

A photograph of several biodegradable seedling trays filled with soil and small green plants. The image is overlaid with a green geometric design consisting of overlapping triangles and lines.

50 SHADES GREENER

Creating action based educational programmes for carbon emissions management to help build a NetZero society.

The purpose of this toolkit is to provide learning collateral and opportunity focused on sustainability, climate change, sustainable development, green skills and stakeholder collaboration for inclusion of green skills into Nepal's economy.

For more information, visit the Dakchyata website: <https://www.dakchyata-nepal.org/>

Dakchyata: TVET practical partnership is a skills development programme, funded by the European Union and delivered by the British Council in partnership with the government of Nepal, to realise the potential of young people who - equipped with the right skills - can contribute to national economic success in the agricultural, tourism and construction industries.

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of Dakchyata/British Council and do not necessarily reflect the views of the European Union.

INDEX

Climate change	Page 3
Predicted risks and impacts	Page 5
People and climate change	Page 9
Climate change in Nepal	Page 10
Nepal's climate action	Page 12
Sustainability and sustainable development	Page 14
The UN and the 17 SDGs	Page 16
Countries' best practice examples	Page 20
Benefits of sustainable development	Page 22
Mistakes and opportunities	Page 24
The circular economy	Page 26
CO2 emission scopes	Page 29
Stakeholder collaboration on building Nepal's green economy	Page 31
Framework for stakeholder collaboration	Page 33

CLIMATE CHANGE

Climate is the long-term pattern of weather in a particular area. Weather can change from hour-to-hour, day-to-day, month-to-month or even year-to-year. A region's weather patterns, usually tracked for at least 30 years, are considered its climate.

Earth's climate has changed throughout history. Just in the last 800,000 years, there have been eight cycles of ice ages and warmer periods, with the end of the last ice age about 11,700 years ago marking the beginning of the modern climate era — and of human civilization. Most of these climate changes are attributed to very small variations in Earth's orbit that change the amount of solar energy our planet receives.

While Earth's climate has changed through history, the current warming is happening at a rate not seen in the past 10,000 years. Human activities, especially emissions of heat-trapping greenhouse gases from fossil fuel combustion, deforestation, and land-use change, are the primary drivers. Since the late 19th century (preindustrial) the average surface temperature has risen by 1 degree Celsius.

Some effects are already happening. Warming of the earth's climate has caused snow and ice to melt, causing oceans to rise, we can see stronger storms happening year on year, and longer draughts in some parts of the world. Landslides, floods and other natural disasters are devastating many countries. The majority of scientists agree that since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas.

We are living in an unprecedented time, with low lying countries battling rising water levels and forest fires on every continent. Wildlife, including pollinators, that we depend on to grow our crops, has decreased by 68% between 1970-2016 according to the World Wildlife Fund.

Thankfully, it is now widely accepted that these changes are man-made and that with a rising population, we can no longer afford to use earth's resources in the way that we have

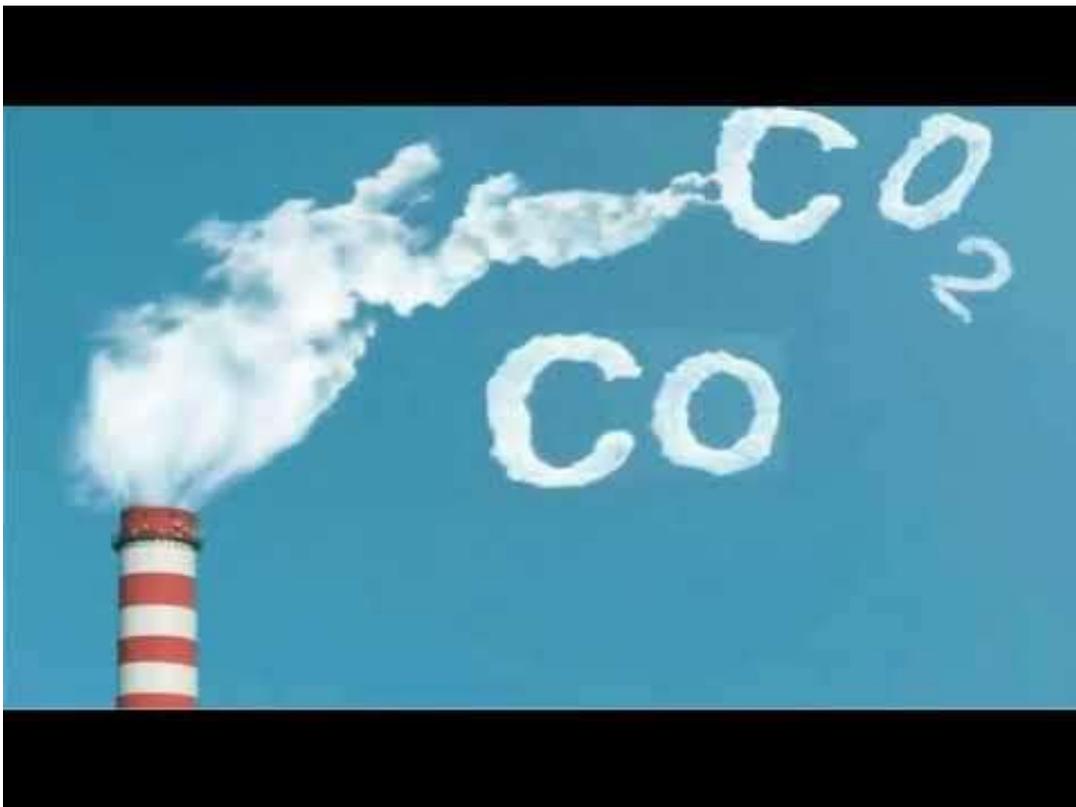
been. We need to look after the planet so it will look after us. Business as usual is no longer an option.

The world has been slow to recognise the climate crisis for a number of reasons.

- Firstly, because climate change is occurring at a global level, it has been hard to see it happening, as humanity is used to dealing with problems at a local and national level
- Secondly, change has been happening slowly and up until recently we haven't been able to see the effects, so it hasn't been a priority for governments and the media

HOW DID WE GET HERE?

[WATCH VIDEO](#)



We need energy to run our economy; to heat or cool our homes, fuel our cars and produce the goods we buy. In order to create energy, we are burning fossil fuels which create GHG (Greenhouse Gases) emissions that are heating the planet. The amount of GHG we are emitting has increased significantly since the industrial revolution, (when factories started producing goods by coal fired steam), and particularly in the last few decades.

GHG emissions are caused by everyday activities such as driving, heating homes, manufacturing products, transporting goods, and burning fossil fuels. CO₂ is the main gas emitted by burning fossil fuels and it stays in the atmosphere for hundreds of years. There are other gases emitted which have a stronger effect than CO₂ on the atmosphere such as methane and nitrous oxide but they only stay around for a few decades.

Greenhouse gases are water vapour, carbon dioxide, methane and nitrous oxide. These gases allow humans to live on earth by absorbing the heat rising from the surface of the earth and reflecting it back out to the atmosphere, a bit like a greenhouse (hence the name). As the amount of GHG emissions has increased, the protective layer that protects earth has become thicker and thicker (like a big woolly blanket), less gas is escaping and this is causing the planet to warm up more than it should.

CO₂: is increasing by the combustion of fossil fuels like coal, oil and gas for electricity, heat and transport and deforestation (destruction of forests) that releases carbon dioxide and reduces the number of trees able to capture carbon dioxide from the atmosphere. CO₂ concentration in the atmosphere is currently 40% higher than when the industrial era began.

Methane: released by coal mining, landfills and agriculture (particularly through the digestive processes of beef and milk cows)

Nitrous Oxide: released by the combustion of fossil fuels. NO₂ forms from emissions from cars, trucks and buses, power plants, and off-road equipment.

Climate change has been sustained by scientific evidence: ice cores yield actual samples of Earth's present and past atmospheres; tree ring data show an average temperature warm up and modern equipment (like satellites and instruments) prove evidence of a changing climate.

PREDICTED RISKS AND IMPACTS OF CLIMATE

We already see effects scientists predicted: glaciers are melting away worldwide, biodiversity is changing, the annual temperatures are increasing over the years in most of the countries, sea level changes, extreme droughts, acidification of seawater, decline in crop productivity... Some are slow in their onset (such as changes in temperature and precipitation leading to droughts, or agricultural losses), while others happen more suddenly (such as tropical storms and floods).

Scientists predict global temperature increases from human-made greenhouse gases will continue. Severe weather damage will also increase and intensify.

Climate change doesn't affect equally: The 50 least developed countries are thought to have contributed 1% of the greenhouse gases that have caused global warming. The USA, the EU and China alone have contributed around 60%. Emergent nations are less able to adapt to climate change and therefore suffer the most from its effects. They are also less able to develop because they need to focus on addressing the challenges caused by climate change. This unequal challenge is known by the term [Climate Injustice](#).

FOOD AND CROPS

- Food production is at risk due to worsening droughts and floods which are wiping out crops and livestock
- There will be food shortages as basic crops like cereals are becoming difficult to grow, making harvest yields lower

WATER

- Water covers 71% of our planet. Much of this is our oceans which absorb CO₂. The amount of extra greenhouse gases that humans are putting into the atmosphere means that we are literally changing the chemistry of the sea water, which affects what can grow and live there, and therefore our food chain
- Climate change will also cause sea levels to rise, changing coast lines meaning coastal communities will have to move elsewhere along with countries with low lying land
- With the global population set to increase and drinking water only accounting for 1% of water on the planet, we will have to manage our water resources better

WORK

- As the planet becomes hotter it will become more difficult for people to work outside in extreme weather conditions
- It will become more difficult to harvest crops and manage livestock
- Walking or cycling to work in extreme conditions will become challenging

BUILDINGS AND INFRASTRUCTURE

- Buildings are at risk of collapsing due to extreme flooding, drought and fire
- Hospitals, data centres and office blocks are at risk of damage

NATURE

- Whole ecosystems are at risk of collapse, including oceans, forests and soil
- Ocean acidification will lead to less CO₂ absorption

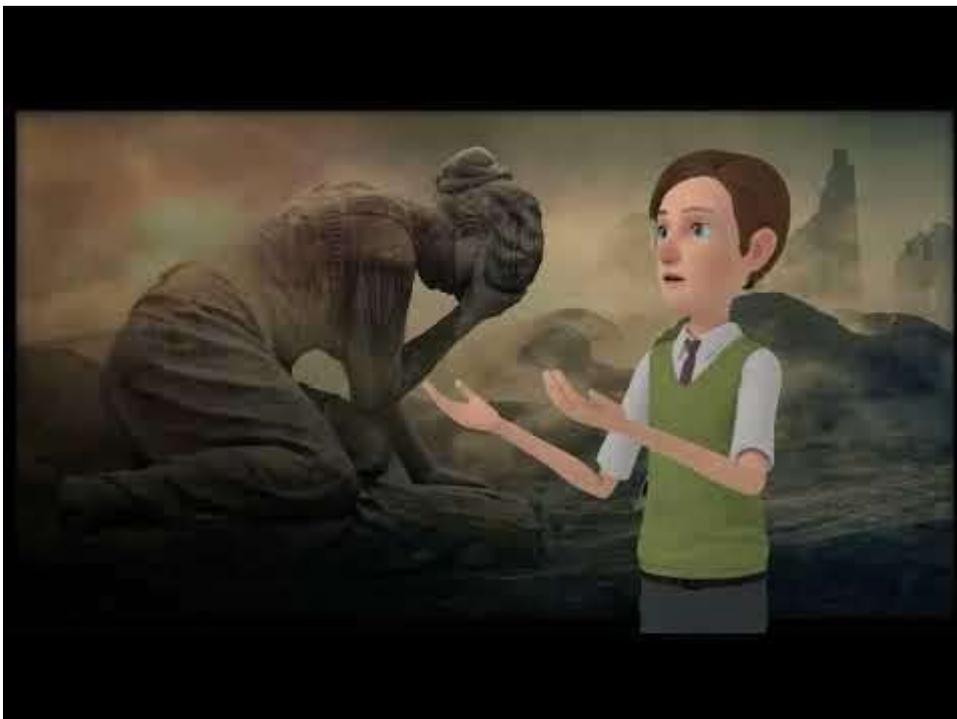
- Deforestation in order to grow crops and livestock leads to soil degradation and means less trees to absorb CO2 emissions
- Soil erosion from intensive farming methods leads to soil degradation which means crops will be difficult to grow and soil will be washed away in landslides

HEALTH

- Human health is at risk due to extreme heat, cold and droughts as well as a higher level of pests and diseases that thrive in a warmer environment

In 2018, the Intergovernmental Panel on Climate Change (IPCC) warned that global warming must not exceed 1.5°C to avoid the catastrophic impacts of climate change. The planet has already warmed by 1° and we have seen more extreme weather events as a result. We need to change how we live and work in order to limit global warming to 1.5°C.

This video was developed to outline the findings of the IPCC report in November 2021.



[WATCH VIDEO](#)

PEOPLE & CLIMATE CHANGE

When confronted with the possibility of climate change, people have many different reactions and feelings about it. This matters because it will make them act in one way or another. People may feel:

- **Denial:** Climate change is not a man-made problem and therefore there is nothing to fix.
- **Despair:** Climate change is such a huge challenge that there is nothing I can do about it myself.
- **Hope:** I know there is something we can do I am just unsure what it is
- **Motivation:** I am ready to play my part to solve this problem.

These different views and feelings about climate change have been caused mainly by misinformation and a lack of education. Back in the 1990's climate change started having a presence in the media, people would learn the horrific futures that may lie ahead but they were not given the skills or knowledge to do anything about it themselves, this caused fear and anxiety for some, and denial for others. In the 2000's some companies and spokespeople started giving advice as to the small things people could do to be kinder to the environment, stop using plastic straws for example. However, as years passed and more science and data started to become available to society, we realised that the problem was much bigger than plastic, and we still did not have the skills and knowledge to fight climate change, which caused despair and once again denial. Nowadays in 2022, the young generations have been learning about climate change at a much faster pace than 30 years ago, and we see young people full of hope, motivation and taking real action.

CLOVER HOGAN



WATCH NOW

CLIMATE CHANGE IN NEPAL

In Nepal, 95% of greenhouse gas emissions are from agriculture and forestry sectors; of this, 77% was from the forestry sector only. The livelihoods of more than 80% of the local people of hilly regions are heavily dependent on climate sensitive areas such as agriculture, forest and livestock and on other natural resources such as water and irrigation.

Due to its geography, Nepal is exposed to a range of climate risks and water-related hazards triggered by rapid snow- and ice-melt in the mountains and torrential rainfall episodes in the foothills during the monsoon season.



Increased frequency/intensity of extreme weather events e.g drought leading to wildfires (2016), less predictable rains, more hailstorms and stronger snows. Increase in annual precipitation, increase in consecutive dry days, increased temperatures.

These factors leading to reductions in agricultural production, food insecurity, strained water resources, loss of forests and biodiversity, as well as damaged infrastructures during the monsoon season.

KEY CLIMATE IMPACT AREAS

Agriculture

Ecosystems

Infrastructure

Human Health

Water Resources



NEPAL'S CLIMATE ACTION

In 2010, the Government of Nepal approved the National Adaptation Programme of Action (NAPA). NAPA was developed as a requirement under the UNFCCC to access funding for the most urgent and immediate adaptation needs from the Least Developed Countries Fund (LDCF).

In NAPA, 6 projects have been identified as the urgent and immediate national adaptation priority. They are:

1. Promoting community-based adaptation through integrated management of agriculture, water, forest and biodiversity sector
2. Building and enhancing adaptive capacity of vulnerable communities through improved systems and access to services related to agriculture development
3. Community-based disaster management for facilitating climate adaptation
4. GLOF monitoring and disaster risk reduction, and forest and ecosystem management for supporting climate-led adaptation innovations
5. Adapting to climate challenges in public health and ecosystem management for climate adaptation
6. Empowering vulnerable communities through sustainable management of water resource and clean energy support, and promoting climate smart urban settlement

During the COP26, [Nepal announced key commitments](#) to:

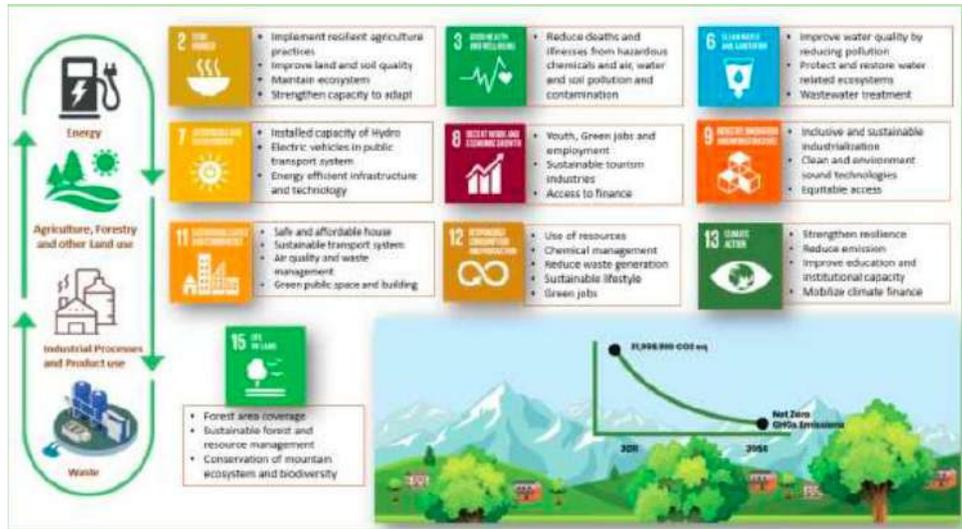
- Remain cumulatively 'net zero carbon' from 2022-2045 and become carbon negative after that.
- Halt deforestation and increase forest cover to 45% by 2030, and
- Ensure all vulnerable people are protected from climate change by 2030.

KEY ELEMENTS OF THE 2045 VISION:

The long terms strategy (LTS) envisions bold policymaking, social transformation, and technological innovations that will lead to a carbon-neutral, inclusive, and climate-resilient path. The following are the key elements of the LTS:

- Increase the use of clean/renewable power in all sectors, including fuel switching to clean and modern energy in all economic sectors.
- Improve energy efficiency and maximize benefits by utilizing clean energy efficiently in the residential, industrial, and transportation sectors.
- Adopt clean, secure, and connected mobility. This includes decarbonizing the transportation sector through the use of alternative modes of transportation, shifting to electric mass transportation, and increasing the use of clean fuels.
- Increase carbon sinks by managing forests and natural resources in a sustainable manner.
- Encourage sustainable agriculture and land use management to maximize co-benefits.
- Expand the circular economy to improve industrial sustainability, promote industrial sector modernization through installations, and invest in new carbon-neutral and circular-economy compatible technologies and systems.
- Deploy carbon removal technologies in all economic sectors.
- Maximise the benefits of the mitigation of clean energy trade where appropriate mechanisms for recognition are in place
- Enhance international cooperation and support (technical and financial) for climate actions (Mitigation and Adaptation)

SUSTAINABLE DEVELOPMENT CONSIDERATIONS



Nepal is part of the [Green, Resilient and Inclusive Development \(GRID\)](#) initiative, which is aligned to deliver Nepal’s climate ambition articulated in Nationally Determined Contributions (NDCs), Long Term Strategy (LTS), and National Adaptation Plan (NAPs), which has the ultimate aim to promote the green growth opportunities in the context of the post-Covid-19 development priorities.

The forest cover at the moment is 37.4 percent, so achieving 45 percent is doable in the next nine years. Likewise, Nepal doesn’t contribute greatly to carbon emissions so achieving ‘no net’ emissions is also very likely if Nepal can focus on alternative sources of energy.

In the NDC, Nepal has also committed to increasing sales of e-vehicles (EVs) to cover 25 percent of all private passenger vehicles sales, including two-wheelers and 20 percent of all four-wheeler public passenger vehicle sales by 2025.

By 2030, the aim is to ensure that 90 percent of all private passenger vehicle sales, including two-wheelers, and 60 percent of all four-wheeler public passenger vehicle sales are EVs.

SUSTAINABILITY & SUSTAINABLE DEVELOPMENT

Sustainability is a term that has various meanings to different people and the endless connotations associated with it can lead to confusion.

In 1987, the United Nations defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. Simply put, this means we need to ensure our own actions in the present don’t affect the lives of our future generations.

Sustainability can be divided into three pillars that interconnect with each other:

- Financial - Profit
- Environmental - Planet
- Social – People

Unfortunately, there are many instances in society where *Profit* is more important than the *Planet* and its *People*, which breaks the balance necessary between the 3 pillars and poses the risk of an unsustainable future, a future that will not last.

[Watch Now](#)



THE UN & THE 17 SDGs

The United Nations is an international organization founded in 1945. Currently made up of 193 [Member States](#). The UN has evolved over the years to keep pace with a rapidly changing world. But one thing has stayed the same: it remains the one place on Earth where all the world's nations can gather together, discuss common problems, and find shared solutions that benefit all of humanity.

The United Nations Framework Convention on Climate Change (UNFCCC), agreed in 1992, is the main international treaty on fighting climate change. Its objective is to prevent dangerous man-made interference with the global climate system.

The Kyoto Protocol, agreed 1997, is a legally binding instrument for cutting greenhouse gas emissions.

WATCH NOW

GHG

- Carbon Dioxide**
 - Coal
 - Gasoline for transport
 - Deforestation
- Methane**
 - Waste landfills
 - Food waste
 - Agriculture

The Paris Agreement adopted by all UNFCCC Parties in December 2015 is the first-ever universal, legally binding global climate agreement. The Agreement includes commitments from all countries to reduce their emissions and work together to adapt to the impacts of climate change, and calls on countries to strengthen their commitments over time. The Paris agreement aims to reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 degrees Celsius while pursuing efforts to limit the increase even further to 1.5 degrees;

In the same year that the Paris Agreement (2015) was signed, 17 Sustainable Development Goals (SDGs) were adopted by all United Nations Member States. The 17 goals set out all of the things that need to be achieved to protect the planet and ensure that all people enjoy peace and prosperity. The SDGs succeeded the Millennium Development Goals (MDGs), eight international development goals to reduce extreme poverty by the year of 2015 that were established by the UN in 2000.

The UN's **sustainable development goals** address the global challenges we face as a society. They are the ultimate goals we all as humans should strive to comply with.

The [SDGs](#) are a universal call to action to end poverty, protect the planet, and improve the lives and prospects of everyone, everywhere.

SUSTAINABLE DEVELOPMENT GOALS



[CLICK HERE](#)
UN SDGS EXPLAINED

[CLICK HERE](#)
UN SDGS POSTERS

[CLICK HERE](#)
UN SDGS INFOGRAPHICS

The 17 goals were adopted by all UN Member States in 2015, as part of the [2030 Agenda for Sustainable Development](#) which set out a 15-year plan to achieve the goals.

The UN SDGs are for everyone; from governments, academics and policymakers to charities, communities, businesses and individuals.

From a political level, they provide the framework for action to be taken by policymakers who report to the UN every year on their progress towards the goals. It is also critical that companies use them to engage with sustainability efforts, as they are globally recognized goals that everyone should be working towards.

At a corporate level, The SDGs align business strategy with the needs of people and the planet. They can highlight areas for improvement and opportunities for product or service innovation and potential new markets. In today's society, all individuals, all corporations and governments, should strive to adopt the 17 SDGs.

Corporations are now realising the benefits of aligning their business strategies to sustainable development:

- Talent management – young generations want to work for companies that have a sustainability strategy to care for the planet and its people
- Brand – society is demanding change, and companies need to align their business to their customer values
- Bids & tenders – sustainability can be a contributing factor to winning contracts.
- Investors – companies looking for investment are being asked for their sustainable development policies and strategies

But how can we individuals align to the UN SDGs? When I look at the 17 goals, on first impression, they seem quite unachievable for a regular person like me. However, if we apply some critical thinking, we can find that every one of us can contribute to all of those goals in one way or another.

Let's look at some examples:

- Paying national and local taxes once we join the workforce is not the most appealing prospect, but every individual that pays taxes on their income, is directly contributing to the social services of their country, which contributes to goal 1 end all poverty, goal 2 zero hunger, goal 3 good health, goal 4 quality education, goal 6 clean water and sanitation, goal 11 sustainable cities and communities and goal 17 partnerships for the goals
- On a personal level, we can all volunteer to local charities or community events to raise funds for those less fortunate, we can donate old items that we do not need any more, or donate food. Community charity work can contribute to goal 1 end all poverty, goal 2 zero hunger, goal 10 reduced inequalities, and goal 11 sustainable cities and communities
- By treating everyone equally within our own communities, regardless of their sexual orientation, religion, background or country of origin, we are assisting goal 5 gender equality, goal 10 reduced inequalities, and goal 16 peace, justice and strong institutions
- By reducing our use of plastics within our lives, we are assisting goal 6, clean water and sanitation, goal 13 climate action, goal 14 life below water, and goal 15 life on land
- By changing our shopping habits, and favouring brands that make their products in an ethical way, we are assisting goal 8 decent work and economic growth, goal 10 reduced inequalities and goal 12 responsible consumption and production
- By reducing our use of utilities like water, waste and energy, we are contributing to goal 7 affordable energy, goal 11 sustainable cities and communities, goal 13 climate action, goal 14 life below water, and goal 15 life on land

However small our contribution to the goals might seem, remember that the power for real change is in our collective action. As an individual, all you can do is commit to change your behaviour to assist those goals, and if every single individual did the same, we would be able to build a future that is fair, sustainable and ends all injustice and inequalities for nature and all species on the planet, including us.

THE NEPALESE STORY OF THE UN SDGs

WATCH NOW



COUNTRIES' BEST PRACTICE EXAMPLES

Poverty reduction(SDG1) in Brasil

In Brazil, significant improvements had been made in terms of poverty and hunger levels since the early 2000's. In 2003, president Lula da Silva introduced the Bolsa Familia Program, which centralized all of Brazil's conditional cash transfer programs into one. The Bolsa Familia Program is a conditional cash transfer program that aims to give aid to the poorest of the population, providing that the families receiving the aid meet certain conditions. These conditions include sending the children to school, taking them in for vaccinations and routine health check-ups, and attending mandatory prenatal checkups for pregnant women. 10 years after the program started, extreme poverty in Brazil dropped from 9.7% to 4.3%.

Climate Action (SDG13) in Sweden

What is most remarkable about Sweden's development is their ambitious plans for clean and renewable energy. Sweden has set a further goal of 50% more efficient energy use by 2030, and 100% renewable energy production by 2040. The government has also declared a target of net zero emissions of greenhouse gases by 2045. Looking at trends, it seems like Sweden is likely to be able to meet these targets; in 1970, oil accounted for more than 75% of Swedish energy supplies whereas now it is around 20%. The large majority of their energy comes from clean and renewable sources.

Peace Justice (SDG16) in Guatemala

Guatemala has been notorious for corruption within government and the elite throughout history, and especially in the reign of the most recent presidents. However, the state demonstrated that they are trying to combat this issue when they joined the Open Government Partnership in 2011. Getting as many outside actors and organizations as possible involved in the decision-making process is essential to government transparency

and the fight against corruption. The involvement of civil society organizations as well as representatives of all levels of government ensures that government decisions are accounted for and allows the general public to have their ideas and needs represented. Furthermore, combating corruption ensures that government funds are spent as they are meant to, thus indirectly working toward many other SDGs.

Life below Water (SDG14) in Ireland

The government's project Harvesting Our Ocean Wealth sets out to: achieve healthy ecosystems that provide monetary and non-monetary goods and services; ensure that fishing and aquaculture are environmentally and socially sustainable; foster a dynamic fishing industry and ensure a fair standard of living for fishing communities. To achieve these goals the country is implementing strategies such as regulating harvesting and ending overfishing, implementing policies to restore fishing stocks to sustainable levels and putting a plan in place to tackle pesticides in drinking water.

Climate Action (SDG13) in Egypt

ACSAD is an Arab organization that supports Arab efforts in agricultural development. ACSAD addresses the challenges facing arid areas, especially the adverse effects of desertification, drought and land degradation through the development of scientific research, project implementation and capacity building to promote a sustainable management of natural resources and improve the living conditions of people in affected areas.

BENEFITS OF SUSTAINABLE DEVELOPMENT

Countries

All member states are encouraged to develop as practicable ambitious national responses to the overall implementation of this agenda. Different countries confront different challenges regarding how they should set priorities and targets to develop in a sustainable way. For example, Iceland and Paraguay have already achieved 100% renewables whereas countries like Libya have almost no renewable energy. Addressing SDGs provides opportunities to make progress in other areas –for example, addressing climate change it also helps in reducing air pollution, combatting fuel poverty, improving public health and fostering businesses of the future. The SDGs can create a fine opportunity for goal-oriented policies that will improve the quality of the democratic practices around the world.

Society

The benefits to society to develop in a sustainable way include:

- Healthier living. For example, sustainability promotes walking or cycling over cars. It also promotes fresh local food over processed food or the use of harmless natural products over synthetic ones.
- Saving money. Sustainability advocates for less materialism through the sharing, renting, second-hand, recycling and reusing of goods for example.
- Pro-social behaviours such as sharing, giving and supporting each other for mutual benefit and to achieve a higher level of social well-being in our communities. Instead of the produce-and-consume way of life, people are able to focus more on the things that really support well-being such as relationships, self-improvement, meaningful pursuits and life experiences, including cultural and social experiences.

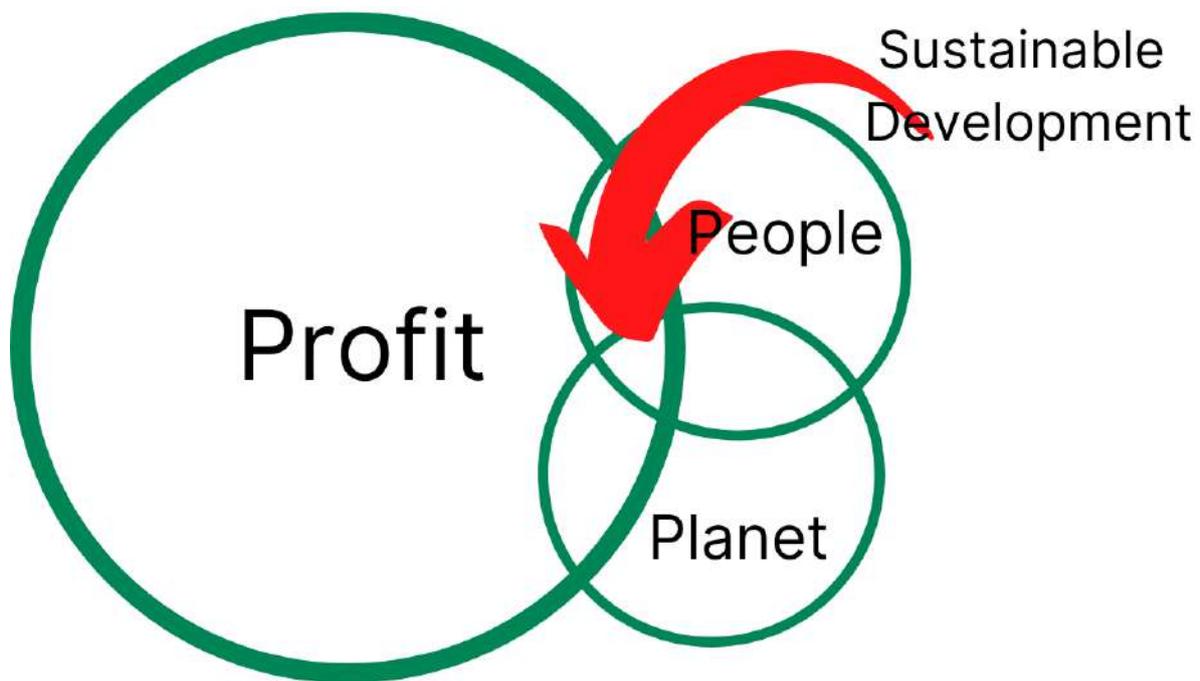
Companies

The private sector, in this context, is an indispensable partner and has a critical role to play in advancing the global development agenda. In developing countries, private sector operations constitute, on average, 60 percent of GDP, while generating 90 percent of jobs and 80 percent of capital inflows (OECD). The private sector further contributes to development by providing goods and services, financing social and economic investments through taxes, and creating innovative solutions to help tackle development challenges.

- Achieving these SDGs will improve environmental performance and reduce risks for business, including those related to biodiversity loss.
- New market opportunities and improved engagement with customers and stakeholders
- Increased productivity across supply chains and products.
- Being engaged with the SDGs attracts investors ([green finance](#)) and talented young employees.
- Businesses will be more resilient to climate change impacts and will be prepared to address future regulations.
- Improve energy and raw materials efficiency.
- Increase employment in communities
- Gain a competitive advantage from goodwill. Many consumers prefer green products and services.
- Recruit and retain good employees.
- Save money from efficiency and waste reduction.
- Make money from waste re-generation.
- Sustainability is a form of market differentiation. Become preferred supplier for other businesses.

MISTAKES AND OPPORTUNITIES

Western countries like Ireland, the UK, France, USA, etc have been developing their economies at a huge rate since the industrial revolutions in the 1950s. Unfortunately, in order to develop economies, the environment and other people have not been taken into consideration, breaking the balance of sustainable development.



Over the past 70 years societies have developed habits and behaviours that are unsustainable for the planet, like the overuse of resources (energy & water), consumerism and the quest for owning more things (capitalism).

Old trades like repairs and upcycling of materials have been lost in society in favour of “new” products, like the surge of fast fashion and single use plastics that now litter rivers and oceans all over the world.

In 2020, we saw a surge of sustainability education in Europe trying to address the mistakes we made and educate a society that is aware of its own environmental and social impact.

As a developing country, Nepal has not seen the negative effects of western consumerism therefore has the opportunity not to make the mistakes that more developed societies have.

Education has been slow to react to green skills and the implementation of sustainability into the education and training sector in Europe.

A significant uptake in 2022 has seen government departments and industry sectors prioritise sustainability and climate change, close to 200 new education and training programmes are expected to be rolled out through Schools, FET, 3rd Level and in the workplace. A leading factor for this dynamic shift in prioritisation is the establishment of a green skills definition and its levels, creating a more focused approach and understanding. We believe that Nepal has the capacity to reach the same position Ireland has in the coming months due to the intervention of this project and its outcomes.

Observations whilst in Nepal provided us with evidence of sustainable best practice, food waste was being collected separately from general waste from the hotel we stayed at, it was explained that food waste was collected for pig farmers and fed the pigs (although this sustainable practice is better than being disposed of as general waste there are further food safety and health implications not under our scope).

A collective consciousness and awareness around food waste was evident from our interaction with hotel workers for example, when food remained un-eaten on the plate. This further underpinned the value of resource efficiency and knowledge of food waste.

Many repair facilities and workshops were evident throughout the city of Kathmandu, including umbrella repairs, steel gates and tyre shop repairs all contributing to an up-cycling sustainability strategy.

Nepal has a real opportunity to ensure the development of their economy, and this goes hand in hand with the development of an environmentally aware, just and equal society, and the only way to achieve this is through education and training.

THE CIRCULAR ECONOMY

In our current economy, we have relied on the “take, make, waste” linear economy approach: we take materials from the Earth, make products from them, and eventually throw them away as waste – the process is linear. This type of economy prioritizes economic benefit, ignoring sustainability, since products are manufactured with the purpose of being used and thrown away. In a circular economy, by contrast, we stop waste being produced in the first place.

In practice, it implies reducing waste to a minimum. When a product reaches the end of its life, its materials are kept within the economy wherever possible. These can be productively used again and again, thereby creating further value.

The world's population is growing and with it the demand for raw materials. However, the supply of crucial raw materials is limited. In addition, extracting and using raw materials has a major impact on the environment. It also increases energy consumption and CO2 emissions. However, a smarter use of raw materials can lower CO2 emissions.

The circular economy gives us the tools to tackle climate change and biodiversity loss together, while addressing important social needs. It gives us the power to grow prosperity, jobs, and resilience while cutting greenhouse gas emissions, waste, and pollution. The circular economy model is a key pillar of sustainability.

It is based on 3 principles:

1. Waste and pollution elimination
2. Product and material circulation
3. Regeneration of nature

The 9R framework of the circular economy contains nine strategies for achieving a cradle-to-cradle life cycle in business:

Refuse: Make a product redundant by abandoning its function or by offering the same function by a radically different (e.g., digital) product or service. Which products are unnecessary? e.g. some companies have eliminated paper receipts, replacing them with electronic ones,

Rethink: Make product use more intensive. How can my products be used by more people? How can my products be used as a service? e.g. some companies are putting forward their product as a service so that it is hired instead of owned.

Reduce: Increase efficiency in product manufacture or use by consuming fewer natural resources and materials. How can I use fewer natural resources? e.g. to offer reduced packaging or to package greater quantities of goods in a package

Re-use: How many times the same product be used? Reuse of a product which is still in good condition and fulfils its original function (and it is not wasted) for the same purpose for which it was conceived. An example of reuse would be replacing disposable water bottles with reusable bottles (aluminium or other non-plastic) that include your organization's logo.

Repair: Repair and maintenance of defective products so it can be used with its original function. What needs to be repaired or maintained? In Repair Cafes, citizens can fix damaged products with the help of skilled volunteers

Refurbish: Restore an old product and bring it up to date (to specified quality level). Is there any old product that I can restore and use again?

Remanufacture: Use parts of a discarded product in a new product with the same function (and as-new-condition). Can I use any parts of an old product to build a new one?

Repurpose: Use a redundant product or its parts in a new product with a different function. Can I use any parts of an old product to build a new one with a different function? e.g. old furniture, dishes, and equipment can be donated to a charity that might provide them for low income families or refugees.

Recycle: Recover materials from waste to be reprocessed into new products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.

BENEFITS OF THE CIRCULAR ECONOMY

Make better use of finite resources. The circular economy concept is all about making better use of natural resources like forests, soil, water, air, metals and minerals.

Reduce emissions. About 45% of global greenhouse gas emissions come from product use and manufacturing, as well as food production. Circular economy strategies that reduce our use of resources can cut global greenhouse gas emissions by 39% (22.8 billion tons) and play a crucial role in averting the dangerous impacts of climate change.

Protect human health and biodiversity. Every year, more than 9 million deaths occur due to air, water and soil pollution. This pollution also threatens biodiversity. Working towards a circular economy helps protect human health and biodiversity in many ways, including by making better use of natural resources (e.g. protecting water and land), and by mitigating the climate crisis.

Boost economies. For example, a circular economy for plastics offers considerable economic benefits. Less plastic waste in the ocean would benefit industries like fishing and tourism, as plastic pollution currently leads to \$13 billion in costs and economic losses per year.

Create more and better jobs. Transitioning to a circular economy could create a net increase of 6 million jobs by 2030. Jobs may be lost in more linear businesses; however new jobs will be created in fields such as recycling, services like repair and rental, or in new enterprises that spring up to make innovative use of secondary materials.

CIRCULAR ECONOMY PRACTICE EXAMPLES:

A CIRCULAR TRAVEL SOLUTION

Cars are by far one of the most under-utilised resources in modern life. Empty car seats are the largest excess capacity in the transport industry, and this inefficiency has a negative impact on the environment and is expensive for car owners. In Denmark, GoMore's platform offers a service that enables drivers to invite people for a ride on an already planned journey. This increases the number of people in cars and reduces the number of cars on the streets, making car trips more efficient and better for the environment. It is a travel solution which is cheaper for both the car owner and the passenger.

RE-USING OLD BRICKS TO BUILD A GREENER FUTURE

The driving force behind the founding of the company "Gamle Mursten" ("Old Bricks") was the desire to prevent resources of natural bricks from being wasted. The old bricks are collected, cleaned with vibration technology, manually checked one by one and finally stacked by robots before being shipped to new sites. Saving more than 95% of the energy otherwise used to manufacture new bricks, this method of re-using old bricks is an example of perfect circular economy passing the resources of one generation on to a new one.

CO2 EMISSIONS SCOPES

WHAT IS Co2?

It is a Green House gas in the atmosphere made out of 1 atom of Carbon for two atoms of Oxygen.

CO₂ is generated from many activities. It is a chemical compound that is found in Earth's atmosphere as a gas. It is exhaled by animals and used by plants in a process called photosynthesis, so its existence is absolutely necessary for our survival, but when CO₂ is over produced it will cause weather pattern changes around the world. As CO₂ builds up in our atmosphere from burning fossil fuels, it has a warming effect.

EMISSION SCOPES

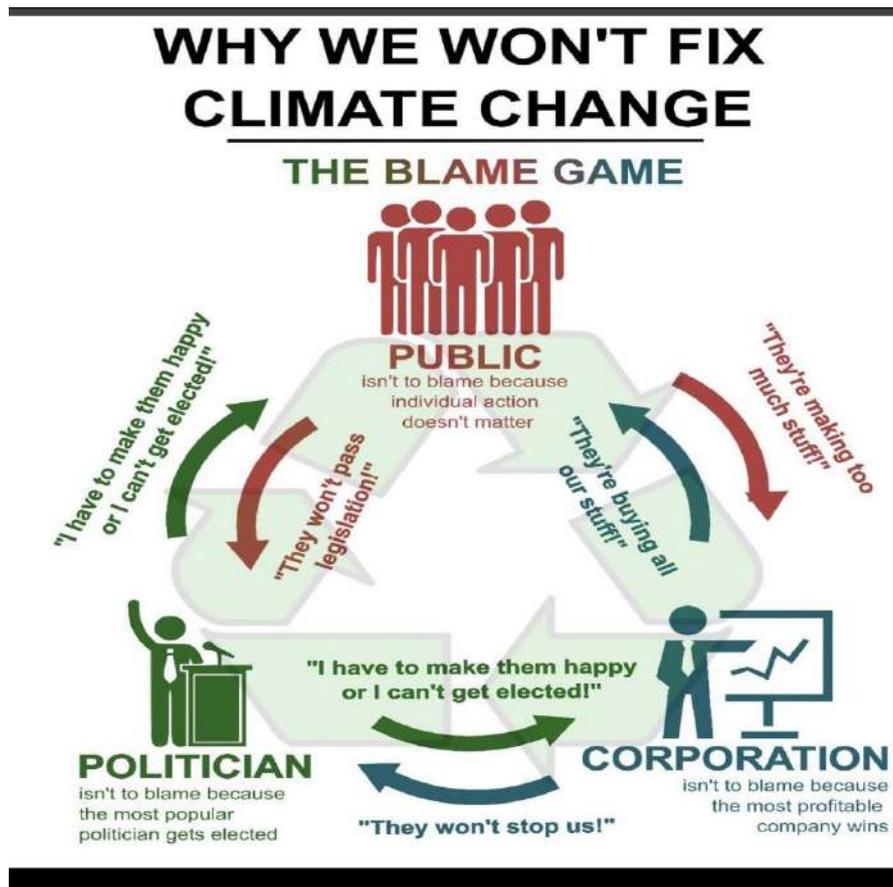
Scope 1: Direct emissions that result from activities within an organisation's control. This can include the fuel burnt in company vehicles, the natural gas used to heat buildings, or any direct emissions from owned manufacturing plants.

Scope 2: Indirect emissions from any electricity, heat or steam purchased and use. Although businesses are not directly in control of the emissions, by using energy they are indirectly responsible for the release of CO₂.

Scope 3: Any other indirect emissions from sources outside the organisation's direct control. Examples of Scope 3 emissions include purchased goods and services, use of sold goods, employee commuting and business travel, outsourced transportation, waste disposal and water consumption

STAKEHOLDER COLLABORATION IN BUILDING NEPAL'S GREEN ECONOMY

Sustainable development and green economies require a collaborative effort from the top down but also from the bottom up.



The blame game most countries are currently experiencing is the biggest cause of climate inaction at present.

Personal responsibility for Climate Change reminds us all, that every member of society has to power to change their own mindset and take climate action within their own lives and workplaces.

Education and training are the key component to ensure we change mindsets.

It needs to be supported by policy makers, government institutions, international agencies, and the private sector. Setting up systems and frameworks for collaboration between all parties, but also listening to student and community voices to fully understand the issues that are happening at local level.



FRAMEWORK FOR STAKEHOLDER COLLABORATION

As countries transition towards low carbon economies and reach for sustainable development, the economy and business must change the way they do things, in order to achieve competitive advantage and more importantly sustainability. Collaboration provides the mechanism and catalyst required to shift current business models and shape future models towards sustainability.

Our ability to meet the current and future demands that are required of commerce we need to understand what we require of our workforce and plan the upskilling, reskilling, and training of the talent that will help us achieve those needs including green skills.

Greater alignment with government policy and climate targets across all stakeholders will ensure that we will have greater effect, success, and future sustainability.

We hear time and time again: no single business, NGO or government can solve the environmental and social challenges our world faces. But how do you collaborate for business impact in a competitive environment?

Working in collaboration is now part and parcel for every forward-thinking business aiming to create lasting positive change in terms of sustainability. It's not always easy, but it can deliver far greater impact than any company acting alone.

STRATEGIES FOR COLLABORATION

Create mechanisms to channel the desire of governments, institutions, business leaders and citizens to do more in sustainability.

POINTS TO CONSIDER WHEN LOOKING TO COLLABORATE

1. Think are these collaborations of short, medium, or long term?
2. Formal or ad-hoc?
3. Apply trust
4. Respect
5. Willingness
6. Effective communication
7. Build relationships

STICK TO THE FOLLOWING POINTS:

- Be clear on the 'why' and get firm commitment
- Be bold in your ambition
- Create real dialogue and don't be afraid of the tension
- Adopt a principles-based approach
- Establish leadership and touch points across the whole group
- Be strong on governance
- Engage others, including civil society and government
- Celebrate success and make it mainstream

Collaboration is about taking collective risks and embracing collective entrepreneurship and innovative. It is possible to take a collective stance and support each other to be bolder and braver on the sustainability agenda. It is the commitment, trust and personal leadership of the group involved that will generate the successes.

COLLABORATIVE IDEAS ARE ENDLESS....

- Create action led groups to achieve a sustainability goal
- Develop networks of committed individuals with aims to
- Transition to a Low Carbon Economy
- Diversity & Inclusion

THE WORKER OF THE FUTURE

Develop strategies for skills development by using Occupational Standards (OS) to meet current and future skills needs

Occupational Standards are statements of the standards of performance an individual must achieve when carrying out the functions of an occupation in the workplace, together with specifications of the underpinning knowledge and skills.

[CLICK HERE TO ACCESS
TOOLKITS & LEAFLETS](#)

SOURCES

<https://climate.nasa.gov/evidence/>

<https://www.ipcc.ch/>

<https://climate.nasa.gov/effects/>

<https://unfccc.int/topics/resilience/resources/climate-related-risks-and-extreme-events>

[https://sdgs.un.org/sites/default/files/2022-07/SDG Good Practices 4-Page \(2\).pdf](https://sdgs.un.org/sites/default/files/2022-07/SDG_Good_Practices_4-Page_(2).pdf)

<https://www.undp.org/sdg-accelerator/business-and-sdgs>

<https://www.socialjustice.ie/article/sdg-14-life-below-water>

<https://assets.gov.ie/19344/32f9bdd2aae2464caae37760edd1da04.pdf>

<https://www.bccic.ca/poverty-reduction-in-brazil/>

<https://sdgs.un.org/goals>

<https://gsdrc.org/wp-content/uploads/2015/09/HDQ1232.pdf>

<https://www.weforum.org/agenda/2021/02/change-five-key-areas-circular-economy-sustainability>

<https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits>