

LESSON 1

WHAT IS CLIMATE CHANGE?



WHAT IS WEATHER?

- Weather is the set of conditions in the atmosphere in one location for a limited period of time—such as throughout the day, at night, or at any particular point during the day.
- Weather is **temporary**.

(Source: Britannica)

WHAT IS CLIMATE?

- Climate describes the average condition of the atmosphere over a **long period** of time, such as across spans of 30 years or more, for a given location.

(Source: Britannica)

- Ireland has a *temperate oceanic climate*. Characteristics include cool winters and relatively warm summers, with a narrow temperature range. Precipitation is reliable and evenly distributed throughout the year.

(Source: World Atlas)

STATEMENT

WEATHER

CLIMATE

Today was 10 degrees hotter than normal

It feels much hotter today than yesterday

Heavy thunderstorms are expected to move through the area this evening

New York sees a White Christmas 75% of the time.

"I've lived here for 15 years and I've never seen flooding like this."

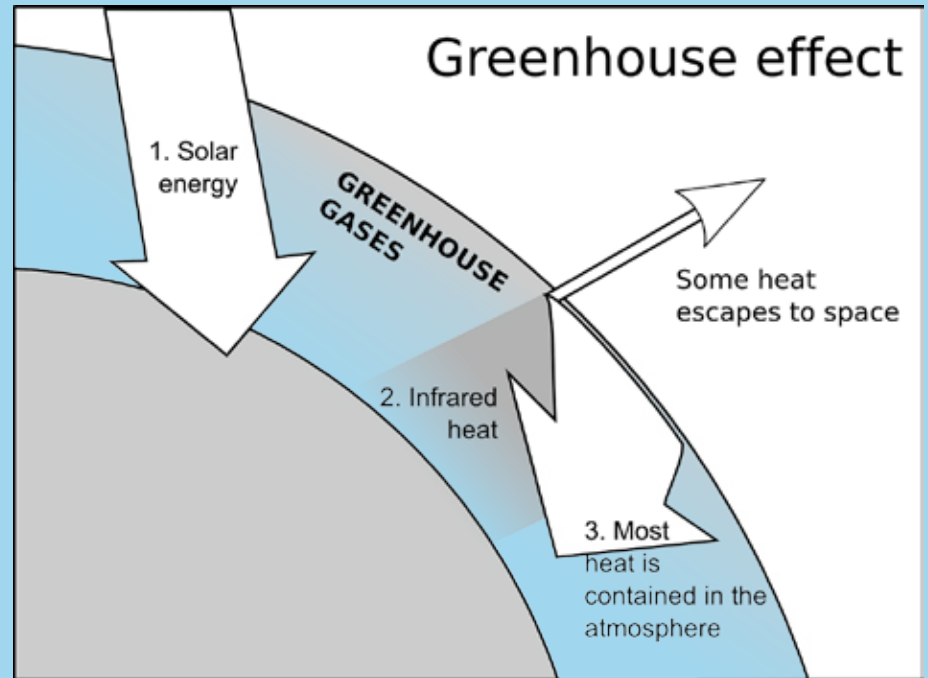
WHAT IS CLIMATE CHANGE

- **Climate Change** refers to the long-term changes in climate patterns that have occurred over a period of time including temperature, precipitation and sea level rise. Climate change is caused by natural factors or human activities that are changing the composition of the Earth's atmosphere.
- **Global Warming** refers to the trend of rising average temperatures across the globe.

(Source: Teaching Manual on Disaster Risk Reduction)

THE GREENHOUSE EFFECT

- The sun's rays pass through the atmosphere to the earth. When they reach the earth's surface they are reflected and go through the atmosphere to space. However! When the sun's rays are reflected from the earth, GREENHOUSE GASES can trap the heat in the atmosphere.
- Without these gases the earth would be very cold – about minus 18 degrees Celsius.
- We call this process THE GREENHOUSE EFFECT because it is similar to what happens in a greenhouse. In the atmosphere these greenhouse gases act like a big blanket around the earth, trapping more and more heat from the sun.





CLIMATE CHANGE 101

CLIMATE CHANGE 101

LESSON 2

**WHO IS RESPONSIBLE FOR
CLIMATE CHANGE?**

ACTIVITY

- Write a list of everything you do during a normal school day (get the bus to school, use a computer, wear a uniform, eat lunch) and tick any of the activities that may use fossil fuels
- **Tip:** fossil fuels are used in many forms such as transport, heating, electricity, food, and clothing production.



WHO HAS THE **WORST** CARBON FOOTPRINT?

Rank the following countries in order of who you think has contributed towards the most CO2 emissions in 2018. The country with the largest emissions should be given a number 1 and the country with the smallest a number 10.

Indonesia

China

Kenya

Philippines

Germany

Ireland

Papua New Guinea

USA

New Zealand

Mali

WHO IS RESPONSIBLE?

(Source: <http://www.globalcarbonatlas.org/en/CO2-emissions>)

| Country | CO2 emissions (from human activity and natural occurrence) | World Ranking out of 220 countries |
|-----------------|--|---------------------------------------|
| China | 9839 MtCO ₂ | 1 |
| USA | 5270 MtCO ₂ | 2 |
| Germany | 799 MtCO ₂ | 6 |
| Indonesia | 487 MtCO ₂ | 12 |
| Philippines | 128 MtCO ₂ | 37 |
| Ireland | 40 MtCO ₂ | 68 |
| New Zealand | 36 MtCO ₂ | 72 |
| Kenya | 16 MtCO ₂ | 93 |
| Papa New Guinea | 7.4 MtCO ₂ | 117 |
| Mali | 1.7 MtCO ₂ | 154 |

FACT

Ireland has third highest emissions of greenhouse gases per capita in the EU.

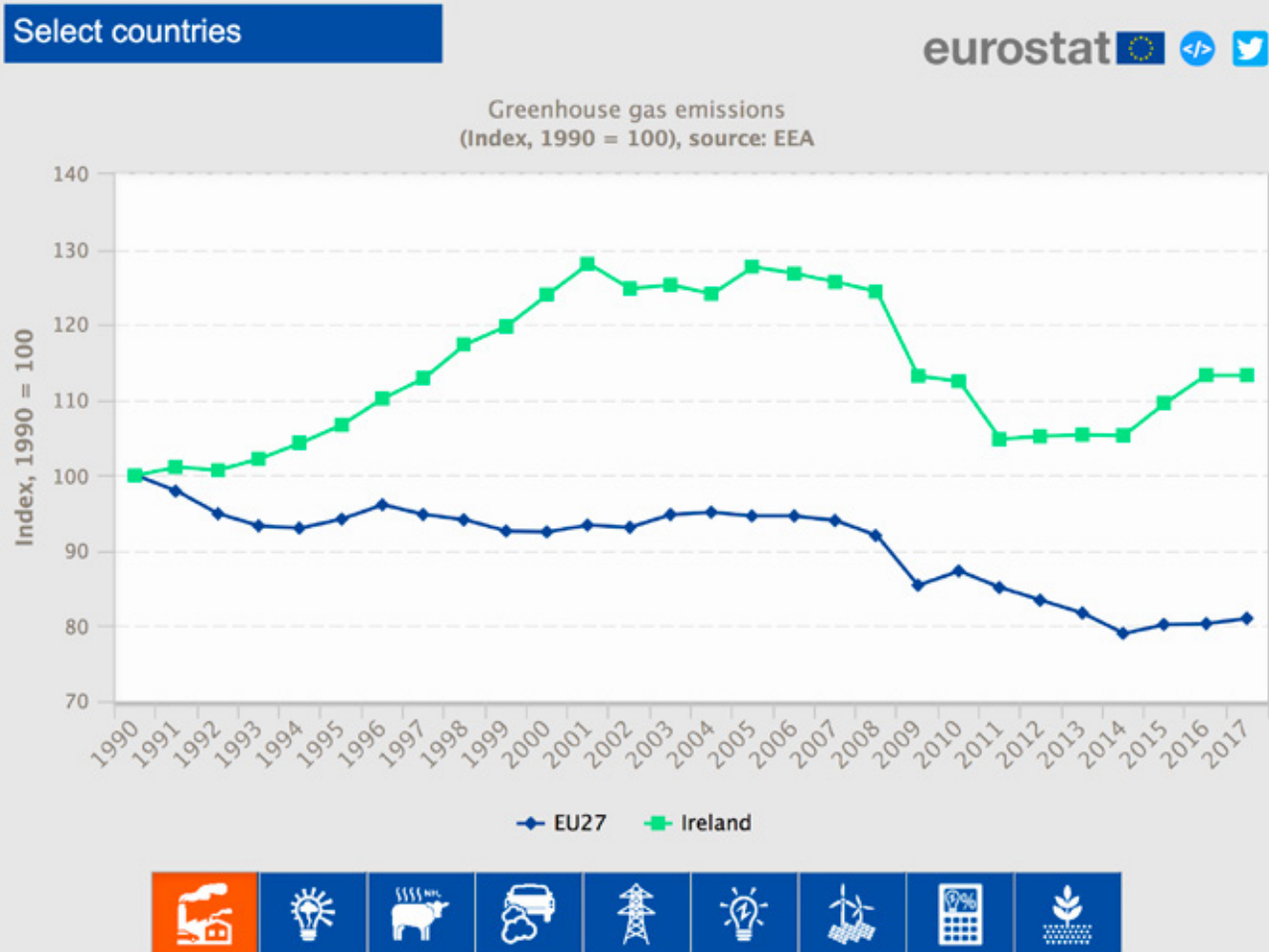
CSO report shows Ireland's per capita carbon output is more than double the rate in Sweden!

Sweden's population is 10.12 million – Ireland's population is half that.

(Source: The Irish Times, August 2019 <https://www.irishtimes.com/news/environment/ireland-has-third-highest-emissions-of-greenhouse-gas-in-eu-1.3998041>)

IRELAND GREENHOUSE GAS EMISSIONS

(<https://ec.europa.eu/eurostat/web/climate-change/visualisations>)



WHERE ARE IRELAND'S EMISSIONS COMING FROM?

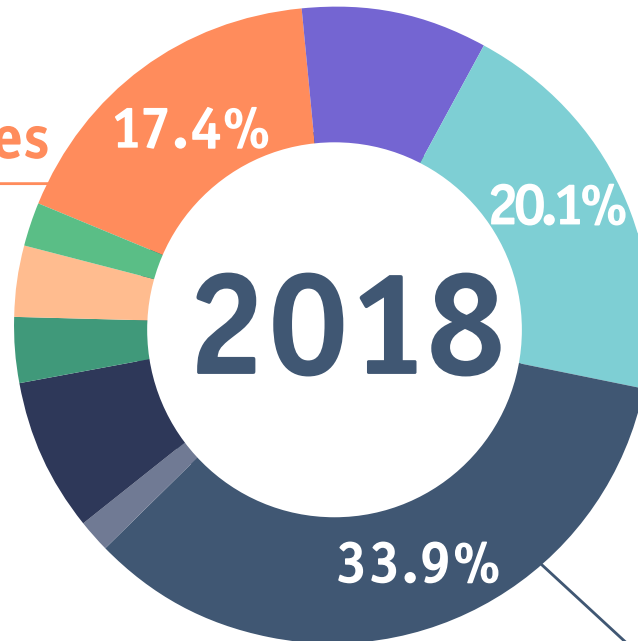
(www.epa.ie/ghg/documents)



Energy Industries

17.4% total

↓ -10.7%



Transport

20.1% total

↑ +1.6%



Agriculture

33.9% total

↑ +1.9%

71% of our greenhouse gas emissions come from Energy Industries, Agriculture and Transport.

Emissions from Energy industries declined by over 10.7% in 2018 due to less coal. However, Agriculture and Transport emissions have increased significantly in the last 3 years.

THE HISTORY OF **CLIMATE CHANGE** NEGOTIATIONS



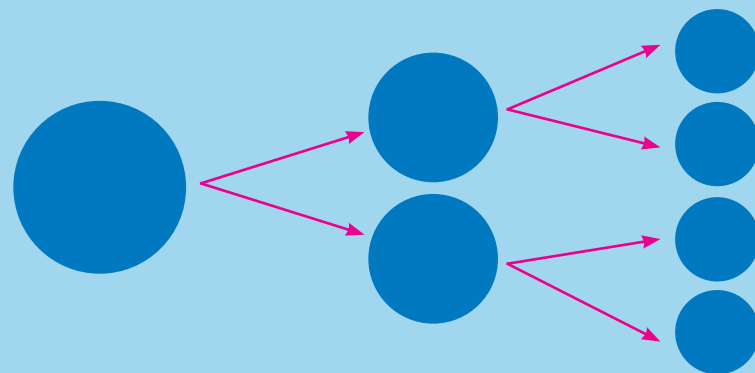
LESSON 3

IMPACTS OF CLIMATE CHANGE

CONSEQUENCE CHART



Link your group's extreme weather event card to any possible hazards associated with it. They make a list of any possible impacts associated to the hazards. See example below.



EXTREME WEATHER EVENT

HAZARDS

POSSIBLE IMPACT

FURTHER IMPACTS

Extreme rainfall

- Flooding
- Erosion
- Landslide

- Contaminated waters
- Crops can be washed away
- Animals can drown
- People get sick
- Loss of income

- Families living in extreme poverty
- Children are unable to pay school fees
- Girls vulnerable to child marriage



SUSTAINABLE DEVELOPMENT GOALS



MYSTERY STORY



Use the clues below to answer the question “Why did Juan’s friends have to leave school?”. Place the cards in a logical order and explain your reasoning.

Indonesia has one of the highest deforestation rates in the world.

Climate change is believed to increase the risk of extreme weather conditions.

Carbon dioxide is a greenhouse gas which contributes to climate change.

Cars produce carbon dioxide from burning petrol.

There is no public transport in Liam’s town so his parents drive him to school each day.

Ireland has the 3rd highest emissions of greenhouse gases per capita in the EU.

Liam’s school is an older building and is poorly insulated, meaning the classrooms have to run the heating more often than necessary.

Liam lives 3km from his school.

Indonesia is the world’s 12th largest emitters of greenhouse gases.

East Nusa Tenggara in Indonesia comprises of beautiful mountains, hills, green forests and waterfalls.

In East Nusa Tenggara during extreme drought, food and water run out.

Many farmers in East Nusa Tenggara live on corn and cassava grown on small plots of land.

In East Nusa Tenggara food is prioritised for fathers over children and mothers, meaning people most effected by malnutrition are women and children.

Juan’s 17 year old friend left school and migrated to Kalimantan Island where he works for a palm oil company.

During the rainy season in East Nusa Tenggara rivers overflow and cause erosion.

The erosion of riverbanks was so bad Juan lost his home.

Juan is a 16-year-old boy from East Nusa Tenggara in Indonesia, where 11% of people classified as poor in Indonesia lived in 2015.

A young person with short dark hair, wearing a light-colored short-sleeved shirt and a patterned wrap, stands in a lush green field. They are carrying a wooden handle of a hoe over their right shoulder. The background shows a line of trees under a cloudy sky.

LESSON 4

STORIES OF CLIMATE CHANGE

WHO ARE THE **MOST VULNERABLE** PEOPLE?

Who are the most vulnerable people? When a hazardous weather event occurs or a climate issue takes effect, it can seriously affect those who are vulnerable and at risk more than others because they are more susceptible to problems such as:

- **Economic issues:** people with low incomes, lack of facilities, lack of housing and difficulty accessing public services (health, education, clean water).
- **Social issues:** people who are isolated from their communities – less involved in social organisations or activities in the local community; their isolation means that their voices are not represented in community decisions or activities.
- **Environmental issues:** people who live in areas that are vulnerable to natural disasters or are impacted by pollution.

CLIMATE CHANGE **STORIES**

Each group must present their case study. Presentations can be made through role play, song, interview, or drawing. **The time limit for presentations is 3 minutes and each group has 20 minutes to prepare.**

- **0-5 Content:** Points made reflect their importance.
- **0-5 Organisation:** Information is presented in a logical sequence.
- **0-5 Participation:** All team members contribute to the presentation.
- **0-5 Creativity:** How creative was the presentation?

LESSON 5

TAKING ACTION AGAINST CLIMATE CHANGE



YOUTH AROUND THE WORLD: TAKING ACTION



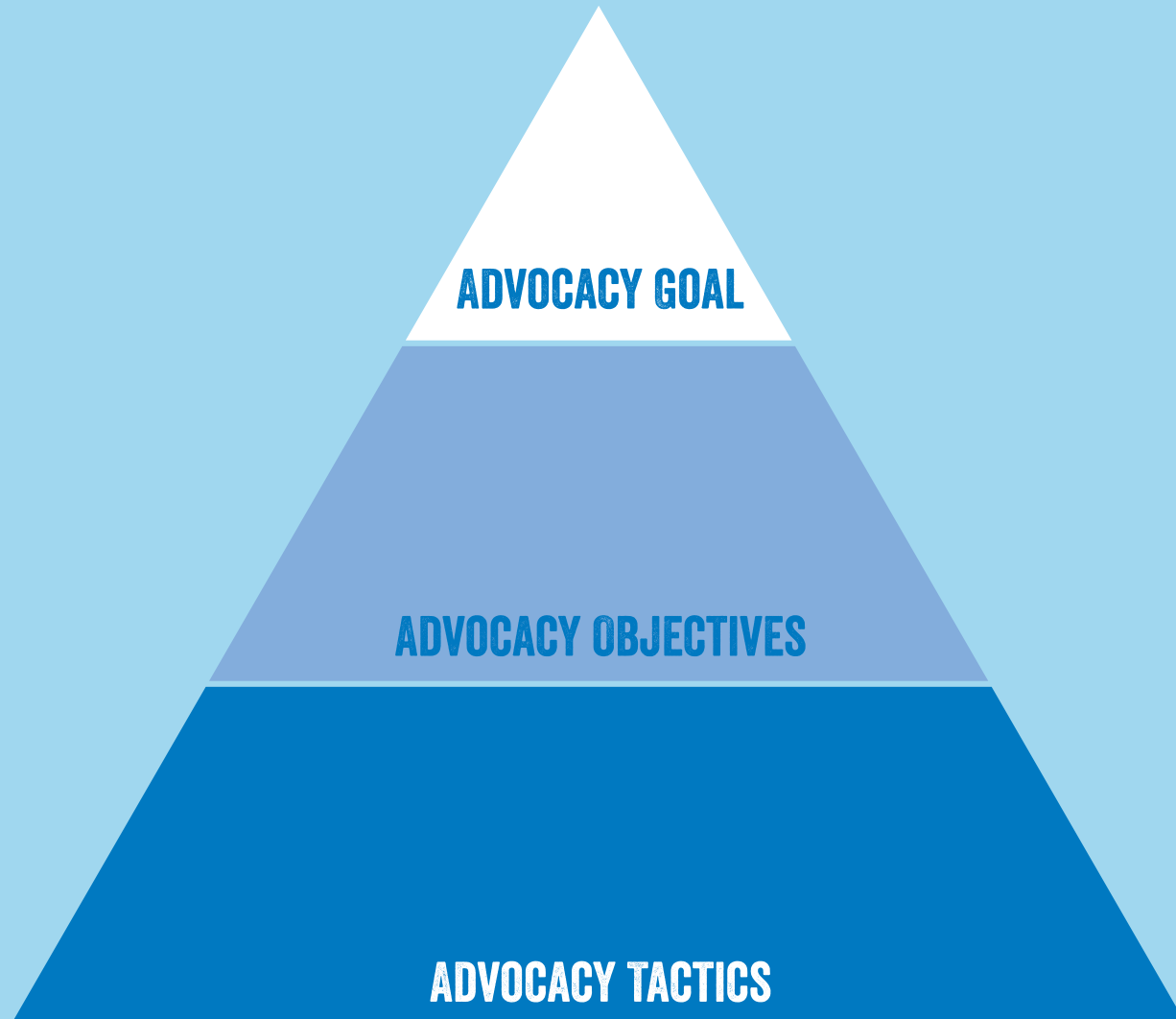
ACTION ON CLIMATE CHANGE

- Climate **Mitigation**: We can stop climate change from getting worse. This means reducing human activities that release greenhouse gases into the atmosphere.
- Climate **Adaption**: We can also take action to deal with climate change impacts. By adjusting and adapting both the natural and human environment we can be better prepared for climate change impacts.

(Y-Adapt, facilitators guide)

ADVOCACY PYRAMID

(Plan International, Champions of Change module)



PROBLEM TREE



Choose a major problem in relation to climate change and complete a problem tree with at least 5 branches. The problem should relate to the advocacy goal you have chosen.

Branches

Consequences

Trunk

Main Problem

Roots

Causes



SPHERES OF INFLUENCE

Fill in a climate change action idea for each circle. Examples: turn off lights when they leave a room, create a school garden and compost heap, research how to get solar panels in your community, write a letter to a local councillor to advocate for more bike lanes in your town, etc.

