Jan 7, 2022 · Twitter for iPhone

7 Retweets   18 Likes

Recommendations

Only around 9% of content about impacts explicitly drew a connection with the climate crisis by mentioning keywords such as "climate crisis" or "climate change" in conjunction with the specific effect mentioned.

☑ *While this doesn't necessarily mean that the users are not aware of the causality link, encouraging use of hashtags such as #climatechange or #climatecrisis when discussing events such as floodings or droughts can help raise awareness on the connection between climate action and response to these emergencies.*

In the sample of sponsored content analyzed through Facebook Ad Library, nine ads had over 1 million impressions and the advertisers were all pages based outside of ESA region and only one was a UN agency.

☑ *This suggests opportunity for more systematic and strategic use of paid advertisement on social media to increase reach of climate-related content by UNICEF and partners.*

A large part of the online conversation and engagement in ESAR has been driven by users discussing events currently being experienced like droughts and floodings, with less focus on the long-term impact of climate change.

☑ *This suggest that there is a bias towards issues that are close in terms of time and immediate impact and that there is a need to draw the attention also towards the future devastating consequences of the crisis and how we can mitigate them and adapt.*

About 12% of total engagements was generated by climate-related posts that mentioned children and young people and less than 10% of total engagements mentioned women and girls. About 4% of engagement was from content mentioning both groups. Only about 1% of engagement was from posts mentioning migrants and refugees.

☑ *Raise awareness on the role of the climate crisis in exacerbating inequality by amplifying content that highlights how it affects the livelihood of key groups such as children, women, migrants and refugees.*

The analysis of the audience profile shows that about 30% of climate-related content was posted by young adults aged 18-24 and that some young activists appear among the most influential accounts on social media. However, the network of accounts that created and/or amplified climate-related content on Twitter appears quite fragmented, suggesting an opportunity for more coordinated action to amplify the voices of young climate activists in the region. Most users were identified as male (63%) and underrepresentation of women was also observed among the top influencers.

☑ *Empower young people, particularly young women, as activists in climate-related conversations, by amplifying their voices online and working with partners to provide opportunities for skills building and leadership.*

Commonly tracked misinformation claims included denial that climate change is real, that it's not man-made but a natural process, that floodings are caused by "weather manipulation" and that nothing can be done to solve the crisis.

☑ *Inoculate people against false climate claims and use targeted visualizations to address specific incorrect assumptions and biases to show human contribution to the climate crisis and possible impact of specific climate actions.*

References

Cook, J. (2020). Deconstructing Climate Science Denial. In Holmes, D. & Richardson, L. M. (Eds.) Edward Elgar Research Handbook in Communicating Climate Change. Cheltenham: Edward Elgar.

Denton, F., T.J. Wilbanks, A.C. Abeysinghe, I. Burton, Q. Gao, M.C. Lemos, T. Masui, K.L. O'Brien, and K. Warner (2014). Climate-resilient pathways: adaptation, mitigation, and sustainable development. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

UN Environment Programme. Mitigation. https://www.unep.org/explore-topics/climate-action/what-we-do/mitigation

UN. What is Climate change? https://www.un.org/en/climatechange/what-is-climate-change

UNICEF and Plan International (2011). The benefits of a child-centred approach to climate change adaptation.

UNICEF ESARO (2020). Regional Social Media Monitoring and Rumor Management Strategy to Support Risk Communication and Community Engagement (RCCE) on COVID-19.

UNICEF ESARO. ESA Regional Collaboration for Children (2022–2025).

UNICEF. Social and Behavior Change Guidance. https://www.sbcguidance.org

WHO. Madagascar Health Cluster activated to respond to increasing hazards related to climate change. https://healthcluster.who.int/countries-and-regions/madagascar

Zhao, J., Luo, Y. (2021). A framework to address cognitive biases of climate change. NeuroView, 109(22): 3548-3551