Introduction to working strategically with sustainability in businesses

RESILIENCE, GREEN TRANSITION AND DIGITALISATION OF SMES is a project developed by 22 Universities of Applied Sciences throughout Finland with the aim of developing the resilience of micro-, small-, and medium-sized companies in unforeseen situations. This is achieved by providing support in the form of short-term trainings, such as micro-studies, events, workshops, and other educational materials. The content developed in the project will increase companies' capacity and competence to adapt to and take advantage of changes in the business environment. The project is funded by the European Social Fund REACT-EU as part of the EU's measures taken in response to the COVID-19 pandemic. The implementation period is from December 1, 2022, to November 30, 2023.

ARCADA UNIVERSITY OF APPLIED SCIENCES has identified a need for improved knowledge, especially in Swedish and English, in Finland to create better conditions for businesses to develop. As part of the project, this handbook has been developed to support companies in working strategically with sustainability and initiating the green transition. The handbook has been created with the financial support of Svenska kulturfonden.

Contents

Introduction to working strategically with sustainability in businesses

SUSTAINABILITY CHALLENGES ARE COMPLEX

There is rarely just one cause behind a problem or a simple solution. When dealing with complex challenges, we need tools and models to help us understand both how the system functions as a whole, and to prioritize our possible paths forward and manage trade-offs between different issues. This handbook is created to assist you and your company in initiating the work toward a green transition. But what does it actually mean? Green business transition aims to make companies sustainable in their operations and production. This means that the company takes responsibility for its impact on the environment and society while working to reduce its climate impact.

By integrating a systems-based approach to sustainability into the company business model, you can secure long-term sustainable growth and success. Companies that start the process toward a green transition can benefit from several advantages, such as cost savings, increased competitiveness, strengthened brand identity, new business opportunities, and a positive impact on employees. Most importantly, a green transition is a crucial part of the global effort to mitigate climate change, protect the environment and people, and contribute to a sustainable future.

This handbook introduces a model for working strategically with sustainability in order to design sustainable products and services. The idea is that you, as the reader, can apply the knowledge immediately. The chapters are structured so that step by step, you gain a deeper insight into working strategically with sustainability. Each chapter contains relevant supplementary material for the theme, possible exercises, and references.

We hope that this handbook will help you navigate the sustainability jungle. Our goal is to provide clear and easily understandable information, inspiring tasks, and offer concrete advice and guidance for you and your company to either take the first steps or progress on an already initiated sustainability journey.

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DEFINITIONS

ATMOSPHERE is a gaseous composition of air that surrounds the Earth. The atmosphere serves as a protective layer around the Earth by, among other things, absorbing some of the solar radiation and regulating the Earth's temperature.

BACKCASTING is a central method for working strategically with sustainable development. The process begins by defining goals and a future vision based on scientific principles of sustainability. Subsequently, the current state is analyzed based on sustainability principles, which maps out the sustainability gap between the current state and the desired future. Finally, steps and strategies to move forward are identified.

BIG HAIRY AUDACIOUS GOALS are goals that are clear, challenging, and long-term. They may even seem difficult to achieve, but they are goals that need to be reached for the operation to become fully sustainable.

BIOSPHERE is the part of the Earth where life exists. The area extends from the Earth's surface to the upper reaches of the atmosphere.

CARBON DIOXIDE is the most well-known greenhouse gas and is naturally produced through respiration and the breakdown of biomass. It is also formed through the combustion of fossil fuels and chemical reactions. Carbon dioxide is removed from the atmosphere by plants in a process called photosynthesis, which converts sunlight into energy. Vegetation on land and in the ocean plays a crucial role in capturing carbon dioxide.

CARBON DIOXIDE EMISSIONS in the atmosphere increase annually due to human activities, such as the combustion of fossil fuels. The increase of carbon dioxide in the atmosphere is a major contributing factor to global warming.

CONCENTRATION INCREASE means that an element or substance accumulates in nature because nature cannot break down the substance rapidly enough or perhaps cannot break it down at all. In sustainability work, concentrations of substances are mapped because increasing concentrations can cause harm and therefore be unsustainable.

CYCLES OF NATURE are constantly recurring flows and exchanges in a repetitive path. In nature, there are many different larger and smaller cycles, such as the water cycle, including evaporation, condensation, precipitation, and so on.

ECOLOGICAL SYSTEM is a complex network of living organisms and their surrounding environment, such as a rainforest, a sea, or the entire biosphere.

EROSION, in addition to various forms of wear and tear, in this hand book the term erosion also includes emissions and substances released from the Earth's crust, such as when volcanoes erupt.

FOOD CHAIN is the path that nutrients travel through plants, animals, and microorganisms.

FORECASTING is a process of predicting the future by creating a prognosis of what we believe will happen. The method is used to predict future events or trends based on existing data and historical information.

THE GREENHOUSE EFFECT makes the Earth's temperature warmer than it would otherwise be. Many greenhouse gases naturally occur in the atmosphere, but human activity contributes to their accumulation, which, in turn, leads to a greater portion of heat energy being retained in the atmosphere, known as the greenhouse effect. The greenhouse effect alters the Earth's climate. This temperature increase is called global warming.

GREENHOUSE GASES absorb heat radiating from the Earth's surface, trap it in the atmosphere, and partly prevent it from escaping into space. The natural composition of greenhouse gases in the atmosphere has helped regulate and maintain a stable climate on Earth for the past 10,000 years. Without greenhouse gases that retain a certain amount of heat within the atmosphere, we would have a cold planet. However, if the concentration of greenhouse gases increases, too much heat is retained in the atmosphere, resulting in what is known as the greenhouse effect.

SEDIMENTATION is the deposition of rock fragments, soil, organic matter, or dissolved material that has been eroded.

SOCIAL SYSTEM is a collection of people, organizations, or institutions linked through interaction, communication, activities, or common goals.

THERMODYNAMIC LAWS are physical principles that describe how energy is transformed and transferred within different systems. Read more in chapter 3.3.

1. Short history

1.1 FROM ENVIRONMENTAL WORK TO SUSTAINABILITY

Throughout millennia, humans have lived in harmony with nature and its cycles. However, with the development of industrialization approximately 200 years ago, human impact has become increasingly significant. Today, we live in an era where humanity's influence on nature has the potential to alter the fundamental conditions of the planet's systems necessary for human survival.

In connection with Rachel Carson's book "Silent Spring" in 1962, there was a growing awareness among a broader public that chemicals could travel through the food chain. During the 1960s, it became clear that perpetual growth on a planet with limited natural resources is not feasible.

In 1972, the United Nations held its first global environmental conference in Stockholm, which established an understanding of how humans impact the environment.

In the late 1980s, the Brundtland Report "Our Common Future" highlighted three aspects of sustainability: environmental, social, and economic sustainability. As we will see later, this triple bottom line has been partially reevaluated as we have learned more about sustainability. A general and popular definition of sustainability was presented, one that many can stand behind, but it doesn't provide sufficient guidance for concrete sustainability efforts.

The subsequent decades brought more conferences and various international agreements, including Agenda 21, the Kyoto Protocol, and the 2015 Paris Agreement to reduce carbon dioxide emissions.

AGENDA 21

Agenda 21 is a global initiative formed by entities such as the United Nations, governments, and other stakeholder groups. It aims to address the adverse human impact on the environment and promote sustainable development. Agenda 21 formulates strategies to achieve sustainable development at the global, national, and local levels, focusing on social, economic, and environmental development while balancing the needs of current and future generations.

THE KYOTO PROTOCOL

The Kyoto Protocol was adopted by the United Nations in 1997 and is an international agreement that binds industrialized countries and economies to limit greenhouse gas emissions in accordance with national targets. Today, 192 countries have signed the Kyoto Protocol.

THE PARIS AGREEMENT

The Paris Agreement aims to combat climate change by limiting global warming to well below 2°C and striving to limit it to 1.5°C. Signatory countries work to enhance resilience to climate change and enable sustainable development. Each country is expected to develop and implement its own national contributions to reduce greenhouse gas emissions.

THE NINE PLANETARY BOUNDARIES

Just over a decade ago, a group of researchers introduced the concept of The Planetary Boundaries. With this, nine different planetary boundaries essential for maintaining the stability of the climate of the past 10,000 years were identified. The conclusion is that, due to human activity, we are approaching the threshold values, known as 'tipping points,' for several of these planetary boundaries. It's uncertain how nature will react if these thresholds are exceeded. The research on the threshold values is continually developed.

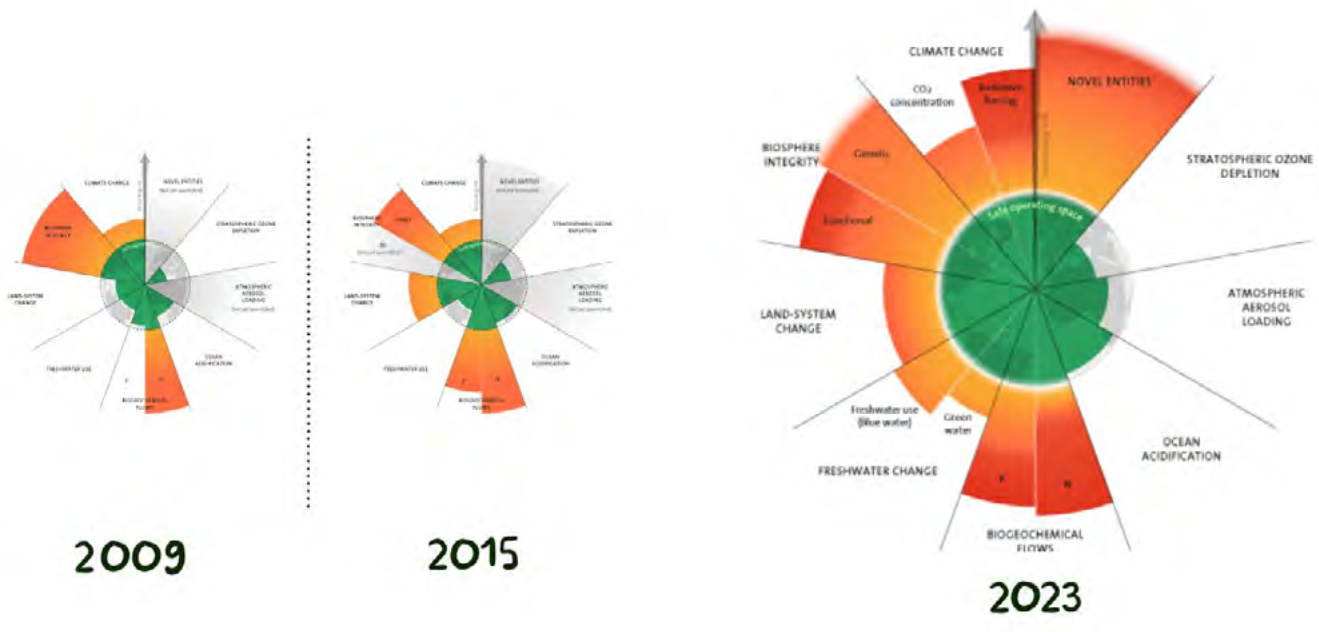


Image: The planetary boundaries over the years.Source: Stockholm Resilience Centre 2023.

The planetary boundaries are interconnected in several ways, and many of these boundaries and the associated processes depend on each other. For example, increasing biogeochemical flows (nitrogen and phosphorus) will have an effect on ocean acidification. Similarly, changes in land use will impact climate change, which, in turn, affects many of the other boundaries, such as changes in freshwater and biosphere integrity.

The planetary boundaries are global boundaries that provide insights into the state of the planet as a whole. However, they are not easily translated into daily business realities. As we will see later on, there is a need for a strategic approach to sustainability that helps define when business models are sustainable, meaning not contributing to exceeding the planetary boundaries.

THE 8 UN MILLENIUM GOALS DEVELOPED INTO THE 17 SUSTAINABLE DEVELOPMENT GOALS FOR 2030

Source: UNDP - United Nations Development Programme

The turn of the millennium inspired the United Nations' eight global goals, marking the first global agreement on broad goals with a focus on sustainability. These were further developed in 2015 into the UN's 17 Sustainable Development Goals. These 17 goals cover many areas of human activity and impact.

On September 25, 2015, UN member countries adopted Agenda 2030, a universal agenda for sustainable development that includes seventeen global goals to be achieved by 2030. These global goals, in turn, include 169 sub-goals and over 230 global indicators for how the work should be implemented and monitored. Through these global goals, world leaders have committed to achieving four main objectives by 2030: eradicating extreme poverty, reducing inequalities and injustices in the world, promoting peace and justice, and addressing the climate crisis.

Agenda 2030 and its sustainable development goals affect all countries of the world. To achieve these goals, efforts are needed from the government, local administration, private sector, civil society, and citizens.

The criticism of the development goals primarily revolves around the fact that it's not so straightforward to put the goals into practice. Some goals are contradictory, and some are not ambitious enough. However, the idea of working with all parts of society is a good starting point.

Source: UNDP - United Nations Development Programme

As we can see, our understanding of human impact on the environment and social contexts has evolved over the past 50 years, gradually leading to a broader and more comprehensive view and systems understanding. .

1.2 READ MORE HERE (printed version: links in Section 10.2)

- > 17 Sustainable Development Goals (SDGs)
- > The 9 Planetary boundaries
- > Agenda 21
- > The Kyoto Protocol
- > Video: Sustainability: the threshold explained in 20s

2. Long-term value creation as part of a bigger system

2.1 THREE DIFFERENT TYPES OF VALUE CREATION

Nature and people should thrive and have opportunities and conditions to sustain life. Sustainability efforts aim to maintain healthy, vibrant, complex systems within both the ecological and social systems.

In this section, we will explore three different ways to understand and implement value creation in businesses: shareholder value, shared value, and system value. These three different approaches to value creation are based on how value is generated through a company's business model. Traditionally, shareholder value has been the primary focus when assessing a business model. However, over time, as we have developed a deeper understanding of sustainable development, we have realized the need to reconsider value creation in companies to genuinely work towards sustainable development.

SHAREHOLDER VALUE

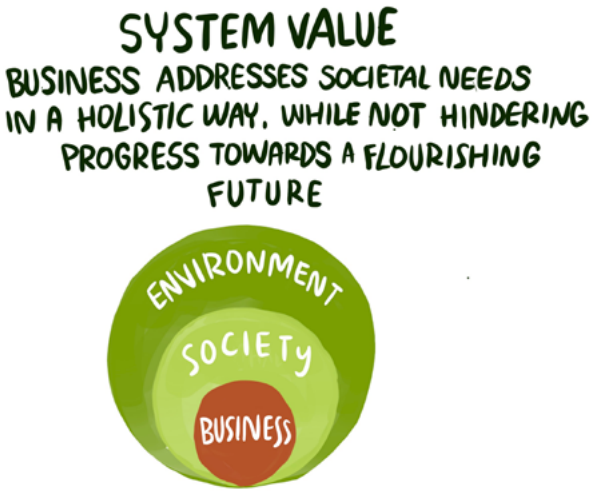
When we discuss value creation in businesses, we traditionally talk about, often short term, economic value creation for shareholders. Company law stipulates that a CEO has a central responsibility to create value for shareholders. The company's profit is the primary focus, and profit can be generated in any legal way possible. Any environmental or social harm caused by how the company conducts its business and generates profit is the responsibility of society to address. For example, a company may rely on selling products imported from other parts of the world where regulations may not be as stringent, allowing emissions or poor working conditions. Through its import and sale of inexpensive products, the company can generate a profit for shareholders but may not take responsibility for the potential harm that occurs. This is known as privatizing profit and externalizing costs or losses.

SHARED VALUE

While it's evident that every company should maintain a sound financial position, there is a growing understanding that a business model is not sustainable if the operation continues to harm people and the environment. When it comes to value creation in accordance with the shared value model, the company begins to realize that there are stakeholder groups advocating for greater responsibility for the impact the company has on people and the environment. The company is willing to take responsibility for its impact, but perhaps not directly by rectifying the exact damages it causes. Instead, it aims to compensate by contributing positively elsewhere. For instance, if a company's business model contributes to pollution in a river in one part of the world and a stakeholder group brings attention to this issue. Rather than directly addressing the problem, the company may start a school in another part of the world to do some good. The company understands the interconnectedness of the environment, society, and the business, but it may not be fully onboard to take complete responsibility for its actions and remedy the damage. This means one acknowledges causing harm in some way but doesn't internalize the responsibility enough to fully address and correct the harm. Instead, it may compensate in an entirely different manner.

SYSTEM VALUE

A company cannot exist separately from the social and ecological systems. We need business models that are economically profitable while also creating value for people and nature, known as system value. This means the company's business model is built on all processes at all levels sustaining the mechanisms of sustainability. Ultimately, it means that whatever value the company offers that value has been created in such a way that it does not systematically harm nature or people. It is the responsibility of every company to gradually transition its operations and the processes it relies on in its business model so that all parts are oriented toward sustainability and a broader value creation. The value creation in the company should not originate separately from the nature and society that surrounds it. In the end, we all depend on clean air, clean water, healthy soils, and sufficient resources for everyone to share.



2.2 SYSTEMS THINKING

When it comes to sustainability, terms like ecological systems and social systems are often mentioned. But what is a system? And what is systems thinking, and why is it so crucial when it comes to sustainability issues?

Traditionally, we are accustomed to science breaking issues down into smaller and smaller parts to examine how different components function. We are also used to separating various areas into different themes and addressing them individually. Sometimes, dividing things into smaller parts or themes is justified to make it easier to understand things. This is what we call a silo mentality, where we rigidly delimit the area we investigate or work on.

Sustainability issues are complex and influenced by various interacting areas. Sometimes, a silo approach with solutions to one problem can create new problems in other areas or in another silo. Therefore, systems thinking is essential in sustainability work to comprehend the whole and how various components affect each other in various directions, not just in isolation as individual components.

We also need tools that help us work with all relevant issues without either getting lost in overly comprehensive discussions with no concrete actions or getting bogged down in the details to the point that we lose sight of the big picture. This handbook offers a strategic and systems-based approach to sustainability so that, over time, we can align the parts with the whole and the present with the future.

Increasingly, companies are transitioning from creating value based solely on shareholder value to organizing their operations in ways that benefit the society around them and the nature they depend on. This may include taking responsibility for local energy production, entire value chains, and sustainable local development.

BUSINESS EXAMPLE: Interface®

As an example, we can mention the global carpet and flooring manufacturer Interface. They embarked on their strategic sustainability journey in the early 1990s, guided by their vision "Mission Zero." When they plan factories today, it is taken for granted that their operations should give back more to nature and the local community than they take, guided by the updated vision of "Climate Take Back." You can learn more about Interface in the link in Section 2.4.

2.3 EXERCISE - VALUE CREATION IN BUSINESSES

Discuss in your working group, based on the information provided above about value creation, how you perceive your company's approach to value creation. How would you like it to be? What might need to change?

2.4 READ MORE HERE (printed version: links in Section 10.2)

- Read more about Interface on their website
- Video: Biomimicry: definition & examples
- Video: Ted Talk with Erin Meezan, VP and Chief Sustainability Officer, Interface. What nature can teach us about sustainable business
- Video: Creating sustainable value for YOUR business
- Video: Systems thinking - a cautionary tale (cats in Borneo)

3. How does the ecological system work?

3.1 NATURE (BIOSPHERE) AND THE EARTH'S CRUST (LITHOSPHERE)

Over nearly 4.5 billion years, life on Earth has undergone significant transformations. Various processes have gradually transitioned the planet from a hazardous mix of toxic substances to a state where elements like heavy metals and other substances are stored in the Earth's crust. Eventually, water became cleaner, and life could arise in the oceans. This, in turn, contributed to the production of oxygen, enabling more advanced life forms among plants and animals to evolve on land.

Image: Development on the planet over time

3.2 THE PLANET AS AN OPEN AND CLOSED SYSTEM

The Earth operates as an open system for energy, where sunlight penetrates through the atmosphere and is released as heat. Simultaneously, it functions as a closed system for matter. Within the biosphere, various cycles involve the exchange of substances. Slower cycles also occur, involving the transfer of elements between the biosphere and the Earth's crust, such as sedimentation and mineralization when substances are stored in the Earth's crust, and erosion when elements are released from the Earth's crust into the biosphere.

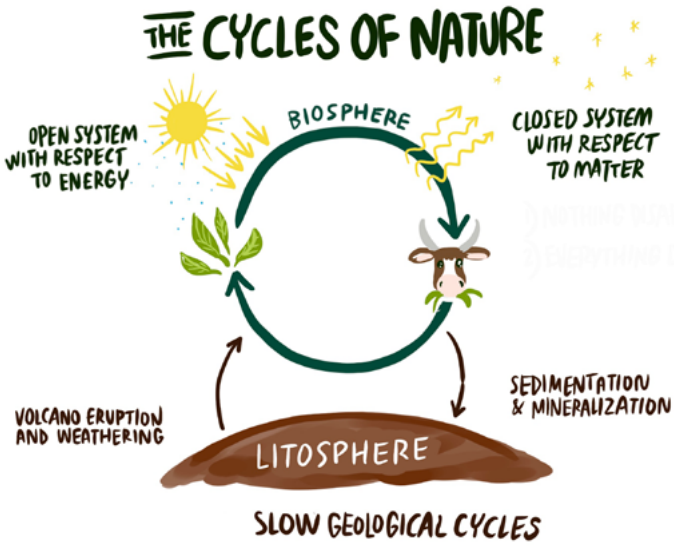


Image: Cycles of nature

3.3 THERMODYNAMIC LAWS

All of these processes are governed by a set of thermodynamic laws. From a sustainability perspective, two, in particular, are of interest.

The first law states:

1. Nothing disappears. All matter that has existed for millions of years remains. It may change form, but it doesn't vanish.

The second law states:

2. Everything spreads. This means that no matter on Earth lasts forever in the form it has at a given time. Everything breaks down into smaller components, some quickly and others more slowly. These smaller components and substances then become building blocks in new materials and cycles in accordance with the first thermodynamic law that nothing disappears.

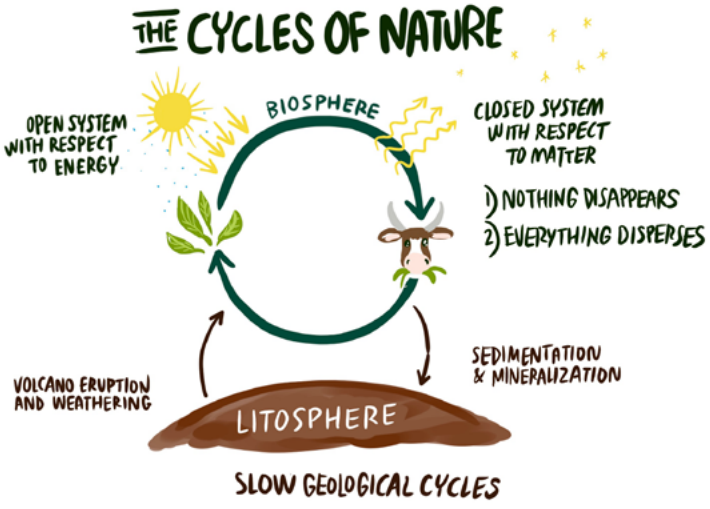


Image: Cycles of nature and thermodynamic laws

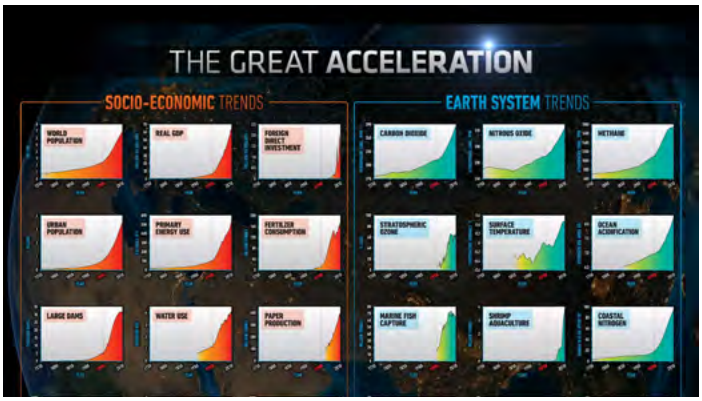
3.4 THE GREAT ACCELERATION

These two thermodynamic laws apply not only to substances in nature but also to the materials we humans manufacture and use. For example, in the past, people used to dispose of trash in the woods or in the lake, believing it was set aside and wouldn't cause any harm. Today, we know that everything breaks down, and nothing disappears, allowing us to observe hazardous substances moving through the cycles of nature and eventually affecting plants, animals, and humans in a harmful way.

The last 10,000 years of the planet's history have been characterized by a stable climate and stable processes. This stability has been favorable for humans as a species, providing us with the conditions to develop settled larger communities based on agriculture. Initially, we humans lived in a way that everything we produced was made of materials that could be returned to nature's cycle. We were not so numerous either that our impact was anything other than local.

Image: An example of how people earlier have lived as part of a local cycle of nature within the conditions of nature. Animals and plants get nourishment from nature and in turn give fibers like wool and linen to humans. From these fibers we produced different types of products and when the products were discarded, they could be returned to the cycle of nature.

After the onset of industrialization about 200 years ago, our impact on the ecosystems has become increasingly extensive. The period following industrialization is thus called "The Great Acceleration" and is illustrated by these graphs:



Source: Will Steffen et al. 2015

One could say that we systematically and on a large-scale are reversing progress by contributing to polluted water, toxic and eroded soils, contaminated air, and large-scale extinction. Therefore, it is inevitable for all companies to integrate sustainability into their business models. Nature simply cannot keep up with cleaning up after us, which has become evident over the past 30 years.

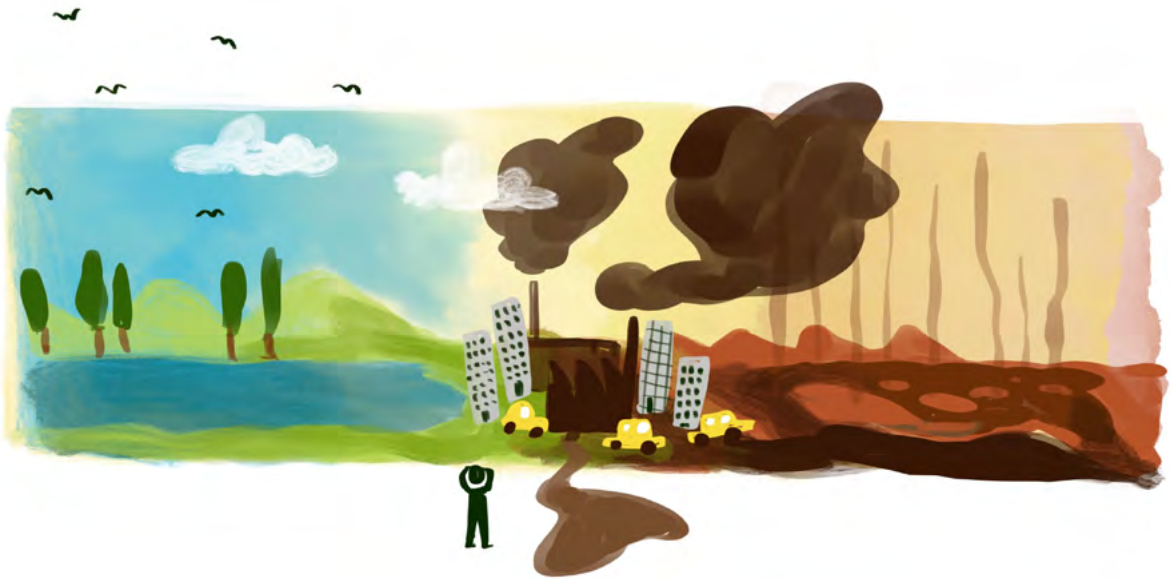


Image: Reversed development on the planet.

3.5 EXERCISE - COMPANY'S IMPACT ON NATURE AND ECOSYSTEMS

Discuss in your working group, based on your thoughts and experiences, how you perceive that your company's business model and/ or processes that you depend on in your business model contribute to either a negative or a positive impact on nature and the ecosystems.

3.6 READ MORE HERE (printed version: links in Section 10.2)

> Calculate your personal footprint here.

> Video: Ecological footprint: Do we fit on our planet?

4. How does the social system work?

4.1 WHAT IS A SOCIAL SYSTEM?

We all grow up as part of a society, but we might not think too much about what makes some societies seem more viable and resilient than others. Just as nature consists of different ecosystems that operate under certain conditions, our society also consists of different social contexts, known as social systems, that function under certain conditions.

A social system comprises many different actors, and various interactions occur among these actors. We cannot predict exactly how a social system will react in different situations, but a vibrant social system is characterized by complexity, meaning it consists of many different actors and interactions, and it is adaptive, meaning it has the ability to adapt to various changes.

4.2 CONDITIONS FOR SUSTAINING A VIBRANT SOCIAL SYSTEM

We can either organize our societies to maintain the conditions for strong social contexts and create vitality in our social systems and, thus, vibrant communities. Alternatively, we can erode the conditions and, in doing so, generate more corruption, injustice, lack of trust, inequality, economic disparities, gender disparities, and crisis situations.

Our social system is constantly changing, but the prerequisites for vibrant development in all social contexts are as follows:

- Diversity
- Continuous learning
- Capacity for self-organization
- A high level of trust
- The capacity for meaning making

We also need to consider that, similar to nature's ecosystems, our social systems are globally interconnected. This means that actions in one part of the world can have a significant impact on people far away. Therefore, we must ask ourselves how to manage the complexity and various social contexts simultaneously to ensure that what we do does not contribute to sustainability problems elsewhere.

Companies have a significant impact on society. We must consider how nature works, and likewise, we must design our operations in line with the prerequisites of sustainable social systems.

4.3 EXERCISE – THE IMPACT OF YOUR BUSINESS ON SOCIAL CONTEXTS

Discuss within your workgroup, based on your thoughts and experiences, how you perceive that your company's business model and/or the processes you rely on in your business model contribute to either a negative or a positive impact on various social contexts. This could pertain to social contexts in your local area, in Finland, or in other parts of the world.

4.4 READ MORE HERE (printed version: links in Section 10.2)

> Video: 5 Principles for Social Sustainability (facing unpredictable change together)

What is sustainable?

5. What is sustainable?

5.1 HOW WE UNDERMINE SYSTEMS WE DEPEND ON

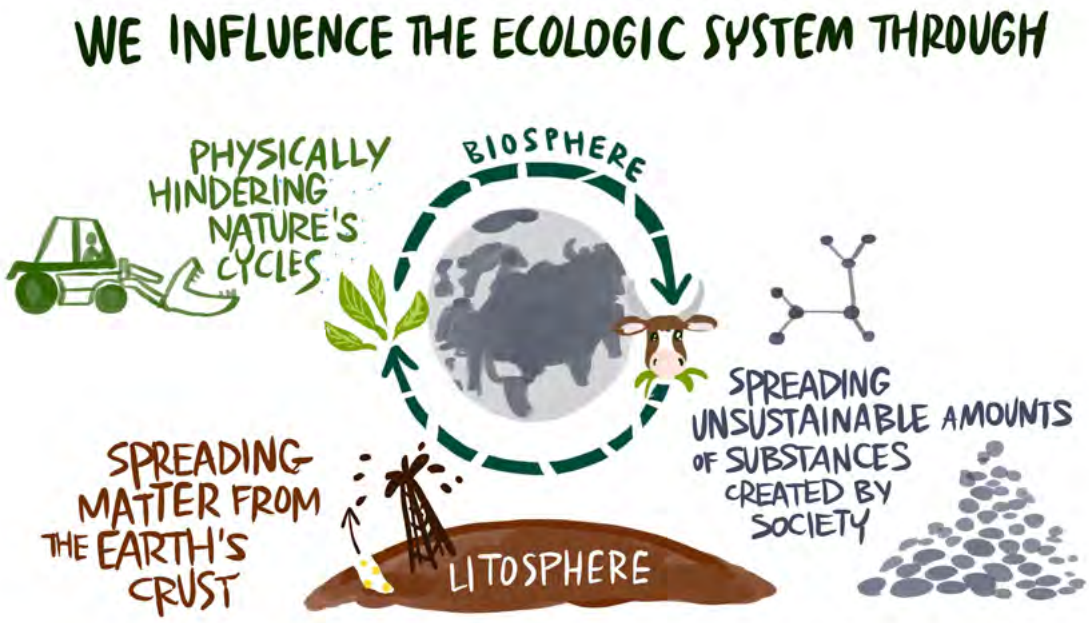
5.1.1 THE ECOLOGICAL SYSTEM

Based on how the ecological system functions when in balance and maintaining vital ecosystems, Karl-Henrik Robért, in collaboration with other researchers from various disciplines, in the 80s developed an answer to the question: What is it that humans do that erodes and destroys the ecological system? What is not sustainable? In the year 2000, Karl-Henrik Robért received "The Blue Planet Prize", often referred to as the Nobel Prize for sustainability, for this work.

Robért and the research group concluded the following:

- We extract substances from the earth's crust that we, through our use in society, then spread in the biosphere.
- We introduce human-made foreign substances into the biosphere.
- We systematically hinder nature's cycles by physical means.

In these three ways, we systematically undermine nature's capacity to sustain life.



5.1.2 THE SOCIAL SYSTEM

Just as researchers addressed ecological sustainability, Dr. Merlina Missimer has identified essential conditions for a social system that continuously maintains balance and vitality, the conditions under which the system can continue to function. The questions she asked were:

What is it that humans do that erode and weaken our social systems?

What is not sustainable?

She found that there are structural barriers to maintaining the conditions necessary for social sustainability, which are:

- Diversity
- Continuous learning
- Self-organization
- Trust and
- Meaning-making

A structural barrier is a social structure; political, economic, and cultural, established in society, maintained by those in power, and difficult to avoid for those subjected to them.

Social sustainability is about not systematically undermining these conditions that are fundamental to the social system's ability to maintain resilience and viability.

When we organize our operations without eroding the conditions for sustainability, it means that both the ecological and social systems can continuously maintain balance and vitality.

5.2 UNDERSTANDING THE SUSTAINABILITY CHALLENGE

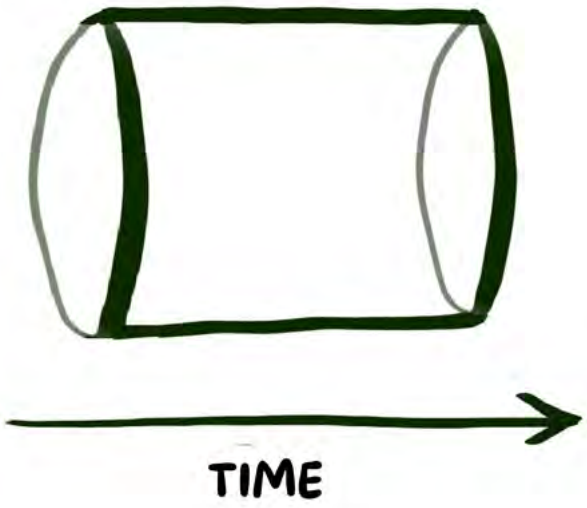
Here, two different ways of approaching and understanding the sustainability challenge described in Section 5.1 are presented. Depending on the kind of understanding one has of the sustainability challenge, it will lead to different conclusions about what needs to be done and how we need to act now and in the future.

5.2.1 THE CYLINDER PARADIGM

Many people adopt the idea that we have sustainability problems, meaning there are ecological and social challenges that need to be addressed. However, they also rely on the belief that these problems will be solved and taken care of if we find the right technological solutions or if we achieve slightly better economic growth so that we can afford to address them eventually.

The belief that technology or the economy will solve these challenges is based on the view that these challenges are individual problems and essentially an inevitable effect of a modern society. The assumption is that it doesn't matter much whether we tackle these challenges now or later; they will more or less remain the same over time.

This is called the cylinder paradigm and is illustrated by a horizontal cylinder. The walls of the cylinder correspond to the limitations within the ecological and social systems, but these limitations are not expected to worsen over time. The idea is that we safely can postpone action until we have better technology or a stronger economy.



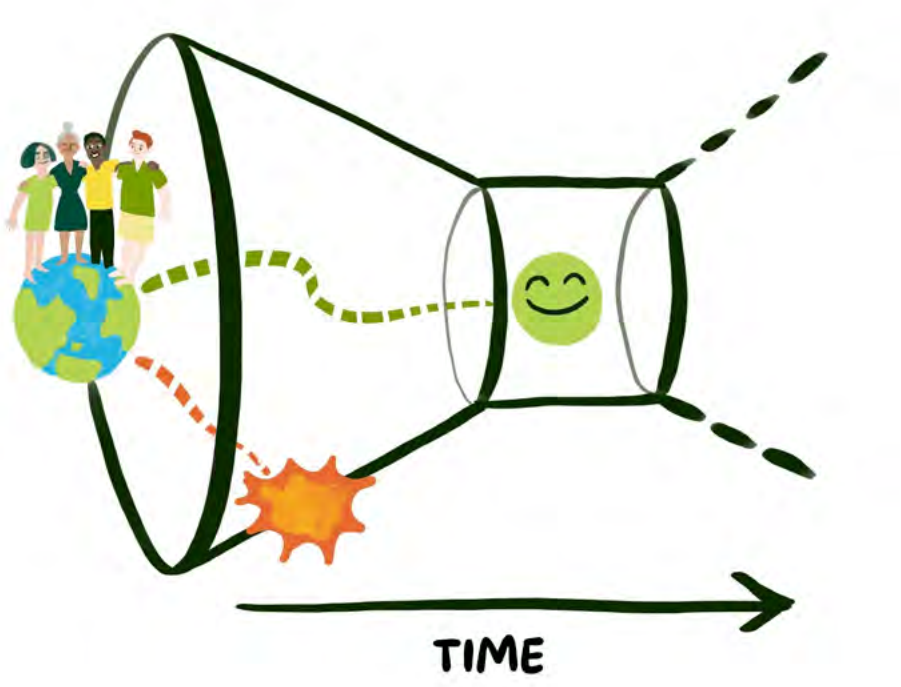
5.2.2 THE FUNNEL METAPHOR

What research shows, however, is that there are fundamental flaws in how we use our ecological and social resources. Over time, there is a larger and larger depletion of these resources, and our way of life becomes increasingly unsustainable. The sustainability challenge and problems grow and become more severe and visible over time. At the same time, our living space systematically shrinks as challenges and problems grow. It becomes more and more difficult to meet everyone's needs as resources and space diminish.

We can observe this through increasing deforestation, systematic overfishing of the oceans, the systematic depletion of biodiversity, more severe storms and floods as a result of climate change, increasing social unrest, widening economic disparities, the erosion of trust among people, and growing social injustices, among other things.

This paradigm is called the funnel metaphor and is illustrated by a funnel whose walls slope inward, symbolizing how navigation becomes more challenging as our shared living space shrinks.

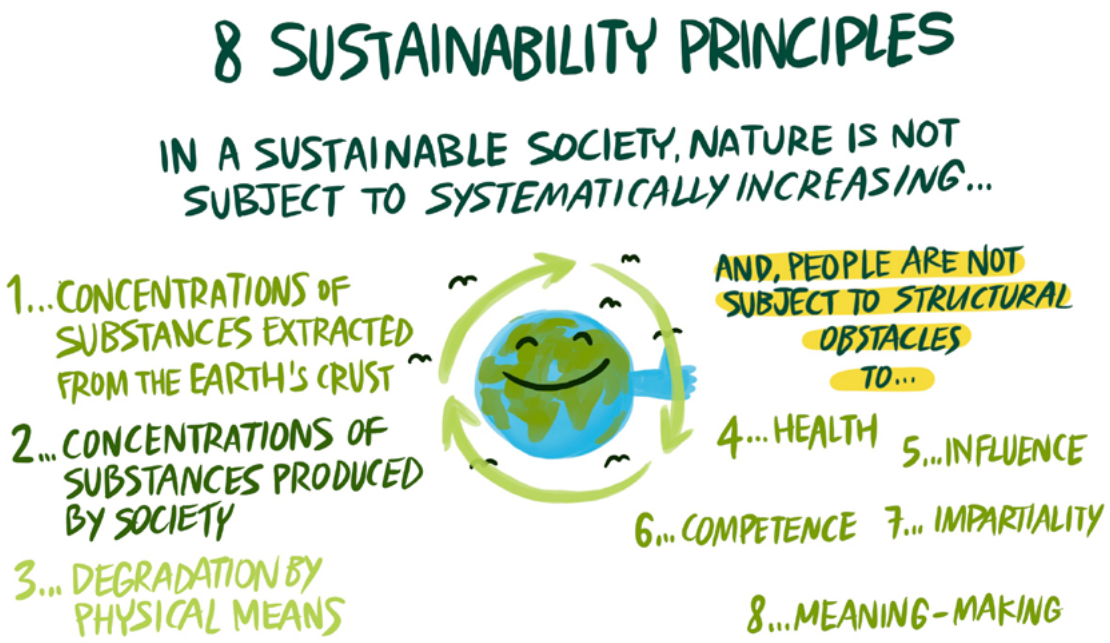
The challenge for us as humanity on this planet is to focus on a future where the systematic depletion of our ecological and social systems has ceased. Instead, we have adapted our society to the planet's and the social systems' limits. In this way, we navigate through the funnel without crashing into the funnel wall (the growing challenges) and move into the cylinder where we no longer systematically deplete our systems. Eventually, we should also be able to work on sustainability in a way that expands our space again, increasing biodiversity, reducing the effects of climate change, and narrowing economic disparities, thereby achieving a high level of interpersonal trust.



5.3 THE 8 SUSTAINABILITY PRINCIPLES

By scientifically identifying what we do that erodes the systems and then adding a "not" in front of these descriptions, we get an answer to what we need to consider to maintain sustainability. This results in sustainability principles.

Research has formulated a total of 8 sustainability principles: three principles for the ecological system and five principles for the social system. If we steer all our activities within the boundaries of these principles, it means that we have created a sustainable society.



It is important to remember that in a sustainable society, it doesn't mean we never violate any of the ecological principles. However, our businesses in a sustainable society are not dependent on **systematically** violating these principles. Similarly, it does not mean we never get sick or feel depressed. But we have eliminated **structural barriers** to health, influence, competence, impartiality, and meaning making within our organizations.

5.3.1 THE THREE ECOLOGICAL SUSTAINABILITY PRINCIPLES

Let's start with the first two sustainability principles:

In a sustainable society, nature is not subject to systematically increasing ...

1. ... concentrations of substances extracted from the Earth's crust.
2. ... concentrations of substances produced by society.

This means that if the use of substances, either by extracting them from the Earth's crust or by coming from society's production, contributes to an increase in concentrations in nature, this indicates that the use of these substances is not sustainable. Use that contributes to an increase in concentration means that nature cannot break down the substance in question quickly enough or at all or that it somehow ends up outside of nature's cycles and accumulates, becoming "toxic" to animals, nature, and humans. In such cases, we must either completely cease use or reduce it to a level where it does not contribute to an increase in concentrations in nature.

An example of an activity that contributes to a systematic increase in nature is the extraction of phosphorus in mines. Phosphorus is spread on fields as fertilizer. If the nutrients would remain in the fields, everything would be fine. However, following the laws that state that everything spreads and nothing disappears, we can observe a leakage of phosphorus from the fields to water bodies through water runoff and rain.

This means that a substance that was previously stored in the Earth's crust and posed no danger is now being extracted from the bedrock and then spread in nature, contributing to an increase in the concentration of nutrients in water bodies. This additional nutrient content leads to eutrophication and algae blooms in water bodies. Algae blooms cause oxygen depletion, resulting in the death of sea beds and the endangerment of ecosystems in lakes, seas, and waterways.

Other examples of activities that contribute to an increase in concentration can be emissions (through manufacturing processes or waste) of toxic metals, such as copper, silver, or lead that accumulate in nature. Emissions in the form of carbon dioxide and other greenhouse gases also often originate from the extraction of oil, coal, or gas from the bedrock, which then spreads and accumulates in nature in the form of carbon dioxide in quantities that nature cannot handle.

Similarly, we cannot systematically contribute to an increase in the concentration of flame retardants, pesticides, medicines, microplastics, or other chemicals in nature that nature either cannot break down or it takes too long to break down. According to the laws of thermodynamics, these substances will circulate in nature and eventually end up in the wrong places in plants, animals, and humans, where they contribute to poisoning and various types of diseases.

The third sustainability principle:

In a sustainable society, nature is not subject to systematically increasing ...

3. ... degradation by physical means.

This means that we cannot continue activities that, in various ways, use physical means to claim more and more of nature for human needs. We cannot continue to systematically displace animals and plants, for example, by asphalt or by building more and more roads and communities at the expense of nature. We also cannot continue to trawl the world's oceans and engage in overfishing, which destroys marine ecosystems. We cannot extract more groundwater or pollute freshwater to a greater extent than nature can purify the water or maintain groundwater levels at a level where both humans and nature can survive.

5.3.2 THE FIVE SOCIAL SUSTAINABILITY PRINCIPLES

The five social sustainability principles generally mean that if we do not violate them, then we create conditions for social sustainability and a high level of trust among people. This way, we can avoid corruption, crime, exclusion, and other socially unsustainable situations. The social sustainability principles apply to all social contexts and in different organizations and companies.

When we work on social sustainability, it is about identifying and eliminating structural barriers to maintaining social sustainability. A structural barrier can be a norm, law, tradition, cultural expression, regulation, or agreement, whether explicit or implicit, that, in some way, maintains power or privileges for a certain part of the population, thereby excluding others. When we have eliminated structural barriers in such a way that the social sustainability principles apply to everyone on equal terms, we have created a socially sustainable operation or a socially sustainable society.

The fourth sustainability principle reads:

And in a sustainable society, we do not contribute to people being subjected to structural obstacles to ...

4. ... health

This means that all people should have the opportunity to maintain good health. If, for example, it is very expensive or difficult for certain groups in society to access healthcare, it means there are structural barriers to health. Similarly, if certain tasks are so monotonous that they risk one's health, or if the tasks are directly hazardous to health, there are structural barriers to maintaining health. We also need to eliminate structural barriers for people to actively maintain good health through activities such as exercise or cultural experiences.

Regarding the fifth sustainability principle:

5. ... influence

It means that all people should have the opportunity to influence their workplace, their school, their leisure time, and society. It does not mean that everyone always gets what they want, but all people should have the opportunity to make their voice heard in a way that respects everyone's influence over their everyday lives. For example, if a company's management only listens to certain parts of the staff, there is a structural barrier to influence in the workplace. If a society does not have voting rights, freedom of speech, or the right to organize at work or in society, it is also indicative of structural barriers to influence.

The sixth sustainability principle:

6. ... competence

It is about competence development and the opportunity for lifelong learning. Not everyone needs to learn everything all the time, but everyone needs to, at their own pace, have the opportunity to improve themselves throughout their lives. Situations that prevent, for example, children or girls from having access to basic education are structural barriers to competence. In the workplace, it is also important that the staff has the opportunity to develop in their work so that they feel they can contribute to the best of their abilities. Lifelong learning can also take place in other areas of society where one feels that one can learn new things and grow as a person.

The seventh sustainability principle:

7. ... impartiality

It is about treating all people impartially and provide equal treatment regardless of their origin, gender, skin color, sexual orientation, age, or economic status.

Finally, the eighth sustainability principle:

8. ... meaning-making

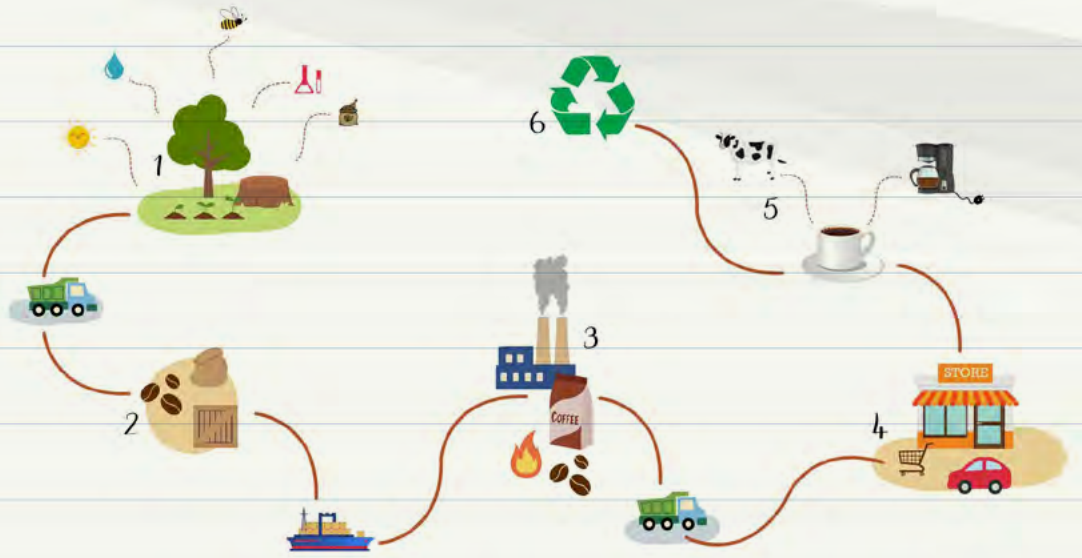
It is about everyone's right to create meaning in their lives, whether at work, in their leisure time, in their family, or elsewhere. This does not necessarily mean that every day will feel meaningful, but every individual has the right to perceive their overall life and daily experiences as meaningful.

5.4 EXERCISE – THE 8 SUSTAINABILITY PRINCIPLES

The purpose of this exercise is to collectively, within the company, understand the 8 sustainability principles as a definition of sustainability. Section 5.2 explains the principles and what they entail more thoroughly, principle by principle.

Read through the explanations in Section 5.2 and discuss together based on different examples of how the various principles should be understood.

In the second part of the exercise, you can relate to the company and consider what in the company's operations aligns with the principles and what may potentially violate the principles. Feel free to focus on a product, material, or service that the company relies on. Follow the entire value chain from the first supplier to the customer to examine in each step which parts contribute to violating any of the sustainability principles and which parts align with the sustainability principles. See the example below of a value chain for a coffee cup for tips on how you can think through the entire value chain for the product or material you've chosen to discuss. Preferably draw a value chain diagram together.



5.5 READ MORE HERE (printed version: links in Section 10.2)

> Video: Sustainability: definition with simple natural science

OBS! The video above presents three ecological principles and one social principle for sustainability. In 2015 the social sustainability principle was updated in line with new research to the five social sustainability principles. See the video below from 5:10 - 8:15 for an update about the latest research on social sustainability.

> Video: 5 Principles for Social Sustainability (facing unpredictable change together)

6. System, strategy and tools

6.1 THE 5-LEVEL MODEL

When we begin the sustainability work of a company, it's easy to get excited and think, "Now we should start taking immediate action or measure things." This approach can work well when dealing with simple problems where you already know the solution. However, if we are working on sustainability and need to find solutions to challenges in complex systems where several problems are interconnected, and we may not know the answer right away, there's a significant risk if we start by taking action or measure something without answering the questions:

What is the overall goal, and how should we understand the problem in relation to the whole? What is the smartest thing to do first? How can we ensure that we achieve results in time?

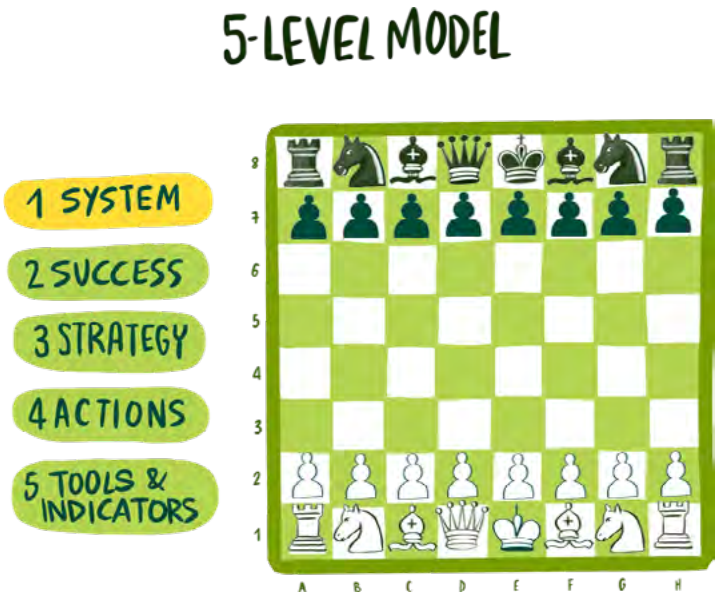
In short, how do we reach the goal in the right way, in time, and with the right resources?

When planning in complex systems, we can use the 5-level model. It helps us structure knowledge into different categories and levels. This way, we can ensure that we achieve success within the system by developing indicators and tools for the right actions in line with our strategy. We can be sure that we are making strategic decisions to future-proof our company even if we are working on long-term complex challenges.

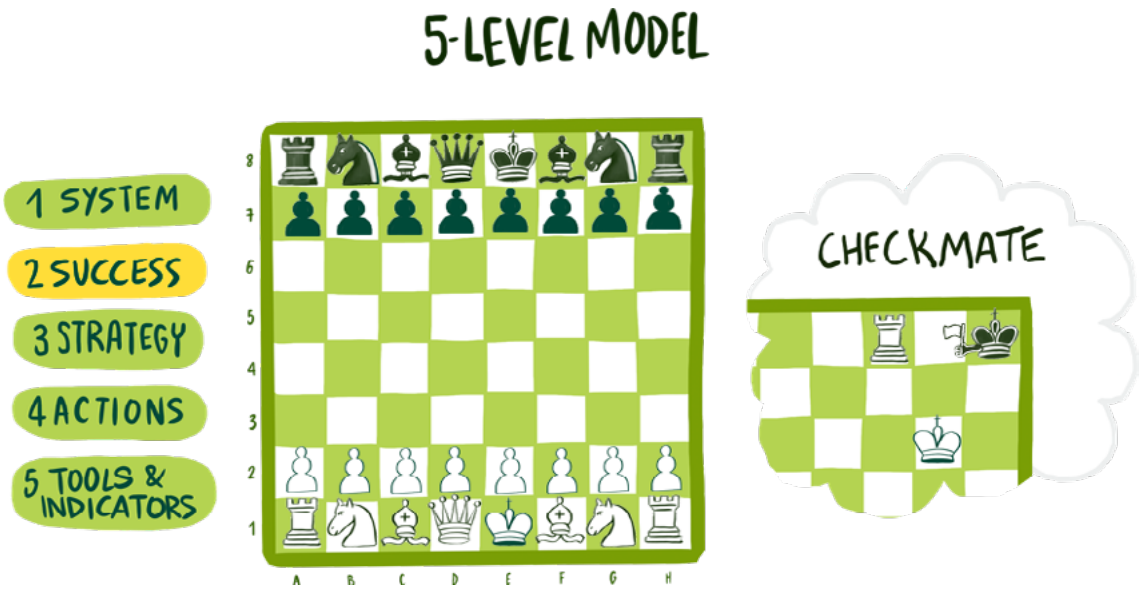
6.1.1 EXAMPLE: CHESS

The 5-level model identifies five different levels of information. Let's first go through the model and the different levels using the example of chess.

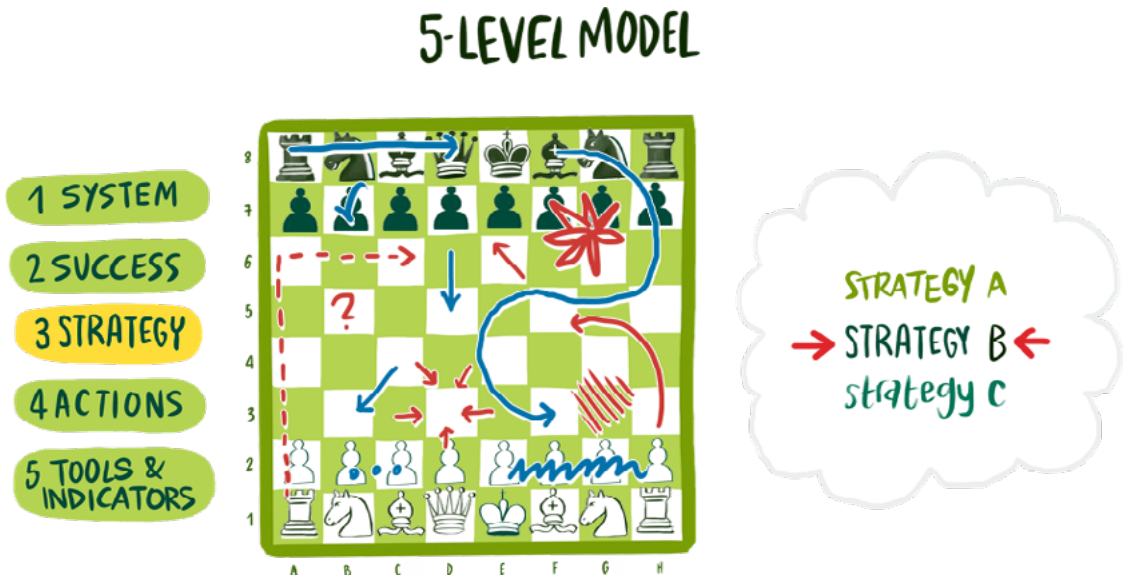
The top level is about the system, both the system we are a part of and the system our organization depends on. In the example of chess, the system corresponds to the black and white chessboard and the black and white pieces.



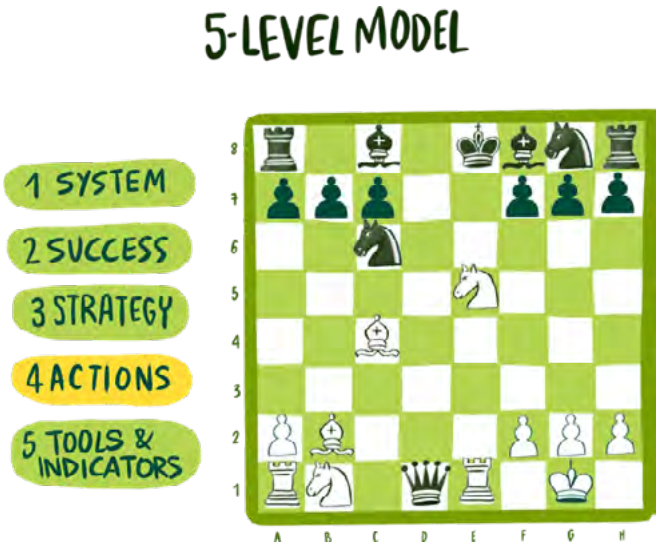
On the next level, success within the system is defined based on principles of success. The principle of success within the system of chess is, of course, achieving checkmate. We know what the principle is, but we don't know exactly what each checkmate will look like. Therefore, it is essential to work based on principles of success and not preconceived scenarios.



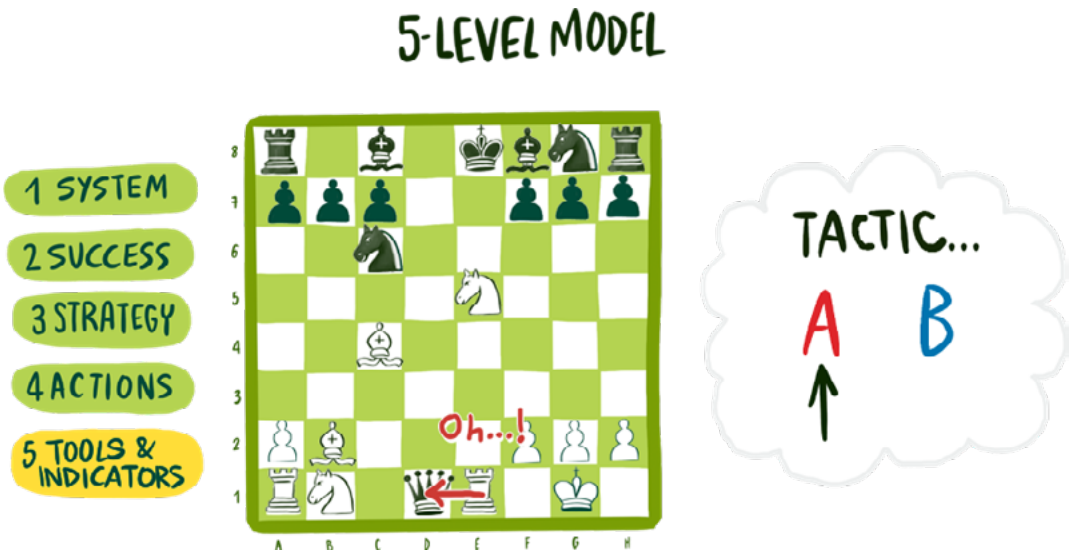
The third level is about strategy, specifically addressing the challenge in a strategic way. In chess, we can have different strategies. Some players want to finish the game quickly, while others work more long-term. However, what is important is that the strategy is always developed to achieve success within the system, which, in this case, is achieving checkmate.



After we have developed our strategy, we can determine which are the smartest actions in the short and long term. These actions need to be flexible enough so that we can adjust our next move in line with the strategy and depending on the opponent's moves.



We also need to be able to decide, assess, evaluate, and measure whether what we are doing aligns with our strategy. For this, we need tools and indicators to monitor the work. A chess player continuously evaluates whether there is a reason to change the next planned move to fulfill the strategy and maximize the chances of achieving checkmate.



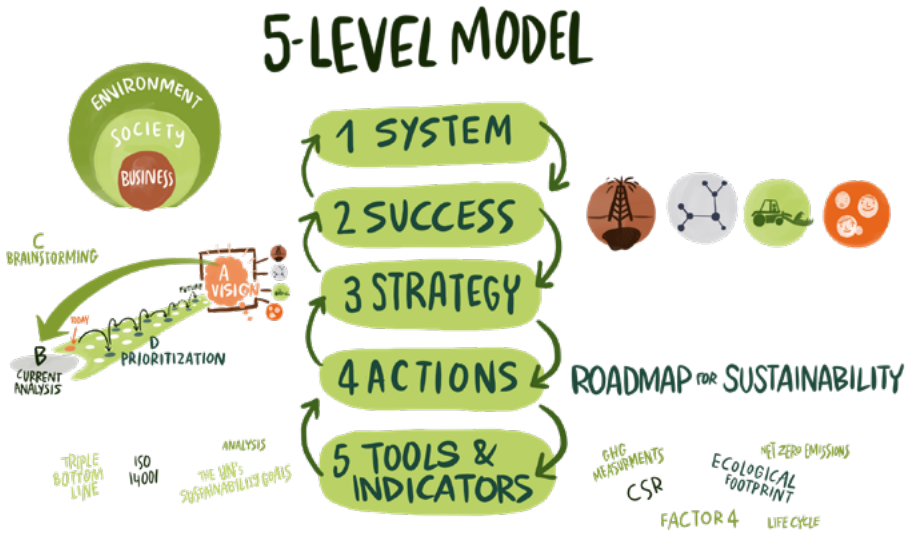


Image: 5-level model and sustainability

6.1.2 THE 5-LEVEL MODEL AND SUSTAINABILITY

Similar to the chess example, we need to structure information and knowledge when it comes to working with sustainability.

First, we must have a clear picture of which systems the company is dependent on. In which systems does the company operate? How does that activity relate to ecological and social systems? If we don't know which systems we depend on, it's highly likely that the company, through its business model, is unconsciously contributing to the depletion of these systems. The last 200 years of industrialization have seen the rise of many successful companies, but this has occurred in parallel with significant externalized costs. Consequently, companies have also contributed to the long-term depletion of the natural resources and social systems their business models depend on. We are slowly eroding the capital rather than just living off the interest.

When companies begin to work on sustainability, it is often the case that they initially lack a clear idea of what sustainability really means, that is, what constitutes success within the system. Without knowing what success is, it becomes impossible to determine whether you are creating long-term value for the company.

On the second level, we define principles of success within the system, in other words, sustainability principles (as discussed in Section 5.3). By concretely applying these sustainability principles, we can analyze to what extent the company is sustainable, meaning it's future-proofed or not future-proofed.

When companies begin to work on sustainability, it is often the case that they initially lack a clear idea of what sustainability really means, that is, what constitutes success within the system. Without knowing what success is, it becomes impossible to determine whether you are creating long-term value for the company.

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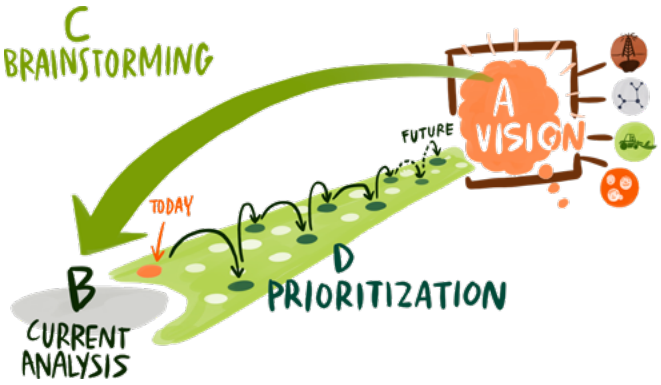
On the third level, it is crucial to ensure we have a model for how to work strategically and systematically based on a vision of where we need to be when the company is fully sustainable. The ABCD-model (discussed in the next chapter) is a strategic tool that helps us align the present with the future and the details with the bigger picture. Learn more about the ABCD model and how it is applied in Chapter 7.



By having an idea of what success is within the system and adopting a strategic approach, we can be confident that the measures we develop are the most intelligent ones, step by step, building our success. These measures are identified and prioritized in a roadmap that can be developed year by year as we gain new knowledge.

After having identified the actions to bridge the sustainability gap between where we are today and when we are future-proofed and fully sustainable, we need tools to measure data and track that what we are doing is yielding results. When we systematically progress through the different levels, we can also better assess and determine what we want to measure or evaluate and why. This ensures that we allocate our limited resources effectively.

By structuring information and knowledge according to the different levels in the 5-level model, we ensure that we allocate the right resources for the right actions, allowing us to achieve our established goals and future-proof our company in due time.

6.2 EXERCISE - THE 5-LEVEL MODEL

Discuss the different levels in relation to your company and how you address each level. Where is there a lack of information? Are there potentially missing guidelines or decisions?

Where can you complement or enhance your understanding?

Guiding questions:

SYSTEM - Does the company understand the system it depends on? Is there an understanding of how the ecological and social systems work and the rules governing these systems? List the systems the company relies on.

SUCCESS - Does the company have a definition or understanding of what success means in regards sustainability? Is there a scientific definition of success for sustainability? Identify the company's idea of success when it comes to sustainability.

STRATEGY - What is the company's strategy for working with sustainability? Does it start by describing the end goal? Is there a vision of what a sustainable business model is? Is there an idea of what the unique value proposition is in a sustainable future? Is sustainability integrated into the business model? Has the company mapped how far its daily operations are from a sustainable business model? Describe the company's strategy for working with sustainability.

ACTIONS - Has the company already started taking sustainability action? In what way are these actions adapted to the changes needed in the system the company relies on? Are the actions adapted to how the ecological and social systems work? How are these actions aligned with the concept of success within the system? Have the actions been developed with a strategic approach to sustainability? Are the actions coordinated and prioritized for the short and long term? Discuss and summarize the conversation about the company's perspective on how it has developed its sustainability actions.

TOOLS AND INDICATORS - Is the company using any tools and indicators for its sustainability work? If so, which ones? If the company measures any aspect of its sustainability efforts, how is the measurement or evaluation linked to an overarching strategy for shifting its business model? Discuss and describe the tools and indicators the company currently uses and why these were chosen.

6.3 READ MORE HERE (printed version: links in Section 10.2)

> Video: Sustainability strategy: a 5-step game plan to help YOU win

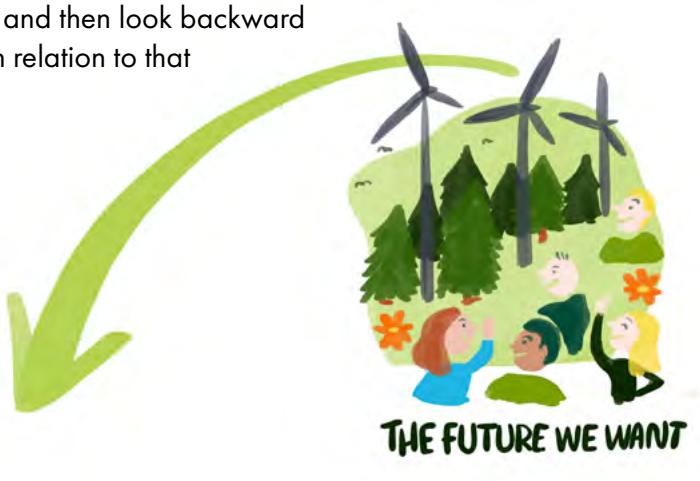
7. The ABCD model

7.1 FORECASTING OR BACKCASTING

Usually, when we want to change something, we look back in time and try to identify trends and the direction in which something seems to be evolving. Then, we make decisions about the direction we need to take based on that. However, when it comes to sustainability issues and the required system changes, it's not enough to base decisions solely on existing trends and where things seem to be heading.

For example, if we consider energy consumption, we can see that the trend has been an increase in energy use over the past few decades. To achieve a sustainable society, we need to break these trends. If we start with existing trends and try to predict where we are heading in line with those trends, using forecasting, we risk drawing entirely wrong conclusions, making incorrect decisions, and not achieving a sustainable society.

Instead, what we need to do is start from our vision of a sustainable society, meaning we start with a desired future, and then look backward from there to identify where we are today in relation to that vision.



This approach is known as back-casting. When we use backcasting, we begin with a shared vision, set a common direction, and ensure that we are working toward the same goal. It's like steering towards a lighthouse; regardless of your starting point, you ensure that the direction and goal are the same.

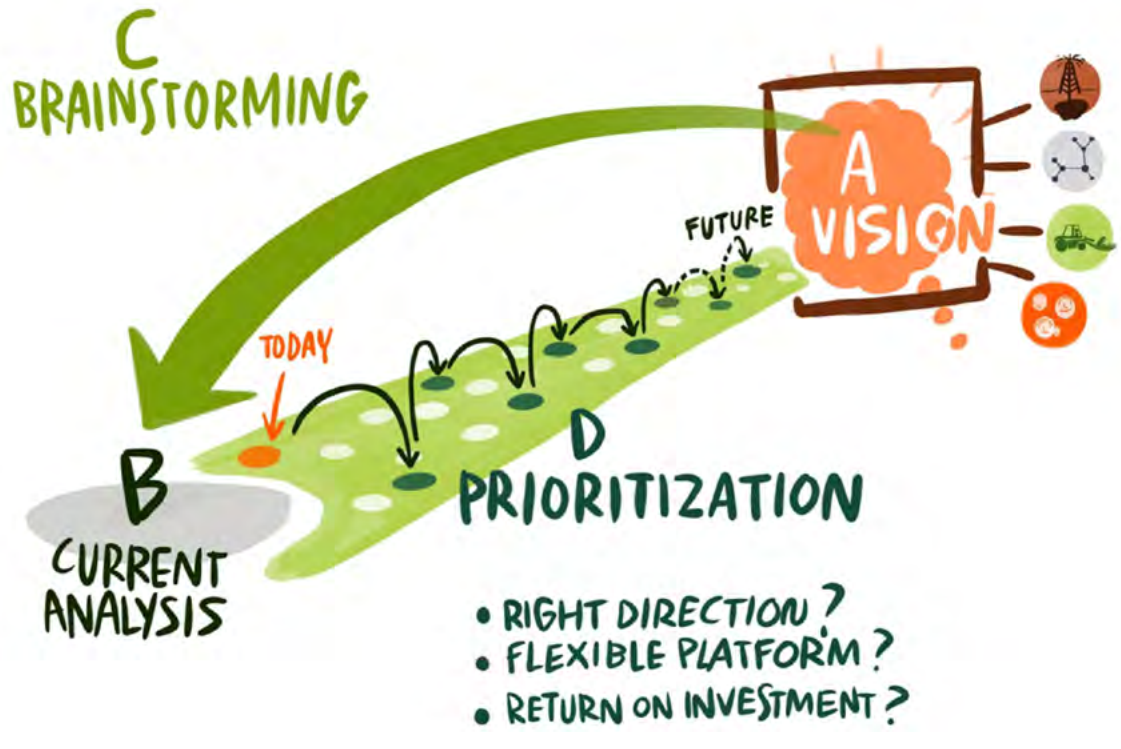
In terms of a sustainability vision, it should be framed by sustainability principles because we cannot know the exact scenario of how the future will unfold in advance. Therefore, we need to be flexible regarding future innovations in both technology and the social realm. By working based on the same principles, we can unleash creativity and find solutions in the short and long term within the boundaries of sustainability.

7.2 THE ABCD MODEL AND THE DEVELOPMENT OF ROADMAPS

The goal of working with the ABCD model is to develop a sustainability roadmap for the company, listing the specific actions needed for the company to strategically and systematically transition toward a vision of a completely sustainable and future-proof business model.

The ABCD model follows a backcasting perspective, starting with the development of a vision of where the company needs to be when the business model is entirely sustainable. The work is done in four simple steps: A-vision, B-current state, C-brainstorming, and finally, D-prioritizing actions in a roadmap.

Below, we will go through the different steps and describe them in more detail as a foundation for the company to conduct an ABCD exercise on its own. The exercises for the various steps are described separately in Section 7.3.



7.2.1 A-STEP - VISION

The A-step is about developing the company's vision and target image with concrete strategic goals and core values framed by the sustainability principles (see Chapter 5). Framing the vision with the sustainability principles means that any business model and vision can be developed as long as the business activities align with the sustainability principles. If any part of the vision or business model violates the sustainability principles, it is not yet sustainable.

By starting with the development of the vision, we ensure a common target image for the company. We focus on how our business model can contribute to creating system value and a sustainable society, and how we can transition to a sustainable business model for the company.

The vision consists of three different parts: vision description, core values, and measurable strategic goals. The company develops these parts according to its discretion and needs.

VISION DESCRIPTION: The vision should be long-term and answer the question - What value does the company contribute to in a sustainable society? What do we want to create as a company? Who are we as a company in a sustainable future?

The vision should be inspiring in a way that both owners, employees, customers, and suppliers can say, "YES, this is what we want to be a part of producing!" and "This feels meaningful to be a part of."

Examples of companies that have integrated sustainability into their long-term vision:

- The company Interface: Creating a climate fit for life with our Climate Take Back™ mission.
- The company Polarbröd: We make sustainable bread meals available to everyone.
- The company Ikea: "To create a better everyday life for the many people."

Ikea states: This vision extends beyond home furnishing. We want to have a positive impact on the world, all the way from the communities where we source our materials to how our products help our customers lead a more sustainable life at home.

By sharing what we do and standing up for what we believe in, we can be a part of a positive change in society.

CORE VALUES: What core values are important for the company in a sustainable society? What values does the company wish to live up to and integrate into its business model? Which values provide guidance for the company in the transition to sustainability?

These values characterize the development and journey toward sustainability and should be integrated into the vision. They reflect what the company considers important and guide everything from how people and the planet are treated to how decisions are made and business is conducted.

Examples of companies' values and how they present them:

> The company Interface's values

> The company Polarbröd's values: Innovative, wholehearted, and proactive.

> The company Ikea and its vision and values

MEASURABLE STRATEGIC GOALS: In addition to a fluffy and inspirational vision description, concrete measurable strategic goals are also needed. These goals clarify when the vision is fulfilled. The goals should be long-term and preferably characterized as BHAGs, which stands for Big Hairy Audacious Goals, meaning goals that are challenging and long-term enough to drive business development toward sustainability.

It is not enough to set goals, for example, five years ahead. The goals need to be set and framed to make clear what should be achieved within various core areas when the business is entirely sustainable, for example, 20-30 years ahead.

The goals also need to be measurable, either quantitatively or qualitatively. The goals can encompass everything from employee well-being, material and resource use, energy consumption, procurement, or various aspects of the business model, such as new revenue streams.

Examples of companies' strategic goals:

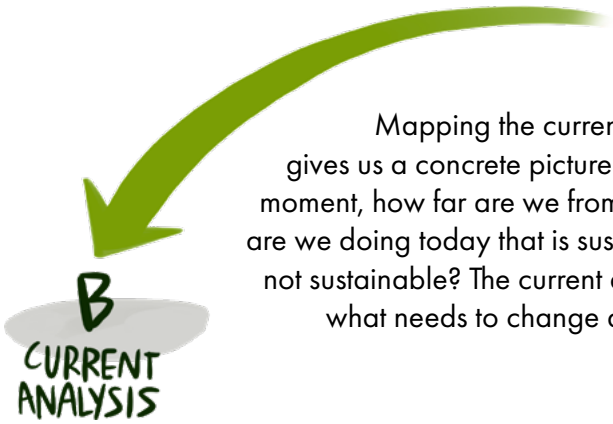
- The company Interface: Aim for zero negative impact on the environment
- The company Polarbröd: By 2032, our business will be 100% circular, and 50% of our revenue will come from things we don't do today

> The company Ikea: Read more about Ikea's strategic goals here

Section 7.3.1 provides instructions on how the company can proceed step by step to develop its vision.

7.2.2 B-STEP - CURRENT ANALYSIS

In the B-step, a current analysis of the existing operations is conducted based on the eight sustainability principles that frame the vision (see Chapter 5). This ensures that the current analysis of the operations aligns with the vision of a sustainable business in a scientific and accurate manner.



Mapping the current analysis in relation to sustainability principles gives us a concrete picture of the sustainability gap. In other words, at the moment, how far are we from the vision and a sustainable operation? What are we doing today that is sustainable? And what are we doing today that is not sustainable? The current analysis thus lays the foundation for us to know what needs to change and which actions are the smartest to start with.

Section 7.3.2 provides instructions on how the company can proceed step by step to conduct a current analysis in relation to sustainability principles.

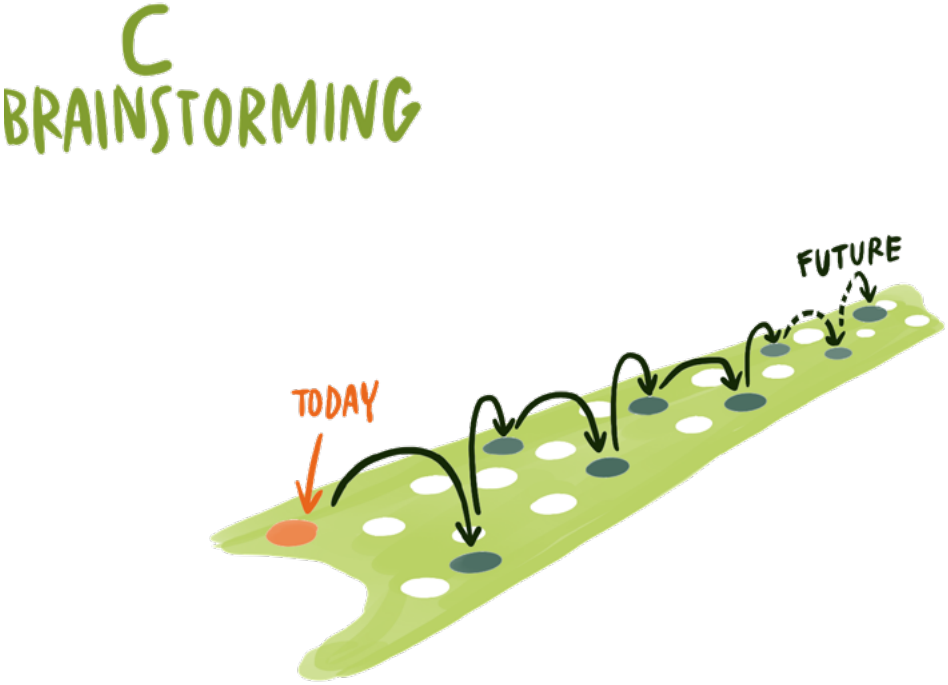
7.2.3 C-STEP - BRAINSTORMING

The C-step involves brainstorming solutions and actions to bridge the sustainability gap between where the company is today (B-step, current analysis) and where the company needs to be in a sustainable future (A-step, the vision). The brainstormed actions should address how the company will find solutions to all the identified aspects of the operation that violate the sustainability principles. Sometimes a direct shift to a sustainable solution is possible, and at other times, the transition or transformation needs to occur in multiple stages.

Therefore, the solutions and actions should be both short and long-term but also flexible enough for the company to develop the transition in multiple steps as, for example, the technological development and human behaviors change.

The solutions and actions can involve everything from necessary investments and new materials for production to researching suppliers and the origins of products, as well as finding smarter ways of doing things.

Section 7.3.3 provides instructions on how the company can proceed to conduct a brainstorming of actions.



7.2.4 D-STEP - PRIORITIZATION

In the D-step, we use the three prioritization questions to develop a roadmap consisting of prioritized and time-bound actions, based on the brainstormed actions.

We go through each suggested brainstormed action one by one and ask ourselves:

Is the action...

... in the right direction?

... flexible enough?

... a smart return on investment?

After the D-step is completed, with all actions and proposed solutions prioritized and scheduled in a roadmap, the company now has a plan for how the transition to a sustainable and future-proof business model will go about.

A roadmap needs to be updated continuously and at regular intervals. When the company has completed an ABCD process, it doesn't need to go through the entire process again. However, sometimes, as part of the update, the company may need to refer back to the current analysis to incorporate the latest developments in the company's operations. Following that, the C and D steps may need to be revisited to integrate the specific additions or new information that have arisen.

In this way, the company can create a culture of continuous development based on systems thinking, ensuring that it continually incorporates the latest technology and sustainability knowledge into its operations.

Section 7.3.4 provides instructions on how the company can proceed to prioritize the brainstormed actions and solutions and then create a roadmap with prioritized and scheduled actions.

7.3 EXERCISE – THE ABCD MODEL

Using the ABCD model, organizations and businesses can future-proof their operations and step by step lay the foundation for their strategic work with sustainability. The process begins by integrating sustainability into the vision and business model (A-step). Then, a current analysis is conducted to identify sustainability challenges (B-step), followed by brainstorming actions to address these challenges and bridge the sustainability gap (C-step). The actions are prioritized and scheduled in a roadmap (D-step), showing how the company can future-proof its operations step by step.

The recommendation is to conduct the exercise using a backcasting approach, meaning that the work starts from the vision by agreeing on where the organization is heading and where it should be in a sustainable future.

The time required to go through all four steps will vary significantly based on the number of participants, the amount of preliminary work done, and the extent of the organization's operations. IMPORTANT! It is more important to get started with the work and complete a quick initial iteration of all four steps than to get stuck in one step and then not have time to finish. The first version can be further developed and deepened when there is time to revisit it.

7.3.1 A-STEP, VISION

The exercise aims to initiate the development of the company's vision as a starting point for the three subsequent steps in the ABCD model. The company's vision is a central part of the roadmap work, showing where the company is heading and what the roadmap will help achieve.

The development of a vision is best done together within the company. If it is a small company, everyone can participate and contribute. If it is a larger company with many employees, it might be a good idea to include representatives from different departments.

It is a good practice to appoint one person to lead the work and another person to document and summarize the thoughts and results. Strive to create an inspiring and open atmosphere. A vision should indeed be a vision of the future and what is desirable 15-20 years from now. It's essential to remind ourselves that we do not need to know right now how we will realize the vision; that work will come in the following steps.

Start by reading Section 7.2.1. The vision consists of three parts: vision description, core values, and measurable strategic goals. If the company already has a vision or has worked on some parts of the vision, it's good to build upon that work. The vision should integrate sustainability into the business model, so an existing vision may need to be complemented and deepened according to the instructions below.

PROCEED AS FOLLOWS:

1. VISION DESCRIPTION

The vision description should briefly in a few short sentences, and in an inspiring manner, answer the question of WHY the company exists in a sustainable future. The vision should address the following: What is the purpose of the business? What needs does the business meet in a sustainable society? Why does the company exist?

The vision description should serve as an inspiration both internally and externally, especially during challenging times. It should act as a beacon, showing where you are heading and what you aim to achieve.

When working on the vision, it is essential not to unconsciously limit yourselves based on what you believe is possible. Therefore, start the process of creating the vision description with an open listing of inspiring words that characterize your sustainable business, without limitations. Aim for the stars and bring a future focused mindset. Discuss the selected words and the reasons for why they were chosen, determining which ones are crucial to include in the vision description. Agree on the next steps in the process to finalize the description.

2. CORE VALUES

The company's core values should guide both internal and external processes. Which values will help the company achieve its vision? What values do you want to build your corporate culture on? What signals do you want to send to your employees, suppliers, and customers?

Initiate an open discussion about values and corporate culture. Identify values that are important in a sustainable business. Are there existing values that the company currently upholds and wishes to preserve? Is there room for further development? Agree on the process to establish which values will apply.

3. MEASURABLE STRATEGIC GOALS

A vision requires measurable strategic goals to determine whether the vision has been achieved or not. Goals can be measured quantitatively, using numbers or quantities, or qualitatively, such as self-assessed health or perceived influence in the workplace.

- Keep the number of goals limited, typically between 5-10, depending on the extent of your operations.
- The goals should be strategic, meaning they should be framed in a way so that they are achieved when the company reaches its vision of a sustainable business.
- They should be long-term, future-focused, and challenging.
- You do not need to know how to achieve the goals right now; they should describe a future you want to attain, which may make some goals feel a bit challenging.
- The goals should cover critical areas of the business both internally and externally. They can relate to material use, energy, emissions, well-being, transportation, competence development, workplace influence, et cetera.

Discuss collectively which central aspects of the vision and the company's operations need to be defined as measurable strategic goals. What should be achieved? How will we know that we have reached our vision of a sustainable business? Don't settle for mediocre goals that you already know can be achieved in the near future; they won't be challenging or motivating enough. Think big, think long-term, and think completely future-proof and sustainable.

7.3.2 B-STEP, CURRENT ANALYSIS

After developing the vision in the A-step, the work proceeds to the B-step, which involves conducting a current analysis of the business based on the sustainability principles. The analysis aims to determine what is currently sustainable in the business operations and what is not. At this stage, we do not need to consider actions yet; it is a pure analysis of the current state that we are aiming for. The analysis answers what the company currently depends on in its business model and how sustainable it is.

The current analysis can be conducted either as a preliminary overview or in more detail, delving into supplier chains and customer habits. It is recommended to start with a preliminary overview and then delve deeper into selected areas based on the available time. Throughout the process, many questions and uncertainties will naturally arise. These questions and uncertainties should be documented as part of the current analysis and addressed in the subsequent steps.

Start by reading Section 7.2.2 and Chapter 5 about the sustainability principles.

PROCEED AS FOLLOWS:

1. Create a preliminary overview of the flows of materials, products, energy, transportation, and other elements that the company depends on for its operations. What is purchased by the company? What is used within the company? What is sold to customers or leaves the business as waste or byproducts? List specific materials or products the company depends on but do not list each substance at this stage. Also, specify the type of waste generated by the company and, if possible, what happens to the sold products when customers use or discard them. What do the flows of materials and resources the company depends on look like?
2. Proceed further by applying the sustainability principles to the identified flows of materials and resources in step one above. Have the sustainability principles at hand to remind yourself of the principles.

Let us start with the three ecological sustainability principles:

a. Begin with sustainability principle 1 and ask: What is it that we depend on or currently do in our operations that violates sustainability principle 1, which states that we should not systematically extract materials from the Earth's crust that, through use in any stage of our operations, accumulate in nature? In other words, what are we dependent on or currently doing that contributes to harmful concentrations of substances from the Earth's crust in nature?

   List all the actions and products et cetera that violate sustainability principle 1 separately in a long list. Be as specific and clear as possible, as this will make it easier in the following steps. For example, do not write "fossil transportation" in general; list in as much detail as possible whether it is supplier transportation, customer transportation, or the company's transportation. Also, specify whether it is gasoline/diesel vehicles or fossil-fuel-generated electricity used in electric cars. All items listed that violate sustainability principles need solutions in the C-step. The more precisely we have identified the problem, the easier it is to find the right solutions and actions to resolve it. Listing "fossil transportation" or "artificial fertilizers" without further specification will not be sufficient when we later need to find alternative solutions.

b. After sustainability principle 1, move on to sustainability principle 2 and ask: What are we dependent on or currently doing in our operations that violates sustainability principle 2, which states that we should not systematically spread substances from societal production that, through use in any stage of our operations, accumulate in nature?

   List, in the same way as for sustainability principle 1, all actions and products et cetera that violate sustainability principle 2 separately, as specifically and clearly as possible.

c. ... and then sustainability principle 3 in the same way, asking the question: What are we dependent on or currently doing in our operations that violates sustainability principle 3, which states that we should not systematically degrade nature with physical means?

   List, in the same way as sustainability principles 1 and 2, all actions and products et cetera that violate sustainability principle 3 separately, as specifically and clearly as possible.

   Regarding the five social sustainability principles, the question is framed slightly differently since it is about identifying structural barriers to achieving these principles.

d. Sustainability principle 4 focuses on health. The question then is: What structural barriers to health can we identify? In other words, is there something we depend on that is produced in a way that makes it difficult for people in any part of the supply chain to maintain their health? Is there something we do or have decided that hinders people here or elsewhere from maintaining their health? Do our products or services contribute to the existence of structural barriers at any point in the supply chain, now or in the future, to attain health?

   List all structural barriers to maintaining sustainability principle 4 separately, as specifically and clearly as possible.

e. Sustainability principle 5 is about influence. The question is: What structural barriers to influence can we identify? In other words, is there something we depend on that is produced in a way that makes it difficult for people in any part of the supply chain to exercise legitimate influence or have their voices heard in matters that are important to them? Is there something we do or have decided that hinders people here or elsewhere from attaining influence? Do our products or services contribute to the existence of structural barriers at any point in the supply chain, now or in the future, to the right level of influence?

   List all structural barriers to maintaining sustainability principle 5 separately, as specifically and clearly as possible.

f. Sustainability principle 6 is about competence. The question is: What structural barriers to competence can we identify? In other words, is there something we depend on that is produced in a way that makes it difficult for people in any part of the supply chain to maintain and further develop their competence? Is there something we do or have decided that hinders people here or elsewhere from obtaining education or maintaining their competence? Do our products or services contribute to the existence of structural barriers at any point in the supply chain, now or in the future, to attain competence?

List all structural barriers to maintaining sustainability principle 6 separately, as specifically and clearly as possible.

g. Sustainability principle 7 is about impartiality. The question is: What structural barriers to impartiality can we identify? In other words, is there something we depend on that is produced in a way that results in people in any part of the supply chain not being treated impartially? Is there something we do or have decided that hinders people here or elsewhere from being treated impartially? Do our products or services contribute to the existence of structural barriers at any point in the supply chain, now or in the future, to impartial treatment?

   List all structural barriers to maintaining sustainability principle 7 separately, as specifically and clearly as possible.

h. Sustainability principle 8 is about meaning-making. The question is: What structural barriers to meaning-making can we identify? In other words, is there something we depend on that is produced in a way that makes it difficult for people in some part of the supply chain to create meaning in their lives? Is there something we do or have decided that hinders people here or elsewhere from having a meaningful life? Do our products or services contribute to the existence of structural barriers at any point in the supply chain, now or in the future?

   List all structural barriers to maintaining sustainability principle 8 separately, as specifically and clearly as possible.

The current state analysis in Step B is often perceived as the heaviest and most comprehensive step. However, it pays to be thorough and think carefully. Alongside listing what violates or acts as a structural barrier to sustainability principles, you can also list what you are currently doing that is in line with the sustainability principles. In those aspects, the business is already sustainable today, which is worth noting, both to celebrate and to raise awareness so that you do not accidentally worsen something that is already good.

7.3.3 C-STEP, BRAINSTORMING ACTIONS

Once we have lists of things the company currently does or depends on that violate one or more of the eight sustainability principles, the next step is to brainstorm measures and solutions for what can be done instead. For some of the identified sustainability challenges, you may find solutions immediately, but for others, it may require some investigative work or finding financing, and so on. Anything that needs to be done to prepare for a new solution also becomes part of the actions that are listed.

Start by reading Section 7.2.3.

PROCEED AS FOLLOWS:

Brainstorm short- and long-term solutions for each of the listed challenges. This step can be quite quick and efficient. Imagine it as a downloading of all possible and impossible solutions without further discussion.

- Write down all of the proposed solutions that come to mind, no matter how strange or unworkable they may seem. The brain functions in such a way that you need to let the ideas and creativity flow without judgments or limitations. At some point, a really smart solution will emerge.
- Write each solution separately, on, for example, a separate post-it note. Solutions will later be processed and scheduled on a timeline, and they need to be processed separately.
- Describe the solution with enough detail for someone else to understand what you mean and what the solution is for. Just writing something like "electric cars" on a note is too unclear because you can not deduce what problem the electric car is supposed to solve. However, you can write "customer deliveries with electric cars instead of diesel cars," which makes it clearer.
- Aim to create as long a list of solutions as possible. This provides the best chance of finding solutions that could actually work.
- The brainstorming can take place in silence so that everyone comes up with possible solutions on their own. At this stage, there should be no discussion or evaluation, so the most effective approach is for everyone to do their own brainstorming.
- Collect all the notes with solutions and then proceed to Step D, which is about prioritizing and scheduling the solutions on a timeline.

7.3.4 D-STEP, PRIORITIZATION

Now, we have reached the final and fourth step in the ABCD model. We have a vision, an assessed current state, and an analysis based on the sustainability principles, along with a long list of brainstormed solutions for all of the challenges. It is time to prioritize and schedule the actions on a timeline to develop the company's roadmap for achieving the vision of a future-proof and sustainable operation.

Start by reading Section 7.2.4.

We have three prioritization questions to guide us:

1. Is the solution/action heading in the right direction, meaning, does it lead the company towards fulfilling our vision?
2. Is the solution/action flexible enough, meaning, does it avoid locking the company into technology or finance for a long time, or can we build upon it when needed to achieve the vision of a fully sustainable operation?
3. Does the solution/action provide the company with sufficient financial room for maneuver, meaning, does it create new income opportunities, help save resources, or is it a smart investment for the future?

PROCEED AS FOLLOWS:

- Go through each action one by one and evaluate it against the three prioritization questions. If the action "passes" all the questions, it is "approved" and saved for the roadmap.
- After reviewing all the actions, you will have several approved actions. The next step is to determine whether each action is a short- or long-term solution.
- Create a timeline, either physically in the room or digitally, and arrange the actions so they logically build upon each other, forming a roadmap with the aim of bridging the sustainability gap between where the company's operation is today and where it will be when the vision is fulfilled.
- Finally, go through the actions in the roadmap together and consider if there is anything missing. Perhaps an investigation of some kind is needed to make a decision on an investment to be implemented later? Maybe there is a need to ask questions to subcontractors about products and materials? Perhaps there is a need to explore if new suppliers can be found? And so on. Add all actions that come to mind to make the roadmap as comprehensive as possible.

Once all the steps in the ABCD model are completed, the company has laid the foundation for a strategic sustainability effort to future-proof its business model. The work can then be continuously developed as more information becomes available. It is advisable to periodically, perhaps once a year, provide feedback and update the various parts of the work. For example, feedback to the current analysis can provide new insights leading to new actions that might need to be incorporated into an updated roadmap.

It is also important to regularly monitor and measure the aspects that have been established as strategic goals to ensure that the roadmap realizes the vision in the right time and in the right way.

7.4 READ MORE HERE (printed version: links in Section 10.2)

> Video: Sustainability Strategy: backcasting from Success

Overviewmodel of the framework and tools for the sustainability work in Businesses

8. Overviewmodel of the framework and tools for the sustainability work in businesses

8.1 OVERVIEW MODEL

The company benefits from various types of information and knowledge when working on sustainability to ensure that actions align with principles for success in the system and that we measure and track the right data.

Perhaps the company has initiated working with sustainability on a specific issue and at a certain level, but it may lack certain aspects to make the work coherent in all parts and over time. Instead of going back and starting all over, you can continue forward and complement the work based on a deeper understanding of how to work more strategically with sustainability.

The overview model for the company's sustainability work enables a process using various frameworks and tools containing both a system perspective, a strategic approach, clear targets, and tools for measuring and monitoring. Section 8.2 presents the model step by step. If your company has not yet started its sustainability journey, we recommend following our process (see Exercise 8.3 below).

If your company has already embarked on its sustainability journey, it may be wise to systematically check off the parts of the process that have already been completed and supplement them with the steps that are still missing. This way, a clearer picture emerges of which parts you are already working on strategically and in which parts you can deepen your understanding of your sustainability work. See Exercise 8.3 and the question checklist for more information on how the company can proceed.

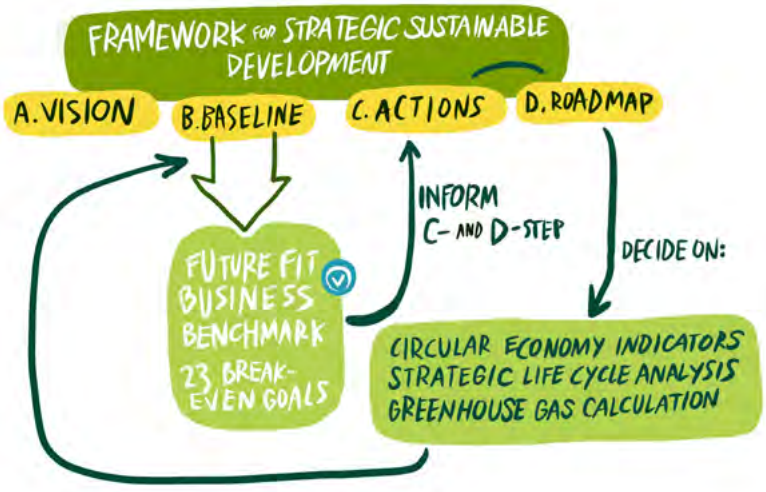


Image: Overviewmodel of the framework and tools for the sustainability work in businesses

8.2 DIFFERENT PARTS OF THE OVERVIEW MODEL

1. FRAMEWORK FOR STRATEGIC SUSTAINABLE DEVELOPMENT (FSSD)

The Framework for Strategic Sustainable Development (FSSD) is developed with a focus on companies and organizations that want to transform their operations in line with how nature and social contexts work. It ensures that a company's operations no longer deplete our shared capital but rather that our companies live off what nature and our social contexts provide as interest rate.

The framework includes various components, each of which works together effectively in developing a sustainable operation. According to the overview model (see image), the work begins by creating A. a vision and then performing B. a current analysis according to the ABCD model (see Chapter 7). With the completion of these steps, the company has identified its sustainability gap, which is how far the company is from a sustainable operation today.

At this stage, the company can choose to deepen its work with the strategic goals. This is done by working with the Future-Fit Business Benchmark and its 23 Break-Even Goals and 22 Positive Pursuits (see below). Then, the company proceeds with what is referred to as C. actions and D. roadmap in the Overview model above. Or, after the A- and B-steps, the company can directly proceed with C. actions and D. roadmap (see Chapter 7) without working with the Future-Fit Business Benchmark.

2. FUTURE-FIT BUSINESS BENCHMARK

The Future-Fit Business Benchmark (FFBB) is a tool based on the FSSD. It ensures that all goals are designed so that the company achieves ecological and social sustainability from a scientific perspective.

FFBB consists of 23 Break-Even Goals and 22 Positive Pursuits. Each of these goals has one or more associated indicators for monitoring.

How the company can work with FFBB will be presented in the next handbook on the Future-Fit Business Benchmark.

3. TOOLS FOR MEASURING SUSTAINABILITY

Once the company has developed a vision, performed the current analysis, potentially further developed the strategic goals using FFBB, and developed actions in a roadmap, it is time to consider how and in what manner it is worthwhile to measure and monitor the work.

There are a multitude of aspects that can be measured, both quantitatively and qualitatively. In recent years, the availability of various sustainability measurement tools has significantly increased. Regardless of what is measured, it will require some resources. Therefore, it is crucial to carefully consider what to measure and why, to ensure that the measurements add value for the business. In this way, the sustainability work is developed for the organization's benefit, and one does not measure for the sake of measuring.

Different businesses have different measurement needs. Some businesses are bound by requirements from procurers, customers, or suppliers. Others, in their ABCD process, conclude that certain products, materials, or substances used need to be replaced because they violate sustainability principles. There may also be a need to track the organization's performance with indicators that steer the operation in the right direction according to the roadmap and decisions, such as towards increased circularity.

In general, one can start from three different types of measurements:

1. **Measurement of a specific aspect of the business that is then monitored over time.**
2. **Measurement of a product's degree of sustainability as the basis for prioritization.**
3. **Measurement of a product's or business's circularity.**

Below, we will go through the three types of measurements in a bit more detail.

1. Measurement of a specific aspect of the business that is then monitored over time.

When the business has completed the mapping of its operations and developed a roadmap for a transition using the ABCD method (and possibly supplemented with FFBB), there is likely a need to measure a specific aspect of the business. This could involve obtaining concrete quantitative or qualitative values for some aspects of the impact that the business creates, whether environmentally or socially. The developed vision and strategic goals will guide the decision on what part of the operations and what impact is worthwhile allocating resources to follow up on through measuring. The result of the current analysis regarding sustainability principles and a possible application of FFBB also provides valuable information on where the greatest sustainability gap exists. This could involve determining, for example, the greenhouse gas emissions generated by the business, the proportion of sustainably sourced raw materials, the chemicals released in any part of the value chain, the percentage of renewable energy used, water consumption rates, employee self-assessments of health, the percentage of employees with a living wage, and so on.

Here is an example of reasoning that can be applied when considering what needs to be measured. Even though measuring greenhouse gas emissions, for example, is trending right now, it may not be a given that this is where the organization should allocate most of its resources. Sustainability Principle 1 (see Section 5.2.1) indicates that all sources of greenhouse gas emissions resulting from extracting substances from the Earth's crust, which then contribute to greenhouse gas emissions through combustion, need to be phased out. In this case, it may not always be necessary to measure every kilogram of greenhouse gas since we know that all emissions sources of fossil origin, such as coal, oil, and natural gas, are to be phased out. If, for instance, 10 sources of greenhouse gas emissions have been identified within the organization, the work can immediately begin to prioritize phasing out the various sources and invest resources accordingly.

However, in situations where there is a need to prioritize investments over time among different sources for greenhouse gas emissions reduction, it can be helpful to determine which source, based on the volume of greenhouse gas emissions, is most cost-effective to phase out first. Sometimes, prioritization may also mean investing in an action that may lower emissions but is more about saving money or reducing expenses, or increasing revenue. An improved financial position, in turn, allows for investment in an action that phases out a source with much higher emissions later.

For organizations of such size that there are requirements for reporting greenhouse gas emissions or, for instance, customers demanding emission disclosures, the situation is different. Even there, it might be appropriate to demonstrate how the organization strategically plans to phase out all sources of emissions derived from substances from the Earth's crust.

There are various tools available to measure different aspects of the business, depending on the industry and specific needs. Once a clear need and the strategic aspects that require measurement have been identified, it becomes easier to find a specific tool that meets those needs. You can find various examples of tools in Section 8.4.

2. Measurement of a product's sustainability as a basis for prioritization.

Sometimes, the current state analysis in relation to sustainability principles reveals that the business is dependent on a particular material, product, or production method somewhere in the value chain that violates the sustainability principles. In such cases, it is important to learn more about alternative materials and how to prioritize between different materials or products when transitioning to a sustainable operation. A strategic life cycle analysis provides an initial overview and qualitative understanding of a material's or product's impact in different stages of its life cycle. After the qualitative analysis, a more detailed quantitative life cycle analysis can be conducted to explore aspects highlighted by the qualitative analysis that may provide crucial insights.

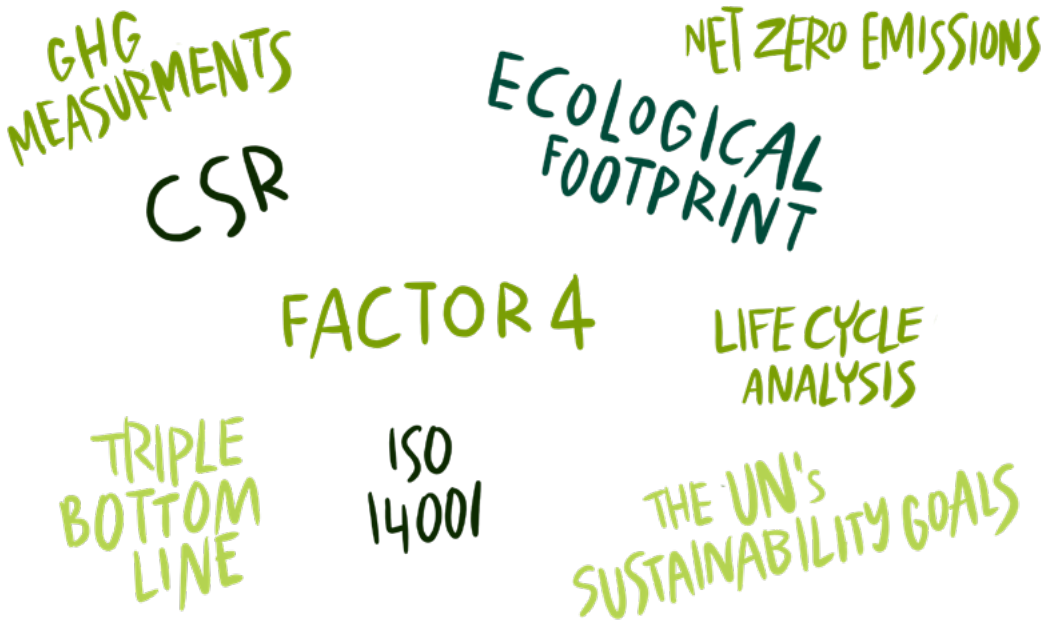
Sometimes, a qualitative analysis may be sufficient for comparison and as a basis for prioritization and decision-making. For examples and descriptions of a strategic life cycle analysis and a quantitative life cycle analysis, please refer to Section 8.4.

3. Measurement of a product's or business's circularity.

Circular economy is a concept that involves integrating substances, materials, and products into an economy where there is no waste, and everything can be circulated and transformed into new products and services. Manufacturing and production no longer rely on a linear material flow that includes resource extraction, production, use, and eventual disposal. A circular flow operates similarly to nature, where resources are continuously reused and reintegrated into the system, with nothing falling outside of the cycle or becoming waste that burdens the system and, in the worst case, creates diseases, such as asbestos or cancer-causing chemicals and dyes.

The foundation of a circular operation is that all substances, materials, and products used align with sustainability principles. This means that even in a circular operation, there is no contribution to the accumulation of substances from the Earth's crust or from society's production in the biosphere. It does not systematically degrade nature. Additionally, social sustainability principles need to be considered within a circular economy.

Learn more about indicators for measuring the circularity of products and businesses in Section 8.4.



8.3 EXERCISE – WHERE DO WE START? CHECKLIST FOR THE SUSTAINABILITY WORK

Initially, it is essential to establish a scientifically grounded and strategic approach to working with sustainability. This ensures that we are doing the right things at the right time and in the right way. This applies regardless of whether the business is large or small. If the business is large, there is much efficiency to be gained by doing the right things from the start and getting the entire organization on board for the journey, aligning everyone towards the same goals. If the business is smaller, it is necessary from the beginning to use limited resources wisely and where they will have the most impact, not just based on trends or what tools someone wants to sell.

Here is a list of questions that can be reviewed one by one to check whether the different elements of a strategic sustainability approach are in place. Points 1-6 below correspond to the content in the Overview Model (see Section 8.1) and the content described in the handbooks. They form the foundation for working strategically with sustainability.

CHECKLIST:

1. Is a scientific definition of sustainability the foundation of the business operations? Does the business have a shared understanding of sustainability? Refer to Section 5.2.
2. Has the business established a vision, core values, and measurable strategic goals? Refer to Section 7.3.1.
3. Has the business conducted a current state analysis based on sustainability principles (Section 5.2)? Refer to Section 7.3.2.
4. Has the business deepened its understanding of its goals and the current state using the Future-Fit Business Benchmark? Refer to Section 8.2 and the second handbook that presents how to work with the FFBB.
5. Has the business brainstormed and prioritized time-bound actions in a roadmap for transitioning to a sustainable operation? Who is responsible for the implementation of those actions? Refer to Section 7.3.3 and 7.3.4.
6. Based on the new information about the business and the priorities outlined in the roadmap, it may be relevant to implement tools to measure some aspect of the operation. Refer to Section 8.2 and 8.4.

Once the strategic sustainability work is implemented, it may also be necessary to consider the need for indicators, environmental management systems, or reporting on sustainability work. Points 7-9 below address these aspects and connect them to working strategically with sustainability, but these elements are not covered in the handbook:

7. For larger organizations, indicators may be needed to ensure that the decided actions are being carried out as planned (known as strategic indicators) and also to monitor whether the measures taken produce results (known as system indicators).
8. Larger organizations might also need to implement some form of environmental management system. It is important to remember that an environmental management system operates by tracking work based on the content which is put into the system. An environmental management system, by itself, is not a guarantee for working strategically with sustainability. If the sustainability work is not grounded in a strategic approach, no environmental management system will help create it.
9. Finally, it might be necessary to consider how sustainability work is monitored and reported annually to customers or other stakeholders in case it is requested or meaningful for the business. When sustainability is integrated into the business model, there's no need for a separate sustainability reporting. Sustainability is reported as part of the realization of the business model and the annual result.

The Checklist summarizes and complements the content of the handbook on how to work with sustainability. The first six points in the list form the foundation for how to work with sustainability, while points 7-9 may be relevant even if you have not yet implemented all elements from 1-6.

Points 7-9 in the checklist are essential to mention so we know how they relate to other parts of the sustainability work. These points are not covered in the handbook as they do not entirely fall within the scope of the handbook.

8.4 READ MORE HERE (printed version: links in Section 10.2)

1. Tools for measuring various aspects

What is a carbon footprint? How to calculate and reduce it?

Tools for measuring greenhouse gas emissions across different sectors

Various calculators for measuring carbon emissions

Standards that set criteria for an effective environmental management system

Various calculators for insights and data on water usage

A leading tool for creating and providing information on life cycle analyses

2. About Strategic Life Cycle Analysis and Life Cycle Analysis

A method for strategic life cycle analyses

A PDF file with the most essential information on life cycle analyses

Complete beginners guide to life cycle analyses

Video: Life Cycle Analysis

3. Circular economy and and circular economy indicators

Video: Circular economy: definition and examples

A collection of indicators for the circular economy

Guide to the circular economy for CEOs

9. Conclusion

Sustainability is more than just a trend. It's a necessity for businesses that want to be relevant and responsible, both environmentally and socially. By working strategically on sustainability, we ensure that the company is contributing to building a better world with a shared vision of sustainability.

Thank you for reading and engaging with the content in this handbook. You have now received an introduction to embarking on the sustainability journey with knowledge at the cutting edge. Your contribution to a sustainable future is significant. Remember to share what you've learned with others. Together, we can make a significant difference!

10. References and attachments

10.1 REFERENCES

Braskem. (15 syyskuu 2023). Life Cycle Assessment. [Video]. Youtube. https://www.youtube.com/watch?v=cYOC8_jJcII

Carbon Footprint. (2023). Start Measuring And Reporting Your Carbon Emissions. https://www.carbonfootprint.com/measure.html

Ecochain. (2023). Life Cycle Assessment (LCA) - Complete Beginner's Guide. https://ecochain.com/blog/life-cycle-assessment-lca-guide/

Global Footprint Network. (2023). Footprint Calculator. https://www.footprintnetwork.org/resources/footprint-calculator/

GREENHOUSE GAS PROTOCOL. (2023). Calculation Tools and Guidance. https://ghgprotocol.org/calculation-tools-and-guidance

Interface. (2023). Sustainability in our DNA. https://www.interface.com/GB/en-GB/sustainability/sustainability-overview.html

International Organization for Standardization. (2023). ISO 14001 and related standards. https://www.iso.org/iso-14001-environmental-management.html

Missimer, M. (2015) Social Sustainability within the Framework for Strategic Sustainable Development. [Väitöskirja, Blekinge Tekniska Högskola]. https://www.diva-portal.org/smash/get/diva2:852857/FULLTEXT02

Missimer, M., Robert, K.-H., Broman, G. (2017). A Strategic Approach to Social Sustainability - Part 2: a principle-based definition. Journal of Cleaner Production 140, 42-52. http://dx.doi.org/10.1016/j.jclepro.2016.04.059

Robèrt, K.-H., Broman, G., Basile, G. (2013). Analyzing the concept of planetary boundaries from a strategic sustainability perspective: how does humanity avoid tipping the planet? Ecology and Society, 18(2) Artikkeli 5. http://dx.doi.org/10.5751/ES-05336-180205

Royal Society of Chemistry. (2023) Life Cycle Assessment [Esite]. https://www.rsc.org/globalassets/22-new-perspectives/sustainability/progressive-plastics/explainers/progressive-plastics-explainer-8---life-cycle-assessment.pdf

Statistics Finland. (2023). Kiertotalousliiketoiminnan indikaattorit. https://www.stat.fi/tup/kiertotalous/kiertotalousliiketoiminnan-indikaattorit.html

Suomen YK-liitto. (2023). Kestävän kehityksen tavoitteet. https://www.ykliitto.fi/kestava-kehitys

Suomen ympäristökeskus. (2018). Planeetan reunaehdot on jo osittain ylitetty. https://www.syke.fi/fi-FI/Suomi_ja_kestava_hyvinvointi/Planeetan_reunaehdot_on_otettava_huomioon/Planeetan_reunaehdot_on_jo_osin_ylitetty(47892)

Sustainability Illustrated. (12 huhtikuu 2016). Biomimicry: definition and examples. [Video]. Youtube. https://www.youtube.com/watch?v=UHb_XNgIHFY

Sustainability Illustrated. (17 tammikuu 2020). Circular Economy: definition & examples. [Video]. Youtube. https://www.youtube.com/watch?v=X6HDcubgxRk

Sustainability Illustrated. (28 lokakuu 2014). Creating sustainable value for YOUR business [Video]. YouTube. https://www.youtube.com/watch?v=jpeS9lFDHpY

Sustainability Illustrated. (26 marraskuu 2013). Ecological footprint: Do we fit on our planet? [Video]. YouTube. https://www.youtube.com/watch?v=g_aguo7V0Q4

Sustainability illustrated. (19 kesäkuu 2020). 5 amazing examples providing real sustainability

solutions. [Video]. Youtube. https://www.youtube.com/watch?v=5FZ9Ryx5zAk

Sustainability Illustrated. (18 maaliskuu 2020). 5 Principles for Social Sustainability (facing unpredictable change together) [Video]. YouTube. https://www.youtube.com/watch?v=o6lSuwJw0pk

Sustainability Illustrated. (10 maaliskuu 2015). Sustainability: definition with simple natural science [Video]. Youtube. https://www.youtube.com/watch?v=eec0UYGIeo4

Sustainability Illustrated. (15 joulukuu 2015). Sustainability strategy: a 5-step game plan to help YOU win [Video]. YouTube. https://www.youtube.com/watch?v=y9xRYglf308

Sustainability Illustrated. (22 tammikuu 2014). Sustainability Strategy: Backcasting from Success [Video]. YouTube. https://www.youtube.com/watch?v=DeDm-HTFuiY

Sustainability Illustrated. (24 maaliskuu 2014). Sustainability: the threshold explained in 20 seconds (spaghetti analogy) [Video]. YouTube. https://www.youtube.com/watch?v=cupnkbFypKY

Sustainability Illustrated. (7 toukokuu 2014). Systems thinking: a cautionary tale (cats in Borneo) [Video]. YouTube. https://www.youtube.com/watch?v=17BP9n6g1F0

Sustainability illustrated. (11 joulukuu 2020). What is a CARBON FOOTPRINT? How to calculate and reduce it?. [Video]. Youtube. https://www.youtube.com/watch?v=bYb7YLsXvzg

TED Talks. (14 helmikuu 2022). Erin Meezan: What nature can teach us about sustainable business | In The Green [Video]. YouTube. https://www.youtube.com/watch?v=TxwGZppT2WA

The Natural Step. (2023). Assessing the sustainability of products and services: Bring strategic sustainability into your product design and innovation. https://thenaturalstep.org/slca/

United Nations. (2022). Agenda 21. https://sustainabledevelopment.un.org/outcomedocuments/agenda21

United Nations Framework Convention on Climate Change. (2023) What is the Kyoto Protocol? https://unfccc.int/kyoto_protocol

Water Footprint Network. (2023). The Water Footprint Assessment Tool. https://www.waterfootprint.org/resources/interactive-tools/

World Business Council for Sustainable Development. (2023) CEO guide to circular economy. [Esite]. https://docs.google.com/viewerng/viewer?url=https://docs.wbcsd.org/2017/06/CEO_Guide_to_CE.pdf

10.2 REFERENCES BY CHAPTER

CHAPTER 1

17 Sustainable Development Goals (SDGs) https://sdgs.un.org/goals

The 9 Planetary boundaries https://www.stockholmresilience.org/research/planetary-boundaries.html

Agenda 21 https://sustainabledevelopment.un.org/outcomedocuments/agenda21

The Kyoto Protocol https://unfccc.int/kyoto_protocol

Video: Sustainability: the threshold explained in 20s https://www.youtube.com/watch?v=cupnkbFypKY

CHAPTER 2

Read more about Interface on their website https://www.interface.com/

Video: Biomimicry: definition & examples https://www.youtube.com/watch?v=UHb_XNgIHFY

Video: Erin Meezan: What nature can teach us about sustainable business https://www.youtube.com/watch?v=TxwGZppT2WA

Video: Creating sustainable value for YOUR business https://www.youtube.com/watch?v=jpeS9lFDHpY

Video: Systems thinking - a cautionary tale (cats in Borneo) https://www.youtube.com/watch?v=17BP9n6g1F0

CHAPTER 3

Calculate your personal footprint here. https://www.footprintnetwork.org/resources/footprint-calculator/

Video: Ecological footprint: Do we fit on our planet? https://www.youtube.com/watch?v=g_aguo7V0Q4

CHAPTER 4

Video: 5 Principles for Social Sustainability (facing unpredictable change together) https://www.youtube.com/watch?v=o6lSuwJw0pk

CHAPTER 5

Video: Sustainability: definition with simple natural science https://www.youtube.com/watch?v=eec0UYGIeo4

Video: 5 Principles for Social Sustainability (facing unpredictable change together) https://www.youtube.com/watch?v=o6lSuwJw0pk.

CHAPTER 6

Video: Sustainability strategy: a 5-step game plan to help YOU win https://www.youtube.com/watch?v=y9xRYglf308

CHAPTER 7

Interface's values https://brand.interface.com/our-brand/brand-values

Polarbröd's values: Innovative, wholehearted, and proactive https://www.polarbrod.se/en/sustainability/

Ikea and its vision and values https://www.ikea.com/gb/en/this-is-ikea/about-us/the-ikea-vision-and-values-pub9aa779d0

Interface: Aim for zero negative impact on the environment https://investors.interface.com/

corporate-responsibility-esg/environmental/default.aspx

Polarbröd: By 2032, our business will be 100% circular, and 50% of our revenue will come from things we don't do today https://www.polarbrod.se/en/sustainability/

Ikea: Read more about Ikeas strategic goals here https://www.ikea.com/gb/en/this-is-ikea/climate-environment/the-ikea-sustainability-strategy-pubfea4c210

Video: Sustainability Strategy: backcasting from Success https://www.youtube.com/watch?v=DeDm-HTFuiY

CHAPTER 8

1. Tools for measuring various aspects

What is a carbon footprint? How to calculate and reduce it? https://www.youtube.com/watch?v=bYb7YLsXvzg

Tools for measuring greenhouse gas emissions across different sector https://ghgprotocol.org/calculation-tools-and-guidance

Various calculators for measuring carbon emissions https://www.carbonfootprint.com/measure.html

Standards that set criteria for an effective environmental management system https://www.iso.org/iso-14001-environmental-management.html

Various calculators for insights and data on water usage https://www.waterfootprint.org/resources/interactive-tools/

A leading tool for creating and providing information on life cycle analyses https://ecochain.com/

2. About Strategic Life Cycle Analysis and Life Cycle Analysis

A method for strategic life cycle analyses https://thenaturalstep.org/slca/

A PDF file with the most essential information on life cycle analyses chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.rsc.org/globalassets/22-new-perspectives/sustainability/progressive-plastics/explainers/progressive-plastics-explainer-8---life-cycle-assessment.pdf

Complete beginners guide to life cycle analyses https://ecochain.com/blog/life-cycle-assessment-lca-guide/

Video: Life Cycle Analysis https://www.youtube.com/watch?v=cYOC8_jJcII

3. Circular economy and and circular economy indicators

Circular economy: definition and examples https://www.youtube.com/watch?v=X6HDcubgxRk

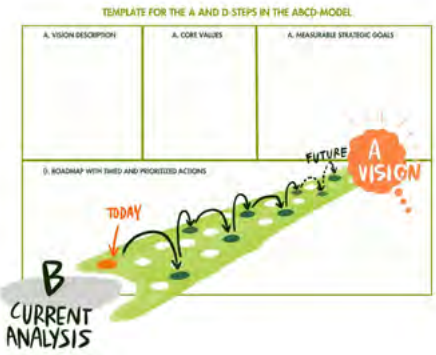
A collection of indicators for the circular economy https://www.stat.fi/tup/kiertotalous/kiertotalousliiketoiminnan-indikaattorit_en.html

Guide to the circular economy for CEOs https://docs.google.com/viewerng/viewer?url=https://docs.wbcsd.org/2017/06/CEO_Guide_to_CE.pdf

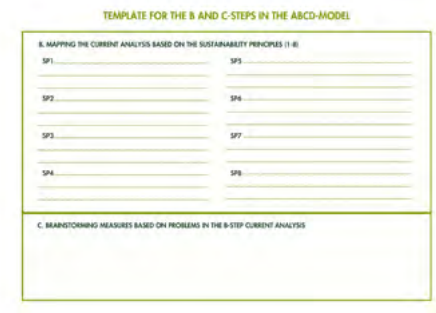
10.3 ATTACHMENTS

Attachment 1 is a combination of Attachment 2 and Attachment 3. The attachments are only suggestions on how the work can be documented. Each person/working group documents the process in their own way, adapted to their needs.

Attachment 2 serves as a template for documenting steps A and D of the ABCD model. The template is a summary of the vision, core values, strategic goals and prioritized actions of what the company needs to do to move from the current situation, step by step towards the vision.



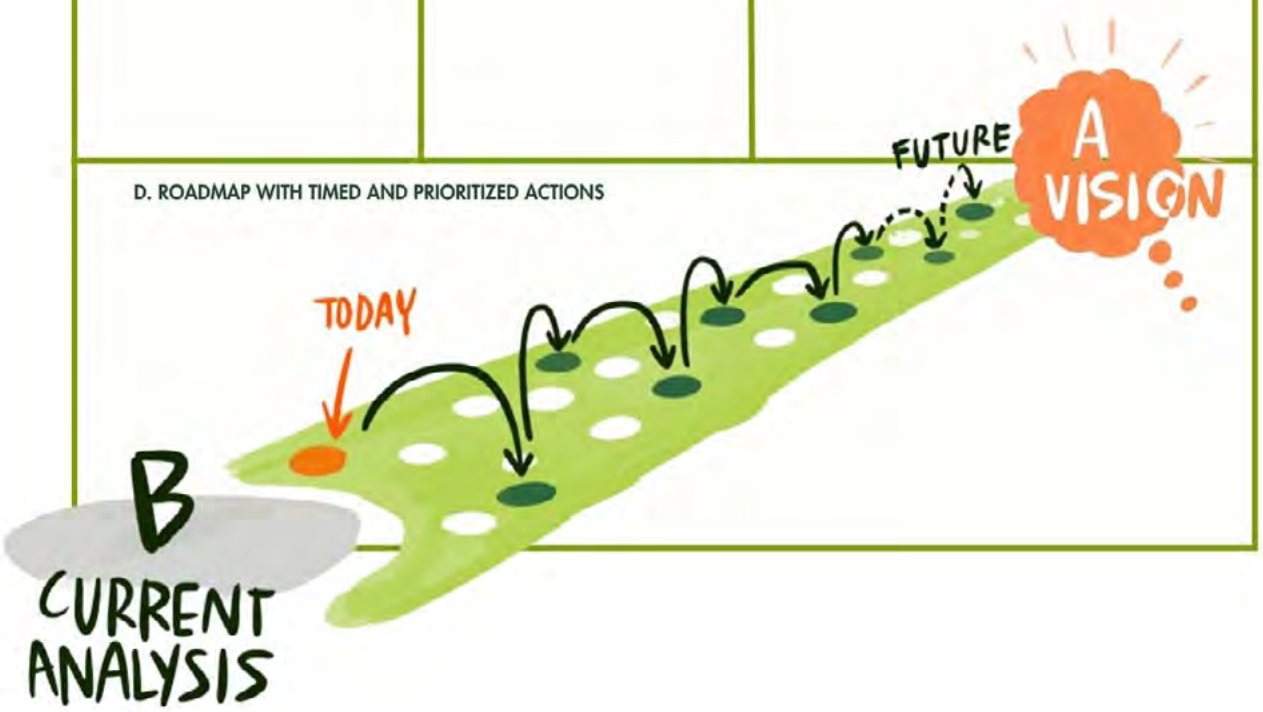
Attachment 3 is about documenting the analysis of the current operations based on the eight sustainability principles and brainstorming solutions to the challenges identified in the B-step.



TEMPLATE FOR THE A AND D-STEPS IN THE ABCD-MODEL

A. VISION DESCRIPTION	A. CORE VALUES	A. MEASURABLE STRATEGIC GOALS

D. ROADMAP WITH TIMED AND PRIORITIZED ACTIONS



TEMPLATE FOR THE B AND C-STEPS IN THE ABCD-MODEL

B. MAPPING THE CURRENT ANALYSIS BASED ON THE SUSTAINABILITY PRINCIPLES (1-8)

SP1.....

SP2.....

SP3.....

SP4.....

SP5.....

SP6.....

SP7.....

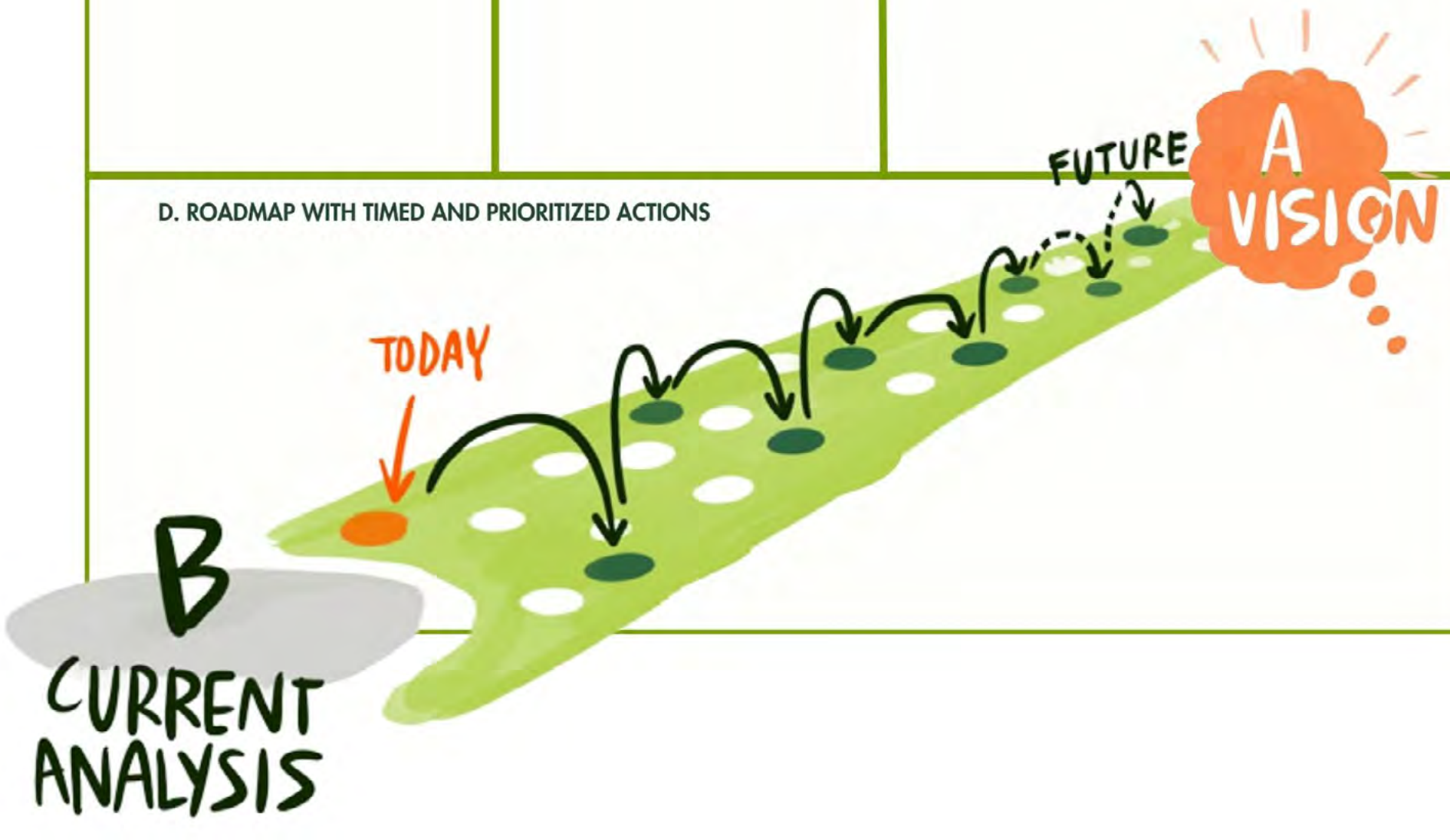
SP8.....

C. BRAINSTORMING MEASURES BASED ON PROBLEMS IN THE B-STEP CURRENT ANALYSIS

TEMPLATE FOR THE A AND D-STEPS IN THE ABCD-MODEL

A. VISION DESCRIPTION	A. CORE VALUES	A. MEASURABLE STRATEGIC GOALS

D. ROADMAP WITH TIMED AND PRIORITIZED ACTIONS



TEMPLATE FOR THE B AND C-STEPS IN THE ABCD-MODEL

B. MAPPING THE CURRENT ANALYSIS BASED ON THE SUSTAINABILITY PRINCIPLES (1-8)

SP1.....

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SP2.....

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C. BRAINSTORMING MEASURES BASED ON PROBLEMS IN THE B-STEP CURRENT ANALYSIS

INTRODUCTION TO WORKING STRATEGICALLY WITH SUSTAINABILITY IN BUSINESSES

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