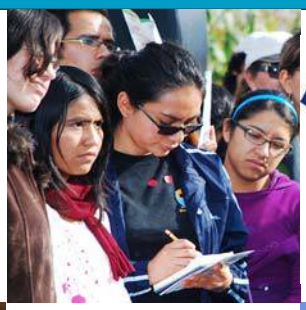





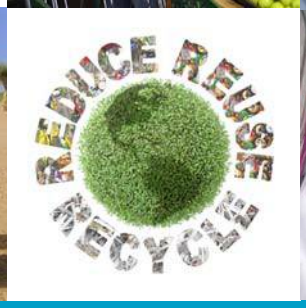

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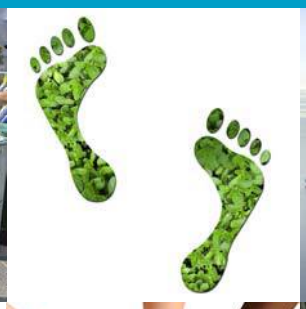
Climate Change and Lifestyles Guidebook





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Guidebook Series

Climate Change and Lifestyles

United Nations Educational, Scientific and Cultural Organization

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UNEP

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The *YouthXchange Guidebook on Climate Change and Lifestyles*, which focuses on the challenges, opportunities and good practices of climate change, is the first in a series of thematic guidebooks. This series is produced for young people and people working with young people, educators, teachers, trainers and youth leaders around the world.

Since its launch in 2001, the YouthXchange Initiative has been working with national partners in 45 countries to adapt and translate the YouthXchange training kit on responsible consumption. Now translated into more than 20 languages and distributed worldwide through partnerships with national governments and local organizations, the guidebook has reached more than 400,000 young people worldwide.

For more information on the YouthXchange Initiative: www.youthxchange.net

Foreword

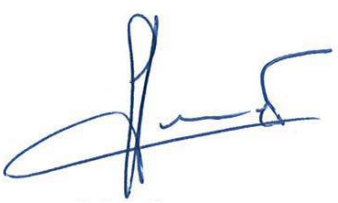
Every day, young people are exposed to numerous images and messages that promote models of unbridled consumption as the key to happy and fulfilling lives. In reality, however, the impacts of this unsustainable consumption are extremely harmful, contributing to climate change and other environmental challenges, such as rising sea levels, water shortages and food insecurity.

The world's youth will have a significant role to play if we are to bring about the widespread behavioural change needed to shift towards more sustainable lifestyles and consumption habits. It is important for young people to understand that behind over-consumption lies increased exploitation of resources, rising poverty, widening inequalities and persistent conflicts, all of which will worsen with climate change and eventually will minimize their opportunities for a better and sustainable future. The poorest of the poor, those who cannot consume enough to meet their basic needs, are the worst hit by climate change. Most of these are young people under 24, who make up nearly half of the world's population, with most living in developing countries.

But young people are determined, creative and have high hopes. They have the energy and willpower to help make their communities and the world better places and are constantly looking for the best opportunities for their future. Many of them are concerned about climate change and are ready to take action and to look for ideas and guidance on how to change and adapt their lifestyles towards more sustainable ones. Information and education are essential in empowering them and helping them to better understand not only the science of climate change and what is at stake, but also the way it relates to their daily lives and local environments, as well as to the choices they make, especially as consumers. Most young people have already heard about climate change, but many of them still perceive it as an abstract threat, too complex and too big while in fact its consequences are concrete, like the solutions and behaviours that can be developed to adapt to or mitigate them.

UNEP and UNESCO's *YouthXchange Guidebook on Climate Change and Lifestyles* aims to answer the questions that young people aged from 15 to 24 may have, and to inspire them in their daily lives. It explores the interrelationship between climate change and lifestyles through a scientific, political, economic, social, ethical and cultural angle and identifies actions young people might take towards more sustainable lifestyles. It channels the relevant information related to climate change in a less abstract and frightening manner, helping young people develop alternate visions and set goals towards improving their future. This guidebook provides information, case studies and useful tips around topics relevant to young people and their everyday lives, such as food and drink, travel and transport, leisure and entertainment.

At a time when the Earth's resources are being depleted faster than they can be replenished, adopting and promoting more sustainable ways of living that are in harmony with our communities and nature has never been more crucial. This guidebook supports young people to become advocates and agents of change for sustainable lifestyles in their respective communities around the world.



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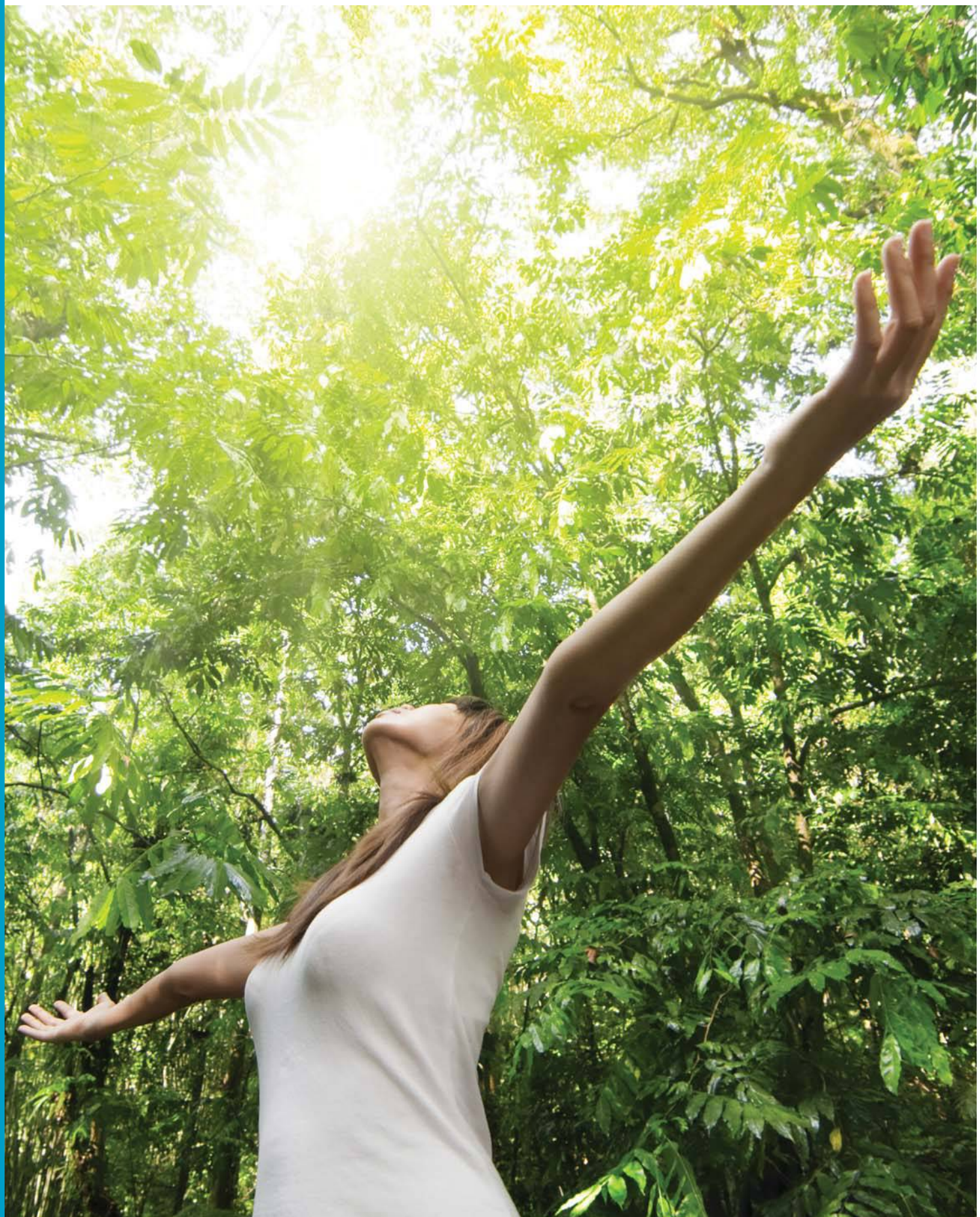


Contents

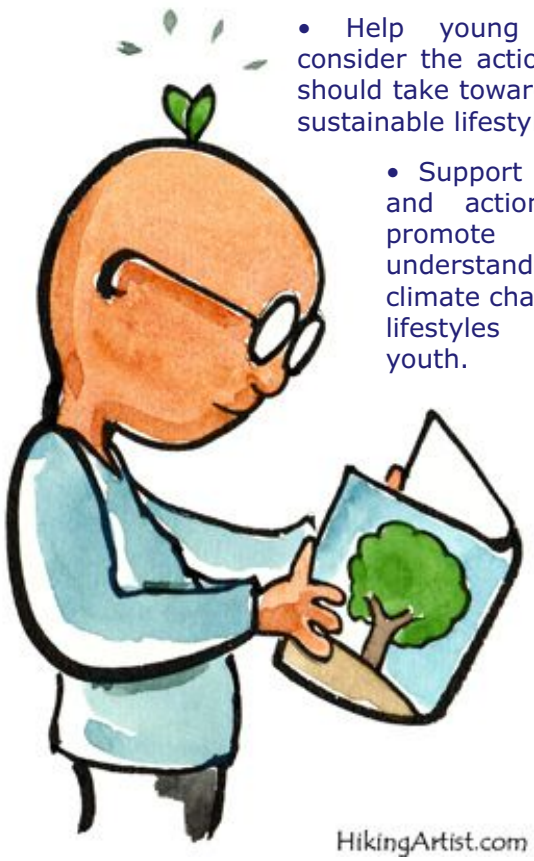
1. YXC Guidebook Series

Climate Change and Lifestyles is the first in a series of guidebooks supporting the UNESCO/ UNEP YouthXchange (YXC) Initiative, which was created in 2001 to promote sustainable lifestyles among youth (15-24 years) through education, dialogue, awareness raising and capacity building. The series is being produced for young people and people working with youth, such as educators, teachers, trainers and youth leaders in both developed and developing countries.

Almost half of the world's population is under the age of 25, and nearly 90 per cent of them live in developing countries. Youth is a critical stakeholder in the global economy and will be the main actor and motor for change in the near future. Thus, the energy, motivation and creativity of youth are essential assets to stimulating change.

Aims of the YXC Guidebook on Climate Change and Lifestyles:

- Explore the links between lifestyles and climate change;
- Help young people consider the actions they should take towards more sustainable lifestyles;
- Support courses and actions that promote greater understanding of climate change and lifestyles among youth.



Flickr: HikingArtist.com

The guidebook:

- Considers the causes and effects of climate change and its human impacts and responses, while connecting them to lifestyle choices and the technical and social infrastructures of a society;
- Provides scientific, political, economic, social, ethical and cultural perspectives on climate change;
- Explains complex issues in accessible language supported by facts, graphics, images, examples and web links;
- Develops the critical skills young people need to make personal choices to address the challenges of climate change.

"I am convinced that climate change, and what we do about it, will define us, our era, and ultimately the global legacy we leave for future generations. We hold the future in our hands. Together, we must ensure that our grand children will not have to ask why we failed to do the right thing, and let them suffer the consequences."

(Ban Ki-Moon, Secretary-General of the United Nations)

The YouthXchange Guidebook on Climate Change and Lifestyles is downloadable from

www.youthxchange.net

And on the UNEP and UNESCO websites at www.unep.org and www.unesco.org

The challenges

Young people have immense power to determine the future of our planet. They can be catalysts for change, using their power as citizens, consumers, campaigners and change-makers to champion alternative ways of living. From across the world, many young people are finding solutions to the challenges of climate change.

A growing number of young people around the world are major consumers of clothes, food, gadgets, communication devices, travel and entertainment. Advertising and peer pressure encourage young people into consumption patterns that are most often unsustainable and carried, often subconsciously, into adult life. This trend is driven by globalization with increased media, travel, communications and trade influencing ever greater numbers of young people.

For young people in developed and developing countries, understanding the relationship between climate change and lifestyles can be a challenge. This challenge needs to be addressed so that positive changes in lifestyles can happen and our negative impact on the environment can be reduced.

For some young people, however, these changes are already happening, either forced on them directly through changes in their local communities, or through the influence of friends and the media.

"The over-arching advantage of youth is an undeniable optimism that shouts: 'This will work, because it has to, because I am going to live through it. We can feel the momentum: the energy of youth is shifting the environmental movement faster than any other force. This movement has a life of its own, with all arrows pointing forward. The best part is that we're doing it by and for ourselves."

(Zoe Caron, Blogger on Itsgettinghotinhere)

Jolanta Uktveryte

Many young people are aware of the climate related challenges as one of the defining issues of their lives and futures. However, others are not because climate change remains largely abstract or irrelevant for them.

- How can we link lifestyles and climate change and take action together?
- How can we hear the views and see examples of other young people who are directly affected?

This Guidebook is designed to answer these questions. It provides a guide to the challenges facing young people about their lifestyle choices in response to climate change.

It empowers young people to critically engage with the complexities of climate change, to form their own views, take action and implement their own initiatives.

The guide has been written to provide background information on climate change and lifestyles, examples of causes, effects and solutions from around the world, and suggested starting points for engagement and action by young people.

2. Learning for change

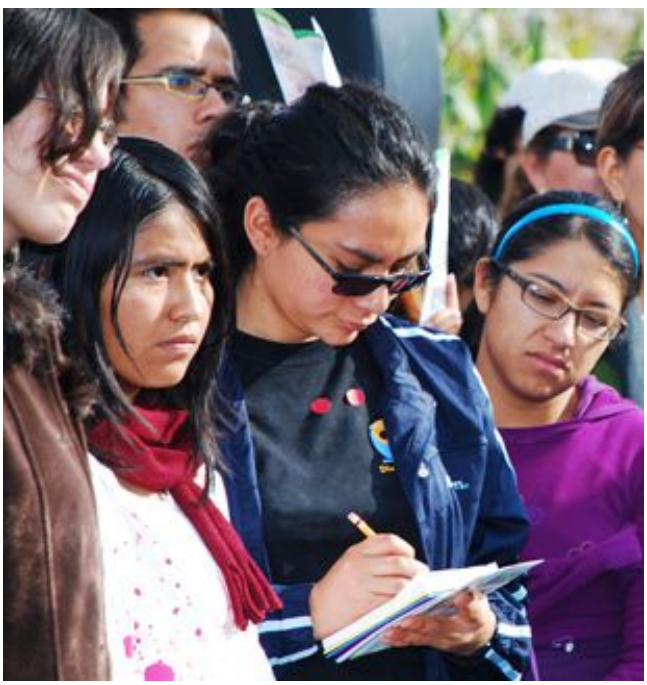
Education is vital in helping young people respond to the challenges of climate change, but what should this education look like? How will young people learn?

Education for sustainable development

Education for sustainable development (ESD) provides a framework that can help us understand and respond to the challenges of climate change. ESD goes beyond the gathering and storing of knowledge by encouraging learners to think critically and develop values such as respect for the environment and other people.

> *"ESD is not education about environment or sustainable development, but rather education for sustainable development that includes learning about values, human rights, good governance, economics and culture."*
>
> (Two concepts One goal – Education for international understanding and Education for sustainable development)

ESD demands that we look at learning in a new way. It views learning as a lifelong process taking place in various settings. It should transform societies so they become more sustainable and just.



Flickr: CIMMYT

This approach to learning is essential for an issue as complex as climate change where there are many perspectives, and where actions in one location can have an impact on distant people and places. Skills such as comparing evidence, listening to different perspectives, understanding connections and making judgements are essential for young people to make informed choices, reach consensus, and collaborate with others to make lifestyles more sustainable.

This approach to education throughout life is based on UNESCO's Five Pillars of Learning:

Learning to know is about having a broad general knowledge and in depth understanding of a small number of subjects.

Learning to do is about having a main occupation but being skilled to deal with different situations and to work in teams.

Learning to live together is about understanding other people and our interdependence.

Learning to be is about personal development to make better choices and become more responsible.

Learning to transform oneself and society is about individuals working separately and together to change the world. This means gaining the knowledge, values and skills needed for transforming attitudes and lifestyles.

UNESCO, Five Pillars of Learning

"My point is simply that education is no guarantee of decency, prudence, or wisdom. More of the same kind of education will only compound our problems. This is not an argument for ignorance, but rather a statement that the worth of education must now be measured against the standards of decency and human survival - the issues now looming so large before us. It is not education that will save us, but education of a certain kind."

(David Orr, Professor of Environmental Studies and Politics)

Learning for change

Quality ESD is about:

- learning to ask critical questions
- learning to clarify one's own values
- learning to envision more positive and sustainable futures
- learning to think systemically
- learning to respond through applied learning
- learning to explore the evidence behind both tradition and innovation.

(Based on Education for Sustainable Development: An Expert Review of Processes and Learning, UNESCO)

ESD, climate change and lifestyles

ESD is now being used to address current challenges such as climate change. The UNESCO Climate Change Education for Sustainable Development programme for example, uses ESD to help people understand the impacts of climate change and to increase climate literacy among young people.

Learning for change towards a more sustainable lifestyle can be summarized in terms of key understanding, key skills and key attitudes. ESD is a form of education that helps to meet:

Key understanding	Key skills	Key attitudes
• The interdependent nature of our society and life on our planet; • The limited carrying capacity of our planet; • The value of biological, social and cultural diversity in maintaining the wellbeing of our planet and our society; • The role of rights and responsibilities in a sustainable society; • The role of equity and justice in a sustainable society; • The presence of risks and the need for precaution in making decisions about our planet and our society.	• To understand the relationships and connections between issues in order to make decisions and solve problems in a joined-up way; • To enable co-operation and collective decisions even where views and power may not be distributed evenly; • To think critically about problems, issues and situations and to shift thinking from how to make things less unsustainable, to the kind of systems and lifestyles needed to achieve sustainability.	• Confidence to take actions and believe they will make a positive difference; • Appreciation that individual behaviour must be balanced by our responsibilities as members of a wider society; • Seeing humanity as part of a natural world with limits and living in harmony with it as a resource for human development; • Respect for the biological, social and cultural diversity that is fundamental to our world; • Caring for self, for others, for living things, and for our planet.

(From: The Sustainable Development Education Network's Framework for the introduction of Education for Sustainable Development)

Jolanta Uktveryte

Case study

The Global University Partnership on Environment and Sustainability (GUPES) aims to promote the infusion of environment and sustainability concerns into teaching, research, community engagement and management of universities and other tertiary institutions.

Get Active!

Look at the wide range of downloadable teaching and learning resources that are listed in Section 15: *Online resources*. Try using and adapting some of the activities with small groups of young people.

3. Changing climates

What is the difference between weather and climate? Why is the climate changing? What human activities affect climate change? What does our future look like?

Climate and weather

Climate and weather have one difference. Weather measures the conditions of the atmosphere, through temperature, humidity, wind and precipitation, over a short period of time (day, week and month). Climate is the average weather for a particular region and time period, usually taken over 30 years. The climate system is very complex and studying it does not only mean looking at what is going on in the atmosphere but also in the ground, oceans, glaciers and so forth.

Global temperatures

Warming of the climate is certain. Air and ocean temperatures are increasing, snow and ice is melting, and the sea level is rising. There are many examples that illustrate the striking changes that are already taking place because of climate change.

In Numbers

Warning signs

According to major climate research centres around the world, the 10 hottest years on record have all occurred since 1998.

Sea levels have risen in a way consistent with the warming – since 1961 at an average of 1.8 millimetres per year, and since 1993 at 3.1 millimetres per year.

(UN Global Environmental Alert Service, April 2011)

The expansion of water as it warms, the melting of glaciers, ice caps and the polar ice sheets and the runoff water from terrestrial reservoirs are all contributing to sea level rise. The Arctic Ocean, for example, had the least ice of any year on record in 2007, followed by 2008 and 2009. The likelihood of certain weather events is also increasing. Between 1900 and 2005, rainfall has increased significantly in the Americas, northern Europe and parts of Asia, but decreased in southern Africa and southern Asia.

Changing climates

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There are several factors that can influence the climate, such as changes in the Earth's orbit around the sun, volcanic eruptions, and natural processes within the climate system (i.e. changes in ocean circulation). However, the climate change we are experiencing today is very likely (greater than 90 percent chance) due to human activities.

The atmosphere is made up of gases that act like a blanket wrapped around the planet. This blanket is the Earth's own natural way of regulating its temperature. This mix of gases allows some of the sun's radiation to reach the surface. But it also partially blocks the escape of long wave radiation, in the form of heat, back into space. This heat trapping function is called the greenhouse effect. It keeps the Earth's surface in a suitable temperature range to sustain life as we know it.

After water vapour, the most important greenhouse gases (GHG) are carbon dioxide (CO_2), methane, and ozone. If we did not have these gases, the planet would be 33°C colder than it is today, making it too cold for our survival. Most of the increase in global average temperatures is very likely due to the increase in human-induced greenhouse gases.

Most of these additional greenhouse gases come from burning fossil fuels such as coal, natural gas, and oil to power our cars, factories, power plants, homes, offices, and schools.

Human causes

Statistics show that GHG emissions started to rise significantly in the 1800s due to the Industrial Revolution and the resulting increased production and consumption, as well as changes in land use. GHG emissions linked to human activities have accelerated dramatically in recent decades, with an increase of 70 per cent between 1970 and 2004 alone. Carbon dioxide from the burning of fossil fuels is the largest single source of greenhouse gas emissions from human activities. The supply and use of fossil fuels accounts for about 80 percent of mankind's CO_2 emissions. The fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC), the leading international body for the assessment of climate change, shows a strong correlation between the rise of anthropogenic (human-induced) GHG emissions in the atmosphere and the increase in average global temperature.

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Maintaining ecosystems

Our ecosystems absorb and store CO_2 in plants, soil and oceans. They are known as carbon sinks and play a major role in the carbon cycle. Forests are the green lungs of the world storing huge amounts of carbon in the trees and in the soil. However, 13 million hectares of forests were converted to other uses or lost through natural causes each year between 2000 and 2010, an area roughly the size of Greece. Fewer forests mean fewer trees to absorb CO_2. In addition, when forests are burnt for farming or development, most of the carbon in the trees is released back into the atmosphere. Thus, fewer forests often mean more CO_2 is emitted into the atmosphere and less can be naturally removed by it. This thickens the blanket even more.

Changing climates

In Numbers

Sources of climate change

Major contributors to global GHG emissions are:

Electricity and heat	25%
Industry	21%
Forestry and land use change	18%
Agriculture	15%
Transport	13%
Buildings	15%
Waste and waste water	4%

All these sectors consume energy from some of the world's top global emissions sources, such as CO_2 from the burning of coal (27%), oil (24%), and gas (13%).

CO_2 also comes from land-use change (9%), cement manufacture (4%).

Methane and nitrous oxide comes from agriculture (14%), fossil fuels (5%), and waste (3%).

(UNEP Grid-Arendal climate change graphics)

Different Scenarios

The international community has committed to reduce GHG emissions, but at the current level of international commitment, global GHG emissions are expected to continue to grow, causing further warming, over the next few decades. However, how much future temperature will increase is uncertain because we cannot predict the rate and intensity of future human activities and lifestyles that will produce GHGs, and also because of the complexity of the climate system.

The IPCC established several scenarios for GHG emissions and projections of surface temperatures from 2000 to 2100 compared to 1980–99 levels. These give an idea of the anticipated changes. The best case scenario is where the global mean temperature would rise by 1.8°C. This scenario considers a world with a global population that peaks in mid-century and declines thereafter, but with rapid change toward a service and information economy. It describes reductions in consumption and the introduction of clean and resource-efficient technologies. The emphasis is on global solutions to sustainability, including improved equity, but without additional climate initiatives.

In the worst case scenario, the global mean temperature would rise by 4°C by the end of the century. This scenario is based on very rapid economic growth, a population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies but still based on fossil fuels. Some scientists argue that because of increasing GHG emissions, we are actually on the road to the worst case scenario.

Computer models suggest that these temperature increases will not be evenly distributed around the Earth. Land areas will warm more than oceans partly due to water's ability to store heat. High latitudes will warm more than low latitudes partly due to positive feedback effects from melting ice. Most of North America, all of Africa, Europe, northern and central Asia, and most of Central and South America are likely to warm more than the global average. The warming will be close to the global average in south Asia, Australia and New Zealand, and southern South America. The warming will differ by season, with winters warming more than summers in most areas.

Changing climates

"Even if we could limit global average temperature increase to between 2 - 2.4˚C above pre-industrial levels at equilibrium, some impacts would be unavoidable and global average sea-level rise on account of thermal expansion alone would lie between 0.4 - 1.4 metres. To this we should add the contribution to sea-level rise from melting of ice across the globe."

(Dr. Rajendra Pachauri, Chairman of the IPCC)

Global awareness and concern regarding climate change has been increasing since the mid-eighties and since the IPCC had produced its First Assessment Report on Climate Change (1990). The first Earth Summit saw the establishment of the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty that supports intergovernmental negotiating process among countries (called Parties) with a view to limit dangerous anthropogenic interference with the Earth's climate. The Kyoto Protocol to the UNFCCC sets an overall GHG emission reduction target for Annex I countries (industrialized countries and countries in transition) of 5.2 per cent compared to 1990 emission levels to be achieved by 2012. The Protocol entered into force on 16 February 2005. As of April 2010, 191 states have signed and ratified the protocol.

An invisible threat

Scientists are looking for ways to help the media, the public and policy makers better understand climate change, its effects and impacts. Some people are sceptical that climate change is happening at all because in the last few years, some parts of the world have experienced harsh winters, with heavy snowfall and unusually low temperatures. So, many ask how can the Earth be getting warmer, when we are seeing such cold winters. Firstly, the IPPC's Fourth Assessment Report identified a 100 year continuous warming trend (1906–2005) of 0.74°C and projects further warming in the order of 1.1 to 6.4°C by the end of this century. Secondly, climate change goes along with increased severity and frequency of extreme weather events like heat waves, cold waves, storms, floods and droughts.

Get Active!

To help address the scepticism surrounding climate change, its causes and effects, discuss in groups how to reply to the following false statements:

- There is no absolute evidence for climate change.
- The recent weather shows no signs of global warming.
- The Earth will adjust to cope with the effects of climate change.
- Scientists keep changing their mind about the main effects and impacts of climate change.

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There is still widespread doubt about the urgency to act on climate change and about the effectiveness of individual actions and choices. For many, climate change is abstract in terms of time, scale and impacts. It is often perceived as a future problem. For some people, the global causes and science behind climate change may be difficult to understand and to relate to their local experiences. Many people are finding it hard to judge the impacts of their actions because they cannot see and relate to the effects or the causes of climate change. Risks are often perceived in terms of immediate, obvious and simple threats.

4. Changing effects and impacts

What are the effects of climate change on the planet and ecosystems? How does climate change impact different people around the world? Is everyone affected the same way?

Climate change effects

The effects of climate change are global in scope and unprecedented in scale, with some of them already being observed. They include more frequent and extreme weather patterns, changes in plant growth affecting agriculture and food production, loss of plant and animal species unable to adapt or migrate to changing conditions, changes in the spread of infectious diseases in terms of the rate and the expansion of ranges, changes in the flow of ocean currents, and changes in seasons.

These effects will have severe impacts on coastal communities and cities, our food and water supplies, marine and freshwater ecosystems, forests, high mountain environments, and far more. Climate change is expected to intensify throughout this century with significant implications for people and the planet. So, to avoid the unmanageable and to manage the unavoidable, there is an urgent need to adopt more sustainable lifestyles and economies with lower greenhouse gas (GHG) emissions.

Effects on the planet

The observed 0.74°C temperature increase (1906-2005) has already strong impacts on our natural environment. These changes are affecting the whole world, from low-lying islands to the polar regions. Local effects can be very different in different parts of the world, and these affect natural systems in different ways.

For example, today, 25 per cent of GHG emissions due to human activities are absorbed by oceans that function as carbon sinks. When CO_2 is absorbed by seawater, chemical changes occur in sea water, reducing both its pH and the concentration of carbonate ions, a process known as ocean acidification. This phenomenon affects corals, causing their bleaching and it could lead to the degradation of entire marine ecosystems that depend on them.

Changing effects and impacts

Ecosystems

Changing conditions have consequences on ecosystems such as coral reefs, rainforests, glaciers, wetlands and oceans. A 1-2°C increase in global temperature poses major risks to many unique and threatened systems, including biodiversity hotspots - the richest and most threatened reservoirs of plant and animal life on Earth. Scientists predict that 20 to 30 per cent of species are at risk of extinction if global average warming exceeds 1.5-2.5°C. This is because, as temperatures rise, environments change too quickly for the species to either adapt or migrate to somewhere more suitable for them.

Get Active!

Look at an ecosystem in your own area. Describe the ecosystem.

What are the potential impacts on this ecosystem that might result if temperatures increased and rainfall decreased?

Small, slow changes in a natural system can quickly become big, quick changes when they reach a tipping point. Tipping points are critical thresholds, beyond which natural systems are not able to recover from further disturbance. Major climate system tipping elements include Arctic sea-ice loss, melting of Greenland ice sheet, dieback of the Amazon rainforest and Sahara greening.

Case study

With aerial footage from 54 countries, the film HOME shows how the Earth's problems are all connected. It shows how in the past 50 years – one single lifetime – the Earth has been more radically changed than by all previous generations of humanity. (www.homethemovie.org)

Impacts on people

Climate change impacts people by affecting agricultural production, water supplies, sanitation and levels of nutrition and health. These are all severe consequences for countries with a growing population.

Case study

The film 6 Billion Others – Climate Voices is a selection of 600 interviews from 17 countries. It features testimonials from people around the world who are witnessing change in their daily lives, as a result of climate change. (www.6billionothers.org)

© Shutterstock

The health of millions could be at risk because of climate change. Clean water supplies will be under pressure because warming temperatures increase water pollution from bacterial growth leading to a rise in diarrhoeal diseases. Limited access to clean water could lead to malnutrition, dehydration and inadequate sanitation. People could suffer from water shortages since climate change is expected to alter the seasonal flows in regions fed by melt water from mountain ranges, such as the Himalayas. While melting glaciers are likely to increase flood risk during the rainy seasons, they will strongly reduce dry-season water supplies to one sixth of the world's population.

Changing effects and impacts

In addition, as precipitation patterns change with prolonged dry seasons, crop productivity is predicted to decrease, exposing people to starvation and diminishing water supplies for drinking and hygiene.

This is particularly devastating for developing countries where 98 per cent of the world's poor live. Although hurricanes and floods are already happening, they will rise in frequency and intensity along with other extreme weather events because of climate change, increasing the likelihood of destroying homes, roads and farmland.

In less visible and immediate ways, it could also affect the way of life for all of us – whether our food and drink, use of energy, travel, leisure, shopping, investments or jobs – as can be seen in some of the following sections.

Case study

Cooling or warming is not necessarily bad for some areas. For example, Siberia might get warmer in a few decades and this could be profitable for the local population. On the other hand, the impact of climate change may force others to leave their homes because of changing environmental conditions. In the Sahel region of Africa, for example, declining agricultural productivity has driven people out of their homes for the past 30 years; this is expected to continue as a result of climate change, putting the lives of 60 million people who live in the Sahel region at risk.

Get Active!

Draw pictures or use words to describe the causes, effects on the planet and impacts on people of climate change.

- How does reading and talking about climate change make you feel? Do you feel hope, fear or denial?
- How do you think other young people feel about climate change impacts?

"Global temperatures have not been 3°C higher than today for 3 million years. Such warming would likely lead to mass migrations away from the worst affected regions, with the risk of severe, prolonged conflict."

(International Energy Agency)

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Developed countries

Wealthy countries and countries with rapidly growing economies are the major consumers of fossil fuels and other resources. They are responsible for over three quarters of GHG emissions. Richer countries have many of the technical and financial resources, social organizations and political structures that are needed to reduce the causes (mitigation) and effects (adaptation) of climate change.

Emerging countries

Many developing countries are industrializing and experiencing rapid economic growth. As a consequence, they are emitting more and more GHGs, although developed countries are responsible for most of the historic emissions. Through what is called the principle of common but differentiated responsibilities, the Kyoto Protocol recognizes these historical differences

Changing effects and impacts

and requires developed countries to reduce their emission of greenhouse gases. Scientists agree that total emissions - from both developed and developing countries - must decrease to very low levels in order to prevent dramatic changes to the Earth's climate.

In Numbers

Where do emissions come from?

If you live in Europe, North America or Australia, your contribution to GHGs will be about three times higher than if you live in China, 10 times that in India and up to 100 times that in Africa.

© UN photos

Developing countries

Developing countries are considered the most vulnerable to climate change because they have fewer resources to adapt socially, technologically and financially and are often very reliant on natural systems. The impacts of climate change would be mainly felt by poor and vulnerable people, such as children, women and the elderly, and the basis of their livelihoods will be challenged.

Young people

Young people in developing countries are likely to feel the impact of climate change on their lifestyles and livelihoods more quickly and directly than young people in developed countries. Most young people in Africa live in rural areas, where agriculture, which is extremely vulnerable to climate-related damage, accounts for 65 per cent of total employment. In the short term, agricultural production is threatened by more soil degradation and erosion, crop damage, and reduced harvests resulting from extreme weather events such as droughts, heat waves, severe storms, and floods. Because of these threats, many young people are migrating to cities and other countries. It is their way of adapting. Climate change may also cause conflicts due to resource scarcity, which could affect the lives of many young people in the long term.

Many young people in developed countries work in the service sector, like tourism, where there are likely to be long-term impacts such as the skiing season being shorter in Europe because of melting glaciers, and tourists may be less attracted to coastal environments.

Indigenous youth

Young people who still live a traditional lifestyle with their families, based on local resources and culture, are likely to be the most affected because their livelihood is directly dependent on their natural environment. They can see climate change directly changing their lands and homes. As with youth in developing countries, climate change is therefore not only an environmental but also a human rights issue for them, as they are forced to change their lifestyle, livelihood, culture and worldview. Some of the traditional beliefs of indigenous peoples can be seen on the Climate Frontlines website.

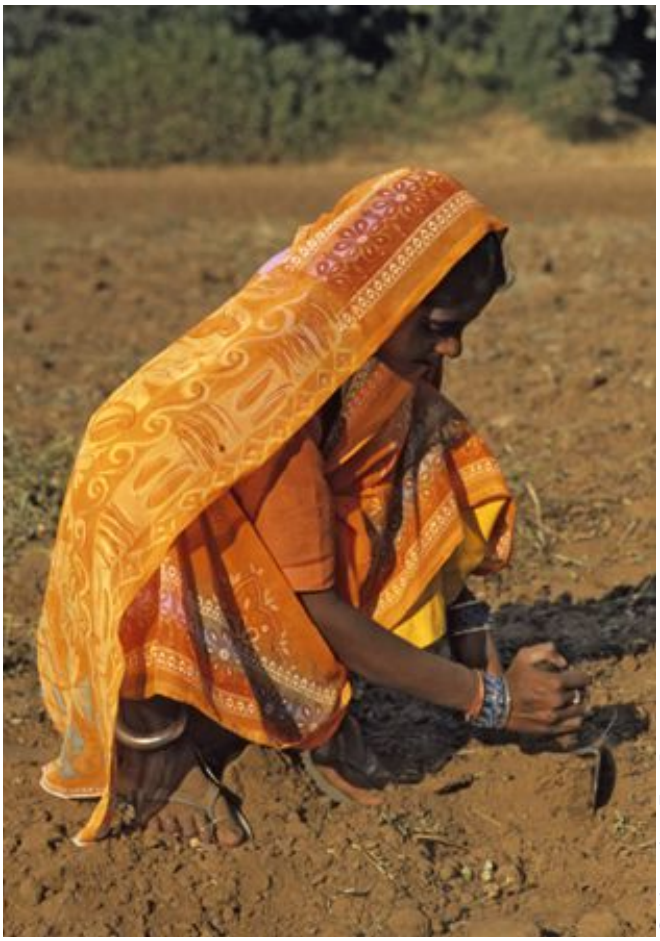
"Here in the Arctic, where the impacts of climate change are happening at an accelerated rate, we feel our physical environment, our culture, and our spirituality, are being disrupted. Sea ice is melting, coastlines are exposed and degrading, and species are at risk."

(Declaration on Climate Change from Youth of the Arctic)

Changing effects and impacts

Girls and young women

Girls and young women in developing countries are especially vulnerable to climate change. Drought and floods caused by climate change can create more work for them and take more of their time for finding and fetching water or growing crops, as they collect water, fuel and firewood and often grow food for their families. As a result, many of them miss out on education, which means fewer opportunities for them to have better living conditions and become actors of sustainable development. Nonetheless, many girls and young women are working hard to escape from these conditions by becoming agents for change and finding ways to adapt to climate change in their daily lives and build stronger communities.



© Listening Eye Images

Case study

Wangari Maathai saw many communities in her native Kenya suffering from lack of natural resources. She founded the Green Belt Movement – a grassroots organization that empowers women to improve their lives and conserve the environment through planting trees; in an effort to replenish resources and reduce vulnerability to climate change, one tree at a time. This movement has spread worldwide.

Get Active!

Evaluate one climate-related risk faced by your local community, town, city or country, for instance, the risk of droughts or heavy precipitation.

What are some of the impacts of these extreme weather events and what can governments, civil society and individuals do to reduce the causes and effects?

Islanders

Small island developing states (SIDS) are among the lowest GHG emitters but they are likely to be the most affected. As low-lying islands with limited land and freshwater, they are likely to be severely affected by sea level rise and more extreme weather events.

So, settlements, critical infrastructure, economic activities, such as tourism, and ecosystems are at risk. Unsustainable human activities such as sand mining and extensive coastal developments already represent a problem for many island states and increase their vulnerability to climate change impacts.

Changing effects and impacts

"The sea is eating our island and shrinking it. Islanders are thinking about relocating to the mainland."

(Local solutions on a sinking paradise, Carteret Islands, Papua New Guinea)

Case study

Papua New Guinea reports that 25 per cent of its existing shoreline has already been inundated. If sea level rises by 1 metre, the Maldives will disappear entirely, and in Grenada, up to 60 per cent of the beaches would disappear in some areas following a 50-centimetre sea level rise.

The good news

Climate change is real and needs to be addressed. We must find solutions to adapt the way we live to the new environmental conditions resulting from climate change. This is called adaptation and the good news is that it can be turned into opportunity, through innovation for instance.

We also have the potential to slow down these changes. This is called mitigation, which means we need to change our behaviour to help reduce GHG emissions and understand that we are part of nature, not apart from it. We are all part of a chain, and we can act as agents of change. Young people have the most to gain and the most potential to make this happen over their long lifetime.

5. Lifestyle choices

Everyone wants a good life, but what do we mean by that? How often do we think about how we live and who influences our choices? What impact do different lifestyles have on our environment and natural resources?

Lifestyles

We are all defined by our own lifestyle. But in today's consumer culture, it is often only defined by our possessions and consumption - the products or services that we choose. The word lifestyle is now more often used in magazines and advertising to sell products and services.

But lifestyles should be understood as a simpler concept as it describes the world we live in and who we are. It includes everything from the moment we wake up to the moment we go to sleep, everything from the food we eat, to how we interact and the way we get around. People express their identity, values, hopes, fears, politics and social position to others through their lifestyle.

We will only change our lifestyles in exchange for a better one. The changes will be personal for each of us. Young people in Indonesia will want and need a different lifestyle than young people in Italy.

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Case study

Our cultures, religions, communities and so forth often affect our lifestyle choices and how they relate to climate change and consumption. In the United Kingdom, the Akashi Project works with community and faith groups to better understand climate change and the future of our planet.

Get Active!

List single words to describe the way you live (your lifestyle) – what you consume, your possessions, social relations, entertainment, habits, clothing. What can you change to make your lifestyle more sustainable?

A world of choice?

We are constantly making choices. How much choice we have as individuals depends on where and how we live, how wealthy we are and whether we live alone or with others.

Lifestyles are also influenced by our personal history, our friends and family, our education and work, our culture and interests, and our attitudes and beliefs. Some people have a very lively lifestyle with lots of parties and going out with friends, while others may prefer a quieter lifestyle, staying at home with family or enjoying a quiet read or walk. In many countries, especially poorer ones, people do not choose their lifestyles, as they are often dictated by the need to work long hours to earn enough money, or produce enough food to survive.

Lifestyle choices

"A sustainable lifestyle means rethinking our ways of living, how we buy and how we organize our everyday life. It is also about altering how we socialize, exchange, share, educate and build identities. It means transforming our societies and living in harmony with our natural environment. As citizens, at home and at work, many of our choices - on energy use, transport, food, waste, communication and solidarity - contribute towards building sustainable lifestyles."

(Report of the Marrakech Task Force on Sustainable Lifestyles)

Case study

Climate Culture is a virtual world where your avatar (online persona) can make smart choices that save money and energy, and are good for the environment. The site was created by a group of recently graduated students in the United States who wanted to make a change in a fun way that would also make people think.

Ecological footprints

Ecological footprints measure the resources used to support our lifestyle and compare our resource use to what is sustainable, considering the carrying capacity of the planet. This method uses land as a measure needed to support lifestyle. A sustainable lifestyle would mean each person on Earth using about 1.8 global hectares.

The Global Footprint Network is building calculators for different parts of the world. It allows you to look at lifestyle choices and footprints in 15 different global locations. It shows that globally, our lifestyles are not sustainable. In 2010 alone, on average, we were each using 2.7 global hectares. This is a global average, though, and it is not the same for all countries:

In Numbers

Global footprint of selected nations

	Global hectares per person
South Africa	2.3
Democratic Republic of Congo	0.8
Japan	4.7
India	0.9
Denmark	8.3
Romania	2.7
Uruguay	5.1
Haiti	0.7
United States	8.0
Mexico	3.0
United Arab Emirates	10.7
Yemen	0.9

(Footprint for nations, Global Footprint Network)

These ecological footprint figures also show that if everyone lived like the average person in India, then we would be living within the limits of our planet. But millions of people in India live in poverty and hunger and without access to electricity. If we all lived a more affluent lifestyle, such as people in Japan, then we would need 2.6 planets to sustain us all. If everyone adopted the average lifestyle of the highest footprint countries, namely the United Arab Emirates, Qatar, Denmark, the United States, and Belgium, we would need up to six planets to support everyone. This reveals strong imbalances

Lifestyle choices

that have serious consequences on people's life. Rich countries need to consume less and better. Conditions of living in developing countries need to be improved through more responsible and sustainable consumption.

Measuring our ecological footprints as individuals, communities, cities, businesses and countries allows us to better manage our ecological assets by taking collective and personal action.

In Numbers

Carbon footprints (tons CO_2 per person)

United States	20.6
United Kingdom	9.8
China	3.8
India	1.2
Bangladesh	0.3

(Human Development Report UNDP, 2007)

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Carbon footprints

Carbon footprints show our impact on global warming by calculating the greenhouse gases (GHGs) that our lifestyle produces in a year, measured as tons of carbon dioxide equivalents (CO_2e). There are many online carbon calculators, each designed for a specific type of person in a specific type of climate and lifestyle. The Best Foot Forward ecological footprint calculator allows you to play with the settings to quickly see how your lifestyle has an impact on your ecological and carbon footprints. If you are from a country in the cooler North, the online Carbon Independent carbon calculator is worth trying.

The Stern Review on the economics of climate change claims 5 gigatons of CO_2e can be sustainably absorbed by the planet each year. Given the present population of 6.6 billion people, that means our fair share is about 750kg of emissions each, per year. The global average, however, is currently 2 tons per person per year, more than double the fair share.

Advertising

Advertising can have a huge influence on our lifestyle choices as consumers. Companies use many different ways to encourage us to buy

Lifestyle choices

or use their products. Some of these methods of influencing choice have been criticized for encouraging negative and unsustainable lifestyles. Some companies also mislead consumers regarding their environmental practices or the environmental benefits of a particular product or service, making false claims on the environmental sustainability of their products. This is called greenwashing.

The same powerful forces that influence our lifestyle choices are also used to encourage us to make more sustainable choices. Advertisements can promote more environmentally friendly and low carbon products. These are products that produce less GHG emissions throughout their lifecycle, from the collection of raw materials and manufacture of products to their use and disposal. In addition, campaigns can help make us more aware of challenges such as climate change and how it relates to our own lives.

Get Active!

Every day we are exposed to hundreds of messages that attempt to influence our lifestyle choices. Here are a few tips to help you understand how this has an influence on you:

- Next time you are shopping or reading a magazine, look at the advertisements and think about the lifestyles they are trying to encourage. Which messages help encourage behaviour to reduce climate change and which could make it worse?
- Next time you watch TV, think about both positive and negative role models and messages.
- If you were to promote a more sustainable and climate friendly lifestyle to your family or friends, how would you do this? Think about the different words, images, examples even colours that you might use and why.

Governments use a mix of different approaches to try to influence or support our lifestyle choices. This includes advertising but also introducing new laws such as laws requiring buildings to be more energy efficient, or laws introducing labelling schemes that help customers to see how much energy products use.

Case study

UNEP developed the first international online database of corporate and public advertising campaigns dedicated to sustainability issues. UNEP has also worked with the International Association of Public Transport to produce a joint UITP/UNEP TV campaign called The world is your home. Look after it. It won several international awards and over 60 companies and organizations have adapted the advertisement.

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6. Good life

A good life requires good health, happiness and prosperity. But will more and more consumption make our life good? Can we all consume equally and as much as we would like?

Flickr: HikingArtist.com

Consumer culture

Some young people consume a lot. Their consumer culture is considered appealing and consuming is often seen as a source of happiness. However, many young people are now starting to question whether consuming a lot really brings happiness, particularly following the 2008 economic crisis. In fact, according to the Global Survey for Sustainable Lifestyles (GSSL), most young people do not have dreams of luxury and unlimited material comfort. They long for a simpler and slower life. This is because many young people now see how a culture of consumption and competition can be a cause of stress. Nonetheless, for some young people, particularly those in developing countries, consumption may be a remote dream, one that many are working towards. Consumer power is unevenly distributed, with huge differences between developed and developing countries. Although nearly half of the 1.7 billion people of the global consumer class are from developing countries, about a billion people will still live on less than US$ 1.25 a day in 2015.

Wellbeing and happiness

The dominant world view is that more consumption and economic growth will lead to more wellbeing and happiness. Gross Domestic Product (GDP) has become an indicator of the standard of living and progress in many countries. It is the market value of all goods and services produced in the country in a given period. But in the rich world, four decades of rapid GDP growth, high consumption, and carbon emissions, has not converted into a proportional continuous increase in the standard of living or wellbeing. The Department for Environment, Food and Rural Affairs (DEFRA) report on wellbeing research shows that there is now a lot of evidence for this, if we look at health, stress and life satisfaction. Wellbeing in different countries can be compared using the Happy Planet Index (HPI), the first ever index to combine environmental impact with wellbeing. The HPI shows that around the world, high levels of resource consumption do not reliably produce high levels of wellbeing.

Good life

© Shutterstock

Case study

A study by Professor Easterlin examines the relationship between income and happiness over 20 years in 37 rich and poor, developed and developing countries. It showed that while the personal incomes in Chile, China and South Korea have doubled in less than 20 years, there have been no significant rises in happiness. While in the long term money does not buy happiness, in the short term, case studies reveal that there is a relationship between income growth and happiness.

Consuming the Earth

Our global consumption has already exceeded the Earth's carrying capacity. In fact, considering the way and the amount we consume, we will soon run out of many of the Earth's finite resources. Currently, we need 1.4 Earths to sustain our lifestyles. The Intergovernmental Panel on Climate Change (IPCC) says that while the Earth's carbon sinks such as trees can absorb only 3.1 billion tons of carbon dioxide (CO_2) from the atmosphere, carbon sources like cars are emitting 7.2 billion tons of carbon dioxide into our atmosphere each year, more than double the absorption capacity of the Earth.

Low carbon lifestyles

Low carbon lifestyles are not universally the same. They are complex and depend on the environment, resources, people and cultures around us. They can be lean (using less stuff), clean (having only enough or sufficient) or green, which combines using less stuff and having enough. It is the only lifestyle that connects less consumption with more health, creativity, prosperity and wellbeing. It is also not just about thinking, feeling and looking good for ourselves, but also about doing good for others and the planet.

A low carbon lifestyle – one that creates less CO_2 and greenhouse gases – means:

- Less travel, especially by air and car;
- More efficient use of energy in appliances and homes;
- More energy efficient production of food and other goods;
- Fewer and more locally-produced consumer goods.

© Shutterstock

Good life

Case study

The Low Carbon Lifestyle Tour was a six month voyage, visiting 40 ports around Britain in the revolutionary zero-emission Explorer Microyacht, to promote the benefits of low carbon living to an audience of 12 million people. The message was that low carbon lifestyles are easy, fun, save money and improve your quality of life.

The challenges of climate change give high consumers some good reasons to change to a lower carbon lifestyle. Young people are finding that green, sustainable lifestyles are a new and exciting opportunity for them to shape their future.

Get Active!

Describe a low carbon lifestyle, using a picture of a stick person or simple words.

Consider the differences between this and your current lifestyle. What can you change about your lifestyle to make it a low carbon one?

© Listening Eye Images

We may all have many different reasons for changing to a low carbon lifestyle. From both a personal and social point of view, it offers many advantages:

- Being creative and innovative to improve our lives, health, wellbeing and environment;
- Exploring new ways of working and living together;
- Setting an example for others;
- Improving skills of working with the natural environment;
- Caring for less advantaged people and being fair to all;
- Having concern for future generations and the wellbeing of our families;
- Being well prepared for the future;
- Securing local supplies and being self sufficient;
- Experiencing fewer conflicts over scarce, non-renewable sources like oil and coal;
- Experiencing fewer emergencies and disasters like hurricanes and floods;
- Experiencing less forced migration due to sea level rise and extreme changes of climate.

Get Active!

Divide into groups and discuss the following:

- With all these advantages and our goodwill, why is it so hard to change?
- What challenges do we face for changing to a low carbon lifestyle?
- What can we do to overcome those challenges and start changing?

Good life

Creative communities are mobilizing, governments are creating policies and businesses are producing products that can all contribute to more sustainable lifestyles. They all need to do more to enable the shift towards sustainable lifestyles. But the transition we need must take place in people's hearts and minds as much as in our green buildings, electricity networks and efficient transport systems.

Get Active!

What are the attractions of a low carbon lifestyle? What are the difficulties? What would you be glad to get rid of or to stop doing? What would you miss? List the attractions and difficulties and share them with your group.

Discuss the following questions with your group and plan how to spread your message of low carbon lifestyles:

- What can we do as individuals now?
- What will the government need to support?
- How will work, leisure and travel need to change?
- What will need changing in how people think about their life?
- How soon might we achieve these changes?

Case study

In Japan, interesting new trends are showing a shift in what young people think of a good lifestyle. One trend is de-ownership. For some young people cars, books and clothes are not things to buy and own but just to use, when wanted. Their identity is shifting slowly from what I have to who I am. More than 10 cities in Japan have issued a Slow-Life City declaration, and they are organizing conferences called Slow-Life City Summits. Libraries, car pooling and tool hire are other examples of this collaborative consumption.

Pessimism

Some people have pessimistic views about climate change and these views can affect our understanding of the impact of our lifestyles on climate change. See How to talk to a climate sceptic for some ideas on how to respond to the most common sceptical arguments on climate change.

Flickr: HikingArtist.com

Get Active!

Test yourself by replying to these sceptical statements:

Changing my lifestyle is not going to have an effect on climate change. (Every little helps. We can all set an example and be the change we want to see).

I have to pay more for green products and services. (Some products last longer, are healthier and safer).

I will not have so many good things in life to enjoy. (Less can be more. Less stuff means more space and more time for other things).

7. Food

We all need food and drink to survive, but for some, what they eat and drink is more a matter of lifestyle choice than survival. What are the impacts of the choices we make on food and drink and what alternatives are available to us?

A world of opposites

As a world population, we have never had so much food. The world produces enough food to feed everyone. Improvements in farming and the easier transportation of food around the world are just two of the reasons why. But this is not the case everywhere.

Globally, almost a billion people (around 15 per cent of the world population) go to sleep hungry every night, most of them living in Asia and Africa. For them, choice and access are luxuries they do not yet have. They simply need more food. In other parts of the world, especially the more developed regions, there are over a billion people who are overweight, with 300 million being obese, the majority of them being poor people. Obesity has increased globally by around three times since 1980, mainly because of an increase in high-fat and high-sugar convenience foods.

In Numbers

Average world calories per person 1967-2007

1967	2329
1977	2430
1987	2621
1997	2704
2007	2798

(FAOStat)

Food miles

Our food and drink choices have an effect on the environment and are a major contributor to climate change. Some of these effects are easy to see, for instance, in the case of the transportation of food from where it is grown to where it is consumed. Modern methods of transport and technology, such as refrigeration, allow food to be transported over great distances. A popular way of measuring our food's footprint is the idea of food miles - how far a particular food has travelled to get to our plates.

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In Numbers

Common food imports in the United Kingdom

Item	From	Approx distance
Carrots & peas	South Africa	5,900 miles (9,500 km)
Apples	United States	10,000 miles (16,000 km)
Potatoes	Israel	2,200 miles (3,500 km)
Chicken	Thailand	6,500 miles (10,500 km)
Prawns	Indonesia	7,000 miles (11,200 km)
Lamb	New Zealand	14,000 miles (22,500 km)

(Nuffield Education for Citizenship food miles factsheet)

Food

The Organic Linker food miles calculator allows you to select where you are and where your food came from. This way, you can get an estimate of how far it has travelled in food miles.

Although food miles have received a lot of attention, they only account for a small proportion of the energy consumed and emissions produced by the food industry. The growing of food, the harvesting and processing and the storage and selling of food all have a much greater impact on the environment and carbon dioxide (CO_2) emissions.

Farm animals

Farm animals are a big cause of climate change. They have an impact by releasing greenhouse gases, such as methane and nitrous oxide through their respiration and digestion, as well as deforestation for grazing and crop land. About 30 per cent of greenhouse gas (GHG) emissions from food production can come directly from farm animals. Methane released by farm animals is particularly important because its warming effect in the atmosphere is about 21 times greater than carbon dioxide. Methane from farm animals is increasing as meat based diets increase around the world. Meat based diets are also very energy inefficient. Around 40 calories of energy, in the form of food, are needed to produce a single calorie of beef.

Virtual water

Water use is another important factor to think about. When we take water from the environment, we treat it and distribute it to homes, businesses and factories for processing. After its use, it is collected as sewage and then treated before it is put back into the environment. This entire process requires energy and is therefore partly responsible for GHG emissions.

Around 70 per cent of global water use is for agriculture. Food processing and manufacturing are also major consumers of water. Lifestyle choices are particularly important here, because diets that consume high levels of meat or processed foods, for instance, place particular pressure on water resources. One way to look at this is to think about the hidden or virtual water footprint within different everyday food products.

In Numbers

Litres of water needed to produce:

1 litre of tea	100
1 litre of milk	1000
1 kg of rice	3400
1 kg of cheese	5000
1 kg of beef	15500

(Water Footprint)

Food

Get Active!

Examine your food habits. Answer the following questions and see where you can make positive changes:

- How do you choose what to eat?
- Where does your food come from?
- Do you get to make the choices of what you eat and where you get it from?
- What can you do to change your food habits?

Food choices are very complex because it is not always easy to uncover the full story about the food we eat, and even less about how it contributes to climate change. There are many different campaigns and initiatives that are geared towards helping us make these choices. Here are some of the leading ideas and what they might mean for you.

Local food

Because of the growing awareness of food miles, there have been many campaigns aimed at persuading consumers to buy food that is produced locally instead of food that is transported from hundreds or even thousands of kilometres away. In many cases, it is possible to find local alternatives, but sometimes, they are more expensive and there may not be enough to provide for everyone. In general, buying local and seasonal foods will reduce the use of fossil fuels, boost local economies and increase people's awareness of where their food comes from.

Across the world, millions of people are growing their own food. This is especially true in developing countries where even the smallest of spaces are put to use to grow crops or keep animals. In large cities like Mumbai in India, it is not unusual to see small plots of land producing food for the local people. However, this can be challenging for some developing countries, which do not produce enough local food, and as a result, they rely heavily on imported foods.

In more developed nations, growing your own food has increased in popularity in recent years.

Flickr: Christiana Care

Case study

Since 1991, The Food Project has been engaging young people in personal and social change through community supported agriculture. It uses rooftops, greenhouses and suburban vegetable plots in the several American towns and cities. Youth work as local producers by growing the food and then distributing it through farmers markets and organizations that help to feed the hungry. The young people gain valuable job experience and a personal connection to food systems and issues of food justice.

Meat-free meals

The high environmental impact of meat based diets has led experts calling for more people to reduce their meat consumption, or adopt a vegetarian or vegan diet.

Global meat production is projected to more than double from 229 million tons in 1999/2001 to 465 million tons in 2050. By reducing meat consumption, this will help decrease the greenhouse gas emissions released from livestock.

Food

In Numbers

Meat consumption (kg per person per year)

Country	1980	2002
Denmark	85	146
United States	108	125
United Kingdom	71	80
China	15	52
Bangladesh	2	3

(Food and Agricultural Organisation 2004)

Case study

Some popular campaigns aimed at reducing meat consumption to tackle climate change include Meat-Free Monday, a campaigned launched in 2009 by Sir Paul McCartney calling on households to be meat-free on Mondays to help reduce climate change. This came a year after Rajendra Pachauri, chair of the United Nations Intergovernmental Panel on Climate Change (IPCC), said that people should have one meat-free day a week to help reduce climate change.

Organic food

Food produced using organic farming methods produces fewer emissions and uses less energy. This is because it recycles nutrients into the ground instead of adding them using artificial chemicals in their manufacture. This uses large amounts of energy, often from the burning of fossil fuels.

Organic food is generally more expensive than conventional foods because the price not only reflects the cost of food production itself, but a number of other factors that are not part of the price of conventional food, such as environmental enhancement and protection. However, as demand for organic food increases along with more technological innovations, this may help reduce costs of production, processing, distribution and marketing for organic produce, making it cheaper for consumers.

Case study

The Gambia's Ministry of Youth and Sport is working with several youth organizations at the local and district level to create district youth farms across the country. The farms will engage youth in growing local food for sale as part of The Gambia's drive to become more self sufficient in food. The hope is that this initiative will encourage youth to take up farming and help transform their own lives and communities.

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Get Active!

Carry out a personal food audit by examining your food habits:

Over one week of shopping, take note of where you food comes from.

Using a website (e.g. http://www.organiclinker.com/food-miles.cfm), calculate the food miles involved in your food.

Look at the types of food you have and think about the energy and emissions involved in different types of food.

Your results may tell you that it is time to reduce your impact on resources. Think about your lifestyle choices.

- What can you change?
- What are some of the more difficult things to change?
- What kind of information would help you make better choices?

8. Energy control

We are dependent on energy, but do we have to use so much of it? How can we use energy in a way that reduces our greenhouse gas emissions?

Energy rules

We need energy to create everything we buy, eat, travel in, use, such as electricity, and wear. Energy is the master resource in any society. In developing countries, where many people live in energy poverty lacking electricity and heat, energy is particularly needed to help improve their economies and the lives of people by lifting them out of poverty. Access to electricity helps people live longer and healthier lives. Nonetheless, to help reduce greenhouse gas (GHG) emissions, both developing and developed countries need to lessen their use of fossil fuels as a source of energy. One way of doing this is by relying on renewable energy sources like wind and solar.

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In Numbers

Access to electricity

About 25 per cent of the world's population do not have access to electricity, of which 83 per cent live in rural areas. In sub-Saharan Africa only 12 per cent of the rural population has access to electricity.

(International Energy Agency)

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Fossil Fuels

Fossil fuels, such as oil, as well as coal and natural gas that are still important sources of energy in developing countries, are hydrocarbons that are formed from the remains of dead animals and plants. We have been using fossil fuels to create energy for centuries now. In the United States alone, fossil fuels provide more than 85 per cent of all the energy used, much of which is used for electricity and transportation. Fossil fuels are finite and non-renewable. They will eventually run out. They need many years to form and reserves are being depleted faster than new ones are being formed. Some experts believe we have already reached Peak Oil – the time when the oil drilled from Earth is starting to decline. Some also believe Peak Gas is on its way. Fossil fuels not only release harmful greenhouse gases into the atmosphere, but they have also been increasing conflict between some countries. Despite this, the reliance on fossil fuels is on the rise. Demand for energy is growing, particularly from the BRIC countries – Brazil, Russia, India and China.

Energy control

In Numbers

Energy consumption increasing

Global energy consumption is set to grow over 40 per cent between 2006 and 2030, with 70 per cent in developing countries.

Energy consumption in the BRIC countries alone is expected to grow by 72 per cent, compared with 29 per cent in the 34 Organisation for Economic Co-operation and Development (OECD) countries.

(Organisation for Economic Co-operation and Development, OECD)

Energy choices

To meet our current and future energy demands in a way that will not harm the environment, we have two choices – either to use energy from renewable sources such as from the sun and wind or to use energy in a more efficient and wise way. Using energy more efficiently not only helps the environment, but it is also more cost effective. However, this poses a challenge for all. Countries with high carbon footprints, for instance, may want to continue in their path of consumption, while those with lower carbon footprints may want to increase their economic activities and develop further. Therefore, exploring and using more renewable energy could provide the best solution for all. Aiming for a fairer carbon lifestyle for everyone on Earth is the key objective.

In Numbers

Worldwide energy sources

Energy source	%
Oil	34
Coal	25
Gas	21
Biomass and Waste	11
Nuclear	6.5
Hydroelectricity	2.2
Geothermal, solar, wind	0.5

(International Energy Agency)

Renewable energy

As well as using energy in a more efficient way, we can try to use electricity that is not made by burning carbon fuels. One way to mitigate GHGs is to shift from oil and coal to renewable energy sources, such as wind turbines, solar panels or hydro dams. A renewable energy source is a source of energy that is replaced by a natural or carefully controlled process at a rate that is equal to or faster than the rate at which the resource is being consumed.

Although we are not yet able to capture this tremendous amount of energy, enough sunshine reaches the Earth in two hours to meet the world's energy needs for a year. Some scientists believe we could get all the energy we need from renewable sources - sun, wind, water, biomass, heat from within the Earth - within a few decades, making oil and coal nearly unnecessary. Many future careers, such as those in renewable energy and technology sectors, will help shape a green economy, based on sustainable, accessible and clean energy solutions. UNESCO's Global Renewable Energy Education and Training programme has helped to develop these careers in many developing countries. More international cooperation is needed to share knowledge, technologies and build capacity, especially for developing countries that need support.

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Energy control

Personal control

Young people do not usually have full control of the temperature or light in the buildings they are in. But they may control their own use of it. The more electricity we use, the higher the demand to produce this electricity, which generally means burning fossil fuels. And the more fossil fuels we burn, the more GHG emissions we release into the atmosphere.

Talking with others who share our home, school, college, university or workplace is the best way to start reducing energy usage, like electricity.

Get Active!

How can switching a light off to reduce electricity use also reduce the risk of flooding on other side of world?

Draw a series of pictures or cartoons to illustrate the links – and then use this to explain to others.

Controlling temperature

For many people, especially in developed countries, the biggest emissions are from energy used to heat or cool homes. A 1°C drop in temperature, which we would hardly feel, may reduce fuel use by 15 per cent.

Heating water

Everyone has a way of heating water. Dung fuel, wood fuel, camping gas, oil, electric stoves and microwave are each sources of energy with different effects on climate change. Solar cookers are now being promoted in hot countries, especially China, as an appropriate, simple technology with zero carbon emissions.

The top three electrical appliances that use the most power to heat water are the dishwasher, washing machine and tumble drier. These wet appliances may use about 25 per cent of the domestic energy and water consumption in developed countries. Cold appliances like fridges and freezers are also energy hungry. But newer ones are about twice as energy efficient as 10 year old ones. Energy efficient appliances can often be spotted by various eco and energy labels.

Tips

Insulation as well as natural ventilation and shading can all help keep comfortable temperatures in the home. However, wearing warm or cool clothes, installing electronic temperature controls and moving to different parts of the home for different activities use less energy.

A thermometer or heat-sensitive strip can be used to find the different heat zones in a room or building. You then know which parts of the building to use or change.

Controls on thermostats, radiators, air conditioning and water heating could be turned down. Using a ceiling fan and opening the windows and doors to create an air current can also reduce the need for air conditioners.

A microwave or pressure cooker uses much less electricity than a gas oven.

Controlling lights and appliances

The energy efficiency of light bulbs varies hugely. The International Energy Agency estimates that a worldwide switch to efficient lighting could cut global electricity use by 10 per cent.

Energy control

Tips

Fully loaded machines that wash clothes and dishes at lower temperatures can reduce electricity usage.

Air-drying clothes saves electricity, unlike using a tumble drier.

Flickr: Earth Hour Global

In Numbers

Lightbulb efficiency

Newer energy efficient bulbs, such as light-emitting diodes (LEDs) bulbs, last up to five times longer and are over twice as efficient as compact fluorescent bulbs.

Only 5 per cent of the energy used by incandescent bulbs is turned into light. Most escapes as heat.

Case study

The solar and pedal-powered rechargeable LED lights produced by Nuru Designs are transforming lives in rural Rwanda, by enabling children to study, home-based businesses to operate, and households to function after dark, while reducing emissions.

Tips

Notices next to light switches can remind forgetful people to turn off the lights when they leave the room. Timer or movement-sensitive light switches are also energy efficient.

In Numbers

Standby

The world's standby products, using up to 10 per cent of household energy consumption, are estimated to cause 1 per cent of global CO_2 emissions. For instance, a typical TV on standby has as big a carbon footprint as a typical person in Burundi.

Tips

Greenhouse gas emissions can be reduced by:

Sharing televisions, computers and other electronic items with other household members.

Buying energy-efficient electronics and appliances, and plug timer switches.

Buying a solar charger, such as for a mobile phone. This avoids buying products that use external power transformers (chargers). Better still, try doing without so many electronic devices, and enjoy the alternatives.

Unplugging all idle appliances from the main switches. Better still pulling out plugs surprisingly saves electricity. If the plug gets even slightly warm, it is still using power.

Many power companies offer slightly more expensive green tariffs, but the money is invested in renewable energy

9. Travel and transport

The movement of people and goods is an essential part of life, but is this movement always necessary? What are our choices in travel and transport?

A world on the move

We live in a world on the move and this movement is increasing. Much of the increase in mobility has been in more developed countries but mobility is also growing rapidly in developing countries. Urban development contributes to this increase in mobility as a result of rising migration into urban centres. Today, more than half of the world population is living in cities and this is expected to swell to almost 5 billion by 2030, with most of this growth in the developing countries in Asia and Africa. This, along with rising mobility, poses a challenge to the existing transport infrastructure such as roads and public transport, which are developing more slowly, creating more congestion and pollution.

Transport is necessary to provide access to essential services such as health and education. For instance, in Morocco, the number of girls in school more than doubled in areas where the roads were improved. Better transport can also improve incomes. In parts of rural Africa and South America, road building has allowed farmers to get more crops to markets. Food production and incomes have increased by up to 200 per cent as a result. Transport links also improve lives by allowing people to visit friends and family, to enjoy their leisure time or to visit new places.

"Mobility is essential to economic and social development. It enables people to access goods, services and information, as well as jobs, markets, family and friends. Mobility can enhance quality of life, but the development of mobility in today's conditions also brings congestion, air pollution, traffic-related accidents and the environmental costs of transportation."

World Business Council for Sustainable Development Mobility for Development facts and trends

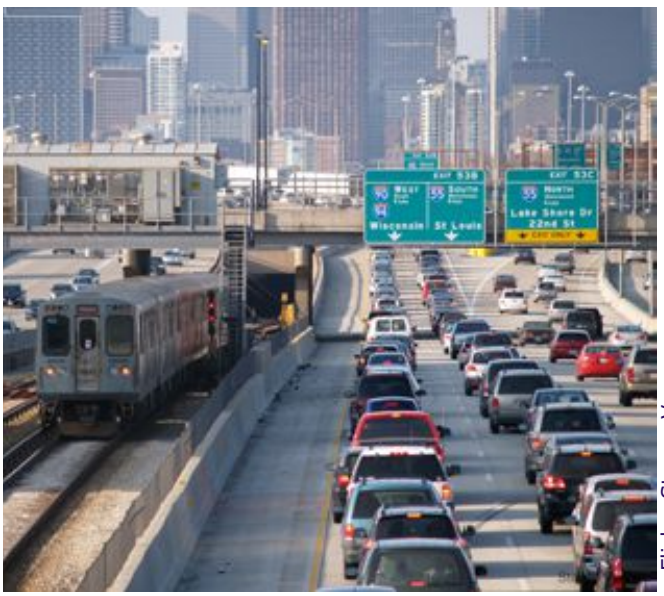
In Numbers

Increasing travel

In 1950, the average UK resident travelled around 5 miles (8 km) per day. This increased to 30 miles (48 km) per day by 2007 and is expected to double by 2030.

Per year, vehicle ownership is rising at a rate of 15 to 20 per cent in much of the developing world, as more and more people live and work in cities. Nonetheless, vehicle ownership rates are still low, ranging from 15 per cent in Mexico and Brazil to less than one per cent in India and Nigeria.

(World Business Council for Sustainable Development)



Flickr: Steven Vance

Transport emissions

However, there is a negative side to increased travel and transport, together with urban development. Mobility is rapidly becoming one of the greatest challenges facing developed and developing countries alike. Transport accounts for approximately 15 per cent of overall greenhouse gas emissions. Most of today's modern transport methods rely on oil or other fossil fuels for their

energy. There are also rising concerns about their impact on the quality of urban life, including social inequalities, and about the effects of their pollution on health and buildings. As well as contributing to climate change, transport emissions cause health and breathing problems such as asthma.

In Numbers

Emissions from transport

In the 27 countries of the European Union (EU), transport makes up around 23 per cent of total greenhouse gas emissions and in the United States it is 28 per cent.

Global emissions from transport have grown by 45 per cent from 1990 to 2007, led by emissions from the road sector in terms of volume and by shipping and aviation in terms of highest growth rates. Global greenhouse gas emissions from transport are expected to continue to grow by approximately 40 per cent from 2007 to 2030.

(International Transport Forum. Reducing greenhouse gas emissions trends and data. 2010)

Making better choices

The choices young people make about how they travel are especially important, because they can often form habits that continue into adulthood, and these choices can make a considerable difference to both people and environments. The most sustainable forms of transport are those that do not require fuels. For the short trip, the choices of walking and biking have a big impact on reducing climate change, but they may not always be possible because of safety, weather, or practical limits.

If we need to use fuel based options, then public transport is often the next best choice, using buses, trains or the urban rail systems found in some larger cities like Mumbai and New York. Public transport is also more efficient, for example a typical highway can move up to 4,000 passengers per hour, but a dedicated bus lane can move up to 20,000! Public transport is especially important in less developed countries where private vehicle ownership is lower. In more developed countries, public transport is often the best option in larger towns and cities where it is usually the cheapest and quickest choice. Unfortunately, public transport is normally less available in rural areas and people living there often have far fewer choices. This is why developing infrastructures, as well as services, is crucial for sustainable mobility to be accessible to everyone.

Tips

Another environmentally friendly option that is gaining popularity is car pooling, the sharing of rides in a private vehicle and car sharing. A car pooling system increases the number of passengers in cars, allowing for fuel costs to be shared, while also contributing to reduced traffic, emissions and pollution, as there are fewer cars on the roads.

Flickr: Blue Grama

Case study

Youth for Public Transport, managed by the International Association for Public Transport, has an online network and forum and provides advice on youth action, training and advocacy. It recently organized the first ever worldwide public transport flash mob, involving groups of people who assembled in large public places in different cities around the world to raise awareness on this issue.

Travel and transport

"I enjoy using public transport when I am with my friends because we get to talk about so many things before we arrive at our destination. It's like a moment to bond."

(Philippines, Female (18-23 year old) - Visions for Change: Recommendations for Effective Policies on Sustainable Lifestyles)

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Urban Public Transport

More than half of the world's population lives in cities and so their travel choices are very important. Cities often suffer from traffic congestion and poor air quality caused by pollution from transport. But cities also offer some of the most sustainable transport options available. A large population makes it possible to invest in public transport systems such as urban rail, dedicated bus lanes and cycle schemes.

Case study

In Curitiba, Brazil the Bus Rapid Transit system allows 1.9 million people (75 per cent of the working population) to move in the city every day. This has inspired similar systems around the world, such as Istanbul, Turkey. The project Megacities on the move looks at different futures based on the decisions cities make about travel and transport.

Case study

Students in colleges and universities around the world may often lead the way on making lifestyle choices about transport. In 1997, students at the University of British Columbia, Canada, developed a range of transportation options to provide more sustainable transport choices. They worked with the local bus company to offer lower fares to students, introduced car pooling and better facilities for cyclists. These actions reduced the number of cars coming onto campus by around 12,000 per day!

To fly or not?

Globally, people are flying more. In 2010, scheduled passenger air traffic grew by around 8 per cent and cargo traffic by 20 per cent. A major challenge of this increase is the contribution that flying makes to greenhouse gas (GHG) emissions and climate change. Around 3 per cent of global emissions are from flying, but this is increasing as more people choose to fly. Emissions from flying are more damaging because they are released higher in the atmosphere. Long distance flights make up most of the emissions from aircraft, but flights over a short distance are seen as the most avoidable because of the alternative choices available. Choosing to travel by train between London and Paris for example, produces just 10 per cent of the emissions produced by flying.

In Numbers

Emissions from flying

A single flight from Germany to the Caribbean produces around 4 tons of CO_2 per passenger. This is more than four times the average annual emissions of a person living in India.

(AtmosFair – Impact of air travel)

Touring the planet

People travel around the world for many reasons - to discover new places, to relax, to meet new people and learn about new cultures. This mass

Travel and transport

tourism may seem harmless, but in fact it both contributes to GHG emissions and can have a negative social and cultural impact on the local community. When a natural environment is destroyed by mass tourism, the traditions of communities that depend on this natural environment can be affected. For example, if trees are cut down to make room for building hotels and resorts, this not only causes displaced villages, but the religious rituals or traditions of those that depend on the forests can disappear over time.

Case study

UNEP's Green Passport campaign introduces tourists to sustainable ways of travelling, by choosing the least polluting form of transport, finding low impact accommodation options, improving their energy efficiency at destinations and offsetting the inevitable carbon emissions of their trip.

In Numbers

Tourism and climate change

Tourism accounts for 5 per cent of global CO_2 emissions. Projections show that if no action is taken, emissions could triple by 2035. There is great variation across tourism sectors and within individual trips. For example, while long haul travel account for just 2.7 per cent of all tourist trips, they contribute 17 per cent to global tourism emissions. And while 34 per cent of all trips are made by coach and rail, they only account for 13 per cent of emissions.

(Climate Neutral Network, UNEP)

Get Active!

Complete a travel audit over a normal week of your personal transport choices to see whether you could make some changes to your own lifestyle.

Have a look at some green travel tips for your next trip.

Get Active!

We all need to travel, but we can ask ourselves some critical questions to make the best transport choices:

- Can I walk or cycle easily and safely?
- Is there a way to get to my destination using public transport?
- If I have to use a car then can I share my journey with someone else or do several things on one journey?
- Are there alternatives to flying and do I need to fly in the first place?

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10. Leisure and entertainment

We all want to enjoy life, but are there ways we can do so that also reduce our impact on the planet and its resources?

Having fun

Leisure time is an essential part of healthy living. It is important for young people to break away from their busy lifestyles to take some time out for recreation and pure enjoyment. There are certainly ways to have fun whilst taking action on climate change. There are now many green choices we can make about sports, games, arts, films, festivals, holidays, youth activities and projects. Changing people's behaviour for the better is easier when it's fun! In fact, young people lead the growth in climate-friendly acoustic music jams, board games in cafes and green festivals.

Case study

Take a look at the Fun Theory to see how simple everyday actions can be presented in a fun way and be good for the environment!

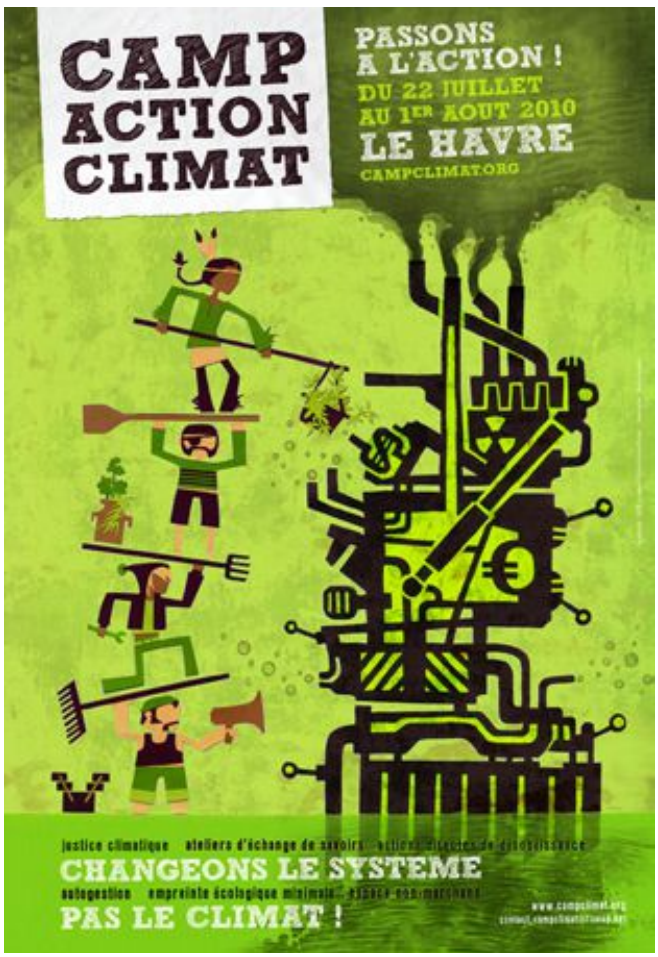
© Listening Eye Images

Tips

There are many ways to go green when organizing events, for example, having vegetarian/organic food choices, using washable and recyclable cutlery and crockery, having paperless invitations, relying on natural light, etc.

Organizing low carbon events

Many young people have the chance to organize fairs or festivals in their community or college, or at family gatherings, parties and seasonal celebrations. Why not make them green events?



Flickr: Camp Action Climat

Case study

Young people in parts of England and Denmark can now experience simple, low-tech living in the wilderness by hiring Danish hiking shelters. These shelters are built using wood from locally harvest timber and insulating roofs, with nearby compost toilets.

Leisure and entertainment

Low carbon sports

Any sport that uses fuel is likely to be carbon costly whether in a powered vehicle, travelling to get to the sport, in the sports clothing or sports equipment or on the surfaces. But think of the sports that are low carbon - activities that allow you to interact with your natural environment like cycling, skateboarding, surfing, climbing, sailing, canoeing, football, etc.

Flickr: Greenkozi

Case study

The Action Sports Environmental Coalition is paving the way for skateboarders, surfers, snowboarders, BMX bikers to buy green and ride green. One of their member organizations, Comet, uses sustainably harvested bamboo and non-toxic resins to make its skateboards.

Case study

The Beijing Olympics met many of its pledges on the environment based on a report by UNEP. From reducing air pollution to big investments in public transport and renewable energies, the organizers made major efforts to ensure that the games marked a step forward in terms of an eco-friendly mass spectator sporting event.

Case study

The Otesha Project, Canada, uses bicycle theatre to encourage young people to think about their lifestyle choices. The youth-led project runs cycle tours for young people, stopping off at schools, community groups and festivals along the way to perform their plays or run workshops in sustainable living. The project started in Canada in 2003, but its ideas and actions have since spread to the Philippines, Japan, the United Kingdom and Australia.

Climate-friendly arts

Performing and visual arts have the power to express and explore other ways of looking at the world, enabling us to question and change our lifestyles.

Case study

The Young Artists Fellowship for the Environment (YAFE) uses art as a platform for environmental campaigning in the Philippines. Over the years, YAFE has implemented various projects from grassroots initiatives such as EnviroArt workshops, murals, theatre plays or art exhibits highlighting environmental issues.

Tips

Organizing events that are climate-friendly can be good for their promotion and reputation, as well as for the planet and the participants.

The visual and performing arts can help to expose and express issues related to climate change, consumerism and sustainable lifestyles.

Get Active!

Explore ways to convey different low carbon leisure and entertainment activities by drawing a picture, inventing a game, singing a song, designing a house or room, writing a poem, or planning something.

Now spread your message of adopting more sustainable activities with others!

11. Shopping for stuff

For many young people, shopping is both a regular habit and a necessity. We all need some things, but is buying them always the best way? What choices and alternatives might there be?

Ethical Shopping

Shopping is one of the biggest areas in which young people can most obviously make a contribution to counter climate change. To many, the impact of clothes, toiletries and CDs on greenhouse gas emissions is not always easy to spot or measure. However, through ethical shopping, which is becoming increasingly popular, we can reduce our carbon footprint.

Ethical shopping is buying stuff that is produced with ethical standards, which means stuff with minimal harm to people, animals or the natural environment. Arguably the most important is to make a positive choice to buy stuff that is fair trade, cruelty free, organic, recycled, re-used, or produced locally since it directly supports innovative companies. But we can also make a choice to avoid or boycott things that are not produced in an ethical way.

© Listening Eye Images (Anokhi)

Zero waste

Fossil fuels are used to create the energy needed to produce products for consumers. The burning of these fossil fuels, in addition to the creation of waste, some of which is released into land, sea and the air, is detrimental to the environment. As consumers we are depleting the Earth's finite natural resources because of the way we buy, use and dump in a linear flow.

In natural systems, resources like carbon dioxide move in a circular flow. They produce no or zero waste because the output from one system is the input into another system. However, with the increased use of fossil fuels, this flow between the output of rising amounts of greenhouse gases to the input into another system is broken, creating increasing waste in the atmosphere.

As individuals, we can break away from this chain and strive towards producing zero waste, employing the same circular flow that our natural systems use. Zero waste means reducing consumption and ensuring that the products we use are reused, repaired or recycled. Our challenge now is to rethink the way we do things. The video Get Loopy shows why and how this could be done.

© Shutterstock

Shopping for stuff

Embedded water

Most things we buy need water to produce them. The processing, production and transport of textiles and food can often need up to 20 times the volume as embedded (or virtual) water. Greenhouse gases are emitted when water for this processing, production and transport is collected, cleaned, stored and pumped.

In Numbers

Embedded water

Product	Virtual water
Cotton T-shirt	2,050 litres
Pair of leather shoes	8,000 litres
Sheet of A4 paper	10 litres

(Water Footprint)

In addition, while a large amount of water is used in the production of goods and services, many people in the world survive on just 10 litres a day and over a billion people have no access to clean drinking water. Yet much of their water is embedded in items they export for the lifestyles of other people.

Alternatives to buying new

Instead of buying, we often have the options to borrow, swap, buy second-hand, make or repair. The 5 Rs are a handy way of questioning if we need to buy new stuff, and what we do with the stuff we already own.

Get Active!

Buying new things may be enjoyable, but is it always necessary? Answer the following questions to help determine if you really need to buy new things.

- What are the alternatives?
- What about borrowing, loaning, swapping, buying second hand and making new stuff?
- What are the benefits of these options?

Get Active!

Here are the 5 Rs to keep in mind before buying anything new!

Rethink – Do you really need it?

Reduce – Could you have or use less of it?

Repair – Could it be mended or maintained?

Re-use – Can it be used for other purposes?

Recycle – Can it be recycled to avoid dumping underground?

© Listening Eye Images

Get Active!

Discuss the 5 Rs with others and how you might use them. Bring along a small favourite object and see how you would apply the 5Rs to some of your favourite possessions or small objects. What do they represent to you?

Shopping for stuff

Case study

The Freecycle Network is a free Internet service linking people who want to get rid of something with other local people who might want it. It now has nearly 6 million members in over 85 countries, having started in the United States in 2003.

Clothes and textiles

Clothes and textiles make up a small part (about 2 per cent in developed countries) of your carbon footprint. However, for some young people, these are their biggest purchases. So, it is important to choose wisely.

A whole new re-use industry has developed around re-fashioned and secondhand clothes and other previously owned products, clearly extending the life of these products. These obviously extend the life of the garment, but only if they are alternatives to buying new clothes.

Flickr: Adam Foster

The choice of fabrics have their pros and cons. Clothes made from natural fibres such as cotton and wool can have a carbon footprint more than 20 times their weight. Their cultivation, processing and transport may involve heavy use of fossil fuels. Synthetic fibres, such as nylon and pvc, are used for waterproof, stretchy and light clothing. Although they are made from fossil fuels they may not need so much washing and drying which can use loads of energy. In many cases the washing and drying of clothes produces more carbon emissions than the production and processing of the clothes.

Packaging

Packaging from plastic is made from carbon-rich petroleum oil – one of the fossil fuels. So when it is burnt or dumped, it releases greenhouse gas emissions into the atmosphere. Packaging from paper and cardboard uses vast amounts of water, chemicals and electricity, even if it is recycled paper and cardboard. Sustainable packaging, is most climate-friendly when it is made with minimal, recyclable or renewable materials, has most potential to be reused or recycled and has least effect on the environment.

Flickr: fmg 2001

Labels

Labels are important in helping us to easily spot the truly climate-friendly products and services. While green shopping guides can help, choosing between different brands can be complex and

Shopping for stuff

time-consuming. Reading the package and label, and asking the shopkeeper can be done in the shop but further research about greener choices can also be done online.

© Shutterstock

Case study

There are now carbon emission labels on products in a few countries such as Canada, Switzerland and Japan. The Carbon Reduction Label in the United Kingdom shows how more and more brands are making a commitment to reducing their carbon footprint.

Get Active!

Many people say that they buy things which they later feel they do not need or which do not bring them much satisfaction. So why do we do it? Which reasons apply to you, or to your friends or family? Which are good and which are questionable reasons?

Basic – Need, safety, family

Society – Belonging, approval, status

Personal – Curiosity, enrichment

Marketing – bargains, illusions

Tips

Cutting out the new

- Refraining from buying the newest version of a product if the current version is still working well.
- Buying used or vintage clothing and furniture, but only if they are alternatives to buying new.

Choosing the ethical

- Learning more about the products one buys, including their carbon footprint.
- Choosing eco-labeled goods and services.
- Purchasing environmentally friendly products, including recycled goods and items that are easily recyclable and biodegradable.
- Choosing goods from manufacturers and dealers with clear environmental and ethical policies.

Cutting down on shopping trips

- Buying in bulk can save on shopping trips.
- Buying dried and concentrated products saves transporting water.
- When possible, shopping online can be one of the simplest ways of greening shopping, with fewer trips to shopping centres.

Buying nothing

- Trying some ideas like Buy Nothing Christmas which questions how the rampant consumerism of Christmas is damaging the planet or Buy Nothing Day – an international day of protest against consumerism.

Flickr: Freecycle Graphics

12. Money and jobs

Choices about the way we spend or invest our money and the jobs we want or do can have a big impact on climate change. So, how can our choices help to build low-carbon economies?

Money and banks

There are now many low carbon choices for how to spend, bank or invest our money. As bank customers, we have huge collective power which can influence where and how banks invest our money in large shareholding companies. Some banks, such as the Cooperative Bank have an ethical policy, which states that they will not finance any business whose core activity contributes to global climate change. The worldview of many traditional, or indigenous, communities is that all things are related and that ethics should be included in all investment decisions.

© Shutterstock

Banking alternatives

Some people are now using local currency or local credit unions and banks that only invest in the local community. This encourages local trading, markets and travel – all reducing carbon emissions, and exposing any potential local causes of climate change.

Case study

Some young people in Ecuador are using Ecosimia as a form of trading and exchanging without money. This developed from similar schemes like Timebanking, which is growing in popularity in a range of developed countries. These schemes create their own local currency without the need for money and enable people to swop their skills. This encourages local, and hence low carbon, trade and exchange, as well as a range of social benefits.

Cost of climate change

It is now widely accepted that acting on emissions now is cheaper than dealing with the impacts of climate change in the future.

In Numbers

Act now!

To stop carbon dioxide (CO_2) levels rising above 500 ppm (or 2 °C rise) by 2050, it is cheaper to spend money to address this now rather than later. It would be better to use 2 per cent of our gross domestic product (GDP), which is the total value of all goods and services produced in one country during a year, now to stop carbon dioxide levels from rising, rather than spending 20 per cent of GDP later.

(Stern Review on the Economics of climate change)

Governments and people are currently arguing about how money can be used globally to reduce the causes and effects of climate change with things like carbon taxes (taxing carbon emissions), cap and trade (limiting carbon emissions through a mandatory cap with mechanisms for compliance) and carbon offsetting (reducing carbon emissions to offset, or compensate, for emissions elsewhere on Earth).

Get Active!

Organize a debate and tackle the following question: How do you think money could be used most effectively to tackle global climate change? Indicate the role of government, civil society, corporations and individuals.

Buy now- pay later culture

In 2008, when the financial crisis hit economies around the world, it was clear that our financial, banking, consumption and production systems are unstable. It also reminded us that our systems are all interconnected and what happens in one part

Money and jobs

of the world affects other parts. Many around the world have been consuming their financial capital on credit. This culture of buy-now-pay later has followed the same pattern as our burning of fossil fuels now only to pay with climate change in later generations.

Green jobs

On the bright side, the carbon challenge is already developing many new career opportunities and green skills. Growing concerns over the environment have paved the way for an increasing demand for green jobs across a multitude of sectors such as energy, recycling, agriculture, food and transportation.

The renewable energy sector is by far leading the way in developing green jobs with increasing investments in wind, solar and biomass production. There are already 2.3 million global jobs in renewable energy. The United Nations Environment Programme (UNEP) predicts that the number of jobs in this sector could exceed 20 million by 2030. In some countries like the United States, there have been huge investments in clean energy of US$ 60 billion, some of which is being used for the creation of green jobs. This sector provides young people with endless opportunities, representing a new way for them to contribute towards the fight against climate change.

Case study

In the United States, Green for All trains low income young people in renewable technologies, green construction and organic food industries. America's Green Jobs Act is set to create millions of new green collar jobs.

The explosive growth in jobs in newer, greener industries is likely to be matched by new green courses in colleges and universities. But in a way all jobs can be green. Some of the most influential jobs addressing climate change could be in sectors such as insurance, finance, government, transport and tourism. Decent green jobs, as promoted by UNEP, need to both protect the environment and reduce poverty. UNEP has shown that trade unions are influential in campaigning on behalf of their members for the promotion of green jobs and the greening of the economy.

Case study

In Bangladesh, the company Grameen Shakti has installed 2 million solar panels. This has provided green energy, promoted a green economy and developed green jobs giving a decent living to local women.

© Listening Eye Images

Tips

Your green lifestyle can influence the work style of your future employment for whatever job is chosen.

Choosing a bank, insurance policy or investment where there is a clear ethical policy means more support for sustainable lifestyles.

Working from home, communicating electronically and working part-time reduces our carbon footprint but can also increase our wellbeing. Some people would argue that with less working hours, more people could be employed and we could have more time for local community projects.

Banking online is climate-friendly, saving the fuel to reach your bank, not to mention the paper saved to keep records.

13. Connecting with others

What is the impact of connecting with others by text, email or social networking? How can we use these connections as a force for change? How can we communicate with others about the value of a low carbon lifestyle?

Communicating climate change

Climate change and sustainable living are often in the news and in general conversation. This can make young people anxious and often confused. So, it helps to communicate well with others about the causes, effects and ways of reducing climate change. Research on the psychology of climate change communication shows what can work well when communicating with other young people.

- Be positive – Taking a positive approach that change can happen and can lead to a better life.
- Work together – Working with others can inspire them and set an example to politicians.
- Connect with people - Starting from the concerns or issues of other people gets them interested.
- Take small steps – Making even the smallest changes of lifestyle can be a good start.
- Connect with nature – Experiencing nature motivates people to protect it, and can improve health.
- Celebrate success – Demonstrating that positive change can motivate, inspire and be fun.

© Listening Eye Images

Adam Cade

Digital communication

Computers are not always the best tools for connecting with others. But growing numbers of young people can instantly communicate around the world by text, email or social network. However, as with every other aspect of lifestyle, the opportunities for this vary greatly around the world.

Case study

Young people in Brazil, India and Nigeria are using the low-energy XO laptop. It can be recharged with solar panels, hand-crank, foot-pedal and pull-string, as well as a regular plug-in adaptor.

In Numbers

Internet access

One estimate shows that over a quarter of the world's population has internet access. But this ranges from nearly 80 per cent in North America to 10 per cent in Africa.

(Internet World Stats)

The generation that has grown up with digital technology is well suited to developing and promoting this technology as a force for change and part of the solution to climate change. They can also help make the use of energy more efficient, quickly communicating advice of best local designs, farming practices and travel routes.

Connecting with others

Case study

Home personal computer users are helping to pioneer climate prediction research by tracking the links between global warming and extreme weather.

In Numbers

Mobile phone use

Just two per cent of Africans had a mobile phone in 2000, but nearly 30 per cent had one in 2009. Developing countries have 66 per cent of the world's mobile phones.

(Measuring the Information Society)

Climate change communication needs young people both locally and globally, with their electronic networking, open mindedness and innovation. Young people have often led changes of lifestyle. They have been key catalysts of not just social and cultural change, but also technological innovation.

Case study

Cranked, but not cranky, the multi-tasking Eco media player plays movies, FM radio, MP3s, stores photos and files, recharges mobile phones and records sound. One minute of winding gives 40 minutes of audio play.

Electronic waste

Electronic products such as computers, televisions, telephones, mobile phones, air conditioners, electronic toys, generate harmful waste when they are discarded improperly, and this has serious impacts on the environment and health. These products use a wide range of metals, plastics and other harmful substances, such as lead and mercury. When they end up in landfills, harmful substances leak from the decomposing waste into the environment by seeping into groundwater, contaminating the soil, and eventually entering the food chain. This can create health problems, such as respiratory, reproductive and development problems.

Current global e-waste generation is growing by about 40 million tons a year, especially as there are new product models increasingly being developed and coming onto the market. Unless adequate steps are taken to properly collect and recycle materials, many developing countries will face the challenge of dealing with mountains of hazardous e-waste. So replacing electronic products just because new ones are available will build this mountain even higher.

Tips

Sharing, reusing and recycling electronic products helps to reduce e-waste entering the environment.

In Numbers

Electronic sales

Sales of electronic products around the world, particularly in Africa and Latin America are set to rise sharply in the next 10 years. In South Africa and China by 2020, e-waste from old computers will have jumped by 200 to 400 per cent from 2007 levels and by 500 per cent in India.

(Solving the e-waste problem, UNEP)

Flickr: Manuel Flores

Connecting with others

Electronic emissions

Of course, the global digital boom has a global carbon cost. All our electronic communication has an environmental impact. Viewing web pages for an hour a day could emit up to 0.25 tons of greenhouse gases (GHGs) per year. The more complex and animated the webpage, the more the emissions.

Search engines operate huge data centres around the world that consume a great deal of electricity, mainly to stop them from over-heating. The total power required to run and cool these data centres is about 30 per cent of the business costs. Doing two online searches from a desktop computer can emit as much greenhouse gas as boiling water in a kettle.

Mobile phones cause a fairly tiny slice of global emissions, but if you are a chatterbox using your mobile for an hour each day, the total adds up to more than 1 ton of carbon dioxide equivalent (CO_2e) emissions per year.

In Numbers

ICT emissions

Information communication technologies (ICT) account for 2 per cent of global CO_2e emissions - 40 per cent of which is due to PC's and monitors.

(Climate Neutral Network. UNEP)

Tips

By switching off a computer when not required, carbon dioxide (CO_2) emissions can be reduced significantly, typically by over half a ton per year.

Social networks

The new age of global networking allows us to connect instantly with thousands of other young people as a force for change. Social media, like Facebook and Twitter, has given young people the potential to be global journalists, film-makers and campaigners. Many organizations are using the power of social networks to mobilize youth around the world for a common cause.

Case study

Since 2008, the environmental organization 350.org has led a campaign to build a global grassroots movement to raise awareness of man-made climate change. It has mobilized more than 5200 actions in 181 countries and has taken its message to UN climate conferences. It is named 350 because 350 parts per million (ppm) is what many scientists say is the safe limit for CO_2 emissions. It is predicted that we are above the safe zone at our current 388ppm.

© Shutterstock

"Facebook has oiled the wheels of activism, and has been a boon for young environmentalists. Before Facebook, it was difficult to stay in contact after international youth conferences or events. Now sharing helps us all maintain our enthusiasm."

HyunJin Jeon, North East Asia Youth Environment Network

Case study

The Denmark-based ido30 campaign for washing clothes at a lower temperature used social media to influence people with more than 12,495 fans on Facebook in 25 countries, and a popular feed on Twitter. At the United Nations Climate Change Conference in Copenhagen in 2009, people used social media sites to post their wishes for change and action. This successful campaign involved a partnership between a company that produced a climate friendly product and a creative agency that knew how to use the growing power of social media.

Socialbrite's social tools for social change

Connecting with others

A global youth movement has grown around climate change issues, with hundreds of grassroots initiatives, campaigns and networks springing up in countries around the world. Section 15 – Online resources lists many examples. However, most of the existing youth-led networks that focus on climate change are mainly in the English-speaking, developed world. So, the networking challenge for the digital generation is to connect a wider range of young people from developed and developing countries.

There are also many networks and websites targeted either at schools and colleges or at a general interested audience.

"Students at my high school regularly convene with other schools to find solutions to problems. My committee focused on global warming. We raised funds from corporate sponsorship and at fairs. So far we've involved students in afforesting eight schools and explaining how it reduces global warming."

Dmitri Tasmali, Turkey, UNEP Magazine for youth: Tunza

Communicating with decision-makers

Young people have been present at climate negotiations since the Rio Earth Summit in 1992, and at the series of annual United Nations conferences on climate change. Their actions have resulted in widespread media coverage and the mobilization of thousands of their peers, using blogs and online video. They have met with government representatives, participated in dramatic actions and creative demonstrations, and let the global public know what their governments were doing on their behalf.

Collectively, their plans have included building the global youth movement by supporting smaller delegations, shaming negotiators who obstruct the policy process and demanding that a youth voice be heard in the official meetings of the conference.

"Our future is at stake. History will judge whether you did enough to give us a planet worth living in. As you make these decisions, take a moment to reflect on why you are here. Are you here for us, your children? As emerging leaders, young people are mobilizing the public, building powerful movements, and forging international coalitions. We are already inheriting the consequences of your choices. The world is watching, The youth are rising."

So spoke four representatives of a group of 200 young people from 30 countries at the United Nations Framework Convention on Climate Change (UNFCC) in Bali, 2007.

Flickr: Oxfam International

Case study

The Fossil of the Day awards are presented to countries which perform badly during climate change negotiations. These awards were first presented during climate talks in Bonn in 1999. See the scoreboard to see which countries got the awards.

Case study

19-year-old Ravi Muthu attended his first Indian Youth Climate Network event as a climate sceptic. He was convinced that the planet was just going through a natural warming period. He asked questions, and kept getting reasonable answers, until he had no choice but to switch sides. He has run recruiting events for the Indian Youth Climate Network (IYCN) at over 100 colleges, learning two languages along the way.

14. Taking action

Young people are not powerless. Their generation is the first generation with the knowledge, skills and technology needed to prevent the catastrophic impacts of climate change – but perhaps the last that can actually do so.

Climate change is happening and it needs to be dealt with now. We must be the agents of change in addressing this crisis we have created and everyone has a role to play. As a global community, the lifestyles we lead as individuals, the policies our governments implement, and the way our industries behave all have an impact on this one Earth that we all share. We can find solutions and change the way we are living. This can be done collectively, through the environmentally conscious and sustainable solutions we introduce in our homes, our workplaces, our communities, our cities and countries, but also, individually, by adopting more sustainable lifestyles.

Young people have shown concern about climate change through their engagement in various initiatives around the world. They have been active and vocal at international conferences on climate change, and have taken leadership roles in a wide range of adaptation and mitigation projects addressing climate change. These projects range from educating each other on climate change issues and youth entrepreneurship to finding ways of producing sustainable energy to help their communities.

Choice of actions

At the global level, there are five main types of action that could reduce global warming. All of these need government support and most need inter-governmental agreement:

- Changing the behaviour of institutions, individuals and businesses;
- Increasing energy efficiency;
- Switching to low or zero carbon energy sources;
- Speeding up the development of new technologies;
- Using natural carbon sinks, especially forests;

Changing individual behaviour is the trigger for many other actions because as consumers, voters and citizens, we can influence the decisions of others. The demand from our consumer choices can direct the supply of low carbon, energy-efficient products and services. The bottom-up approach to change can work.

Taking action

Get Active!

Debate with others: *Governments are more effective than local communities at meeting the challenge of climate change.*

This obviously depends on many factors, ranging from the type of government, the political and economical situation of the country and so forth. There is no right answer and working together is the most effective way forward. However, such a debate can raise a lot of issues about how young people can most effectively take action.

Different impacts

It is important that we know the different impacts that our lifestyle choices have on greenhouse gas emissions. For example, some common and popular green behaviour has relatively little impact on emissions, such as buying energy efficient products or recycling. Others such as avoiding unnecessary short-haul flights are less common and popular but have a big impact. These impacts also vary in different countries.

In industrialised countries, the biggest elements of personal carbon footprints are usually housing, transport, food and electrical appliances, in that order. In those countries, people typically consume 40 per cent fuel/electricity, 40 per cent food and 20 per cent for everything else by mass. However, the big elements of personal carbon footprints in developing and emerging countries are usually food followed by housing. However, richer populations in developing countries often have similar personal carbon footprints to those in developed countries.

Flickr: Net_efekt

Group action

Taking action with other people, in the community, school, college or university, can be more motivating, easy and fun than personal action. But successful group action needs people with a wide range of skills.

Adam Cade

Tips

Skills for group action

Practical skills - Plant lots of trees as carbon sinks, preferably species that add shade, beauty, fruit and nuts. (See the Billion Tree Campaign)

Marketing skills - Ask shopkeepers to sell recycled products if they don't already. Recycling paper saves trees. Recycling most materials saves energy.

Writing and design skills - Show your local or national politicians that you are serious about climate change. Write to them. Visit them.

Speak out at public meetings - Many policy makers love to hear from young people. Write blogs, letters for websites and local newspapers. Produce posters, leaflets or videos.

Facilitation skills - Run a workshop for other youth groups.

Leadership skills - Set up a group and link to sites like TakingITglobal. Run a local campaign. Join a national or international campaign. Organize a special event, fair or festival. Link a campaign to a special day like World Environment Day June 5.

Taking action

Campaigning

All great campaigns in social improvement, like the end of slavery or universal primary education, were started by groups of creative, determined and open-minded people who saw the need for change. So, there are reasons for optimism.

The Climate Change Youth Guide to Action on the TakingITGlobal website gives advice on planning and reviewing a campaign.

"The first step is to make sure that everyone understands exactly what the challenge is, then convince individuals that their actions count, even though the challenge is so big. Our campaign will try to demonstrate that everyone can contribute something - that it's possible to achieve real change when all sectors of society act together. And we'll try to get this across in an interesting and entertaining way, showing people that helping the planet can be positive, fun and desirable."

Sara Svensson, UNEP Tunza Youth Advisory Council, Sweden

Get Active!

Look at some climate change and lifestyle campaign websites (Buy Nothing Christmas, 350.org, African Youth Initiative on Climate Change).

- Would you support any of these campaigns? Why or why not?
- Are they aimed at raising awareness, changing behaviour or influencing decision-makers?
- How do they focus on hopes and fears, the causes and effects, the problems and solutions?
- What would make them a better campaign, if anything?
- What makes a good campaign?

Of course, the actions of concerned young people, even multiplied a million times, may seem insignificant. However, actions are powerful. They act as examples to others. They send messages to businesses and governments. Most importantly, they pave the way to adopting a healthier, happier and less consumer-based lifestyle!

Taking action

Flickr: AYCC

We must act now and we must act fast by adopting low carbon lifestyles and transforming our societies into low carbon societies, both of which are geared towards reducing greenhouse gas emissions. The longer we wait to do this, the more we damage our environment and ecosystems and eventually our daily lives.

"The number of indigenous peoples' movements across the globe is growing. Global leadership has to take this into account. It must be participatory. And it must involve the new generation. A leader should be a dreamer. Leadership is about being part of a movement and a struggle. Leaders can be individuals or whole groups."

Jennifer Awingan, organizer of the Asia Pacific Climate Youth Camp 2010, Philippines.

"Often branded the leaders of tomorrow, young people around the globe are already leading, inspiring, and walking the talk. Undeterred by the barrage of stories of doom and gloom, these young people are already turning ideas into action and, through this passion and commitment, inspiring leadership, belief and enthusiasm in others."

Elizabeth Wainwright, author, Resurgence magazine

Flickr: India Youth Climate Network

15. Online resources

All these resources are free and online.

Section 1 – YXC Guidebook Series

UN World Youth Report 2010 – Climate change - http://social.un.org/index

Climate Challenge - BBC online interactive game - www.bbc.co.uk/sn/hottopics/climatechange

Videos

Home: A film by Yann Arthus-Bertrand - www.homethemovie.org

Section 2 - Learning for change

The UNESCO climate change initiative - Climate change education for sustainable development - www.unesco.org

Here and now – Education for sustainable consumption - http://unep.org/pdf/Here_and_Now_English.pdf

Sandwatch Manual - Adapting to climate change and educating for sustainable development - www.sandwatch.ca/

Climate change - Educator resource collections - http://climate.nasa.gov/education/

Climate kids - http://climate.nasa.gov/kids/

Job Corps - Sustainable living - Curriculum & Activity Guide http://fs.usda.gov/conservationeducation

Global change: from research to the classroom - www.carboeurope.org/education

Treading lightly on the Earth - http://openlearn.open.ac.uk/

The Shared energy toolkit & Democs for schools - Climate change - www.neweconomics.org/

Climate talk - www.neweconomics.org/publications/climate-talk

Facing the Future-Sustainability & Global Issues Curriculum - www.facingthefuture.org

UPD8 Climate Futures Introductory Task - www.upd8.org.uk/

C4C Climate 4 classrooms - www.uk.climate4classrooms.org

Practical Action climate change resources - http://practicalaction.org/schools

Oxfam climate change resources - www.oxfam.org.uk/education/

ActionAid - Get global toolkit - www.actionaid.org.uk/

The corporation teachers resource - www.tvo.org/thecorporation/teachers.html

The big climate change debate - how to play your part www.walescarbonfootprint.gov.uk

Climate change: Post Copenhagen - www.oxfam.org.uk/education/

Happy planet sustainable development and citizenship - www.eauc.org.uk/sorted/files/happy_planet.pdf

Awakening the dreamer, Changing the dream Symposium - http://awakeningthedreamer.org/get-involved/the-symposium/

The Global climate change game - www.economicsnetwork.ac.uk/

Videos

www.youtube.com: "Young ESD voices from around the world," "Youth conference on education for sustainable development & Vision Values Action," "Power Down TV Show - World Cafe - Episode 10"

Awakening the dreamer, Essential materials - http://awakeningthedreamer.org/get-involved/

Section 3 - Changing climates

International Panel on Climate Change - www.ipcc.ch

Gateway to the UN system's work on climate change - www.un.org/climatechange/

Global climate change - Vital signs of the planet - http://climate.nasa.gov

Kick the habit: A UN guide to carbon neutrality - www.unep.org/publications/

Climate in Peril: A popular guide to the latest IPCC reports - www.grida.no/publications/

UNEP Grid Arendal Vital Graphics series - www.grida.no/publications/vg

Understanding Climate Change: UNEP's Beginner's Guide to the UN Framework Convention and its Kyoto Protocol - www.unep.org/dec/docs/info/ccguide/beginner-99.htm

World Development Report 2010 - Science of climate change - www.worldbank.org

US Environment Protection Agency - Climate Change - www.epa.gov/climatechange/

Real Climate - www.realclimate.org

Trendalyzer - Gapminder World - world's most important trends - www.footprintnetwork.org/

Videos

www.youtube.com: "How It All Ends"

UNEP Science and scientific evidence on climate change - www.podcampus.de/channels/21/nodes/3366

Section 4 – Changing effects and impacts

Climate Frontlines brochure - www.climatefrontlines.org

UNEP Tunza Magazine - No. 6.1 Kick the habit - www.ourplanet.com/tunza

Stop disasters! A disaster simulation game - www.stopdisastersgame.org

Human Impact Report: The anatomy of a silent crisis - www.eird.org/publicaciones/humanimpactreport.pdf

Videos

www.youtube.com: "Earth Focus: Climate change special," "Poor countries can't afford our lifestyle," "Fighting for survival - Indigenous peoples and climate change in Kenya," "War for resources - Age of stupid animation," "Facing up to droughts & floods"

Online resources

"United Nations - 90 climate change videos - www.youtube.com/view_play_list?p=4BF02A105C347439

Human Development Report 2007/2008: Climate change and human development - http://hdr.undp.org/en/reports/global/hdr2007-8/videos

Local solutions on a sinking paradise, Carteret Islands - www.vimeo.com/4177527

Wake up, freak out - then get a grip - www.vimeo.com/1709110

Climate change - One planet, one chance. Photo essay - www.inmotion.magnumphotos.com/essay/one-planet-one-chance

Section 5 - Lifestyle choices

Tracking climate change - Comparing total and per capita CO_2 emissions - www.miller-mccune.com/

Visions for change: Recommendations for effective policies on sustainable lifestyles - www.unep.org/publications

Future news - www.neweconomics.org/

A Big Foot on a Small Planet? Accounting with the Ecological Footprint - www.conservation-development.net/?L=2&ds=5

Global footprint network - www.footprintnetwork.org/en

WWF footprint calculator - www.footprint.wwf.org.uk

Videos

www.youtube.com: "Mathis Wackernagel: The Ecological Footprint," "Age of Stupid: Clips: Bad Futures (Early Version)"

Possible Futures film contest - www.possiblefuturesfilmcontest.org

Section 6 - Good life

DEFRA Wellbeing research: Synthesis report - www.defra.gov.uk

Happy Planet Index - www.happyplanetindex.org

Education for sustainable development linking learning and happiness - www.unesco.org

The Alphabet of the Human Heart: The A to Zen of Life - www.alphaheart.com/outtakes-upside

Videos

www.youtube.com: "The miniature Earth," "THE SPIRIT LEVEL (short film)," "Affluenza (two2toomuch)"

Economics of Happiness - www.theeconomicsofhappiness.org

Section 7 – Food

UNEP Tunza Magazine - No. 6.2 Food and the Environment, No. 6.3 Water - www.ourplanet.com/tunza

UNEP Climate Neutral Network (Agri-Food) - www.unep.org/climateneutral/

What I eat - Around the world in 80 diets - www.whatieat.org/

Hungry planet: What the world eats - Educational guide - www.eusa.org/siteresources/data/files/pg_hungryplanet.pdf

Videos

www.youtube.com: "Hungry planet," "Think Global: Eat Local Pt 1 of 2," "Think Global - Eat Local Pt 2 of 2," "Climate Dish - Germanwatch and Bread for the World"

The food and climate connection - www.vimeo.com/11923174

Section 8 - Energy control

Sustainable energy - without the hot air - www.withouthotair.com

Estimated world statistics, including energy - www.worldometers.info

Non-renewable energy poster - www.berr.gov.uk/files/file23275.pdf

Renewable energy poster - www.berr.gov.uk/files/file23272.pdf

Videos

www.youtube.com: "Biogas as a Health, Empowerment, and Climate Solution," "Energy-Saving Tips Inside Your Home (1 of 2)," "Energy, let's save it!" "20% renewable energy by 2020"

Section 9 - Travel and transport

Our Planet - Sustainable transport - www.unep.org/ourplanet/2009/sept/en

UNEP Climate Neutral Network (Transport) - www.unep.org/climateneutral/

Shell - Alternative energies for transport - www.shell.com/home/content/environment_society/

Flights and carbon calculator - www.chooseclimate.org/flying

Videos

www.youtube.com: "Brazil- Curitiba, a sustainable city," "Philippines moves to green transportation," "Future360 Ep 3: Green Transportation," "Amsterdam: The Bicycling Capitol of Europe"

Innovation - Producing energy by walking - www.vimeo.com/2503037

Section 10 - Leisure and entertainment

Climate change and youth travel: A Youth Travel Industry Guide - www.wysetc.org/resource/resmgr/research_reports/climate_change_industry_guid.pdf

UNEP Green passport - www.unep.fr/greenpassport/

UNEP Green Meeting Guide - www.unep.org/pdf/GreenMeetingGuide.pdf

Artists Project Earth - www.apeuk.org/

Videos

www.youtube.com: "Age of Stupid: Trailers: February 2009," "climate change global warming cartoon part 2," "Climate Change: The Musical," "HOME of Climate Rap Winner: New!" "350 eARTh: Climate Change Art Visible From Space"

Sustainable skateboards - http://planetgreen.discovery.com/videos/treehugger-tv-sustainable-skateboards.html

Take aim at climate change - www.passporttoknowledge.com/polar-palooza/whatyoucando/taacc/

Online resources

Hard rain film - www.unep.org/NewsCentre/videos/player_new.asp?w=480&h=272&f=/newscentre/videos/shortfilms/2009-12-1_Hard_rain

Section 11 - Shopping for stuff

Ethical consumer - www.ethicalconsumer.org

A Closer Look at the Things We Buy - www.facingthefuture.org

Videos

www.youtube.com: "Mike Berners Lee - The Carbon Footprint of Everything," "Consumerism (AudioKingd0m)", "Buy it, Use it, Break it, Junk it, it's Toxic," "Where does e-waste end up?" "Forests and climate change: A convenient truth pt 1/2 and pt 2/2"

The Story of stuff - www.storyofstuff.com

Green expo in Japan - www.vimeo.com/6241312

De-ownership – Ecomodo - http://ecomodo.com/pages/index.aspx

Collaborative consumption groundswell – What's mine is yours - www.collaborativeconsumption.com/spreadables

Section 12 - Money and Jobs

Green Jobs: Towards decent work in a sustainable, low-carbon world - www.unep.org/

UN Climate Change Learn - www.uncclearn.org/

Tim Jackson's economic reality check - www.ted.com/talks/tim_jackson_s_economic_reality_check.html

Growth isn't working - The unbalanced distribution of benefits and costs from economic growth - www.neweconomics.org

Ethical Consumerism Report 2009 (Co-op Bank) - www.co-operativebankinggroup.co.uk/

Green careers - http://climate.nasa.gov/kids/greenCareers/index.cfm

Job Corps - Green jobs - www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5212120.pdf

Videos

www.youtube.com: "The Bill - short film - Germanwatch," "Age of Stupid: Clips: Contract and Converge Animation"

Section 13 - Connecting with others

The psychology of climate change communication - www.cred.columbia.edu/guide/

Communicating sustainability - www.unep.org/publications

Sell the sizzle: the new climate message - www.futerra.co.uk

"UNFCCC Growing together in a changing climate - The United Nations, young people and climate change" and "Youth participation in the UNFCCC negotiation process - The United Nations, young people and climate change" - www.unfccc.int

Youth united for climate progress - www.youthclimate.org

The Youth climate movement - http://en.wikipedia.org/wiki/Youth_Climate_Movement

Youth@COP15 - The youth climate movement's coming of age - www.sustainus.org

TakingITGlobal - www.tigweb.org/

Snapshot of the global youth movements - http://youthmovement.org/guide/globalguide.htm

Videos

www.youtube.com: "UNICEF Pacific - Kiribati and Climate Change," "The Alliance for Climate Education: Climate change for teenagers," "Eddsworld - climate change animation"

Young voices on climate change-series of short films - www.youngvoicesonclimatechange.com/

1 minute to save the world - www.1minutetosavetheworld.com

Section 14 – Taking action

TakingItGlobal - Climate change: youth guide to action - www.tigweb.org/action-tools/guide

Twelve steps to help you kick the CO_2 habit - www.unep.org/

Our Future Planet - Share today's knowledge, Take action, Create our future planet - www.ourfutureplanet.org

Videos

www.youtube.com: "The Global Climate Wake-Up Call," "Happy Birthday Transition Heathrow," "UNICEF: Zambian youth delegates confront climate crisis"

Resilient Bangladesh: Mapping local solutions - www.vimeo.com/9872994

Young leaders from the global south - www.vimeo.com/6076933

Youth grabbing the wheel - www.fora.tv/topic/environment

16. Useful terms

Adaptation
The adoption of policies and practices aimed at preparing for the effects of climate change, accepting that complete avoidance is now impossible because of the inertia of the atmospheric and oceanic systems.

Anthropogenic emissions
It refers to emissions of greenhouse gases, greenhouse gas originators and aerosols associated with human activities, including burning of fossil fuels for energy, deforestation, and land-use changes that result in net increase in emissions.

Carbon dioxide (CO_2)
The main greenhouse gas caused by human activities. It also originates from natural sources, like volcanic activity.

Carbon footprint
Amount of greenhouse gases (usually measured in tons of carbon dioxide equivalent) being emitted by a person, an organization, a product or an activity.

Carbon sink
A natural feature – a forest, for example, or a peat bog – which absorbs CO_2.

Circular economy
A circular economy is an economy that balances economic development with environmental and resource conservation. It puts emphasis on environmental protection and the most efficient use of and recycling of resources. A circular economy features low consumption of energy, low emission of pollutants and high efficiency.

Climate change
It refers to a statistically significant variation of either the average state of the climate or in its variability, persisting for an extended period (typically decades or longer). This change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as a change that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. The UNFCCC makes a distinction between climate change attributable to human activities and climate variability attributable to natural causes.

CO_2 Equivalent
This is the concentration of CO_2 that would cause the same amount of radiative forcing as the given mixture of CO_2 and other greenhouse gases. Carbon dioxide equivalents (CO_2e) provide a universal standard of measurement against which the impacts of releasing (or avoiding the release of) different greenhouse gases can be evaluated.

Consumers
Everyday purchaser of a good or service in retail or end user in the distribution chain of a good or service.

Consumption
Expenditure during a particular period on goods and services used in the satisfaction of needs and wants, or process in which the substance of a thing is completely destroyed, and/or incorporated or transformed into something else.

Conspicuous consumption
Lavish spending on goods and services acquired mainly for the purpose of displaying income or wealth and maintaining social status.

Ecological footprint
A measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices. The ecological footprint is usually measured in global hectares (a common unit that encompasses the average productivity of all the biologically productive land and sea area in the world in a given year). Because trade is global, an individual or country's footprint includes land or sea from all over the world.

Education for sustainable development
Education for sustainable development (ESD) aims to help people to develop the attitudes, skills and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these decisions. ESD supports five fundamental types of learning to provide quality education and foster sustainable human development: learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society. ESD concerns all levels of education and all social contexts (family, school, workplace, community). It allows learners to acquire the skills, capacities, values and knowledge required to ensure sustainable development, and fosters responsible citizens.

Fossil fuels
Carbon-based fuels from fossil carbon deposits, including coal, oil, and natural gas.

Global warming
The increase in the average measured temperature of the Earth's near-surface air and oceans since the mid-20th century, and its projected continuation.

Green building
A green building focuses on ecological aspects. It is designed, specified and constructed with energy and water efficiency in mind, and minimising any adverse impact of the building on its inhabitants as well as the environment.

Greenhouse effect
The reason the Earth's surface is this warm is the presence of greenhouse gases, which act as a partial blanket for the longwave radiation coming from the surface. This blanketing is known as the natural greenhouse effect. Without a natural greenhouse effect, the temperature of the Earth would be about -18°C instead of 14°C.

Greenhouse gas (GHG)
Atmospheric gases that trap the heat and are responsible for warming the earth and climate change. The major greenhouse gases are carbon dioxide (CO_2), methane (CH4) and nitrous oxide (N20). Less prevalent but very powerful greenhouse gases are hydro fluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).

Greenwashing
Greenwashing is the act of misleading consumers about the environmental practices of a company or the environmental

Useful terms

benefits of a product or service. Companies are notably accused of greenwashing when they spend more time and money claiming to be green through advertising and marketing than actually implementing business practices that minimise their environmental impact.

Green jobs
Green jobs are work in agriculture, industry, services and administration that contributes to preserving or restoring the quality of the environment. They reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable. Green jobs are found in many sectors of the economy, from energy supply to recycling, and from agriculture and construction to transportation.

The Intergovernmental Panel on Climate Change (IPCC)
Leading international body for the assessment of climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts.

Kyoto Protocol
A protocol to the UN Framework Climate Change Convention. The Protocol requires developed countries to reduce their GHG emissions below levels specified for each of them in the Treaty. These targets must be met within a five-year time frame between 2008 and 2012, and add up to a total cut in GHG emissions of at least 5% against the baseline of 1990.

Lifestyles
In this publication, the word lifestyle refers more broadly and more simply to ways of life, encapsulating representations, values and beliefs, behaviors and habits, institutions, economic and social systems.

Low carbon economy
A low carbon economy is a new economic, technological and social system of production and consumption to conserve energy and reduce greenhouse gas emissions, compared with the traditional economic system, whilst maintaining momentum towards economic and social development.

Mitigation
A human intervention to reduce the sources or enhance the sinks of greenhouse gases.

Renewable energy
Energy sources that are, within a short time frame relative to the Earth's natural cycles, sustainable, and include non-carbon technologies such as solar energy, hydropower, and wind, as well as carbon-neutral technologies such as biomass.

Resources
Naturally occurring assets that provide benefits through the provision of raw materials and energy used in economic activity (or that may provide such benefits one day) and that are subject primarily to quantitative depletion through human use. They are subdivided into four resource categories: mineral and energy, soil, water and biological.

Sufficiency
The concept of sufficiency provides an alternative economic model to consumerism, and is a necessary component of sustainable lifestyles. It is a philosophical ideal that offers the possibility of a higher quality of life while simultaneously reducing the human impact on the natural world. Sufficiency challenges the notion that if some is good, then more must be better; instead, it emphasises enoughness. Sufficiency is not about sacrifice, denial, asceticism or doing without; it is about wellbeing and being well.

Sustainable development
Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development includes economic, environmental and social sustainability, which are independent and mutually reinforcing pillars, and can be achieved by rationally managing physical, natural and human capital. Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of, and essential requirements for, sustainable development.

Sustainable lifestyle
A sustainable lifestyle is a way of living enabled both by efficient infrastructures, goods and services, and by individual choices and actions that minimize the use of natural resources, and generation of emissions, wastes and pollution, while supporting equitable socio-economic development and progress for all. Creating sustainable lifestyles means rethinking our ways of living, how we buy and how we organise our everyday life. It is also about altering how we socialise, exchange, share, educate and build identities. It is about transforming our societies and living in balance with our natural environment.

United Nations Framework Convention on Climate Change (UNFCCC)
The United Nations Framework Convention on Climate Change (UNFCCC) is the first international climate treaty. It came into force in 1994 and has since been ratified by 189 countries including the United States. More recently, a number of nations have approved an addition to the treaty, the Kyoto Protocol, which has more powerful (and legally binding) measures.

Wellbeing
Wellbeing refers to the state of being healthy and happy. It is correlated with many different factors, including the capacity to meet one's needs. It is beyond financial wealth indicators such as GDP. However, research has shown that, beyond a point, increasing consumption and GDP does not make people happier and more satisfied. Wellbeing is also closely correlated to social capital, including the feeling of being part of and useful to a community.

Virtual water
Also referred to as embedded water. It is the water consumed in the production process of an agricultural or industrial product.

Zero waste
This involves rethinking and redesigning product lifecycles so that all products are reused, repaired or recycled back into nature or the market place, creating a complete circle.

17. About YXC

The YouthXchange Initiative

UNEP and UNESCO started the YouthXchange (YXC) Initiative in 2001 to promote sustainable lifestyles among young people (aged 15-24) through education, dialogue, awareness raising and capacity-building. At the national and local level, YXC training activities are secured through a diverse network of partners, with the support of a printed training kit and a website www.youthxchange.net.

The YXC training kit on responsible consumption

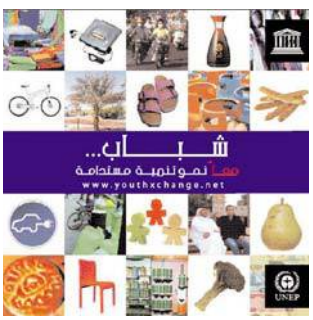
The YXC training kit provides information, ideas, tips and good practices on topics such as sustainable consumption, lifestyles, mobility, waste reduction, energy and resource efficiency, smart and responsible shopping and so forth. Since 2001, the YouthXchange guide has been translated into over 20 languages, including: Arabic, Azeri, Basque, Catalan, Chinese, Filipino, Flemish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Portuguese, Slovenian, Spanish, Turkish. From China to Italy and from Dubai to Mexico City, UNEP and UNESCO estimate that the guide has been distributed to more than 400,000 people world-wide. It is downloadable from www.unep.org and www.unesco.org.

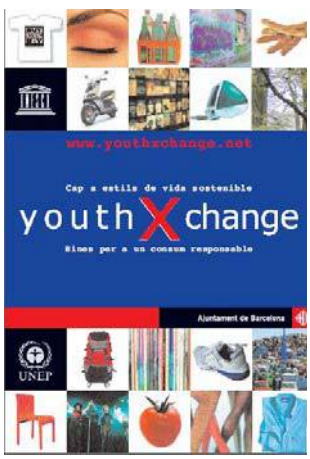
The YXC Network

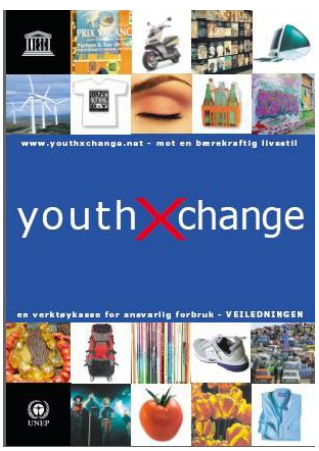
YXC works with young people aged 15-24 as well as educators, non-governmental organizations (NGOs), trainers and youth leaders around the world. YXC reaches young people through a network of national partners in 45 countries. YXC has become a network of organizations that actively pursue education for sustainable consumption and lifestyles and work at the local level with the same materials and similar pedagogical approaches. Some YXC partners also have local versions of the YXC website.

The YXC partners

The YouthXchange partners all over the world have made the project a reality and are living proof of how complex sustainable lifestyle values can be transmitted to young people, while having fun and exchanging ideas and active experiences.







The United Nations Educational, Scientific, and Cultural Organization (UNESCO)

The United Nations Educational, Scientific and Cultural Organization (UNESCO) was founded on November 16, 1945. This specialized United Nations agency's mission is to contribute to the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information.

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United Nations Decade of Education for Sustainable Development (DESD)

In December 2002, the United Nations General Assembly (UNGA) adopted resolution 57/254 to put in place a United Nations Decade of Education for Sustainable Development (DESD), spanning from 2005 to 2014, and designated UNESCO to lead the Decade. The United Nations Decade of Education for Sustainable Development seeks to integrate the principles, values, and practices of sustainable development into all aspects of education and learning, in order to address the social, economic, cultural and environmental problems we face in the 21st century.

For more information:
http://www.unesco.org/education/desd

United Nations Environment Programme (UNEP)

The United Nations Environment Programme was created in 1972 as the voice for the environment within the UN system. Its mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

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