

Sustainable Development Goals

their origins, actions and activities to help meet them

Introduction

Sustainable development tries to reconcile the desire for higher living standards for **all** peoples with protection and enhancement of the environment, *now and for future generations*. So there is an obligation on the present generation to leave the world in a fit state for succeeding generations to enjoy.

The Sustainable Development Goals (SDGs) are a set of targeted interventions by countries of which the primary goal is to eradicate poverty and hunger. However this goal, like some other SDGs, is threatened by a changing climate which has already led to an increase in extreme weather events including droughts in the Sahel region of Africa and tropical storms of great severity in the Caribbean.

A changing climate could also result in a decline in biodiversity with up to one million species threatened with extinction and a consequent loss in biological resources which feed and clothe us and provide housing materials, medicines and spiritual nourishment.

The global aim of the SDG agreement, approved at a special meeting of the UN General Assembly in September 2015, was to implement a set of actions to *help those in need and leave no one behind*.

Use of resources

These on-line resources and activities will help you to learn about these goals and what you may be able to do help others who are in need of your assistance.

In this way each of us can help others who we may never meet, but who will always be grateful to those who helped them lead a better life.

Contents

Sustainable Development Goals.....	1
their origins, actions and activities to help meet them.....	1
Introduction.....	2
Contents.....	3
Origin of sustainable development goals.....	5
Context of SDGs.....	7
Scouts for SDGs.....	8
Human needs.....	9
Activity 1 Human needs.....	9
Global village.....	10
Activity 2 Global village.....	10
Limiting climate change.....	12
Activity 3 Limiting impacts of climate change.....	15
Sustainable energy use.....	16
Activity 4 Using less energy.....	18
Changing to renewable energy sources.....	19
Activity 5 Renewable energy sources.....	21
Sustaining terrestrial ecosystems.....	22
Activity 6 Sustaining eco systems.....	25
Conserving marine resources.....	26
Activity 7 Conserving marine resources.....	28
Ending poverty and hunger.....	30
Activity 8 Ending poverty and hunger.....	31
Purchasing fair trade products.....	32
Activity 9 Fair trade products.....	32
.....	33
Activity 10 Ensuring healthy lives.....	36
Accessing clean water.....	37
Activity 11 Accessing clean water.....	39
Sustainable consumption.....	40
Activity 12 Sustainable consumption.....	41
Providing inclusive education.....	42
Activity 13 Providing inclusive education.....	43
Promoting sustainable settlements.....	44
Activity 14 Promoting sustainable settlements.....	45
Building resilient infrastructure.....	46
Activity 15 Building resilient infrastructure.....	46
Reducing inequality.....	48
Activity 16 Reducing inequality.....	49

Promoting sustainable economic growth	50
Activity 17 Promoting sustainable economic growth	51
Promoting peaceful and inclusive societies	52
Activity 18 Peaceful and inclusive societies	53
Strengthening global partnerships	54
Activity 19 Global partnerships	55

These activities cover all age ranges but answers may differ depending upon age.

Some activities can be done by yourself but others are more fun if you can do with your brother or sister or another member of your family.



If you belong to a Scout (or Guide) Group then these activities can also be undertaken during virtual meetings. By completing at least 5 activities, then your leader can award you the *Global issues activity badge*.

Glossary

CO2	carbon dioxide, the principal greenhouse gas
GHG	greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
ITN	insecticide treated bed nets
MDG	Millenium development goals
SDG	Sustainable development goals
UN	United Nations

Origin of sustainable development goals

Origins

To celebrate the Millennium in 2000, the UN General Assembly agreed a set of eight Millennium Development goals, which involved primarily promoting sustainable development goals in *developing* countries to meeting human needs by 2015. The commitment entered into by the world's leaders was "to spare no effort to free our fellow men, women and children from the abject and dehumanising conditions of extreme poverty". The achievements have been very significant on a worldwide basis (Box 1).

Box 1: Outcome of Millennium Development Goals

The UN Secretary General Ban Ki-moon noted in the summary of the achievements of the Millennium Development Goals (MDG) that 'the world community has reason to celebrate. Thanks to the concerted efforts at all levels of society and governance, the MDGs have saved the lives of millions of people and improved living conditions for many more. The targeted interventions together with adequate resources and political will have resulted in even the poorest countries making unprecedented progress.

The eradication of extreme hunger and poverty was the primary goal and the number subject to such conditions has been halved in the past two decades. Between 1990 and 2015, the number of undernourished people decreased by 640 million to 795 million. Child mortality in the under-five age group declined by more than 50% and so did the number of deaths. For example measles vaccination helped prevent nearly 16 million deaths during the MDG period and the proportion of children vaccinated increased from 75% to 84%.

To ensure environmental sustainability, almost all ozone depleting substances, of which ozone itself is a greenhouse gas, have been eliminated though it will take until 2050 for the ozone layer to recover. This layer protects species against harmful ultra-violet radiation from the sun.

The number of people with improved access to clean water increased by 1 billion (or 15% of the world population) over this period. More than 900 million insecticide-treated mosquito nets were delivered to malaria endemic centres in sub Saharan Africa resulting in 6 million fewer deaths of children primarily under the age of 5 years old..

Leaving no one behind

These successful interventions led the world leaders at a special meeting of the General Assembly of the United Nations in September 2015 to accept a new set of Sustainable Development Goals for the following 15 years from 2016 to 2030. As progress in the first phase had been uneven across countries and regions, the aim of the new Agenda was to "*leave no one behind*" that is help people in *both* developed as well as developing countries. To maintain the focus on sustainable development, a new set of goals was formulated to guide development for the following 15 years

Ban-Ki Moon, the UN Secretary General observed the "*we need to tackle root causes and do more to integrate the economic, social and environmental dimensions of sustainable development and to leave no one behind and create a world of dignity for all*". The new Agenda also addresses the plight of *refugees*, whose numbers are increasing partly due to conflict but in the longer term almost inevitably to environmental degradation due to climate change

The number of development goals was increased from 8 to 17 in order to progress these global aims and these are listed in Box 2.

Box 2: Sustainable development goals



- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- Goal 5. Achieve gender equality and empower all women and girls
- Goal 6. Ensure availability and sustainable management of water and sanitation for all
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. Reduce inequality within and among countries
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. Ensure sustainable consumption and production patterns

- Goal 13. Take urgent action to combat climate change and its impacts+
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Source: <https://sustainabledevelopment.un.org/sdgs>

Context of SDGs

This table summarises briefly the context of each of the SDGs

Sustainable development goal	Context
Sustainable development	Helping others in need and leaving no one behind
Limiting climate change	Limiting the rise in average global temperature to 1.5 C to avoid irreversible changes in climate
Using energy sustainably	Reducing our own energy usage and converting from using fossil fuels to local renewable energy sources wherever possible
Sustaining terrestrial ecosystems	Preserving ecosystems to sustain species and promote biodiversity
Conserving marine resources	Sustaining biodiversity to preserve species and preventing oceans becoming more acidic by limiting greenhouse gas emissions
Ending poverty	Ensuring all can access basic human needs such as food, clean water and energy
Ending hunger	Improving food distribution and reducing poverty so food is available to all
Accessing clean water	Increasing access to clean water and thereby reducing exposure to water borne diseases
Ensuring heathy lives	Providing access to food and clean water, shelter and medical treatment when needed
Consuming sustainably	Consuming food sustainably to ensure that there is sufficient food for other who still go hungry
Providing inclusive education	Ensuring that education is available for all including opportunities for life long learning
Achieving gender equality	Recognising that all can contribute to their local communiy including caring for others both young and old
Promoting sustainable settlements	Developing settlements which preserve biodiversity and use energy and resources in a sustainable way
Building resilient infrastructure	Creating infrastructure which will be resilient to changes in climate and extreme weather events
Reducing inequality within and between countries	Reducing the gap between haves and have nots in terms of food, water and energy
Promoting sustainable economic growth	Creating work which uses energy and resources in a sustainable way
Promoting peaceful and inclusive societies	Reducing causes of conflict and helping refugees who have had to leave their homes because of warfare or changes in the environment
Creating global partnerships	Increasing the number of global partnerships like Scouts for SDGs

Scouts for SDGs

Scouts for SDGs forms the basis of the commitment by World Organisation of Scout Movements to coordinate the activities of its members, a mobilisation of 50 million Scouts, to make the world's largest coordinated youth contribution to the Sustainable Development Goals (SDGs).

Scouting has previously made an extraordinary contribution over the years to improve the sustainability of our planet, promote peace, and tackle inequality. Earlier this year Scouts surpassed an incredible milestone by giving more than one billion hours towards sustainable development through local projects under World Scouting's programmes, including the flagship Messengers of Peace initiative.

By 2030, this unprecedented activation aims to engage 50 million young people in a coordinated effort to deliver two million local projects and an additional three billion hours of service for the 17 Sustainable Development Goals.

Scouts for SDGs features a newly launched online SDG hub and a range of resources to support National Scout Organizations to raise awareness and take action for the SDGs. The initiative also leverages financial and in-kind contributions from the World Scout Foundation and a wide network of partners, including United Nations agencies and non-governmental organizations, to support local projects led by Scouts.

For further information consult <https://sdgs.scout.org>. Inspire others by sharing your projects!

Other resources

United Nations and SDGs - <https://www.un.org/sustainabledevelopment/>

World Scouting and SDGs - <https://sdgs.scout.org>

Scouts Scotland and SDGs - <https://www.scouts.scot/members/programme/international-support/sustainable-development-goals-resources/>

United Nations mini book - "The Sustainable Development Goals"

World Bank book - "Atlas of Sustainable Development Goals 2018"

Human needs

In developed countries we tend to take for granted that through our own efforts and support of our community our needs can be met. For example, we can drink water from our taps and can afford to buy the food we need from our shops. Our agriculture is resilient and so our farming methods can survive changes in climate except for the most extreme weather events. Education and access to clinics and hospitals are readily available if we are ill.

However, there are many people who still go hungry each day and others who lack access to clean water. Not everybody can access treatment if they are ill and for many tropical diseases, there are no vaccines. There may also be very little resilience in food production to a changing climate so threatening their ability to feed themselves. If this change is coupled with a shift in rainfall, people may have to migrate in order to survive. Even today, 15% of the world's population still lack access to clean water though this proportion has halved since the year 2000.

Caring and sharing

Human beings are now the main cause of change in the world environment. The rapid increase in world population, consumption of resources and in the production of waste and pollution is having profound effects on the world and its ecosystems. Continued increases in population and non-sustainable consumption could cause critical problems for the environment and hence mankind unless development is sustainable.

All societies care and share for their peoples, some more equitably than others. What makes this era differ from any previous is that the existence of some countries is now threatened by climate change created not through their actions, but through the actions of people in other countries.

In his recent encyclical *Care for our Common Home*, Pope Francis argues that “climate change, mass extinction of species and the poisoning of the oceans have been unfolding like slow motion disasters for decades and universally damage the lives of the poor for the benefit of the rich. Further that we have to realise that a true ecological approach always becomes a social approach: it must integrate questions of justice in debates on the environment so as to hear both the cry of the Earth and the cry of the poor. Leaving an inhabitable planet to future generations is first and foremost up to us. The issue is one which dramatically affects us for it has to do with the ultimate meaning of our earthly sojourn”.

<http://www.usccb.org/about/leadership/holy-see/francis/pope-francis-encyclical-laudato-si-on-environment.cfm>

Activity 1 Human needs

List what you think are the most important human needs?

How do these needs differ in temperate and tropical countries?

Which human needs are most threatened by climate change and why?

Are you aware of how your actions can influence collectively the climate in other countries a long distance away? Is this climate justice?

Global village

understanding how other people live

Introduction

Let's consider how our village or town compares with the 7.5 billion people living on this planet. In a recent book entitled *If the World were a Village*, its author David Smith envisages the whole world as a village of just 100 people. In this imaginary village, each person represents 75 million people from the world around us and the idea is to identify and consider what characterises our global village.

Activity 2 Global village

The activity comprises linking each characteristic with the appropriate number of persons out of 100 from our global village.

Ask your family to help you select the appropriate number

Then after looking at the data, consider what you think can be done to help others less fortunate than ourselves.

Highlight the appropriate number and then check the answers below

How many in our global village	Number in our village out of 100
are less than 14 years old	15 - 20, 20 - 25, 25 - 30
are older than 65	4 - 8, 8 - 12, 12 - 16
go hungry some of the time	5 - 10, 10 - 15, 15 - 20
go hungry all the time	2 - 4, 4 - 6, 6 - 8
have access to clean water	80 - 85, 85 - 90, 90 - 95
do not go to school	2 - 6, 6 - 10, 10 - 15
cannot read or write	5 - 10, 12 - 15, 15 - 20
have been vaccinated against infectious diseases	75 - 80, 80 - 85, 85 - 90
live in an area where mosquitos are found	10 - 20, 30 - 40, 50 - 60
will contract malaria	2 - 4, 6 - 10, 10 - 15

Outcome To reinforce knowledge about how other people live and what we can do to help them

Answers to characteristics of our global village

How many in our global village	Number out of 100	comment
are less than 14 years old	20 - 25	Number of children are decreasing
are older than 65	8 - 12	Number of older persons are increasing
go hungry some of the time	10 - 15	There is sufficient food for all if food supplies were equally divided
go hungry all the time	4 - 6	Unequal distribution of food so some people have to go without food once or more per day
have access to clean water	85 - 90	One billion people still lack access to clean water
cannot go to school	6 - 10	For some students, no school nearby or they have to help their families in the fields
cannot read or write	12 - 15	Restricts the type of work they can do
have been vaccinated against infectious diseases	80 -85	Not all persons have been vaccinated
live in an area where mosquitos are found	30 - 40	Mosquitos are active in sub tropical areas where heat and humidity are present
will contract malaria	6 - 10	No vaccination available so necessary to sleep under insecticide treated bed nets

Observations

Such statistics have formed the basis of the Sustainable Development Goals as discussed in the Introduction. As a result of these interventions, between 1995 and 2015, millions of lives have been saved and living conditions improved for many more while the number of people subject to extreme poverty and hunger was halved.

Nevertheless many people still go hungry some of the time even though the world produces sufficient food globally for everyone. However not everyone can access such food nor can afford it.

To alleviate this hunger, the United Nations' World Food Programme supplies food to people in more than 80 countries to improve food security and nutrition. It helps the most vulnerable people to strengthen their capabilities to absorb, adapt and transform farming practices in order to limit the effects of climate change, environmental degradation, water scarcity, disease, population growth, unplanned urbanisation and conflict.

Another health statistic is that about one third of the world's population live in areas where malaria is endemic

Reference If the World were a Village by David Smith and Shelagh Armstrong (Bloomsbury) 2016

Video *youtube: if the world were a village of 100 people Knowva Academy*

Limiting climate change

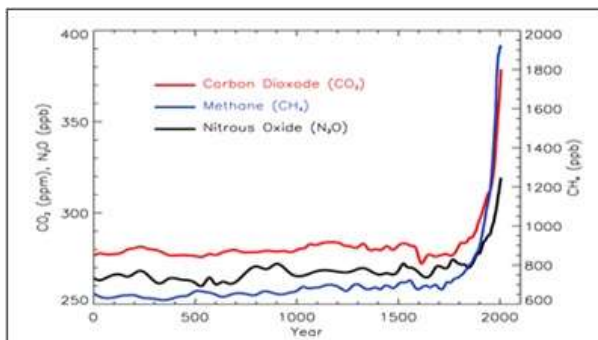
SDG: Take urgent action to combat climate change and its impacts

Of all the Sustainable Development Goals, limiting climate change is possibly the most urgent as its impacts on achieving other SDGs which include –

- Ending poverty and hunger
- Leading a healthy life
- Ensuring access to clean water
- Protecting and sustaining terrestrial ecosystems
- Conserving and maintaining oceanic ecosystems

To understand why the climate is changing we need to understand the role that a group of gases called *greenhouse gases* play in regulating the climate. Their presence in the upper atmosphere is the principal reason for the existence of life on earth as they raise the average earth temperature from -18 C to +12 C.

Greenhouse gases and global warming

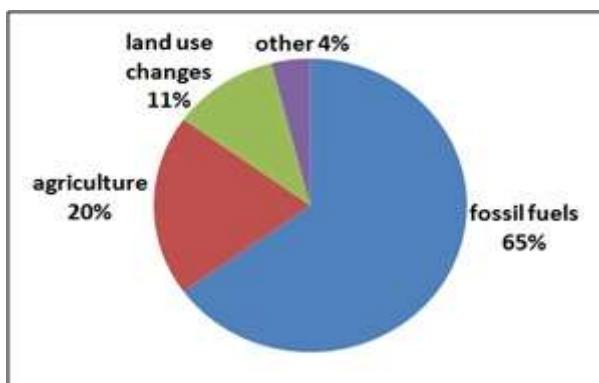


Rise in greenhouse gas emissions (IPCC)

Our planet is surrounded by a gaseous atmosphere, which comprises primarily oxygen and nitrogen. Both are important in sustaining life on earth. Of equal importance are the *greenhouse gases* of which *carbon dioxide* is the most important as these allow sunlight to penetrate the earth's atmosphere, which is then absorbed by the earth.

When some of these rays are reflected back at longer wavelengths, these gases trap some of this radiation which would otherwise be radiated into outer space.

However the concentrations of the three principal greenhouse gases in the atmosphere have increased significantly since 1800. This increase is above the natural fluctuations in their concentrations and coincides with the start of the industrial revolution in which industry grew very rapidly to produce products that people needed.



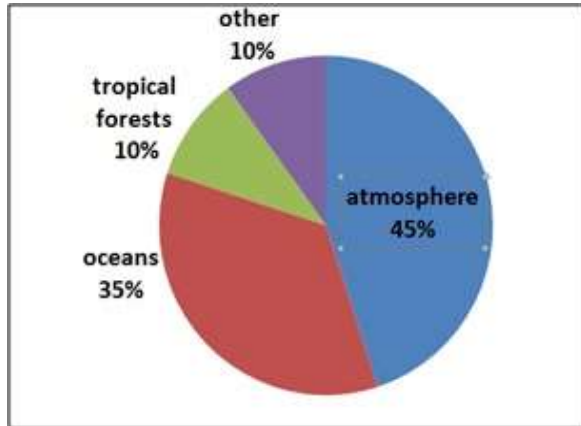
Sources of carbon dioxide

The combustion of fossil fuels to produce energy is the by far the largest source of carbon dioxide which is produced as a by-product of the combustion process. This energy is used for heating our homes, moving our transport or generating electricity.

Principal sources of carbon dioxide

Agriculture is the next biggest source via activities such as soil fertilisation, farming of animals and growing crops like rice. A further important contribution is from changes in land use including clearing and burning of vegetation and deforestation as 40% of the Earth's land surface has now been converted for grazing or farming.

Our emissions are also increasing because the world's population is growing as is our individual use of energy. So as we discuss in other SDGs we need to use energy more efficiently and derive our energy from renewable sources which do not result in greenhouse gas emissions.



Sinks of greenhouse gases

Sinks

The biggest sink of greenhouse gases is the upper atmosphere, where the concentration of these gases is resulting in global warming.

The oceans are the next most important sink because of their huge volume. The ability of the oceans themselves to absorb CO₂ will result in them becoming more acidic. This will decrease the ability of marine organisms to form calcium carbonate, one of the key substances in building the skeletal of organisms so decreasing its biodiversity

Forests, particularly tropical forests are also important sinks and the relative importance of the various sinks is illustrated. .

Impacts of a changing climate

Rising global temperatures

An average 1 C rise in global temperature has already been observed since the start of the industrial era (ca 1750), and if this trend continues, irreversible changes in climate could occur. Based on existing scientific evidence, the IPCC has recommended that it is essential to limit the average global temperature rise to 1.5 C. The average global temperature increase during the winter of 2019/20 in Europe was 1.4 C, only 0.1 C below the critical global temperature limit.

Whilst an average temperature rise of 1.5 C might not seem a lot, the concern is that such temperature rises are *not* uniformly distributed throughout the globe. Polar regions have experienced much higher temperature rises leading to concerns about melting ice sheets, rising sea levels and changes in the circulation of ocean currents particularly in the Arctic region.

Higher temperatures will also affect where people can live, remembering that the body temperature is 38 C and above this temperature, the body has to cool itself by perspiring and evaporation of sweat. In some areas of the world, temperatures approaching 50 C have already been recorded. Our most important staple crops, like grains, also have an upper temperature limit which is typically 45 C so any temperature above this limit could lead to reduced yield or even crop failure and yet today there are still one billion people who do not have access to sufficient food to meet their daily needs.

This upper temperature limit sets a limit on the amount of carbon that can be emitted to the atmosphere and *this will require that the majority of carbon sources such as oil, gas and coal will have to be left in the ground.* We have to convert increasingly from using fossil fuels to using renewable energy sources whose use does not result in the formation of greenhouse gases responsible for global warming.

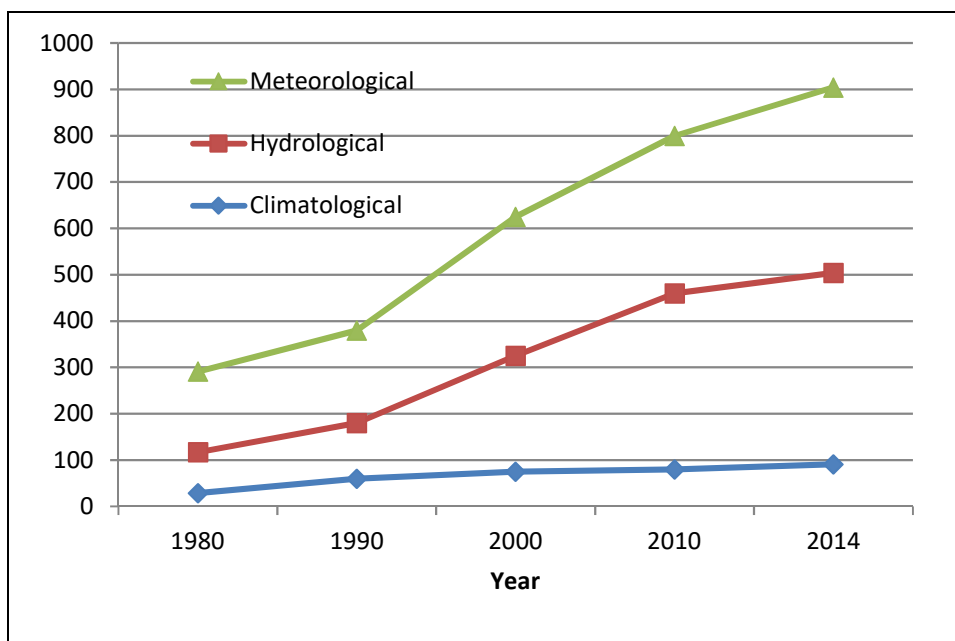
Extreme weather conditions

Other predictions of climate models suggest more extreme weather conditions – these include tropical storms, extreme heat and cold, flooding and droughts. Such events have occurred with increasing frequency in the past decade with loss of lives, crops and livestock.

The predictions of all climate models are an increasing number of extreme weather events on a worldwide basis. These are being reported with increasing frequency and are of three types

- Climatological events including extreme temperatures (low and high), droughts and forest fires
- Hydrological events including flooding
- Meteorological events like storms – tropical, convective and local

Their increasing incidence is plotted in the accompanying figure.



Increasing incidence of extreme weather events (National Geographic Magazine, November 2015)

Note that not all these events can be attributed to a changing climate but the impacts on the affected people have been severe including loss of life, homes, food supplies and livelihoods.

Environmental refugees

All available evidence and predictions indicate that people living in some counties will be more affected than others by a changing climate. Already people are having to migrate in order to survive the drought conditions in the Sahel region of Africa and who therefore become environmental refugees. If further climate changes are not limited then many more people could become refugees due to shifts in rain fall patterns.

Cost of doing nothing

Two million people each week need humanitarian aid because the changing climate is leading to increasing numbers of extreme weather conditions including droughts, flooding and hurricanes.

According to a recent report by the Red Cross, this number of people could double in the next three decades as climate changes become more severe unless Governments are willing to act

collectively to reduce average global carbon emissions as per the 2015 Paris agreement to limit the global temperature rise to 1.5 C.

This cost was highlighted in the UN Secretary General's Antonio Guterres' address to the Special Meeting of the UN's General Assembly on September 23, 2019 who noted that "*the cost of doing nothing was high and it was the most vulnerable people who would suffer the most*". He concluded that "timely adaptations to the likely impacts of climate change and actions to reduce greenhouse gas emissions drastically could reduce the numbers of affected persons significantly. Moreover many of the necessary measures were *low cost* including early warning systems, improved weather forecasts and restoring natural features like mangrove swamps and wet lands".

Video youtube: *causes and effects of climate change National Geographic*

Activity 3 Limiting impacts of climate change

What local changes have you noticed in the climate? Also ask your parents or grandparents what changes they have observed?

What impact could global warming have on your local environment and way of life?

Do you think that such changes will continue to occur and if so why?

What local actions can you suggest to limit the impact of a changing climate? Design a poster to illustrate your suggestions.

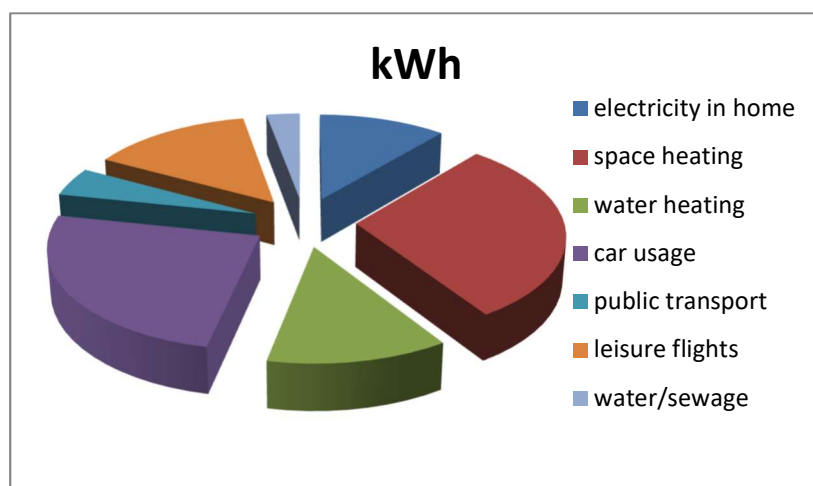


Climate change posters designed by students of Newlands Primary School, Yateley, Hampshire

Sustainable energy use

SDG: Ensure access to affordable, reliable and sustainable modern energy for all

Currently our energy sources are cheap because we only pay the cost of their extraction and transport but not the cost of their social or environmental impact. If we had to pay the full cost, it is likely that we would use energy more efficiently. So the sustainable use of energy therefore involves using energy more efficiently and converting to non-polluting sources of energy such as renewable energy sources.



Carbon footprint

Our energy usage results in our carbon footprint which for someone living in the UK is illustrated below.

How energy is consumed in and around the home in UK

From this distribution, we can see that much of our carbon emissions are associated with heating our homes, providing hot water and our use of transport primarily, but not only, travel by car. However, our individual carbon footprint will vary with where we live, what we do and our age. If we lived within the tropics, heating would not be required; if we worked from home, we would not need to travel to work and younger and older people either cannot or no longer wish to drive.



Using less energy

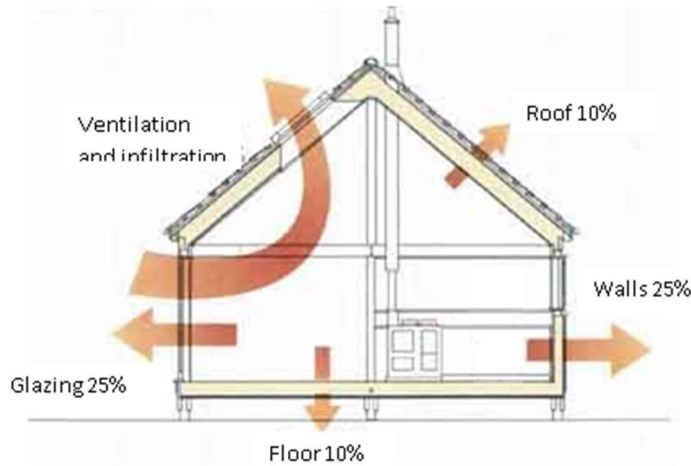
This is the easiest and also the most economical way of saving energy. Many actions are self-evident like switching off the lights when leaving a room or using less of an energy consuming product.

Clearly some actions will result in larger energy savings than others. Illustrations like these help us to realise just how many energy using products we use and to ensure that they are switched off when not in use.

Energy used in the bedroom (illustrator: Jan Smolik)

But there are many other ways of saving energy and surveying your energy use will help you to realise where you could save energy such as watching less television and reading a book or playing with your friends or cycling/walking to school rather than travelling by car.

Reducing heat losses in buildings



If our homes are well insulated then their heat loss will decrease and less energy will be required to heat the building.

Since 1945, UK buildings have been required to have a cavity in their external walls. In addition it is now economic to have 300mm of insulation in the loft whereas in 1965 only 25mm of insulation was required. Today double glazing is required in order to minimise heat loss through windows.

Heat loss through building elements

It is possible to retrofit insulation to all buildings though this may be more difficult for older buildings. The greatest heat loss is through the walls which have the largest area of contact with the outside air. For buildings with cavity walls, the cavity can be filled with insulating materials such as mineral wool but if no cavity exists, the external walls can be clad with insulation while internal cladding is less common because it reduces the area within the room.

Use of passive building elements.

This is most common in older buildings and well-designed modern buildings to retain heat in winter and keep out solar gain from sunshine in summer such as -

- *Shutters* which can admit light and solar gain during the day in winter and can be closed at night to keep the heat in. Conversely they can be closed during the day in summer to keep out solar gain and opened at night to allow the building to cool.
- *Green roofs* will also provide insulation with plants growing on soil above a waterproof membrane.

Every dwelling now has associated with it an energy label which enables the energy efficiency rating and environmental impact to be assessed while the accompanying energy report indicates how energy loss and environmental impact can be reduced. .

Energy Efficiency Rating		Current	Potential
Very energy efficient - lower running costs			
(92-100)	A		
(81-91)	B		85
(69-80)	C		
(55-68)	D	63	
(39-54)	E		
(21-38)	F		
(1-20)	G		
Not energy efficient - higher running costs			
England, Scotland & Wales		EU Directive 2002/91/EC	

Environmental Impact (CO ₂) Rating		Current	Potential
Very environmentally friendly - lower CO ₂ emissions			
(92-100)	A		
(81-91)	B		83
(69-80)	C		
(55-68)	D	59	
(39-54)	E		
(21-38)	F		
(1-20)	G		
Not environmentally friendly - higher CO ₂ emissions			
England, Scotland & Wales		EU Directive 2002/91/EC	

EU energy label for buildings

Active travel

Many journeys involve short distances such as going to school, shopping or visiting friends. For such journeys, walking and cycling are the most efficient and environmentally friendly. Such modes can be encouraged by reducing the road space for cars and installing cycle lanes and widening pavements

For longer distances, public transport in the form of buses, trams and trains should be used wherever possible. This will have the benefit of reducing noxious emission of pollutants in city centres as well as reduction in greenhouse gases.

Energy labelling of appliances

All energy consuming and energy saving products are now labelled. This has resulted in a very significant increase in efficiency as manufacturers compete with each other to produce the most efficient appliances.



Energy labelling allows comparison between various models based not only on energy consumption, but also on performance. For example, the washing machine label (illustrated) categorises the washing as well as the drying performance. Drying ability is important if you live in a flat and washing ability if your clothes are likely to gather dirt

EU energy label for washing machines

Labelling has had other beneficial effects including –

- comparing the initial and running cost
- introduction of minimum efficiency standards for energy consuming or energy saving products which has resulted in the least efficient products being withdrawn from the market.

Activity 4 Using less energy

Compile a list of your daily activities which use energy?

Compare your usage with others and decide how you could use less energy?

How does your energy use compare with your grandparents when they were your age? What are the major differences?

Can you identify where are the major energy losses in your home by using a thermometer?

Visit a shop selling electrical appliances and note the efficiency of the various appliances. Then calculate how much energy you could save per year by using the most rather than the least efficient models?

Can you consider walking, cycling or using public transport to travel to school?

Changing to renewable energy sources

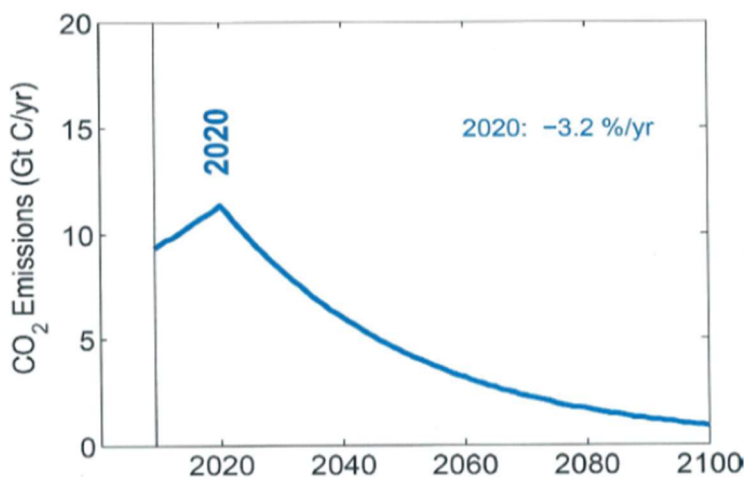
SDG: Ensure access to affordable, reliable and sustainable modern energy for all

The only way to meet our energy needs without heating the planet any further is to use energy more efficiently and to convert our energy sources from fossil fuels to renewable energy sources which are derived primarily directly or indirectly from sunlight. Such sources are abundant, wide spread and most importantly do not result in the formation of greenhouse gases which lead to global warming.

Leaving fossil fuels in the ground

The agreement reached in Paris in 2015 is to prevent the average global temperature exceeding 1.5 C in order to avoid irreversible changes in climate will require leaving much of the existing fossil fuels in the ground. Modelling shows that this temperature rise sets an *upper* limit to the amount of carbon that can be consumed. This emission limit is likely to around 886 gigatonnes of carbon, of which 565 gigatonnes have already been generated so leaving only 321 gigatonnes still to be consumed

IPCC 5 authors explain that the longer the world delays with stabilising its carbon emissions, the more severe will need to be the subsequent annual decline to stay within the required average global temperature limit. The scenario favoured by IPCC 5 in 2015 was for the world's carbon emissions to peak by 2020 and then decrease by 3% each and every year up to the end of this century. To achieve zero carbon by 2050, which will now be required, will require an even higher year on year decrease in carbon emissions.



Limit in annual global carbon emissions peak in 2020 and then decline at a rate of 3.2% per annum to limit carbon in atmosphere to 886 gigatonnes (IPCC 5 assessment report)

Renewable energy sources

Renewable energy sources enable direct conversion of sunlight into electricity, heat, growth of biomass and creation of wind through differential heating over both land and sea.

Electricity can be generated by solar panels which can convert the ultraviolet portion of sunlight into electricity using the photovoltaic conversion process. These panels are generally roof mounted provided that the roof is suitably orientated (in the northern hemisphere preferably SW to SE). If some of this electricity cannot be used at the time it was generated, it can be exported to the electricity grid where it can be used by other consumers or it can be stored in batteries for future use.



Roof mounted solar electric panels (outer panels) and solar water heating panels (middle panels)

Wind turbines capture the momentum of moving air through a set of blades mounted on one end of a shaft which can then rotate an electric generator mounted at the other end of the shaft to generate electricity. Wind turbines are either community based in the form of cluster of wind turbines (called wind farms) or in wind farms out to sea. Wind generated electricity becomes economic in areas where the average wind speed exceeds 8 – 10 km/hour. These turbines are then coupled to the electricity grid so the fluctuations in power output can be smoothed.

It is also possible to utilise the output of a single turbine and supply a local community, which may not be linked to the grid, like Fair Isle, situated to the north of Scotland.



Grid linked wind turbines



Wind turbine supplying electricity to dwellings on Fair Isle

Hydro-electricity

Electricity can be generated by water flowing from either rivers or s from dams by rotating a turbine to which an electricity generator is attached. This technique is widely used and many dams have been built simply to generate hydro-electricity.

Wave and tidal power

Again, moving water, this time in the oceans whose flow can be used to rotate turbine generators.

Heat

Solar thermal water panels use the infra-red portion of sunlight to heat directly water flowing through a set of tubes mounted on a black absorbing surface. Such panels can also be roof mounted. However output is seasonal and so this source will not provide sufficient hot water in the winter when light levels are low.

Biomass heating is possible in rural areas if a local source is available and sufficient space is available to store the biomass.

The other renewable heat source is to concentrate the low grade heat present in the air, ground, rivers or lakes using a *heat pump*. Heat pumps have the ability to *concentrate* the ambient heat present in the air, ground, rivers or lakes using the Carnot cycle of expansion/compression of a refrigerant gas. As heat pumps only concentrate the heat *not* produce it, they are able to produce up to 4 units of heat output for every unit of energy consumed. This is very much more efficient than a gas boiler which has a typical conversion efficiency of 85 – 90 %.

What is becoming more common are district heating networks in which heated water preferably geothermally is circulated through a flow and return ring main. This heat can then be concentrated by connecting the geothermally heated water as the input to individual heat pumps installed in each dwelling.

Activity 5 Renewable energy sources

Do many houses in your town have solar panels on their roofs?

Is your roof orientated SE to SW so that at some future time solar panels could be fitted?

Have you seen wind turbines and if so where?

Are there any wind turbines locally and if not, why not?

Have you ever been in home which is being heated by a renewable heat source? Was this any different to that heated by say a gas boiler.

Sustaining terrestrial ecosystems

SDG: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Life on earth has evolved over hundreds of millions of years with the evolution of myriad of species, each one of which has its own ecological niche. The natural diversity within species and between species and ecosystems forms the basis for natural selection which has led to the life forms that exist today. We are part of nature and it is important to preserve the biosphere which supports today's marine, freshwater and terrestrial landscapes.

Biological resources feed and clothe us and provide housing, medicine and spiritual nourishment. The natural ecosystems of forests, savannahs, pastures, deserts, tundra, rivers, lakes and seas contain most of the Earth's biodiversity.

No organism can live in isolation from other living things and each has its own way of life, which contributes to the balance of nature. It is the harmonious and healthy functioning of all organisms which is the concern of the Biodiversity Convention (<https://www.cbd.int/>), which was discussed and agreed at the 'Earth' Summit in Rio de Janeiro in 1992 [UN Convention on Biological Diversity, Rio de Janeiro 1992].



Typical landscapes – wild flowers and trees

Declining insect populations

Insects are at the heart of the food web as they pollinate the large majority of plant species, keep soils healthy, recycle nutrients and control pests so forming the cornerstone of all terrestrial ecosystems. However, a recent survey led by Francesco Sanchez- Boyet shows that the world's insect population is rapidly declining and that one third of all species could become extinct. This reduction in turn will impact many birds, reptiles, amphibians and fish that eat them which could result in them dying of starvation.

Shrinkage of the tropical rain forests

The tropical rain forest is a key ecosystem of our planet for many reasons which include -

- contains over half of the world's plant and animal species
- the Amazon forest alone releases 20 billion tonnes of moisture every day helping to water crops thousands of miles away in South and North America
- healthy rain forests absorb up to 10% each year of our carbon emissions through the photosynthesis process

These types of forest are very susceptible to any substantial rise in average temperature so die back of the forests will occur as the temperature continues to rise so diminishing their ability to regulate the climate. However these forests face an even more serious short term threat than climate change that is deforestation.



In the past deforestation was associated with the subsistence activities of local people. They cleared native forests to grow crops or to provide firewood, charcoal or timber for construction. These products were either consumed by families or traded locally.

Increasingly however more and more deforestation is being driven by commercial operators linked to global markets. Much of the beef, soya and palm oil produced in tropical countries is exported and ends up on our supermarket shelves, in our restaurants or to produce biodiesel.

Figure Typical area of rainforest showing diversity of vegetation

One third of the tropical forests have been lost in the past 50 years and at current rate of usage, we could lose almost all of the rainforest in the next 50 years. This could have very severe consequences for our global climate as well as biodiversity. The trees in these forests are very susceptible to any significant increase in temperature; die back of the tree cover will start to occur if the average temperature rise exceeds 2°C.

Healthy rainforests are able to convert and store carbonaceous products in plants, trees, roots and soils; up to 100 – 300 tonnes of carbon per hectare can be stored

However the area of rainforest is declining through deforestation to meet global demands for food, wood and industrial materials. This destruction is reducing the ability of rainforests to absorb carbon dioxide and no other living sink is able to take over this role.

The other threat to the rainforest is through global warming and changing rainfall patterns which could limit the growth of its biomass.

Retreating glaciers

Even glaciers which cover 10% of our land area are teeming with biodiversity. They are breeding places for species like artic hares, beavers, foxes and musk oxen as well as bacteria, fungi and algae and lichen and artic flowers bloom during the summer where the ice has melted. However glaciers are in retreat from India to Greenland and their melt waters will contribute to rising sea levels. *[Guardian newspaper 19/09/2019]*

Why are all these changes in ecosystems occurring?

Increasing population is a key factor as it reduces the habitats available for animals and plants while increasing pollution of the air and water alter the environment in which animals and plants can grow.

In the oceans, overfishing and plastic pollution have played a big role in the decline of species and stocks while climate change is likely to accelerate these changes as species have neither time nor space to adapt.

Another factor is that the human footprint is now so large that it leaves little space for other species. Three quarters of all land has been turned into farm fields, covered by concrete or otherwise altered. Scientists conclude that agriculture and deforestation are the primary cause of this decline.

As poor people's livelihoods are more directly tied to natural resources they will suffer the most from environmental degradation especially as they often live in areas that are most vulnerable also to climate change.

Decline in biodiversity

A recent UN report convened from the Intergovernmental Science Policy Platform on Biodiversity (IPBES) considered -

“what are humans doing to the world's species, its biodiversity, its ecosystems and its natural resources? And what are the consequences for human life as well the natural world?”

The IPBES report published in April 2019 found inter alia that

- at least one million species were at risk of extinction because of human actions
- a third of the world's coral reefs was threatened
- more than a third of marine mammals are also threatened
- for domesticated plants and animals, the lack of biodiversity was providing less protection against diseases and fewer options for breeding plants and animals that will be better adapted to a changing climate
- the decline in insect pollinators could have cascading effects on ecosystems

In a recent update to the IPBES report, the authors observe that 'the loss in biodiversity includes rampant deforestation, uncontrolled expansion of agriculture and the exploitation of wild species have created a perfect storm for the spill over of diseases from animals to people'. Moreover, these activities 'can cause pandemics by bringing more people into close contact with animals from which 70% of emerging human diseases originate'.

The lead author, Peter Daszak, adds 'the health of people is intimately connected to the health of wildlife, the health of livestock and the health of the environment'. He concludes that 'we have a small window of opportunity in overcoming the challenge of the present crises to avoid sowing the seeds of future ones. So investing in the means to reverse the decline in biodiversity will give an incredibly good return in investment compared with cost for example of any future pandemic' [Guardian newspaper 28/04/2020]

Reversing the decline

To reverse this trend it will be necessary to –

- reduce the use of pesticides
- convert to more organic forms of agriculture
- use less intensive farming practices
- increase 'green' planting that planting more trees, reinstalling hedgerows and creating wild flower meadows along verges

- to limit climate change in order to reduce
 - habitat loss
 - die back of tropical forests
 - melting of glaciers
 - exposure of species to extreme weather conditions

Activity 6 Sustaining eco systems

Why do you think that biodiversity is so important and how have you benefitted?

How can we help to preserve and strengthen local ecosystems and habitats?

Create a bug hotel to provide shelter for insects and small creatures like hedgehogs?

Create an area in your garden or community in which nature can decide what plants can grow like wildflower meadows?

Identify and buy products which do not contain palm oil by checking the ingredients on the label.

Conserving marine resources

SDG: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Introduction

Seas and oceans cover 71% of the earth's surface and have an average depth of 3800 metres. About half the ocean floor consists of vast flat plains which are covered in sediment mainly comprising material that sinks down from the surface and which is primarily the product of biological activity. However, surrounding almost all continents are shallow seas, 100 - 200 metres deep, with continental slopes to the deeper waters.

The oceans are as important as the land in promoting biodiversity though their contribution is not always recognised. Oceans regulate our climate, they feed us and provide a source of fresh water through evaporation which is the basis of all life. For these reasons, healthy oceans are essential to preserve ecosystems which support myriad of species and life on earth.

The oceans contain 97% of water on our planet while a further 2% are contained within ice sheets like Greenland and Antarctica. Water in lakes and streams comprise 0.02% and *only 0.001* is present in the atmosphere in the form of water vapour which can condense and fall as rain.

Life on earth

More than 3 billion years ago, some of the very small primitive plants found in the ocean developed a form of photosynthesis in which oxygen was produced as a by-product. This has resulted in today's concentration of oxygen of 21% which has enabled the growth of multi-celled organisms such as ourselves.

Additionally the production of oxygen by ocean plants has led to the formation of the *ozone* layer in the upper atmosphere. This layer absorbs the *ultra violet* radiation from the sun so enabling living organisms to survive on land. *So healthy oceans play a key role in sustaining life on earth.*

Factors influencing the health of oceans

Fishing

The oceans contain a great diversity of species which vary in size from plankton to whales. Most of the ocean plants, called phytoplankton, are very small on which larger species feed. Like with species found on land there is a food web with larger species feeding off smaller species. Any disruption of this web through overfishing of certain species can create problems for adjacent species above and below the species being overfished.

Seas becoming more acidic

The oceans are the second largest *sink* after the atmosphere and absorb up to 35% of global carbon emissions. However comparatively little carbon is contained within ocean fauna and flora due to the small size of species found in the ocean. The remaining carbon dioxide will dissolve in the surface sea water which will then become over time more acidic.

This increase in acidity will interfere with its ecosystems creating problems particularly for species at the bottom of the food web like plankton off which other species feed.

Rising sea levels

These arise both from ice melting in Greenland and Antarctica, melting of glaciers and increasing ocean temperatures due to global warming causing the water to expand.

This will also lead to increased flooding in low lying areas and coastal cities and areas like wet lands, salt marshes, coral reefs and mangrove forests all of which are important in preserving biodiversity.

Rising sea temperatures

Global warming will result in the surface layers of the ocean becoming warmer. This in turn will affect the temperature difference between the surface and deeper water layers so altering the flow of nutrients from the bottom to the top of the ocean and thereby affecting the food web.

Coral reefs

Climate change in combination with other factors can also induce change in ecosystems. For example, three quarters of the world's coral reefs are at risk from overfishing, pollution as well as climate change. By 2050 virtually all the world's coral reefs from the waters of the Indian Ocean to Australia will be in danger. Some 275 million people live within 30 kilometres of reefs which provide an important habitat for fish

The most visible impact is the decay of coral reefs found in tropical areas of the world which fringe many of the shores in the shallow continental margins. These reefs are affected by both the increase in surface temperature and the rising acidity of the sea water which is of great concern as these coral reefs provide a home to 500,000 species, more than any other marine ecosystem.

Storm surges

The greater the difference in temperature between the land and the sea, the stronger will be the winds that are generated by their difference in temperature. This creates winds of great strength and increased intensity resulting in tropical storms such as hurricanes and typhoons.

Such temperature differences can also result in storm surges called *tsunamis* which can affect habitats adjacent to the shore.

Pollution

Nutrient enrichment

To enhance the productivity of the soil in order to grow more food, there has been large scale manufacture of fertilizers which are nitrogen based. Through soil erosion and water run off after heavy rain falls, some of these nitrogenous products are washed away and eventually enter the sea. This nutrient enriches the surface layers resulting in an increase in phytoplankton and a reduction in light penetrating to the deeper depths where other plants grow.

Plastic debris

Currently much of the plastic used for packaging food and manufacturing containers is non-recyclable, some of which enters the ocean as debris. Oceanic species then either become entangled in such debris or inadvertently swallow it resulting in loss of life.

Conserving oceanic species

To maintain the existing food web, we will need to

- prevent over fishing by agreeing quotas
- encourage fish farming on land through creation of ponds and lakes
- reduce use of fertiliser by using better (organic) farming methods
- use less plastic and ensure that it always degradable or recyclable

- to limit climate change in order to
 - reduce rising sea levels
 - reduce rising sea temperatures
 - limit storm surges
 - prevent oceans become more acidic
 - sustain coral reefs

Activity 7 Conserving marine resources

In the Table below identify the impacts that our activities have on the ocean and on people and possible solutions.

Process	Impact on ocean	Impact on people	Possible solution
Fishing			
Sink for carbon dioxide			
Rising sea temperature			
Rising sea levels			
Nutrient enrichment			
Plastic debris			

If you live near the sea side, what sort of debris do you collect along the shore line and how much of this is plastic in origin?

Can you identify ways of using less plastic?

How can you ensure that plastic packaging is recyclable?

How could you reduce your carbon emissions which contribute to global warming and acidification of the oceans?

Answers

Process	Impact on ocean	Impact on people	Possible solution
Fishing	Loss of species if overfished	Source of food	Fishing quotas for species
Sink for carbon dioxide	Seas become more acidic	Helps to regulate climate change	Use less fossil fuels
Rising sea temperature	Alters flow of nutrients	More frequent storm surges	Use less fossil fuel

Rising sea levels	Wet lands, salt marshes, mangrove swamps, coral reefs	More flooding of low lying areas	Use less fossil fuel
Nutrient enrichment	Reduces light level exposure to bottom plants	Enables more food to be grown	Use fertilizers more carefully and rotate crops
Plastic debris	Enters food web	Conserves food	Only allow use of bio-degradable or recyclable plastic

Ending poverty and hunger

SDG: End poverty in all its forms everywhere

SDG: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

The primary aim of the Millennium Development Goals from 2000 to 2015, was the eradication of extreme poverty and hunger. Through targeted interventions, the number of people subject to these conditions was halved, but this still left some 800 million people unable to access or afford basic human needs such as food, clean water and energy. These factors in turn make such people much more susceptible to illness and disease.

The majority of people living on less than €0.25/day reside in two regions – sub Saharan Africa and Southern Asia. Understanding the characteristics of these people and the reasons for their deprivation is crucial in determining how to target and eradicate poverty.

Eliminating extreme poverty and its associated hunger is very challenging as many people live in fragile environments and remote areas and are therefore unable to access health care and clean water. The new Sustainable Development Goals aim “*to help such people who have been left behind and create a world of dignity for all*”.

Food supplies

Sufficient food is grown worldwide to feed everyone, but production, distribution and consumption is uneven. Some countries can only grow sufficient crops for their needs but some are able to grow sufficient crops that they can export to countries whose food supplies are deficient. However this food is not available to everyone as not everybody can afford to buy food and so go hungry some or all of the time.

Twelve percent of the world’s population are currently undernourished and 8% severely undernourished and go without one or more meals a day. Progress in reducing hunger has been significant but ultimately it is linked to extreme poverty and lack of employment opportunities (other SDGs). Extreme weather events, natural disasters and increasing number of conflicts will all limit progress in ending hunger and achieving food security.

Factors influencing food production

The three major climatic factors influencing food production are –

- **soil** – its nature and quality will vary in all countries; it is a vital, limited resource which needs to be managed and used in a way that sustains its functions; its quality can be affected primarily by acidity, pollution in the atmosphere and erosion
- **water** – an essential ingredient in growing crops, sustaining forests and supporting livestock; it is not only the amount of rain, but also when it comes and in what form that affect the ability to produce the food we all need
- **temperature** – the growing of food is very temperature dependent as the maximum temperatures for the three of the most important crops (rice, wheat and maize) varies between 42 and 47° C.

Whilst the aim is to limit the average global temperature rise to 1.5° C or less, the temperature increase in some growing areas could be much higher and maximum growing temperatures could be exceeded. Moreover for farmers in regions close to the equator, the temperatures could increase to such an extent that the soil could dry out before the next rains come. In some countries there may be very little resilience in food production to a changing climate so threatening their ability to feed themselves. People may then have to migrate in order to survive thus becoming *environmental refugees*.

An additional concern is that the world's population is still increasing and so more food will be required. To feed these additional people it is estimated that the world's food production will have to increase by 50% by 2050.

Humanitarian assistance

This is provided by the UN World Food Programme to people in more than 80 countries to improve food security and nutrition. It helps the most vulnerable people to strengthen their capabilities to absorb, adapt and transform farming practices in order to limit the effects of climate change, environmental degradation, water scarcity, disease, population growth, unplanned urbanisation and conflict.

Children who are malnourished in their first three years may suffer cognitive and physical impairment all their life. Historically such interventions have saved countless lives and restored the livelihoods of millions but have rarely tackled the underlying vulnerabilities. However the evidence suggests that by embedding *resilience* in any intervention, it should be possible to alleviate such human suffering.

Activity 8 Ending poverty and hunger

Why are some people unable to access sufficient food to meet the needs of their families?

To meet a growing population, where could the land be found to grow these additional food supplies?

How would this extra supply impact the earth's biodiversity and ecosystems?

What can we do to help?

Climate change will influence the principal factors associated with growing crops and feeding animals; what effect could this have in your region and your community?

Purchasing fair trade products

One of the most effective ways of reducing poverty and hunger is to buy products that carry the Fair Trade logo. Not only do the producers of such products get a minimum guaranteed price for their goods, but they also receive an additional sum of money (Fair Trade premium). This premium is used for example to buy seed, food, send children to school and develop community projects.



® For 25 years, the Fair Trade Foundation has been working with farmers, enterprises and cooperatives in developing countries to get for the products we eat, drink, wear or use around the home. The Foundation has certified 1,400 producer organisations involving 1.7 million people in 73 countries.

In the UK alone, there are 4,500 certified products of which the most common are bananas, tea, coffee and chocolate.

Producers use this additional income in various ways which include –

“Now with the fair trade premium, I expect my son will have access to education.”

“Many people have been unable to stay in their homes because work is so poorly paid; now thanks to the fair price we receive for our quinoa cereal, we have been able to stay.”

“At Zaytoun, our fair trade producers come exclusively from farmers that we know allowing us to support farming families as they build a sustainable future.”

“We have a true passion for growing tomatoes that respect both people and the environment. That is why our tomatoes from the Tunisian desert not only taste delicious, but also that our tomatoes make the world tastier and better at the same time”

Activity 9 Fair trade products

Undertake a survey of local shops to identify which fair trade products they stock

Design a poster to advertise fair trade products

Prepare a meal using as many fair trade products as possible

Help your parents to find fair trade products when they go shopping

Programme activities

Discussion

Discuss what are fair trade products and why should we buy them; what fair trade products have you seen? Examine the packaging of fair trade products and identify how the producers will use the extra funds they receive

Game

Resource - map of the world for each team with a set of counters with names of fair trade products. Each member of the team in turn has to identify from the packaging in which country they are produced and place a counter on a likely producer country

Blind tasting

Blind tasting of fair trade and non-fair trade products is always popular and such products will depend upon what's available locally

Undertaking a fair trade survey

Visit one or more shops or supermarket and survey the fair trade products they stock.

Show your results to the store manager and ask him why they stock certain fair trade products and why people buy such products. Encourage him to stock more fair trade products and ask him whether he is willing to display a fair trade poster in his shop

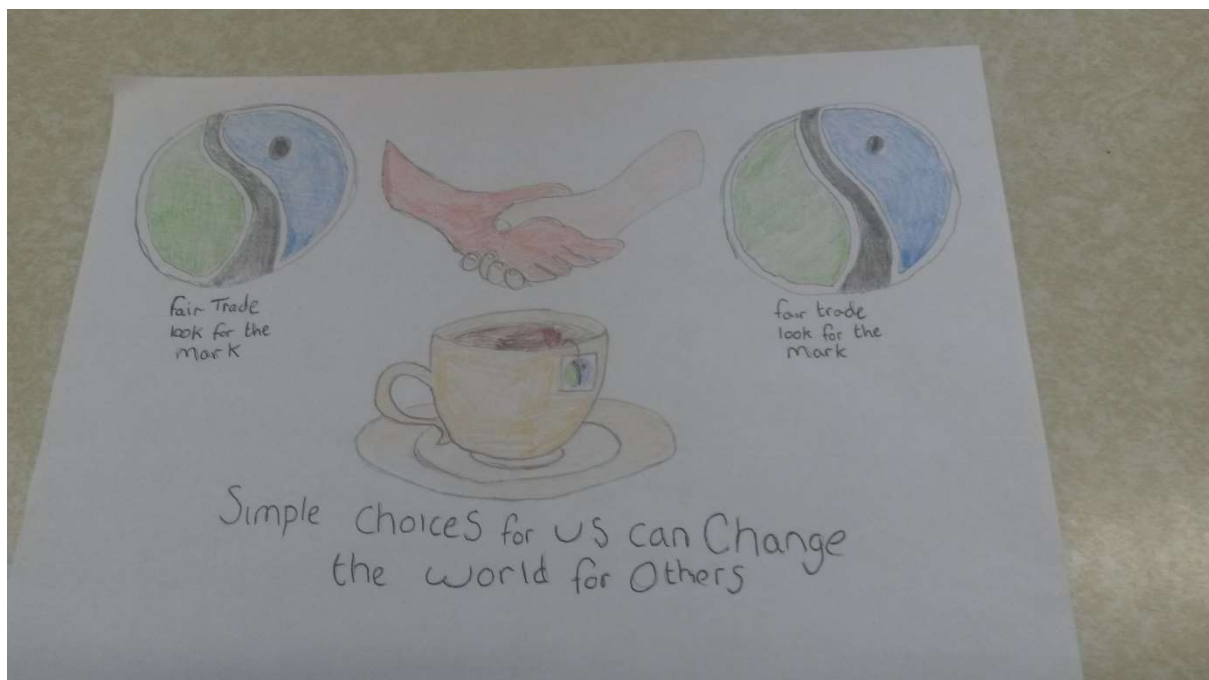
Preparing and cooking a fair trade meal

Visit a food shop that stocks fair trade products and buy a selection of Fair Trade products so you can produce a meal with as many fair trade products as possible. Then devise some recipes, prepare a meal and serve to your six or patrol

Increasing choice

Each year more fair trade food products are available – for example a new range of fair trade spices have been produced and more varieties of rice, quinoa and pasta products. You can also search the internet to discover where such products can be purchased locally.

Fair trade fortnight is held each year during the last week in February and the first week in March and then extra products are available in the shops, but you can organise fair trade activities at any time.



A poster encouraging people to buy fair trade products

Ensuring healthy lives

SDG: Ensure healthy lives and promote well-being for all ages

The ability to lead a healthy life depends upon a number of factors, many of which we take for granted but this does not necessarily apply to all people. Such factors form the basis of many of the SDGs.

Factors which will promote healthy lives include –

- alleviating poverty and hunger
- increasing access to clean water
- reducing air pollution
- reducing noise pollution
- providing adequate shelter
- vaccinating against infectious diseases
- preventing catching tropical diseases
- limiting changes in climate
- encouraging peaceful and inclusive communities

We consider briefly each factor in turn which are described in more detail within specific SDGs

Alleviating poverty and hunger

A significant proportion of the world's population (12 – 15%) go hungry some of the time and a small proportion all the time (4 – 6%). Under nourishment makes people more susceptible to disease so reducing poverty will enable more food to be grown or bought.

Increasing access to clean water

12% of the world's population still lack access to clean water and so they become more susceptible to catching water borne diseases. Clean water also enables good hygiene to be practised through allowing hands to be washed safely and avoiding the spread of viruses like the coronavirus.

Reducing air pollution

Air pollution arises primarily in urban areas where emissions from transport is the greatest source of gaseous emissions like nitrous oxides and small particles both of which are injurious to health. These pollutants can damage both hearts and lungs through inflaming the lining of the lungs and aggravating respiratory diseases like asthma and bronchitis.

Reducing traffic volumes by encouraging active travel like walking and cycling can reduce pollution by up to 50% as shown during the C virus lockdown in many European countries.

Reducing noise pollution

Unlike air pollution, noise pollution is transient and so reducing traffic volumes will benefit both noise and air quality. Providing low noise road surfaces in urban areas will reduce noise emissions from transport.

Other sources of noise include those associated with construction and certain manufacturing industries

Providing adequate shelter

This is a necessity against the weather especially as more extremes in weather will occur and also in tropical areas to keep out mosquitos.

Vaccinating against infectious disease

Vaccines exist for almost all illnesses found within the temperate climate areas of the world. However not all families have access to clinics where they and their children can be vaccinated and so these persons are likely to catch such diseases.

Preventing tropical diseases

Few vaccines exist for prevention of tropical diseases of which malaria is the most severe with an average of 200 million persons being infected annually resulting in some 400, 000 deaths, the majority being under 5 years in age. However only half the population of sub Saharan Africa are currently protected by long life insecticide treated (ITN) bed nets which is the best way of avoiding being bitten by an anopheles mosquito when sleeping at night.

In many areas there may not be a clinic nearby where treatment can be sought for a range of illnesses. In the case of cerebral malaria, treatment needs to be initiated within 12 hours of being bitten to save a life. For diarrhoea which is a common symptom of water borne diseases, oral rehydration has to be started as soon as possible, particularly for children under the age of 5.

Limiting changes in climate

A changing climate poses many risks to human health of which high temperatures, food availability and spread of disease are the most important.

Higher temperatures

As the air temperature rises above that of the body temperature of 37°C, the body has to cool itself by perspiring and evaporation of sweat. The higher the temperature, the more cooling is required. While the aim is to limit the global temperature rise to 1.5 C, some areas, particularly interiors of continents, have already experienced air temperatures above 50°C. While this may not pose a problem for healthy people, it can be a problem for those who are already suffering poor health. For example, the heatwave experienced by Europe in 2003 is likely to have resulted in 35,000 premature deaths

Food supply

The increasing occurrence of extreme weather events has been reported in recent times in many areas of the world. Whether these are droughts, floods or prolonged periods without rainfall, these can result in the inability of people to feed themselves and their livestock due to loss of crops

We have already noted that our most important staple crops have a temperature limit which cannot be exceeded for their growth which is typically about 45° C so any temperature above this limit could lead to reduced yield or even crop failure.

Spread of disease

Rising temperatures will increase the range of the *mosquito and in addition* as the weather gets warmer, mosquitos breed more rapidly and bite more often. The greatest health issue is the spread of *malaria* which occurs from a bite of the *anopheles* mosquito resulting in a parasite being injected into the human blood stream. As no vaccine currently exists, the only long term form of human protection is to sleep under an insecticide impregnated bed net.

Encouraging peaceful and inclusive communities

Where there is conflict, health will always be the greatest casualty as it affects lives in so many ways. So to live in peace requires members of communities to tolerate and understand other people's way of life and care and share for others. It also requires communities to integrate migrants and refugees who may have had to migrate through no fault of their own

Activity 10 Ensuring healthy lives

Which factors do you think are the most important in leading a healthy life in temperate and tropical climates?

Why do these differ?

What do think you could do to help other people lead healthy lives?

As climate change is becoming increasingly important in leading a healthy life, consider your own energy use and how you can use less energy?

Accessing clean water

SDG: Ensure availability and sustainable management of water and sanitation for all

Life on our planet has evolved over a period of billions of years with the aid of two cycles – the water cycle and the carbon cycle. Their close connection through chemical bonding has regulated the concentration of the two most important greenhouse gases that is water vapour and carbon dioxide which have raised the earth's average temperature from -18 C to 12 C thus enabling life to evolve in its present form.

Water cycle

Water can exist in many forms – as vapour, a liquid, and as a solid as in ice or snow. Unlike energy, water cannot be used up as it is being continuously recycled as part of a natural earth system.

On Earth, water is always in motion and is part of the cycle driven by the sun. Under the influence of the infra-red rays of the sun, water is primarily evaporated from the surface of our oceans resulting in the formation of clouds whose droplets may condense and fall as rain. However some of this water vapour is blown by the wind onto the land where it adds to that evaporated from other water sources and eventually it falls as rain or in cold climates as snow.

Rain water is in turn absorbed by the soil resulting in chemical substances called nutrients being dissolved in the water which are then transported and taken up by plants. Some water will sink beneath the soil to add to the ground water flow while the remaining water will enter streams and rivers so will return to the sea

Water sources

Without water there can be no life as it is a fundamental human need for people, animals and species. One of the biggest achievements of the Millennium Development goals agreed in 2000 was the goal of halving the number of people who did not have access to clean water. Though this goal was achieved in 2015, there are still today more than 1 billion people who do not yet have access to clean water which is an essential requirement for good health to avoid catching water borne diseases.

Water sources may be rainfall, rivers, lakes, melt water from glaciers or underground water supplies. The frequency and volume of rain water on which many people depend is critical for all as too *little* rain can result in drought conditions and crop failure unless sufficient water can be stored for use during the dry season. Conversely too *much* water can result in flooding and washing away of the top soil in which most of the nutrients are located. So one of the main reasons for limiting climate change is to maintain progress with access to water sources for all people.

Benefits of clean water

- Safe to drink without catching water borne diseases
- Able to practise good hygiene when washing hands so preventing the spread of infectious diseases and viruses
- Safe from water borne diseases. These include typhoid, cholera and dysentery which can have fatal consequences particularly for young children, bilharzia through ingress of parasitic worms and sleeping sickness induced by the tsetse fly

Avoiding water borne diseases

Measures that can be taken include –

- protecting natural springs by constructing spring wells so that there is no open source of water where mosquitos can lay their larvae
- filtering water from underground sources before use so that clean water is available
- fencing water sources so that animals cannot enter so maintaining a clean water source
- depositing human waste in latrines, located away from any water source
- washing hands with clean water before touching any food to prevent spread of germs and viruses

If these measures were available in every settlement then these diseases would not occur but too many people still lack this basic need. Though much assistance has been already been given, much more is still needed to reduce the incidence of such diseases and save lives.

Shifts in rain fall

Climate change is inducing shifts in rain fall and the region most affected up to now has been the Sahel region of Africa. This has resulted in failure of crops and insufficient water to feed livestock so inhabitants have had to migrate to adjacent areas where there may be only just sufficient water to supply the existing communities. These *environmental refugees* are increasing in number as the climate changes and may not be welcome in adjacent countries whose people might also be suffering. This is a further reason for limiting carbon emissions to the atmosphere which are inducing a changing climate.



Sahel region of Africa just north of the equator bordering in the Sahara desert; effect of prolonged drought



Spring wells

One approach to cleaning dirty water from water sources like spring wells is to flow the water through a series of filters to remove contaminants and then to ensure that the water source is not contaminated by providing a tap and fencing off the area to restrict the entry of cattle.

More than 40 such wells have been installed in the Masindi District of Uganda through a global partnership between the Ugandan Water Board, Masindi Scouts and UK Scouts



Natural spring source



Spring well under construction

. Once UK Scouts have learnt about clean water and have raised funds for the construction of the wells, such funds have been transmitted to Masindi where the wells have been built under the supervision of the Ugandan Water Board while the Masindi Scouts have educated the villagers about the importance of accessing and maintaining clean water supplies.

As a result more than 15,000 people now have access to clean water. An unexpected outcome of this collaboration has been increased attendance at schools which are close to the water wells. Children go to school with empty water bottles, fill them up at school and take the filled bottles home so that their younger siblings can have access to clean water. These actions have resulted in Scouts contributing to two further SDG goals which are leading healthy lives and increasing attendance at schools

Activity 11 Accessing clean water

Why is water such a fundamental need?

What can you do to ensure more people have access to clean water?

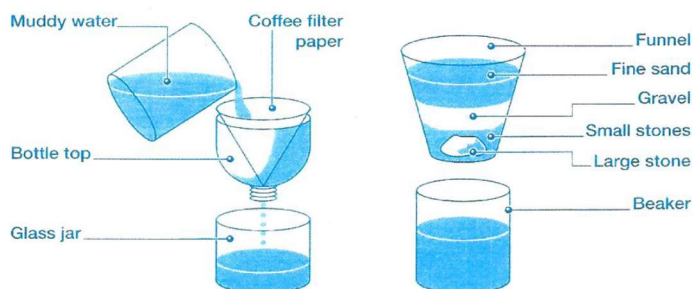
Try to manage on 5 litre/water per person per day – what do you have to go without?

A method of filtering dirty water

Below is described a simple method making a filter and showing how effective it is cleaning dirty water. You can try various types of filter materials to see which are the most effective. Do not drink any such cleaned water as it is uncertain how effective the filter will be.

Cleaning water

Make a simple water filter using a pop bottle and a coffee filter or a plant pot filled with sand, washed gravel and stones.



Sustainable consumption

SDG: Ensure sustainable consumption and production patterns

Food distribution

There is sufficient food grown worldwide to feed everyone, but this distribution is uneven with some countries having a surplus and others a deficit. So, countries which can afford to import food, are able to provide sufficient food for all their citizens whereas countries which cannot afford to import food, rely on the World Food Program, a UN Agency, to provide at least some of the food they need.

Currently some 800 million people a day go without one or more meals a day because they are unable to grow sufficient food to feed their families or cannot afford to buy the seed to grow their crops.

Food and diets

Some people eat too much and are overweight. Others have too little to eat and are malnourished and consequently are more susceptible to illness and disease. Even in the UK there is uneven consumption and not everyone can afford to buy (or grow) sufficient food for their needs. In 2018, some 3 million people visited foodbanks where non-perishable food items are available as free issue.

A study by UN's Food and Agricultural Organisation has calculated that animal based food production accounts for almost 20% of our greenhouse gas emissions. Of animal-based products, meat has the greatest impact so switching to a vegetarian based diet or eating less animal based products could significantly reduce our carbon footprint

Sustainable consumption

The principal factors which can increase our sustainable consumption are –

- making changes in our food purchasing habits and diets
- choosing food which is grown locally
- preserving our ecosystems and sustaining biodiversity
- limiting climate change to reduce impact on growing crops

In supermarkets rather than local markets, there tends to be a very wide choice of food products, some grown locally and some grown in other countries. By purchasing locally grown food where possible, we will reduce the distance ('food miles') that these products have travelled and encourage more local production of crops.

Preserving ecosystems to sustain biodiversity

Where land is converted from natural habitat to mono type agriculture growing a single crop, biodiversity will suffer and species decline. Such land use needs to be compensated by identifying other areas where biodiversity can be increased through green planting of trees, hedgerows or wild flower meadows, even in urban areas.

Impact of climate change on growing crops

A changing climate will not only influence what crops can be grown but also where they can be grown. This in turn can influence where people can live particularly in areas where there is currently only just sufficient rain to grow the food they need. So of great importance is knowing whether the rains will fall and when and whether such water can be stored for use during dry periods and drought. If the rains do not come when expected then people may have to migrate so becoming *environmental refugees*.

Of increasing concern is that in many food growing areas, rising maximum air temperatures will affect the ability of staple crops to survive extreme heat and that in some countries currently self-sufficient, food shortages could occur thus reducing the availability of supply of surplus crops.

This is one of the main reasons why everyone has to undertake local actions to limit climate change.

Sustainable production

Single crop production each year will deplete the nutrients in the soil so requiring these to be added to replace those absorbed by the previous year's crop which adds to the production cost and may not be available locally.

However sustainable production involves growing crops with resources that are available locally and are suited to local climate and soil conditions. Crop rotation then helps to ensure that all available nutrients in the soil are used and can be replenished by natural means.

Activity 12 Sustainable consumption

Compare your diet with that of someone living in a country within the Tropics – how would it differ and why?

Estimate what proportion of food you eat is grown locally and what proportion is imported from other countries?

Could local production of food be encouraged?

Could you grow your own food if you have access to a garden?

Climate change will influence where crops can be grown and animals fed. What effect could this have on the ability of your community to feed itself?

Providing inclusive education

SDG: Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all

We go to school to learn the basic skills of reading, writing and arithmetic and to learn something more about the world and the people who inhabit it.

However 8% of children are unable to go to school for one of the following reasons -

- some have to help their parents in the fields
- some have no school within walking distance of their home
- some families cannot afford to send their children to school

In addition a further 4% of people cannot read or write.

The basic reason for this lack of access is poverty. So enabling families to earn more money for the crops they grow or products they make, will enable more children to go to school and in addition there would be more funds available for building schools and employing teachers.

Acquiring basic skills will enable students to learn also traditional subject knowledge, which will relate to the needs of their community

Specific skills can be learnt through further education or via by working with or alongside others who have already acquired such skills.

Life long learning

If you ask your parents or grandparents what has changed in the past 50 years, their list will likely include – motor cars, TV, mobile phones, computers and texting. So new skills have had to be acquired in order to use these devices and machines. So, all of us have to adopt lifelong learning.

As the world around us is changing, lifelong skills will continue to be required. Global changes to which we will have to adapt to include –

- local production of food and products
- undertaking local actions to limit climate change
- building resilient infrastructure to withstand better extreme weather events
- integrating environmental refugees into our communities

Gender equality

Equal learning opportunities are essential for all young people regardless of gender, race, religious beliefs or life style. This makes for more inclusive communities and enables people to reach out and care and share for others. Scouting (and Guiding) provides such opportunities. We should also reach out to immigrants and refugees and help them to integrate into local communities.

Scouting Movement

This worldwide youth organisation of 50 million members in 190 countries is an educational organisation teaching young people on an informal basis, skills that they may need at some time during their life and to enable them to help other persons less fortunate than themselves.

The Scout Movement is also encouraging all its members to undertake local projects to assist in reaching the Sustainable Development goals through its global programme Scout for SDGs.

Activity 13 Providing inclusive education

What would you do if you could not go to school?

Ask your parents/grandparents what changes they have observed during their life time?

What new skills do you think you will need during your lifetime?

Would you make friends with those who have recently arrived in your community?

Would you invite newly arrived children to join organisations like Scouting or join in after school activities?

Promoting sustainable settlements

SDG: Make cities and human settlements inclusive, safe and sustainable

Urban and rural settlements

Urban Almost half the world's population reside in cities, many of whom have migrated from rural areas in order to find employment. However, in migrating people loosen their ties with and support of their community in which they were born and grew up. So when new urban developments are created within cities, communities need to explore and develop their common interests.

However, the larger the settlement, the less efficient and sustainable it becomes as distances increase between home and work and goods/products have to be transported in increasing amounts into the city from other settlements.

Rural From an economic and social viewpoint, sustaining rural settlements through growing their own food supplies and developing local enterprises providing sustainable employment is a viable and inclusive option. Such self-sustaining communities can maintain social and cultural links with neighbouring settlements and its inhabitants would not have reason to migrate to urban settlements.

Sustainable settlements

These require

- availability of food supplies
- adequate provision of housing and shelter
- local infrastructure which provides basic needs like water and electricity
- access to health services
- availability of schooling and lifelong learning
- local utilisation of renewable energy sources and resources to reduce dependence on fossil fuels
- manufacture of products needed by the community
- green planting in order to sustain and promote ecosystems and biodiversity which are essential for preserving species on which our food chain depends

Inclusive settlements

Inclusive settlements are those in which all the residents are able to participate in local governance and no one is excluded on the basis of race, colour or religion. This includes integrating new persons and refugees into the community. It is important that everyone reaches out and cares and shares with other members of the community.

Safe settlements

Settlements are more likely to be safe if –

- institutions and governance are inclusive
- sufficient food and clean water for all
- schooling for all and lifelong learning opportunities
- sustainable employment
- living in peace with neighbouring settlements

Integrating into a community

Churches, schools and Scouting can help integrate newly arrived persons into their community.

Activity 14 Promoting sustainable settlements

Consider/discuss the following –

In which order would you rank the above criteria for sustainable settlements?

Who do think are happier – people living in urban or rural settlements?

Does where you live meet the above criteria for a sustainable settlement?

If not what else could be undertaken to make your settlement more sustainable?

What local employment is available in your community and what additional employment could be created?

Can you identify actions which would make your community more inclusive and safe?

Building resilient infrastructure

SDG: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

Traditional infrastructure

Such infrastructure comprises not only roads and railways lines which are visible but also utility services like water, gas, electricity and telecommunications whose pipes and lines can be or are buried beneath the pavement or road way. However such services do not exist in all settlements and in some countries these are only provided in urban areas.

Resiliency

Infrastructure is deemed resilient if it is able to withstand extreme weather conditions such as floods, cyclones, tsunamis (or storm surges) and earthquakes and the impact of rising sea levels for coastal settlements. Many of these events are increasing in frequency and intensity due to climate change and so infrastructure currently deemed resilient may not be so in the future.

Building resilience against likely extreme weather conditions will add to the construction cost and may simply not be affordable. So this provides another reason for limiting greenhouse gas emissions whose presence in the upper atmosphere are responsible for climate change.

Limiting greenhouse gas emissions

Infrastructure has not only to meet our needs but also to do so in ways that will reduce the environmental impact of our energy use

Transport of goods is a major use of energy as products can be designed in one country, manufactured in another country and sold in other countries. If products were produced *locally* then the carbon footprint associated with their production would be less and it would create local employment. This applies equally to food production, which if grown locally, would reduce 'food miles'.

For short journeys, *active travel* involving cycling and walking can be encouraged by building pavements and creating cycle paths where these do not currently exist

The transition from fossil fuel to *renewable energy sources* is increasing as its costs decrease with increasing production. As renewable sources are abundant and wide spread, converting to renewable energy sources enables energy to be produced locally without the production of greenhouse gases.

Developing *local infrastructure* to supply locally generated renewable electricity and heat to communities will reduce the losses (and associated cost) of transmission and distribution. It is much easier to ensure that local infrastructure is resilient because of the shorter distances involved in transmission and distribution.

Inclusive and sustainable industrialisation

Such industrialisation should involve manufacturing products for local use wherever possible. There will also be a need to develop innovative products which use or generate energy more efficiently.

Activity 15 Building resilient infrastructure

List the types of infrastructure in your community. Which do you think is missing?

Has your community experienced extreme weather events recently? If so was the infrastructure able to survive such an event?

What choices are there for travelling to school or college by active travel – walk, cycle, scooter or bus?

Is it possible to walk or cycle safely to school? If not what infrastructure is needed?

Are there places where you can safely cross busy roads?

Would you undertake more active travel if the local infrastructure was improved?

What innovative products do you think could be manufactured locally?

Reducing inequality

SDG: Reduce inequality within and among countries

Many countries are able to provide basic human needs for all their citizens though in some countries it has not yet been possible to make such provision for all its citizens. One of the primary aims of the SDG goals is therefore to reduce all inequalities by targeted interventions.

In its broadest sense reducing inequality will include –

- access to clean water
- sufficient food to satisfy basic needs
- shelter and housing
- gender equality
- opportunity for learning
- prospects for employment
- provision of health care services
- community support in old age

In a society that is caring and sharing for others, such inequalities will be minimised. In a society that treats not everyone as equal and does not provide equal opportunities for all, inequalities will persist.

Inclusive settlements

In inclusive settlements everyone feels part of the community and all are able to participate in the decision making process and governance. The concept of shared ownership of what we have in common will help us to reach out to other persons, possibly less fortunate than ourselves. This also applies to refugees and migrants, who through no fault of their own, have had to migrate.

Sustainable settlements

Such settlements are those where inequality between people has been minimised. This will generally require investment in local resources like provision of clean water, renewable energy and housing which will in turn create local employment so enabling people to buy the seed and food they need and to send their children to school.

Reducing inequality between countries

Reducing inequality is a *primary need* for promoting collaboration between countries rather than identifying our differences. Interventions can comprise many forms from providing funding to developing sources of clean water to providing technical assistance and support for more productive agricultural methods.

The formation of *global partnerships*, which is another Sustainable Development Goal, can ensure that targeted interventions will help reduce inequality which will result in the shared ownership of the work and its outputs.

We are all good at *something* like growing crops or producing goods and services but cannot be good at all things, so adjacent communities should cooperate wherever possible.

Activity 16 Reducing inequality

What inequalities exist in your community?

What could be done to ensure more caring and sharing?

Are there many people in your community who lack basic needs or unable to find employment?

What do you think you could do to help them?

What can we do to help people in other countries become self-sufficient in what they need?

Promoting sustainable economic growth

SDG: Promote sustained, inclusive and sustainable economic growth, full and productive employment and work for all

Economic growth is a prerequisite for lifting people out of poverty as it can create work for all. If however such growth increases the use of non-renewable resources or results in significant emissions to the atmosphere, such growth will not be sustainable.

Sustainable economic growth can therefore be defined as that which meets a communities' needs by utilising local resources wherever possible, creates neither local or global pollution and strengthens bio-diversity.

Factors encouraging sustainable growth

Such factors will include –

- local production of food
- ensuring inclusive education for all
- generating renewable energy locally
- building and strengthening local infrastructure so it is resilient
- promoting and strengthening biodiversity
- promoting walking and cycling
- sustainable employment

Food production

For *rural* communities, production of food is the most important as this can be used to reduce hunger either locally or in nearby urban settlements. Any surplus to needs can be bartered or sold in local markets.

For *urban* settlements where space is generally not available to grow food, it will be desirable to manufacture products which are not produced in rural settlements and to provide such products in return for food grown there.

Inclusive education

Schooling will help us to acquire basic skills like reading and writing and to understand the world around us. Lifelong learning will help us to acquire additional skills and knowledge particularly as technology advances and creates new ways of working

Generating renewable energy locally

Substituting renewable energy sources for fossil fuels will reduce production of greenhouse gases, whose combustion is primarily responsible for global warming. Fortunately the cost of the two most important renewable sources for generating electricity that is solar cells and wind turbines has decreased very significantly in the past decade as these technologies have matured. Both systems can either be grid linked or used in stand-alone mode.

As renewable sources vary in intensity, electricity will not always be available so some tasks can only be completed when it is available. If energy storage can be afforded then electricity can be stored for use when the wind does not blow or the sun does not shine.

Promoting and strengthening biodiversity

Increasing biodiversity is essential for preserving species on which our food supplies depend. Hedgerows and wild flower meadows along with trees, form important habitats for species including food for pollinators which are important for growth of many crops.

Projects could include –

- green planting of trees, hedgerows and wildflower meadows to provide more habitats for species
- growing plants which are bee and butterfly friendly
- growing vegetables and fruit in your garden

Sustainable employment

In *urban* areas, sustainable employment ('green jobs') will include –

- retrofitting thermal insulation to buildings to reduce heat loss
- installing solar electric and solar thermal modules to provide electricity and/or heat
- converting heat systems for using gas as a heating source to low carbon heating systems like heat pumps
- promoting active travel such as walking, cycling and public transport

In *rural* areas, food production will be a primary activity while green jobs will include developing resilient infrastructure such as providing clean water sources and generating electricity from renewable energy sources

Promoting sustainable economic growth

To promote such growth, communities therefore should identify the food, products and infrastructure they need to lead a healthy life and plan how these can be achieved. This will depend upon whether it is a rural or urban settlement and what is being produced in adjacent settlements. No settlement can be self-contained and so it will need to import food supplies and products not grown nor manufactured locally in return for food or products they produce

Activity 17 Promoting sustainable economic growth

How would you define sustainable economic growth?

What could be done to increase biodiversity locally?



® *Are there local groups that you can join that undertake conservation or green planting?*

How can renewable energy be developed locally?

Are products produced locally which can reduce our use of energy?

Can you grow vegetables in your garden or bee friendly plants?

Fair trade products

One source of income that has helped provide funds for many rural communities in developing countries has been the premium paid to producers of products traded under the *Fairtrade* logo. This premium is used to buy food, seeds for growing new crops, pay for schooling and starting new enterprises.

When you visit a shop look for products which carry the fair trade logo and when you buy these you will be helping other people to help themselves.

Promoting peaceful and inclusive societies

SDG: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

There can be no winners in any conflict as everyone suffers, some more than others. Such conflicts arise because communities are unwilling to share resources like clean water or to tolerate and understand other viewpoints and religious beliefs. To prevent conflict, it is essential to reach out to persons in other communities and understand their viewpoint and concerns. It is only by emphasizing what we have in common within communities and by caring and sharing for others, are we more likely to live in peace with each other and with our neighbours.

Sustainable development and climate justice

People are now the main cause of change in the world's environment. The continuing increase in world population, consumption of resources and in the production of waste and pollution is having profound impacts on the environment and its ecosystems. Unless development becomes more sustainable, impacts like these will have increasing consequences for the environment and mankind.

What makes this era differ from any previous is that the survival of people in some countries is now threatened by climate change, created not through their own actions, but through the actions of people in other countries whom they have never met.

The moral dilemma as Mary Robinson explained in her 2015 Grantham Lecture at Imperial College, London is that under article 28 of the Universal Declaration of Human Rights (<http://www.un.org/en/documents/udhr/>), every country has a right to exist. Yet the very existence of some countries is now being threatened by climate changes caused *not* by them but through actions of peoples in other countries. This is clearly *not* climate justice

Care for our common home

In his recent encyclical *Care for our Common Home*, Pope Francis argues that *"climate change, mass extinction of species and the poisoning of the oceans have been unfolding like slow motion disasters for decades and universally damage the lives of the poor for the benefit of the rich."*

Further that we have to realise that a true ecological approach always becomes a social approach: it must integrate questions of justice in debates on the environment so as to hear both the cry of the Earth and the cry of the poor. Leaving an inhabitable planet to future generations is first and foremost up to us. The issue is one which dramatically affects us for it has to do with the ultimate meaning of our earthly sojourn".

Refugees

When regional conflicts occur, people have to migrate as innocent civilians are often the greatest casualties in such battles between opposing forces. So they may be refugees in their own country or in countries that border their own. However, there are two other types of refugees which are of growing concern – some leave because they cannot find work at home and others because environmental degradation due to a changing climate has resulted in crop failure.

Communities should be willing to accept refugees and integrate them into their community if they cannot return home. Churches, schools and Scout Groups can all help to integrate such families and help them adjust to their changed circumstances and make them welcome.

Inclusive societies

Inclusive societies are those in which all its members are included and consulted in community based decision making processes. This enables a consensus to be developed in which all persons can take ownership. History shows that for such societies, all members can benefit equally in terms of sharing and caring for others.

Scouting

Scouting exist in 196 countries worldwide and one of its global aims is to help others including those in need as best they can.

Activity 18 Peaceful and inclusive societies

Consider and discuss -

what happens when societies are not peaceful and tolerant of each other?

why are inclusive societies more likely to be peaceful?

why is it important to share resources?

are you aware of how your actions can influence collectively the climate in other countries a long distance away?

do you know of any refugees in your town and have you been able to help them?

Strengthening global partnerships

SDG: Strengthen the means of implementation and revitalise the global partnerships for Sustainable Development

The principal factors which will enable many of the SDGs to be reached include –

- encouraging the formation of peaceful and inclusive societies
- ending hunger by creating conditions where sufficient food can be grown locally
- increasing access to clean water
- providing access to clinics where treatment can be received for infectious and tropical diseases
- reducing the emissions of greenhouse gases which are leading to global warming
- encouraging green planting to reverse the decline in biodiversity
- using existing resources economically and sustainably

By considering each of the SDGs in turn, it is possible to understand why these goals exist and what options are available for initiating positive actions. Through media like TV and social media, young people have become much more aware of the world they are inheriting and the legacy that current generations are leaving for future generations.

What we should realise is that we have created these concerns through *not* living in a sustainable way. So, each of us needs to adopt a more sustainable lifestyle and to reach out to help people living in less fortunate circumstances than ourselves.

Initiating positive actions

Each of the SDG's aims can promote an interesting discussion with young people with the leader/teacher acting as a facilitator. The activities that have been suggested are primarily to help understand what *local* activities are not sustainable and then to identify what actions we could and should undertake to make our activities more sustainable.

We have seen that even one person such as Greta Thunberg can make a difference by asking questions which others do not wish to consider or act on. Partnerships do not necessarily need to be global, but it adds a new dimension to the ethos of helping one's neighbour whoever and wherever they might live.

Leading healthy lives

Scouts for SDGs is one such global initiative in which the World Organisation of Scouting Movements is encouraging its 50 million members in more than 190 countries to undertake 3 billion hours of community based projects to help implement the SDGs. Two such projects are described below.

One such global partnership is *Scouts against Malaria* in which Scouts in the UK are learning about malaria and raising funds which are then sent to Scout Associations in a number of sub Saharan African countries where malaria is endemic. As the vector for carrying the disease is the anopheles mosquito, which is active at night, the primary means of protection is to sleep under a long life insecticide impregnated bed net.

Working with local health officers, these Scout Groups use these funds to purchase these bed nets and distribute to vulnerable families which either have children under five years of age or the mother is expecting a child.



These Scouts also assist with erecting these bed nets, describing the symptoms and explaining to families where they can get treatment if someone is bitten.

Malawian Scout erecting an insecticide treated bed net

For more information refer www.scoutsagainstmalaria.org.uk.



Clean water

This is another global partnership involving UK Scouts, Masindi Scouts and Ugandan Water Board to supply clean water to the many villages comprising the Masindi District of Uganda.

UK Scouts learn about the importance of being able to access clean water and then raise funds ca £5/head.

These funds are then sent to the Masindi District of Uganda where under the supervision of the Ugandan Water Board, spring wells have been constructed in 45 villages in and around Masindi.

Edioivi spring well under construction, Masindi District, Uganda, January 2020

Activity 19 Global partnerships

Consider and rank the SDGs in terms of saving lives

What actions could you initiate or join to help others and make a difference to their lives?