GLOBAL WARMING AND CLIMATE CHANGE





WHAT IS CLIMATE CHANGE?



Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures.



The main greenhouse gases that are causing climate change include *carbon dioxide* and *methane*. These come from using gasoline for driving a car or coal for heating a building.



GLOBAL TEMPERATURE	CARBON DIOXIDE
1.4°C	422 PPM
SEA LEVEL	**METHANE**
10 CM	1922 PPM



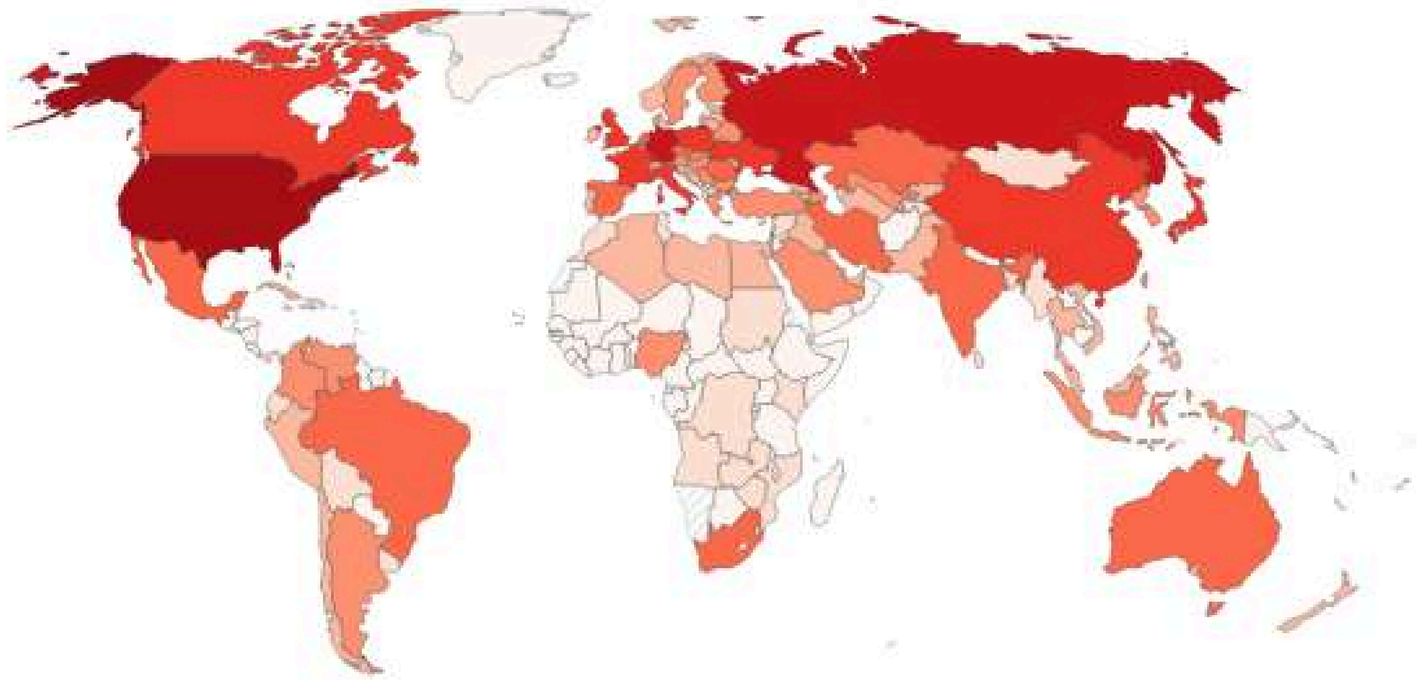
Annual CO_2 emissions, 1972

Carbon dioxide (CO_2) emissions from fossil fuels and industry. Land-use change is not included.

Our World in Data

Table | Map | Chart

World



No data | 0 t | 3 million t | 10 million t | 30 million t | 100 million t | 300 million t | 1 billion t | 3 billion t | 10 billion t

1750 — 2023

Data source: Global Carbon Budget (2024) – Learn more about this data

OurWorldinData.org/co2-and-greenhouse-gas-emissions | CC BY

Explore the data →

THE PRIMARY CAUSES OF CLIMATE CHANGE



HUMAN CAUSES

Global Carbon Emissions

Carbon dioxide emissions are the primary driver of global climate change. It's widely recognized that to avoid the worst impacts of climate change, the world needs to urgently reduce emissions. But, how this responsibility is shared between regions, countries, and individuals has been an endless point of contention in international discussions.

Agriculture

Organic carbon is a source of CO_2 emissions when the soil is mismanaged. The organic carbon in the soil is transformed into CO_2 with loosening of the soil and accumulates in the atmosphere, after it exposure to temperature and oxygen. Unconscious tillage and irrigations increase the physical and biological activity of the soil and cause CO_2 emissions from the soil.



NATURAL CAUSES

Changes in Ocean Currents

Ocean currents carry heat around the Earth. As the oceans absorb more heat from the atmosphere, sea surface temperature increases and the ocean circulation transport warm and cold water around the globe change. The direction of these currents can shift so that different areas become warmer or cooler. As oceans store a large amount of heat, even small changes in ocean currents can have a large effect on global climate.

Volcanic Eruption

Large mountain chains can influence the circulation of air around the globe, and consequently influence the climate. For example, warm air may be deflected to cooler regions by mountains.

Volcanoes affect the climate through the gases and particles (ash) thrown into the atmosphere during eruptions. The effect of volcanic gases and dust may warm or cool the Earth’s surface, depending on how sunlight interacts with the volcanic material.



CLIMATE CHANGE EFFECTS

- Shrinks glaciers and ice sheets
- Shifts plant and animal geographic ranges
- Make substantial losses in agricultural production
- Reduces in the quantity of water available for irrigation
- Causes poverty and displacement
- Does longer-lasting droughts





HOW TO PREVENT CLIMATE CHANGE?



REFORESTATION AND AFFORESTATION



SUSTAINABLE LIVING



REDUCE CARBON FOOTPRINT

REFORESTATION & AFFORESTATION



REFORESTATION

- Loss of habitat for millions of species, which could become extinct.
- Changes in the water cycle: Reduces the availability of drinking water and rain is concentrated in greener areas.
- Erosion leads to the loss of fertility in the soil and a greater risk of landslides and floods.

AFFORESTATION

- Carbon dioxide reduction: Trees absorb carbon dioxide during photosynthesis and store it in their biomass, helping to mitigate climate change and reduce pollution.
- Soil conservation: Afforestation helps prevent soil erosion by providing a protective cover of vegetation.



SUSTAINABLE LIVING

REFRAIN FROM USING PLASTIC SHOPPING BAGS

We can avoid using plastics by using reusable bags when we shop, ditching single-use water bottles, bags and straws, and avoiding products made from or packaged in plastic whenever possible. Switch from single-use to reusable products every chance you get.

DRIVE LESS, DRIVE GREEN

Fossil-fueled transportation emissions create greenhouse gases, smog, soot and other harmful air pollution. But changing your driving habits can dramatically reduce your carbon footprint. Walk, bike, carpool, use public transportation or join ride or bike shares whenever possible.

CONSUME ORGANIC FOOD

From coffee to fruit to clothing, choosing organic products helps reduce your impact on wildlife and the planet.

USE LESS WATER

Many parts of the world are privileged enough to have access to clean water every day, but that doesn't mean we should squander our water. We can keep an eye on the length of your showers, and re-use unsalted cooking water to feed our plants.

REUSE AND RECYCLE

Items that we don't recycle often end up in landfills, contributing to the noxious gases that affect our health and contribute to global warming. We can simply check the packaging for a recycle symbol and put it in the right can.

SWITCH TO GREEN POWER

You can improve your carbon footprint enormously by switching to renewable energy sources for your electricity. Comparison portals help you find the best providers.





REDUCE CARBON FOOTPRINT

There are many things you could do to reduce your carbon footprint. Some of them are:



Use public transportation



Use the least polluting vehicle



Reduce electricity usage at home



Use biodegradable laundry detergent



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THANK YOU FOR LISTENING



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