جائزة الملك خالد

KING KHALID AWARD

Sustainability Award

Capacity Building

Environmental Workshop 2022

Beginner

Toolkit

Governance Workshop 2022 Beginner

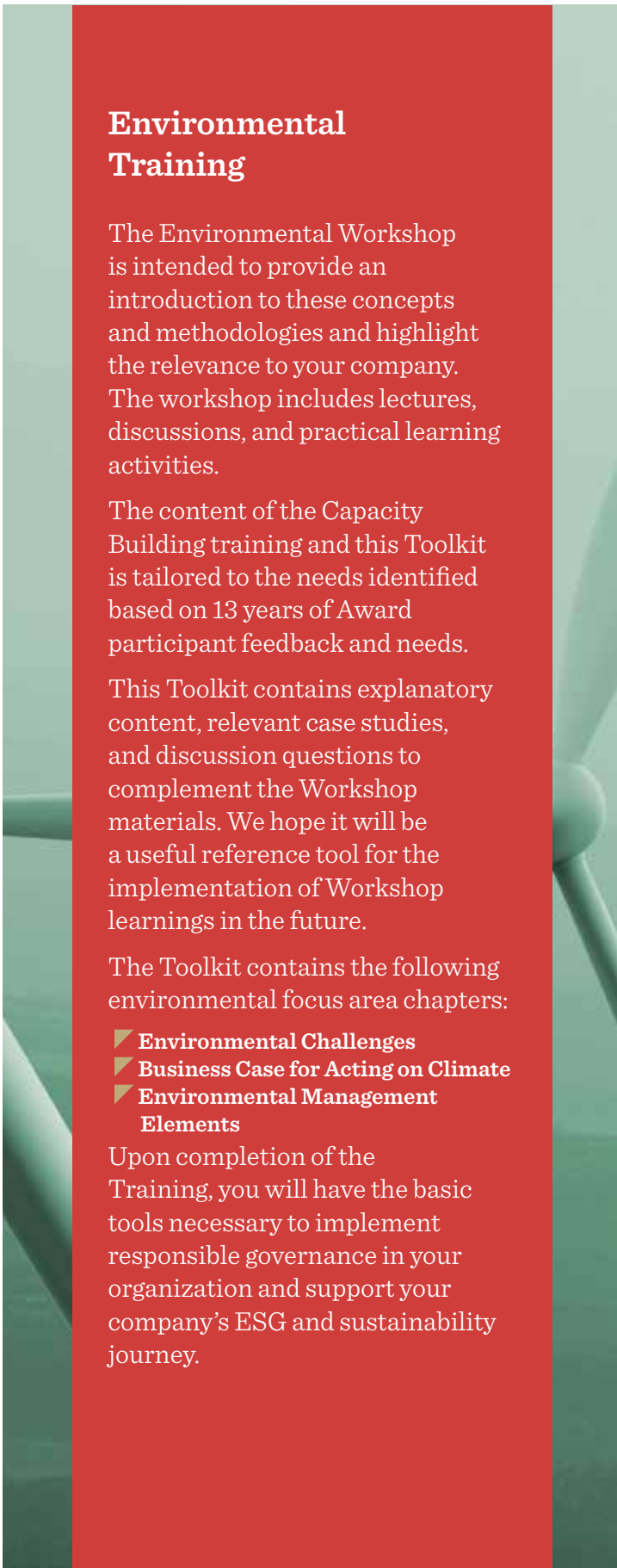
Contents

Letter to Participants

The King Khalid Foundation (KKF) is pleased to publish, in partnership with AccountAbility, this practical and insightful Sustainability Award Capacity Building Toolkit on Environmental, Social, and Governance (ESG) for companies in the Kingdom of Saudi Arabia.

The King Khalid Foundation continues to advance the sustainability agenda by collaborating to deliver impactful sustainability programs and support the growth of responsible business practices. The Foundation has worked and partnered with the corporate sector in the country for the past thirteen years. The Capacity Building Toolkit builds upon years of experience, feedback, questions, and concerns that KSA companies have shared with KKF during the past thirteen years and during each annual King Khalid Award process. The Toolkit supports the Capacity Building Program by outlining trends and challenges and providing specific sustainability solutions for companies throughout the Kingdom.

The Toolkit introduces the ESG sustainability in a broad sense, highlights its importance, its relevance, and how it impacts organizations both globally and in the Kingdom. It sets a foundation for a deeper discussion of selected governance themes that are material to companies in Saudi Arabia.



Environmental Training

The Environmental Workshop is intended to provide an introduction to these concepts and methodologies and highlight the relevance to your company. The workshop includes lectures, discussions, and practical learning activities.

The content of the Capacity Building training and this Toolkit is tailored to the needs identified based on 13 years of Award participant feedback and needs.

This Toolkit contains explanatory content, relevant case studies, and discussion questions to complement the Workshop materials. We hope it will be a useful reference tool for the implementation of Workshop learnings in the future.

The Toolkit contains the following environmental focus area chapters:

- **Environmental Challenges**
- **Business Case for Acting on Climate**
- **Environmental Management Elements**

Upon completion of the Training, you will have the basic tools necessary to implement responsible governance in your organization and support your company's ESG and sustainability journey.

Environmental Challenges

Introduction to Environmental Challenges

Environmental Challenges: Harmful effects of human activities on the biophysical environment.

Environmental challenges refer to the existence of crises in the environment in such a way that it can cause damage to humans and/or the environment. Major current environmental challenges include climate change, pollution, waste disposal, ocean acidification, ozone layer depletion, loss of biodiversity, environmental degradation, resource depletion and overpopulation. All these challenges are complex and interlinked, not only in themselves but also with social and economic challenges, such as community stability, health, and human survival.

Covering all environmental challenges in all of their complexities is impossible in the context of this Toolkit. We focus on a select number of critical topics that are among the most important related to the private sector's sphere and influence in Saudi Arabia. The chosen challenges are areas where business operations have a negative impact on environment if no proper action is taken. However, with proper strategies, commitments and actions, companies can turn the tide and leverage their power and influence for positive impact.

The **three main environmental challenges** that this Toolkit covers are:

- Climate change
- Biodiversity loss
- Natural resource depletion

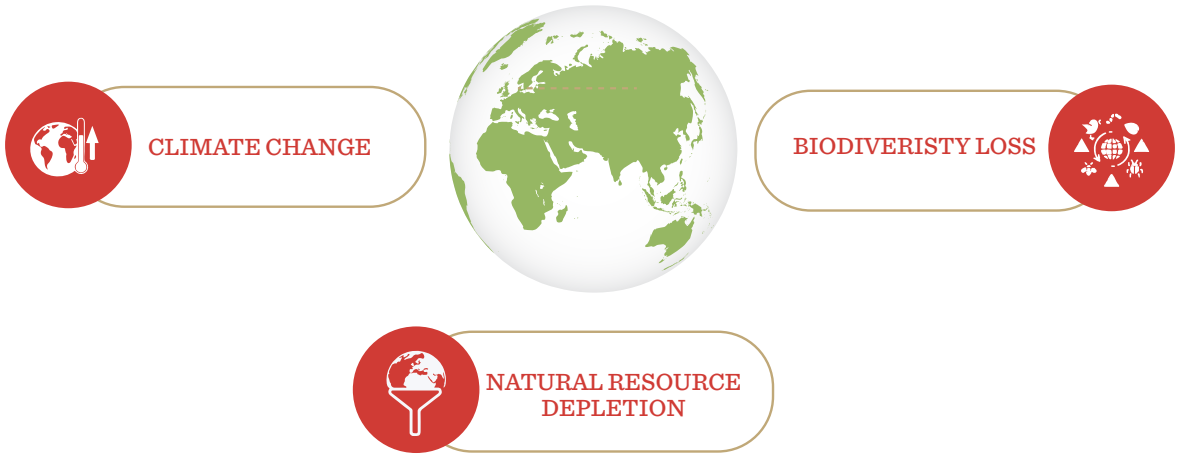


Figure 1. Three Environmental Challenges Covered in the Toolkit.

Climate Change

Climate Change: Long-term shifts in temperatures and weather patterns.

Climate change is perhaps the most critical environmental challenge affecting humankind. Climate change refers to major shifts in global temperature, wind patterns, precipitation, and other measures of climate that happen over several decades. These changes can be natural and happen through variations in the solar cycle. However, since the 1800s, human activities have been the main cause of climate change, mostly due to burning fossil fuels like coal, oil and gas.

Burning fossil fuels creates greenhouse gas (GHG) emissions that become like a blanket covering the Earth. This layer is trapping the sun's heat and warming the surface of the earth. The most well-known impact of climate change is global warming, which relates to rising maximal temperatures and rising minimal temperatures. There are also other impacts that climate change has, such as:

- more dangerous storms
- increasing heat waves
- increase in heavy rain
- more frequent and intense drought
- low water levels
- changes in seasons
- melting glaciers
- rising sea levels
- loss of biodiversity

Figure 2 demonstrates that the effects of climate change are complex and interconnected. The illustration is simplified for a purpose. More arrows and interrelations could be drawn. However, the aim of the figure is not to present a full picture of the effects but to show how all of the effects have also impact on business operations.

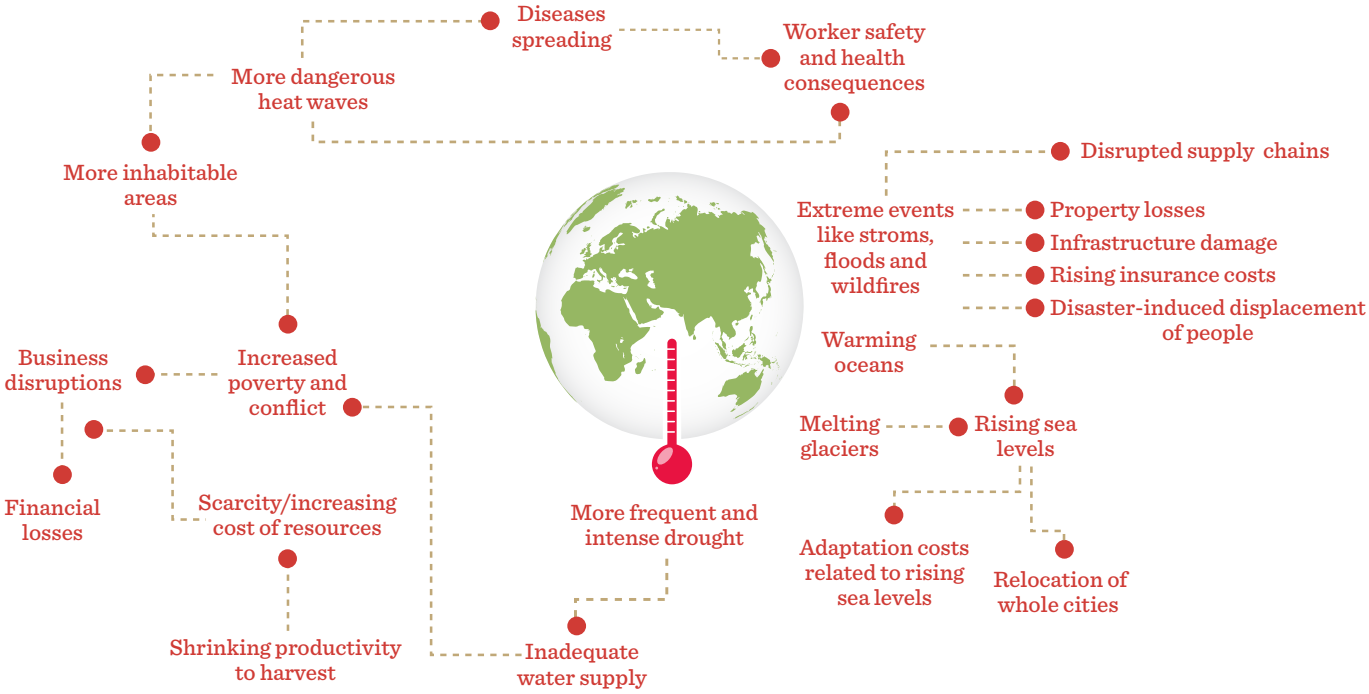


Figure 2. Business impacts of Climate Change.

How climate change affects business operations

Climate change is one of the most important challenges of our time. Its impacts are felt across the globe, and it affects people, nature, and the economy. Climate change is affecting business in far-reaching ways. Its impacts that relate to human health, water supply, agriculture, energy, transportation, and ecosystems—are also impacting business and may cause major business disruptions and financial losses. One of the critical topics is the **adverse effect on human health.**

The most known effect for Saudi Arabia is the increasing occurrence of **heat stress**, which can be fatal for people that must work outside in extreme temperatures. For example, a sustained "wet-bulb temperature" exceeding °35C is likely to be fatal even to healthy people, and even if the people have unlimited supplies of water.

Globally, another health impact is the **spread of diseases**. Rising temperatures and humidity can increase the insect population and the incidences of dengue fever and malaria. Also, other diseases, such as West Nile virus, cholera, and Lyme disease, are predicted to worsen as a result of higher temperatures and more extreme weather events.

High temperatures, caused by increased levels of methane and CO2 in the atmosphere, also lead to atmospheric pollution and **diseases caused by poor air quality**. These diseases include, for example, asthma and bronchitis, which affect negatively to workers' health.

There are also many other impacts affecting business, in addition to the health impacts. Extreme weather events, such as storms, floods, and wildfires, may lead to **property losses, infrastructure damage, disrupted supply chains, disaster-induces displacement of people, and rising insurance costs.**

One major effect of climate change is rising sea levels. According to a Cornell's study in 2017, sea level rise could lead to the displacement of 2 billion people, which is about %20 of world's population by 2100. Major mass migration and **relocation of whole cities** is expected even earlier with residents in coastal communities abandoning their homes. Severe **adaptation costs** will in one way or another also affect the business sector.

One critical climate change related challenge is water supply, and climate change has a negative impact on it. When waters run dry, people cannot get enough drinking water, or water to feed crops. The impacts include **shrinking productively to harvest**, and **scarcity and decreasing availability for resources. Business disruptions and supply chain challenges** are among the severe consequences.

Another supply chain related challenge relates to the fact that a large part of the world's commercially recoverable oil and gas reserves are in danger of high or extreme risks from severe storms and floods, extreme temperatures, and rising sea levels. There is a risk that climate change related consequences pose severe **disruptions to the supply** and **distribution of resources.**

Insight: Saudi Arabia perspective

More than a third of Saudi Arabia's land area is desert. Rising temperatures are threatening country's water supplies, can turn heat waves deadly, and could make large parts of the country and the Gulf region uninhabitable. Saudi Arabia lacks permanent water resources and is depending on groundwater and seawater desalination. Climate change poses large risks to country's water security.

Private Sector's Contribution to Climate Change

The private sector is a critical player in the climate action space. Since 1988, a hundred coal and oil producing companies are responsible for about 70% of global GHG emissions. Another big contributor for high emissions is the key forest risk commodities group, consisting of timber, cattle, soy, coffee, palm oil, mineral ores, and rubber. About 10-15% of emissions comes from this group, which is known for being a driver of deforestation.

Insight: Deforestation

When forests are cut down, much of stored carbon is released into the atmosphere again as CO2. This is how deforestation and forest degradation contribute to global warming.

Figure 3 shows the emissions from 2018. Worldwide, the use of energy represents the largest source of GHG emissions from human activities. About three fourth of global GHG emissions are linked to burning fossil fuels for energy to be used for heating, electricity, transport, and industry.

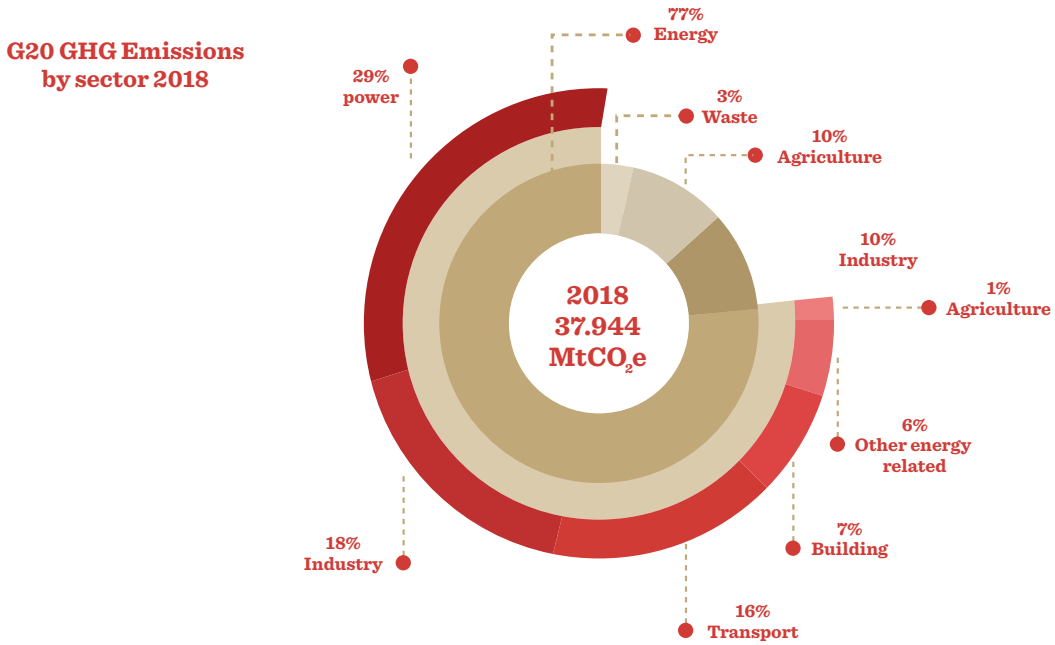


Figure 3. Global GHG Emissions by Sector.

While climate change has been occurring since the Industrial Revolution, it is now impacting the planet faster than scientists originally thought. Many effects are unavoidable and will impact the world's most vulnerable populations the most. By limiting the planet›s warming to °1.5C, by 2100, the hope is to avoid severe climate disruptions that could exacerbate hunger, conflict, and drought worldwide.

Biodiversity Loss

Biodiversity: the biological variety and variability of life on Earth.

Biodiversity is the most vital feature of our planet. It covers every living organism and ecosystem that makes up the environment. Every living organism on the planet plays an important role in the maintenance of our world. With the global warming, pollution and deforestation challenges, biodiversity is in danger. Currently billions of species have gone or will extinct all over the world.

Each year, between 200 to 2,000 species go extinct. We witness an average 68% decrease in monitored species populations since 1970. Figure 4 shows that if we continue "Business as Usual", there are drastic consequences. We need to increase restoration and conservation efforts to maintain biodiversity, but also transform our production and consumption systems to more sustainable ones to be able to restore damaged or destroyed ecosystems.

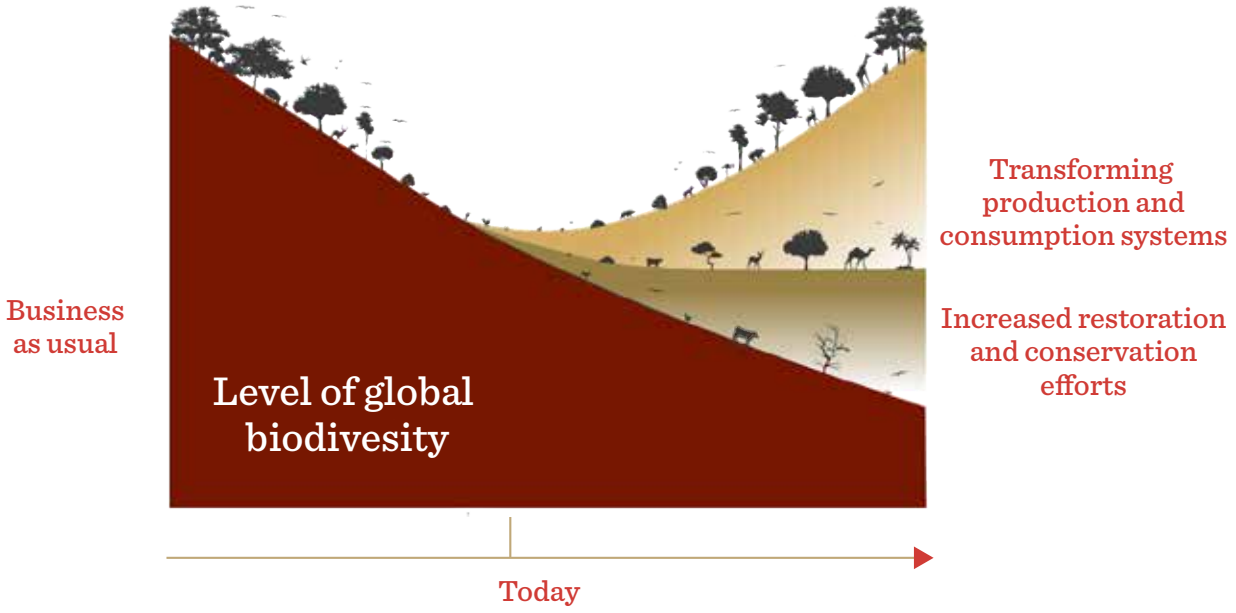


Figure 4. Level of Global Biodiversity.

Private Sector's Contribution to Biodiversity Loss

The main direct cause of biodiversity loss is related to large-scale food production, which is estimated to be linked to 30% of biodiversity decline globally. A significant reason for biodiversity loss is also overexploitation (overfishing and overharvesting) for things like food and timber. This source accounts for about 20% of the loss. The third driver is climate change. In addition to being a direct driver of biodiversity loss, climate change also worsens the other drivers. For example, it increases the spread of non-native invasive species which has negative effect on biodiversity.

Pollution refers to the addition of harmful nutrients or substances to an ecosystem. In a polluted area the quality of food, water, or other habitat resources declines, and this can sometimes force some species to move away or perish.

Business operations impact biodiversity especially through the airborne, waterborne, and soil-borne pollution that it produces. Figure 5 shows how a Seafood Value Chain impacts biodiversity. When a company's operations affect biodiversity negatively, the business can face significant regulatory, financial, operational, and reputational risks. Businesses should act to understand their biodiversity impact and related risks and opportunities.

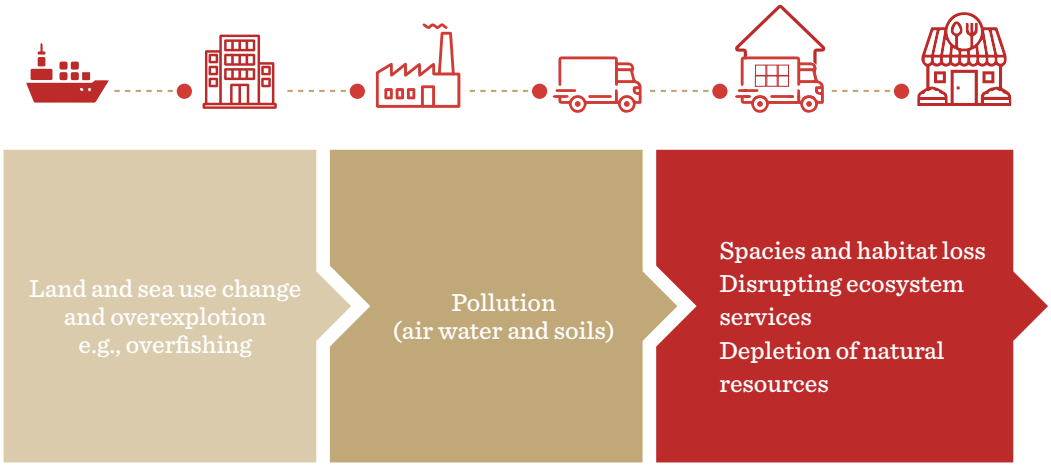


Figure 5. Seafood Value Chain Impacts.

Discussion Prompt: Public sector funds are not enough to reverse biodiversity loss. What is needed is strong political will and coordinated action by the private sector, aided by regulators and governments to bring solutions to scale.

What kind of actions could the private sector take to protect biodiversity in Saudi Arabia? Have you heard of any Saudi or global companies that have taken action to protect biodiversity?

Natural Resource Depletion

Natural resources: materials from the Earth that are used to support life and meet people's needs. Any natural substance that humans use and that is in existence without human actions can be considered a natural resource.

Natural resources can either be **renewable** (trees, wind, water etc.) **or non-renewable** (fossil fuels, minerals, soil etc.).

Resource depletion: the consumption of a resource faster than it can be replenished.

Natural resources are things or materials that people use from the Earth. They exist without human actions. There are two types of natural resources. The first are **renewable natural** resources. They are called renewable because they are able grow again or never run out. Examples of these are wind, sun, plants, animals, and water.

The second group is called **non-renewable natural resources**. These resources are things that can run out or be used up. They typically come from the ground. Examples are fossil fuels, minerals, and soil.

Use of either of these forms of resources beyond their rate of replacement is considered to be **resource depletion.**

Natural resource depletion happens all the time. There are several types of resource **depletion, the most known types being:**

- aquifer depletion
- deforestation
- mining for fossil fuels and minerals
- pollution or contamination of resources
- slash-and-burn agricultural practices
- soil erosion
- overconsumption and waste, excessive or unnecessary use of resources

The demand for resources by human population has become so big that essential bio spheric systems have already been impacted and impaired enormously. The **use** of **natural resources** has **more than tripled** since 1970.

Due to the increasing global population, the levels of natural resource depletion are continuously increasing. Subsequently, the **world's "eco-footprint**" is already estimated to be **1.7 times** the ability of the Earth to sustainably provide everyone with enough resources that meet the levels of their consumption (Figure 6). Overpopulation is linked to resource depletion. With 7 billion people on the planet, the demand on Earth's resources continues to increase. If we continue "Business as Usual", **two Earths will be required to support humanity by 2030.**

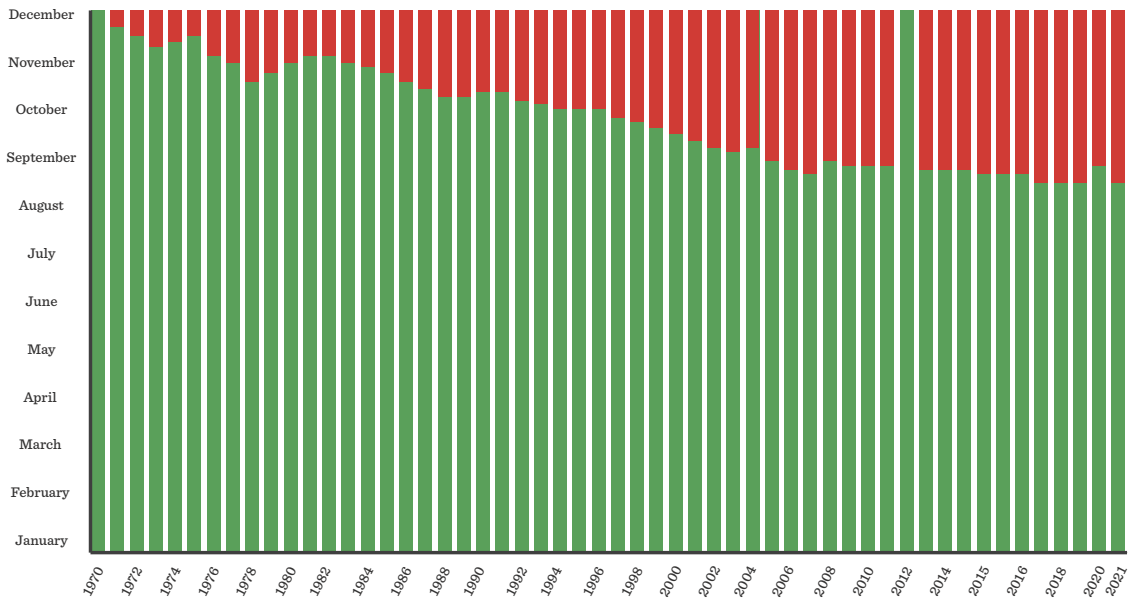


Figure 6. Earth Overshoot Day in 1970-2021.

Earth Overshoot Day (EOD) is a calculated estimation that marks the **date** when **humanity's demand** for **ecological resources** and **services** in a given year **exceeds what Earth can regenerate** in that year. In **2021**, the Overshoot Day was **July 29th**.

Figure 7 below shows the dates on which **Earth Overshoot Day** would fall **if all of humanity consumed like the people in that specific country.** For example, if everyone on Earth consumed like an average Saudi person, we would have run out of resources already by April 27th 2022, and would be without resources for the rest of the year.

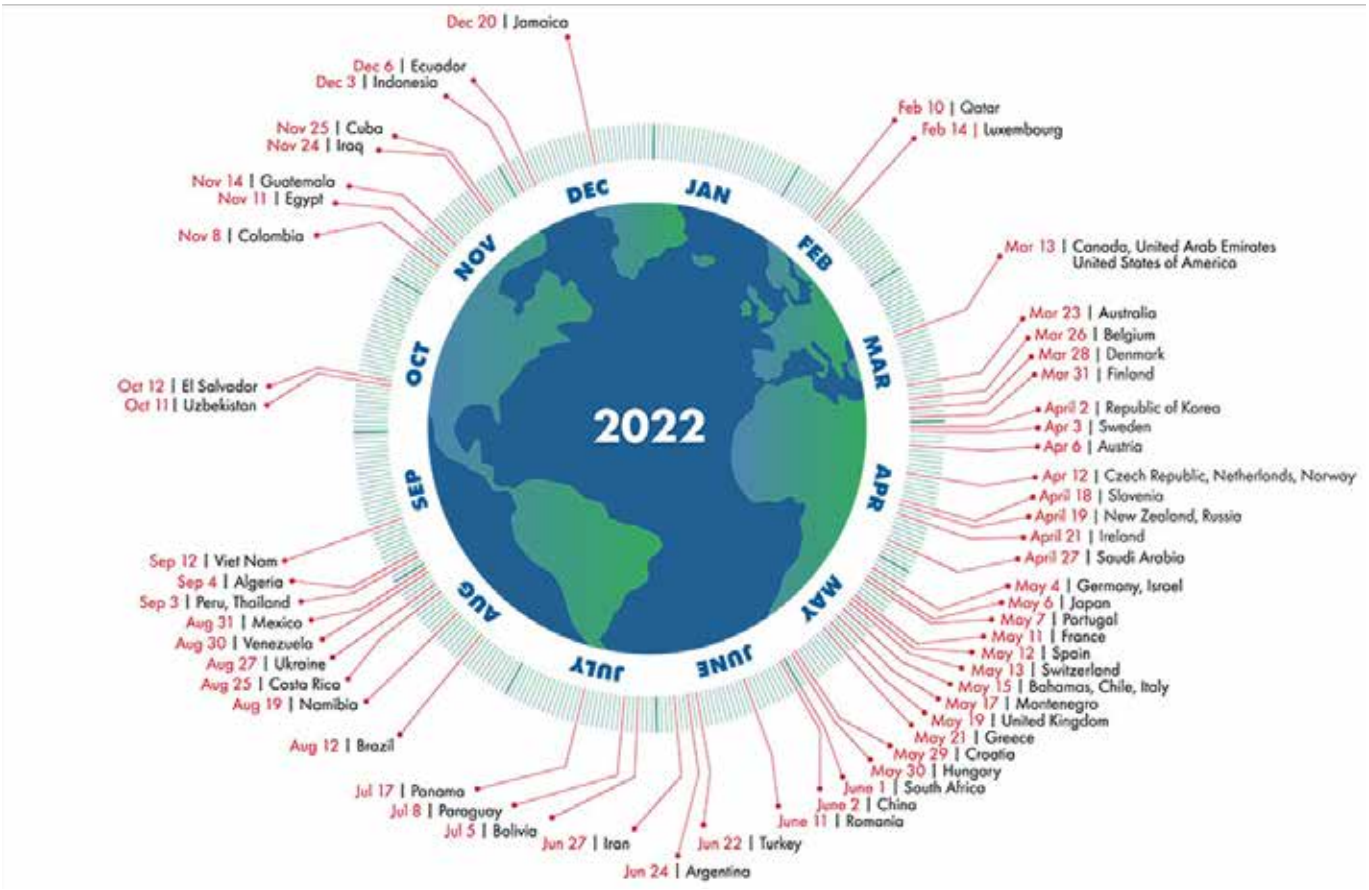


Figure 7. Earth Overshoot Day by Countries.

Private Sector's Reliance on Natural Resources

Nearly every business contributes to natural resource depletion via operations and supply chains, some more than others. On the world stage, natural resources drive economic growth. The use of natural resources is vital in industries such as energy production, manufacturing, and construction. Some natural resources are ingredients in other highly used materials by industries. Natural resources provide the foundation to the goods, services and infrastructure companies are dependent on.

Resources provide the foundation to the goods, services and infrastructure companies are dependent on

- Biomass (wood, crops, including food, fuel, feedstock, and plant-based materials)
- Fossil Fuels (coal, gas and oil)
- Metals (iron, aluminum, copper, etc.)
- Non-metallic minerals (including sand, gravel and limestone)
- Land
- Water

Figure 8. Natural Resources and Business.

Natural resources are at the beginning of every supply chain. They are essential to the production of energy, consumer goods and food. For example, all industries have a certain water footprint. Around 70% of the world's freshwater is used for agriculture but also for example fashion industry is highly dependent on water.

Ikea and wood :

Ikea, a European furniture retail company, is one of the most well-known furniture companies in the world and recognized as one of the leaders in sustainability. The company is working to find **more sustainable solutions to its aggressive consumption of natural resources.**

A large part of the furniture is made of wood because wooden furniture looks elegant, is relatively strong and durable, and is affordable to make. Currently, Ikea is the world's **biggest consumer of wood and consumes 1% of the total** number in the world.

Ikea puts **responsible forest management** at the core of its business and works to **eliminate forest degradation** and deforestation. Ikea also recently announced that **by 2030, 100% of its products will consist of recycled material.**

Coca Cola and water

Coca Cola is the world's largest beverage company and **big water user**. About **one-third of the Coca-Cola system's bottling plants** operate in water-stressed areas, and more than 73% of its global water footprint is used to grow agricultural ingredients like cane sugar, oranges, and apples.

Currently, Coca Cola **manages to replenish all the water it uses**, by reducing, reusing, recycling and locally replenishing the water the company uses. Coca Cola has a holistic strategy to achieve water security for its own business, communities, and nature everywhere it operates, sources agricultural ingredients for its beverages and touches people's lives by 2030.

Apple and minerals

A growing demand for electronic devices is putting pressure on the planet. Mobile phones and other electronic devices could not exist without mineral commodities. More than one-half of all components in a mobile device—including its electronics, battery, and speakers—are made from mined and semi-processed materials.

The valuable **metals and minerals** that are used to manufacture cell phones are **a finite resource**. According to recent estimates, we will run out of some rare earths in the next 20-50 years

Decreasing the environmental impact of cell phones necessitates manufacturers to **increase product lifetimes and make recycling easier.**

Recently, Apple introduced **certified recycled gold**, and more than **doubled the use** of **recycled tungsten, rare earth elements**, and cobalt in its products. Almost 20% of all materials used in Apple products in 2021 were recycled. This is the highest-ever use of recycled content.

Insight: Examples of Natural Resources Depletion

Deforestation

Almost 18 million acres of forest cover are destroyed annually. The removal of trees without sufficient reforestation results in biodiversity loss, habitat damage, and aridity. Other effects of deforestation include soil erosion, loss of biodiversity, increased flooding, and drought. Deforestation also decreases bio sequestration of atmospheric carbon dioxide, which in turn increases negative feedback cycles contributing to global warming.

Water shortages and desertification

Deforestation of forests means cutting down a large portion of trees. Deforestation is one of major causes of water resource depletion. Deforestation can lead to desertification and water scarcity as a result of reduced humidity, cloud formation, and rain.

Approximately one billion people globally lack access to clean water because of the effects of deforestation and contamination of water sources and groundwater. Water shortage further often leads food insecurity.

Depletion of minerals

Our current system is increasingly exploiting minerals such as phosphorus, copper, and zinc to sustain the seven billion people on Earth. At current consumption levels, we can run out of phosphorus – an essential element for plant growth, in around 80 years.

Extinction of Species

Human practices such as overfishing, together with pollution, have led to a drastic reduction in the number of marine species such as the tuna fish.

Companies do not operate in isolation of the natural environment – they rely on natural resources and services. If there are no natural resources, then certainly there is no business. Businesses must know their impact on natural resource depletion and create strategies to conserve resources.

Addressing Environmental Issues

Knowing the range of environmental challenges and how business contributes to those challenges, should motivate us to do things differently and start thinking innovative solutions and ambitious environmental goals. As climate change and other environmental challenges take center stage and impact all areas of our lives, responsible companies are taking initiative to reduce their environmental impact. Businesses can complement governments' efforts by implementing environmental strategies, policies, and programs to address their own operations and set examples for others in their industries.

Figure 9 demonstrates some examples of policies, programs, and commitments that companies can take to address climate change, biodiversity loss and natural resource constraints.

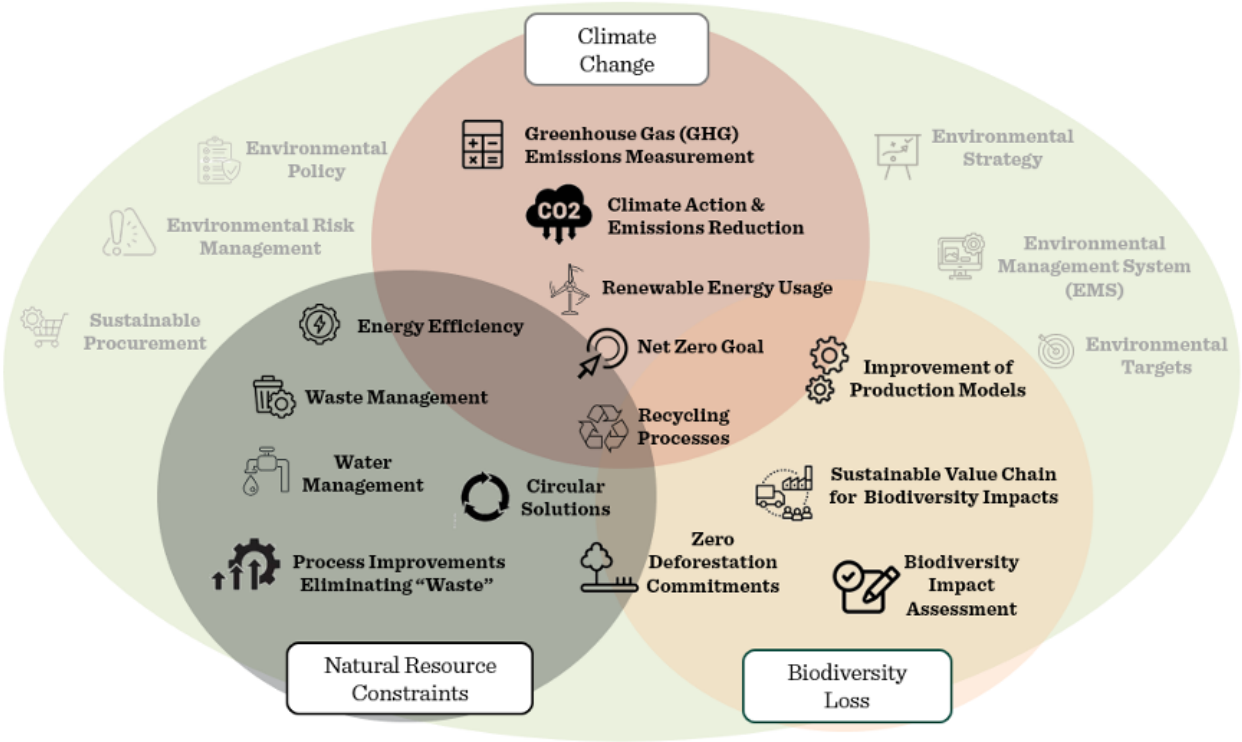


Figure 9. How Companies Address Environmental Issues.

Addressing Sector-specific Environmental Issues

Not all environmental challenges matter equally for every organization. It is important that a company ensures that the environmental topics are being prioritized, and that timely action is taken in regard to those topics that are seen as the most important, in other words most "material".

Some challenges are very sector-specific, such as water for food and beverage industry and e-waste for electronics industry.

To understand which topics matter most, the organization will need to undertake a Materiality Assessment. Materiality relates to identifying and prioritizing the most relevant sustainability topics for the organization. A material issue is a topic that will influence and impact the assessments, decisions, actions, and performance of an organization and/or its stakeholders in the short, medium and/or long term (Source: AA1000 AccountAbility Principles, 2018).

Figures 10 and 11 showcase two different companies and their most material topics. Environmental topics are circled in red. For Nestle, which is a food and beverage company, product packaging and plastic, and bottled water and water stewardship, are among the most material topics. For Santander, which is a global bank, ESG products and services (that would refer, for example, to green mortgages and climate finance) are an example of a more unique sector-specific material topic.

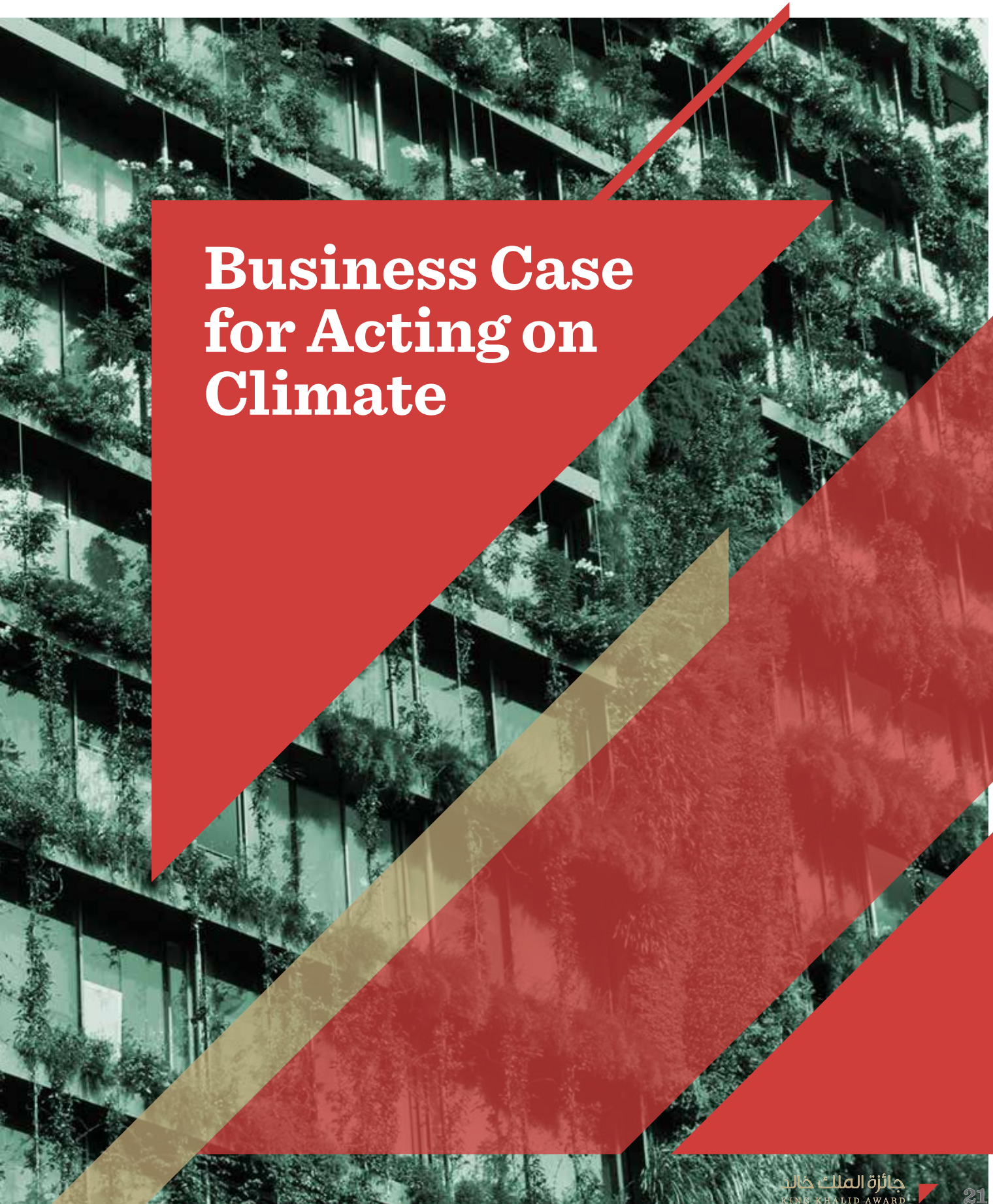
Discussion Prompt: What are some of the sector-specific environmental challenges that your company/industry is addressing? What are some of the environmental challenges that all sectors share?

Santander

Figure 10. Santander's Most Material Environmental Issues.

Nestlé

Figure 11. Nestle's Most Material Environmental Issues.



Business Case for Acting on Climate

Why Should a Business Act on Climate?

Extreme weather disasters, like severe storms, floods and droughts, are more common than before. **The impacts of climate change impose significant costs on companies. Climate threatens business operations, supply and distribution chains, and access to energy and water**. The severe weather disasters can also prevent employees from arriving to work and customers from buying products and services.

Climate change presents a series of different **risks to businesses** all over the world:

- **Immediate threats** from the **physical environment** such as hurricanes, flooding, drought, or wildfires can all **cause physical damage** to **people, property,** and **business operations.**
- Risks that **arise from changes** in policy and **new technologies** such as the growth of renewable energy can leave **companies** with **stranded assets.**
- Risks **arising** from a **failure** to **mitigate, adapt** to, **disclose,** or **comply** with **changing legal** and **regulatory expectations** can lead to **increased costs.**

Creating Impact Globally & Locally

When your company decides to act on climate, it does not only address various risks and create competitive advantage. Your company is also contributing to a better world and helping Saudi Arabia to reach its national goals.

By aligning your environmental strategy with the United Nations Sustainable Development Goals (SDGs), you can turn global environmental challenges into business opportunities while contributing to a more sustainable planet. The SDGs provide a strategic framework for businesses to track performance, set goals, and communicate with various stakeholders. The goals also provide opportunities for shared value creation.

By aligning your environmental ambitions with Saudi frameworks and initiatives such as Vision 2030, Saudi Green Initiative, and Saudi Arabia's Net Zero Target 2060, your company can create local impact and help the country to reach its goals.

Figure 12. Creating Global and Local Impact.

Discussion Prompt: Saudi Arabia aims for 50% renewable energy by 2030. In addition, the country aims to cut its GHG emissions to Net Zero by 2060.

In what ways could Saudi companies contribute to these national goals?

Spotlight: Saudi Green Initiative

The Saudi Green Initiative (SGI) brings together environmental protection, energy transformation and sustainability programs to work towards three overarching targets to achieve a common goal of a green future.

SGI oversees all of Saudi Arabia's work to combat climate change, working collaboratively with government ministries, private sector entities, and foreign governments to bring together environmental efforts and rapidly scale climate action.

Three overarching targets:

- Reducing Emissions - Reduce carbon emissions by more than 278 mtpa by 2030
- Greening Saudi - Plant 10 billion trees across Saudi Arabia
- Protecting Land and Sea - Raise protected areas to more than %30 of total marine and terrestrial area

In a whole-of-society approach, SGI works with entities and organizations across the Kingdom to amplify their existing climate actions and create opportunities for new initiatives. SGI also bridges the gap between public and private sustainability efforts, identifying opportunities for collaboration and innovation.

Benefits of Acting on Climate

By implementing actions to address climate change, companies can gain benefits, such as:

- Getting Ahead of Regulation and Policy Changes
- Catalyzing Innovation Planet and Business
- Supply Chain Resiliency
- Strengthened Reputation
- Long-term Financial Resilience
- Decreased Operating Expenses
- Increased Confidence of Investors and Other Stakeholders
- Improved Medium-to-Long-Term Profitability
- Better Risk Management

Environmental Management Elements

Environmental Management

Environmental Management includes policies, practices, metrics, and targets to manage a company's environmental performance and impact.

The role of environmental management for companies is two-fold: to protect the environment from the impacts of business operations and to protect your company from non-compliance fines and penalties, and bad business reputation.

Environmental management is good for business through, for example, cost savings. When a company spends less money on energy, water, and raw materials, it can save a significant amount of money. Environmental management practices also enhance company reputation because customers are more likely to support a company that pays attention to its environmental impact.

The elements of Environmental Management that this Toolkit covers are:

- Emissions
- Energy
- Materials & Waste
- Water
- Nature, Ecosystems & Biodiversity

When your company takes actions to tackle climate change and protect the environment through developing and implementing environmental management practices, it is important that you avoid greenwashing at all costs. Greenwashing refers to the act of portraying a company's product or services as environmentally friendly only for marketing purposes. A company that spends more time and money on marketing itself as "environmentally friendly" than on truly decreasing its environmental impact, can be accused of greenwashing.

A classic example of greenwashing is when Volkswagen admitted to cheating emissions tests by fitting various vehicles with a "defect" device, with software which could detect when it was undergoing an emissions test and altering the performance to reduce the emissions level. This was going on while to the public the company was advertising the low-emissions and eco-friendly features of its vehicles in marketing campaigns. In actuality, these engines were emitting up to 40 times the allowed limit for nitrogen oxide pollutants.

Emissions:

Greenhouse Gas (GHG) emissions:
any heat-trapping gas (e.g., carbon dioxide and methane) emitted from company›s operations. Mostly, this is carbon dioxide from the burning of fossil fuels, but also includes methane and nitrous oxide from agriculture and waste.

A major reason why a company needs to measure its GHG emissions is to facilitate the management and reduction of those emissions. Determining GHG emissions helps to identify unnecessary energy usage or other inefficiencies. When you know the origin of the emissions, it is easy to set reduction targets. Complete and accurate GHG emissions disclosures also provide greater clarity to investors and other stakeholders interested in knowing how much your company contributes to climate change.

Figure 13. Greenhouse Gas Emissions.

GHG emissions are categorized into three groups or 'Scopes' by the most widely used international accounting tool, the GHG Protocol.

Scope 1

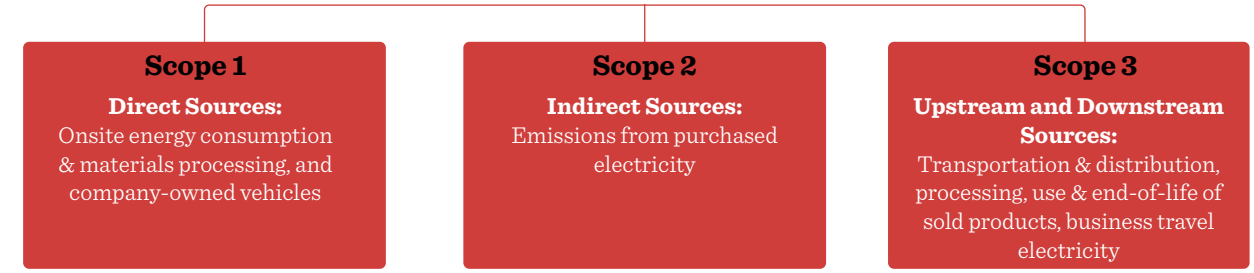
covers direct emissions from owned or controlled sources (e.g., fuel combustion, company vehicles)

Scope 2

covers indirect emissions from the generation of purchased electricity, steam, heating, and cooling consumed by the company

Scope 3

includes all other indirect emissions that occur in a company's value chain (e.g., business travel, waste disposal, employee commuting, use of sold products, transportation, and distribution)



- Energy Conservation Measures, Equipment Upgrades and Efficiency Opportunities, such as:
  - Building Management System
  - Low-flow faucets
  - Building sealing
  - Thermostat programming
  - Air leakage sealing
  - Ductwork insulation
  - LED lighting
  - Lighting controls/ sensors
  - Efficient appliances
  - Electrify gas and oil powered equipment
- Switch to fully electric or hybrid company vehicles

- Conduct regular energy audits
- Install on-site renewable energy (e.g., solar panels)
- Initiate Employee Engagement and Incentive Programs, such as:
  - Lighting usage
  - Thermostat and temperature management
  - Water usage
  - Computer power save mode

- Greater reliance on virtual meetings
- Criteria for in-person meeting travel requirements
- Incentivize employee commuting via public transportation, carpools, walking & cycling
- Improve the energy efficiency of products
- Support suppliers in implementing reduction initiatives
- Develop sustainable procurement policies and strategies

Figure 14. Scope 1, 2 and 3 Categories.

Your organization should calculate its emissions to:

- Monitor and manage your emissions
- Identify ways to reduce emissions and set ambitious targets
- Align with Vision 2030 goal of Net Zero by 2060

Steps to measure your organization's emissions include:

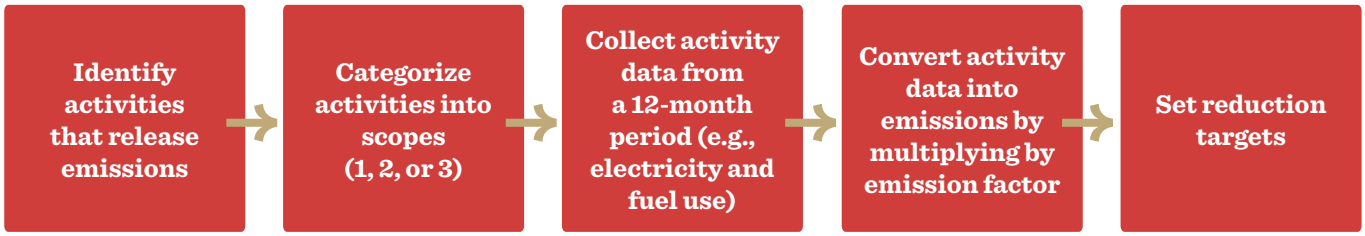


Figure 15. Steps to Measure Organization's Emissions.

The most common approach to calculate GHG emissions is to use recognized emission factors to known activity data from the company (See Figure 15). Activity data is information used to calculate GHG emissions from combustion or other processes. For example, an activity data could be liters of fuel consumed by your company vehicles. Most activity data is easy to find, for example, from invoices, bills, and receipts.

An emission factor is a representative value that attempts to relate the quantity of GHG emissions released to the atmosphere with a specific activity. When you multiply the activity data by an emission factor, you determine your GHG emissions.

Several different tools and templates exist that help to calculate your company's GHG emissions. A well-known guidance is the GHG Emissions Calculation Tool by the Greenhouse Gas Protocol.

Activity Data x Emission Factor =GHG Emissions

Figure 15. Calculating GHG Emissions.

Insight: Scope 3 emissions can account for up to 90% of a company's environmental impact.

There are 15 different categories of Scope 3:

- Purchased goods and services
- Capital goods
- Fuel and energy-related activities
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased assets
- Downstream transport and distribution
- Processing of sold products
- Use of sold products
- End-of-life treatment of sold products
- Downstream leased assets
- Franchises
- Investments

Measuring and managing Scope 3 emissions is challenging given that Scope 3 data collection is often reliant on a vast array of stakeholders, many of whom may not be keeping their own data or calculating a footprint. Moreover, complex global supply chains often lack transparency, making it hard to identify where emissions happen and receiving data. The problem of double counting, which refers to a situation where two parties claim the same carbon removal or emission reduction, is also frequent.

Scope 3 is not just about reducing the impact of one organization. It is about contributing to a global shift to a lower carbon economy. Targeting value chain emissions provides the opportunity and the motivation for global collaboration to reduce emissions and meet targets.

The actions taken across international value chains will contribute to a "cascading" of positive impacts across geographies and industries.

Emissions: How to Reduce

Many organizations have implemented GHG emission reduction strategies, such as cutting energy consumption, and replacing fossil fuels with cleaner alternatives like renewable energy. Organizations can also reduce emissions by using appliances and machinery with higher energy efficiency rates or switching their company cars to hybrid or electric vehicles.

There are many actions your organization can take to reduce Scope 3 emissions. The list below includes some examples.

- Engage suppliers and assist them to implement reduction initiatives (e.g., through capacity building)
- Develop sustainable procurement policies and strategies
- Support walking and cycling to work schemes for employees
- Replace business travels by airplane with train rides or move to online meetings
- Improve the energy efficiency of products developed
- Use the Corporate Value Chain (Scope 3) Standard methodology to account for and report emissions

Case Study:
Microsoft

- Goal to become Carbon negative by 2030
- Goal to have 100% renewable energy supply by 2025
- Aiming to electrify global campus operations fleet by 2030
- Pursues environmental certifications (ILFI Zero Carbon and LEED Platinum)
- Implements internal carbon tax, which is a tool used to identify lower-carbon building materials and track carbon emissions together with traditional financial costs when making construction decisions

Case Study:
Saud Aramco

- Goal to become Net Zero by 2050
- Implements a GHG emission management program
- Recycles carbon to produce stronger concrete
- Invests in carbon capture, utilization, and storage
- Promotes energy efficiency
- Adopts a circular carbon economy approach, which is a closed loop system involving 4Rs: reduce, reuse, recycle, and remove

Energy

Energy Use:
power from energy resources used by a company and its value chain to provide light and heat or to work machines used

Monitoring energy consumption allows companies to understand and optimize energy usage. An active approach to monitoring energy usage can help reduce energy use through early detection of possible discrepancies in the operation or ongoing life cycle of a machine. Energy is also one of the largest controllable overheads in office buildings which means there are many opportunities to save costs.

Lowering energy consumption not only reduces costs but also improves company's long-term performance. The reductions in energy use benefits the environment, which in turn also enhances corporate reputation.

Average Office Building Electricity Consumption

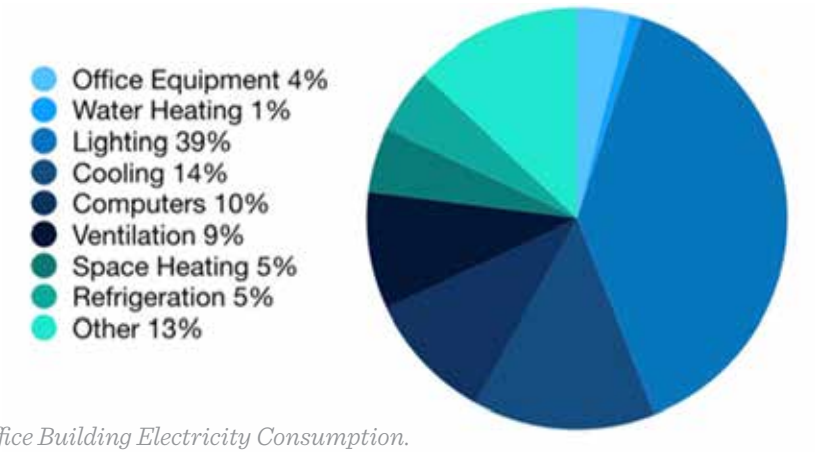


Figure 16. Average Office Building Electricity Consumption.

There are many actions your company can take to reduce the environmental impacts of your energy use. Energy efficiency refers to using less energy to get the same job done, and same time avoiding expensive energy bills and unnecessary pollution. Many products, buildings, and industrial facilities consume much more energy than is needed. Finding energy-efficient alternatives for machinery and appliances is vital when reducing energy use. Other examples of energy reduction strategies include integrating renewable energy sources into your energy mix (e.g., solar panels), and working towards energy efficient certifications and frameworks (e.g., LEED, ISO 50001).

Insight: Energy management systems can help cut operating costs. Energy can represent 25% of all operating costs in an office building.

Case Study:
Siemens

SIEMENS

- Goal to have 100% renewable energy by 2030
- Aims to have 100% electric vehicles by 2030
- Already invested €65 million in energy efficient projects
- All Siemens production facilities and buildings worldwide aim to achieve a net zero-carbon footprint by 2030

Case Study:
STC

stc

- 11.4% decrease in electricity consumption since 2017 due reduction efforts
- New data centers provide energy efficiencies of 30%
- Energy systems being developed and rolled out include renewable power generation (solar) and energy efficient cooling systems

Discussion Prompt: What do you think uses the most energy in your company? Does your company actively try to find energy-efficient alternatives? What are some of the examples of actions that your company has implemented to save energy?

Materials and Waste

Measurement is important to every component of a waste reduction program. This concerns not only waste generated but also waste prevention, collection, and recycling. Establishing strong waste management practices can lead to the availability of valuable materials to reuse. This leads to cost savings while potentially creating new business opportunities. Reducing, reusing, and recycling your waste is important for the environment, but it can also be profitable for your company.

Waste:

unused and rejected materials that are seen as worthless or unwanted by a company and its value chain.

Insight: Saudi Arabia produces 50 million tons of waste per year – and 95% of that ends up in landfills, polluting the environment and releasing GHG emissions into the atmosphere.

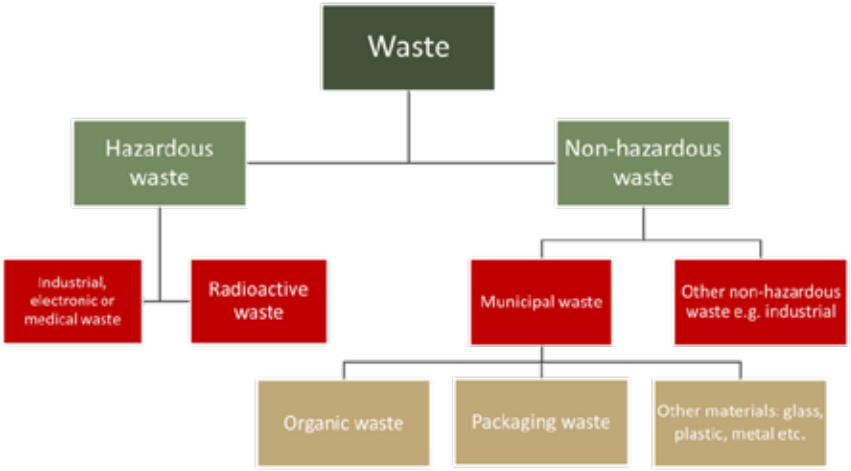


Figure 17. What is Waste?

How to Minimize Waste:

1. Collect waste data
2. Comply with waste legislation
3. Identify ways to reduce waste
4. Set reuse and recycling targets
5. Adopt circular economy solutions

Examples of materials and waste reduction strategies include creating a formal waste management strategy, increasing reuse and recycling practices, adopting circular economy approaches (e.g., new technologies), and educating staff on good waste management practices.

Insight: In a circular economy, we eliminate waste and pollution, circulate products and materials, and regenerate nature. Looking beyond the current take-make-dispose extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. The circular economy is based on three principles, driven by design:

- Eliminate waste and pollution
- Circulate products and materials (at their highest value)
- Regenerate nature

The circular economy system diagram, known as the butterfly diagram (Figure 18), illustrates the continuous flow of materials in the economy. There are two main cycles – the technical cycle and the biological cycle. In the technical cycle, products are kept in circulation in the economy through reuse, repair, remanufacture and recycling. In this way, materials are kept in use and never become waste. In the biological cycle, the nutrients from biodegradable materials are returned to the Earth, through processes like composting or anaerobic digestion. This allows the land to regenerate so the cycle can continue.

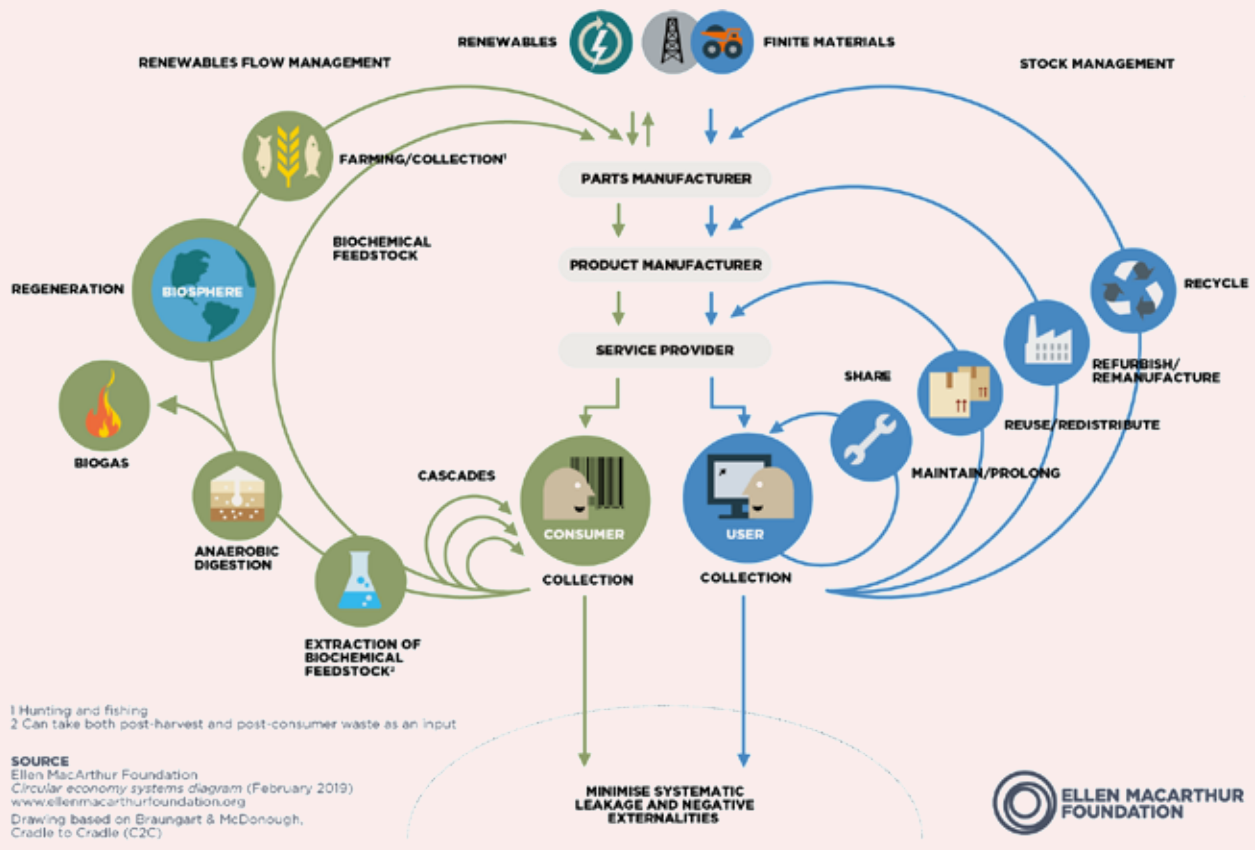


Figure 18. The Butterfly Diagram of Circular Economy.

Case Study:

Kering

- **An ambitious aim to avoid waste and adapting Circularity**
- **Four pillars:**
  - promoting luxury that lasts
  - adopting a holistic approach
  - using innovation to better manage resources
  - collaborating with the industry for solutions
- **Constantly seeking new collection & recycling solutions**

Case Study:

Sabic

- **TRUCIRCLE – circular economy portfolio & services**
- **Two overarching initiatives:**
  - Portfolio that focuses on product circularity
  - Services that focus on collaborations around circularity
- **Design for recyclability**
- **Mechanically recycled products**
- **Certified circular and renewable products**

Water

Water Use:
the water consumed throughout an organization›s value chain, operations, services, and products.

In the World Economic Forum›s 2019 Global Risk Report, the water supply crisis has been identified as the fourth greatest risk to society over the next decade. In many places, a stable supply of good-quality water can no longer be relied on by companies to do their business. A growing number of investors and customers are increasingly expecting companies to respond and adapt to water shortage challenges. To reduce your water footprint, particularly in the water-scarce region of Saudi Arabia, your company should adopt practices to measure and manage its water consumption.

Companies that track their water use can determine the impacts of their direct and indirect water use on communities and natural ecosystems, evaluate material water-related risks, and credibly report on these impacts in their sustainability reporting. Water accounting can also help an organization ensure more efficient water use and lead to significant cost savings. To learn more about the topic and follow leading practices, the organization can take advantage of CDP's resources on water.

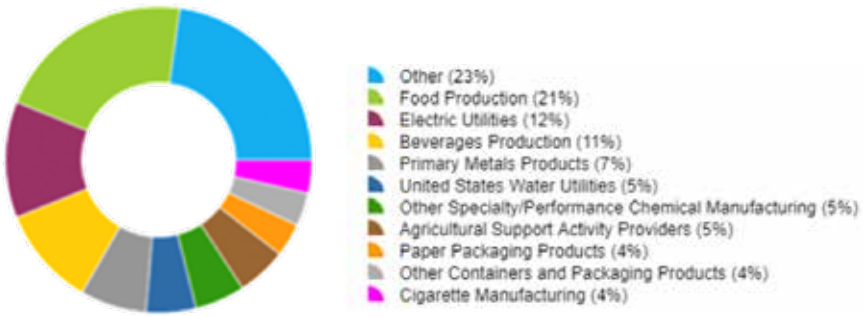


Figure 19. Water Usage by Industries.

How to Develop a Water Management Plan:

1. Collect water consumption data
2. Identify highest consuming activities
3. Identify highest consuming activities
4. Assess opportunities to improve water efficiency
5. Set reduction targets

Examples of water reduction strategies include using recycle wastewater and more efficient water systems (e.g., leak detection and repair), installing water-saving faucets and fixtures, and educating staff on conserving water consumption.

Case Study:

Google

- **Committed to replenishing %120 of the water it consumes by 2030**
- **Deploys technology that uses reclaimed wastewater to cool data center**
- **Implements drip irrigation and watering systems that adjust to local weather conditions**
- **Establishes partnerships to help use data tools to predict and prevent water stress**

Case Study:

North Ghawar Producing Department Saudi Aramco

- **Water conservation roadmap governs the use of water in operations, ensuring that the company:**
  - supplements water supplies with nontraditional sources
  - implements water-efficient practices
  - maximizes wastewater reuse
  - minimizes water losses, and
  - promotes water conservation awareness among employees, their families, and local communities
- **Aims to eliminate the use of groundwater**
- **Adopts new technologies to reduce 2,552 million gallons of water by 2030**

Nature, Ecosystems and Biodiversity

Biodiversity: the variety of animals, plants, fungi, and microorganisms that makes our world. Each of these species work together in ecosystems. Biodiversity supports everything in nature that we need to survive.

Direct and indirect human pressure on natural environments and ecosystems is rapidly accelerating **species loss** at a rate at least 100 times higher than the natural extinction rate. Studies show that between **200 to 2,000 species go extinct each year,** with an average 68% decrease in monitored populations of mammals, birds, reptiles, amphibians, and fish since 1970.

The alarming decline in biodiversity in the last decades threatens to bring disastrous consequences to the environment and people, including triggering knock-on effects on climate change. **Biodiversity loss** is increasingly being recognized as one of the **most important** and **most likely business risks,** alongside climate change and water crises.

Considering these substantial risks, **both private and public actors are mobilizing to address biodiversity loss.** International organizations are putting pressure on governments and corporations to take significant steps within the next decade to protect biodiversity, such as through the **UN's Sustainable Development Goal 15: Life on Land,** or the new **Science-Based Targets for Nature initiative.** Over 100 nations, including the United States, Brazil, and China, **pledged to end deforestation at the 2021 UN Climate Change Conference (COP26).** In 2022, the **UN Biodiversity Conference** is expected to **produce a post2020-global biodiversity framework to stem biodiversity loss,** with far-reaching business implications. **Many financial** institutions are also taking steps to ensure their lending and **investment portfolios do not harm biodiversity,** including the over 75 institutions signing the **Finance for Biodiversity pledge.**

In Saudi Arabia, biodiversity and conservation actions have become a topic of focus, with many successful initiatives being implemented already. **Saudi Green Initiative,** for example, has goals that aim to reach over 20% of protected land by 2030. A new force called the **Special Forces for Environmental Security (SFES)** has been established to monitor the application, guidelines, and regulations regarding the **protection of biodiversity and wildlife** in the country. Although many initiatives are already being implemented by the public sector, **private sector actors also need to do their part.** Companies are encouraged to act and develop a biodiversity management plan.

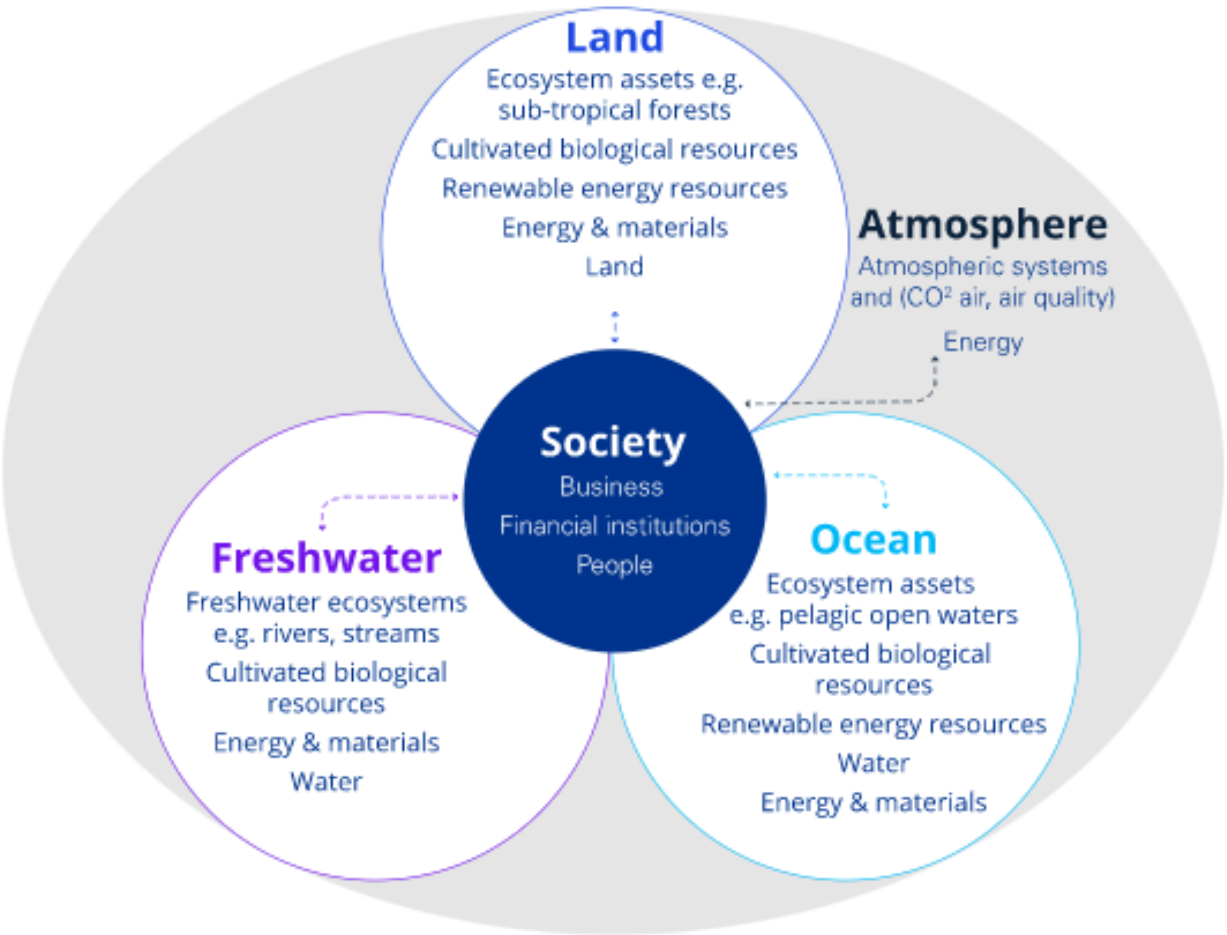


Figure 20. Business and biodiversity.

Nature and Biodiversity Corporate Trends

Momentum is building on stemming biodiversity loss as businesses wake up to the looming financial and environmental impacts. Below are some trends and current developments that can be observed within the private sector on a global level.

Biodiversity Reporting

Revised global GRI standard for Biodiversity will enable organizations to increase their accountability on biodiversity impacts and improve a more harmonized approach to nature-related disclosures. The standard will be released by the end of 2022.

Science-based Targets (SBTs) for Nature

Science-based Targets (SBTs) for nature provide systematic solutions to reduce the risk of nature loss across four key areas – freshwater, biodiversity, land, and oceans. Companies are increasingly addressing biodiversity and looking for appropriate methods, tools and guidance. It is important that companies have a common guidance to set nature-related goals which is benchmarked against scientific frameworks. Setting science-based targets to stop nature loss will create resilient businesses and sustainable economies.

Private Sector Funded Conservation Efforts

Private sector funds could be directed to support innovative projects, technologies, and policies for biodiversity conservation, and fill the global financial gap of about 824$ - 598$ billion per year for the protecting nature. Many leading companies are taking part in this “innovative finance”, which is the new term used to find ways to channel private sector money to nature-based solutions. Rimba Collective initiative aims to deliver 1$ billion to protect and restore over 500,000 ha of tropical forest landscapes in Southeast Asia. The initiative is led by buyers and processors of palm oil, including P&G, PEPSICO, and Nestle. Private sector funding for nature conservation initiatives are expected to increase.

How to develop a biodiversity management plan:

- Assess the ecological impacts of your supply chain
- Identify habitats and species on your company's site
- Identify ways to avoid and reduce impacts on biodiversity
- Decide clear interim milestones
- Restore historical impacts caused by your supply chain (e.g., reforestation)
- Set targets to reduce biodiversity loss

Examples of Biodiversity & Ecology Impact Reduction Strategies include **monitoring** and **managing** your **impact, identifying ways** to **reduce impacts** and **set targets,** and **aligning** with **Vision 2030 targets** to **protect terrestrial** and **marine** environments in the Kingdom.

Case Study:
Nestlé

- Forest Positive Strategy
- Deforestation-free supply chains: 97.2% of Nestlé›s ingredients confirmed as deforestation-free in 2021
- Long-term forest conservation and restoration, including aims to grow 200 million trees by 2030
- Goal to support 15 sustainable landscape initiatives by 2023

Case Study:
Saudi Aramco

- Maps and monitors biodiversity
- Committed to establishing protected areas within reservation areas (e.g., Mangrove Eco-Park)
- Conducts initiatives to engage employees and communities in biodiversity protection
- Partnerships for biodiversity protection (with Supporting Sea Alarm Foundation, Saudi Wildlife Authority, and the Smithsonian Institute etc.)

Benefits of Implementing an Environmental Management Strategy

By implementing Environmental Management, companies can gain benefits, such as:

- Improved Resource Efficiency
- Better Risk Management
- Reduced Negative Health Impacts
- Reduced Costs
- Improved Brand Image and Reputation
- Attracting And Retaining Talent
- Alignment With Industry Compliance Standards
- Long-Term Financial Resilience
- Increasing Confidence of Investors and Other Stakeholders

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