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Climate change and environmental sustainability module: Information booklet

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ISMAILI CIVIC
PAKISTAN



آغا خان یونیورسٹی
THE AGA KHAN UNIVERSITY
Institute for Educational Development

CLIMATE CHANGE AND ENVIRONMENTAL SUSTAINABILITY MODULE



INFORMATION BOOKLET



LEARNING INSTITUTE

Climate Change and Environmental Sustainability Module

Information Booklet



2022, AKU-IED

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Acknowledgments

The module is one of the undertakings of Ismaili CIVIC initiatives in Pakistan and the Aga Khan University Institute for Educational Development (AKU-IED) and is developed to provide awareness to school students about climate change and environmental sustainability. It is authored by Dr Fozia Parveen, Sara Hassan and Subhah Khan.

Dr Parveen is an environmentalist, member of Ismaili CIVIC team and currently serves as Assistant Professor at the Aga Khan University Institute for Educational Development (AKU-IED). Sara and Subhah are students at Lahore University of Management Sciences (LUMS) in the humanities and social sciences (HSS) department.

The module began as an elective for the Aga Khan Youth and Sport Board's (AKYSB) youth weekend camp. In the final project for a course titled 'Introduction to Environmental Science', Sara, Subhah and Maryam created an activity booklet for students aged 6-12. Later, through LUMS Learning Institute's pedagogical partnership, the module was further updated and more activities for teachers and parents were added to ensure environmental stewardship.

Ismaili CIVIC is a global program under which the Shia Ismaili Muslim community across the world unites around its centuries-old tradition of serving humanity by rendering voluntary service to improve the quality of life of the communities in which they live, regardless of faith, gender, and background. This international endeavor reflects the community's ethic of civic engagement and good citizenship, exemplifying Islam's core values of service, peace, compassion, and care for the vulnerable. The Ismaili CIVIC would like to acknowledge the support of LUMS Learning Institute (LLI) for providing financial support to the partnering students.

This is but a first step towards many interventions AKU-IED and Ismaili CIVIC intend to carry out in the future. It is a work in progress and the authors welcome any feedback on the module consisting of the 'Information' and 'Activity Booklets'. The cover art for both the booklets is designed by Mr. Hazem Asif.



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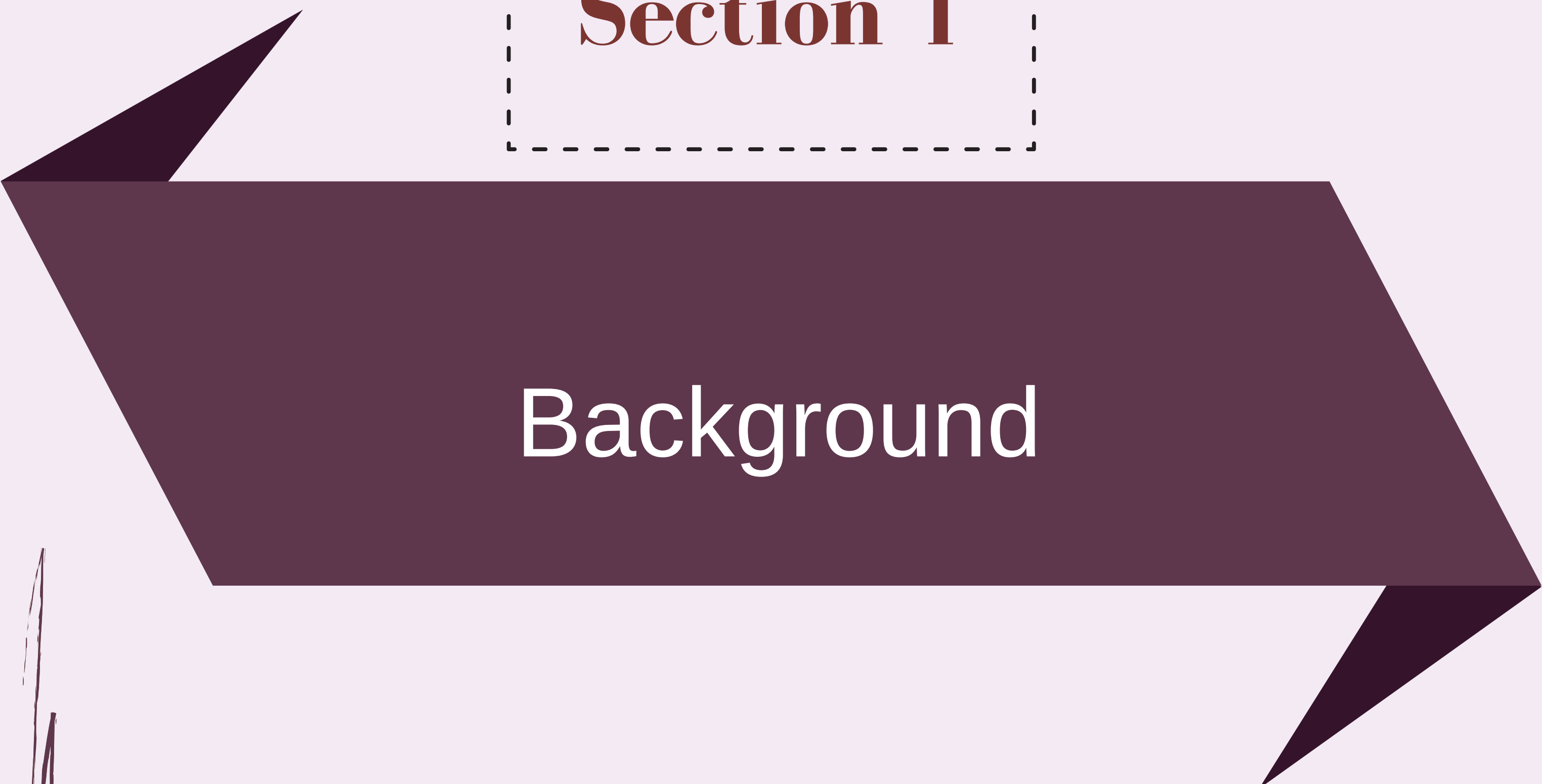
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Section 1



Background



Background

Our planet, although a very small part of the solar system, holds a unique value in sustaining life. The challenges faced by the planet today are due to a rapid increase in population, urbanisation, and overexploitation of natural resources, which disturb the balance of the ecosystem.

The Climate Change and Environmental Sustainability module will primarily focus on two questions;

1. How do human activities (anthropogenic) activities affect the environment?
2. How to better explain climate issues through pedagogical interventions?

We hope that by making this open resource available to all educators and parents, more people will be able to share knowledge with their students and young children.

The module consists of an information booklet, which will serve as a source of basic knowledge required for the activity booklet.

In the information booklet, the first section provides an overview of major climate change concepts. The second section introduces sustainable development goals while the third section talks about environmental sustainability. The fourth section is directed at both the educators and participants, and can easily be followed by students. The section aims at highlighting actions that can help leave behind a better planet. The authors believe that systemic changes are the most important part of the change we require for a sustainable planet.

An additional annexure has been added that presents the guidance of Islam and other religions to preserve our natural environment.

An illustration of a classroom scene. A teacher with dark hair, wearing a light-colored shirt and an orange skirt, is leaning over a desk, writing on a piece of paper. A young student with dark curly hair, wearing an orange shirt, is sitting at the desk, looking at a small globe. On the desk are various school supplies: a pink apple, a yellow pencil sharpener, a purple pencil holder with several colored pencils, and a stack of books. In the background, there is a whiteboard on a wooden easel. The scene is surrounded by floating school supplies: a paint palette with an orange brush, a blue fountain pen, a purple crayon, a compass, an ink bottle, and a blue marker. The background is a solid yellow color with green stars and circles scattered throughout.

Information for Instructors

Section 2



Climate Change 101



What is Climate Change?

Climate change is a long-term transformation in the average weather patterns that define Earth's local, regional, and global climates. Global warming, a term sometimes used interchangeably, is mostly associated with just the past warming and not the overall changes in climate. Therefore, the idea of climate change is being used predominantly now.

Changes observed in Earth's climate since the early 20th century are primarily driven by human activities, notably fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere, raising its average surface temperature. These human-produced temperature increases are commonly referred to as global warming. Natural processes can also contribute to climate change, including internal variability (for example, cyclical ocean patterns like El Niño, La Niña, and the Pacific Decadal Oscillation) and external forcing (for example, volcanic activity, changes in the Sun's energy output, and variations in Earth's orbit).

Scientists use ground, air, and space observations and theoretical models to monitor and study past, present, and future climate change. Climate data records provide evidence of climate change key indicators, such as global land and ocean temperature increases; rising sea levels; ice loss at Earth's poles and in mountain glaciers; frequency and severity changes in extreme weather, such as hurricanes, heatwaves, wildfires, droughts, floods, and precipitation; and cloud and vegetation cover changes, to name but a few.



Who produces pollution?

In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was created to produce the first international agreement on reducing global greenhouse gas emissions (more on this later). Of these gases, carbon dioxide is the most important, but as it is not evenly produced by countries, the task was not simple.

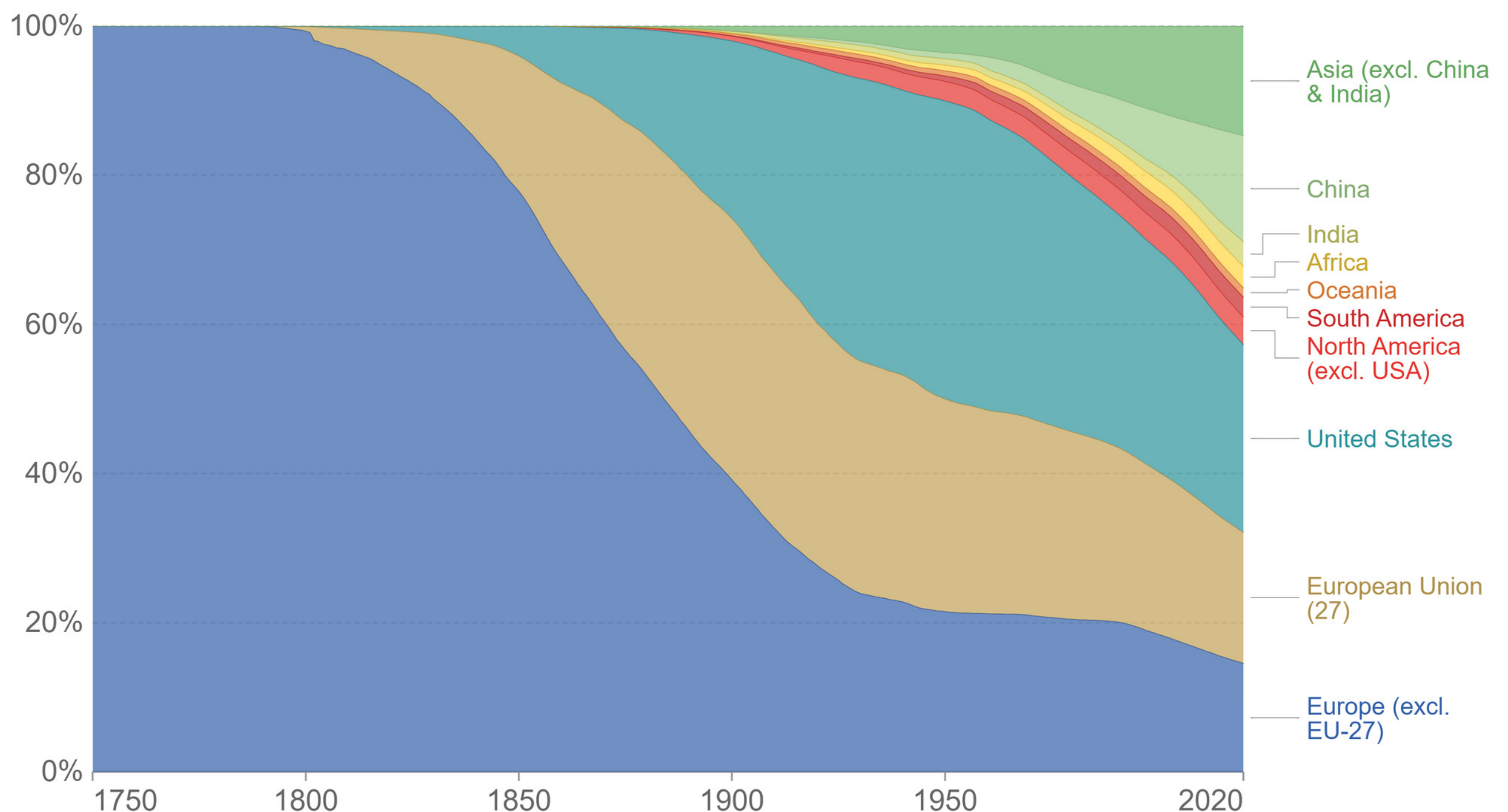
The first major source of carbon dioxide is the increase in the burning of fossil fuels used in energy production, industrial processes, and transport. The second major source of global carbon dioxide emissions is land use changes. These mainly come from the cutting down of forests for the purposes of agriculture, urbanisation, or roads. This results in a reduced capacity for storing carbon dioxide.

Carbon dioxide emissions are not distributed evenly, and most of the anthropogenic (man-made) GHGs are released by the developed economies, as shown in the figure below.

Cumulative CO₂ emissions by world region

Cumulative carbon dioxide (CO₂) emissions by region from the year 1750 onwards. Emissions are based on territorial emissions (production-based) and do not account for emissions embedded in trade. This measures CO₂ emissions from fossil fuels and cement production only – land use change is not included.

Our World
in Data



Source: Our World in Data based on the Global Carbon Project

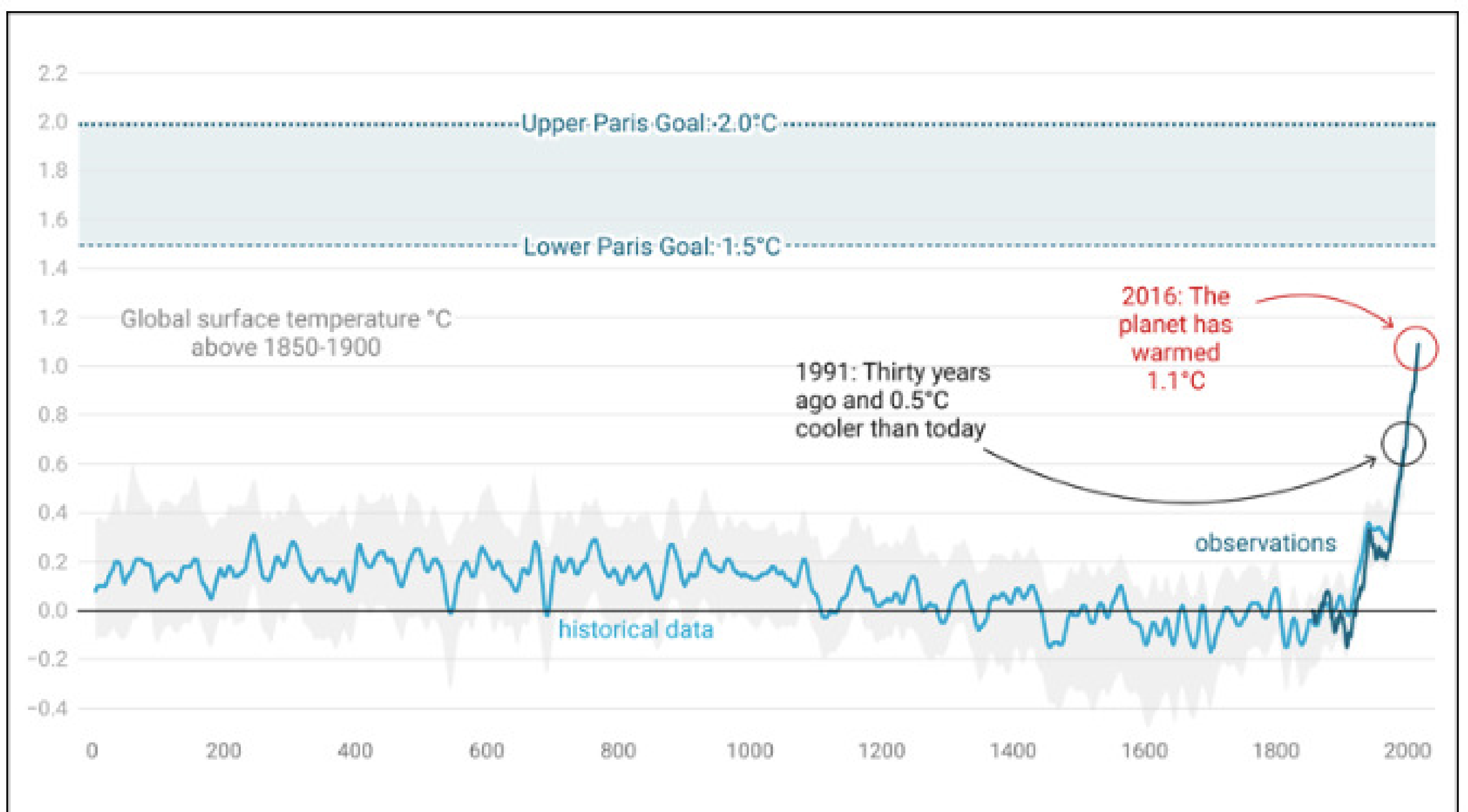
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

What is Global Warming?

The earth's temperature is increasing, but since the industrial revolution, it is increasing at an alarming rate. This rapid rise in temperature is caused due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in the Earth's atmosphere. As previously stated, the terms "climate change" and "global warming" are frequently used interchangeably, though the latter refers to both man-made and natural warming and the effects it has on our planet as opposed to the former. It is most commonly measured as the average increase in Earth's global surface temperature.

Anthropogenic carbon dioxide emission is increasing at an alarming rate, which can be observed in the figure below.

Since the pre-industrial period, human activities are estimated to have increased Earth's global average temperature by about 1 degree Celsius (1.8 degrees Fahrenheit), a number that is currently increasing by 0.2 degrees Celsius (0.36 degrees Fahrenheit) per decade. Most of the current warming trend is extremely likely (greater than 95 percent probability) the result of human activity since the 1950s and is proceeding at an unprecedented rate over decades to millennia

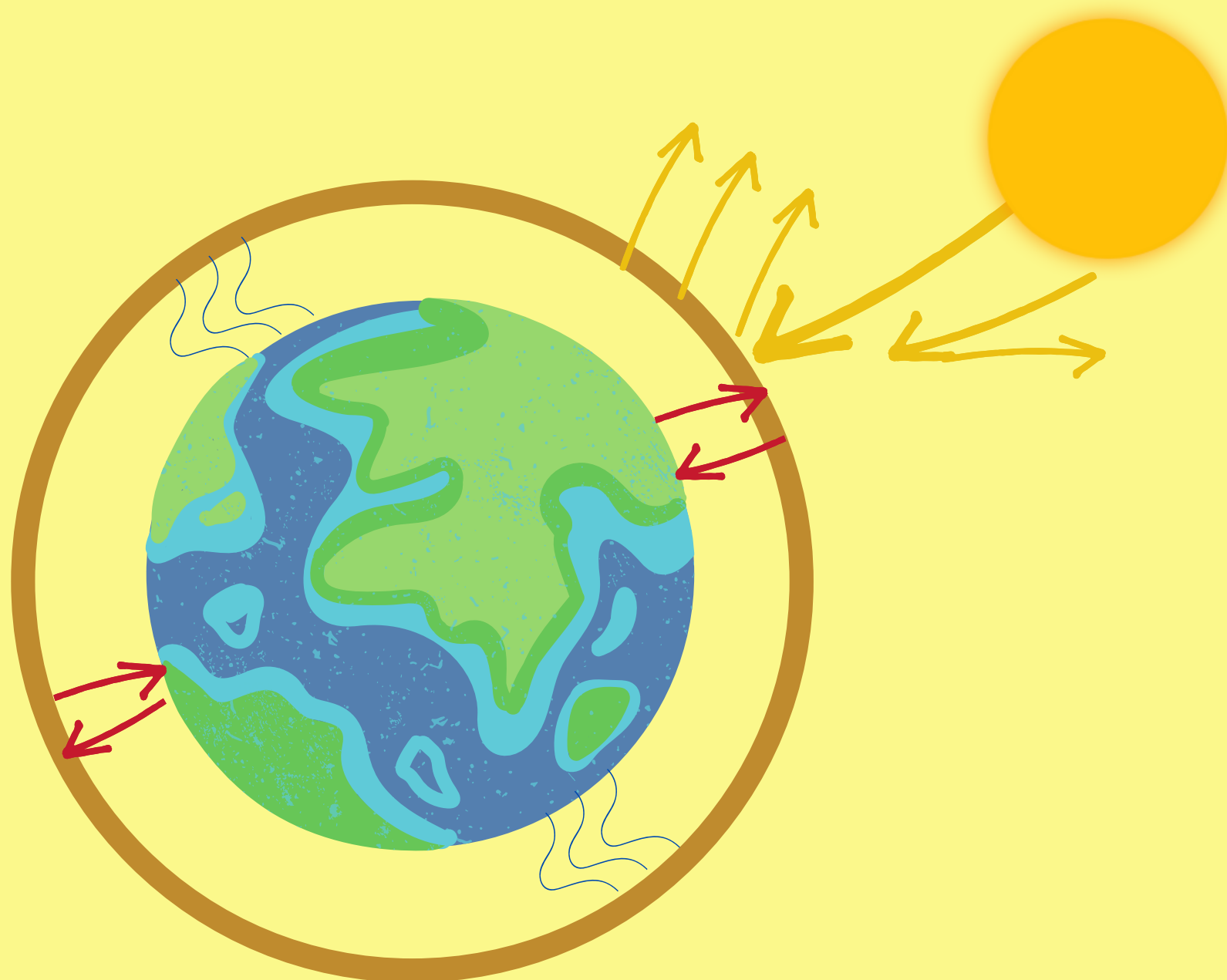


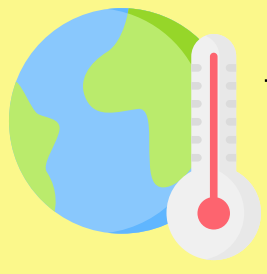
Prior to the start of an extraordinary rate of warming in the middle of the 20th century, the average global surface temperature had been rather stable over the previous 2,000 years. The planet's temperature has increased by 1.09°C (0.95°C to 1.20°C) from 1850–1900. Recent observations are direct measurements, whereas historical information was derived from paleoclimate archives. For historical measurements, shading displays the 5 percent and 95 percent confidence ranges. (source: IPCC 2021).



The Earth's Natural Greenhouse

The temperature of the Earth is determined by the balance between the input of energy from the Sun and the reflection of some of this energy back into space. Certain atmospheric gases are critical to this temperature balance and are known as greenhouse gases. The energy received from the Sun is in the form of radiation (short wave-ultraviolet and visible). On average, one-third of the solar radiation that hits the Earth is reflected back to space. Of the remainder, some are absorbed by the atmosphere, but most by the land and the oceans. The Earth's surface becomes warm and emits long wave infrared radiation. The greenhouse gases trap and re-emit some of these long wave radiations and warm the atmosphere. Naturally occurring greenhouse gases include water vapour, carbon dioxide, ozone, methane, and nitrous oxide, and together they create the natural greenhouse or blanket effect. Without these gases, our planet would be much colder.





What are Greenhouse Gases?

Greenhouse gases are gases in the Earth's atmosphere that trap heat. They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving the atmosphere. The main greenhouse gases are:

- **Water vapour**
- **Carbon dioxide**
- **Methane**
- **Ozone**
- **Nitrous oxide**
- **Chlorofluorocarbons**

Overall, greenhouse gases are a good thing. Without them, our planet would be too cold, and life as we know it, would not exist. However, scientists have been worried that human activities are adding too much of these gases to the atmosphere. The images below will show the good and bad sides of these gases briefly.

National Aeronautics and Space Administration 

WATER VAPOR



Visit climatekids.nasa.gov

H₂O

This is water in gas form. High in the atmosphere, it condenses back into liquid water and rains back on Earth. The water we drink is part of this natural cycle.



WATER VAPOR



H₂O

Water vapor blocks heat from escaping the atmosphere, and warmer air holds more water vapor. As Earth heats up, more water vapor can trap more heat.



National Aeronautics and Space Administration


CARBON DIOXIDE



CO₂

Visit climatekids.nasa.gov

Made up of carbon and oxygen, CO₂ is all around us naturally. It comes from decaying and living organisms, and from volcanoes.



National Aeronautics and Space Administration


CARBON DIOXIDE

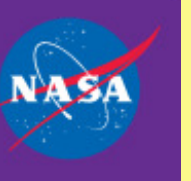


CO₂

Visit climatekids.nasa.gov

CO₂ is released when burning fossil fuels like coal and oil. It's the most important contributor to human-caused global warming.



National Aeronautics and Space Administration


METHANE

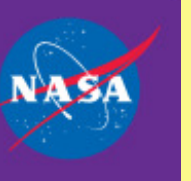


CH₄

Visit climatekids.nasa.gov

Methane, made of carbon and hydrogen, is a normal gas released from wetlands, growing rice, raising cattle, using natural gas, and mining coal.



National Aeronautics and Space Administration


METHANE



CH₄

Visit climatekids.nasa.gov

It traps a lot of heat. Scientists consider it the second most important contributor to human-caused global warming of all the greenhouse gases.



National Aeronautics and Space Administration


OZONE



O₃

Visit climatekids.nasa.gov

Up in the atmosphere where the planes fly, the ozone layer blocks the sun's radiation, which helps protect us from the powerful rays.



National Aeronautics and Space Administration


OZONE



O₃

Visit climatekids.nasa.gov

Close to the ground, ozone acts as a greenhouse gas and can be formed by burning gas in cars and factories.



National Aeronautics and Space Administration 

NITROUS OXIDE



Visit climatekids.nasa.gov

N₂O

Nitrous oxide is a natural part of the nitrogen cycle. Bacteria in soil and the ocean make it.



NITROUS OXIDE



N₂O

Nitrous oxide is released by some types of factories, power plants, and plant fertilizer. It damages the protective ozone layer and is a powerful greenhouse gas.



National Aeronautics and Space Administration 

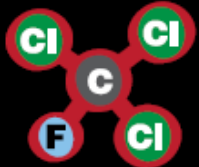
CHLOROFLUOROCARBONS



Visit climatekids.nasa.gov

CFCs

Fluorinated gases are not created in nature. They damage the protective ozone layer and are powerful greenhouse gases.

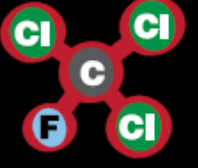


CHLOROFLUOROCARBONS



CFCs

You probably shouldn't have created me.



What is IPCC?

The intergovernmental panel on climate change (IPCC) was established in 1988 jointly by the United Nations environmental panel and the World Meteorological Organization because of the possibility of worries about global warming. It is recognised as the most authoritative scientific and technical voice on climate change. Its assessments have had a profound influence on the negotiators of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto protocol.



Section 3

Environmental Sustainability 101

Environmental Sustainability

Environmental sustainability is defined as responsible interaction with the environment to avoid depletion or degradation of natural resources, allowing for long-term environmental quality.

The practice of environmental sustainability helps to ensure that the needs of today's population are met without jeopardizing the ability of future generations to meet their own needs. In order to understand this, it is important to understand the history of sustainable development goals.



Sustainable development

A brief history;

- In 1983, the United Nations Secretary-General invited Norwegian prime minister Gro Harlem Brundtland to chair the World Commission on Environment and Development.
- The Brundtland Commission delivered its report on Our Common Future in 1987.
- The concept of 'sustainable development' was launched.

It led to the first Earth Summit- the UN Conference on Environment and Development- at Rio de Janeiro in 1992, and to the formulation of Agenda 21.



source: <http://emeraldbe.com/sustainable-development-important/>

Our Common Future

From One Earth to One World

Our common future has three parts.

Part I- Common Concerns

Part II- Common Challenges

Part III- Common Endeavors

This report alerted the world to the urgency of making progress toward economic development that could be sustained without depleting natural resources or harming the environment.

This report also defined sustainable development as;

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

It led to the production of Agenda 21, an action plan of the UN with regard to sustainable development, which lays out actions to be taken globally, nationally, and locally, in order to make life on earth sustainable.

It aimed to discuss the environment and development as a single issue.

It highlighted three fundamental components of sustainable development (see image on page 13)

- **The Environment**
- **The Economy**
- **The Society**

The image here presents the 5 Ps of sustainable development.



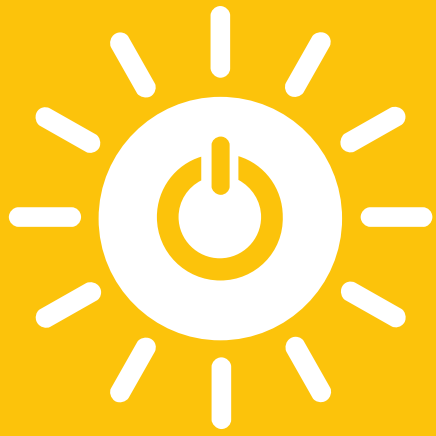
Agenda 2030

- In 2015, countries adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals. In 2016, the Paris Agreement on climate change entered into force, addressing the need to limit the rise of global temperatures.
- 17 goals and 169 associated targets came into effect on January 1, 2016 to guide decisions in the next 15 years.
- The world will be a better place in 2030 if we succeed in our objectives.

We the people



7 AFFORDABLE AND
CLEAN ENERGY



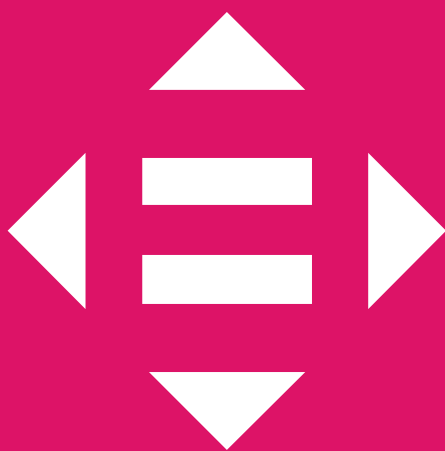
8 DECENT WORK AND
ECONOMIC GROWTH



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



10 REDUCED
INEQUALITIES



11 SUSTAINABLE CITIES
AND COMMUNITIES



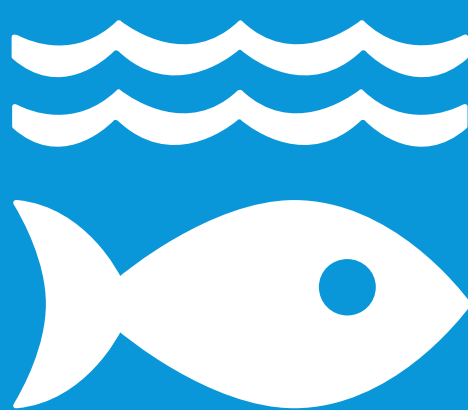
12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



14 LIFE BELOW
WATER



15 LIFE
ON LAND



16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS



17 PARTNERSHIPS
FOR THE GOALS





Section 4

Information for Students and Instructors on Sustainable Lifestyle

Please refer to the activity booklet for more information and activities

Measure your Footprints

STEP 1:

Visit the websites to measure and calculate:

Ecological footprint: <https://www.footprintcalculator.org/>



Water footprint: <https://www.watercalculator.org/>



Carbon footprint: <https://www.carbonfootprint.com/calculator.aspx>



STEP 2:

Think about one action you can take to reduce your ecological, carbon, and water footprint.



Did you know?

The carbon footprint is higher if you eat meat as compared to when you eat vegetables
Can you guess why?

Hint: Animals feed on greens and therefore require more water and energy,
The livestock industry is also responsible for methane emissions in the atmosphere.



Consumerism

We often buy things that we don't need and end up wasting food, and having toys, gadgets, and other products that keep piling up. We end up having a lot of under utilised and extra items that need to be gotten rid of. All of these eventually end up in a landfill.

What should we do?

- Reduce, reuse, and recycle
 - Only buy items we need
 - Avoid throwing away items unnecessarily
 - Reuse old items instead of buying new
- New items should be donated to charity
- Unsubscribe/unfollow and block advertisements from all sites that use algorithms to target customers

Benefit

Buying less means saving more





Plastic Pollution

Consumerism also encourages a throwaway culture where disposable items are bought regularly and disposed of. Most of these materials are made up of a certain kind of plastic, which takes many years to decompose, and results in contaminated rivers, lakes, estuaries, and oceans.

What should we do?

- Reduce the use of disposable plastic bags and bottles by keeping reusable cloth bags and reusable water-bottles handy
- Properly dispose of or recycle non-biodegradable waste at home and in public
- Demand more garbage and recycling cans in public places

Fishermen have a sustainable income, and the fish we eat are healthier and more nutritious for us. It is therefore important for us to keep pristine environments safe for people whose livelihoods depend on them.



How is plastic produced

Petroleum drilling

Crude oil and natural gas refining to petrochemicals, fuel, ethane and propane etc.

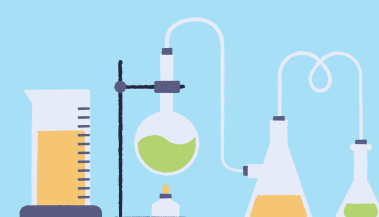
Ethane and propane are cracked into ethylene and propylene at high temperature

Catalysts are combined with them to form fluff (polymer)
Fluff is combined with additives

Polymer is melted in an extruder

Melted plastic is turned into small pellets by a pelletizer

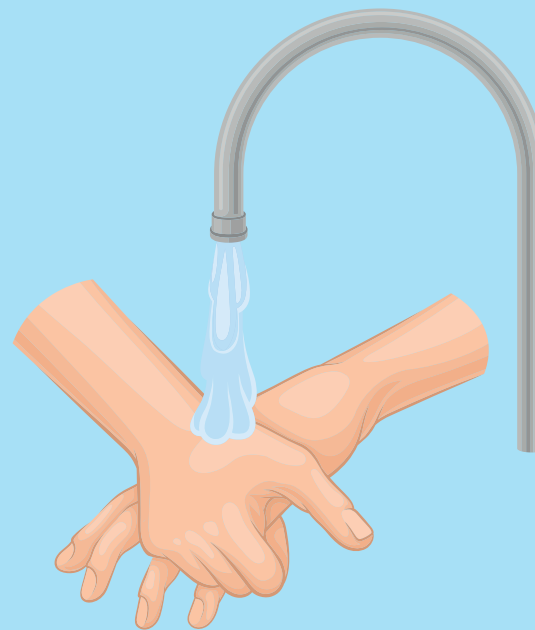
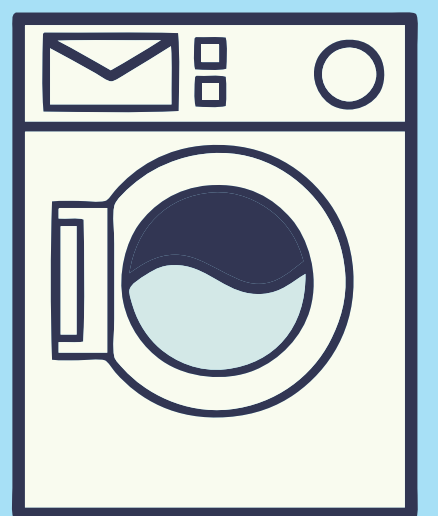
Pellets are shipped and converted into desired products using various processes



Save Water



We waste water;
We are careless with water
use and waste a lot of
water in everyday activities
such as brushing teeth,
taking showers, washing
dishes, cars, and our
houses.



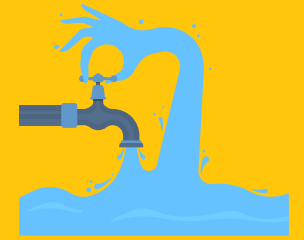
A lot of water is used once.
If it is not mixed with
chemicals or human waste,
it can be reused for other
purposes. This is called
"greywater".





What should we do?

We can reduce water use in everyday activities by turning off the tap when water is not actively in use. e.g. when we brush our teeth, apply soap or shampoo in the shower, apply detergent to dishes, etc.



Water used to wash dishes or clothes can be reused to wash cars, motorbikes, driveways, etc.



We can collect rainwater in barrels. This is called rainwater harvesting.



We can write to our local political representatives to express our concerns about water wastage by companies, schools, shops, and other institutions in our area.



We can aim to keep our drinking water sources clean and demand clean drinking water



Waste Management

What is waste?

Anything we throw away and don't use e.g. old clothes, toys, old electrical gadgets etc.



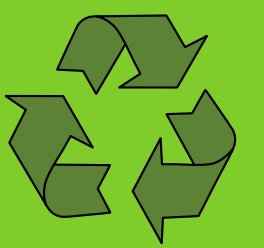
Where does all the waste go?

Developed countries have prepared proper landfills where waste that can no longer be used is dumped, but in poor countries, it is generally dumped into open grounds (referred to as dump sites).



Can we make use of waste?

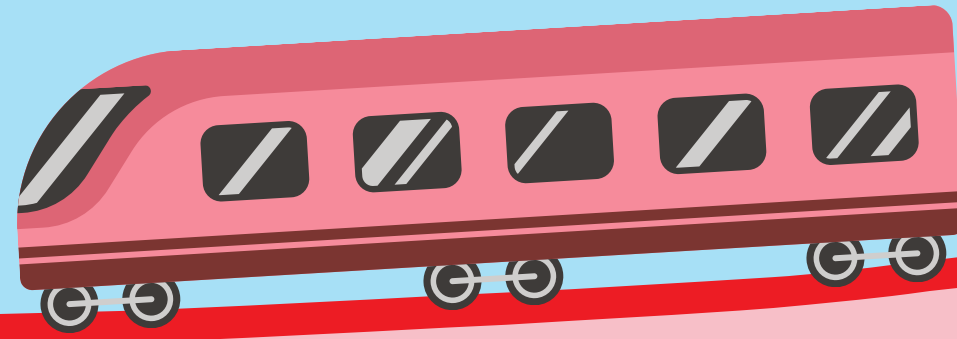
We can create compost out of food waste, recycle plastic, metals, glass, etc., and reuse many products that are still fit for use instead of sending them to landfills. We can also try to reduce our waste!



What is segregation?

We can segregate waste at the source, i.e., put different kinds of waste in different bins so that they can be sent for recycling, reuse, and dumping accordingly...





Use Public Transport...

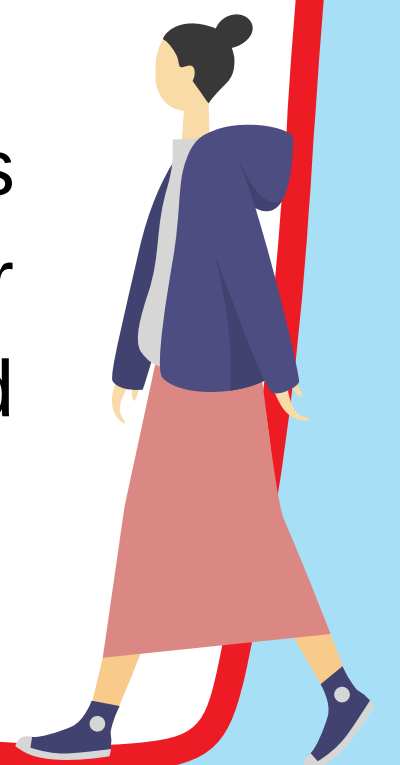
to conserve energy and alleviate traffic congestion.



- Increased traffic, smoke, and smog in cities will cause a reduction in visibility and increased health issues.
- Increased carbon emissions will lead to warming. If we continue on the current trend, global temperatures will increase up to 5 degrees centigrade by the year 2100.

What should we do?

- We can use shared or public transportation. For school, we can carpool with classmates and friends, or opt for a bus or van. If school is nearby, we can walk or cycle as a group.
- We can ask our school to increase school buses and vans at an affordable price.
- For short trips to the market or playground, we should use bicycles or walk.
- Less congestion on the roads leads to more space for cyclists and pedestrians, cleaner air, limited carbon emissions, fewer health issues related to breathing and heart problems, and therefore a healthier and more active population.



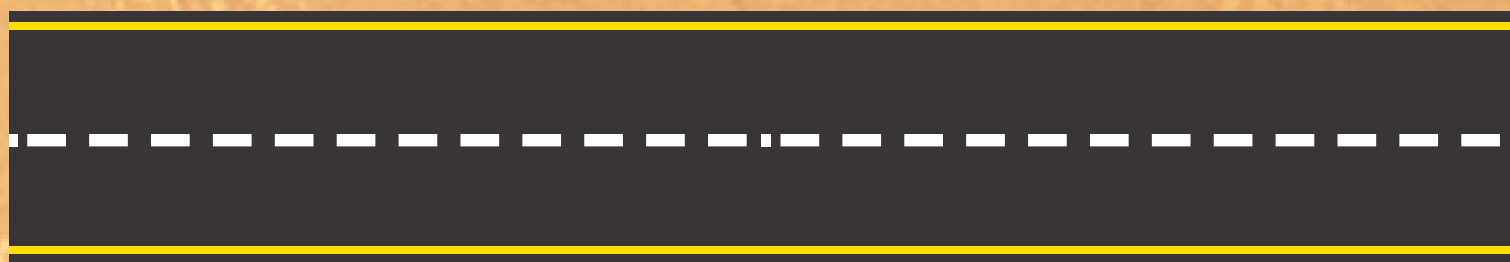
What is AQI? Have you checked the air quality index of the city you live in?

Use <https://waqi.info> to explore more



Deforestation

We are cutting trees from forests, parks, and roadsides at an alarming rate, which is causing deforestation. In cities, this is being done to make room for more buildings and roads.

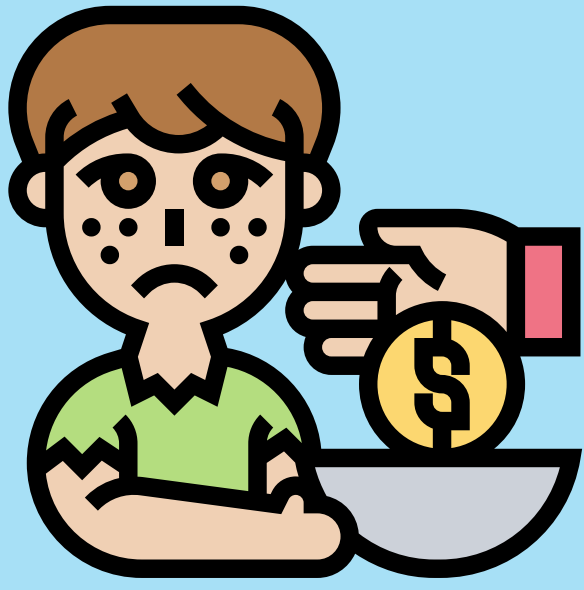


What should we do?

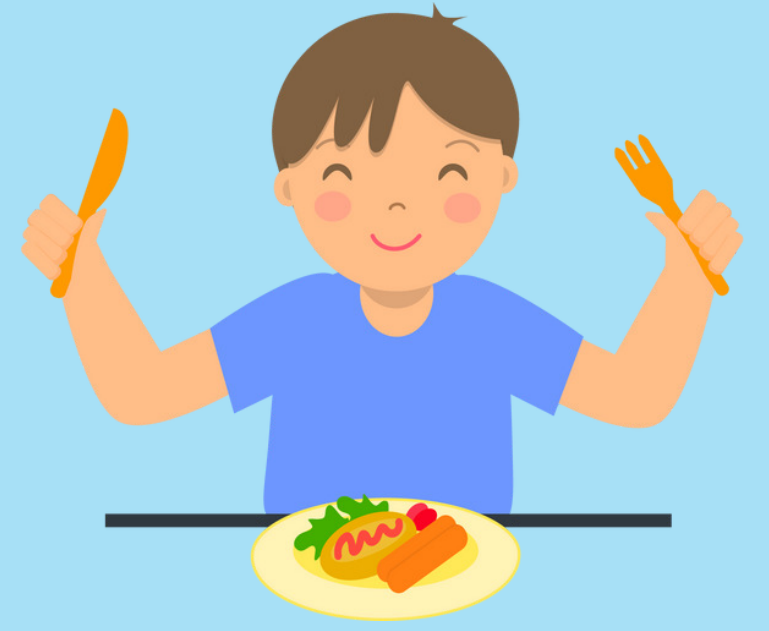
- Plant a tree! A single tree can absorb 1 tonne of carbon dioxide during its life.
- Gather and spread information about which trees are appropriate for your town or city. Plant local trees according to the availability of nutrients and water.



- Start a campaign to raise awareness about the unsustainable cutting of trees in your town or city by organising walks, tree-plantation days, etc.



Food Scarcity



Due to climate change, more frequent food shortages across the country can be expected, meaning there will not be enough food to feed all the people. Those who are already poor and starving have a higher rate of hunger and malnutrition.

We waste a lot of food at home, restaurants, and weddings!

40% of cooked food in Pakistan is wasted! This includes food that is thrown away or gets spoiled.

Our diet has a lot of meat in it. Meat has higher water and carbon footprints than vegetables, and too much meat is harmful to the environment.

What should we do?

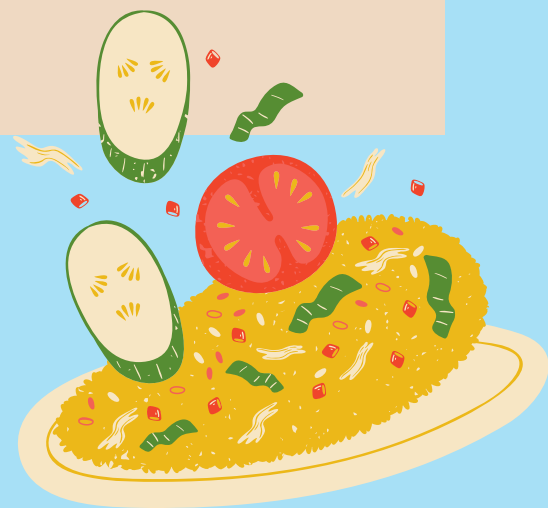
We can promise to not throw away leftover food and instead collect it and give it to the poor directly or through community centers.

Rotten or spoiled food can be used for composting.

We can change our diet to include more vegetables and more meatless days.

Because of a healthy mixture of vegetables in our food, less water is used and fewer greenhouse gases are released into the atmosphere.

We can also make our agricultural practices more resource efficient and switch to organic farming.



Extreme Weather Events



What can be expected?

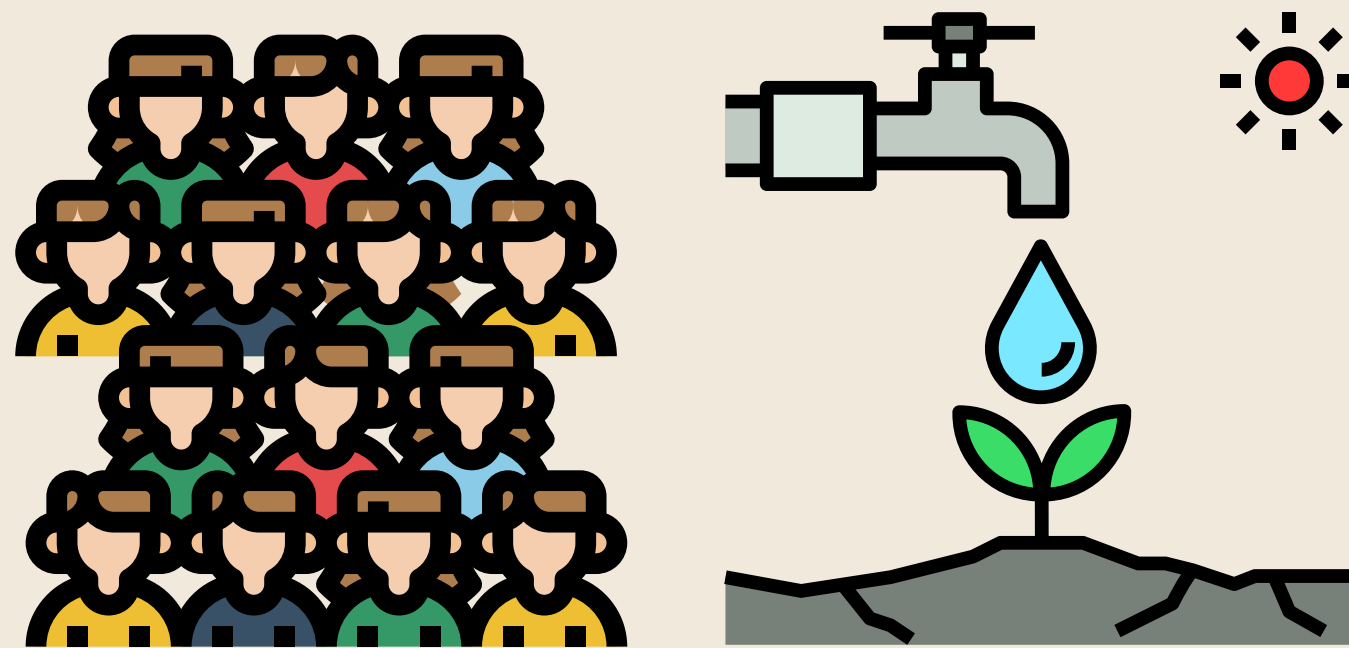
- Increased heat stress and heatwaves in cities due to Urban Heat Island (UHI) effect
- Fewer trees to absorb carbon dioxide through photosynthesis, can exacerbate the impacts of climate change
- Increased flood damage due to a reduction in natural flood defences
- Natural habitats for insects and birds are disrupted and biodiversity is harmed

What can be done?

- Make more green spaces available for people and animals to shelter from the heat and sun
- Capture and remove carbon from the atmosphere at a higher rate (for example, through afforestation)
- Create natural flood barriers which decrease the intensity of flood impacts on towns and cities
- Sustain ecosystems along with biodiversity

Why should I care about all of this?

Water shortages and droughts will become more frequent by 2025 and reduce the availability of water for drinking, farming, hydropower, washing, cooking, etc.



Due to climate change and overpopulation, Pakistan is predicted to be the most water-stressed country in South Asia by 2040.

Competition over water can lead to conflict and violence.





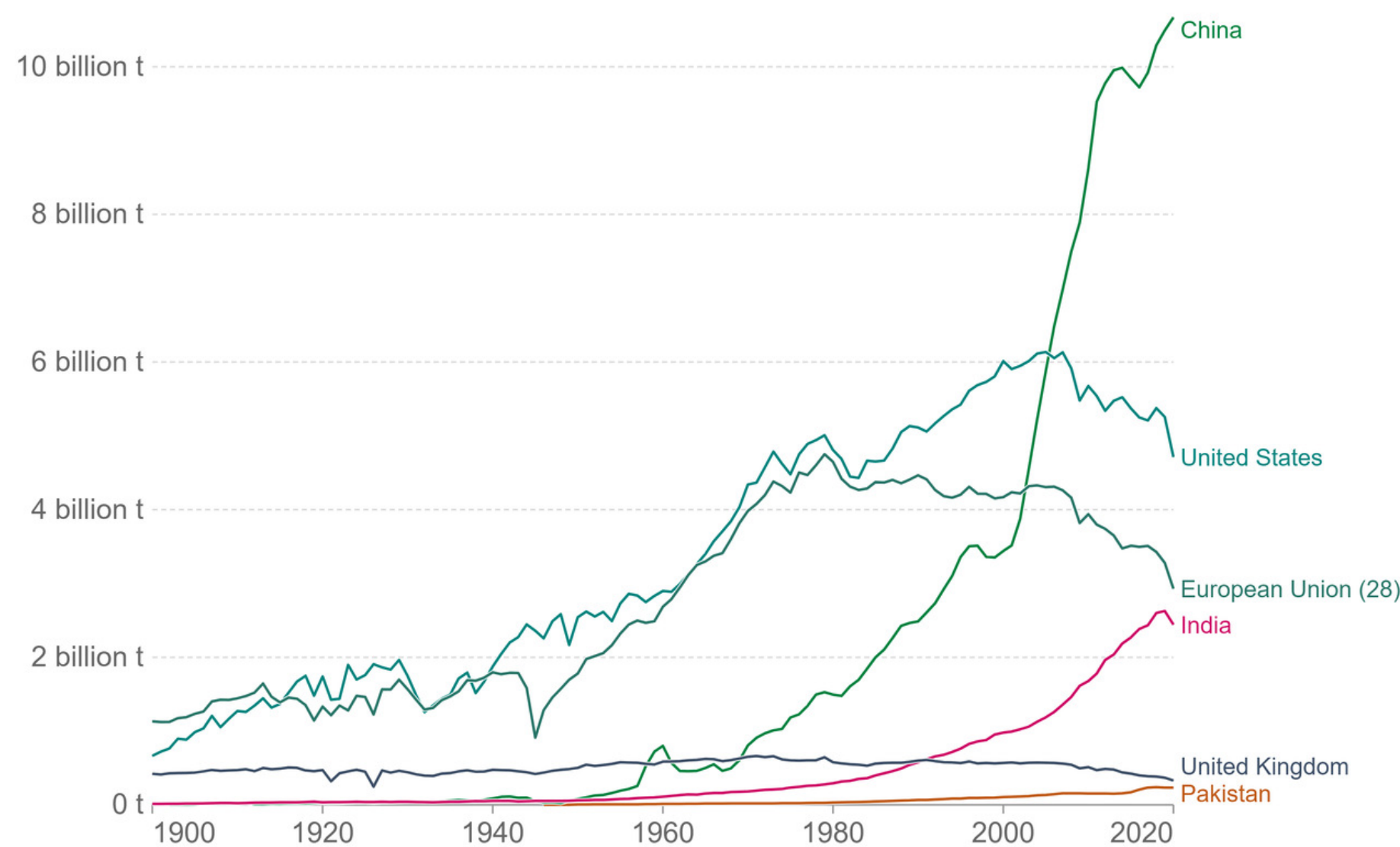
Extreme Weather Events

Pakistan Floods-2022

Annual CO₂ emissions

Carbon dioxide (CO₂) emissions from fossil fuels and industry. Land use change is not included.

Our World
in Data



Source: Global Carbon Project

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

We learned in Section 2 that the biggest polluters have been the developed world or global north, while the global south is being impacted more due to climate change. Pakistan, for example, contributes less than 1% of global greenhouse emissions but consistently ranks among the top ten countries most vulnerable to the effects of climate change, according to the German Watch Index.

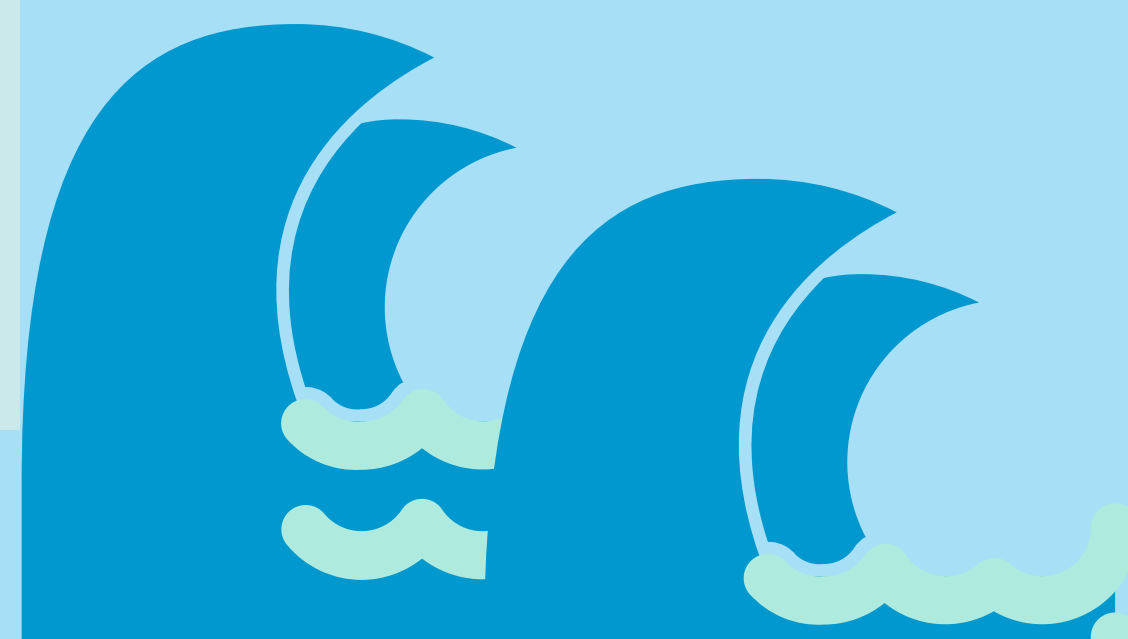
The recent floods of 2022 in Pakistan are a sheer example of how the global south lacks the capability to address the challenge and adapt to it.

- 33 million people are impacted, compared to 20 million in 2010.
- 1.4 million houses were damaged or destroyed.
- 1265 flood-related deaths
- There are 627,793 people living in displacement camps.

(Government of Pakistan, September 2022)

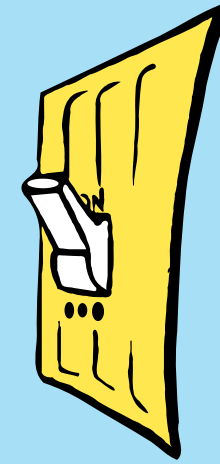
It is obvious that the scale of these disasters will continue to increase. We need to prepare better for future events.

Note: Global North and South are now being used to describe the political, social, and environmental characteristics of countries. Global north relates to the western world while global south largely relates to developing countries (on the global map).



What else are we doing wrong?

We waste electricity by using unnecessary and inefficient lights and fans.



Currently, 67% of household electricity use is because of inefficient appliances such as fans and lights.



Roughly 65% of our electricity is generated by fossil fuels (coal, gas, and oil), which are the major contributors to GHGs.



What are the simple things that I can do?

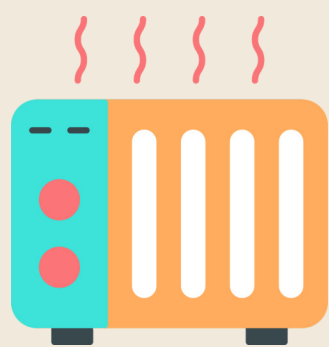
Turn off lights and electronic devices like TVs, radios, and computers when not in use. If building new, install sensor-based systems.



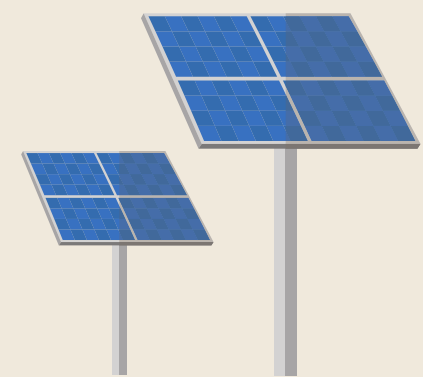
Use energy efficient light bulbs like 'energy savers' or 'LEDs'. Promote solar powered alternatives for backup generators and UPS.



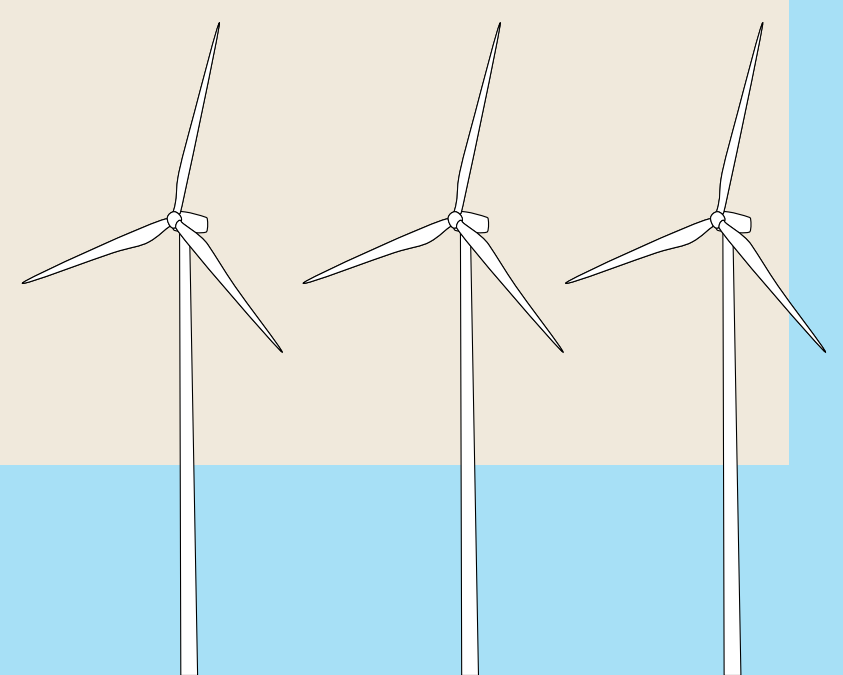
During winter, turn down heating and wear another sweater instead.



Clean renewable energy replaces fossil fuel energy as the main source of electricity. Now we produce more electricity without harming the environment.



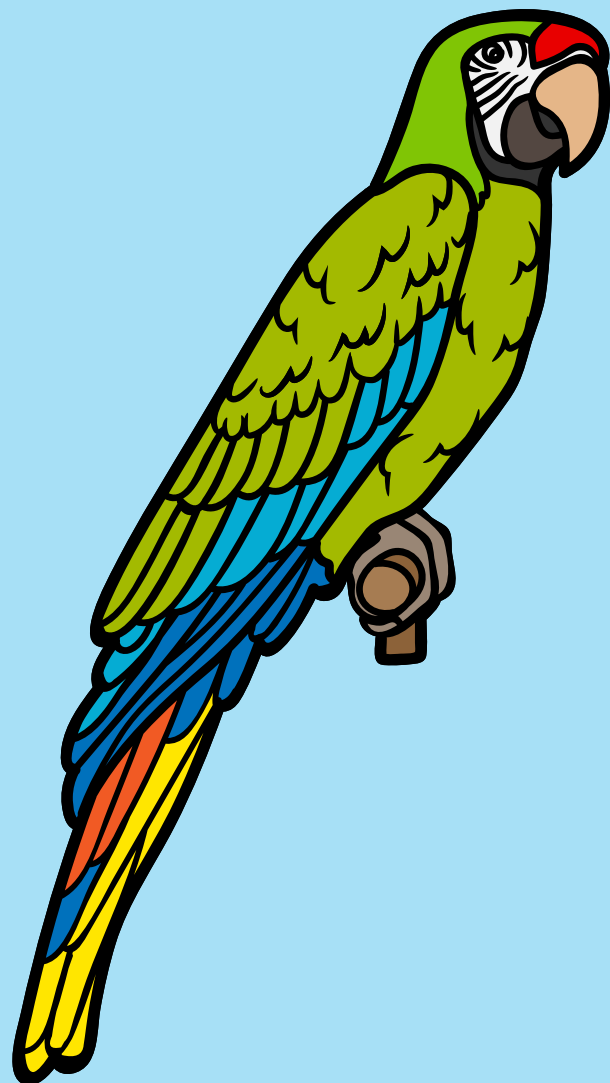
Conservation and efficient use of electricity means there is less drain on Pakistan's energy sources and less load-shedding.





Biodiversity

Our activities and negligence is causing the extinction of animals



Spix Macaw

Cause of Extinction:
Poaching has decimated the population and destroyed their habitat

Cause of Extinction:
Went extinct in the wild due to habitat destruction, illegal trapping and trade



Western African Rhinos

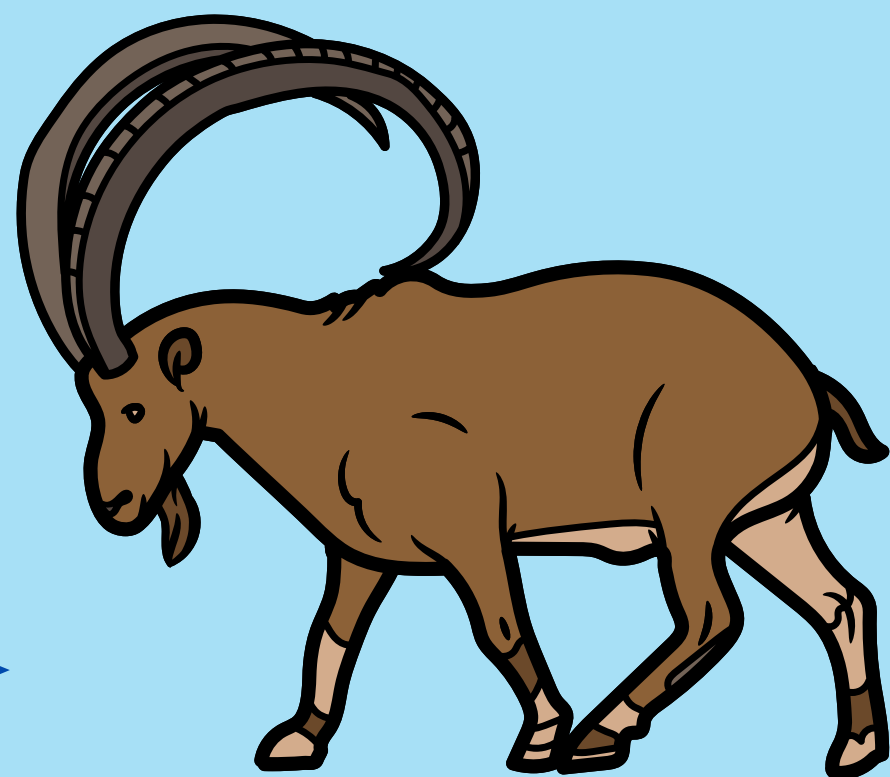
However we can reverse the cycle by biodiversity conservation



**Himalayan
Brown Bear**

The Himalayan brown bear population was critically endangered until UNDP took over and worked with the community to increase their population

The Himalayan Ibex population was declining at an unprecedented rate, but NGOs, by working with communities and introducing trophy hunting, were able to bring in income while also controlling hunting.



Himalayan Ibex

Are individual actions and small initiatives enough for environmental conservation?

There are many questions that one comes across as they advocate for and adopt many lifestyle changes for climate action. For example:

- Are individual and smaller actions going to change anything about the bigger and more complex issues of the planet?
- Is one person's zero waste or plastic-free life going to solve the issue of plastic pollution?
- If the developing world is not the biggest emitter, why should we mitigate?
- What difference would my switching off the light make?

Obviously, one person's actions does not make a lot of difference to the daunting global statistics, but if that individual's actions were multiplied by a million and then by billions, it could most certainly change the numbers significantly.

It is also important to note that individual actions can drive changes at the system level. Everyone is aware that energy (for electricity, transport, homes, etc.) is the major contributor to GHG emissions. A shift in the behavior of the masses will matter a lot. From a different perspective, the top 20 fossil fuel-based companies are responsible for one-third of GHG emissions.

Many things could change, if renewable energy is subsidized and encouraged. The transition from fossil fuels to renewable sources of energy is the most important of all transitions for the betterment of the planet.

So yes, one person's behavioral shift may not mean anything in the bigger scheme of things, but that one person's behavior can inspire a shift in their communities, which can act as an inspiration for many more people.

The systems-level change will perhaps require a bigger commitment for a particular country and policy makers, but we can aim to change both simultaneously.

Annex

Religion and Environmental Protection



Religion and Environmental Protection

To most people, including scientists and researchers on this matter, the need for change at individual and collective level to meet the challenges of creating a sustainable environment is clear, based on observation and data. But, it may help to note, and act as an inspiration to many, how religious teachings may pertain to the major challenges of our times.

From a religious perspective, all creation is from a deity, whatever its name in a particular religion. Hence, there is an organic and spiritual link between humans and nature. Everything belongs to God and to Him they all shall return. From this, we can deduce that nature is something with whom we humans should have a relationship of care and protection, rather than conquest and destruction. The entire creation, from this perspective, is supportive of each other, growing, consuming, transforming, and re-growing in the process.

In fact, we are at our most productive when we work with nature, rather than against it. Some of the great achievements, such as air travel, have been possible only because science worked with nature, gravity, and geography in this case, and together made the seemingly impossible, possible.



To a listening mind, nature reminds us of the finitude of our lives. Oceans, mountains, the trees outsize, outlive, and outperform us, both humbling and enriching us. There is a message here that nature belongs to us collectively as humanity and thus each generation has it as a trust for the coming generations of humans. This indeed is the defining intention behind the idea of sustainable development.

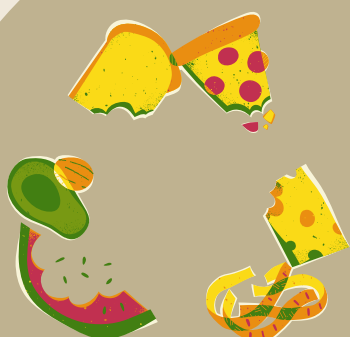
Fables, poems, religious scriptures, and stories are filled with nature as a source of moral lessons. A tree, for example, is often used in wisdom literature as a symbol of moral excellence in terms of providing shade and fruits to all and sundry. Some of the ideas now widespread in sustainable education, such as recycling, have their ultimate inspiration in nature. Religions often refer to natural objects and phenomenon to bring the majesty of God to human imagination.

In short, religious teachings point to the need for rethinking our relationship with nature from one of domination, control, and destruction to that of partnership, mentorship and nurturing.



Below are some relevant quotations from various world religions:

Christianity



"When they had all had enough to eat, he said to his disciples, 'Gather the pieces that are left over. Let nothing be wasted.'" (John 6:12)



"Look at the birds of the air; they do not sow or reap or store away in barns, and yet your heavenly Father feeds them. Are you not much more valuable than they?" (John 6:12)

ISLAM



Allah as the creator and sustainer of all living beings

“And the earth have We spread out, and placed therein firm hills, and caused each seemly thing to grow therein. *And we have given unto you livelihoods therein, and unto those for whom ye provide not.*” (Quran, 15: 19-20) Source: Pickthall



“Whoever plants a tree and diligently looks after it, until it matures and bears fruit, is rewarded.” Source: Ahmad b.Hanbal, Musnad, IV, 61, 374

Buddhism



“As a bee – without harming the blossom, its color, its fragrance – takes its nectar and flies away: so should the sage go through a village.” (Dhammapada IV, Pupphavagga: Blossoms, 49)

Hinduism



"The environment is not ours to take or leave it is ours to make" (Gita 9.10)

Zoroastrian



When he has cared for the creations, the care of these Bounteous Immortals is for him, and he must teach this to all humanity in the material world. — Shayasht ne Shayast 15:6



***This module was created from love,
inspiration and passion from the
environment! It is now yours to
implement and continue to pass down
to others so that they too can think
global and act local.***

***Please send us your feedback and
responses to the activities that your
students/children have completed, we
would love to hear from you!***

*The
End*