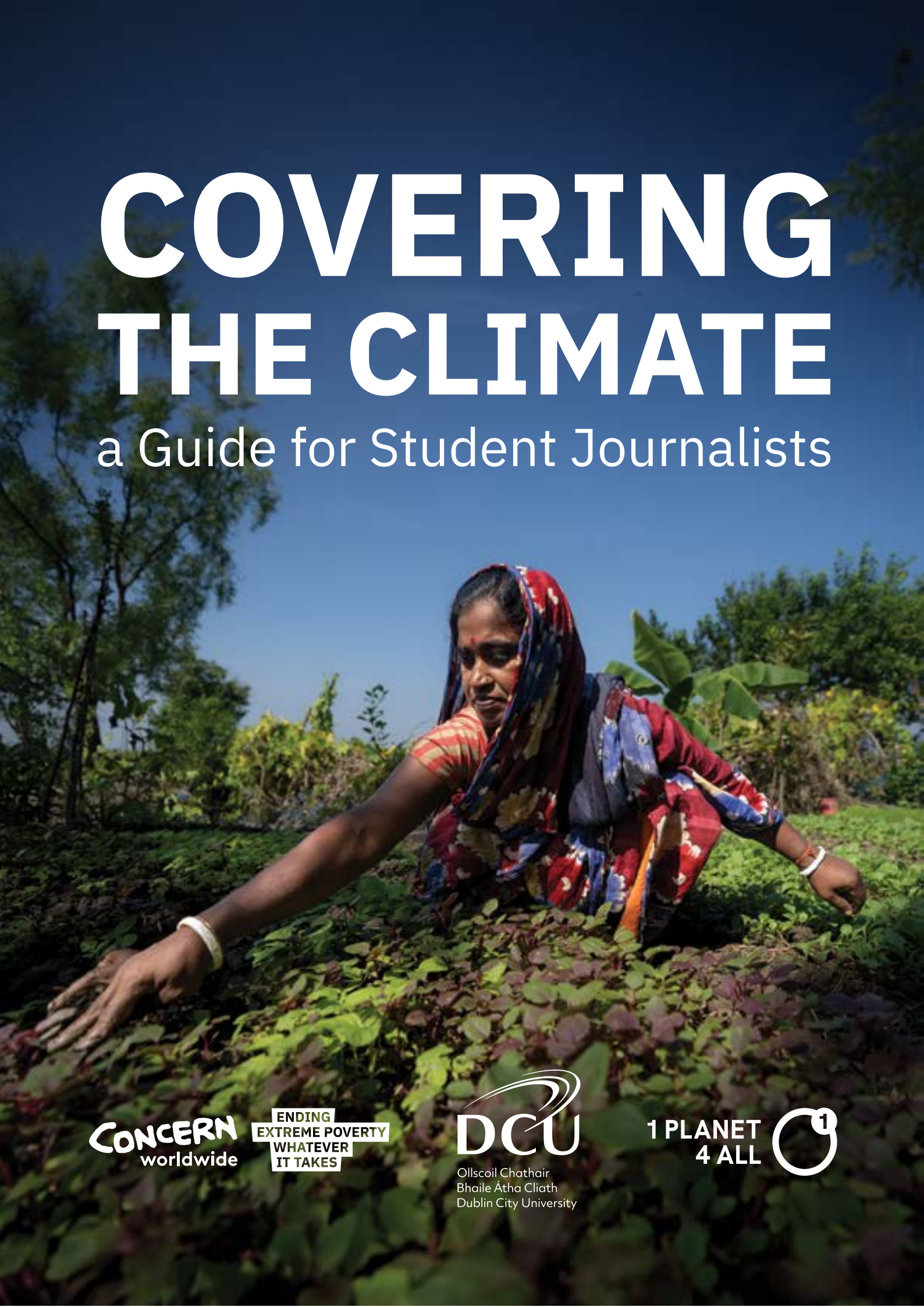
COVERING THE CLIMATE

a Guide for Student Journalists



Concern worldwide

ENDING EXTREME POVERTY WHATEVER IT TAKES

DCU
Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

1 PLANET 4 ALL

CONTENTS

Contents Photo: *Momota Ray takes a basket full of compost from her compost shed in Tildanga, Dacope. Like others in her neighbourhood, she deposits cow dung at a specific spot and makes compost out of it that she uses for her vegetable farming. She also dries cow dung and burns it as fuel for cooking. Photo: Mumit M/Concern Worldwide*

Cover photo: *A woman tends to her garden in Kalabogi, Dacope, Bangladesh as part of Concern's Enhancing Resilience of Coastal Communities project. (Mumit M/ Concern Worldwide)*

Introduction

The story you were born to tell

Climate change is the greatest challenge journalism has ever faced. No other story is as complex, as multi-dimensional, and as difficult to tell as this one.

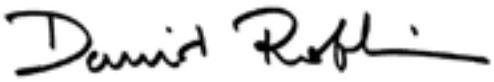
There is a further challenge for journalists writing about climate change: their audiences are often polarised or disengaged. Simply reporting on events isn't enough: journalists are faced with the task of educating, persuading, and engaging their audiences as well.

Just to make matters worse, climate change is taking place at a time when the news industry is facing severe economic challenges. Newsrooms are shrinking, staff reporters are being replaced by freelance journalists, and specialist correspondents, including climate, science, and environment correspondents, are being let go.

So, just when journalists are needed most to cover this story, they are least equipped to do so.

Which is where you – the next generation of reporters, editors, videographers, data journalists – come in. This resource is aimed at you, so that you can understand this story in all its complexity, and tell it in multiple ways, across different platforms, to diverse audiences.

You belong to the generation that will experience the effects of climate change more acutely, and in your careers as journalists, it will fall to you to inform, educate, even to lead.



Dr David Robbins
Co-director, DCU Centre for Climate and Society
www.dcu.ie/climate

Our 1 Planet 4 All campaign

Climate change is one of the defining issues of our time. It is vital that today's young people engage with a topic that will so heavily shape their futures. Concern Worldwide's approach to climate change in Ireland has been through our 1 Planet 4 All climate campaign. 1 Planet 4 All is all about empowering young people, educators, youth workers and organisations to engage with climate change and climate justice and empower them to take action. Clearly communicating an often-complicated topic is a first step on this path.

From climate-smart agriculture to flood resilience and mitigation measures, Concern works with some of the communities around the world who have been hit the hardest by climate change who have also caused the least damage to the planet in the first place. Their voices, experiences, and realities need to be listened to and shared as we discuss how we can take action to tackle the climate crisis.

Through this resource, Concern and DCU want to motivate the next generation of journalists, storytellers, activists, and climate champions to delve into the very core of reporting climate change: how to showcase the voices of those most impacted by climate change, relay the facts, share successful climate measures, and challenge false narratives.

Laura O'Connor
Political Engagement and Campaigns Manager
Global Citizenship | Concern Worldwide

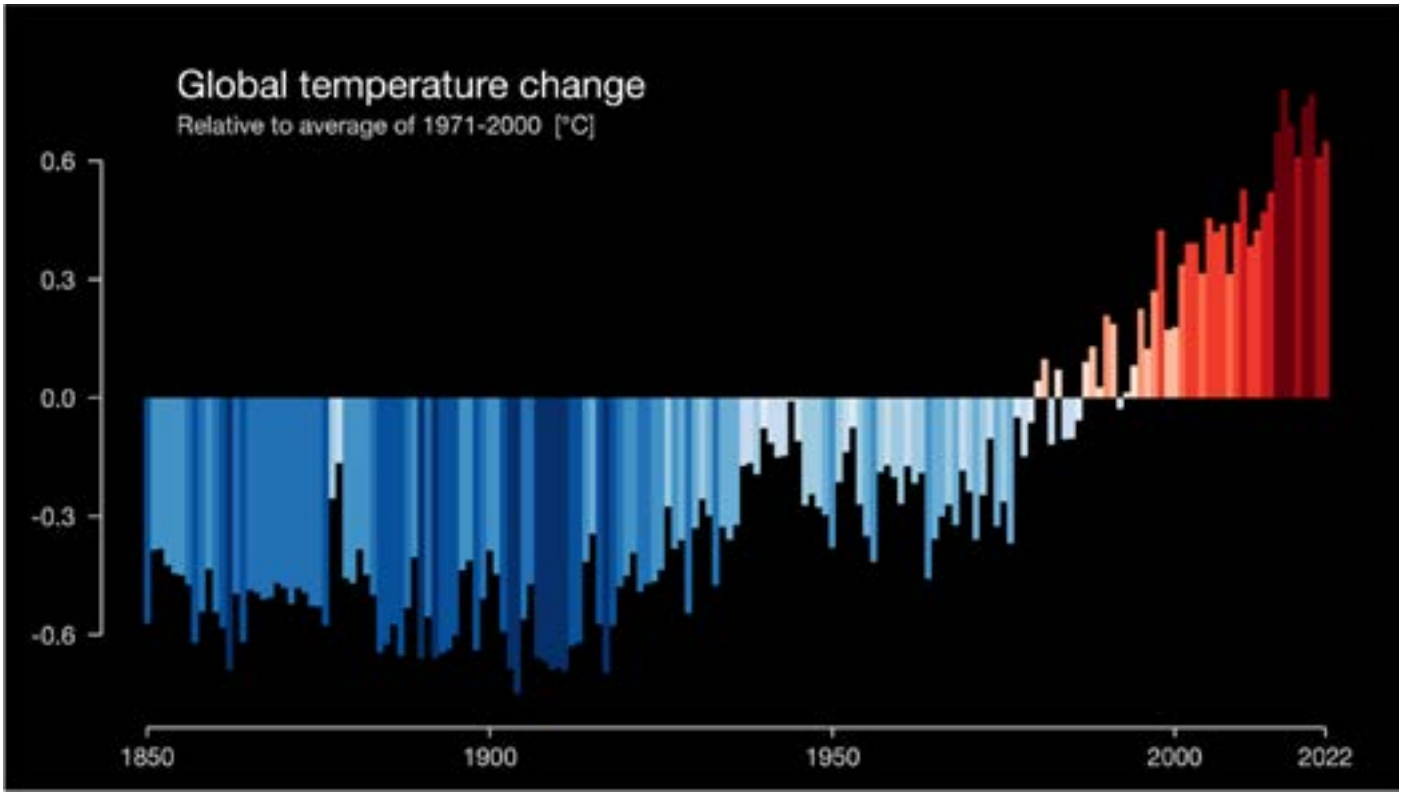
Section 1: **Understanding Climate Change**

> ***"It's not climate change, it's everything change."***
> - Margaret Atwood, writer
>
> ***"Climate change is the existential threat of our generation."***
> - Antonio Guterres, UN Secretary-General

1. What is climate change?

In Ireland we often say we can have the four seasons in a day. That's our weather. So let's start by separating weather and climate. Weather is what is happening now while climate is the long-term average of regional or global weather conditions over at least 30 years. **So climate change means long-term shifts in global temperatures and weather patterns.**

Some of these shifts can be natural but since the 1800s, and the industrial revolution when humans started burning large amounts of fossil fuels like coal, gas and oil, the data shows a clear global warming trend. 2023 has been confirmed as the warmest on record, more than 1.4C warmer than the long-term average in the late 19th century when records began. Burning fossil fuels generates greenhouse gases like carbon dioxide, trapping heat in Earth's atmosphere. This long-term effect is changing our environment, including melting glaciers, rising sea levels, warming oceans and causing extreme weather events and biodiversity loss. Climate change science is the study of the causes and consequences of a warming Earth.



Graph: *Prof. Ed Hawkins, Reading University (CC)*

Explore more:

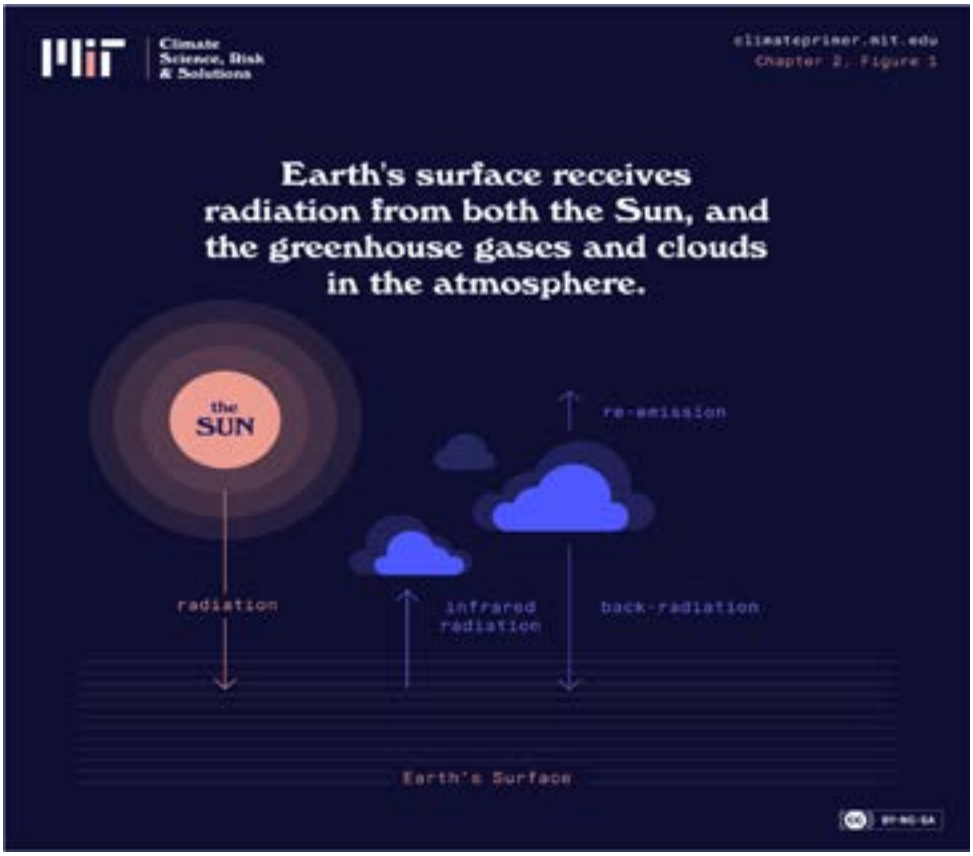
- UNDP, Climate Dictionary
- MIT, Climate Primer

2. What is the Greenhouse Effect?

First things first. The Greenhouse Effect is a good thing. It's how Earth is a habitable planet for humans. Without it our planet might be like living on Mars. But you can have too much of a good thing. In 1859 Irish physicist John Tyndall documented how gases like carbon dioxide and water vapour could absorb and radiate heat and change climate. His work followed decades of scientific research, including that by an American woman Eunice Foote, and shaped our contemporary understanding of climatology, meteorology and Earth sciences.

So put very simply, how does it work? Every day, when the sun's rays hit the Earth's atmosphere and surface, about 70% of that energy stays on the planet and is absorbed by land, oceans and plants. The other 30% is reflected back into space. This absorption-radiation process keeps the Earth's atmosphere in equilibrium, creating our 'Goldilocks' planet as Irish solar physicist Peter Gallagher calls it, not too hot, not too cold, with an average temperature of 15C.

Greenhouse gases, like methane, carbon dioxide, nitrous oxide and water vapour, allow heat from the sun to enter the atmosphere but then slow down its release back to space. So these gases are essential for human life on Earth. But since the industrial revolution, and the mass extraction and burning of fossil fuels like coal, oil and gas, we are releasing vast amounts of gases like carbon dioxide, unbalancing that equilibrium, trapping solar heat and causing global warming. While much of our focus in climate change is on fossil fuels and carbon dioxide, the production of methane through animal farming is particularly relevant to Ireland with its beef and dairy agricultural sector.



Graph: *The Greenhouse Effect. MIT Climate Science, Risk and Solutions (CC)*

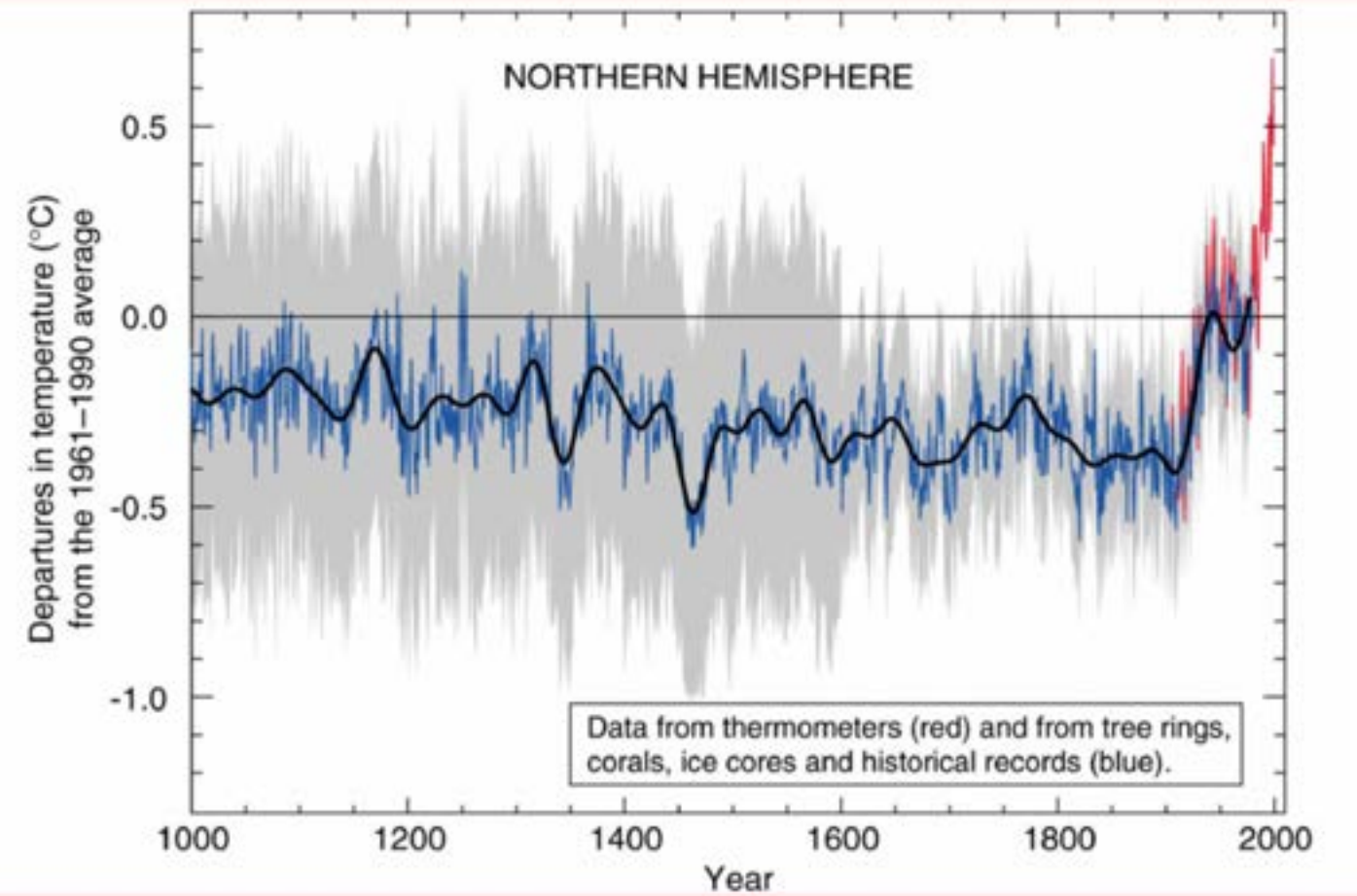
Explore more:

Dr. Katherine Hayhoe's Climate Science 101
MIT Climate Primer: The Greenhouse Effect and US

3. How do we know human activity is causing climate change?

There is overwhelming scientific consensus, based on data research, that human activity, primarily through the use of fossil fuels, is responsible for warming the climate. For example, bubbles of ancient air trapped in ice show that before 1750 the concentration of carbon dioxide in the atmosphere was roughly 280 parts per million. It began to rise slowly during the 1800s, as industrialisation began, and crossed 300 parts per million (ppm) around 1900. The shift to cars, aviation, electrification and urbanisation, fuelled by extracting and burning fossils, helped bring this to 423 ppm by 2024.

In 1998, the famous hockey stick graph from the study by scientists Michael Mann, Raymond Bradley and Malcolm Hughes, showed how temperatures had remained relatively flat for centuries before turning upwards during the industrial era. It used data measurements from tree rings, ice cores and other natural, historic indicators. In Ireland, 10,000 year old boglands have been used to show a historic record of climate change. We can track when things changed, we can measure the greenhouse gas levels across long time periods, and we can see the cause and effect of releasing ancient carbon stores in oil, coal, gas and peat reserves into the atmosphere.



Graph: *IPCC use of the hockey stick graph in its 2001 report (IPCC AR3 Working Group I: The Scientific Basis p. 134)*

Explore more:

IPCC, Summary for All : Climate Change 2021

Michael Mann - A Tale of Two Hockey Sticks

4. What is the impact of climate change on our planet?

So when people hear global warming they think of rising temperatures but in reality the planet's warming affects everything. Scientists predict 'tipping points' of accelerated change with devastating environmental and human impact if temperatures exceed 1.5C above pre-industrial levels. Global temperatures are already close to that threshold following 2023's record-breaking heat.

Many of the frozen parts of the Earth are rapidly thawing leading to rising sea levels but also reducing the planet's capacity to absorb heat. The oceans have slowed down the impact of climate change by absorbing heat, and carbon dioxide, but the oceans are now warming faster than at any time in over 11,000 years. That absorption of additional carbon dioxide is also acidifying the oceans, water is now at its most acidic level in two million years, and is killing marine life. Across the world we are experiencing more extreme weather events; heatwaves, wildfires, droughts, heavy rainfall, floods, landslides and more intense and frequent storms. Lives and livelihoods are being lost. For example, the people of small island nations like Tuvalu are being forced to become climate refugees as their homeland is being lost to rising sea levels.

Most of us live in towns and cities but they, because of their design, location, transport systems, building materials and population density, are worst hit by extreme heat and air quality. In Europe, for example, nearly 63,000 people died through extreme heat in the 2022 summer heatwave. The majority of global cities are also on the coast and rising sea levels, with increased storms, can lead to devastating coastal flooding. Cycles of storms, flooding and drought are already threatening agriculture and food supplies. Ultimately climate change, as we pass through these tipping points, becomes an existential risk to human life and to the environment that supports it.

Photo: *Fighting wildfires by Kyle Miller/Wyoming Hotshots/USFS / (Public Domain)*

Explore more :

The New Yorker, Elizabeth Kolbert, Climate Change from A-Z,
NASA - The Effects of Climate Change

5. What is the climate impact for Ireland?

In Ireland we are already seeing more frequent and extreme storms and Met Éireann says the evidence is clear: our climate will be wetter and warmer. The Environmental Protection Agency (EPA), says Ireland will see increased wind speeds and storm tracks, more river and coastal flooding, biodiversity changes to plant and animal species and pressure on water supply and quality. All major Irish cities are on the coast, subject to tides, and rising sea levels with extreme storms will mean increased coastal erosion, and poses a serious risk to Irish society, economy and environment. Met Éireann's scientific models show Ireland's highest daytime summer temperatures could rise by 2.6C, with increased drought, affecting water supply and altering the growing season. We can also expect a 50% reduction in frost days. This long-term trend will change our calendar concept of four equal seasons. Ireland's first scientific climate change assessment, by the EPA, confirmed that recent heat extremes and increased, heavy rainfall can be linked to climate change. It found that median annual rainfall in Ireland was 7% higher between 1991 and 2020, compared to the 30-year period 1961-1990, and that sea level rise in Cork and Dublin has been higher than the global average.

Image: *Storm Ellen over West of Ireland, NASA,2020 public domain*

Explore more:

EPA - The Status of Ireland's Climate Report
EPA - Ireland's Climate Change Assessment

6. How do we know climate change is causing extreme weather events?

Not all extreme weather events, or natural disasters, are caused by climate change so it is important to look for the scientific sources on attribution rather than make assumptions. For example El Niño-Southern Oscillation (ENSO) is known in climate change science as one of the internal climate variability phenomena. It is part of a natural cycle, occurring every two to seven years, affecting tropical sea surface temperatures in the Pacific Ocean. But this natural cycle's extreme weather impact, according to the Intergovernmental Panel on Climate Change (IPCC), is being intensified by global warming. The record breaking heat, and extreme weather events, in 2023 is attributed by scientists to a combination of an El Nino cycle and anthropogenic global warming. Iceland's volcanic eruptions are not caused by climate change but scientific research is showing the co-relationship between the melting of glaciers and increased volcanic eruptions.

Explore more:

Nature.com, Earth boiled in 2023 - will it happen again in 2024?
European Commission, The Consequences of Climate Change.

7. What is the connection between climate change and biodiversity loss?

Climate change and biodiversity loss are connected crises. Deforestation, for example, in the Amazon reduces natural carbon stores and amplifies climate change. Every minute deforestation destroys an area the size of 27 football pitches. The connection between climate change and biodiversity loss creates what is known as a feedback loop. For instance, global warming is increasing wildfires that destroy habitats for plants and wildlife, leading to species loss. The good news is that the solutions to these crises are also interlinked. Restoring peatlands, through rewetting, ensures a bioclimatic environment for birds and plants, but also creates one of the most effective, natural greenhouse gas stores on land.

In Ireland the Citizens Assembly on Biodiversity Loss has recommended that a referendum should be held to give constitutional rights to protecting nature and biodiversity. The Government reports 85% of EU protected habitats in Ireland are in unfavourable status with 46% in ongoing decline. About half of our rivers and lakes are in a poor ecological state mainly because of nitrates from wastewater and agriculture. The number of pristine river sites has dropped from 500 to 20 over the last 40 years and agricultural practices are negatively affecting over 70% of habitats. The Government's 4th National Biodiversity Plan is set to expand national parks with a funding and legislative commitment to tackle species loss and protect habitats. State agencies and local authorities will now have biodiversity obligations similar to their climate targets.

Photo: *Mother and son planting as part of a community flood prevention project, photo by Kings County Parks, United States (CC).*

Explore more:

UN, Biodiversity - our strongest natural defence against climate change
Citizens Assembly on Biodiversity Loss, Final Report

8. Who is responsible for climate change?

Ultimately, science tells us humans are responsible for post-industrial global warming but the question then is which humans, those who historically contributed the most emissions, or those doing the most today? Historical responsibility for climate change is an important part of the international political discussion on climate justice and the idea that the industrial powers, in Europe and the United States, who benefited economically from the exploitation of fossil fuels and raw materials, should pay more towards global climate action and solutions. From the 1800s global emissions were dominated by Europe and the United States; by 1900 these regions produced 90% of emissions and even by 1950 that was still 85%.

While today China tops the emissions list, followed by the United States and India, the United States is cumulatively responsible for 25% of all emissions, twice that of China and it is worth remembering that China and India together represent one third of the global population. When you adjust for emissions per capita you see that people in sub-saharan Africa have the lowest carbon emissions per person in the world but are amongst those at the frontier of climate impact. And when you compare Ireland and China on a per capita basis, carbon emissions per person are remarkably similar (between 7-8 C02 tonnes per person).

How we live and consume everyday, in transport, heating, food and clothes defines our emissions. A study by Oxfam concluded that the richest 1% in the world contribute 15% of global carbon emissions equivalent to 5 billion people; two thirds of the poorest people in the world. Research by the University of Leeds found that across 86 countries, the richest 10% of people consume around 20 times more energy than the poorest 10%. Fundamentally, how our political economy works, in a growth model, is intrinsically linked to our emissions. Economists, including Mariana Mazzucato, make the case for decoupling growth and greenhouse gases. Others argue for a degrowth model.

The oil industry, as a vested interest, holds particular global power and responsibility in that dynamic and suppressed evidence from its own scientists on the devastating impact of anthropogenic emissions on the planet from the 1970s for decades. That undermining of climate science, similar to how the tobacco industry suppressed its connection to cancer, has shaped climate change denial, delay and deflection and according to Harvard scientist, Naomi Oreskes, has critically stalled global climate action. As journalist David Wallace-Wells observes in his book The Uninhabitable Earth humans have added 50% of all carbon emissions in the past thirty years, with the knowledge of climate science and since ground-breaking international conferences like the Earth Summit in Brazil in 1992.

Photo: *Smoke stacks in Benxi, China by Andeas Habich (CC BY-SA 3.0)*

9. What is the Paris Agreement and why is it important?

The Paris Agreement is a legally binding international treaty on climate change adopted at the UN Climate Change conference in Paris in 2015. It sits under the UN Framework Convention on Climate Change (UNFCCC), the UN climate change body established in 1992, post the Earth Summit, and it follows on from the Kyoto Protocol, an international treaty agreed in 1997. The UNFCCC holds annual international climate negotiation sessions called the Conference of the Parties (COP) and the Paris Agreement came out of CoP21.

The Paris Agreement directs global climate action and its overall goal is stated as holding "the increase in global average temperatures to well below 2C above pre-industrial levels" and to make efforts to "limit the temperature increase to 1.5C above pre-industrial levels". The UN's climate science body, the Intergovernmental Panel on Climate Change (IPCC), has indicated that crossing the 1.5C threshold risks severe climate impacts so climate targets now state that to limit warming to 1.5C greenhouse gas emissions must peak by 2025 and decline 43% by 2030.

Explore more:

- Carbon Brief: Which countries are historically responsible?
- Harvard Gazette, Tracing Big Oil's PR war to delay action on climate change

Explore More:

- UNFCCC: The Explainer, TheParis Agreement
- UN Climate Action : Science, Solutions, Solidarity

10. How is climate policy developed?

Since 2020, under the Paris Agreement, countries must submit their national climate plans, known as National Determined Contributions (NDCs) showing how they are achieving emissions reductions and meeting the 2030 target. In Egypt at COP27 countries were asked to strengthen their commitments to align with the Paris goals. COP28, in the United Arab Emirates, undertook a global stocktake of the world's efforts to meet the Paris Agreement and progress was shown to be slow across all areas of climate action. COP28 concluded with a key call on governments to accelerate the transition away from fossil fuels to renewables in a move which was described as "the beginning of the end" of the fossil fuel era.

Ireland's Climate Action Plan commits Ireland to halve greenhouse gas emissions by 2030 and achieve net zero by 2050. The Paris Agreement requires countries to "achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases" by the second half of the century. Net zero is defined as reducing emissions as much as possible and ensuring that any ongoing emissions are balanced by removals. For example forests, plants, oceans and restored peatlands are natural greenhouse gas sinks. Attention is also on technologies like carbon capture storage (CCS) where carbon dioxide is captured at the industrial process stage and stored underground in rocks. CCS is an unproven technology in climate action but may help decarbonisation in industries like steel, cement and concrete. Critics of net zero say that national emissions targets do not account for all a country's emissions, and that CCS technology does not currently exist as a scale needed to meet climate targets.

A company can claim to achieve "net zero" emissions when they have reduced their emissions to some extent, and undertaken steps to **offset** the remaining emissions by investing in measures that remove carbon from the atmosphere. Often companies purchase carbon offsets for example to plant forests and then use those off-sets to describe their business or activities as 'net-zero'. While investing in **forestry** is important the use of carbon offsets to mask emissions, delay cutting emissions, and claim net zero is often associated with the concept of green-washing where a business attempts to mislead its customers or the public into the extent and accuracy of the company's climate action. Increasingly companies who do this are facing accountability in regulation and through the courts. The UN says net zero must be backed by credible action.

Explore more:

RTÉ Podcast, Hot Mess
European Council, Climate change, what the EU is doing
UN. Greenwashing - the deceptive tactics behind environmental claims

11. Does the climate crisis affect poorer countries more?

Climate change affects the poor and marginalised more, regardless of their location, but poorer countries, and emerging economies, are the most severely affected due to their geographical and climatic conditions, their socio-political history (in that many are post-colonial nations) and their limited economic capacity to fund climate action.

The World Health Organisation (WHO) data shows 3.6 billion people live in areas at high risk of climate impact, while 2 billion people lack safe drinking water and nearly 800 million face hunger, predominantly in Africa and Asia. So according to the IPCC climate change acts as a stress intensifier on poverty; exacerbating social, economic, racial and gender vulnerability.

Given the historical responsibility for climate change that wealthy nations hold, particularly in Western Europe and North America, there is international focus on how poorer countries, in the Global South, are supported to combat the impact of climate change. At COP27 in Egypt, after a decade of debate, the international community agreed to establish a Loss and Damage fund, where wealthier regions financially assist climate vulnerable countries. The Loss and Damage fund, while significant, is not a form of climate reparations and the current commitments cover just 0.2% of the estimated cost of climate impact in these regions. At COP28 Ireland committed €25 million to the fund, equal to the European Union's allocation, and twice that of Canada.

Photo: *Measuring emissions in rice, International Centre for Tropical Agriculture, (CIAT), Colombia, by Neil Palmer (CIAT) (CC).*

Explore more:

UNDP, Climate change is a matter of justice
Concern, 1Planet4All
DW. Climate Justice Explained

12. What is climate action?

The concept of climate action covers both grassroots activism and political policy initiatives. In policy terms climate action is seen as having two distinct elements: mitigation and adaptation. In climate mitigation the focus is on cutting emissions and meeting the Paris Agreement target of holding global temperatures under 2C. This means a transformation shift away from fossil fuel energy in heating, production and transport towards renewable energy like solar, wind and wave. It also means embedding what is known as the circular economy, reducing our depletion of raw materials and ensuring we reuse and repurpose materials like glass, aluminium, steel, paper, textiles, plastics and food waste. In Ireland the Re-Turn Scheme, introduced in 2024, to incentivise the recycling of used plastic bottles and aluminium drink cans, is a mitigation action, to promote the circular economy. Grants for housing insulation, solar panels and heat pumps, as well as incentivising public transport and cycling, are also migration actions.

Photo: *Luas and cyclist at Broadstone, Dublin by William Murphy (CC)*

Climate adaptation is about adapting to the reality of a warming world and building climate resilience to ameliorate climate impacts and protect human health and the environment. For example, in cities, where extreme heat is an issue, building design is changing to provide more shade and in flood risk areas drainage programmes are being funded. In some countries, like Italy, agriculture crops are already changing. Concern is supporting a climate-smart agriculture programme in countries like Malawi to assist farming and fishing families become more climate resilient, ensuring better food security.

In Ireland, a climate adaptation plan is being knitted into all regional and local planning to address coastal erosion, flooding and expanding green space in cities to help urban heat. Nature-based solutions like the restoration of sand dunes in Wexford and the oyster reefs in Galway Bay are good local examples.

Photo: *Lucia Tebulo (40) is a farmer with six children from Samu village, Neno District, Malawi. Chris Gagnon/ Concern Worldwide.*

Section 1 Activity:
Create your own climate change 101. Script a video or audio podcast feature, about 5-10 minutes, explaining climate change to teenagers, making it relevant to them and their lives.

Explore more:

BBC Podcast, The Climate Question
Irish Government, National Adaptation Framework

Photo: *Village under water on Mirpurkhas to Mirwah Gorchani road in Sindh, Pakistan during the devastating floods that affected over 33 million people in the country in 2022, destroying lives and livelihoods. Emmanuel Guddo/ Concern Worldwide.*

- How can we communicate effectively about the climate and biodiversity emergencies?
- How can climate change be communicated to various groups?
- Do climate change campaigns such as Just Stop Oil and Extinction Rebellion work?
- Does it matter what visuals are used in climate change communications?
- Can movies such as *Don't Look Up* engage audiences around climate change?

Uncovering effective ways of communicating the climate crisis remains a major challenge for journalists and across all forms of media output. In this section we will suggest some 'best practice' models for effective communication. A list of core texts is listed in the bibliography.

Media coverage of the Climate Crisis and Biodiversity Emergency

On screen climate devastation and destruction of the planet, or ecocide as it is sometimes called, is evident everywhere on our screens. Even if such representations

of the climate crisis seem extreme, they keep the climate crisis in the public eye for some. It is worth noting that climate catastrophes are happening around the world.

The Horn of Africa (Ethiopia, Kenya, and Somalia) was hit with a level of drought not seen in 40 years. After five consecutive failed rainy seasons, this most recent drought was the worst to hit the region since 1981. Water shortages destroyed thousands of acres of crops, killed livestock, and dried up water sources across all three countries as well as water sources in parts of Sudan and South Sudan.

For decades now, eco-media scholars have been showing a growing range of environmental documentaries, from Al Gore's *An Inconvenient Truth*, or Damon Gameou's *2040*, alongside fictional narratives like *The Day After Tomorrow, Avatar,* or *Don't Look Up* which help to visualise and communicate the crisis. (See the list of a growing catalogue of green-tinged films).

All of these documentaries and films help to put the so-called "wicked problem" of climate change onto the global public agenda and hopefully inspire audiences to stop and think of the long-term consequences of such crises for our planet.

A primary function of popular media, including (entertainment) journalism, is to serve up stories that distract as well as producing engaging and reflective narratives that connect with mass audience's busy lives. In a time of ever increasing climate change and biodiversity loss, together with increasing pollution levels across the planet, the audio visual and print media industry reflect our changing relationship to nature and help to visualise our precarious environment.

In a book-length essay titled *The Great Derangement* (2017), the Indian novelist Amitav Ghosh wonders why global warming and natural disasters' generally haven't yet become a dominant preoccupation across contemporary media and fiction. [See blog] Ghosh asks why we don't seem able to imagine real-world climate catastrophe. It is suggested that many fictional narratives have not made the dangers of climate warming sufficiently real for us.

One has to admit there is a lot of work to do in creating environmentally focused storylines, which can be understood by the general public, much less for trainee journalists, striving to learn their craft. Hopefully, in time, environmental journalists and all types of artists will create new work that will ignite public opinion, and most importantly, speak to citizens outside of the environmental bubble of citizens who are already committed to the project and need little persuasion.

Audio-visual media, art and journalism has a major role to play in highlighting and encouraging global everyday citizens to actively engage with such issues and uncover ways to promote the radical reduction of our carbon footprint which is necessary for our long-term survival.

Communicating more sustainable climate change attitudes

Environmental attitudes and audience responses have been extensively researched by scholars like Anthony Leiserowitz and others who have studied the effectiveness of film and media generally in communicating environmental messages. See for instance his 'Climate Change in the American Mind' which has also been replicated for Ireland in a major audience study. Such research projects strive to measure audience responses to media focused on climate change.

Communication experts strive to fully consider the broader influences and interactions which trigger emotions and actively engage individuals or citizens through ever-evolving 'uses and gratification' models of audience reception (see Brereton 2022: 51). This becomes even more difficult to tease out when examining climate justice attitudes and behaviour patterns, while acknowledging differences in education, class, ethnicity, gender, etc.

Increasingly, '*Environmental Communications*' (EC) is being used to incorporate a broad-based inquiry into making communications more effective, while being both interdisciplinary in nature and pluralistic in its approach (see Corbett 2021). At all times climate justice concerns across the globe remain at the forefront in dealing both equitably and effectively with the climate crisis.

See for example the student's A-Z guide, *Essential Concepts of Environmental Communication* which seeks to explore a range of intersections between communications and the environment that continue to be important, including acknowledging the following questions which encapsulate the major preoccupations of the field:

- How do human agents respond to nature/ environment?
- What accounts for the development and reproduction of dominant systems of representation or discourses of the 'environment' and what communication practices contribute to the interruption, distribution or transformation of such discourses?
- What effects do different environmental sources (e.g. media), as well as specific communication practices have on audiences?
- What are the relationships between or among communications, individual's values and beliefs and their environmental behaviour?
- In what ways do different modes of dissemination and reception of scientific or technical information contribute to the understanding of, or constitute 'knowledge' of nature or various forms of environmental phenomena?
- How do humans discursively or symbolically constitute space or place?
- How do local or indigenous cultures understand

'nature' or 'environment' and how might they convey understanding of our everyday life?
- How can the broad spectrum of commercial mainstream art, together with avant garde (eco) media promote such change? (Brereton 2022: 3)

Together with concerns around intersectionality (addressing race, class, gender, ethnicity, etc. as interconnecting issues and concerns), alongside aiming for a just transition, ongoing environmental communication scholarship constantly takes on board related challenges including the:

- Complexity of climate messages
- Geographical distribution and focus
- Variety of themes encapsulated by the umbrella term of climate change
- Responsibility for climate change, from top level global organisations and governments to the 'bottom up' responsibility of individuals and local communities
- Uncertainty principle, which can lead to adopting a 'wait and see' approach, inferring the real urgency of the problems are not immediately apparent
- Lack of specialist reporters and media producers available in dealing with the complexities of the issues
- Competing themes, recalling most especially short-term economic and other immediate concerns, and various other political issues that often take precedence over more longer term difficult or so-called wicked problems around climate change (Filho et al. 2019: 4)

The important study by Filho et al. goes on to tease out how climate change communication programs coupled with broad-based educational strategies in general seek to:

- Inform people about specific risks that climate change may pose to their own surroundings, while making connection with this global phenomenon. An emphasis on doomsday messages, for example, is known to be far less efficient than the alternative presentation of positive ones.
- Persuade people to engage and reflect around how the policies that their countries follow may be associated with climate change and how their behaviour may influence the global climate debate and mobilise people in general to become more involved in implementing climate change mitigation measures (Filho et al. 2019: 4).

Constructive ways of achieving more effective environmental communication include:

- Avoid focusing on negative messages and using evidence of successful actions/solutions.
- Alternatively however, as highlighted in satirical cautionary tales like *Don't Look Up*, there is also a growing need to alarm people out of complacency and to do this; you need to scare the audience as appropriate!
- Use a constructive approach, showing how facts contribute to addressing the problem. For instance, farmers might try new crops or adjust the seeding times to avoid droughts.
- Selecting the best and most appropriate tools to reach specific audiences and groups.
- Find ways to monitor progress and show incremental development.

How different groups frame climate change communications

Encouraging all levels of society to actively engage with climate change remains a primary goal of environmental communication and a starting point for environmental literacy and active media communication. Media needs to constantly uncover ways of actively engaging with local communities around sustainability, while helping to develop locally based approaches to environmental citizenship. Stepping into the shoes of audiences and recognising their needs and expectations remains an essential starting point for successful communication strategies. Communities often don't fully realise that many projects they run or actions that they take constitute a useful stepping stone towards effective climate action.

As suggested by Irish environmental organisations like Change by Degrees, be careful of the tone and language register used when designing any campaign. There is so much jargon deployed that it is often difficult, especially for less climate literate citizens, to fully understand or appreciate the overall debate. As constantly affirmed, telling local stories, which audiences can relate to and empathise with, remains an important means of beginning the communication process (see Brereton 2022: 54-55).

Do climate change campaigns such as Just Stop Oil and Extinction Rebellion work?

Engaging citizens and publics in the fight around climate change and climate justice remains an ongoing challenge. From early environmentalists who were predominantly conservationists, wanting to protect 'wild nature' - see for instance the *Sierra Club* in America who helped create the first state Nature reserve - alongside Greenpeace and other big international environmental action groups, which have had global success in putting environmental issues onto the public agenda. Yet they are sometimes criticised for not being effective in the long run, or for being too conservative in their approach. Such large environmental organisations need a constant stream of funding to develop long-term strategies which sometimes appear to support the mainstream or 'status quo' political system.

Yet more 'radical' environmental organisations like Just Stop Oil or Extinction Rebellion appear willing to 'take the law into their own hands' and move the dial to actively engage with on-the-ground resistance around climate change, within a clearly defined climate justice perspective. But of course, such approaches produce ever increasing tensions around ethics values and if the end justifies the means. See for instance British environmentalist Chris Packham's 2023 televisual program; 'Is it time to break the law' on Channel 4.

Or recalling the long-time environmental campaigner Bill McKibben's organisation 350.org and its simple message around stopping extracting of fossil fuels: 'Keep it in the ground'. This strategy has been taken up by more contemporary environmental activist groups like the aforementioned Just Stop Oil and Extinction Rebellion.

Meanwhile, the global success of Swedish activist Greta Thunberg and her Fridays for Future, focused on *intergenerational climate justice*, not to mention her cogent critique of *COP* - recalling her 'Blah blah blah' response to the lack of success of politicians - which remains an important barometer of youth environmental activism. Together with other activist groups, such activists call attention to the limitations of conventional democratic politics. (See the BBC review of her environmental success).

There is a growing demand for all types of activism to keep the climate crisis firmly on the top of the public agenda. Certainly, climate activism can learn a lot from related justice campaigns; like civil rights, gender equality, migration, animal rights etc., which are all of course interrelated in various ways. The climate crisis needs to be faced up to, alongside other related injustice issues across the world. Print journalism, broadcast media and all types of audio-visual media can help promote the various interconnections between such climate and justice issues across the world and help to mobilise global support and bolster concerted action.

The use and power of visuals in supporting climate change communications.

The old adage that a picture is worth a thousand words rings true especially in the new digital age with a proliferation of online platforms and streaming services like YouTube and X (Twitter) alongside TikTok or reels posted on Instagram. New generational audiences appear more open to engage with new forms of audio-visual media communications, which can be used to effectively focus on the climate crisis.

Environmental communications literature concentrate on the need to uncover new 'creative imaginaries' and ways of getting across the complexity of the environmental crisis – beyond conventional images of fossil fuel pollution from a chimney stack or showing a solitary polar bear on an ice-floe. The evolving media industry and creative innovators are constantly striving to come up with fresh images which can help to communicate to broader audiences.

Paradoxically, the environmental communication network is also learning from advertising – which is often considered the 'handmaiden of capitalism' and thereby deemed the enemy of climate change communication. See for instance the work of Purpose Disrupters. These young creatives are deploying their extensive communication skills, beyond simply promoting more consumption, which of course results in excessive carbon waste that ends up in the atmosphere.

By all accounts, all parts of the media industry need to uncover new ways of communicating with a wide range of audiences to actively address the climate crisis. Nature documentaries, for example, use extremely high production values to highlight the dangers of biodiversity loss.

The growth of green children's television and more positive solutions-focused responses to the climate crisis are exemplified by Gameou's eco-documentary *2040* (2019). Such powerful documentaries can assist audiences in triggering climate debates, alongside the growth of more experimental art-house filmmaking which can also be used to actively address the climate crisis: from eco-historical studies like James Benning's *Deseret (1995)* to early aesthetic innovations in communicating environmental destruction like the Koyaanisqatsi trilogy (see Brereton 2022: 28).

In recent times, more mainstream Hollywood films have been striving to support more provocative proactive environmental themes. See for instance the growing list of eco-films discussed in *Hollywood Utopia: Ecology in Contemporary American Cinema (2005)*, or more recently *Environmental Ethics and Film (2016)*; all of which raise questions around journalists' and mass media's effectiveness in both directly and indirectly addressing such complex concerns.

Case Study: **How can movies such as *Don't Look Up* effectively engage audiences around climate change?**

Activity 1:

Watch Don't Look Up on Netflix. Explore how the different characters – politician, TV news presenter, scientist, everyman, etc. – frame the meteorite falling to earth as an allegory of an impending climate crisis.

For a basic review of how to carry out an eco-textual analysis see McDonagh and Brereton's critical review of top 10 eco-business movies (2010) which has a detailed appendix on methodology.

Activity 2:

Using your Journalistic training on story-telling, construct a short environmental script/storyboard/ outline for an imaginative climate storyline which is designed for viewing on TikTok/YouTube etc.

References

Algaier, Joachim 'Science and Environmental Communication on YouTube: Strategically Distorted Communications in Online Videos on Climate Change and Climate Engineering'. *Frontiers in Communication*. Original Research July 2019. Vol. 4 Article 36.

Brereton, P. *Environmental Ethics and Film*. Routledge 2016

Brereton, P. *Essential Concepts of Environmental Communication: An A-Z Guide*. Routledge 2022.

Brereton, P. *Hollywood Utopia: Ecology in Contemporary American Cinema*. Intellect Press 2005.

Corbett, Julia. *Communicating the Climate Crisis: New Directions for Facing what Lies Ahead*. Rowman and Littlefield. 2021.

Cox, Robert *Environmental Communication and the Public Sphere Sage* (Third ed. 2013)

Filho, Leah, Walter et al. *Addressing the Challenges in Communicating Climate Change Across Various Audiences*. Springer 2019.

Hansen, Anders & Cox, Robert (eds) *Handbook of Environmental Communication*. Routledge 2015

McDonagh, P. & Brereton, P. 'Screening Not Greening: An Ecological Reading of the Greatest Business Movies'. Journal of Macromarketing. 30; 133. 2010.

Wallace-Wells, *David The Uninhabitable Earth. A Story of the Future* (London: Penguin Books, 2019)


LEONARDO DiCAPRIO
JENNIFER LAWRENCE
ROB MORGAN
JONAH HILL
MARK RYLANCE
TYLER PERRY
TIMOTHÉE CHALAMET
RON PERLMAN
ARIANA GRANDE
SCOTT MESCUDI
with CATE BLANCHETT
and MERYL STREEP
Don't Look UP
BASED ON TRULY POSSIBLE EVENTS
A FILM BY ADAM McKAY
DON'T LOOK UP
NETFLIX PRESENTS A HYPEROBJECT INDUSTRIES PRODUCTION A FILM BY ADAM McKAY LEONARDO DiCAPRIO JENNIFER LAWRENCE "DON'T LOOK UP" ROB MORGAN JONAH HILL MARK RYLANCE TYLER PERRY TIMOTHÉE CHALAMET RON PERLMAN ARIANA GRANDE SCOTT MESCUDI WITH CATE BLANCHETT AND MERYL STREEP CASTING BY FRANCINE MAISLER MUSIC SUPERVISOR GABE HILFER MUSIC BY NICHOLAS BRITELL COSTUME DESIGNER SUSAN MATHESON EDITED BY HANK CORWIN, ACE PRODUCTION DESIGNER CLAYTON HARTLEY DIRECTOR OF PHOTOGRAPHY LINUS SANDGREN, ASC, FSF CO-PRODUCER RON SUSKIND EXECUTIVE PRODUCER JEFF WADMAN PRODUCED BY ADAM McKAY, p.g.a. & KEVIN MESSICK, p.g.a.
STORY BY ADAM McKAY & DAVID SIRROTA SCREENPLAY BY ADAM McKAY DIRECTED BY ADAM McKAY
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What is the journalist's role in covering climate change and biodiversity loss?

Journalists have a key role to play as societies around the world transition away from the use of fossil fuels and towards a net zero world. The media, especially TV documentaries and the websites of news organisations, are the top source of climate change information for most people.

The public pays attention to how often something is in the media, and the more coverage they see, the more important they deem that topic to be. The way in which the media presents - or frames - the topic influences how people think about it too.

So how often - and how - the media reports on climate change and biodiversity loss is very important in shaping debates in society about these two crises.

There are lots of theories about the proper role the media in general, and individual journalists themselves, should play in a healthy democracy. Most agree that the most basic role of journalism/ journalists is to **inform the public** about matters that concern them.

Journalists should also **act as watchdogs**, warning the public of things coming down the tracks towards them. Many agree that the media did not do a good job as society's watchdog in the run-up to the financial crash of 2008, for instance.

The media should also hold power to account. In democratic countries, the media are part of the system of checks and balances on government power. In this role, journalists scrutinise, critique, and question official plans and policies. When you hear a government minister being asked tough questions on TV or radio, this is an example of the interviewer holding power to account.

Journalists should also **investigate wrongdoing**. Investigative journalism has uncovered many different scandals over the years, some of which have formed the basis of popular movies. *All the President's Men* focused on the Washington Post's coverage of the Watergate scandal; *Spotlight* looked at the Boston Globe's investigation into clerical sexual abuse; *The Post* was about the Washington Post's investigation into government disinformation concerning the Vietnam War.

Journalists are also expected to **adhere to a code of professional ethics**, and to uphold their social responsibilities. They should not publish false information, or information that can harm society. For instance, there are protocols around how the media report on suicides, designed to prevent copycat tragedies from occurring. Their social responsibility role also includes promoting marginalised voices.

Reporters also practise certain professional norms: they try to be **fair, balanced, and objective**.

How does all this work out in relation to climate change?

The news media can inform the public about the basics of climate science, and the different policies governments are putting in place to tackle it. They can act as watchdogs by closely questioning whether these policies will work, and whether they will cause harm or injustice. They can investigate wrongdoing by "following the money" and checking that public money is being spent properly. Their sense of ethics and social responsibility can influence who they include in their reporting, and their norms of fairness and balance can ensure they reflect the scientific consensus on climate change.

When did the media first start covering climate change?

Although there are some mentions of the greenhouse effect on climate going back to the 1950s, climate change really took off as a media topic in 1988, when a scientist from NASA called James Hansen gave evidence to the US Congress about the warming caused by increased levels of carbon dioxide in the atmosphere.

Since then, levels of coverage have fluctuated wildly, while maintaining a general overall upward trend. There is a media observatory in the University of Colorado in Boulder which monitors print media coverage of climate change around the world. You can check out the trends here.

Generally, media interest in climate change peaks at these times:

- When there is a **COP** (Conference of Parties) climate conference on. These are held by the United Nations every year, usually in late November. Some of them, such as the one in Copenhagen in 2009, and the one in Paris in 2015, are more significant and attract a lot more media coverage;
- When the IPCC (the UN Intergovernmental Panel on Climate Change) issues an **Assessment Report**. These are major climate science reports, and they are published every seven years or so. They are published gradually: first comes the report of Working Group 1 (WGI), which looks at the latest climate science; next, WGII reports on the impacts of climate change, our vulnerability to these impacts, and mitigation measures to tackle climate change; then there's WGIII, which examines climate solutions, and lastly, there is a Synthesis Report, which brings together findings from the other three. The publication process can take a long time: the most recent IPCC Assessment Report was its sixth one (AR6), with the first volume published in August 2021, and the Synthesis Report in 2023;
- When there is new data on **record-breaking temperatures**;
- When there is an **extreme event**, such as a drought, wildfire, heatwave, or flood.

Where do people get their information about climate change?

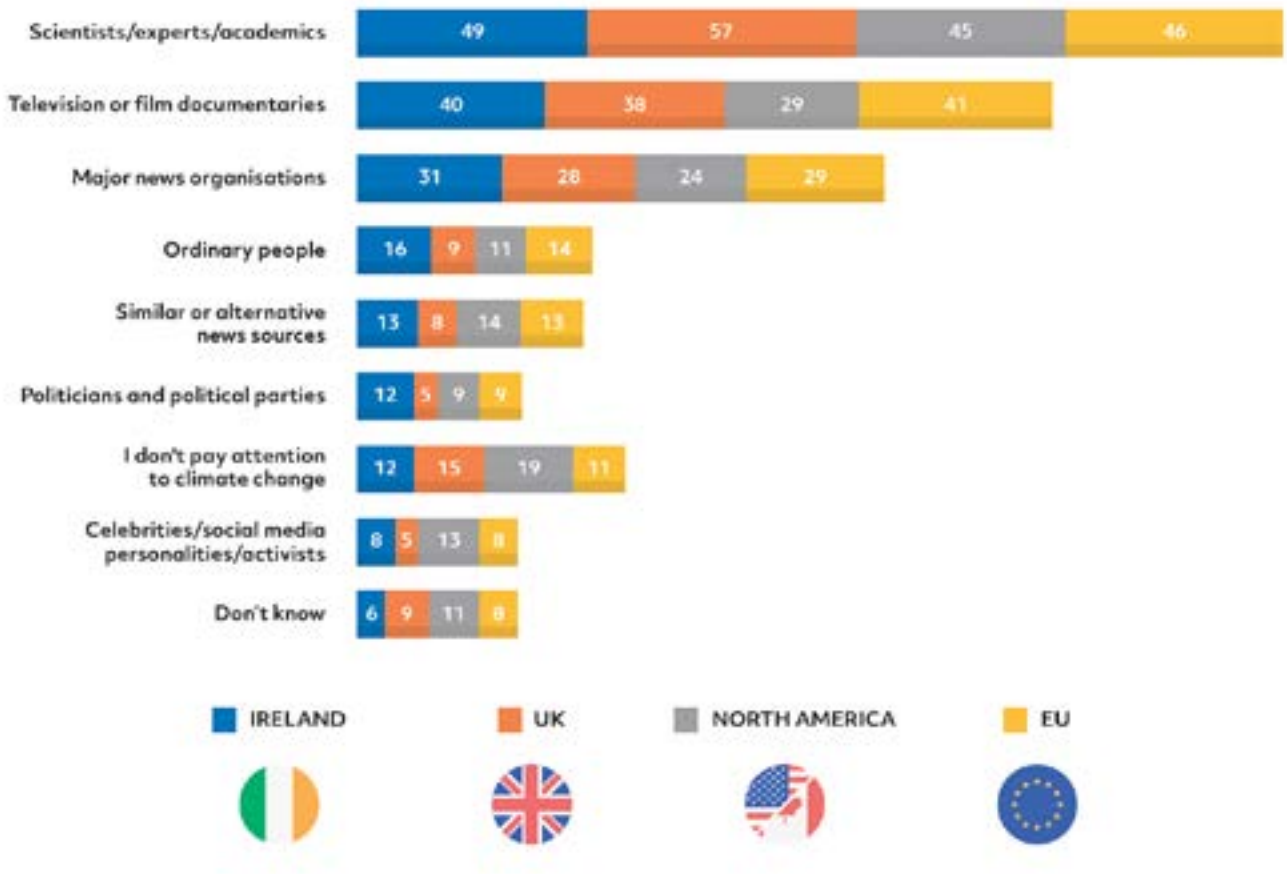
According to the Reuters Digital News Report for Ireland, people generally pay most attention to scientists and academics when it comes to climate change. In Ireland, almost half of the population listen to these groups. About 40% of Irish people get their climate information from TV or film documentaries, and 31% from major news organisations.

Young people (18-24) also pay attention to smaller, independent media organisations (18%), and to celebrities, activists and social media influencers (20%). Young people also want media outlets to take a stance in favour of climate action, rather than passively report events.

When it comes to news in general, Irish people mostly turn to TV (32%), online news sources (32%), and social media (20%). However, younger people have very different news and information habits: they are less likely to get their news from TV (18% versus 51% for over-65s), choosing social media (39% versus 4% of over-65s) and online sources (31% compared to 21% of over-65s) instead.

Additional research carried out for Concern's 1Planet4All project in 2023 found that the top three trusted sources of information for young people were Climate Scientists (61%),

FIG 68: SOURCES OF MOST ATTENTION PAID TO CLIMATE CHANGE NEWS



Source: Murrell, Robbins et al (2022), Reuters Digital News Report for Ireland.

Environment/ International Development NGOs (51.9%), and Teachers/ Educators/Youth Workers (32.9%).

Politicians (13%) and Big Business (9%) ranked lowest as trusted sources on Climate Change, while over a quarter of participants sourced information from social media and friends / relatives.

The reliance by young people on social media as a news source for climate change can pose challenges. Facebook, TikTok, and X (formerly Twitter) have all been identified as major sources of climate change disinformation and climate denial.

Is there a difference between coverage in the Global North versus the Global South?

There is a lot of research available on how the media in the more developed countries of the Global North approach climate change, but far less academic attention has been paid to the media in countries in the Global South.

A recently published study found that the media in the Global South tend to devote less coverage to climate change, but when they do cover it, they focus on different aspects. For instance, in the Global North, the media generally pays attention to climate science, and to the impacts on ecosystems and the environment.

In the Global South, coverage is much more concerned with the impacts of climate change on humans. In developing countries, the societal aspects of climate change (politics, policy, education) are also foregrounded to a greater extent than in richer countries.

What barriers do journalists face in covering climate change?

Climate change has proved a difficult story for journalists to cover. Initially, when it first came to prominence in the late 1980s, the impacts were predicted to take place decades in the future. The time horizons of climate change did not fit well with the breaking news culture in the news media. The news media are also not adept at reporting long-term social trends, such as poverty, homelessness, gun violence, gender violence, and unemployment.

Climate change is also complex, and involves understanding data from many scientific disciplines. As climate action progresses, policy responses have also become more complex. Carbon trading schemes, carbon offsetting, energy systems, land use and forestry, corporate sustainability - each of these topics is a specialism in its own right. Environmental correspondents struggle to cope with a fast-moving and complicated beat.

Environmental journalists also face dangers, both in the real world and online. Climate reporters are frequently attacked, beaten, and even killed in the course of their reporting. Many environmental journalists also report being attacked online for reporting climate science. Others are at risk of being caught up in the disasters they cover, such as wildfires and floods.

In the Global South, reporters face other challenges: limited access to scientific sources, as governments act as gate-keepers, preventing access to scientific data; language difficulties as major climate reports are published in English and press conferences are conducted in English too; pressure from proprietors to drop or minimise pollution, planning corruption, or environmental damage stories.

However, climate reporters also acknowledge that they are working on the most important story they will ever cover, and that as the impacts of climate change deepen, and as the policy responses become more effective, climate change will no longer be the burden of environment correspondents alone.

How to spot greenwashing

It is part of a journalist's role to scrutinise the environmental claims made by businesses and corporations. Making misleading or spurious statements about the environmental impact of business activities is called **greenwashing**. Other forms of corporate deception include **beewashing** (making false claims about biodiversity) and **bluewashing** (making false claims about advancing the United Nations Sustainable Development Goals).

Companies often draw attention to one aspect of their business about which they have a positive story to tell, while failing to disclose information about other aspects which may be causing environmental damage. In addition to these tactics of **deflection**, companies may also use vague language around emissions-reduction tartgets. Reporters need to query phrases such as **net zero, carbon neutral**, and **environmentally friendly**.

A key question to ask corporate entities is whether they have set **science-based targets**. That is, are

their targets for reducing their emissions in line with climate science and the targets set by the Paris Agreement?

Greenwashing is so prevalent that the European Commission has introduced new regulations around what environmental claims can be made by companies.

The Directive on Empowering Consumers for the Green Transition (ECGT) 2024 provides for:

- A ban on generic green credentials – product cannot be sold as "green" or "eco" unless the entire product is truly greener than conventional one
- A requirement to be certified by trustworthy scheme such as the EU's Ecolabel
- A requirement that claims of a product being "sustainable" must be backed up by third-party certification

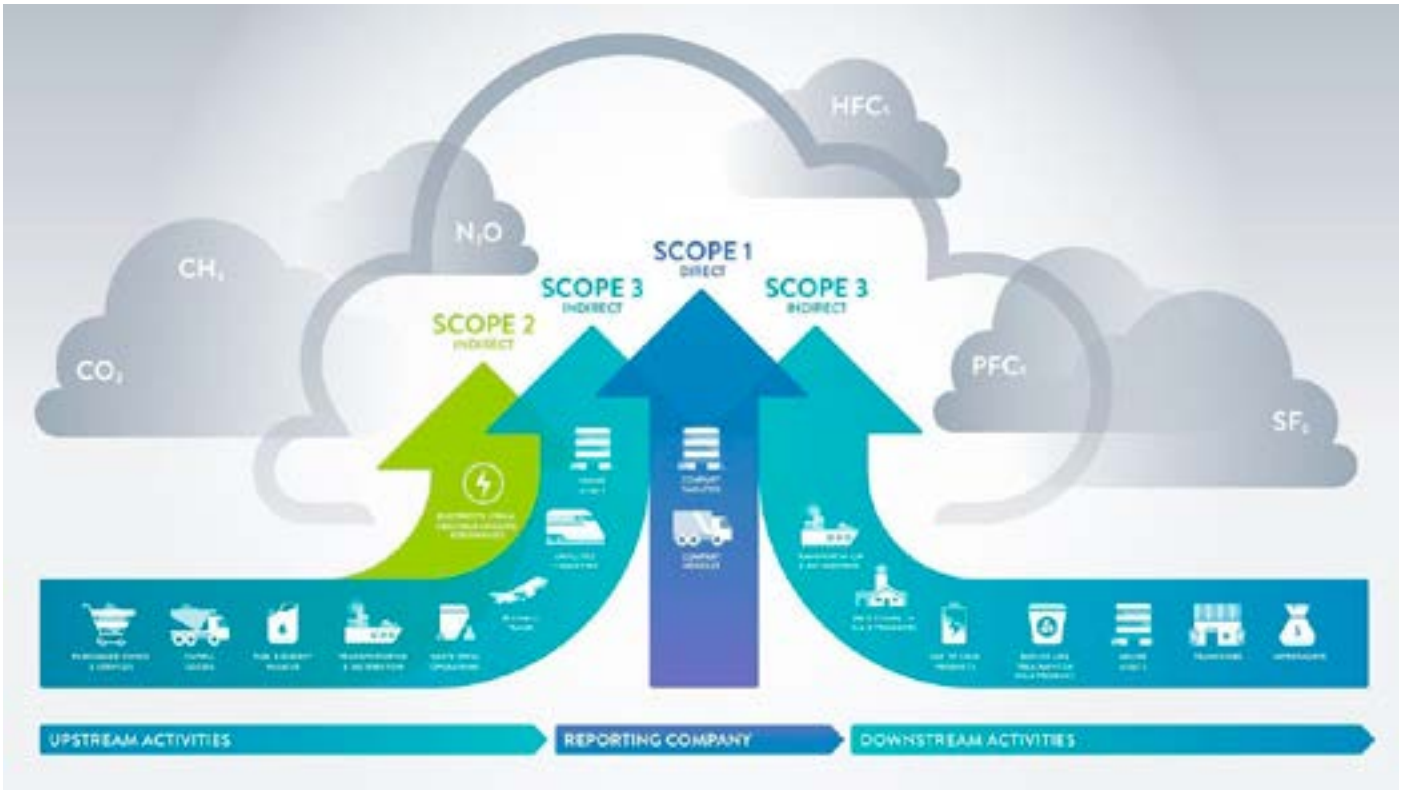
Member states have two years to introduce these rules from January 2024.

The EU has also passed regulations about what kind of investments and financial products can be called "green" or "sustainable". This is called the **EU Green Taxonomy**.

This regulation develops a common language and clear definition of what is sustainable, aims to help investors to make informed investment decisions about environmentally sustainable activities.

To be classed as a sustainable economic activity, a company must contribute to one of the UN Sustainable Development Goals, without violating the others.

There are also new requirements about what European companies must report on. Just as they must now report on their financial position, they will have to report on their emissions and other environmental and social impacts under the European **Corporate Sustainability Reporting Directive**.



Journalists should also be aware of the different kinds of emissions companies are responsible for:

- **Scope 1** emissions relate to the emissions caused directly by the company's activities (their buildings and vehicles, for instance);
- **Scope 2** (emissions cased by heating, cooling etc. their facilities);
- **Scope 3** (the downstream emissions caused by the distribution and use of their products).

Reporters, especially those working in financial or business journalism, need to be informed and alert to the various ways in which businesses measure and report on their environmental impact.

Resources

How to spot greenwashing in the fast fashion industry:
https://www.thesustainablefashionforum.com/pages/medias-role-in-cracking-down-on-greenwashing
EU Green Taxonomy:
https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

European Green Deal:
https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

EU's Corporate Sustainability Reporting Directive:
https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

Guide to spotting greenwashing in corporate sustainability reports:
https://zerocarbon-analytics.org/archives/netzero/how-to-spot-greenwashing-in-a-sustainability-report

What role does social media play in informing people about climate change, or influencing how they think about it?

Social media is an important source of information about climate change for young people. Yet there are serious gaps in our understanding of (i) what kinds of climate change-related material exists on social platforms, and (ii) what effect this social media content has on its audiences.

Existing research shows that young men aged 18-24 have frequent recourse to YouTube for news, more than any other cohort. Yet content which does not support the scientific consensus on anthropogenic climate change is more prevalent on YouTube than videos featuring accurate representations of climate science.

There has also been a steep increase in YouTube videos which, while not denying global warming, suggest that human activity is not the cause, or that such warming will be good for us.

On other platforms, such as Facebook, TikTok, and Instagram, climate disinformation and denial has been spreading too. In Ireland, online activists who have targeted Covid vaccines and immigrants have begun to attack climate science and climate action measures.

It is difficult to predict the effect of such extensive climate disinformation will have on societies. However, it is safe to assume that, as climate action becomes more concerted, the disinformation wars around climate change will escalate.

How do I start writing about climate change?

The first step is to inform yourself generally about climate science (see section 1). The next step is to come up with story ideas. Here are a few ways to generate ideas for climate stories:

- **Extrapolation:** if there is something small happening in your area (perhaps a community garden is established), ask yourself: what would happen if this was scaled up? Extrapolation takes something small and asks: what if this became big?
- **Localisation:** this technique works in the opposite way - it looks at something big (for example, the pledge by different countries to end the sale of petrol and diesel cars by a certain date) and looks at the implications at a local level.
- **Viewpoint switching:** look at the voices represented in an environmental debate (for example, water pollution caused by fertiliser run-off) and ask: is there a voice missing? Perhaps fishermen who fish in local rivers have been excluded from the debate, or maybe the local kayaking club has not been represented.

Once you have a story topic, the next step is to carry out research. This takes two main forms: desk research, which involves searching online sources.

- Check out these courses on digital news skills offered by the Google News Initiative;
- Have a look at the resources provided by the Global Investigative Journalism Network;
- Journalism.co.uk also has some searching tips.

The other form of research involves interviews. These can be by phone, over email, or in-person. Sometimes journalists interview sources for background - to inform themselves about the context or detail of a story - in which case the interview is “off the record” and no quotes from it will be used in the story.

Mostly though, interviews are “on the record” and quotes and comments elicited by the journalist can be used in the article. You can think about potential interviewees at existing at three levels:

- **Ground level** - interviews with people affected or caught up in your story;
- **Middle level** - sources who can quantify or “put numbers on” the topic you are writing about;
- **Top level** - these sources can put your story in a wider political, social, or political context.

Taking the example of our water pollution story, a ground level source might be a householder who cannot drink tap water because the local authority has issued a warning about levels of pollution; a middle level source might be a council spokesperson who can say how many people are affected, how long the problem will last, and how much it will cost to remedy, and a top level source might be an environmental academic who can speak to the pressure on water ecosystems resulting from intensive agriculture.

How do I find good sources for climate stories?

Start by expanding the organisations and networks you are following on social media to include some key climate, biodiversity and environment focussed ones. Many of them are both national and global like Greenpeace and Friends of the Earth.

In Ireland An Taisce, Ireland’s National Trust, is an advocacy agency for heritage, the environment and climate action while the Irish Environment Network is a key umbrella group for non-

governmental agencies across the sector. Get to know them, subscribe to their newsletters and follow their research and findings.

Start to follow more climate scientists and writers too, both in Ireland and across the world. In Ireland, beyond some we've already mentioned, check out people like Professor Hannah Daly, UCC, an expert in sustainable energy systems, Dr Cara Augustenborg, UCD , on planning and environment policy, and Ali Sheridan, who is leading on the Fossil Fuel non-Proliferation Treaty.

For different takes on the environment it is also worth following organisations like Hometree, which began as a community garden project but is now a significant environmental charity planting 150,000 native trees and deepening the concept of restoration. One of its founders, Ray Ó Foghlú is an interesting voice on conservation along with one of its trustees, the writer and broadcaster Manchán Magan.

Increasingly local communities are an important part of climate action and in Dublin have a look at what Connecting Cabra is doing and how it is using simple actions like gardening to create cross-generational action. Connecting Cabra is led by passionate, local people and fits that idea of people-led climate solutions. Find other stories and communities like that in your area. Just down the road from Cabra is another great climate solutions story in Bohemians football club which has created a climate officer, Sean McCabe, and is building climate awareness and climate justice into everything it does.

There are also some Irish podcasts around climate action that can help build your knowledge and contacts. Check out the SEAI podcast 180 degrees, and of course the podcast produced by the DCU Centre for Climate and Society - Code Red.

How do I put my story together?

The first paragraph of your story is very important, whether it's for publication online or in print. If your reader is not attracted to the first couple of sentences, they are unlikely to read further. The first paragraph of a piece of journalism is called the "intro" or "lead" in the UK and Ireland and the "lede" in the US.

Most straightforward news stories use a format whereby the most important and newsworthy information is in the first phrase of the first paragraph. Then information is given in descending order of importance.

But climate change stories are often not that straightforward. Think about using an anecdotal lead - let the first paragraph describe something someone is doing. Don't forget to include a "nut graph" - a paragraph that tells the reader why this story is important just now. Look at the example below, which features a New York Times story about low water levels on the Rhine river:

Intro: anecdotal lead

By Christopher F. Schuetze

Nov. 4, 2018

KAUB, Germany — Just after sunrise, Capt. Frank Sep turned to his ship's radio for the defining news of his day: the water level in Kaub, the shallowest part of the middle section of the Rhine, Germany's most important shipping route.

Nut-graph: why the story is important

The news was bad, as it so often is these days.

One of the longest dry spells on record has left parts of the Rhine at record-low levels for months, forcing freighters to reduce their cargo or stop plying the river altogether.

Type 1 source: someone caught up in story

"I've never experienced so little water here," said Captain Sep, who has been working on the river since 1982, the last 22 years on the Rex-Rheni. "It's becoming so low that it's very difficult for ships to pass."

An exceptionally dry summer has caused havoc across Europe. A trade group in Germany put farmers' losses at several billion dollars. The German chemical giant BASF had to decrease production at one of its plants over the summer because the Rhine, whose water it uses to cool production, was too low.

Type 2 source: someone who can quantify impact

About half of Germany's river ferries have stopped running, according to the Federal Waterways and Shipping Administration, and river cruise ships are having to transport their passengers by bus for parts of their journey. Thousands of fish in the Swiss section of the river died because of the heat and low oxygen levels.

There are reasons to believe such weather will become more frequent with a warming climate.

"Our research shows an increase in instability," said Hagen Koch, who studies rivers at the Potsdam Institute for Climate Impact Research. "The extremes are going to happen more often."

Type 3 source: someone who can paint bigger picture

It's difficult to overstate the importance of the Rhine to life and commerce in the region.

"It's simply the most important river in Germany," said Martin Mauermann, head of the hydrology and water management section of the federal body responsible for waterways. "It's like the thick branch in the middle of the tree."

How to avoid Balance as Bias

The consensus among climate scientists that human activity is causing global heating is somewhere between 97% and 100%. Yet for many years, journalists tried to "balance" the statements of scientists with those who denied the reality of climate change. In their desire to provide balanced coverage, journalists provided reporting that perpetuated an informational bias. (See Max and Jules Boykoff's seminal research here).

More recently, outright denial of climate science has declined, and journalists are more aware of the need to provide evidence-based (rather than "balanced") reporting. Yet often deniers have simply changed their tactics to become either climate "doomers" or climate "delayers".

Doomers or doomists argue that climate change is inevitable, and any measures to mitigate it are doomed to fail. **Delayers** out forward a range of arguments aimed at delaying climate action measures.

Journalists need to be aware of the media strategies of both doomers and delayers. Michael E Mann's book The New Climate War is a good primer to help journalists identify these arguments, while W F Lamb's typology of discourses of delay is also very useful for reporters.

Some broadcast journalists place activists and those impacted by the climate crisis in uncomfortable and unfair situations in which they have to justify their experiences. They are often pitted against climate delayers who make arguments not backed up by science, not based on the reality of the situation, and don't have the best interests of the public in mind.

Be careful about the words you use

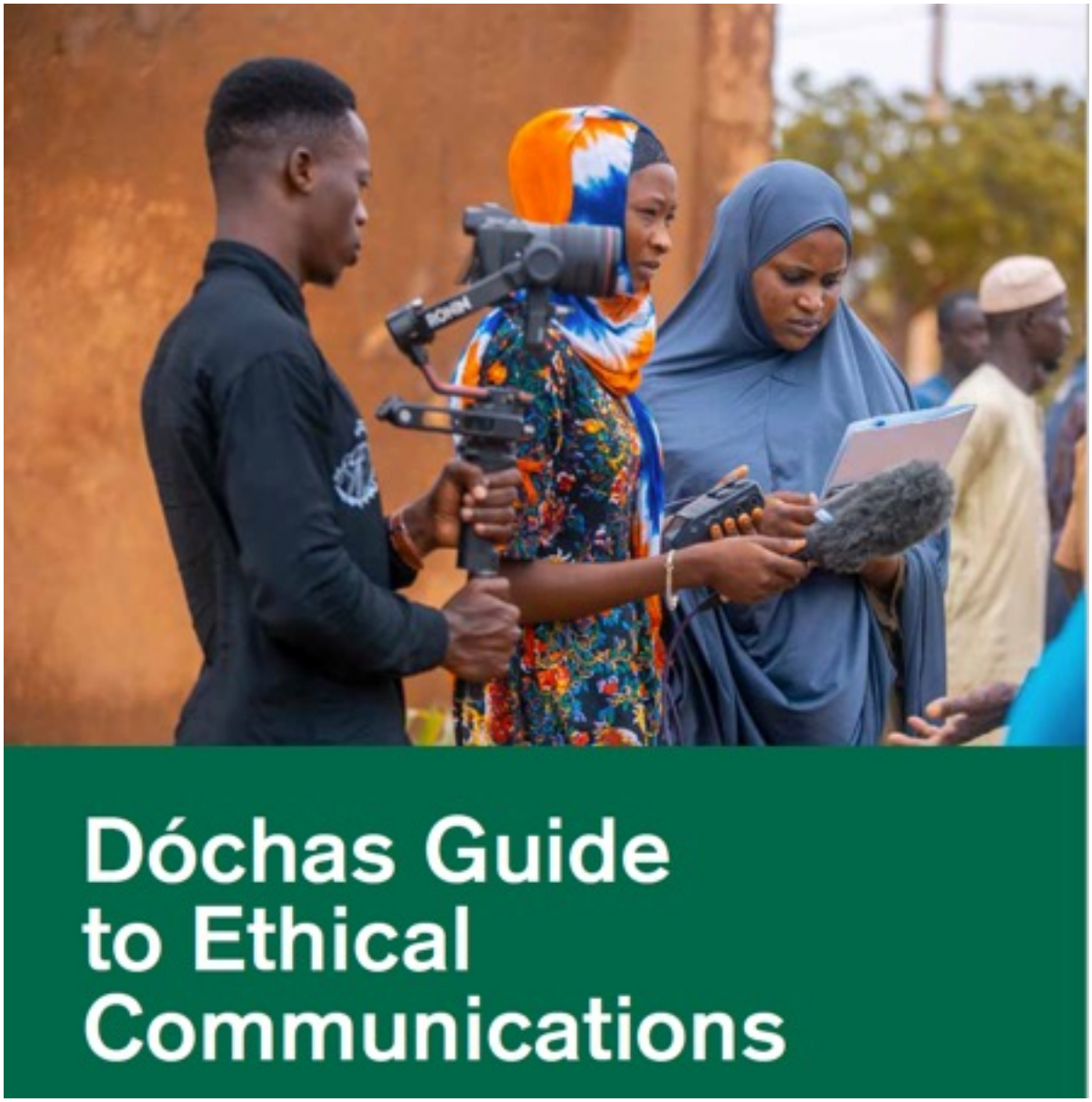
Journalists need to exercise care in their choice of words when writing or broadcasting about climate-related topics. Some media organisations has issued guidance to their staff around climate **terminology** (see the Guardian and BBC examples). The key point is not to use received language automatically, but to be **thoughtful and reflective** in your choice of words.

Likewise, when describing or writing about people affected by climate impacts in developing countries of the Global South, similar care is needed. Representations of hunger and poverty in Africa and elsewhere have often fed into a very negative stereotyping of its indigenous people as instrumentalised and simply needing top-down handouts from the so-called developed world.

The Dochas Guide to Ethical Communication has some excellent advice for those communicating about vulnerable people and communities. Reporting about these communities must be based on three ethical principles: respect for the **dignity** of the people concerned; belief in the **equality** of all people, and acceptance of the need to promote **solidarity, fairness and justice**.

- **Respect** – regarding people as active, valuable and capable agents of choice.
- **Equality** – respecting the rights of people with the same standards afforded to everyone
- **Solidarity** – promoting working together with, rather an on-behalf of communities.
- **Fairness and Justice** – highlighting the cause of poverty and humanitarian crisis. Calling for action to address this and implement a rights based approach to development.

Journalists reporting from climate-impacted areas should begin by listening to local voices, challenge their pre-conceptions, and adhere to the Hippocratic ethic of do no harm.



Conclusion

Wolfgang Blau, the founder of the Oxford Environmental Journalism Network, said that, whether we want it or not, the task of informing the public about climate change has fallen to us in the media.

So if you are thinking about concentrating on environmental journalism in your studies or in your career, you are the right person at the right time.

Bloomberg, the Sun, the London Times, Sky News, the Financial Times, the New York Times, the Washington Post, all these major media outlets have increased the resources they are devoting to covering climate change.

Even as the climate beat itself has moved more front and centre for media organisations, so too climate change has seeped into other beats, such as food, fashion, business, even sport.

A recent report from Nieman Lans summed this trend up nicely: Everyone is a climate reporter now.

Exercise

Using the techniques outlined above, come up with an idea for the climate-related story.

Draft a list of sources you would need to speak to for your story, keeping in mind the three levels of sources mentioned earlier.

Think about what images or video footage would work best with your story.

Decide what kind of opening would work well. Is there something you can describe that brings the reader into the centre of the action?

Think about what media organisation might publish your story. Which media outlet publishes similar stories? Try to match your tone and style to your target publication.

Put together a comprehensive pitch document which includes:

- Potential headline on your story
- Story summary, including a "net graph" explaining why it's relevant right now
- List of sources who would be included
- Suggested visuals to accompany story

Resources

Environmental Sections of Major News Organisations

New York Times - https://www.nytimes.com/international/section/climate
Washington Post - https://www.washingtonpost.com/climate-environment/
Bloomberg - https://www.bloomberg.com/green
Irish Times - https://www.irishtimes.com/environment/climate-crisis/
Irish Daily Mirror - https://www.irishmirror.ie/all-about/climate-change
BBC News - https://www.bbc.com/news/topics/cmj34zmwm1zt
Al Jazeera - https://www.aljazeera.com/climate-crisis/
RTÉ - https://www.rte.ie/topic/climate-change/
Financial Times - https://www.ft.com/climate-capital

Guides and resources for environmental reporting

The Daily Climate - https://www.dailyclimate.org/
Covering Climate Now - https://coveringclimatenow.org/
Society of Environmental Journalists (US) - https://www.sej.org/
How to attribute extreme weather to climate change - https://www.worldweatherattribution.org/reporting-extreme-weather-and-climate-change-a-guide-for-journalists/
European Broadcasting Union "Climate Journalism That Works" report - https://www.ebu.ch/guides/open/report/news-report-2023-climate-journalism-that-works
Columbia Journalism Review climate issue - https://issuu.com/columbiajournalismreview/docs/68675_b

Key reports, targets, and regulations

Ireland's Climate Change Assessment Report (4 vols + synthesis report) - https://www.epa.ie/publications/monitoring--assessment/climate-change/
Text of Paris Agreement: https://unfccc.int/sites/default/files/english_paris_agreement.pdf
Text of Climate Action and Low Carbon Development (Amendment) Act 2021: https://www.irishstatutebook.ie/eli/2021/act/32/section/15/enacted/en/html
Climate Change Advisory Council: https://www.climatecouncil.ie/
EU's Corporate Sustainability Reporting Directive:

https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en
Ireland's Climate Action Plan 2024:
https://www.gov.ie/en/publication/79659-climate-action-plan-2024/#
EU Green Taxonomy:
https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en
European Green Deal:
https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
Text of new EU regulations on greenwashing:
https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/IMCO/AG/2023/11-28/1289669EN.pdf
Climate Change Performance Index:
https://ccpi.org/
Climate Action Tracker:
https://climateactiontracker.org/
EPA climate change charts:
https://www.epa.ie/resources/charts--data/climate/
European Environment Agency climate change resources
https://www.eea.europa.eu/en/topics/at-a-glance/climate

Climate change disinformation in the media

Institute for Strategic Dialogue (ISD) "Uisce Faoi Talamh" on far-right in Ireland report:
https://www.isdglobal.org/wp-content/uploads/2023/11/Uisce-Faoi-Thalamh-1-summary.pdf
Climate disinfo on Instagram – First Draft News
https://firstdraftnews.org/articles/climate-change-misinformation-conspiracy-memes/
BBC on climate denial on TikTok
https://www.bbc.com/news/technology-66023797
Centre for Countering Digital Hate report on online science denial
https://counterhate.com/wp-content/uploads/2024/01/CCDH-The-New-Climate-Denial_FINAL.pdf
Global Witness report finds FB algorithm amplifies climate denial
https://www.globalwitness.org/en/campaigns/digital-threats/climate-divide-how-facebooks-algorithm-amplifies-climate-disinformation/
BBC report on Global Witness FB report
https://www.bbc.com/news/technology-60905348
America Misled – from George Mason University Centre for Communication on Climate Change -
https://www.climatechangecommunication.org/all/handbook/america-misled/
The Climate Deception Dossiers from the Union of Concerned Scientists in US
https://www.ucsusa.org/resources/climate-deception-dossiers

The importance of using the right visuals

Research based on focus group responses to different climate imagery:
https://climatevisuals.org/evidence/
EPA research which includes data on audience responses to climate visuals:
https://www.epa.ie/publications/research/climate-change/research-300-climate-change-in-irish-media.php
Guardian picture editor on why they decided to change the images they use:
https://www.theguardian.com/environment/2019/oct/18/guardian-climate-pledge-2019-images-pictures-guidelines

Best-practice recommendations

Wolfgang Blau's guide for newsrooms
https://wblau.medium.com/climate-change-journalisms-greatest-challenge-2bb59bfb38b8
French journalists' charter for better climate coverage
https://chartejournalismeecologie.fr/upgrading-journalistic-practices-to-tackle-the-ecological-emergency-a-charter/

Photo: *Rekha Boiragi harvests fresh eggplants from her vegetable garden to feed her family and sell the surplus to the local market in Chordanga, Tildanga, Dacope, Bangladesh. The southwest coastal region of Bangladesh is prone to various natural and climate-related hazards, putting its 14 million inhabitants at significant risk. In response to these challenges, Concern implemented the Enhancing Resilience of Coastal Communities (ERCC) project in Dacope and Koyra Upazila (sub-districts) of Khulna district, where extreme poverty rates are higher than the national average.*

The project assisted over 5,000 households in the two sub-districts. Photo: Mumit M/Concern Worldwide.

Section 4: **A new vision for climate communications and journalism**

"Let us make no mistake: the climate crisis is also a crisis of culture and thus of the imagination."

- Amitav Ghosh, **The Great Derangement**

"In order to do what the climate crisis demands of us, we have to find stories of a livable future, stories of popular power, stories that motivate people to do what it takes to make the world we need."

- Rebecca Solnit, **Why We Need New Stories on Climate**

1. Why do we need a new approach to climate journalism?

Climate action demands transformative systems change, according to the IPCC. Last year the World Economic Forum concluded that we need "new systems" for everything and that includes how we communicate climate science, impact and solutions.Traditionally the media has had a siloed approach to climate change coverage in that it was seen as the territory of the environment correspondent and rarely entered into the politics, business, sports, arts, agriculture or food agenda. But climate impacts everything so today some newsrooms, like the BBC, have appointed a climate editor, with a cross-disciplinary team, and all BBC reporters, regardless of their role, receive climate literacy education.

In Ireland climate coverage is dominated by excellent environment correspondents, like Kevin O'Sullivan, Irish Times, Caroline O'Doherty, Irish Independent and George Lee, RTÉ but the international trend is towards climate editors like Justin Rowlett at the BBC, Hannah Fairfield at the New York Times and Emiliya Muchasuk at the Financial Times reflecting the central, all embracing, role climate journalism now plays in news. As the specialist editors and journalists in The Guardian put it a few years back: "We're all climate journalists now".

For more perspectives from the Global South, follow the work of Kang-Chun Cheng, a Taiwanese American photojournalist focusing on the impact of climate change in escalating insecurity, the preservation of indigenous cultural heritage, and the role of foreign aid. She has been residing in Nairobi for the past four years, using photography to narrate stories across various nations, including Uganda, Egypt, and Morocco, among others. You can visit her portfolio here. Sophie Mbugua leads Africa Climate Conversations. They showcase climate and environment stories from an African perspective. Their website is here.

The problem with the siloed approach to climate reporting is that if it is just in the environment and science brief, and that does not interest you, you can filter it out. It creates a disconnect in how we perceive and understand the global crisis. The social, economic, political and human impact can be under-reported. You can have the environment correspondent reporting stark research findings on one page while the business correspondent is lauding construction, aviation and industrial expansion and growth as if those findings don't exist and emissions are not an issue.

So the first principle is recognising that climate change impacts everyone and everything and all reporters need to have a basic foundation in climate science and solutions to understand and give context to what is happening around them. Sports and the arts, for example, have previously stood apart from climate news but today there is no exclusion zone, as we've seen with extreme heat threatening the Paris Olympics and how art museums and the work of Van Gogh and Da Vinci's Mona Lisa have become publicity targeted for climate activists.

So if, as Margaret Atwood wrote, it's not climate change, it's everything change, we need to reimagine how we think about and communicate climate stories. Writer Rebecca Solnit, co-editor of Not Too Late: Changing the Climate Story from Despair to Possibility says that every crisis is in part a storytelling crisis. "We are hemmed in by stories that prevent us from seeing, or believing in, or acting on the possibilities for change", she wrote. In communications and journalism, overcoming that psychological block requires us to embrace the learning curve of climate change 101 and bring our creative, factual storytelling toolkit to the job of telling what is often unimaginable: how to face and shape solutions to a slow-playing existential threat. As climate journalist David Wallace-Wells told us, the facts are not enough. We need the facts but we also need to connect them to people's lives and translate complex causes and effects, the wicked problem of climate change, to the everyday detail of how we live and what we value.

Explore more:
BBC Trusted News Initiative, Professor Alexandra Borchardt, 'Why climate change should be at the heart of modern journalism'.
Guardian, Podcast Rebecca Solnit 'Why we need new stories on climate'
Covering Climate Now
Nieman Journalism Lab, The year of the climate journalism strategy

2. So how do we rethink climate storytelling?

A good way to think about effective storytelling is to imagine you have a bag of assorted books; ranging in genres from children's fairytales and romance novels to factual histories and a few scientific texts. You instinctively know that if you walk into a room full of people you are going to try and match the book to the person. Stories are only 50% of communications, you need to focus just as hard on the other 50% - your audience. In telling factual climate stories, it is a skill to research your information and another one to translate that into a story that is appropriate and relevant for your audience and one that resonates with them. Have a look at what RTÉ did in its Jargon Busters climate literacy series with Saibh Downes aimed at young people.

So the first rule of storytelling is to identify and research your audience just as much as your story and then when you translate your story for them the trick is to understand what your target audience likes in content. So Saibh and her producer Eleanor Mannion, in seeking to reach young people, went for engaging, short form videos, 1-2 minutes with graphics, much like the gifs or videos you find on social media.

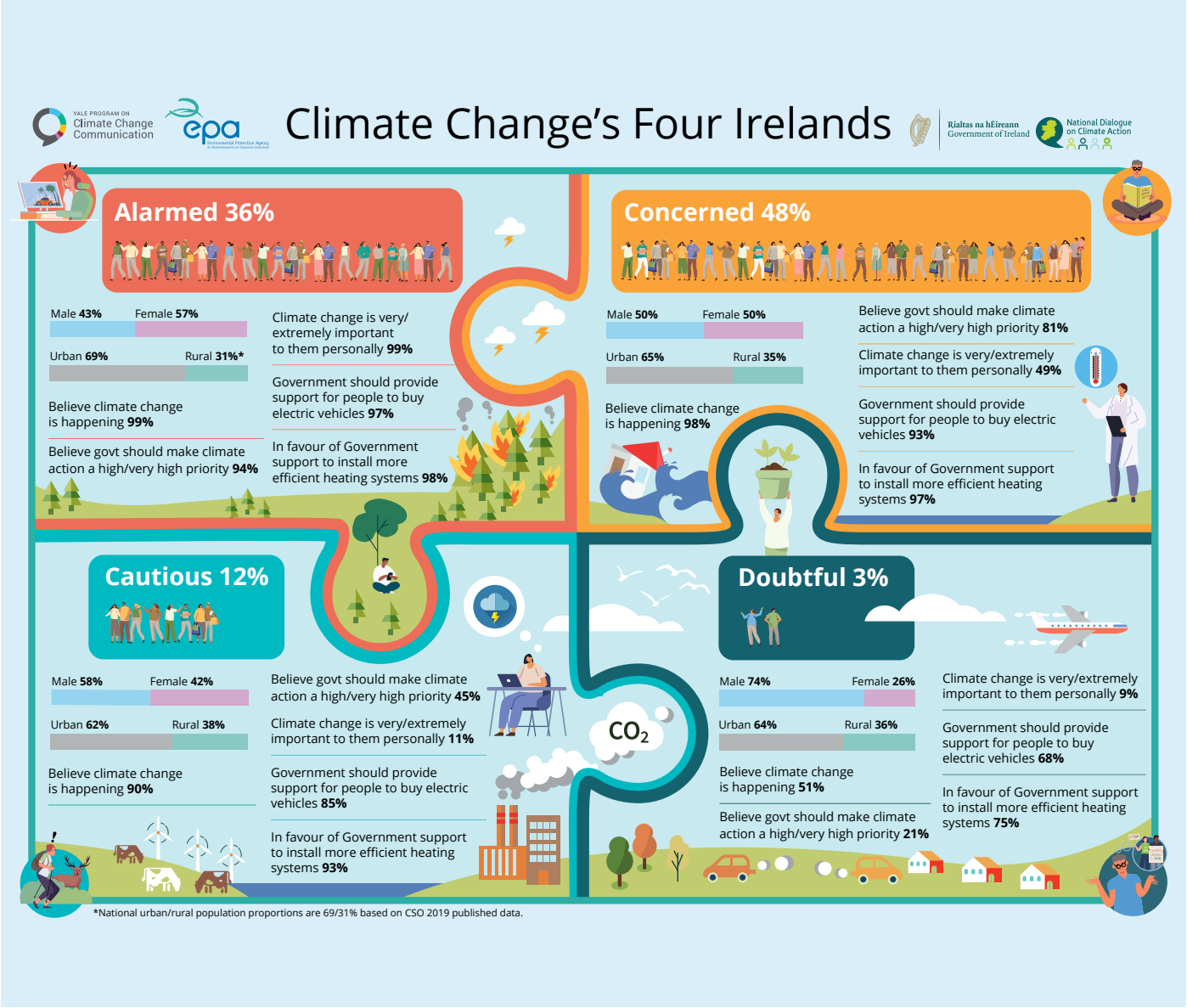
Second rule of storytelling is to go from heart to head. Tell human stories that bring you into the facts. We are overwhelmed with data and statistics in climate studies, which are powerful tools to understanding, but give context to your data by leading with a first person story, or the human consequence of the data. The science and the data are tools for you but your goal as a communicator or a journalist is to reach an audience and bridge that knowledge. Have a read of how The Guardian correspondent in Suriname leads coverage of climate impacts and the role of seed banks with the personal history of a slave woman, who in the 1700s escaped with seeds hidden in her hair, and the life of a contemporary rice farmer Albertina Adjako, today.

The third rule of storytelling is to unpack your story like those little Russian matryoshka dolls, going deeper and deeper, revealing more and more, as you move from that first person or a human peg into the detail of the story; bringing in science, data and statistics. Listen to the expert way veteran environment journalist Roger Harrabin opens his BBC radio documentary Changing Climate Change: Solutions walking through a Malawi village at night, to where a young child is now able to do her maths homework by a solar lantern, and then goes on, layer by layer, to explore the global dilemma of increasing energy without adding emissions. He makes an abstract discussion both personal and tangible, going from micro to macro, engaging his audience before going into detail.

Fourth rule of storytelling is to use the content toolkit. Match your story to the best way of telling it, whether a photograph, audio, video, print or social media gif. Translate your story to your audience and repurpose it in different formats - always with the focus on what is the best way to relate **that** story to your audience. Look athow photographer Alisdare Hickson captures a dystopian London and a parched Greenwich Park during the heatwave and drought in August 2022. It says more to us about urban climate impact, than an essay or a walk through in audio.

And of course the fifth rule of storytelling is be prepared to break the rules once you have figured out how and why they work! For example, one powerful way to use your data and statistics is in an infogram that can visualise what that data means.

Check out the EPA's Four Irelands showing public attitudes to climate change and action; that public opinion report is also a good way to understand audiences.



Graph: *EPA Climate Change's Four Irelands Infographic (2022)*

Explore more:

On storytelling. Ursula Le Guin - The Carrier Bag Theory of Fiction

On climate storytelling. Wired. Bella Lack - Storytelling Will Save The World

Climate journalism. Covering Climate Now - Best Practices for Climate Journalism

Knowing your audience. EPA - Climate Change in the Irish Mind - 2023

3. What is Solutions Journalism?

By its nature climate reporting is often about giving people stark facts and research on how bad things are, and how much worse they are going to get. Without context to climate action and solutions that reporting can create a doomsday scenario. It is like telling us repeatedly there is a fire without letting us know about the fire brigade and all the ways we can prevent fire or control it when it happens. Doomsday reporting is not just missing half the story but it also has an impact. It creates a sense of public helplessness, fuels climate anxiety and research by Reuters Institute shows it triggers audiences to switch off and disengage. After all, if it is happening and there's nothing you can do about it, why bother?

Solutions Journalism means covering the problem, investigating the causes and exploring solutions. It's a growing research area and a developing journalistic practice that draws on research about how we respond and act to news; particularly climate catastrophic reports and disaster events. The Solutions Journalism Network began in the United States over a decade ago with a focus on how we report social problems, for example crime, reporting rising crime figures or events but without the context of why and asking what can we do. Solutions journalism is not about diluting or under-reporting the bad news but about giving the whole picture of a news story; the back story, the causes and consequences of an event or issue, the event or issue itself but also potential solutions. There's an old saying in news journalism that "if it bleeds, it leads" and that's still true. Bad news makes the headlines and grabs our attention, but a solutions journalism approach is that we go beyond the headline, ask questions, particularly of accountability, and see the story in a multi-dimensional framework.

Photo: *Harvesting in County Galway - Credit: João Jesus/ Pexels.*

So the idea of solutions journalism fits this need to rethink climate communications and reporting. Covering Climate Now is a journalist-led international organisation, co-founded in 2019 by Columbia Journalism Review and The Nation magazine in association with the Guardian and WNYC. It has partnered with the Solutions Journalism Network to produce an invaluable guide to best practice for climate solutions journalism. They define solutions journalism as evidence based reporting about problems facing society. The use of evidence is critical in that it requires the journalist to go beyond the surface of the story and event and drill down. Why is this happening, and who is accountable, are key questions to ask as well as reporting exactly what is happening.

Their guide aligns with our climate storytelling section above and includes these pointers

- Know your audience
- Get to know the science (but talk and write like a normal person!)
- Humanise and localise your stories - make them relevant
- Tell the whole story - causes, consequences and solutions
- Beware of being spun - and greenwashing (check claims)
- Don't platform climate science deniers or disinformation
- Be conscious of equity and climate justice in your reporting

The argument that climate science deniers are included for balance, when 97% of global scientists agree on what is happening and that climate change is caused by human activity, is no longer seen as valid by many media outlets and national regulators. For example, the Irish media regulator Coimisiún na Meán (then the Broadcasting Authority of Ireland), said in late 2022 that Irish broadcasting was not required to give airtime to climate deniers on the basis of balance. An analogy would be there are religious groups across the world that do not believe in evolution but there is no scenario where the media includes those groups whenever it mentions evolution or the age of the planet.

Data Journalism

Hand in hand with solutions journalism is a growing field of data journalism where data journalism, and digital mining of data, is used in an evidence-based storytelling approach. An industry and journalism academic initiative in Europe, MediaNumeric, has created a new online training resource for journalists, communicators and digital content creators using storytelling and data journalism. A good resource for climate solutions storytelling is Project Drawdown aimed at advancing science-based solutions and empowering solutions stories. In Ireland the NGO Global Action Plan runs Climate Heroes, connecting first person, local stories to global climate themes and similar climate solutions storytelling has shaped the RTÉ Climate Heroes series.

Photo: *Residential building in Milan, Italy - Credit: Francesco Ungaro/ Pexels*

Photo: *Inspecting a wind turbine. Photo credit Dennis Schroeder / NREL GPA Photo Archive (Creative commons)*

Explore more:

Guide. Covering Climate Now : How to Do Climate Solutions Reporting.

Online Solutions Journalism Training. Solutions Journalism

Online Data JournalismTraining. MediaNumeric Academy Training a New Generation of Journalists in Data Journalism

Case Study. DataJournalism.com Climate change through a solutions and data lens

How do journalists handle online fact-checking, tackle disinformation and bust climate myths?

Fact-checking is always part of a journalist's job but with the onslaught of often deliberate disinformation on social media it is now a critical skill and central to maintaining trust in the news. Journalists need to use digital media and social media as resources but climate reporters often find their online profiles are targeted and trolled by climate deniers; or people who have come to believe climate myths and do not accept that global warming is caused by human activity. Since the pandemic there's also a growing alignment of conspiracy theories that tie Covid19 and climate action and a range of political issues, like migration, together. In general, misinformation is defined as false information shared by those who believe it is true while disinformation is shared knowing it is false and often with an agenda.

Verification

DataJournalism.com has developed a good guide on verification and fact-checking and data mining skills are essential in digital verification of images and stories. Also useful is the online training course developed by Google News Initiative that walks users through Google verification tools for content and images online, including using Google Fact Check Explorer, Google Earth and Translation. It also features resources on tackling misinformation. The use of Artificial Intelligence (AI) presents both opportunities and challenges in that it can be employed to create highly convincing disinformation but it also offers journalists tools to spot that fake content. Crowd-sourcing verification is now an established part of online platforms, (even on the platform formerly known as Twitter!) and an interesting one in climate is Climate Feedback where scientists fact-check and verify articles online.

Debunking climate myths

Climate myths are often the result of a lack of public knowledge about climate science but they become so frequently repeated in conversations and in social media that they develop a narrative and reality all of their own. The World Wildlife Fund (WWF) uses this one as an example: Plants need carbon dioxide so it is a good thing. As we described in Section 1, the greenhouse effect are all necessary for life on Earth, so carbon dioxide is a natural and needed part of our ecosystem and atmosphere. The problem is the vast quantity of it that has been produced by us as humans, particularly since the industrial age. The truth is there has not been this level of carbon dioxide in the atmosphere for 800,000 years.

Another climate myth that tends to be repeated is: *global warming is not a problem, look at how cold it is today.*

Of course global warming is causing the Earth's average surface temperature to increase, making heatwaves and droughts more likely but it is also causing changes to our natural climate systems leading to changes in the nature and duration of seasons. These changes make extreme weather events more likely and more severe. For example, hurricanes and storms are becoming more intense, moving slower and taking longer to die down. Because of where we are, the UK and Ireland will experience more rain and wind while New York will see more snow.

So much of what we covered in Section 1 is the most powerful way to counter so-called climate myths. Part of our job is to try and communicate what is happening, why it is happening and how we can act. Understanding the basics of climate science and climate policy is the best way a communicator or journalist can respond to what is essentially misinformation.

The UN has a nice myth busters resource which is worth keeping as a quick, prompt guide in your work. One of their key ones is countering the idea that climate change is not caused by human activity. You will see people repeating the myth that contemporary climate change is caused by volcanoes or by changes in solar tilt. Of course there are natural causes of climate changes across a span of 10-100,00 year but the dramatic increase in greenhouse gases in the atmosphere over the past 200 years (remember Michael Mann's hockey stick graph?) has been unequivocally proven to be caused by human activity and the mass depletion and burning of fossil fuels (nature's carbon stores).

Covering Climate Now also has a myth-busting guide and covers key ones including: *Why bother, me doing anything doesn't matter when you look at China's emissions?*

The United States has cumulatively emitted more emissions than any other country. Yes China has overtaken the United States now but climate change is cumulative not annual, and when you look at per capita analysis you see how Ireland and China are quite similar. The reality is this is a global challenge and every country is responsible. Much of the consumer products in countries like Ireland are produced in China. Our consumer lifestyles and demand, our Western economics, are intertwined with emissions growth in other countries like China. We are all connected.

Photo: *Fitting solar panels to homes - Credit: Stephen Yang / The Solutions Project (Creative Commons).*

Explore more:

Reuters Institute - To cover climate change journalists need to be prepared to identify what misinformation looks like

Rand - Tools to fight disinformation

EU Disinfo Lab - Initiatives tackling disinformation

Where can we find good role models and case studies in climate communications and journalism?

Thankfully, there are lots of good role models and examples to inspire you. In Section 1 we shared Elizabeth Kolbert's Climate Change A-Z in The New Yorker magazine and that has now become a book 'H is for Hope' and it is a great place to start thinking about how you write and tell climate stories. The Icelandic film-maker and writer Andri Snaer Magnason has also written a masterclass in climate storytelling in his factual book On Time and Water. Magnason says that for most people the words 'climate change' are just white noise and that as human beings we cannot register or imagine the scale of global warming. For it to become meaningful to us it needs to become personal to us, so we can see ourselves, and what we value and love, in the story. The novelist Amitav Ghosh, author of The Great Derangement, about climate storytelling and fiction, has also written a remarkable factual climate book The Nutmeg's Curse: Parables for a planet in crisis which is required reading for anyone who wants to reimagine how we think, talk and write about climate change.

BBC Future Planet produces excellent digital and transmedia features. Check out this one about how a Louisiana town moved to escape climate disaster by Lucy Sherriff and consider how it meets the idea of climate solutions storytelling, how it uses data and visual imagery and how it goes from the personal and local to the global.

There are also so many different ways to connect to climate storytelling. The RTÉ nature TV series Wild Islands made by Eoin Warner is a great example of bringing climate change and biodiversity loss together but in a beautiful, human focused storytelling approach that celebrates what we have while highlighting what is at risk.

In Ireland, besides the environment correspondents we've mentioned, check out these four very different writers/broadcasters and consider how they tell climate stories and have impact.There's no one way to tell a story. The question is does it work, does it connect with you and what are the tools the storyteller is using?

1. **Anja Murray:** author of Wild Embrace and creator of Nature File on RTÉ lyric fm.
2. **John Gibbons:** a campaigning climate journalist.
3. **Philip Boucher Hayes:** RTÉ Radio 1 - Hot Mess Podcast
4. **Sadbh O'Neill:** climate adviser, member of DCU Climate Centre - Irish Times columnist - Irish Times video - How to make Irish cities sustainable

Section 4 Activity: Put together a story pitch for a print, broadcast or digital climate story adopting a **climate solutions storytelling framework**; mapping the characters, storyline and data sources.

Explore more:

Reuters Institute - Fixing Climate Journalism
Podcast: Communicating Climate

Climate Glossary *

Adaptation of Climate Change is seen as human actions to reduce the adverse impact of global warming and climate change.

Carbon Capture Storage (CCS) involves the capture of carbon dioxide (CO2) emissions from industrial processes, like steel and cement production, or from the burning of fossil fuels in power generation plants. This carbon is then transported from where it was produced, via ship or a pipeline, and stored deep underground in geological formations, effectively injecting it into rocks.

Climate Anxiety is defined as a sense of personal emotional and mental distress, creating a sense of helplessness and panic, in the light of the climate emergency.

Climate Justice means putting equity and human rights at the core of decision-making and action on climate change. It connects to the unequal historical responsibility that countries and communities bear in relation to the climate crisis **(see Loss and Damage**).

Carbon Neutral means that any carbon dioxide emitted is balanced by an equivalent amount being removed or sequestered.

Carbon Sequestration is the storage of carbon. Trees and plants, for example, absorb carbon dioxide, release oxygen and store the carbon. Fossil Fuels, like coal and oil, effectively stored carbon until burnt.

Climate Resilience is the capacity to anticipate and prepare for climate hazards, reducing their impact, while also reducing emissions. It implies an integration of mitigation and adaptation measures.

Greenhouse Gases are gases that trap heat in the Earth's atmosphere by absorbing infrared radiation. They include water vapour, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrochlorofluorocarbons (HCFCs), ozone (O3), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF6).

Just Transition in climate action means mitigation and adaptation measures must be equitable and fair. It places an emphasis on social dialogue in policy formulation and implementation.

Loss and Damages refers to negative climate effects that happen despite mitigation and adaptation and is closely related to the concept of climate justice because the world's most climate-vulnerable countries are often the lowest emitters of greenhouse gases. This connects to the issue of who should pay to restore loss and damage in poorer countries where resources are limited.

Net-Zero Emissions is when anthropogenic emissions of greenhouse gases are balanced by anthropogenic removal or sequestration of those emissions.

Mitigation of Climate Change is seen as human actions to reduce or sequester greenhouse gas emissions.

Sustainable Development Goals (SDGs) are the seventeen UN Sustainable Development Goals that were adopted by member states in 2015 as part of the 2030 Agenda for Sustainable Development. They are under five pillars: people, planet, prosperity, peace and partnership. The goals are " integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental".

About the Authors

Dr Dave Robbins worked as a senior journalist in the national print and broadcast media for 25 years before becoming an academic. He is the Co-Director of the DCU Centre for Climate and Society, and an Associate Professor of Journalism in the DCU School of Communications. Dave's teaching and research focuses on media coverage of climate change.

Prof Pat Brereton is a scholar of environmental film and audio visual media. He is Co-Director of the DCU Centre for Climate and Society. He has published widely on the role of film and documentary in speaking to us about the environment, nature, and climate. He is particularly interested in how farmers and farming are portrayed in visual media.

Helen Shaw is a communications and storytelling consultant and holds an MSc in Climate Change, DCU. She is a former print journalist and public broadcasting editor and worked with the BBC and RTÉ. She was Managing Director Radio, RTÉ and launched RTÉ lyric fm. She heads her own digital media company, Athena Media and is a multi-award winning documentary-maker. Helen is a board member of An Taisce, Ireland's national trust.

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We are proud that in 2020 Concern was named Charity of the Year at the Charity Excellence Awards Ireland; won the Chartered Accountants Ireland Leinster Society Published Accounts Awards, and received the Carmichael Good Governance Award.