Climate Justice Education in Practice

TUTOR HANDBOOK

City of Dublin Education and Training Board
ADULT EDUCATION SERVICE
A Learning Community

SOLAS
learning works

An Roinn Breisoideachais agus Ardoideachais, Taighde, Nuálaíochta agus Eolaíochta
Department of Further and Higher Education, Research, Innovation and Science

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CHAPTER 1

About this Handbook

"Climate change is not only a threat,
it is, above all, an opportunity to create
a healthier, greener, and cleaner planet
which will benefit all of us.
We must seize this opportunity."

Greta Thunberg

Chapter 1 – Table of Content

Introduction to Handbook

In 2019 City of Dublin ETB Adult Education Service developed its first Climate Justice Education Strategy (2019 – 2022). This strategy commits City of Dublin ETB's Adult Education Service to becoming a lead educator in developing public knowledge on climate change and just transitions in the City of Dublin. Our aim is to:

- develop and deliver high quality climate justice education programmes across a range of disciplines
- build critical literacy around the climate crisis
- provide learners with the educational space to identify potential solutions and take collective action in their local areas

The Climate Justice Education Strategy involves a two-pronged approach: the integration of climate justice issues into existing courses and the delivery of stand-alone modules. To achieve this, the City of Dublin ETB Adult Education Service provides:

- A professional development training programme on climate justice education for experienced tutors;
- A professional development mentoring programme for tutors new to climate justice education;
- A climate justice community of practice online forum and resource databank for tutors to collaborate and share resources and lesson plans.

The Climate Justice Education Steering Group and the City of Dublin ETB FET Unit are also working on the development of an accredited QQI Level 3 SPA module in Climate Justice. This handbook will be a useful resource for tutors delivering that module.

Rationale

This handbook is an important element of our Climate Justice Education Strategy. It offers creative approaches to building adult learners' critical understanding of climate change and climate justice. It aims to build tutors' confidence and capacity to engage learners in discussions and critical reflections on these issues.

The handbook was developed to address a significant gap in climate change and climate justice education. In both policy and practice, education for climate justice is primarily targeted at young people. Teaching and learning resources aimed at adults often assume high literacy levels and are not suitable for those with literacy difficulties or those learning English as a second or other language. It is crucial that adults experiencing social and/or educational

disadvantage can engage in educational opportunities to engage with climate justice issues. With these opportunities, adult learners and their communities will be equipped with the skills and knowledge needed to take informed, empowered actions.

Climate Change and Climate Justice

You may be wondering why we are using the term 'Climate Justice Education' rather than 'climate change education' and what this means. Using a climate justice education framework means we highlight how global inequality is a root cause and consequence of climate change. It looks deeply at why our climate is changing and what needs to change. For example, countries and communities are not all equally responsible for causing climate change. Richer countries in the northern hemisphere are most responsible as, over time, they have released the most carbon dioxide and other emissions into the air.

Climate Justice Education also focuses on how climate change impacts differently on communities according to their socioeconomic positions. For example, the poorest communities are more likely to be affected by drought, floods and other extreme weather events caused by climate change.

A climate justice framework also translates to climate action. Often, solutions to the climate crisis disadvantage people who are already struggling – for example, applying carbon taxes can harm rather than help poorer communities. Climate justice moves the focus away from individual, consumer-based climate solutions (for example – 'buy organic food') to explore deeper societal changes needed.

Climate Justice Education also builds motivation and hope for people working collectively for social change at local and global levels. The activities in this handbook aim to meet learners where they are at and enable meaningful engagement and appropriate, community-identified solutions to the climate crisis. The educational approach taken is a participatory, learner-centred, social action model of education which values the lived experience and knowledge that adult learners bring to the class. It is, at its core, a hopeful and empowering approach.

Handbook Design

The handbook is designed as a modular resource that will be added to each year. This chapter explains the background and rationale along with a recommended teaching and learning approach. Additional chapters contain activities and resources on specific themes or issues, starting with introductions to climate change and climate justice. Future chapters will focus on climate justice themes, such as fast fashion, food and agriculture, and carbon neutrality. The handbook is a collaborative development amongst City of Dublin ETB adult education tutors, management and external experts in Climate Justice Education.

How to use this Handbook

It is not necessary to have any expertise on climate change in order to facilitate these discussions and activities. The activities build learning by drawing on people's lived experience and knowledge. The activities use participative methodologies which include group discussions and role plays. Tutors are encouraged to use the material in an order that suits their context. You may wish to:

- mix and match activities to create your own workshop
- take one or two activities to integrate into a class of another subject
- lengthen or shorten the activities to suit your learners
- include elements to build literacy or digital literacy, for example by asking learners to take notes on worksheets or look up information online

To keep activities accessible and to ensure this handbook remains relevant for as long as possible, links to audio-visual material are not included. Tutors can choose material most appropriate to their contexts. Throughout the handbook, external websites and resources are suggested for further follow-up.

Finally, we welcome feedback on this handbook, especially from tutors who are putting the suggested activities into practice. Please send feedback to ClimateJustice@aes.cdetb.ie

Teaching and Learning Approach

> *"Global issues – such as climate change – urgently require a shift in our lifestyles and a transformation of the way we think and act. To achieve this change we need new skills, values and attitudes that lead to more sustainable societies. Education must respond to this pressing need by defining relevant learning objectives and learning content, introducing pedagogies that empower learners."*
> *UNESCO*

The aim of this handbook is to support adult educators to create empowering experiences that motivate action by learners, and provide opportunities for learners to critically engage with root causes and consequences of unsustainable practices and climate change. The teaching and learning approach adopted by City of Dublin ETB's Climate Justice Education Strategy draws on the following adult learning principles:

Adult/Community Education Principles

- Create a welcoming, supportive and respectful environment for learning and discussion.
- Use student-centred, creative and interactive methods and materials.
- Encourage a spirit of curiosity and exploration.
- Know your limits as tutor – don't be afraid to say you need to check or research something yourself.
- Value the lived experiences and expertise of adult learners.

Climate Justice Education Principles

- Explore root causes of climate change and related issues.
- Consider our own role as global citizens in causes/effects/solutions to climate change.
- Encourage an approach of solidarity (rather than charity) when discussing climate justice.
- Encourage critical thinking by bringing in diverse and challenging perspectives on the issue.
- Use resources and materials which are accurate, reliable and from different parts of the world.
- Challenge stereotyping of people and places.
- Highlight what we stand to gain nationally and globally from a fairer, greener approach.
- Dedicate time to inform ourselves about the issues as educators.
- Encourage meaningful action – help participants to develop skills and approaches to action.

Teaching and Learning Approach

The workshops and activities in the following chapters draw on teaching and learning methods that are participatory, learner-centred and justice-focused. These methods should seek to encourage and inspire social action.

The content of this handbook has a climate justice focus, which recognises that the causes and consequences of climate change are linked to social justice issues. Often climate change education will focus on individual responsibility and identifying personal choices individuals can make to reduce their carbon footprint. This module builds on that and encourages learners to understand how social justice needs to be at the heart of any action taken to combat climate change, and act collectively towards that goal.

The suggested activities encourage open discussion between you as tutor and the learners. This differs from traditional education which views the teacher as the 'expert' with all the knowledge who teaches from the top down. This is what Paolo Freire refers to as 'the banking model'4. A learner-centred approach values the experience and knowledge of people in their communities. In the context of climate change, this approach also encourages learners to make connections between their own experiences and those of others around the globe. It works to deepen understanding and foster solidarity and motivation for action. Paolo Freire referred to this approach as 'problem-solving education' and 'critical pedagogy'.

Appropriate Teaching and Learning Methods

- Group discussion
- Reflection / Journaling
- Creative project – Art / Crafts
- Visual aids
- Analysis of film and other media texts
- Role Play / Drama / Simulation
- Worksheets / Quizzes / Word searches / Comprehension
- Moving debate

Teaching 'Difficult Knowledge'

We recognise that engaging with the causes and consequences of climate change can be challenging. Some content on climate impacts is distressing and some of it relates to aspects of marginalisation that may already affect learners. You may, understandably, have concerns around this. Another concern could be that discussing social action or climate solutions may create a sense of placing responsibility on learners to solve an impossible problem. We share these concerns and have worked to ensure that the teaching and learning approach overall builds a sense of empowerment and hope rather than despair. It is important to remember that the climate crisis will not affect everyone equally and that it will impact on marginalised communities the most. It is essential to provide adult learners from those communities with access to information and opportunities for discussion. These conversations can allow them to build knowledge on the issues and be able to contribute to climate action and solutions: both at the level of their own communities and at a national level around government plans.

Active Hope

An important part of the teaching and learning approach is 'active hope', a practice that encourages people to recognise their power to respond to the challenges facing our world. Developed by Joanna Macy, Active Hope5 is about becoming active participants in bringing about what we hope for, as opposed to passive hope which is waiting for other people to bring about the change we want. Active Hope is a practice rather than a concept. It has three aspects.

1. We take a clear view of reality, and we do not wear rose-tinted glasses to view what is going on in the present. We face it, name it, and acknowledge what is happening around us.
2. We identify what we hope or desire in terms of the direction we would like things to move in or values we would like to see expressed. We take time to imagine what "being better" would look like for ourselves and others.
3. We take steps to move ourselves or our situation in that direction. In other words, we act in a way that is aligned with the future we want to create.

Active Hope Reflection and Debrief Exercise

You can use this debrief wherever you feel it is necessary. We particularly recommend it at the end of workshops or activities that have generated feelings of anxiety or helplessness.

Ask the learners to take 5-10 minutes individually to reflect on their feelings and thoughts about the activity or the workshop. If they want, they can express their experience through writing or drawing – but it is not necessary. If you like, the first time you do this debrief, you can model it for the learners with your own personal example.

Thinking about the activity we just finished, ask the group to complete the following sentences

Looking at the future, our concerns include…

We are grateful for…

What inspires us is…

Looking at the future, we are deeply hopeful that…

A part we can play in support of this is…

A step we will take towards this in the next week is…

> *"Climate change is not only a threat, it is, above all, an opportunity to create a healthier, greener, and cleaner planet which will benefit all of us. We must seize this opportunity." Greta Thunberg*

Climate Justice Education in Practice

CHAPTER 2

Understanding Climate Change

"Climate change is not only a threat,
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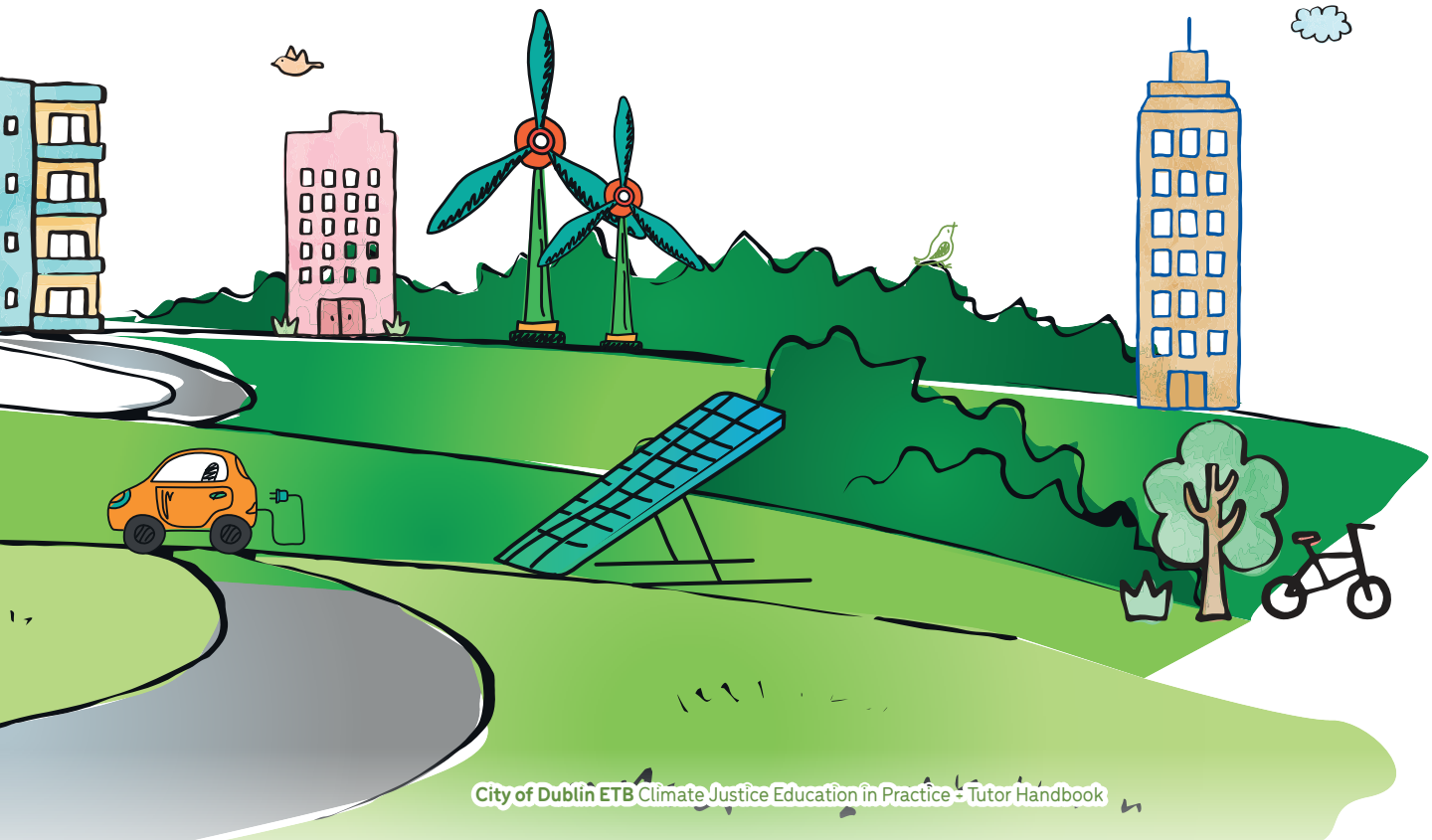
Greta Thunberg

Chapter 2 – Contents



Understanding Climate Change

This chapter contains four sections on the topic of climate change and the climate crisis. Each section contains a selection of activities that will help build learners' critical understanding of key concepts.

- **Section 2.1** – Exploring Climate and Climate Change
- **Section 2.2** – Consequences of Climate Change – the Climate Crisis
- **Section 2.3** – Causes of Climate Crisis
- **Section 2.4** – Climate Action and Solutions

This handbook aims to help you facilitate group discussions and simple activities with your learners to build critical literacy around key concepts related to climate change. You do not have to be an expert on the climate change issues discussed in the section. Guiding notes have been provided, to provide additional inputs to the discussion and learning process.

We have included sample resources, such as worksheets and creative exercises – you are welcome to adapt them or create your own. Suggestions of where to find to optional video material are also included. If you choose to use PowerPoint slides, we have signposted credible sources of data where you can find up-to-date information to supplement your slides.

There are suggested times on each activity as a guide but feel free to adjust the timing to suit your group. There is no minimum or maximum number of learners required.

We have not included icebreaker activities or closing activities. You will have your preferred methods for these, tailored to each group. However, we do encourage you to take the time to introduce the topic as gently as possible, allow plenty of time for discussion, and always debrief after the activities. You can find a sample closing activity with an active hope element in Chapter 1 of this handbook.

Section 2.1 –
Exploring Climate and Climate Change

Overview – Aims and Objectives

The aim of this section is to explore climate change terminology and key concepts with learners, starting from learners' own understanding of climate change. The objective is for learners to understand and be able to explain a range of terms related to climate change. The section will:

- explore learners' own understandings of climate change
- introduce the concept of the 'greenhouse effect'
- introduce definitions of climate change

Section 2.1 – Activities

- **Activity A** – Climate Change Photo Discussion
- **Activity B** – What is Climate Change?
- **Activity C** – Understanding Key Terms
- **Activity D** – The Greenhouse Effect
- **Activity E** – Definitions of Climate Change

Activity A – Climate Change Photo Discussion

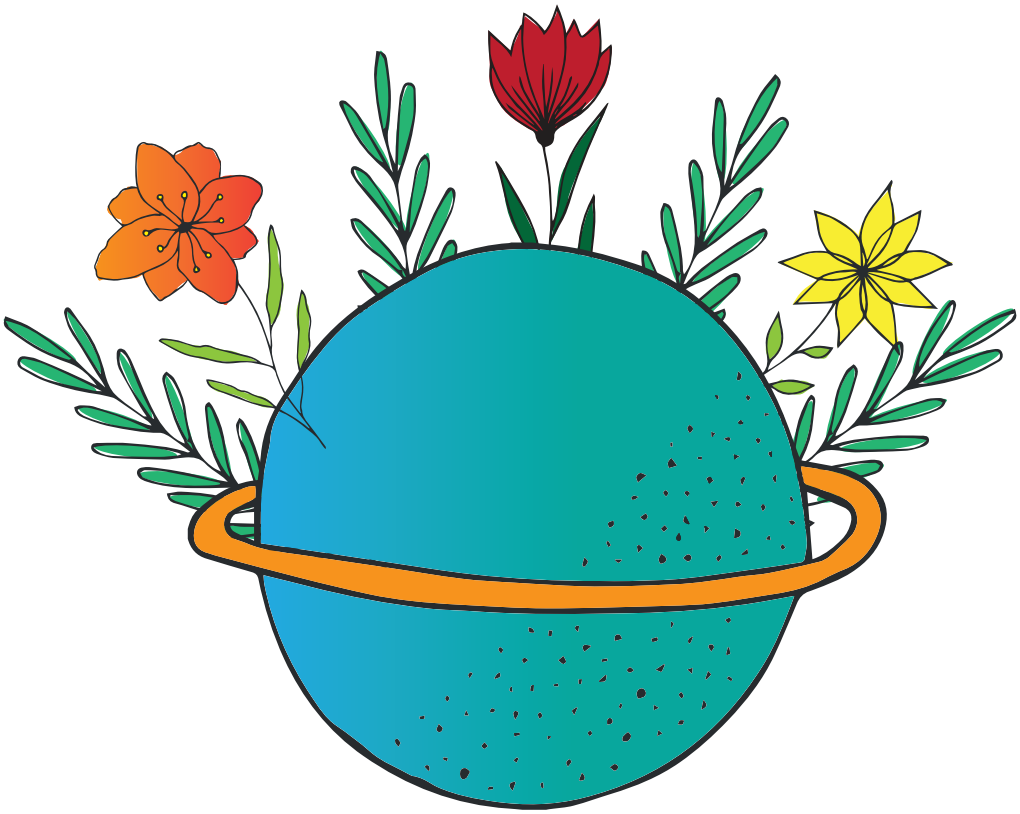
Materials required: *Images relating to climate change; flipchart or whiteboard and markers*

Print out the images on the following pages or use images from newspapers, online websites etc. Pin them around the room or lay them out on tables or the floor. Ask learners to spend a few minutes looking through them and to each choose one that to them represents climate change. Do a go-around for each person to explain why they chose that image. People's responses will likely show the many ways we can understand climate change (see guiding notes). Capture the feedback to use in later activities.

Guiding Notes for Tutors

Different photos represent different aspects of climate change. Some relate to climate impacts in Ireland and in other parts of the world; some relate to causes of climate change. Some of these causes are local and relate to everyday life, such as traffic. Others are global, such as coal fired power stations, or deforestation. Some photos relate to climate activism, such as the youth climate movement.

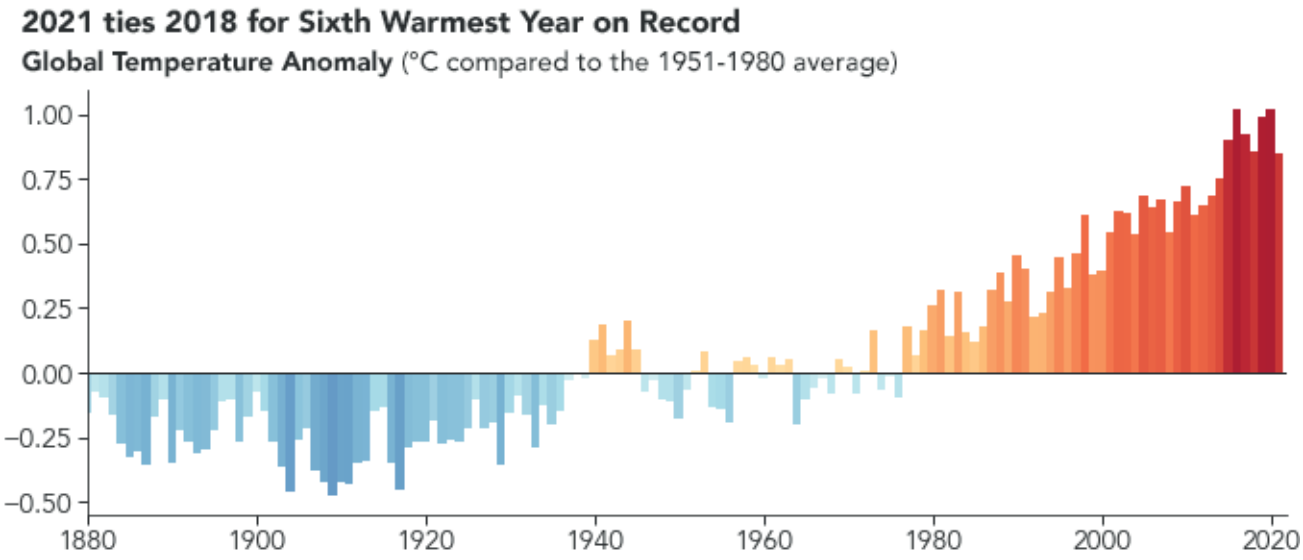
Learners might express very different responses to the images and there could be expressions of resistance or anxiety or disbelief. We encourage you to draw on your skills as a facilitator to allow these expressions to emerge without judgment or comment. If you wish to take reflective notes after the section, you may find them useful for later activities.



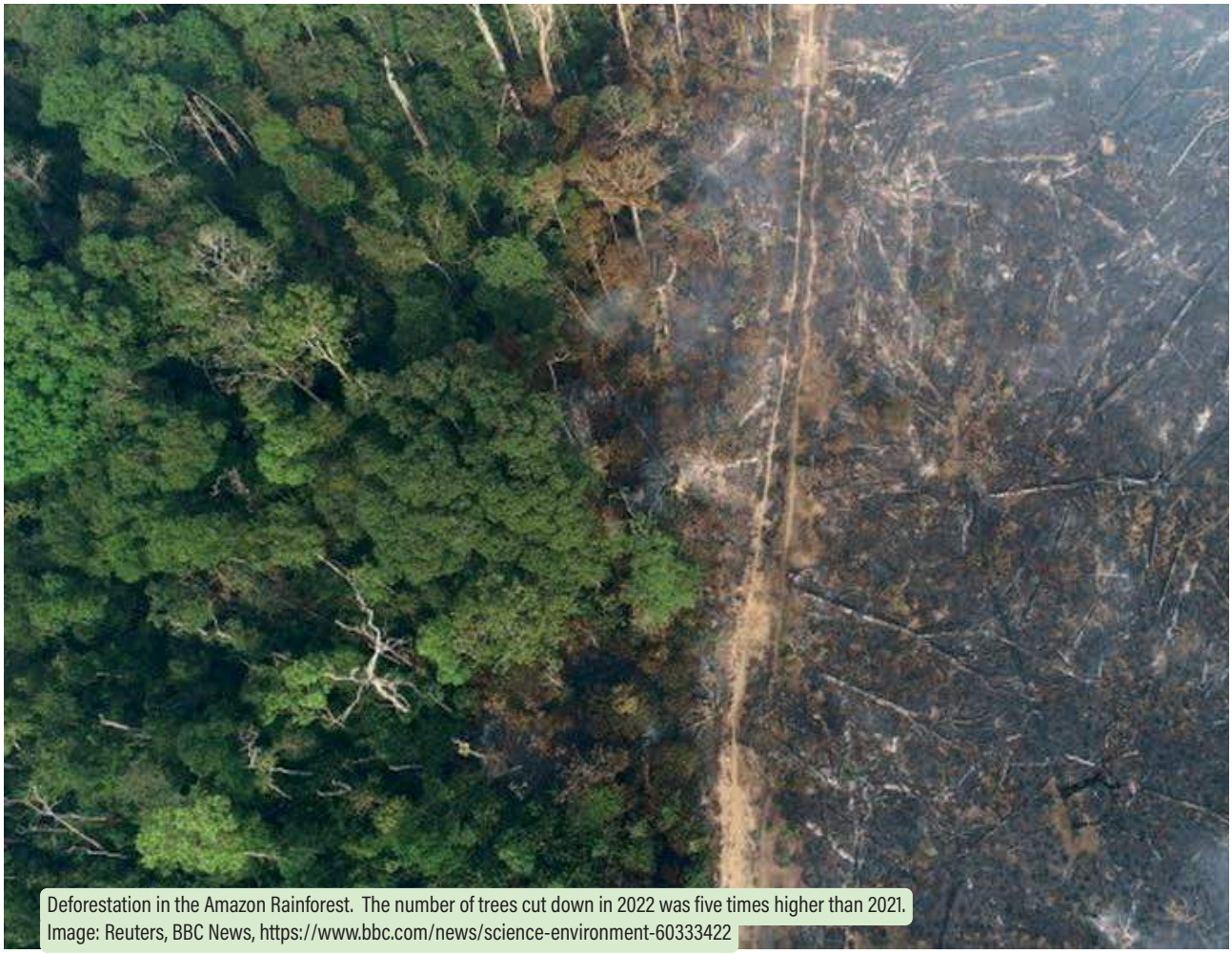
Credit: "Coal power plant" by peggydavis66 on Flickr, licensed under CC BY-SA 3.0.

Credit: "Traffic jam" by buzrael on Flickr, licensed under CC BY-NC 2.0

Credit: "Thailand/Ayutthaya/Main Road Over flow" by dany13 on Flickr, licensed under CC BY-NC 2.0.



Changes in global temperatures between 1880 and 2021. Source: NASA Global Institute for Space Studies. https://earthobservatory.nasa.gov/world-of-change/global-temperatures



Deforestation in the Amazon Rainforest. The number of trees cut down in 2022 was five times higher than 2021.
Image: Reuters, BBC News, https://www.bbc.com/news/science-environment-60333422

Credit: "Global Climate Strike 2019-03-15 - 06" by garryknight on Flickr, licensed under CC BY 2.0

Activity B – What is Climate Change?

Materials required: Flipchart or whiteboard and markers.
For creative activity – newspapers, magazines, scissors, glue, A2 or A3 card.

Ask learners to take two or three minutes to think individually - what pops into your head when you hear the words 'climate change'? What images come to mind? What emotions do you feel when you think about or talk about climate change?

Ask them to discuss the question: What is climate change? Let them know they can talk about it from any perspective: their own experiences; media stories they have seen or heard; stories or perspectives they have heard. The aim is to share with others in their group everything they know about climate change. Give them 10 to 15 minutes to discuss, then invite each group to provide a summary of their discussion to the main group. After feedback is given, ask questions that allow everyone to reflect on what they have heard:

- What strikes you after hearing all of this?
- Are you surprised by anything you have heard today?

Capture the feedback using a flipchart or other method, taking note of keywords mentioned. If you wish, keep a record of these initial thoughts on climate change to revisit in other activities.

Creative activity: Ask learners to use images from the newspapers and magazines to create a Climate Change collage. Explore with the learners why these images were chosen and follow up with the same reflective questions – What strikes you after hearing all of this? Are you surprised by anything you have heard today?

Guiding Notes for Tutors

The purpose of this activity is to explore what learners already know about climate change, as such there are no essential inputs to cover. However, if learners mention changes to weather patterns, it might be useful to clarify with learners the difference between weather and climate:

Weather is the short-term changes we see in temperature, clouds, rain, humidity and wind in a region or a city. Weather can vary greatly from one day to the next, or even within the same day. In the morning the weather may be cloudy and cool. By afternoon it may be sunny and warm.

The climate of a region or city is its weather patterns over many years. This is usually different depending on the season. For example, a region or city may tend to be warm and humid during summer, but it may tend to be cold and snowy during winter. The climate of a city, region or the entire planet generally changes very slowly. These changes take place over decades or over hundreds or thousands of years1. Weather temperatures can change dramatically over one day but even tiny changes in global climate temperature – for example 3 or 4 degrees C - will have a serious impact.

1 NASA (2011) "What Are Climate and Climate Change?" https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-is-climate-change-58.html.

Activity C – Understanding Key Terms

Materials required: Flipchart, whiteboard or smartboard and markers, Key Terms Handout, art materials (if available)

Ask learners to create something that represents their favourite season using any medium – e.g. art, song, drama, dance, poetry, creative writing, a descriptive paragraph. Ask them to share their work with the rest of the group and explain why they chose a particular season.

Next, ask learners to define the following key terms with support from you, where needed: Weather, precipitation, temperature; humidity; season, climate, climate change

Guiding Notes for Tutors

Weather	*Weather refers to day-to-day temperature, precipitation, and other atmospheric conditions.*
Precipitation	*Any liquid or frozen water that forms in the atmosphere and falls back to earth.*
Temperature	*How hot or cold something is. This is measured by degrees Celsius in Ireland.*
Humidity	*The amount of moisture or water vapour in the air. Ireland has a high humidity level especially when it is cold – e.g., 'cold and damp' weather.*
Season	*How the year is divided according to weather patterns and/or activities (e.g., harvesting). Ireland has four seasons – spring, summer, autumn, winter. Tropical countries have two – wet or monsoon and dry.*
Climate	*The pattern of weather in a particular region over a set period of time, usually 30 years. The pattern is affected by the amount of rain or snowfall, average temperatures throughout the year, humidity, wind speeds and so on. Ireland has a temperate climate, in which it doesn't get too hot or too cold.*
Climate Change	*Climate change is more than just warmer summers, it can bring about serious weather events, like storms or floods that can destroy homes and lives. Forest fires are examples of extreme weather that threaten our communities. Ireland is seeing strange weather patterns too. Our winters are warmer than ever before. As the earth heats up, plants begin to bloom in winter months rather than spring which impacts on the birds, animals and insects who depend on them for food. Our seasons are changing, and this change affects our sensitive ecosystem.*

Give the learners the Weather and Climate Handout to read and complete. Discuss with your group any strange weather patterns you have seen recently. This will likely lead to a conversation about climate change.

Ask learners to complete the Introducing Climate Change Worksheet.

Weather and Climate Handout

What is the difference between 'weather' and 'climate'?

The difference between weather and climate is time. Weather refers to local conditions over a short period of time. For example, you can have a hot weather spell for a week or two or you can have a few days of rain or a few minutes of hailstones. The weather can be very different in one day and this is normal for Ireland. Certain weather events can cause a lot of damage – storms, droughts, hurricanes.

Climate refers to the patterns of weather we see over a much longer period of time - thirty years or more. Climate describes the weather conditions we can expect to see at a certain time of the year. The climate of Ireland is mild, humid and changeable with lots of rain. Our winters are not too cold, and our summers are not too hot.

Ireland has four seasons – India has six seasons, and some tropical countries have two seasons – monsoon and dry.

What is your favourite season?

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Have you noticed any difference in your favourite season's weather patterns lately?

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Seasons	Celtic Calendar
Autumn	*August,* *September,* *October*
Winter	*November,* *December,* *January*
Spring	*February,* *March,* *April*
Summer	*May,* *June,* *July*

Introducing Climate Change Worksheet

What does Climate Change mean?

Climate change means the climate we are used to having is changing. Earth's climate is always changing – for example, twenty thousand years ago, Ireland was covered in a thick ice sheet stretching to Scotland. However, in recent times, scientists have noticed unusual changes in the earth's climate. The temperature has been rising much more quickly than expected. There is lots of proof to show this is being caused by human activity, such as burning coal and oil. The past five years have been the warmest five years in centuries, and this is having a big impact on Earth's plants, animals and people. If the climate continues to get warmer at this rate, millions of people will be affected.

What is climate change?

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What serious weather events can climate change bring?

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How are our seasons changing?

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Activity D – The Greenhouse Effect

Materials required: *Printouts of greenhouse diagram handout and worksheets. Optional: video, internet connection, computer and projector*

Give each learner the diagram handout of the greenhouse effect. Ask learners to spend a moment or two observing it. Ask learners if they have any comments or questions. How does it relate to what they already know about climate change?

Optional: Search the YouTube channels of NASA, National Geographic, the UN, or media channels like DW Planet A, BBC Earth, or Al Jazeera English to find a video about rising temperatures and/or climate impacts that's 5-10 minutes long and watch it together after viewing the diagram.

Discuss the diagram and/or video with learners using the guiding notes to clarify any questions they may have. Learners can then complete either or both worksheets.

Guiding Notes for Tutors

The greenhouse effect is the way in which heat from the sun is trapped close to Earth's surface by "greenhouse gases." These gases act like a blanket wrapped around Earth, keeping the planet warmer than it would be without them[2]. Without greenhouse gases, the sun's heat would immediately rebound off the Earth's surface back into space leaving the planet very cold (potentially up to 33°C colder).

You might find it useful to help the group distinguish between global warming and climate change:

- *Global warming is the heating up of the Earth caused primarily by the burning of fossil fuels (oil, coal and natural gas), which releases heat-trapping carbon dioxide and other greenhouse gases (methane, nitrous oxide) into the atmosphere.*
- *Climate change is the altering of climate patterns (for example, more rain events, more intense storms, floods or droughts) on Earth caused by global warming and other consequences of the burning of fossil fuels[3].*

Greenhouse gases occur naturally, but human activity in recent years has increased the amount of greenhouse gases in the atmosphere, leading to more heat being trapped than usual. The human activities most responsible for increased greenhouse gases are:

Human Activity		Increases
Burning of gas, oil and coal – also known as fossil fuels	*When fossils fuels are burned, they release CO_2 into the atmosphere.*	CO_2 – carbon dioxide
Increased livestock farming	*Cattle and sheep produce large amounts of CH_4 - methane - when they digest their food.*	CH_4 – methane
Use of fertilizer in intensive farming	*Large-scale use of nitrogen-based fertilizer increases the amount of nitrous oxide in the atmosphere.*	N_20 – nitrous oxide
Deforestation	*Trees absorb CO_2. Large-scale cutting down of trees means more CO2 stays in the atmosphere.*	CO_2 – carbon dioxide

2 NASA, "What is the Greenhouse Effect?" https://climate.nasa.gov/faq/19/what-is-the-greenhouse-effect/.
3 Mr Geogwagg Geography, "Greenhouse Effect and Anthropogenic Warming" https://mrgeogwagg.wordpress.com/2015/06/24/greenhouse-effect-and-anthropogenic-warming/

The growth of industry in modern times has led to a much greater concentration of greenhouse gases in earth's atmosphere. By 2020, CO2 in the atmosphere had risen to 48% above its pre-industrial level (before 1750)[4]. More gases mean more heat is trapped in the atmosphere which causes global warming – like adding more and more blankets! Global warming in turn is causing climate change.

If the discussion turns to fossil fuels, you can relate it to the small group discussions on what climate change is (where learners may have discussed causes like emissions from transport). You can also use some of the images from 'Activity 1' to remind learners of some of the causes and impacts of rising temperatures.

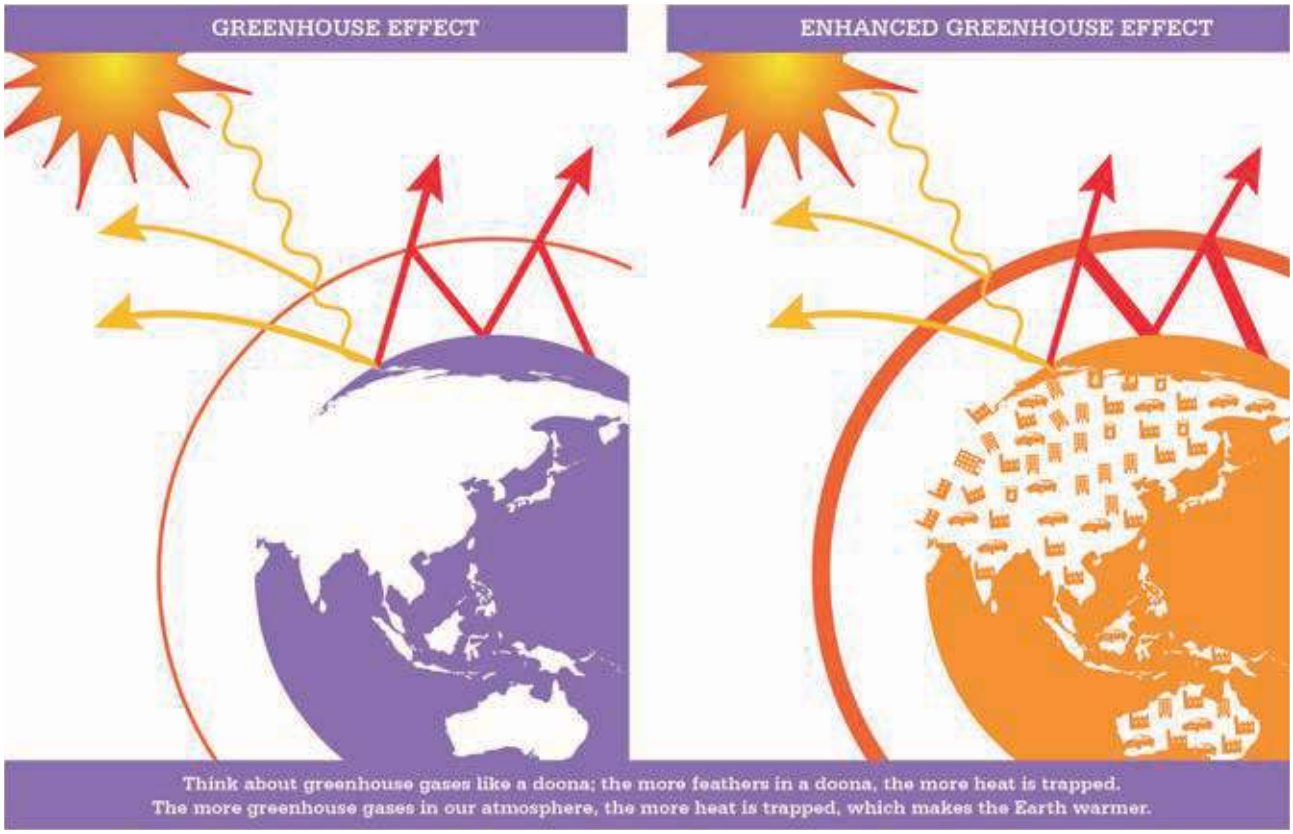
Additional Resources - Look up NALA's Climate Change in Plain English webinar.

Answer Key to Multiple Choice Worksheet:

1. *False – The gases present in the atmosphere (water vapour, carbon dioxide, methane, etc.) all contribute to the greenhouse effect, so there is more than just one gas causing it.*
2. *Occur both naturally and due to human activities.*
3. *Carbon dioxide.*
4. *Global warming.*
5. *All of the above.*

4 IPCC 2007: Chapter 1: Historical Overview of Climate Change. IPCC WG1 AR4 Report. IPCC Secretariat, Geneva, Switzerland.

Greenhouse Effect Handout



The greenhouse effect is a process where radiative energy from the sun passes through the athmosphere and warms the surface of the Earth. The Earth's surface then releases most of this energy as heat, back into the athmosphere. Greenhouse gases absorb some of the heat and raise temperatures on Earth's surface, making it suitable for life.

Human activities, particularly the burning of fossil fuels, are adding more greenhouse gases to the athmosphere. This is enhancing the greenhouse effect, trapping more heat and causing global temperatures to rise.

Human Activity		Increases
Burning of gas, oil and coal – also known as fossil fuels	When fossils fuels are burned, they release CO2 into the atmosphere.	CO_2 – carbon dioxide
Increased livestock farming	Cattle and sheep produce large amounts of CH4 - methane - when they digest their food.	CH_4 – methane
Use of fertilizer in intensive farming	Large-scale use of nitrogen-based fertilizer increases the amount of nitrous oxide in the atmosphere.	N_20 – nitrous oxide
Deforestation	Trees absorb CO2. Large-scale cutting down of trees means more CO2 stays in the atmosphere.	CO_2 – carbon dioxide

Greenhouse Effect Worksheet

1. There is only one gas that causes the greenhouse effect.

- ☐ True
- ☐ False

2. CO_2 stands for:

- ☐ Carbon monoxide
- ☐ Carbon dioxide

3. Greenhouse gases:

- ☐ Occur naturally.
- ☐ Occur due to human activities.
- ☐ Occur both naturally and due to human activities.

4. As the greenhouse effect becomes stronger due to burning of fossil fuels, more and more heat will be trapped on the Earth, increasing the average temperatures. What is this called?

- ☐ Global heating
- ☐ Global warming
- ☐ Earth heating
- ☐ Earth warming

5. Who needs to take action to reduce greenhouse gases?

- ☐ Governments
- ☐ Big businesses
- ☐ Oil and gas Companies
- ☐ People
- ☐ Farmers
- ☐ All of the above

Greenhouse Effect Worksheet

Read the paragraphs below and answer the questions.

Greenhouse Gases The greenhouse effect happens when gases in Earth's atmosphere trap the Sun's heat. This process makes Earth much warmer than it should be. In a greenhouse the heat stays trapped, and the atmosphere is very warm. Greenhouse gases include H_2O (water in gas form), carbon dioxide (CO_2) methane (CH_4) and nitrous oxide (N_2O).

Too much greenhouse gas causes the Earth to heat up as heat gets trapped in the atmosphere. Many different types of plants and animals are threatened as our planet gets hotter. Global warming as a result of greenhouse gases in the atmosphere is known as the 'greenhouse gas effect' because heat is comin g in and getting trapped inside, exactly like a greenhouse.

What does too much greenhouse gas do?

.....

.....

Human activities over the last two centuries have caused the biggest increase in greenhouse gases through burning coal and gas for **industry, transport and electricity and heat**. Other actions – such as cutting down forests – also increases the amount of greenhouse gases in the atmosphere.

List 3 activities that people do that add to greenhouse gas emissions.

1. .....
2. .....
3. .....

The biggest natural contributor of **methane gas** comes from cattle. 70% of the methane gas comes from chemical reactions in the cows' stomachs as their digestive system breaks down the plants eaten while grazing. How can methane problems in cattle increase global warming and climate change? The problem is that there are one billion cattle around the globe producing methane gas by passing wind. We love eating meat. One billion cows are a lot of cows. It is also a lot of wind being passed. The farmers could feed them different food or people could eat less meat. These activities release greenhouse gases into the atmosphere, causing the planet to heat up.

Name one thing farmers could do to reduce methane gas.

.....

.....

Name one thing people could do to reduce methane gas.

.....

.....

Activity E – Definitions of Climate Change

Materials required: *Printouts or PowerPoint slides of definitions of climate change or cartoons.*

Ask the group to call out words or phrases they think of when they think of 'climate change'. Working together and using their words, draft a definition of climate change that everyone agrees with. Next, read the definitions on the handout with the group. Check for understanding - underline and explain words that people are not familiar with or do not understand.

Ask learners what they think of the definitions; how are they different or similar to their own understandings of climate change? Do they agree with the definitions? What differences do they notice between the two definitions?

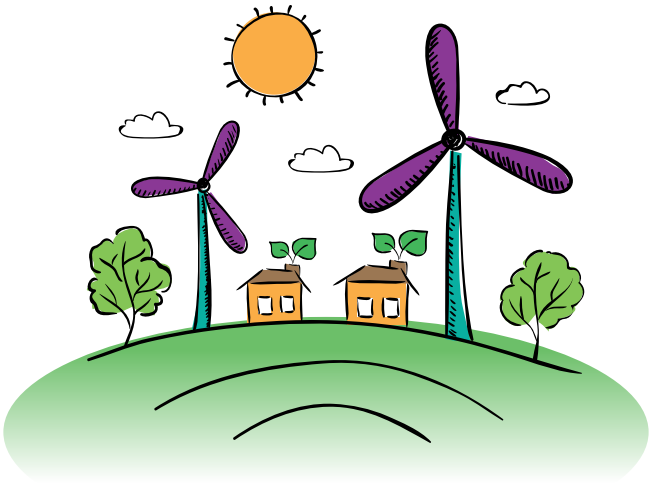
Alternatively, print out or project the cartoons. Ask learners what they notice about the cartoons and facilitate a full group discussion. You can use the definitions of climate change to input into the discussion.

Guiding Notes for Tutors

It may be useful to refer back to 'Activity B', the group discussion on 'What is climate change?' and remind the group of any points they made which relate to these definitions. The definitions here refer to greenhouse gases and the greenhouse effect (discussed in 'Activity D') so learners will need to be familiar with these already.

Something that the learners might note is that both definitions of climate change mention natural climate change as well as human-caused climate change. Previous climate changes in the history of the planet can be explained by natural causes, while current climate change can only be explained by the amount of carbon dioxide released by fossil fuel burning by humans. Records of past climate changes indicate that change happened on time scales of thousands to millions of years. The rapid global rise in temperature that has occurred over the past 150 years has never happened before. It has only happened since humans began burning fossil fuels during the Industrial Revolution.

We suggest ending this section with the active hope debrief, which you can find at the end of Chapter 1 of this handbook.



DEFINITION 1
NALA

CLIMATE CHANGE

is a change in the climate of a region over time **due to natural forces or human activity...**

It is the change in climate **caused by higher levels of greenhouse gases** in the atmosphere due to human activities as well as natural climate changes.

5 NALA (2009) "A plain English guide to environmental terms," https://www.nala.ie/publications/a-plain-english-guide-to-environmental-terms/; UN "What is Climate Change?" https://www.un.org/en/climatechange/what-is-climate-change; Met Office "What is Climate Change?" https://www.metoffice.gov.uk/weather/climate-change/what-is-climate-change

DEFINITION 1
UNITED NATIONS

CLIMATE CHANGE

refers to long-term shifts in temperatures and weather patterns.

These shifts may be natural...

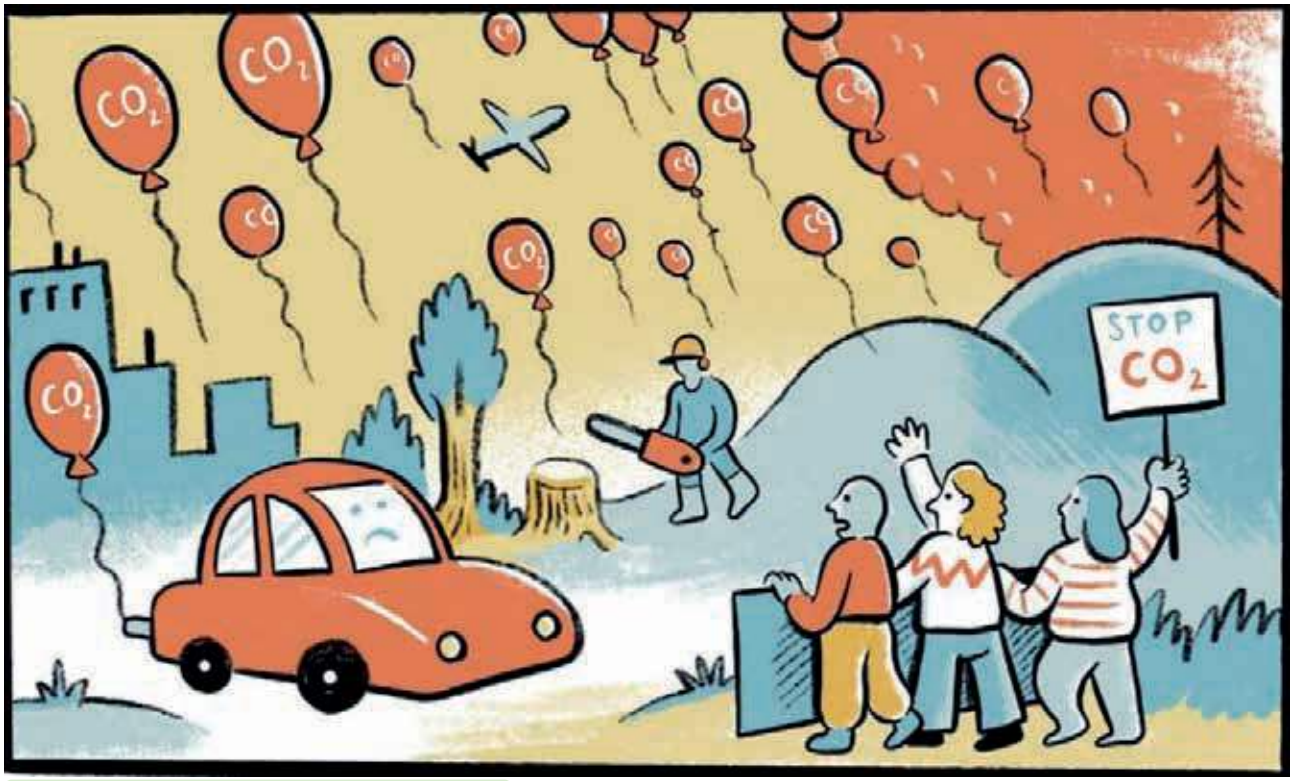
But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas. Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures.

DEFINITION 1
UK MET OFFICE

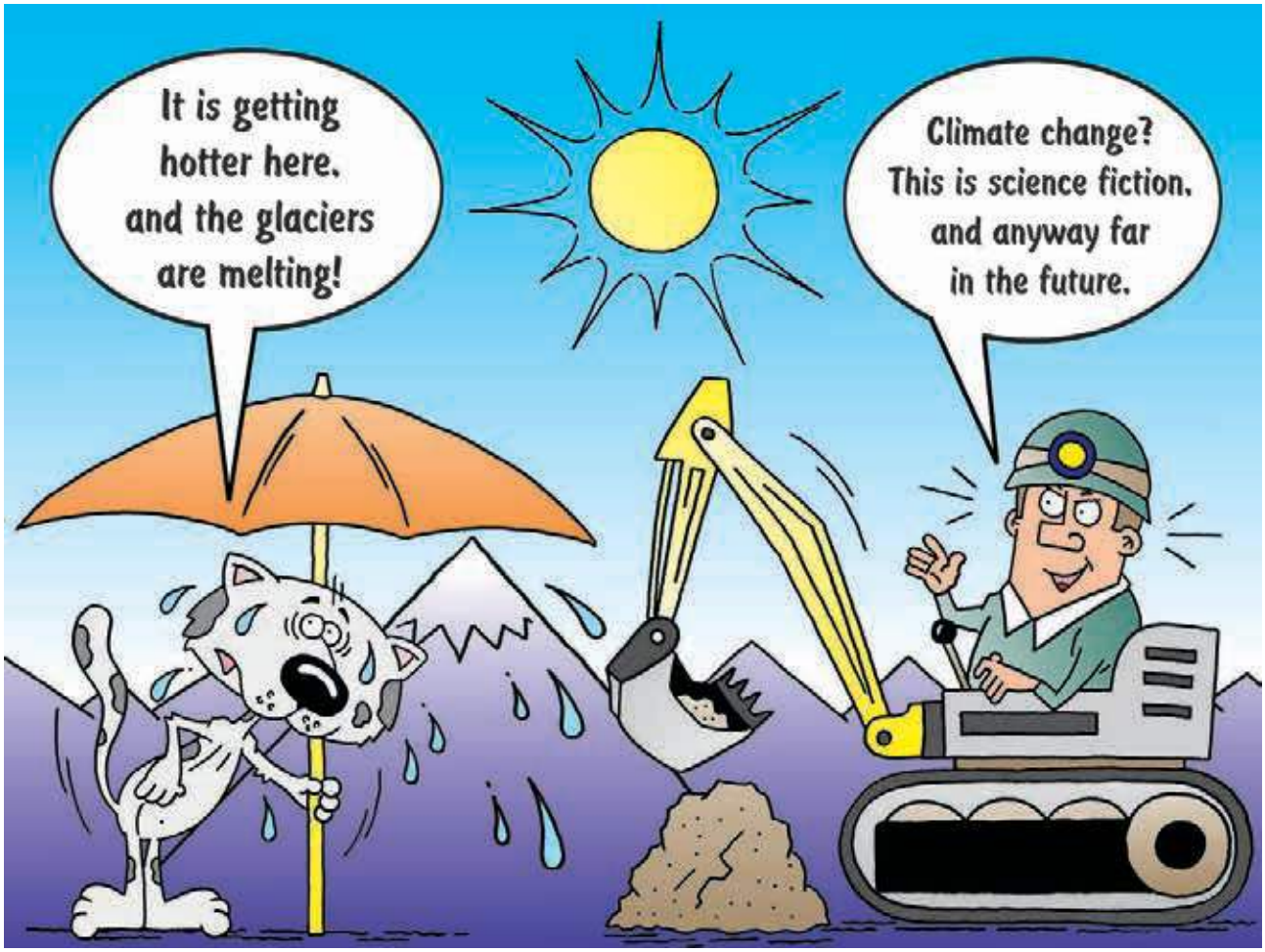
Climate change is the long-term shift in average weather patterns across the world.

Since the mid-1800s, humans have contributed to the release of carbon dioxide and other greenhouse gases into the air.

This causes global temperatures to rise, resulting in long-term changes to the climate.



Source: Bulletin of Atomic Scientists, by Matteo Farinella



Source: Zoi Environmental Network. https://www.flickr.com/photos/zoienvironment/7751737644

Section 2.2 – Consequences of Climate Change

Overview – Aims and Objectives

The aim of this section is to explore the consequences of climate change and climate breakdown at local and global levels. The objective is for learners to be able to outline some of the consequences of climate change and explain some key terms. This section is a stepping stone, moving from an understanding of what climate change is in Section 2.1 and building towards Section 2.3 on the causes of climate change.

Section 2.2 – Activities

- **Activity F** – Changing Climate Poster or Collage
- **Activity G** – Definitions; Cloze Exercise
- **Activity H** – Brainstorm on the Consequences of Climate Change
- **Activity I** – Tipping Point Case Study

As the section build to create in-depth, critical understanding, learners may respond with feelings of negativity, anxiety or resistance. Use your experience and knowledge of the group to determine the timing or appropriateness of some of these activities. Keep the concept of 'active hope' at the centre of the discussions – see Chapter 1 for more information.

Activity F – Changing Climate – Collage or Poster

Materials required: *Newspapers, magazines, scissors, large poster card, glue or Sellotape, coloured pencils, pens or markers, paints.*

Ask learners to discuss the question "How is our climate changing?" Let them know they can discuss it on different levels: changes they have noticed in their own lifetimes or from what family members or older people have told them; changes that are noticeable in their own countries; and changes that are noticeable around the world or changes that they have heard about through the media. Ask the learners to search the newspapers and magazines for words or images that reflect their discussions and create a poster or collage. They can add drawings or text to the images they choose.

Guiding Notes for Tutors

If learners are struggling to identify changes in climate, you can ask if they think there are differences in:

- *Seasons – length / mildness / rainfall*
- *Temperatures – extreme heat / extreme cold*
- *Intensity / frequency of storms or droughts*

The purpose of this activity is to explore what learners already know about changes to the climate. Allow the discussion to be guided by learners' inputs.

Links with other activities

If some of their inputs refer to changing weather patterns or rising temperatures, the tutor might find it useful to review the following and remind learners of some of the discussions during those activities:

- *the guiding notes for 'Activity B' on the difference between climate and weather*
- *the guiding notes for 'Activity C' on the difference between global warming and climate change*

While Ireland's location in the northern hemisphere protects it from the most severe effects, the Status of Ireland's Climate Report 2020 found clear evidence that global warming is causing the climate to change in Ireland. Here are some of the key findings:

- *The annual average surface air temperature in Ireland has increased by over 0.9°C over the last 120 years, with a rise in temperature in every season.*
- *Annual precipitation was 6 per cent higher in the period 1989 to 2018, compared to the 30-year period 1961 to 1990.*
- *Sea level rise and higher ocean temperatures are also being recorded in our oceans and coastal areas*[6].

6 Met Eireann (2020) "The Status of Ireland's Climate," https://www.met.ie/cms/assets/uploads/2021/08/The-Status-of-Irelands-Climate-2020.pdf

Activity G – Understanding Key Terms

Materials required: *Flipchart sheets, markers, Cloze Exercise handout. Optional – newspaper article on the climate crisis.*

This activity is designed to build understanding of key words, terms and concepts in climate change education. Brainstorm with the group around the words they hear frequently when they listen to news reports or people speaking about the climate crisis. Check with the group for understanding, helping them to use dictionaries or the internet to source accurate explanations for each suggestion.

Next, circulate or read out the newspaper article and ask learners to highlight or underline climate change terms. Again, check for understanding, using dictionaries or the internet for help.

Next, circulate the cloze exercise handout and help learners read and complete the sheet.

Definitions Cloze Exercise

Climate change is the altering of climate patterns (e.g., more rain, snow or sleet, more intense storms, floods or droughts) caused by burning of fossil fuels.

2°C is the amount of global warming above pre-industrial levels (200 years ago), which could lead to disastrous outcomes for humans (and countless other animals and plants). The earth has already warmed by 0.8°C above pre-industrial levels.

Carbon dioxide (CO_2) is the main greenhouse gas worrying climate scientists. A growing build-up of CO_2 from burning fossil fuels is warming the Earth.

Climate Justice is a term for viewing climate change as an ethical issue and how its causes and effects relate to justice, particularly social justice and environmental justice. This can mean looking at issues such as equality, and human rights.

Fossil fuels are the underground remains of plants and animals that lived millions of years ago, which can be processed and burned for energy use. Examples include oil, bitumen, coal and natural gas.

Greenhouse gas is a gas that traps heat and contributes to climate change. Some occur naturally and some occur because of human activity.

Global warming is the heating up of the Earth caused mainly by the burning of fossil fuels (oil, coal and natural gas), which releases heat, trapping carbon dioxide into the atmosphere.

Methane (CH_4) is a gas, and the main ingredient in "natural gas." Most of the methane released in Ireland is caused by our large cattle herd.

Renewable energy is energy that comes from resources that are continually replenished, such as sunlight, wind, rain, tides, waves and geothermal heat (heat from the ground). These energy sources do not release harmful greenhouse gases into the atmosphere so they are considered 'eco-friendly'.

Task 1: Fill in the missing words.

- Climate change is the altering of climate _____ (e.g., more rain, snow or sleet, more intense _____ _ or droughts) caused by burning of fossil fuels.

- Climate Justice is a term for viewing climate _____ as an ethical issue and how its causes and effects relate to _____ _____, particularly social justice and environmental justice. This can mean looking at issues such as _____, and human _____.

- Greenhouse gas is a gas that _____ heat and contributes to _____ change.

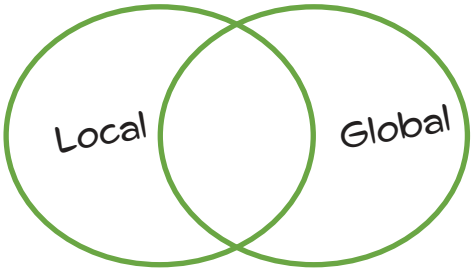
- Global warming is the _____ up of the Earth caused mainly by the _____ of fossil fuels (oil, _____ and natural gas), which _____ _____ heat, trapping carbon dioxide into the atmosphere.

- Renewable energy is_____that comes from resources that are continually replenished, such as _____ _____, wind, rain, tides, _____ and geothermal heat.

Activity H – Consequences Venn Diagram

Materials required: *Whiteboard or flipchart and markers*

Tell learners you are going to explore the consequences of climate change together – building on what you have just discussed about how the climate is changing.



Draw a big Venn diagram on the whiteboard or flipchart, label one side "local" and one side "global".

Ask learners to call out all the words or terms they can think of related to the consequences of climate change. As they call them out, ask if the consequence is happening locally, globally, or both. Note the answers on one side or the other of the Venn diagram or in the middle.

To inspire the brainstorm, you can show a printout of the map of climate change impacts on the next page. The map shows impacts like drought, water shortages, sea level rise, heatwaves. Ask learners how they think these impact on people, and where they might fit on the Venn diagram.

Encourage learners to think of how do these changes to the climate affect plant, animal and human life, and the consequences of climate change on people's lives and livelihoods, both in Ireland and in other countries and note some of these impacts down on the Venn diagram also.

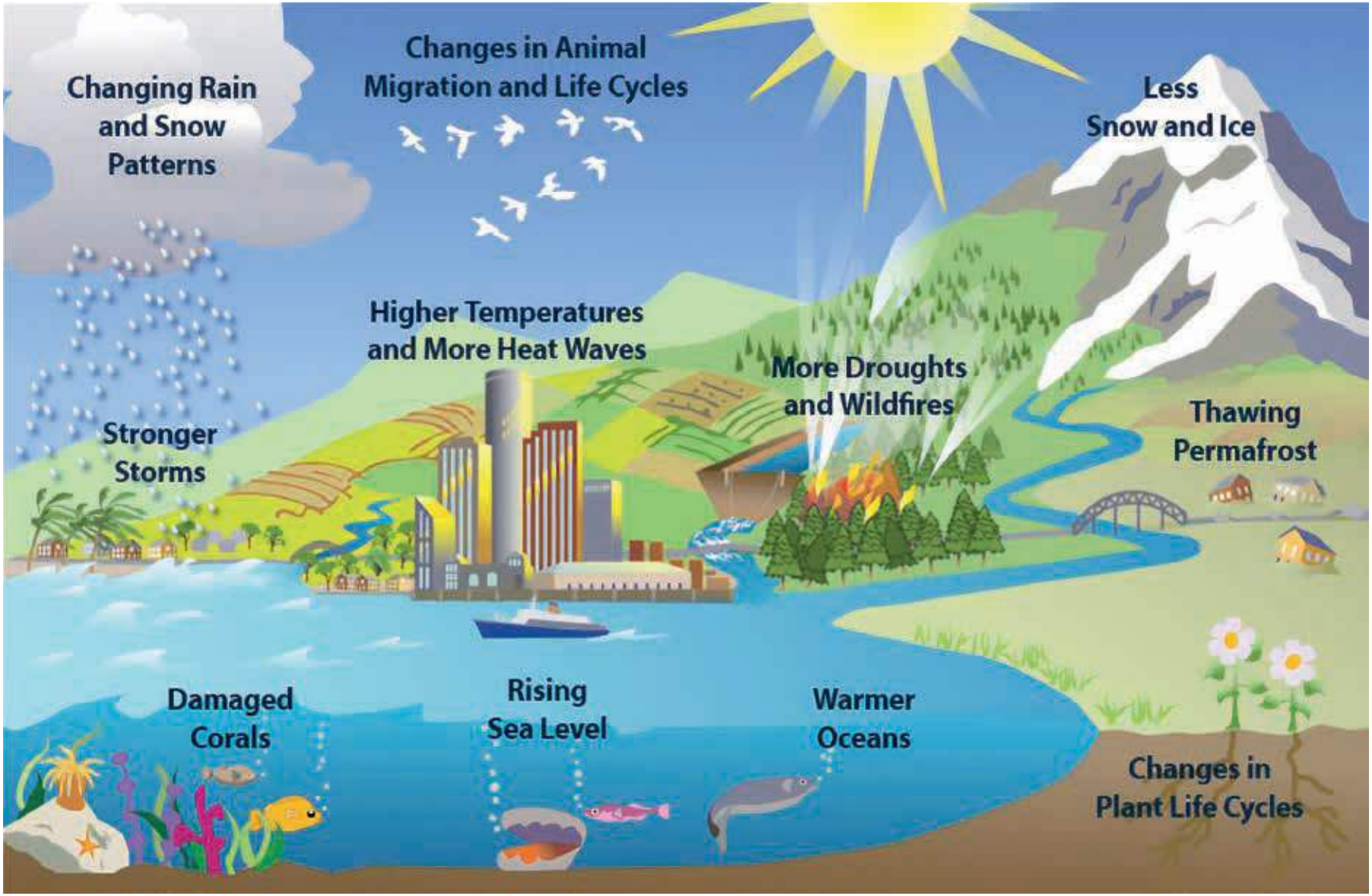
Guiding Notes for Tutors

Reassure learners that there are no 'right' or 'wrong' answers here – this activity explores their perceptions of how climate change impacts us at a local and global level. As the activity progresses, the enormous scale of the problem becomes clear, and this may cause anxiety. Acknowledging the seriousness of climate change is an essential aspect of climate justice education and there is comfort in doing this as a group. However, you can introduce elements of hope by pointing out some positive aspects. For example:

- *There is still time to avert the most drastic effects*
- *190 countries are working together on a global framework*
- *People of all ages are taking action*
- *Businesses are changing their practices*
- *Governments are bringing in 'green' policies*
- *Solutions to climate change can be positive for everyone (e.g., less pollution, cleaner air, water, healthier diet)*

Additional resources

See the climate change chapter of the Irish Environmental Protection Agency (EPA) website and MET Eireann for information on climate change consequences in Ireland.



Source: North Carolina Museum of Natural Sciences

Activity IA – Tipping Points

Materials required: *Map of the world, Tipping Points Handout.*

Suggested time: *30 minutes*

Ask learners to suggest examples of 'tipping points' that they have seen or experienced. What are the main characteristics of a tipping point? For example:

- The straw that breaks the camel's back – cumulative nature
- The point of no return – not possible to reverse

The Oxford Definition is "the point at which a series of small changes or incidents becomes significant enough to cause a larger, more important change."

Robert McSweeney of Carbon Brief (www.carbonbrief.org) uses the game of Jenga to explain tipping points. You play by removing bricks, one at a time, from a tower. As you play, the tower looks solid, but becomes increasingly unstable. Finally, a brick is removed and the tower collapses. The last brick was the tipping point for a permanent change to the tower.

Climate Tipping Points:

Climate Scientists have identified a number of climate tipping points that are linked to global warming and are likely to trigger a cascade of events that will in turn lead to major and permanent changes to the world we live in.

For example:

- Global warming triggers the collapse of Greenland's ice cap.

Explain to learners that you will be exploring a climate change tipping point about the Gulf Stream. Show learners the map of Gulf Stream system on the tipping points handout, either printed out or projected on a slide.

- Point out Ireland on the map and how far north it is. Other regions this far north, for example in Canada or Russia, freeze over completely every winter. Ireland has a relatively temperate climate given how far north it is, and the seas around Ireland average between 7 degrees Celsius in winter and 15 degrees Celsius in summer.
- Explain to learners that Ireland is kept warm by an ocean current known as the Gulf Stream - point out the red lines on the map. The Gulf Stream brings warm water from the tropics near Mexico and the Caribbean all the way up to Ireland and that warm water releases its heat, keeping all of Europe, not just Ireland, relatively warm.

- Explain that the Atlantic Ocean has naturally occurring cold currents of water that move from the north to the south – point out the blue lines on the map. These currents mix with the warmer waters.
- Explain that global warming is melting ice sheets around the Artic. As the ice sheets melt, they add more cold water to the cold currents moving south. This is like a second cold tap being added to the bath you are filling. The tipping point will come when enough ice sheets melt to cool the Gulf Stream permanently.

Ask learners what they think this tipping point would mean for Ireland. How do they feel about it? What do they think can be done to avoid it? Facilitate a group discussion.

Climate Action Tipping Points

It should be noted that there are positive tipping points happening too. These are where people make positive changes that could help stop us reaching the negative tipping points. The following are examples of positive tipping points:

Norway's government introduced incentives for people to change to electric cars, such as a 50% cut in parking charges and toll fees. By September 2022, electric cars accounted for 86.2% of all car sales. Norway plans that by 2025, all new cars will be electric.

Guiding Notes for Tutors

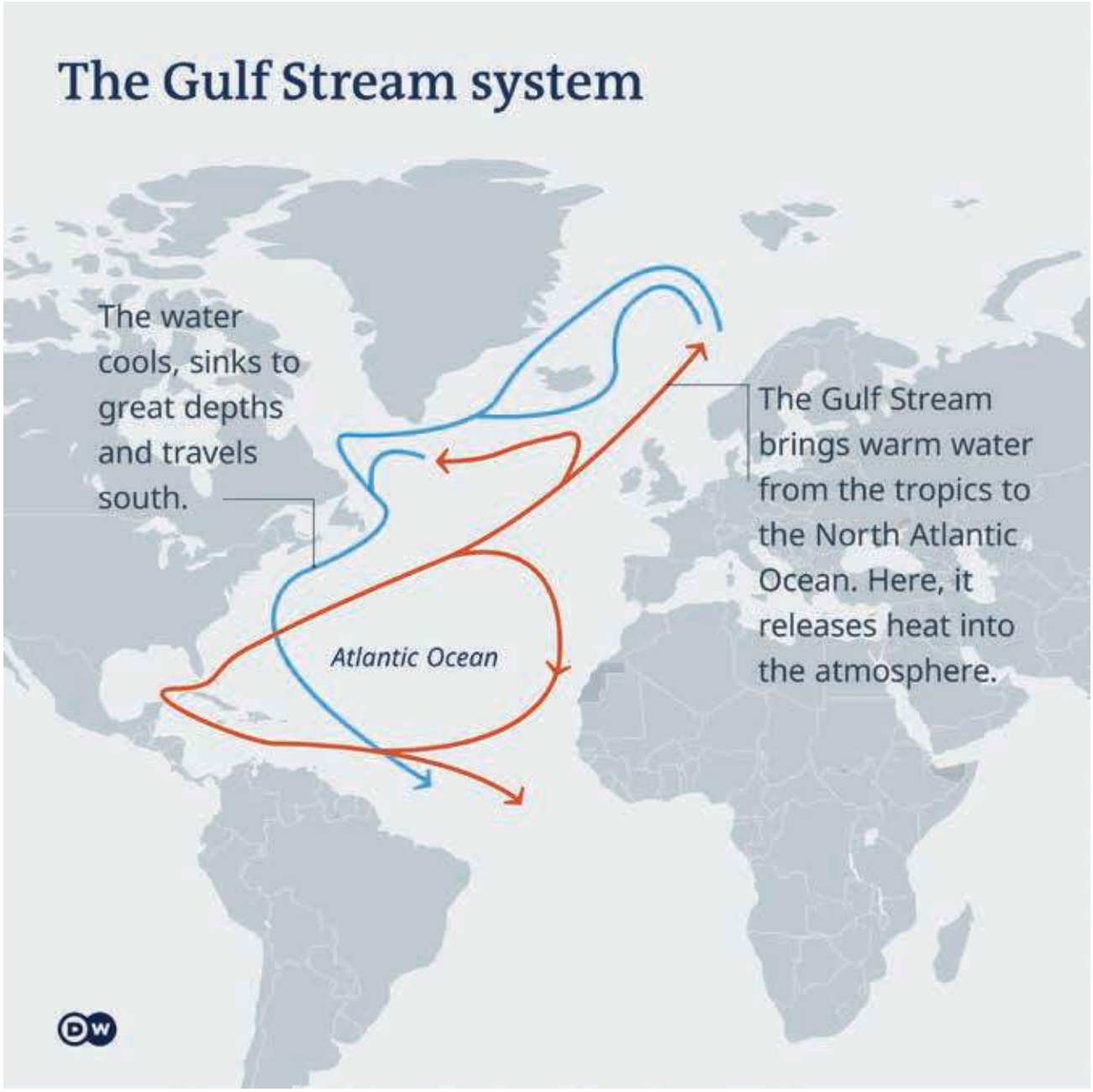
Tipping points are a large and complex topic, but useful and necessary to introduce to learners in order to build climate literacy. Tipping Points will be discussed frequently in public debate and mainstream media, so it is important terminology to learn. This activity introduces one tipping point, but there are several more, because the planet's climate system is interconnected. Changes to one area or ecosystem can causes changes to another – a kind of domino effect, which is not reversible. The main objective of this activity is to introduce the idea of the domino effect of climate change: that changes in one area can have a knock-on effect, causing bigger changes in other areas.

The idea that we are reaching 'tipping points' can be challenging and upsetting. It is important to remind learners that tipping points could be avoided if governments reduce emissions in line with the Paris Agreement and keep warming to around 1.5 degrees. The authors of the latest report from the Intergovernmental Panel on Climate Change (IPCC) wrote that if governments make "immediate, rapid and large-scale" cuts to greenhouse gas emissions, it could still help to stabilise global temperatures. Rebecca Solnit writes "it will take heroic effort, unprecedented cooperation, and visionary commitment. It would mean making profound changes in our societies, economies, our ways of doing things. But it is possible to do.[7]"

Additional resources

Look up climate tipping points on The Guardian, or the Carbon Brief website.

7 Rebecca Solnit (2021) "The IPCC's latest climate report is dire. But it also included some prospects for hope," https://www.theguardian.com/commentisfree/2021/aug/13/ipcc-latest-climate-report-hope



Deutsche Welle.

Activity IB – Tipping Points Research Activity

Ask learners to think about climate change in relation to the following. Discuss in pairs/ groups.

- the Amazon rainforest
- coral reefs
- the Gulf Stream
- glaciers/ Arctic/ Antarctic ice
- more electric cars being bought
- protest groups (Extinction Rebellion, Fridays for Future)
- solar power becoming cheaper

What do you know about these things?

What changes are happening?

Do you know any consequences to these changes?

Research:

Ask pairs or groups to choose one of the examples below. Use the internet to find two consequences of passing that tipping point. Then give feedback to the rest of the class. How do you feel about these tipping points? Can you take any positives from this? Can you identify any possibilities for social tipping points in your community?

Tipping Point	Positive or negative or both?	What are the consequences?
Melting ice sheets in the Arctic/Antarctic		
Higher numbers of electric cars		
Deforestation in the Amazon		
Increase in climate action groups		
Greenways and cycle paths		

Section 2.3 – Causes of Climate Change

Overview – Aims and Objectives

The aim of this section is to facilitate learners to explore the global causes of climate change. The objective is for learners to be able to briefly explain some of the sources of greenhouse gas emissions.

The section will examine responsibility for the causes of climate change and what can be done about it. The concept of 'climate justice' is introduced here because it is interlinked with the causes of climate change – for example, wealthier countries are much more responsible for increased greenhouse gases. Climate Justice is explored in more detail in Chapter 3.

Section 2.3 – Activities

- **Activity J** - Diamond Ranking Causes of Climate Change
- **Activity K** – Root Causes Tree
- **Activity L** – Exploring Evidence
- **Activity M** – Emissions and Emitters
- **Activity N** – Future Visioning Exercise

Activity J – Diamond Ranking Causes of Climate Change

Materials: *Whiteboard or flipchart and markers or smartboard; printouts of diamond ranking sheets and cards.*

Remind learners of Activity D when the group discussed how fossil fuel emissions cause the greenhouse effect, which causes global warming, which in turn causes climate change. Let them know that in this activity you are going to discuss some of the sources of greenhouse gas emissions. If the group is large, invite learners to get into smaller groups of three or four and hand out a diamond ranking sheet and set of cards to each group.

Ask the learners to place the cards on the diamond ranking sheet, with the sources of emissions that they think are the highest in Ireland at the top, and the sources of emissions that they think are lowest in Ireland at the bottom. Reassure learners that they are not expected to 'get it right' and that the activity is designed to help us think more about what is driving the increase in greenhouse gases.

The sources of emissions that cause climate change listed on the cards for ranking are:

- livestock agriculture
- private vehicle transport
- electricity and heating for homes
- business airline travel
- electricity and heating for industry and offices
- single-use plastic
- fast fashion
- food imports
- public transport

Give the groups around 15 minutes and then ask each group to give a short summary of their discussion. Let them know that later in the section you are going to be discussing these causes in more detail.

Guiding Notes for Tutors

It is not necessary to have the 'correct' ranking, as the purpose of the exercise is to build familiarity with some of the causes of climate change. However, you might find it useful to know that agriculture was the sector with the highest greenhouse gas emissions in Ireland at 35% of the total, followed by transport at 20% [8].

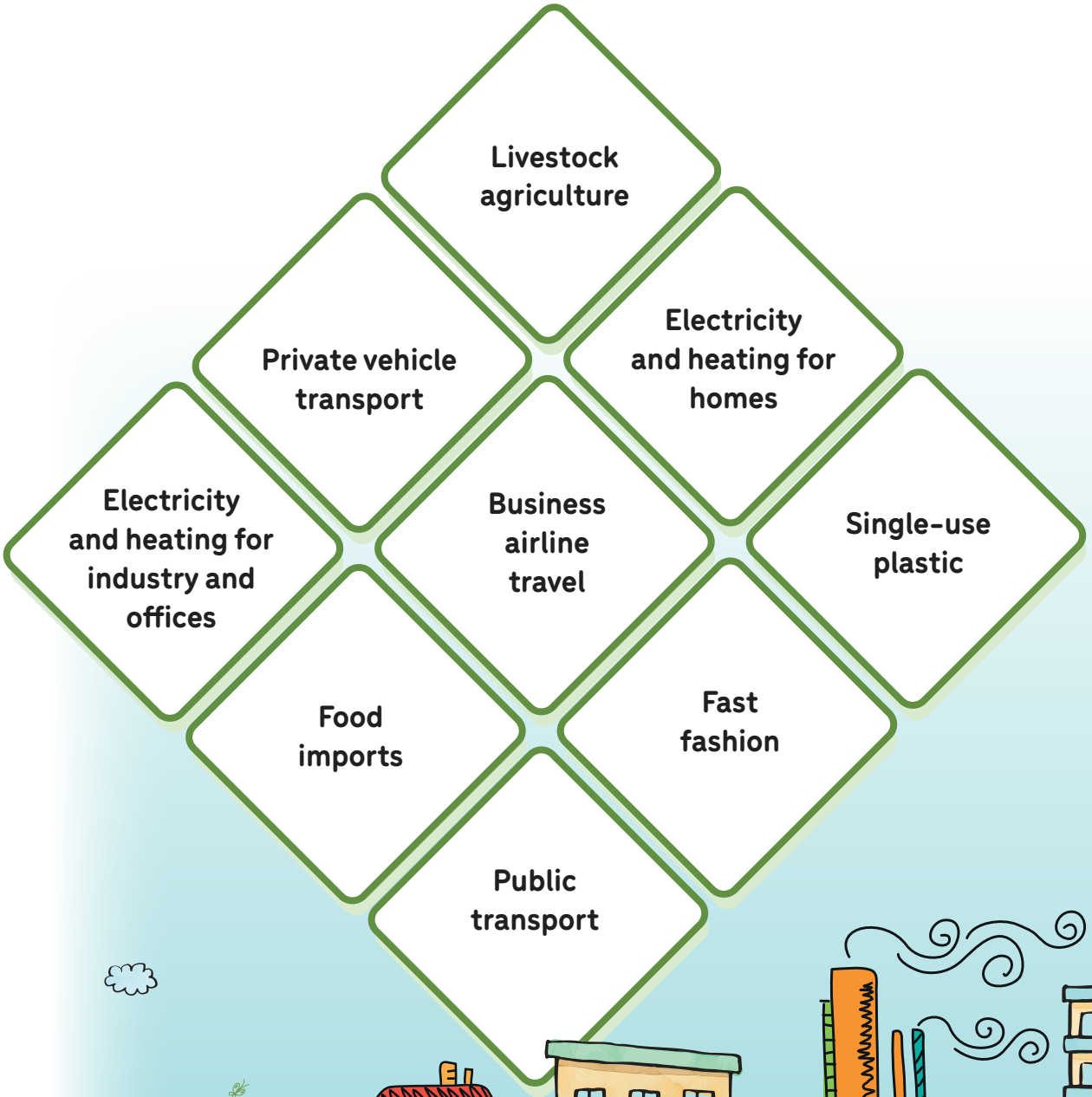
In the ranking exercise, the purpose of dividing transport according to private vehicle use, public transport, and business airline travel is to introduce the idea that people, and countries, are not all equally responsible for the causes of climate change. Similarly, with fast fashion and single-use plastic – the majority of responsibility for the fossil fuel emissions caused by production and distribution of these consumer goods lies with the corporations who produce and distribute the goods, and the countries who facilitate the production and distribution. Ordinary people, on modest incomes have little choice but to purchase goods which may have a higher environmental impact – such as mass-produced clothing. A climate justice perspective argues that the multinational corporations making enormous profits are much more responsible for the emissions than the individual consumer who buys a T-shirt in Penny's or non-organic vegetables.

Agriculture is potentially a more sensitive topic to discuss. Methane from livestock is the main contributor to Ireland's emissions from agriculture and many livelihoods depend on agriculture. We suggest focusing on the fact that Ireland imports much of our food while exporting most of the meat and milk that we produce – does this make sense in terms of emissions? We also suggest shifting responsibility from individual farmers, trying to make ends meet, to government policies that must support farmers transitioning to greener alternatives.

Some other causes of climate change not listed in the activity are deforestation and the cutting of peat bogs (as both forests and bogs absorb carbon dioxide from the atmosphere).

8 Central Statistics Office (2019) "Environmental Indicators Ireland 2019 – Greenhouse Gases and Climate Change," https://www.cso.ie/en/releasesandpublications/ep/p-eii/eii19/greenhousegasesandclimatechange/

Diamond Ranking Template



Activity K – Climate Crisis Root Causes Tree

Materials: *Markers, Climate Crisis Root Causes Tree Handout.*

This activity helps learners identify the root causes of climate change. Ask learners to draw a tree or use the printout on the next page. Label the trunk 'climate change' and explain that the branches are the **effects of climate change**, the roots are the causes. Ask learners to place the terms in the text box on the branches of the tree if they are the effects of climate change, or on the roots if they are the **causes of climate change**.

Go through the terms first and check for understanding of each term.

Use the points below to stimulate contributions from the learners if necessary:

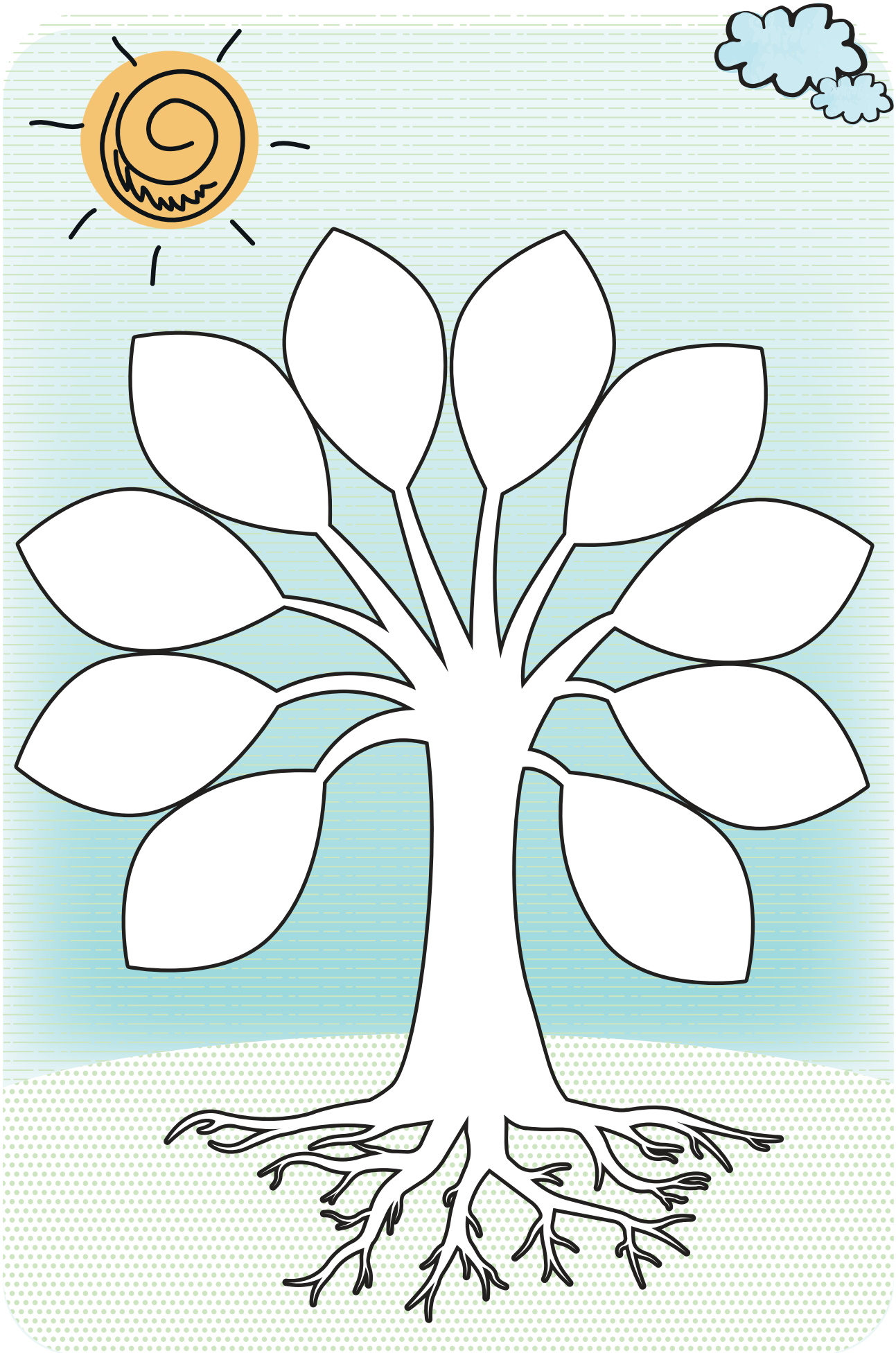
- increased storms and weather events
- fast fashion
- rising sea levels
- changes in temperature
- livestock farming
- rising global temperature
- burning fossil fuels
- transport
- displacement of people
- forest fires
- loss of habitats
- pollution from industry
- loss of biodiversity
- global inequality
- food shortages
- pollution
- (other examples from students)

During feedback encourage learners to make connections between the roots and the branches and to explore the impacts of the root causes.

Finally, ask learners to draw and fill in the leaves on the branches. These are possible solutions or actions we can take to address climate change.

Extension activity: Look at whether the actions/solutions are ones that are to be taken by individuals, communities, industry, or governments. Discuss who should have the greater responsibility for this.

Climate Crisis Root Causes Tree Handout



Activity L – Exploring the Evidence

Materials: *Handouts 1 to 3 on following pages.*

The aim of this activity is to emphasise the consensus that global warming is happening and that it is caused by specific human activities. Show learners 'Handout 1' of the graphs. Explain the two graphs. Graph 1 shows the rise in emissions of carbon dioxide, the principal greenhouse gas, from 1900 to 2010. Graph 2 shows how much global temperatures have risen from 1850 to today (the Earth is now on average one degree Celsius warmer than in the 1800s). Point out the sources of the graphs – the EPA in America and the BBC. Ask learners if these are sources that they would trust.

Ask learners what they notice about the graphs. Do they make sense together? Think about the causes of fossil fuel emissions we brainstormed in the last activity – did they exist before the 1800s? Did they exist in Ireland before the 1800s? How did our grandparents and great-grandparents use resources?

Next, show learners the handout of the industrial revolutions. Explain that since the invention of the first coal-burning steam engine humans have relied on fossil fuel for energy and industrial production.

Finally, give learners the 'climate denial handout'. Invite learners to take a minute to look at the cartoons, and then to get into small groups. Ask them to discuss:

- Why do some people not believe the scientific evidence that humans have caused climate change?
- What do you think can be done about it?

Links with other activities

For more context on how carbon dioxide emissions cause warming temperatures, review the 'guiding notes' of Activity D on the greenhouse effect.

Guiding Notes for Tutors

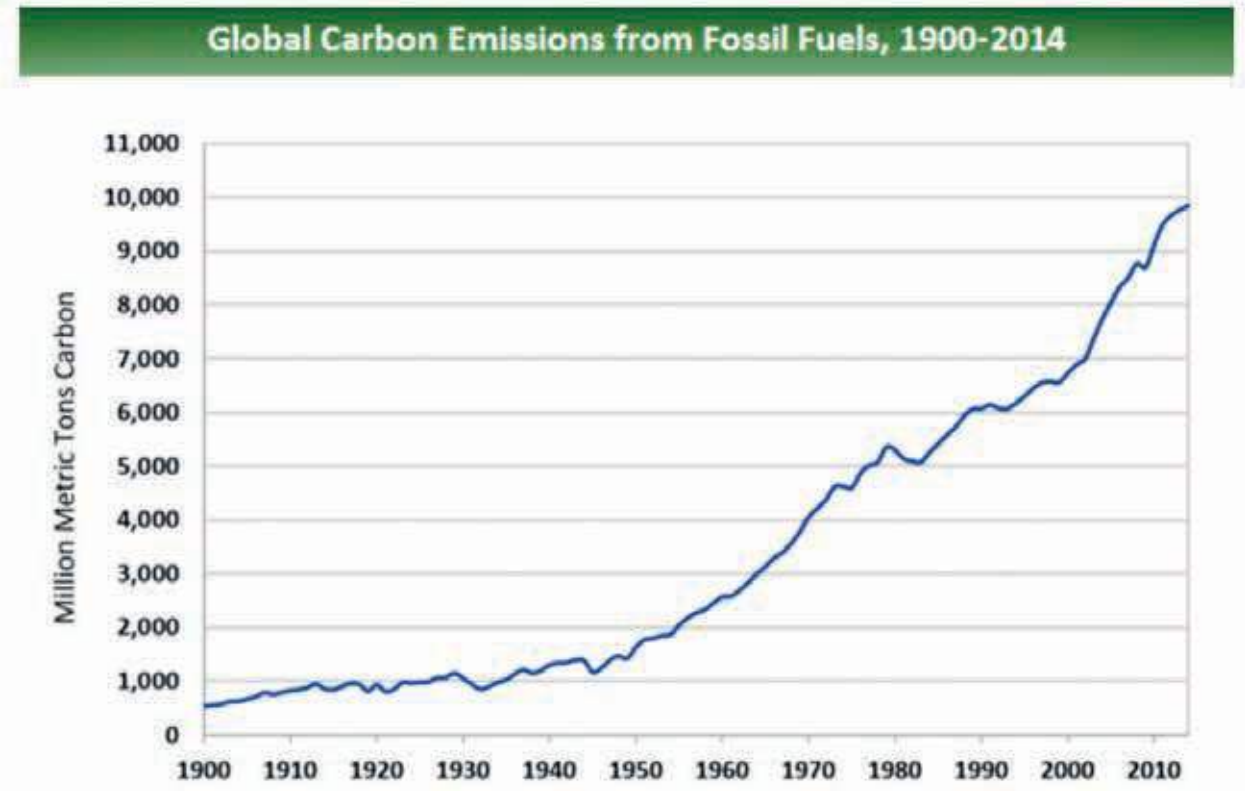
Consensus amongst the scientific community is overwhelming. More than 99.9% of peer-reviewed scientific papers agree that climate change is mainly caused by humans, according to a new survey of 88,125 climate-related studies. [9]. While there are natural climate changes which occur over long periods of time (thousands of years), the rapid global rise in temperature that has occurred over the past 150 years has never happened before. The beginning of the global temperature rise coincides with when humans began burning fossil fuels during the Industrial Revolution and the resulting greenhouse gas emissions, as is evident in the carbon dioxide graph.

You may need to be sensitive to different points of view among your learners, including those who are skeptical of the evidence you present. It is important that learners are not made feel embarrassed about their beliefs. If there are people in the group who are denying climate change is happening, focus on exploring, with the learners, what makes a source reliable and trustworthy and how can claims be checked for accuracy.

Additional Resources

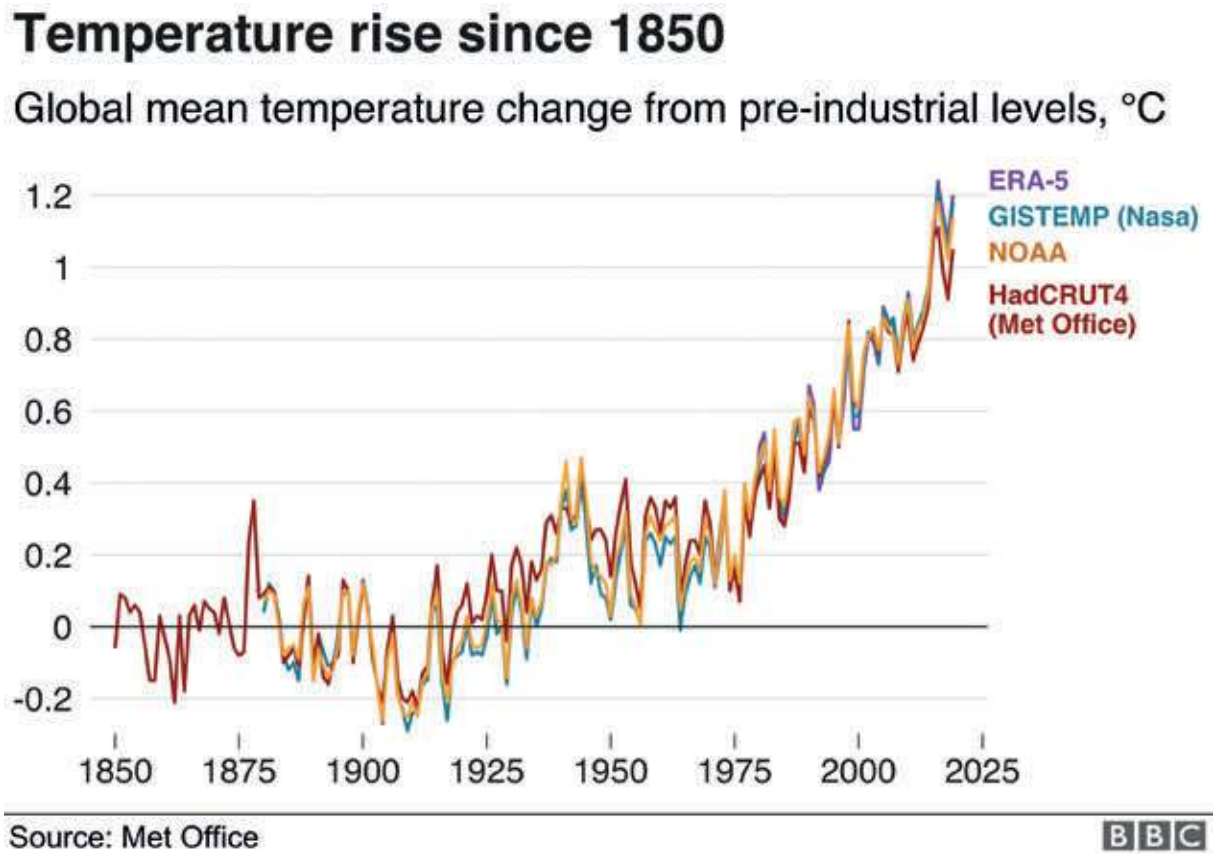
- *Look up the website Skeptical Science, with resources for countering climate change myths.*
- *Watch the documentary Merchants of Doubt – you could also watch this with the group.*

9 Cornell Chronicle (2021) "More than 99.9% of studies agree: Humans caused climate change" https://news.cornell.edu/stories/2021/10/more-999-studies-agree-humans-caused-climate-change



Graph 1 – Global Carbon Emissions from Fossil Fuels, 1900 to 2014.

Source: Environmental Protection Agency, USA



Graph 2 – Global temperature rise since 1850

Source: BBC

Industrial Revolution Handout

Source: Kathy Baxter on Medium

Climate Denial Handout

Credit: "Global Climate Strike 09-20-2019" by Markus Spiske on Flickr, licensed under CC BY 2.0

Source: Greg Perry in the Toronto Star

Source: Vox – https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement

Activity M – Emissions and Emitters

Materials: *Emissions and Emitters Worksheet, pens .*

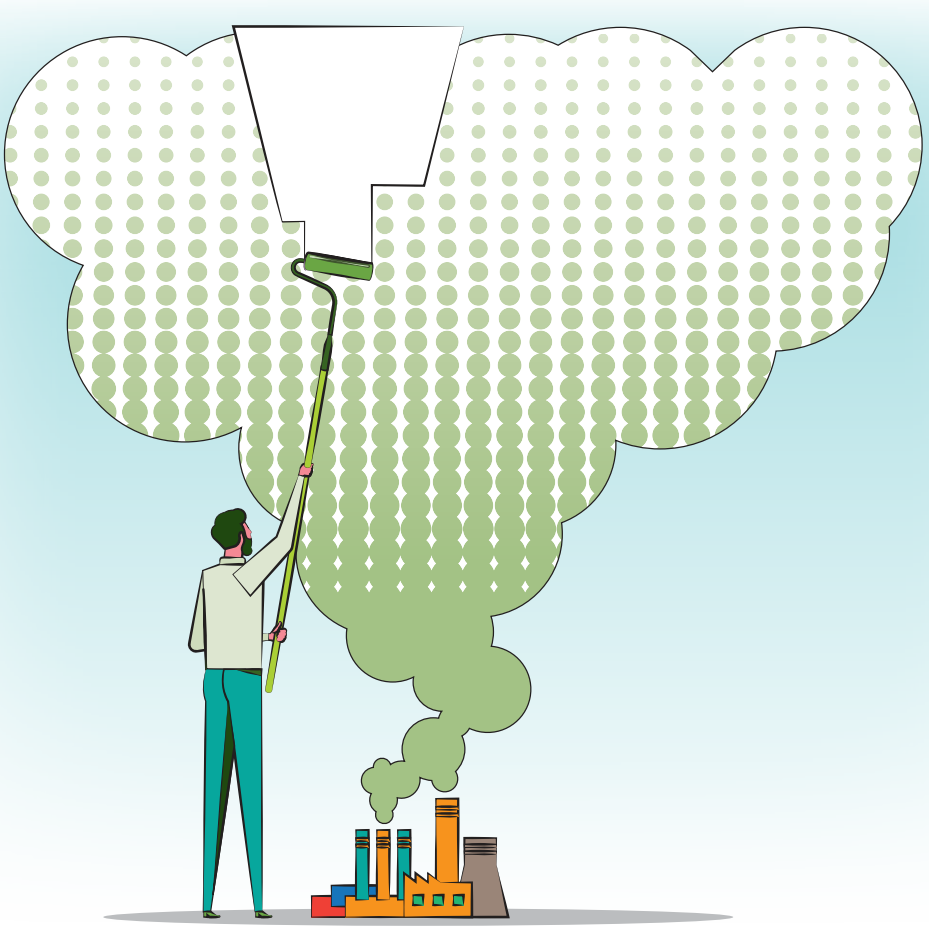
In the Root Causes Tree activity (Activity K), learners looked at the factors impacting climate change and began considering where the responsibility for this lay. This activity continues in that vein. Any focus here on personal responsibility is only to help provide a sense of agency which can be reassuring. It is not meant to shift the focus from industrial and governmental responsibility.

Give learners the Emissions and Emitters Workshop. Learners can work individually or in pairs or small groups to complete it.

When learners have completed the worksheet, encourage them to compare their answers and discuss.

Discussion points:

- Should individual people make big changes to their own lives to address climate change?
- In what ways can we demand change from industry/governments?
- Extension activity:
- Look at some of the graphs on emissions from the website 'Our World in Data'. Compare the emissions from different countries – are they from the Global South or Global North? What do you notice?
- Can you make a pie-chart/graph showing the areas of emissions for your household/ class?



Emissions and Emitters Worksheet

Activity: Decide if the above sources or emissions are personal, from industry, or both. Can you add any other examples?

Personal	Industry	Both

Activity N – Creative Future Visioning Exercise

Materials: *Flipchart paper, markers, post-its, stickers of different shapes and colours, any other arts materials you have available.*

Invite learners to sit in pairs.

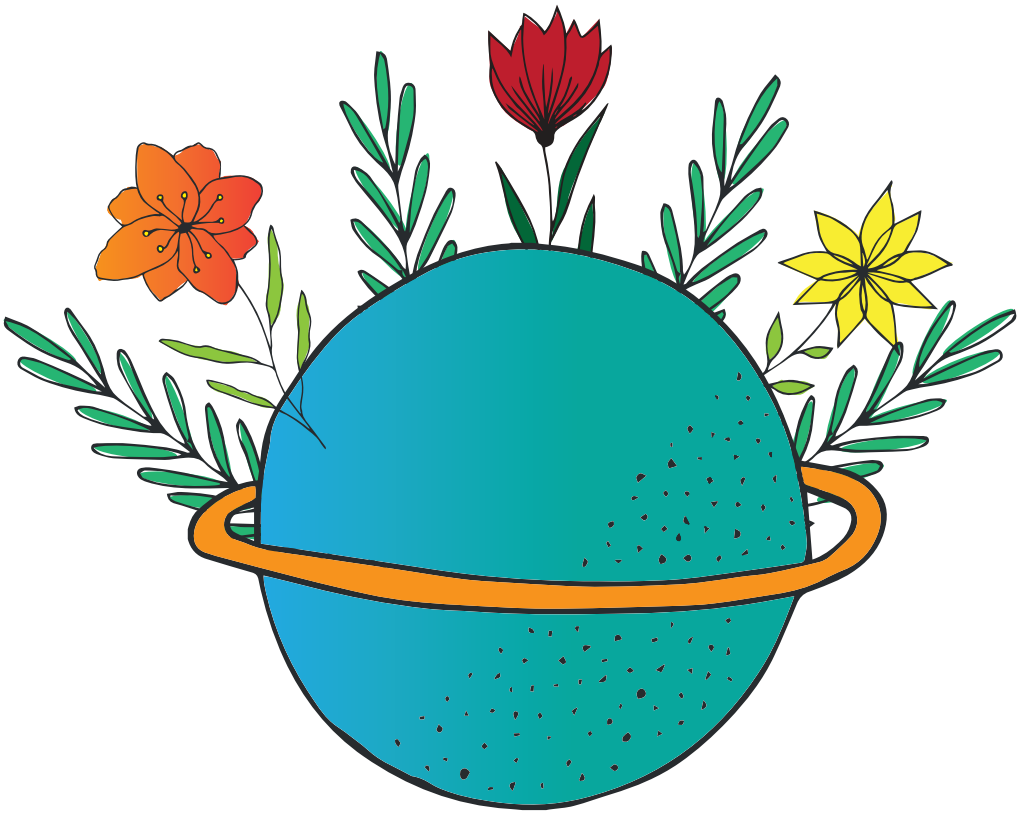
Ask them to imagine they are one of our descendants living 100 years from now in a fairer and more sustainable world for people and planet. What does it look like? They can take a few minutes to think individually and then use the paper, markers, and other arts materials to create a visual image of this future vision.

Invite everyone to share with the full group the vision they have created and encourage applause after each person presents their creation.

Ask learners to identify one thing they will do in the next week that will bring us closer to any of the visions created.

Guiding Notes for Tutors

This activity draws on Joanna Macy's 'Active Hope' approach. It is important to keep the tone light and optimistic. Learners should be encouraged, not pressured, and suggested actions should come from them. Reassure them if they do not feel ready to commit to an action at this time.



Section 2.4 – Climate Action and Solutions

Overview – Aims and Objectives

The aim of this section is to facilitate an exploration of the societal changes needed to take climate action. It begins to explore how climate activism seeks to bring about those changes, as well as structural barriers to change. The objective is for learners to be able to identify types of climate action and solutions that reduce emissions. It also includes an active hope activity on learners' own capabilities of bringing about change.

Section 2.4 Activities

- **Activity O** – Reducing Emissions Walking Debate
- **Activity P** – Rising Sea Levels
- **Activity Q** – Barriers to Change
- **Activity R** – Stories of Positive Change
- **Activity S** – Activism Case Studies

Activity O – Reducing Emissions Walking Debate

Materials: *Two A4 pages – one with 'AGREE' and one with 'DISAGREE' in large letters, Blu-tac*

Hang each sign on the wall as far apart as possible. Tell learners you are going to discuss climate solutions, focusing on how to reduce or eliminate sources of the emissions that are causing climate change.

Tell learners you are going to read out a series of statements and they should pick a place in the room to stand according to how much they agree or disagree with the statement. The more they agree, the closer they should stand to the 'agree' sign. The more they disagree, the closer they should stand to the 'disagree' sign. If they are undecided, they should stand in the middle.

After you read each statement and learners take up their position in the room, invite two or three learners to tell the group why they stood at that place.

Walking debate statements:

- Carbon taxes on petrol and diesel is a good way to reduce emissions.
- Irish farmers should move away from livestock agriculture and grow crops instead.
- We should ban all single-use plastic.
- We should buy food directly from farmers and producers rather than supermarkets.
- People should be forbidden to fly around the world for meetings and conferences.
- People should be forbidden to fly around the world for a holiday.
- Better quality public and social housing would help reduce emissions.
- Governments should mandate that consumer goods be well-made and easy to repair.
- Electricity and home heating from burning fossil fuels should be more expensive.
- Public transport should be free.

Guiding Notes for Tutors

The objective of this discussion is to get the group thinking about these types of climate action and hear everyone's opinion, as such there are no right or wrong answers. The statements are designed to draw out some discussion on how some types of climate action – carbon taxes for example - will impact differently on people, communities, or countries according to their context. They are also designed to encourage a focus on large-scale changes to society as effective climate action. Feel free to add your own statements or ask learners to suggest one.

Activity P – Rising Sea Levels

Materials: • *Wordsearch Handout* • *Rising Sea Levels Handout* • *Tape measure or ruler* • *Post-it notes / flipchart paper / smart board* • *Markers*

Suggested Time: *60 minutes*

Ask learners to complete the wordsearch handout independently or in pairs. Go through the answers and check for understanding of each term. Tell them that one of the consequences of the climate crisis is that sea levels across most of the world are rising. Explain that on average, global sea levels have risen by 21cm (8.5 inches) since 1900. Ask learners to guess how long 21cm is and then show them using a tape measure or ruler.

Next, ask learners to guess or estimate how far they live from the sea. Explain that 40% of the Irish population live within 5km of the coast. Show learners the 'Rising Sea Levels' handout, which projects land that will be under flood level by 2070.

Remind the group that the sea rises will depend on our ability to cut emissions. Ask them to identify who are the actors who can play a part in reducing emissions. Create a flipchart sheet for each actor e.g., 'me' 'local community' 'government' 'corporations'. Next ask learners to identify actions that each of the actors could take to reduce rising sea levels. Record these on the flipchart / smartboard.

Guiding Notes for Tutors

The global mean sea level has risen by 21cm (8.2 inches) since 1900. Projections for 2100 depend on how much we cut back on carbon emissions. A high emissions scenario could mean sea level rises of 63cm – 1.02m. If the polar ice sheets melt quickly (a 'Tipping Point'), sea level rises could reach 5 metres (16.5 ft) by 2150[10].

You can create your own handout of your local area using the online 'Coastal Risk Screening Tool' on www.coastal.climatecentral.org or display to the group. Alternatively, you can ask learners to explore it themselves using their phone, tablet, laptop or PC or show it to them on an audio-visual screen.

10 Source: https://www.eea.europa.eu/ims/global-and-european-sea-level-rise

Rising Sea Levels Wordsearch

Emissions Wordsearch

G	B	A	G	B	N	A	C	I	L	J	Q	Y	F	K
G	R	E	E	N	H	O	U	S	E	G	A	S	V	L
F	D	G	L	O	B	A	L	W	A	R	M	I	N	G
L	C	X	D	Y	N	Y	A	H	C	K	E	X	L	Z
O	A	C	I	G	K	Y	C	Y	E	E	W	C	M	T
O	H	D	Z	P	X	X	H	J	U	R	R	U	E	M
D	E	M	C	H	P	R	A	F	I	Z	T	V	S	E
T	W	Z	H	V	J	S	N	U	D	V	B	J	E	M
Z	P	A	P	O	F	S	G	D	F	S	H	E	A	I
C	L	I	M	A	T	E	E	C	T	F	B	J	L	S
M	P	F	O	S	S	I	L	F	U	E	L	F	E	S
Q	D	M	F	Q	B	C	A	R	B	O	N	O	V	I
Q	S	A	S	L	G	Q	M	S	K	R	E	D	E	O
S	P	C	O	L	Q	T	E	Q	M	Z	K	J	L	N
Y	Q	N	W	J	T	E	Y	S	Z	L	W	I	S	S

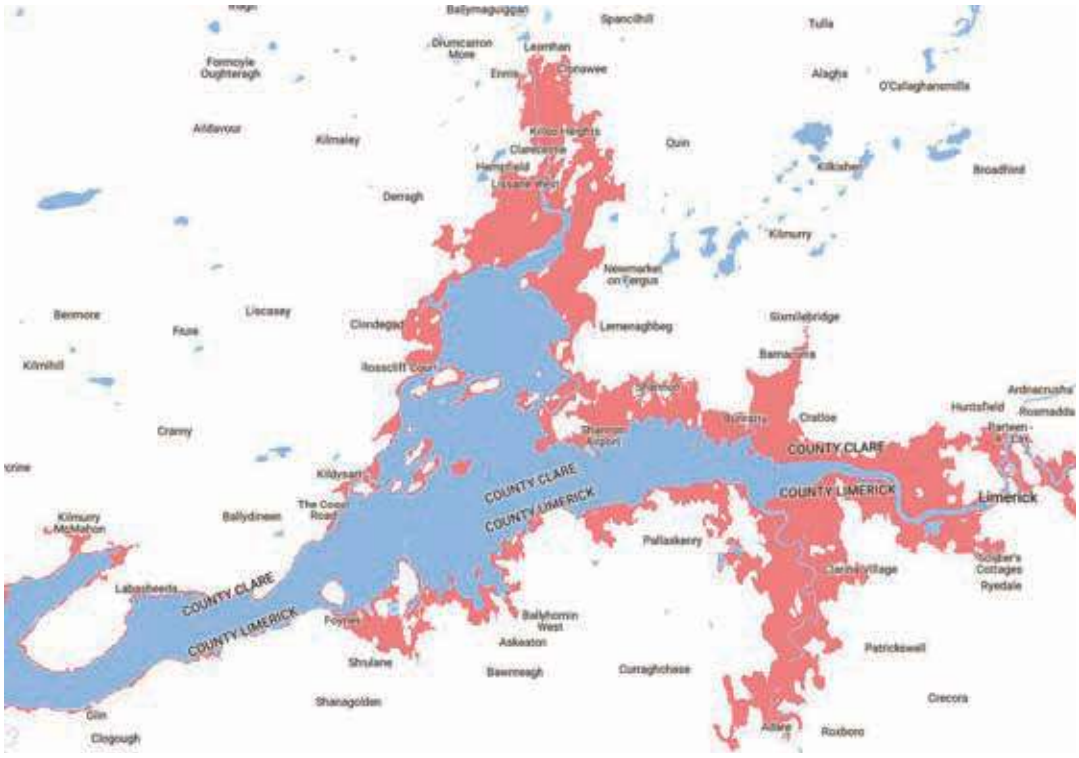
· Greenhouse Gas · Global Warming · Fossil Fuel · Emissions · Sea Levels
· Climate · Carbon · Change · Flood

Rising Sea Levels Handout

CLIMATE CENTRAL

Source: coastal.climatecentral.org

Land in Dublin under sea level by 2070



Land in Limerick under sea level by 2070

Activity Q – Barriers to Change

Materials: • *Print-outs or slide of cartoons on following pages.*
• *Smartboard or whiteboard or flipchart and markers.*

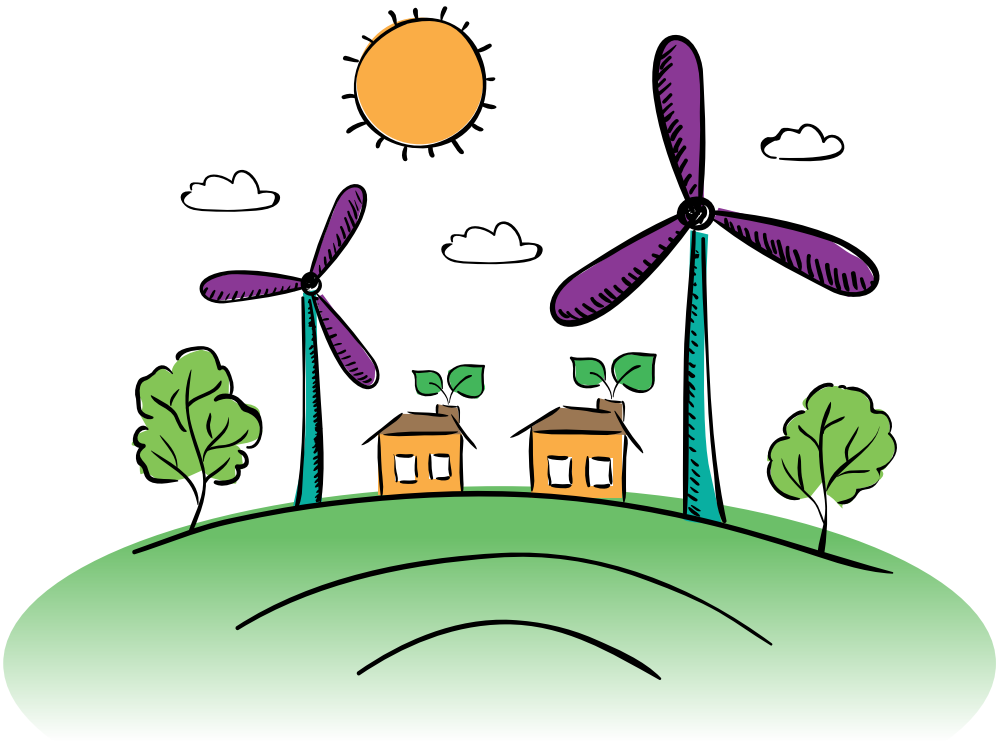
Show the cartoons on the Barriers Handouts one at a time. Ask the learners what they think the cartoons mean – why is there not more enthusiasm for and movement towards the positive changes listed in the cartoon of the climate summit? Learners might mention the power of large corporations, greed, apathy, lack of political will as some of the barriers to change.

Ask them why they think these institutions/political parties/people are not open to change. Note down keywords from the discussion on the smartboard / whiteboard / flipchart. There are no right or wrong answers; the point is to get thinking about structural barriers to climate action. Ask them if they can think of any ways to overcome the barriers they have discussed.

Guiding Notes for Tutors

The 'I used to believe' cartoon shows a quote, made in real life, by a US senator, James Inhofe from Oklahoma.

It is important to allow the discussion to flow between learners – there are no right or wrong answers to this activity. However, if learners dwell too much on personal barriers – e.g., individuals are lazy or unmotivated – point out the importance of change at structural levels. More people might use public transport or buy organic food if policy decisions make those choices easier and more accessible.

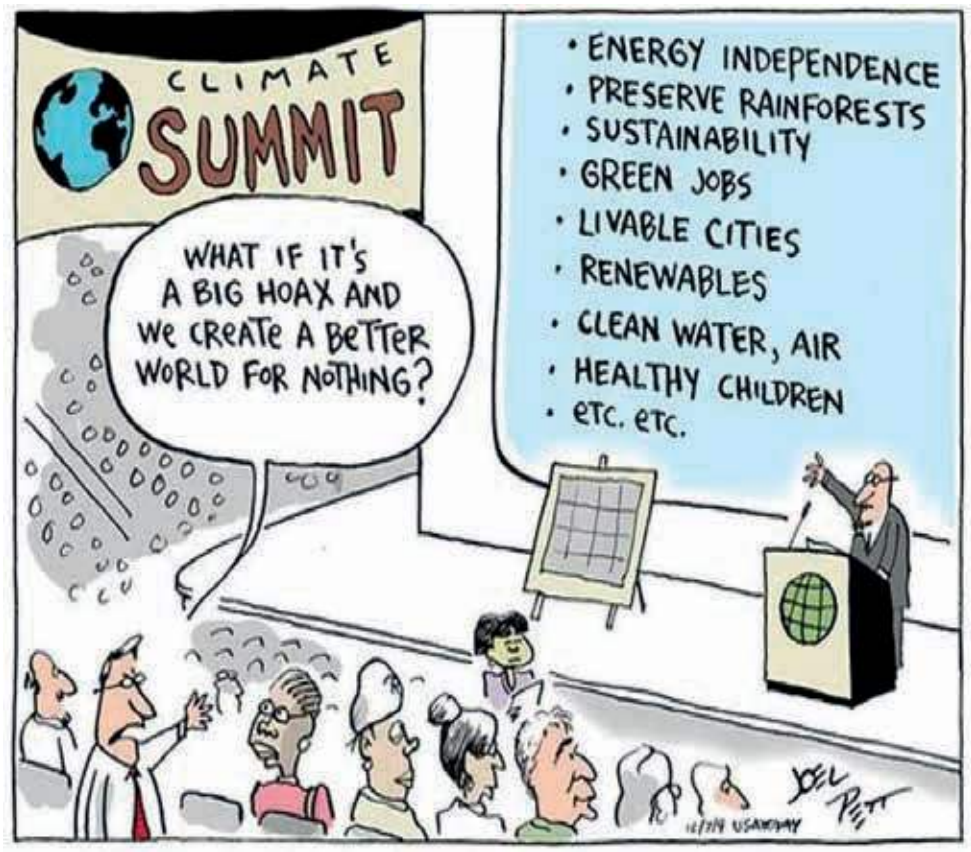


Barriers Handout

https://sustainabilityillustrated.com/

Credit: Tom Moro.
https://i0.wp.com/climatesafety.info/wp-content/uploads/2012/12/tom-moro-cartoon_shareholders.jpg?ssl=1

Barriers Handout



Source: CartoonArts International
https://medium.com/thoughts-economics-politics-sustainability/what-if-its-a-big-hoax-and-we-create-a-better-world-for-nothing-5ef4a30cca48

Credit: Nick Anderson
https://conservationbytes.com/2021/01/07/cartoon-guide-to-biodiversity-loss-lxiv/#more-210323

Activity R – Stories of Positive Change

Materials: *None*

Ask each person to think of a time in their life when something important and good happened because of what they said or did. Let them know that this can be at any level – personal, family, community. Ask them to try to recapture the scene and play it back for themselves. Give them at least five minutes for this individually.

Then invite them to take turns telling their stories in pairs. Ask those who are listening to each story to identify the qualities in that person that were at play in bringing about the positive change that happened. Once everyone in the groups has told their stories, ask the learners to call out the personal qualities or capacities they heard in the stories to the full group, such as bravery, honesty, innovation, etc.

Ask the full group to discuss where they can identify moments where they were able to use their own personal power to get something done, or influence others.

Optional: note down the list of qualities and capacities on a flipchart to come back to in future section when discussing bringing about change in society or planning their own community action.

Guiding Notes for Tutors

This activity is empowering because by recounting incidents from our own lives, we recognise our own capacity to create positive change. This is all the more valuable since we are not accustomed to sharing this kind of experience or understanding it as power. This is an important exercise to follow the previous one on structural barriers to change, as thinking about the barriers can lead to feelings of helplessness and inaction.

Additional resources

The book Active Hope by Joanna Macy - or search online for the website associated with the book.

Activity S – Activism Case Studies

Materials: *activism images, flipchart paper; optional – art materials, poster card, markers, craft materials.*

The aim of this activity is to introduce global climate activism to learners. Show learners the images of the 'Fridays for Future' youth climate strikes and marches. Give everyone a minute to read the slogans on the protest placards. Most of them relate to the consequences of climate change, and young people's demands for governments to take action on climate change. Facilitate a group discussion by asking learners what they think the protest marches are trying to achieve: what do the slogans on the placards mean? What barriers do you think these young people are facing in their demand for climate action? Think about the barriers to change we have just discussed – do you think these protest marches can overcome those barriers?

Next show the learners the images of activism against race and gender inequality. Ask learners to discuss what the activists in these images were trying to achieve. Were they successful? Were their actions supported at the time?

Finish the activity by asking learners to create their own poster or slogan or artwork as an example of climate activism.

Or

Ask learners to plan a specific climate action project in their community.

Guiding Notes for Tutors

School strikes against the climate crisis were started by one girl – 15-year-old Greta Thunberg – when she started protesting outside the Swedish parliament every Friday campaigning for stronger action on the climate crisis. Now 14 million people have taken part in 'Fridays for Future' protests.

Lunch counter protests took place across the US to protest against racial segregation in the 1960s. Black students staged sit-ins at lunch counters in cafes that only allowed white people to sit at the counter or refused to serve black people at all. Laws against racial segregation were passed in 1964.

In 1975, a women's strike saw 90% of women refuse to work inside or outside the home or take care of children. Known as 'Women's Day Off', banks, factories and shops were forced to close, and fathers were forced to stay at home to mind their children. The women were protesting against the lack of women in political positions. In 1975, only 5% of the Icelandic parliament were women. In 2021, 48% are women.

Climate Justice and Social Justice Activism Images

Source: Inside Climate News

Credit: "Youth Climate Strike: Quezon City" by 350.org on Flickr.

Credit: "Global Climate Strike 2019-03-15 - 09" by garryknight on Flickr. https://www.flickr.com/photos/8176740@N05/47387619861

Credit: "Global Climate Strike" by CityofStPete on Flickr, licensed under CC BY-ND 2.0
https://www.flickr.com/photos/63805593@N04/48913323128

See College Newspapers At Campus Echo Office

Campus Echo

North Carolina College at Durham

ENTER CAMPUS ECHO CONTESTS

VOLUME XIX — NUMBER VI — DURHAM, NORTH CAROLINA, FRIDAY, FEBRUARY 26, 1960 — Price: 20c

Students Stage Sit-Down Protest

"All My Sons" Here, March 17

By Gerald Simmons

Arthur Miller's thought-provoking drama, "All My Sons," will be presented by the NCC Theatre in the J. N. Duke Auditorium at 8:00 p.m., March 17.

Charles Lockhart, an old trouper and familiar figure on the NCC stage, will star as Joe Keller, the father who has manufactured defective airplane parts during World War II and stifled the course on his business partner. Steve Deever. Kelly gets the shock and hurt of his life when he discovers that his older son Larry, along with many other pilots, has died in an airplane crash that resulted from the plane's having defective parts that he's manufactured. Later Keller realizes that they were virtually "all his sons."

Parthenia McCall will play the part of Kate Keller, his wife, who is obsessed with the idea that Larry will return home and [illegible]

Here are some of the students who participated in the sit-down protest in the Woolworth's store. In center is Lucy Streeter, with hand on student, one of the principals in the protest and president of the College Chapter of the NAACP.

Results Unknown On Negotiations

By Willie G. Hall

Following a pattern set by A&T students, North Carolina College students staged a sit-down protest at the lunch counters of S. H. Kress, F. W. Woolworth, and Walgreen on February 8 at downtown Durham.

Negotiations were underway in the conference room of the Administration Building late last Wednesday. Members of the original student-faculty committee and members of the Human Relations committee discussed the student sit-down arrest; however, no statement from the group was released. Indications are, nevertheless, that the group will contact downtown merchants.

The plans for the protest were formulated in a student meeting held in the Freshman Dorm of North Carolina College on Saturday, February 6. Here students Lucy Streeter, Robert Kennedy, Collie [illegible]

Seven Students To Attend SSL Confab, March 10-12

Seven delegates from NCC will attend the annual meeting of the State Student Legislature in the State Capitol in Raleigh, March 10-12.

Student Government [illegible] Wiggins, history major from Asheboro; William McPhatter, history major from Hartford; Charles Tivoliet McNeil, general science major from Durham; and Elijah John Fisher, business [illegible]

The opening speaker at the SSL will be Dr. Frederick Morrison, aide to President Eisenhower and invited to become head of the Economic Language Department. Dr. John H. Mayer [illegible] given by Henry Gideon, the out-

Lunch Counter Protest – USA – 1960

Women's Day Off – Iceland - 1975

Climate Justice Education in Practice

CHAPTER 3

Understanding Climate Justice

"Climate change is not only a threat,
it is, above all, an opportunity to create
a healthier, greener, and cleaner planet
which will benefit all of us.
We must seize this opportunity."

Greta Thunberg

Chapter 3 – Contents

Introduction: Understanding Climate Justice

This unit contains three sections on the topic of climate justice and climate action. Each section contains a selection of activities that will help build learners' critical understanding of key concepts.

- **Section 3.1** – Introduction to Climate Justice
- **Section 3.2** – Responsibility for Climate Change
- **Section 3.3** – Action for Climate Justice

Climate justice recognises that climate change is a social and political problem as well as an environmental one. It recognises that different communities feel the effects of climate change differently and that the responsibility for climate change rests with some countries and companies more than others.

> *"The people most responsible for climate change historically — globally, as well as domestically — are not the same people who are feeling the pain first, worst and longest. If you're just talking about greenhouse gases and parts per million, you're not seeing the issues around vulnerability and justice." - Robert Bullard*

Climate justice understands that the lives of those already facing injustice are made even harder by the impacts of climate change. Countries in the Global South and low-income communities in the industrialised north bear the burden of decisions to overexploit and consume the world's resources.

Climate change disproportionality impacts people of colour, women, LBGTQI+ people, disabled people, working class and impoverished people. For example, according to the United Nations Development Programme, 80% of people displaced by climate change are women, and women are more likely to die or come to harm because of extreme weather or natural disasters. [1]

Climate justice is about recognising the interconnectedness of different forms of marginalisation and oppression, and in doing so, working towards solutions to climate change that not only reduce emissions but create a fairer and more just world in the process.

The main objective of this handbook is to help you facilitate group discussions with your learners – it is not necessary for you to be an expert on the climate change or climate justice issues discussed in the Sections. Guiding notes have been provided, which may help

1 UNDP (2016) "Overview of linkages between gender and climate change," https://reliefweb.int/report/world/gender-and-climate-change-overview-linkages-between-gender-and-climate-change

as additional inputs to the discussion and learning process. However, the recommended teaching and learning approach draws on Paolo Freire's concept of conscientization where learners build critical understanding through reflection, dialogue and action [2]. There is more about the recommended teaching and learning approach in the Introduction Chapter of this Handbook.

The sections are participatory with lots of opportunities for group discussion and other activities. We have included sample resources, such as worksheets and creative exercises – you are welcome to adapt them or create your own. Suggestions of where to find to optional video material are also included in some activities. We have also signposted additional resources where you can find up-to-date information to supplement the information here.

2 Paolo Freire (1986) Pedagogy of the Oppressed. New York: Penguin Group.

Section 3.1 – What is Climate Justice?

Overview – Aims and Objectives

The aim of this Section is to facilitate an exploration of the meaning of climate justice and key concepts. The objective is for learners to be able to outline some of the experiences of communities most affected by climate change and reasons why they are affected. The Section will:

- introduce the concept of 'climate justice'
- explore how poorer and/or less powerful people and communities are much more affected by climate change than others
- introduce the idea that some climate solutions may deepen the disadvantage some communities experience.

Section 3.1 – Activities

- **Activity A** – Climate Justice Gallery
- **Activity B** – Impact of Climate Change on People
- **Activity C** – Climate Justice Poem
- **Activity D** – Definitions of Climate Justice

Ojibwe prophecy speaks of a time during the seventh fire when our people will have a choice between two paths. The first path is well worn and scorched. The second path is new and green. It is our choice as communities and as individuals how we will proceed.

Winona LaDuke

Activity A – Climate Justice Gallery

Materials required: *Images relating to climate justice on following pages (or print your own), blu-tac.*

Display the images around the room, on tables or on the wall. Spend time as a class exploring the different images, looking at what is happening and finding connections. Ask learners to move around and look at them, and then stand or sit beside the one that appeals to them most.

Ask everyone to imagine they are one of the people in that picture. They can choose to be a person already visible or they can develop their own role for themselves. This is an imagining task which asks learners to explore the reasons that motivate us to take action and the level of power we feel we have.

Consider:

- Why are you there? What is your role?
- How did you make the decision to be there?
- What are you hoping to achieve?
- How does it feel to be in this situation?
- What will you do next?

Ask learners to pair up and interview each other.

Extension activity: *Imagine you are a journalist for a newspaper covering stories on climate justice. What would be the headlines to go with each picture? Who would you interview for your story? What responses do you imagine you would get? Role-play the interview with a partner.*

Guiding Notes for Tutors

Image 1 – Image 1: A community group from one of the poorest parts of Bristol in the UK celebrate meeting their funding target to build the tallest wind turbine in England. When built, the turbine will generate enough electricity for 3,000 homes. Excess energy will be sold to the national grid and profits will be spent on local community projects in the Lawrence Weston housing estate.

Image 2 – A protest by Friends of the Earth asking that rich countries do their 'fair share' to keep global warming below 1.5 degrees.

Image 3 – Families planting trees for a conservation project in Lake Ontario, Canada.

Image 4 – Green Party activists in Ireland hold a banner on the Cliffs of Moher.

Image 5 – A protest at a fossil fuel mine in Germany. Over 3,500 people shut down one of Europe's biggest carbon polluters in Germany by occupying a lignite mine and nearby power station for more than 48 hours and reducing the plant's capacity by 80%.

Image 6 – Cartoon by political cartoonist Signe Wilkinson on US climate policy.

Image 7 – People living in the northern Indian city of Allahabad collect water from a handpump after heavy rains and flooding.

Image 8 – Cartoon by Eva Bee.

Activity A - Images for Photo Gallery

Credit: Adrian Sherratt / The Guardian
For designer: https://www.theguardian.com/environment/2022/apr/16/bristol-community-secures-funding-to-build-tallest-wind-turbine-in-england

Credit: "Fair Shares: 1.5 degrees = Rich countries do your fair share" by Friends of the Earth International on Flickr, licensed under CC BY-NC-SA 2.0
For designer: https://www.flickr.com/photos/81898679@N00/23560408506

Credit: "HCA Tree Planting" by Hamilton Conservation Authority on Flickr, licensed under CC BY 2.0
For designer https://www.flickr.com/photos/29110920@N06/5181547403

Credit: 350.org/The Green Party.
For designer https://www.greenpeace.org/usa/why-climate-leadership-means-keeping-fossil-fuels-in-the-ground/23083798610_4b54d055d7_o/

Credit: "Germany" by Break Free from Fossil Fuels on Flickr, licensed under CC BY-NC-SA 2.0
https://www.flickr.com/photos/breakfree2016/27083376795/in/photostream/

Cartoon by Signe Wilkinson.

Photo: Reuters.

Source: Eva Bee/The Guardian.

Activity B – Impact of Climate Change on People

Materials required: *phone/tablet/laptop with internet access, photocopy of table (below)*

As a group, choose one of the following areas of climate change:

- sea level rise and flooding
- increased storms and hurricanes
- drought

Use the internet to find out which countries are most affected by this aspect of climate change. Websites like floodlist.com and globalfoodmap.org are useful here.

Type of climate change:

Country affected	Location: Global south or Global north? Country?	Average income of a person in this country/ affected area
1.		
2.		
3.		
4.		
5.		

Can you find out how the same countries will be affected in 2050?

Think about: a day in the life of an affected area. What will daily life be like for:

- people with disabilities?
- children?
- homeless people?
- women?
- people in wealthy communities?
- people in poorer communities?

Write a diary entry for one of the people above.

Optional additional activity: *print out copies of MABS' factsheet on energy poverty amongst Travellers living in mobile homes/trailers* [3].

3 https://www.ntmabs.org/publications/development/2019/nt-mabs-energy-report-factsheet.pdf

Guiding Notes for Tutors

Encourage learners to explore whether people are affected by the impacts of climate change equally, encourage learners to consider the question in terms of income, class, geographic location, access to resources, access to power such as politicians, gender, race, and ability.

For example, people with chronic illnesses and disabled people may have a more difficult time living through periods of severe heat or being able to evacuate from major storms or wildfire quickly and safely.

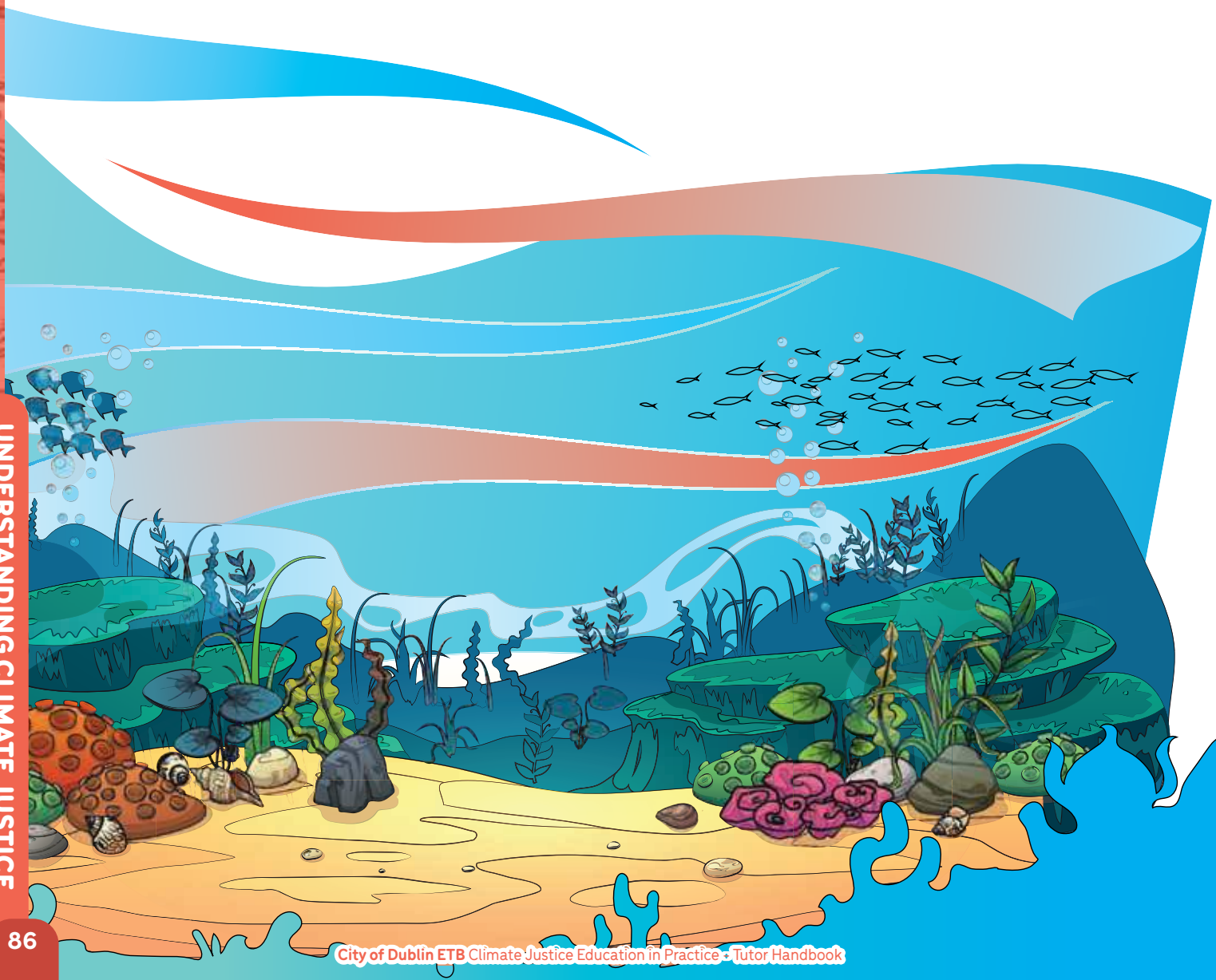
People with limited income may live in substandard housing which may have inadequate insulation, damp problems, or lack of good heating and sufficient access to energy in order to effectively deal with cold snaps or strong storms. In Ireland, this is particularly true in the Traveller community.

Economically challenged people may also be hard-pressed to afford flood or fire insurance, rebuild homes after natural disasters. These communities may not have the same access to political power as wealthy communities and experience lack of climate adaptation projects.

Additional resources

See Yale Climate Connections' blog on "What is Climate Justice" for additional points.

Look up UNESCO's resources on Gender and Climate Change for an understanding of one aspect of unequal impacts of climate change.



Activity C – Definition of Climate Justice through Poetry

Materials required: *Pen, paper, flipchart paper & markers or smartboard, printout of verses of Poemathon 2022 (optional), images from Activity A – Climate Justice Gallery.*

Invite learners to collectively write a poem about climate change and climate justice. Ask students to reflect on the diary entries they wrote for the last activity or to look again at the images from the Climate Justice Gallery from Activity A. What were some of the features of daily life they imagined for people in the affected areas? Ask students to consider these using the 5 senses.

What can they see? Smell? The table below might be a useful starting point.

Affected area/affected people	What can I see?	What can I hear?	What can I smell?	What can I taste?	What can I feel?

As a class, record the responses on the flipchart or smartboard. In this way, learners can generate their class poem in real time.

Read the poem from the Poetry Ireland website- does it cover the same themes?

Guiding Notes for Tutors

The approach taken here is an exploratory one, allowing learners to feel their way into the subject before attempting a definition. The group/class poem allows for an exploration of the lived experiences of someone in an affected area. The images used throughout the handbook could be useful prompts here too.

Background: For Poemathon 2022, Poetry Ireland asked older people around Ireland to contribute a line of poetry that would make up a poem about climate change and climate justice. It, and a micro-version, are available as pdf files on the Poetry Ireland website. The first line was written by Mary Robinson: Growing up we did not know; now we need to mend. Here, that poem provides a comparison for how a poem can be constructed from lines written by different voices and can provide the model for the whole class writing activity.

Poemathon Handout

Poemathon with Older People 2022
An initiative of Poetry Ireland with the Global Brain Health Institute
(Trinity College Dublin) and Creative Brain Week
The first line is by
MARY ROBINSON
A conversation of response lines on the theme of
the Climate Crisis
Arranged & edited by Seamus Cashman

Growing up we did not know; now we need to mend
We cannot hide behind what's truth. 'It's foolish to pretend'
May spring buds always blossom and autumnal leaves continue to fall
It's never too late to make an effort, we owe it to future generations
Dawn breaks over the hills of Ireland
We thought we could keep on taking. Now it's time to give it back
We know we have caused it - let us act now and pause it
— the way we exploit our forests and seas
I will hug a tree hoping your gentle energy
will silently course through me.
Our beautiful and fragile world — it calls us to befriend
This fragile Earth on which our lives depend.
Now I wash off soil from carrots, celery and potatoes,
add a handful of barley and lentils to make soup
like my grandmother did.

Full poem available on Poetry Ireland website https://www.poetryireland.ie/content/files/Poemathon_2022_Completed_Poem.pdf

Activity D – Definitions of Climate Justice

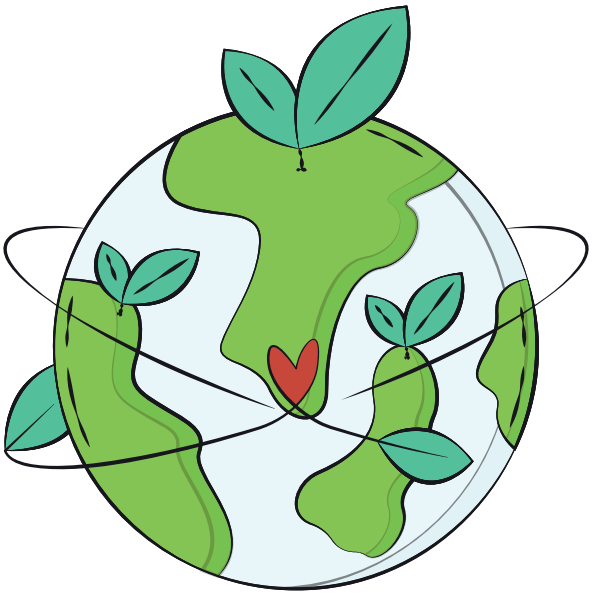
Materials required: *Pen, paper, flipchart paper & markers or smartboard, printout of 'Definitions of Climate Justice' handout.*

Display the definitions to learners by hanging them around the classroom. Tell them that the definitions were written by the following organisations/people:

1. Disha Ravi – Indian youth activist who was charged with sedition in February 2019 for her activism supporting farmer protestors in India.
2. Mary Robinson – former President of Ireland and UN Special Advisor on Climate Change/
3. Greta Thunberg – Swedish Climate Activist who started the Fridays for Future Global School Strikes movement.
4. Scottish Climate Act, 2019
5. Chico Mendes – rubber tree tapper and environmental activist. Chico was assassinated in 1988 for his work protecting the Amazon Forest and advocating for the rights of the people who worked and lived there.

Ask learners to read each definition and to underline words or phrases that are unfamiliar or hard to explain. Record these on a flipchart or smartboard and clarify the meaning of each word or phrase. Ask learners to guess who wrote each definition and to choose the definition that they like the most. Give the correct answers and then ask learners to say why they chose a particular definition.

Optional activity: *get learners to search the internet on one or more of the speakers to find out more about their activism.*



DEFINITION 1

"Climate justice is about intersectional equity. It is about being radically INCLUSIVE OF ALL GROUPS OF PEOPLE, so that everyone has access to clean air, food and water. As a dear friend always says,

'climate justice isn't just for the rich and white.' It is a fight alongside those who are displaced; whose rivers have been poisoned; whose lands were stolen; who watch their houses get washed away every other season; and who fight tirelessly for what are basic human rights."

DEFINITION 2

If there is a climate change problem, it is in large part a justice problem. Our continued existence on this shared planet **demands that we agree to a fairer way of sharing out the burdens and benefits of life on earth,**

and that in the choices we make, we remember the rights of both today's poor and tomorrow's children.

DEFINITION 3

The fact that **3 billion people use less energy, on an annual per capita basis, than a standard American refrigerator** gives you an idea of **how far away** from global equity and climate justice **we currently are.**

DEFINITION 4

Climate justice means "the importance of taking action to reduce global emissions of greenhouse gases and to adapt to the effects of climate change in ways which (a) support the people who are most affected by climate change but who have done the least to cause it and are the least equipped to adapt to its effects, and (b) help to address inequality.

DEFINITION 5

At first I was fighting to save rubber trees, then I thought I was fighting to save the Amazon rain forest.

Now I realise I am fighting for humanity.

Section 3.2 – Causes and Consequences of Climate Injustice

Overview – Aims and Objectives

The aim of this section is to explore the root causes of climate injustice and how it impacts on people and communities. The activities will build learners' understanding of unequal historical responsibility between countries for greenhouse gas emissions. Learners will also learn about the role of global climate conferences in deciding how we respond to the climate crisis and the challenges they face in doing so. Learners will also explore how vulnerable communities in the global South are suffering the impact of the climate crisis right now.

Section 3.2 - Activities

- **Activity E** – Responsibility for causing Climate Change
- **Activity F** – What is CoP?
- **Activity G** - Frontline Communities and Climate Injustice

Activity E – Responsibility for Causing Climate Change

Materials required: *Printout or slide of graphs on following pages.*

Show learners the three images, either on slides, or on printouts. The first one is a graph of countries' contributions to climate change, which visualise how over time, the USA and the EU have emitted far more carbon dioxide than other countries (this graph doesn't include other greenhouse gases).

The second image visualises how income is linked to carbon emissions and that those with the highest incomes have the highest carbon emissions.

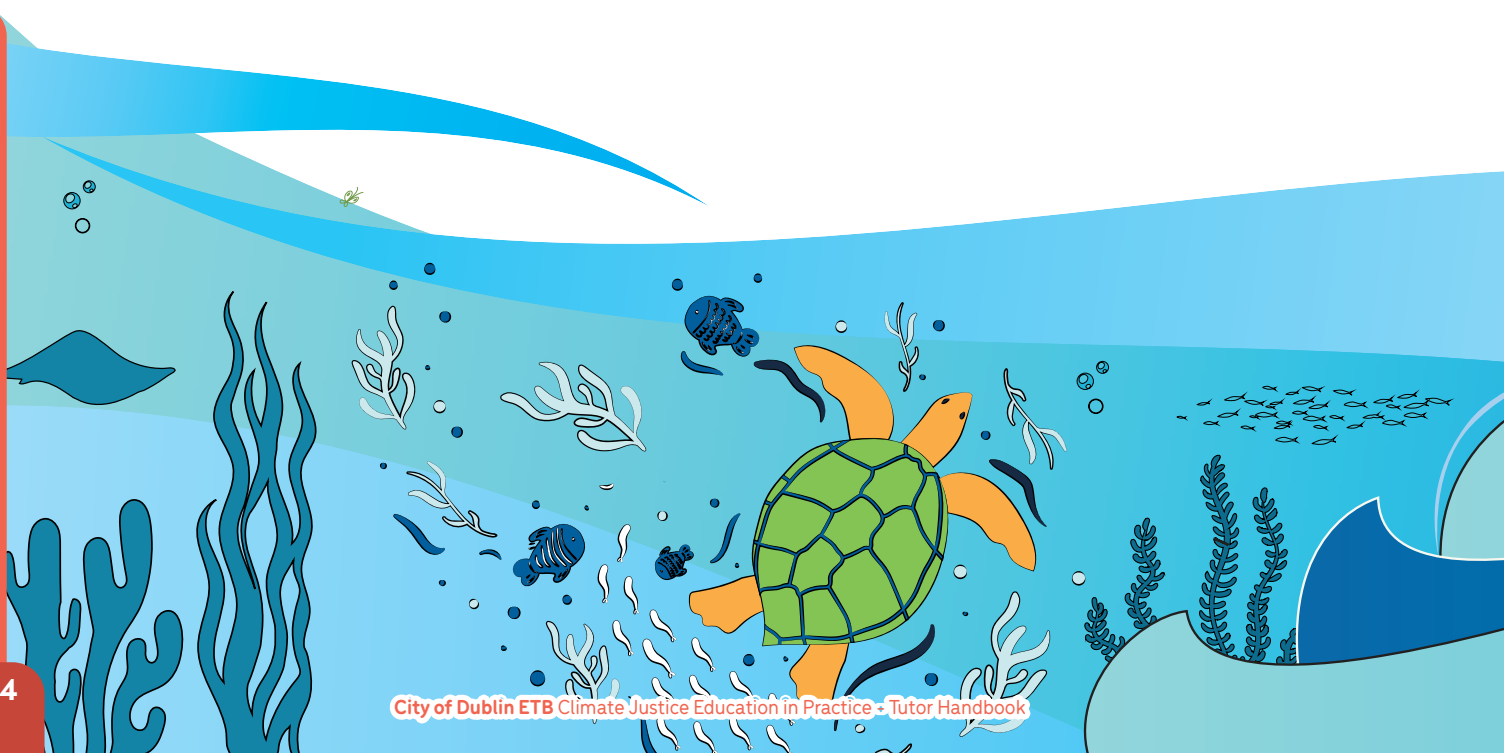
The third image shows the responsibility of the world's biggest fossil fuel corporations for climate change-causing emissions.

If possible, give learners a chance to look at all three images at the same time for a few minutes. Ask for any questions or initial comments (see Guiding Notes for more information on the three images).

Ask learners to consider

- Which countries have benefitted the most from using fossil fuels? Has everyone within those countries benefitted the same?
- Is it fair to ask lower income countries, who don't have much historical responsibility for causing climate change, to not use fossil fuels now?
- What should the fossil fuel companies who are most responsible for causing climate change do?
- How can we ensure justice when tackling carbon emissions? How do we make sure that people / countries who have not caused the problem are protected?

Give the groups at least 20 minutes for discussion. In the full group, invite each small group to summarise their discussion. Congratulate them – they have discussed the main reasons global action on climate change is not advancing urgently enough!



Guiding Notes for Tutors

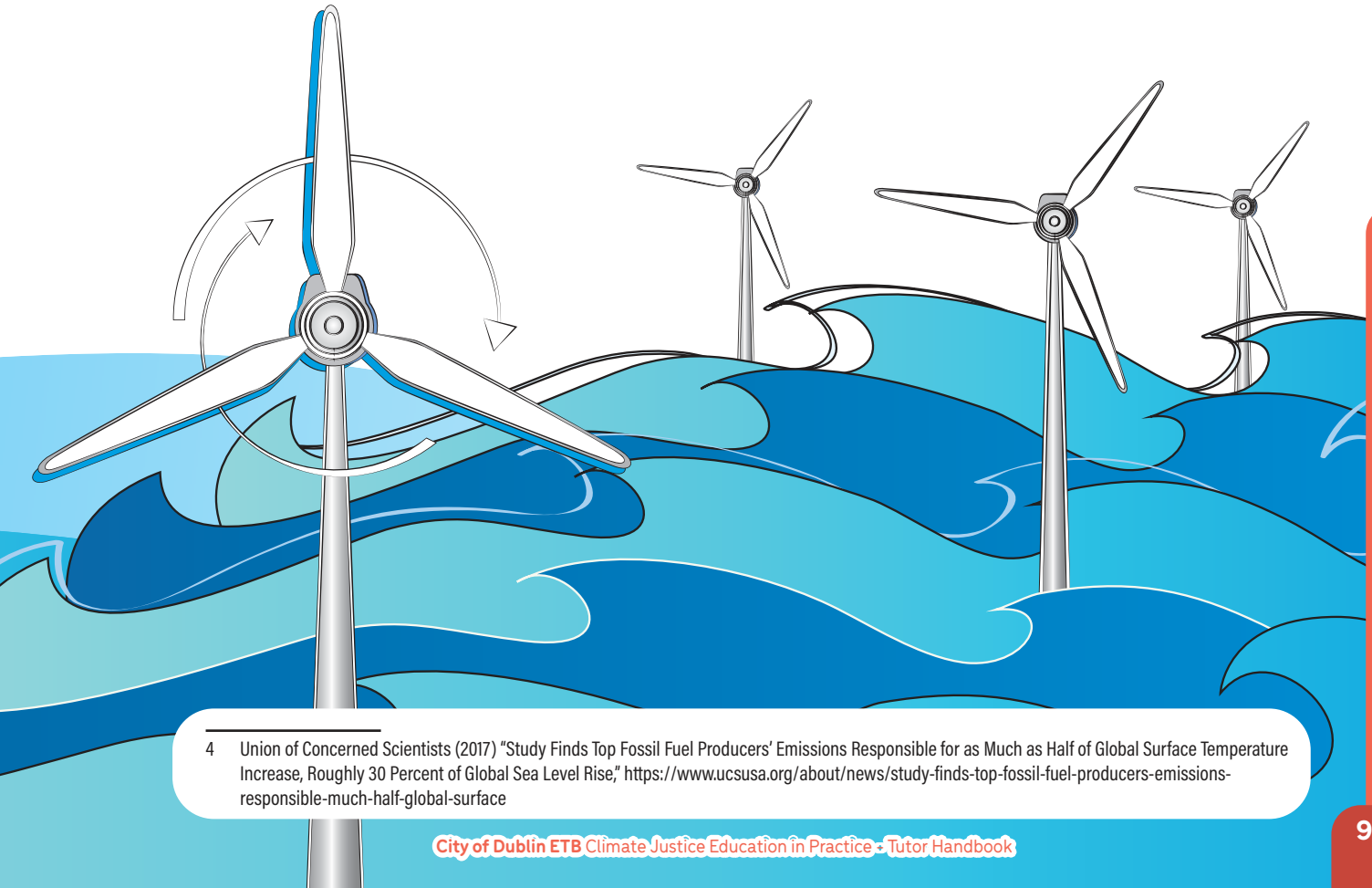
Activities in Chapter 2 show how carbon emissions cause global warming and climate change. This activity looks at those most responsible for emitting carbon, and consequently, changing the climate.

Image 1: There are some key points to looking at emissions from a historical, rather than current, perspective:

- *the United States has emitted more CO2 than any other country to date: at around 400 billion tonnes since 1751, it is responsible for 25% of historical emissions;*
- *which is twice more than China – the world's second largest national contributor;*
- *the 28 countries of the European Union (EU-28) – which are grouped together in the graph because they typically negotiate and set targets on a collaborative basis – is also a large historical contributor at 22%;*
- *many of the large annual emitters today – such as India and Brazil – are not large contributors in a historical context;*
- *Africa's regional contribution – relative to its population size – has been very small. This is the result of very low per capita emissions – both historically and currently.*

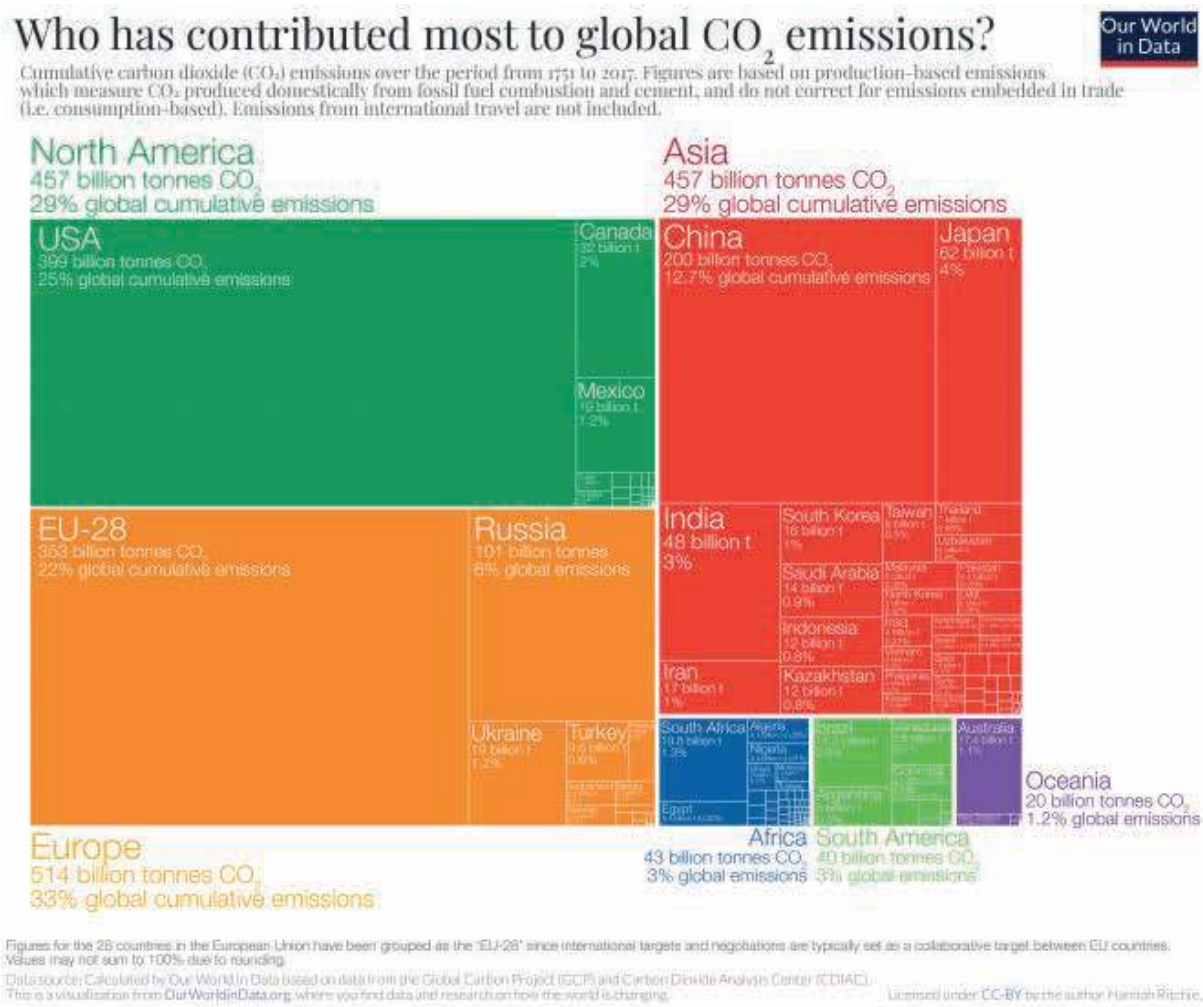
Image 2: Breakdown of carbon emissions (CBE) by population share and income. Note that the top 1% is responsible for 15% of carbon emissions and has a carbon footprint 75 times larger than the bottom 50%.

Image 3: While individuals are the ones using fossil fuels, the corporations who produce them have huge power in terms of determining the rate of emissions and the move to renewables (or not). The authors of the information in this image carried out another investigation, evaluating what global fossil fuel corporations have extracted from the ground since 1965, and the subsequent emissions these fossil fuels are responsible for. They found that "emissions traced to the 90 largest carbon producers contributed approximately 57 percent of the observed rise in atmospheric carbon dioxide, nearly 50 percent of the rise in global average temperature, and around 30 percent of global sea level rise since 1880."[4]



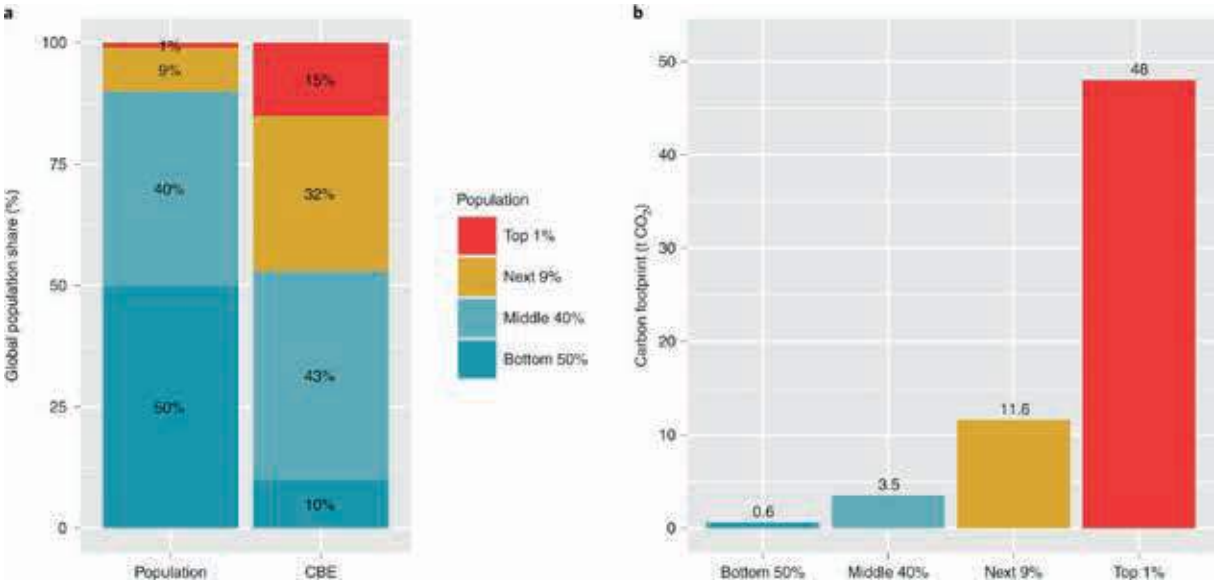
4 Union of Concerned Scientists (2017) "Study Finds Top Fossil Fuel Producers' Emissions Responsible for as Much as Half of Global Surface Temperature Increase, Roughly 30 Percent of Global Sea Level Rise," https://www.ucsusa.org/about/news/study-finds-top-fossil-fuel-producers-emissions-responsible-much-half-global-surface

Handout - Which Countries are Most Responsible?



Credit: Our World in Data.

Handout - Which Countries are Most Responsible?



CBE = carbon emissions.

Source: Bruckner, B., Hubacek, K., Shan, Y. et al. Impacts of poverty alleviation on national and global carbon emissions. Nat Sustain 5, 311–320 (2022).

Handout - Which Corporations are Most Responsible?

Source: Union of Concerned Scientists. https://www.ucsusa.org/resources/largest-producers-industrial-carbon-emissions

Activity F – What is CoP?

Materials required: *Printouts of CoP Worksheet, pens.*

Ask learners what they know about the CoP – the Conference of the Parties, which is the largest climate conference in the world. Give them some background information using the Guiding Notes below. Go through the CoP Worksheet, checking for understanding. Ask the group to discuss possible answers to the last question. Next show them the cartoons on the following pages and ask them what they think the cartoons mean and if they agree with the points being made.

As optional follow-on questions, ask the group what they think would be a fair solution to the responsibility problem? What human values do they think are needed to help act together on climate change? Why might it be difficult for all countries to agree on a course of action? What would help governments meet the targets that have been set?

Guiding Notes for Tutors

The purpose of this activity is to build learners' awareness of the purpose, role and limitations of annual CoPs and to discuss how challenging it is to reach global agreement on climate change given the huge differences in power between the Global South and richer countries of the Global North.

Background information on UN Climate Change Conference of the Parties (CoP)

The annual UN Climate Change Conference of the Parties (COP) brings together countries, civil society, companies and people on the frontline of climate change to accelerate action on the UN Framework Convention on Climate Change.

The 197 nations and territories – called Parties – are those that have signed on to the 1992 United Nations Framework Convention on Climate Change (UNFCCC). The Parties are responsible for monitoring and reviewing the implementation of the UNFCCC with the objective to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

The UNFCCC is the parent agreement to the 1997 Kyoto Protocol, which set binding emission reduction targets for 36 industrialized countries and the European Union. The UNFCCC is also the parent to the 2015 Paris Agreement which calls for action from all signatory countries.

COP summits are considered a milestone event each year in climate negotiations, where Parties are required to submit their updated plans to reduce emissions to meet their obligations under the Paris Agreement and to complete negotiations that were left unresolved from previous negotiations.

The attendees at COP are representatives of governments or 'observer' organisations, like charities. The United Nations manages all attendees at COP.

The 197 Parties to the UNFCCC are broadly organised in five regional groups:

- *Africa*
- *Asia*
- *Eastern Europe*
- *Latin America and the Caribbean*
- *Western Europe and Other States (including Australia, Canada and the USA)*

The Paris Agreement and NDCs

The Paris Agreement was signed at COP21 in 2015 and is a legally binding international treaty on climate

change with an overall goal of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."

To achieve this goal, each Party must reduce their greenhouse gas emissions as soon as possible; targets for cutting emissions are called Nationally Determined Contributions (NDCs). Emission reduction goals are undertaken on the basis of equity and in the context of sustainable development and efforts to eradicate poverty, with less-economically-developed Parties having a longer horizon to reduce emissions.

Parties have also agreed to focus on adaptation to the impacts of climate change and to foster climate resilience and low greenhouse gas emissions development, and to work towards aligning finance flows with low greenhouse gas emissions and climate-resilient development. Eighty countries, including the United States, China and Europe have all agreed to reduce gas house emissions by 51% by 2030 and to achieve 'Net Zero' emissions by 2050.

Source: https://sustain.ubc.ca/what-cop-0

Criticism of CoP

Environmental groups, climate scientists and countries from the Global South have been critical of the progress made so far in the annual conferences. Greta Thunberg said, "The COP has turned into a PR event, where leaders are giving beautiful speeches and announcing fancy commitments and targets, while behind the curtains governments of the Global North countries are still refusing to take any drastic climate action."

At CoP26 in Glasgow in November 2022, nations failed to agree on whether to create a "loss and damage" fund, a kind of insurance policy that would compensate climate-vulnerable countries for damage resulting from emissions that they did not create.

This is how UN Secretary-General Antonio Guterres summed it up in a statement: CoP26 had taken "important steps, but unfortunately the collective political will was not sufficient to overcome some deep contradictions." He went on to say that the conference failed to achieve the goals of ending fossil fuel subsidies, phasing out coal, putting a price on carbon, building the resilience of vulnerable communities, and meeting the pledge of $100 billion in climate finance (in loans and donations) to support developing countries.

Ireland and COP

Ireland is one of the Parties that attends COP each year. The Irish Government have set out a number of actions that they will take to meet their obligations under the 2015 Paris Agreement - to have net zero emissions by 2050 and a 51% reduction in greenhouse gas emissions by 2030. Ireland has consistently been ranked as 'low performing' in meeting year-on-year targets. Then Taoiseach, Leo Varadkar said in 2018 that Ireland is 'nowhere near close' to meeting its climate goals (see The Climate Change Performance Index - https://ccpi.org/countries/ for more details

Net Zero Emissions

The term net zero is important because – for CO2 at least – this is the state at which global warming stops. The Paris Agreement underlines the need for net zero. To achieve Net Zero means we must reduce greenhouse gas emissions and/or ensure that ongoing emissions are balanced by 'removals'. Removals mean measures that are taken that will neutralise greenhouse gases e.g., planting forests and improved management of bogs, wetlands, and agricultural land. Scientists have also come up with ways to 'capture carbon' in the air and store it.

The 'net' in net zero is important because it will be very difficult to reduce all emissions to zero on the timescale needed. As well as deep and widespread cuts in emissions, we will likely need to scale up removals.

Additional Resources

World Wildlife Fund's information about the Paris Agreement and the COP.

Environmental Protection Agency Ireland – Monitoring and Assessment Reports

CarbonBrief.org

United Nations Climate Change CoP – Conference of the Parties

Every year, the United Nations hosts a global Climate Change Conference called 'Conference of the Parties'. Most people call it CoP. The 26th CoP or COP26 was held in Glasgow, Scotland in 2022. The 'Parties' are members from 197 nations and territories, including Ireland, who signed up to the United Nations Framework Convention on Climate Change in 1992. This global agreement aims to prevent dangerous changes to the climate by reducing greenhouse gases. They have set a target of reducing emissions by 51% by 2030 (compared to 2005). Each year, the Parties come together to show how they are reducing carbon emissions and helping communities affected by global warming. It is the largest gathering of political leaders in the world.

It is not easy to get the 197 Parties to agree on the measures that need to take place. Leaders from poorer countries in the Global South argue that richer countries who have caused the problems should be most responsible for fixing them and that they are not doing enough. After CoP26 in Glasgow, Greta Thunberg said "The COP has turned into a PR event, where leaders are giving beautiful speeches and announcing fancy commitments and targets, while behind the curtains governments of the Global North countries are still refusing to take any drastic climate action."

Questions:

What does CoP stand for?

.....

Who hosts the CoP each year?

.....

How many Parties are there?

.....

Is Ireland one of the Parties?

.....

What have the Parties agreed to do?

.....

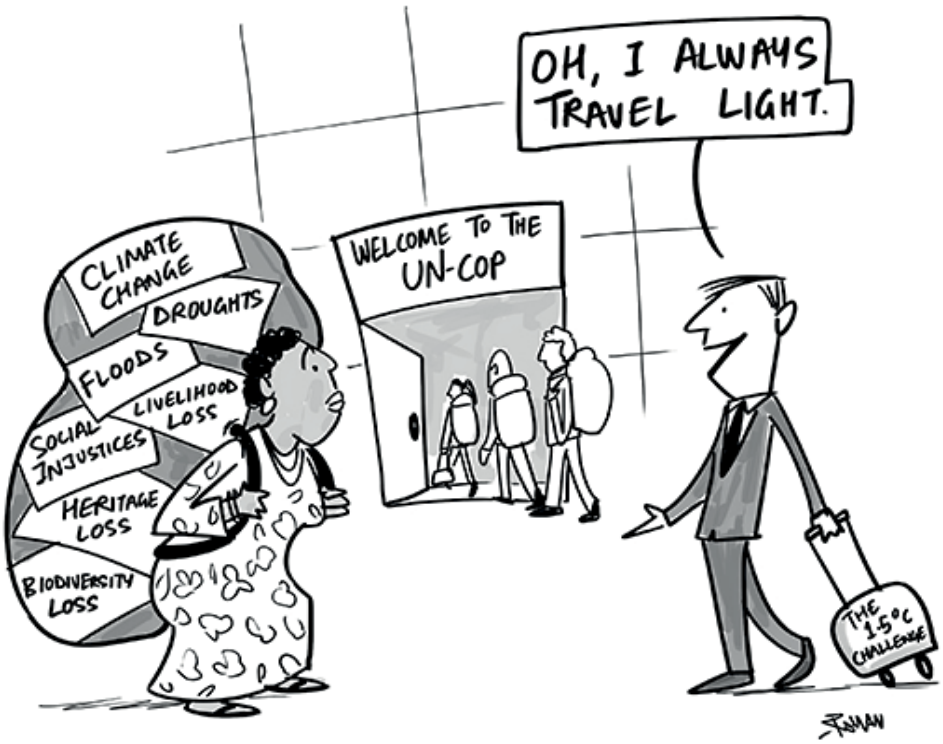
What is one criticism of the CoP?

.....

Why do you think it would be hard to get all the countries to agree on actions that need to be taken to reduce global warming?

.....

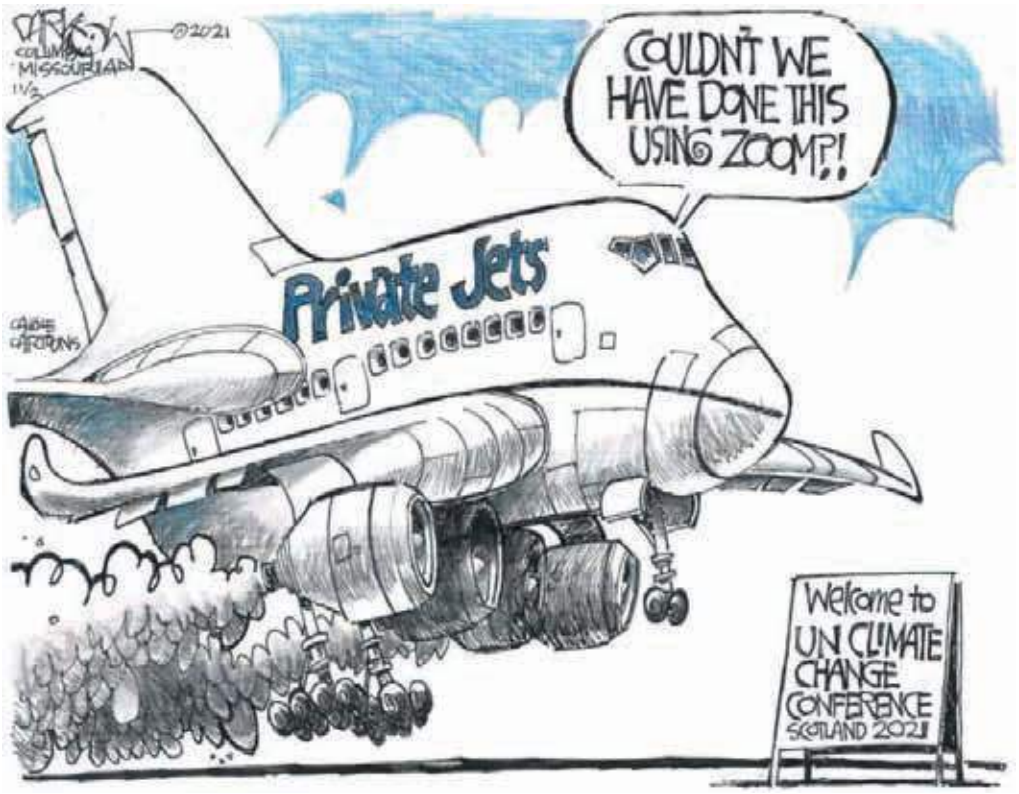
CoP Cartoons



Rohan Chakravarty / Cartoonstock

Source: Rohan Chakravarty

Handout - Which Countries are Most Responsible?



John Darkow | Copyright 2021 Cagle Cartoons

Activity G – Frontline Communities

Materials required: *Printouts of Map 1 and Map 2 Handouts*

Show learners the Map 1 and 2 Handouts, either as a slide or as a printout. The first map shows the main exports of South American countries – many of these are mined or extracted, like copper, natural gas or petroleum. These fossil fuels have to be extracted from the ground, affecting the health and livelihoods of communities who live beside these extractive projects. Mining for minerals for mobile phones or batteries, or gold for jewellery or bank vaults, also has negative effects on communities and causes climate change.

The second map shows sites of social conflict in communities caused by mining across South America. Ask learners why they think the conflicts have developed. Encourage them to think about how fossil fuel extraction and mining affects communities' access to clean water and air, and the effects that contamination of these could have on agriculture and health.

Optional: *search YouTube for one of Friends of the Earth's videos on mining or fossil fuel extraction and play it for the class]*

Ask learners to get into pairs and do the following roleplay: One person is going to play a community member whose health has been affected by the contaminated water and air from the extraction and transportation of coal from a mine near their community. They are a farmer, and their livestock also have health issues. The other person is an official from the coal mining company. They believe that the company is "mining responsibly" and that community members are lying about the impacts on their health. They have come on behalf of their employer to offer the community member a financial reward for staying quiet. Depending on the context of the group, you could prepare the different roles as handouts, or alternatively read them out in class and put keywords for each role on the whiteboard. Give the pairs five minutes to play out the roles, then ask the pairs to swap roles and give them five minutes more.

Back in the main group, ask the learners what they thought of the roleplay. Was it easy, hard? What was it like being the community member? What was it like being the company official?

Guiding Notes for Tutors

Frontline communities are communities who are experiencing the 'first and worst' effects of climate change. They are most often communities of colour, Indigenous and low-income and they have little power over what is happening in their community. Frontline communities are doubly impacted – they are most exposed to climate risks (floods, fires, food shortages, polluted air and water, etc) and they have fewer resources to protect them from those risks.

While countries like Ireland used to have more extractive projects, today many fossil fuel and mining extraction happens in the Global South or in marginalised communities in the Global North. These areas are known as 'sacrifice zones' – areas where we know activities are causing damage to the people living nearby but it is considered necessary to sacrifice clean air, water etc for the extraction of resources. Often, wealthier communities are successful in stopping this activity, but poorer communities lack the power or influence to do the same.

Not many of the economic benefits of these projects remain in Global South countries. Extractivism refers to the extraction of natural resources that are exported in their raw state, and the country of origin gets little of the economic benefit. This is a pattern going back to colonial times.

Additional resources
Look up the website Yes to Life, No to Mining for examples of frontline communities taking action against mining.

Map 1 – Resources in South America

E

Map 2 – Conflict in South America

Source: Screenshot of the Environmental Justice Atlass

Section 3.3 – Action for Climate Justice

Overview – Aims and Objectives

The aim of this section is to facilitate discussion of different actions for climate justice, both thinking critically about broad actions like climate strikes and a just transition and building motivation for learners to take action in their own communities. The objective is for learners to be able to outline some key actions for climate justice that are already taking place and could take place in their own communities.

Section 3.3 - Activities

- **Activity H** - Justice-Focused Community Solutions
- **Activity I** - Youth Climate Activism
- **Activity J** - Introduction to Just Transition

Activity H – Justice-Focused Community Solutions

Materials required: *Art materials (optional), markers, flipchart paper.*

Show learners the following definition for climate justice (or re-visit the poem that was created in Activity C).

> *"Climate justice is about knowing that the people who are hardest hit by climate change are the least responsible and that we can only solve the problem by making the world fairer for everyone."*
>
> *City of Dublin ETB Adult Education Service*

Let them know that you are going to talk about making the world fairer, but in the context of our own communities. Because climate change - and therefore action on climate change - affects every area of our lives, strengthening our communities on many different levels also has implications for climate action, and above all for climate justice. Stronger communities will be able to manage and adapt to the effects of climate change.

First, ask the group to brainstorm the challenges facing the community they live in. Examples may be unemployment, pollution, anti-social behaviour, lack of resources or amenities, mental health issues, isolation, etc.

Next, ask them to imagine they are one of our descendants living 100 years from now in a fairer and more sustainable world for people and planet. Perhaps their great-grandchild? What does their world look like? They can take a few minutes to think individually and then use the paper, markers, and other arts materials to create a visual image of this future vision.

As a class:

1. List the key features of your fairer and more sustainable society. Think about:
   - What does it look like? What green/outdoor/communal spaces are there?
   - Who lives here? Where do they live?
   - How are decisions about the area made?
   - How do people get from place to place here?
   - What resources or supports are in place? How do they access them? Are they free?

2. In groups/pairs, choose one of these outcomes. What are the steps needed to produce this outcome? Break it down.

3. What action needs to happen to move from Step 1 to Step 2? From Step 2 to Step 3?

4. When you have a list of actions, decide who is responsible for taking this action. Use this information to complete the table below.

Individual Action	**Class/Centre Action**
► ► ► ► ►	► ► ► ►
Community Action	**National/Government Action**
► ► ► ►	► ► ► ►

Guiding Notes for Tutors

The community challenges that learners come up with will differ, but common examples may include lack of well-paid jobs, early school leaving, lack of facilities for children and young people, poor quality education and health services and unsafe and unsecure housing amongst others. Strengthening and improving all of these areas increases well-being and resilience to climate change.

Additional resources

Look up the International Institute for Environment and Development's webpage on Community-based Adaptation.

Activity I – Youth Climate Activism

Materials required: *Printouts or slides of text on following page. Optional photos from Climate Justice Gallery relating to water or print out your own.*

Ask the group to think about water. What springs to mind? Rainwater? Drinking water? Bathing or washing? Ask them to imagine what it would be like to live in a country that does not have access to clean water (40% of the world's population do not have this).

Next, read out Autumn Peltier's words about environmental destruction and access to water in her community, from a speech [5] which she gave to the UN General Assembly in 2018. The text is copied below and is also available as a handout on the next page. Autumn is an Anishinaabe indigenous youth leader in Canada.

> *"Our water deserves to be treated as human, with human rights. We need to acknowledge our waters with personhood, so we can protect our waters. We all have a right to this water as we need it. Not just rich people, all people. No one should have to worry if the water is clean or if they will run out of water. ...we need to work together. Now is the time to warrior up and empower each other to stand for our planet. We need to sustain in the little we have now and develop ways not to pollute the environment and sustain the relationship with Mother Earth and save what we have left." – Autumn Peltier*

Check for understanding and underline any words which need future explanation.

Facilitate a full group discussion – What does Autumn's speech have to do with climate justice? What is she calling for in terms of global climate action? How do her words make you feel?

Optional creative activity: Ask the group to create a collage or poster or painting that features some or all of Autumn's words or create something that represents the importance of water in our lives.

5 Indigenous Water Activist Autumn Peltier's Speech at the UN General Assembly - https://www.powwows.com/indigenous-water-activist-autumn-peltiers-speech-un-general-assembly/

Autumn Peltier

"Our water deserves to be **TREATED AS HUMAN**, with human rights. We need to acknowledge our waters with personhood, so we can protect our waters."

"We all have a right to this water as we need it.

Not just rich people, all people. No one should have to worry if the water is clean or if they will run out of water. ...we need to work together.

Now is the time to warrior up and empower each other to stand for our planet. We need to sustain in the little we have now and develop ways not to pollute the environment and sustain the relationship with Mother Earth and **save what we have left."**

Activity J – Introduction to Just Transition

Materials required: *Flipchart sheet or paper tablecloth, markers, small stickers.*

Let learners know you are going to be discussing Ireland's climate policies, and the meaning of a Just Transition. Ask them what they have heard in the news or elsewhere about climate policies or related issues like carbon taxes, grants for home improvements like insulation, the extraction of peat from the bogs, or the building of wind farms in rural communities. What do they think of these? Do they think these measures are fair?

Explain the principles of Just Transition to learners:

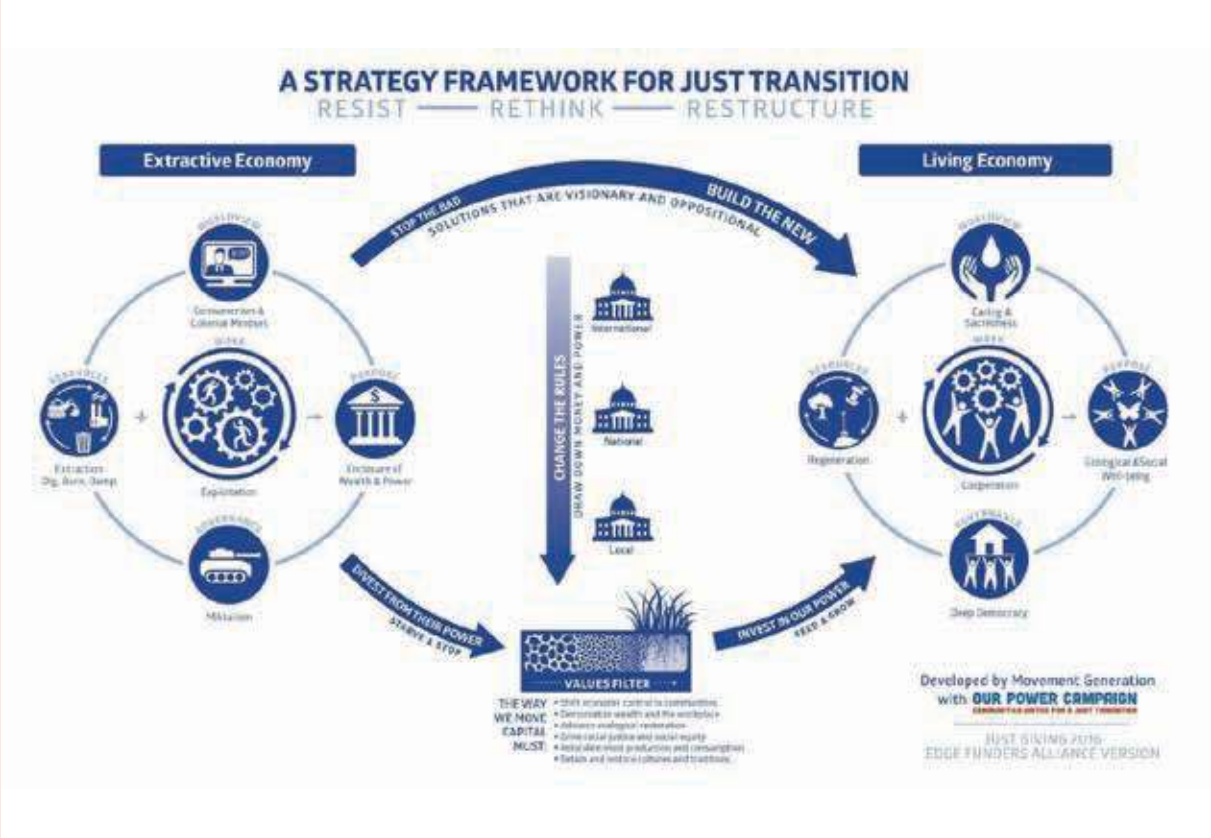
- 'Buen Vivir' – a 'good life' – everyone should be able to enjoy access to clean and healthy water, air, land and food as well as education and shelter.
- One community's 'good life' cannot be at the expense of another person or the natural world.
- The rights of the collective and the rights of nature take priority over individual rights.
- All communities and all community members have a right to decent jobs and their fair share of resources.

Creative activity: Let learners know that they are going to work on a creative mapping activity. Using flipchart sheets or a paper tablecloth, ask the group to draw a map of their local community, or village or local area, starting with main roads, rivers, junctions, parks, housing estates, schools, churches. Ask them to use the stickers to mark on the map all the aspects of their community which they believe make them stronger, which bring life and positive action to the community. They can include physical infrastructure, like playgrounds, health centres and schools, but also local activism or community initiatives. For example, they could add things like community groups, sports clubs, support groups, community gardens, educational activities, outdoor spaces, community centres. They can also add people, like school traffic wardens, the Public Health Nurse, Tidy Towns members.

Then ask them to think about the principles of a 'Just Transition' – what would need to be added to their map to achieve a just transition for this particular area? If learners get stuck, you can suggest things like recycling centres, renewable energy sources, upgrading older houses to be energy efficient, public transport, places to walk or exercise, more greenery, less traffic, cycle lanes, a bicycle repair shop employing local people, a training centre for upskilling local people for green skills jobs, etc.

Guiding Notes for Tutors

This diagram visualises the principles of Just Transition:



Source: Movement Generation

On the left of the diagram is the extractive economy. In place since times of colonisation, it is causing the life system supports of the planet to begin to fail. It is inevitable that the global economy will transition away from fossil fuels, but it is unfortunately not guaranteed that this transition will be fair for marginalised communities. On the right of the diagram is the living economy which Just Transition principles are working towards. Just Transition is about building a visionary economy that is very different than the one we now are in. This requires stopping the extractive economy while at the same time building the living economy. Just Transition is about redistributing resources and power to local communities. Just Transition initiatives work to shift from dirty energy to energy democracy – so that communities can have a say over where their energy comes from and how it is used. Just Transition is a about creating a deep democracy in which workers and communities have control over the decisions that affect their daily lives. [6]

6 Adapted from Climate Justice Alliance's materials on Just Transition - https://climatejusticealliance.org/just-transition/

Climate Justice Education in Practice

City of Dublin Education and Training Board
Bord Oideachais agus Oiliúna
ADULT EDUCATION SERVICE
A Learning Community

SOLAS
learning works

An Roinn Breisoideachais agus Ardoideachais, Taighde, Nuálaíochta agus Eolaíochta
Department of Further and Higher Education, Research, Innovation and Science