Speaking notes:

Module 2 training
Food & Beverage sector
Scoping a natural capital assessment
We Value Nature

Module 2 training
Food & Beverage sector
Scoping a natural capital assessment

Full day training session
DATE

Before kicking-off the training, introduce that this training is being given as part of the We Value Nature Campaign and explain what it is, its purpose, objectives and partners involved:

The We Value Nature Campaign is a €2 million EU-funded campaign supporting businesses and the natural capital community across Europe with the aim of making valuing nature the new normal for business. As we will have a chance to explore during today’s training, by valuing nature, businesses can make smarter decisions that benefit themselves, society and the planet as a whole.

The campaign is coordinated by the Institute of Chartered Accountants in England and Wales (ICAEW), World Business Council for Sustainable Development (WBCSD), The International Union for Conservation of Nature (IUCN) and Oppla. And it is supporting the Natural Capital Coalition, which has recently merged with the Social & Human Capital Coalition to become now the ‘Capitals Coalition’.

The campaign will aim to increase the uptake of the natural capital approach (including: natural capital assessment, natural capital accounting, nature-based solutions and green infrastructure) by identifying barriers and opportunities, providing practical support to business through activities (such as webinars, helpdesk calls, etc.) and training such as this one, as well as by inspiring businesses to adopt the NCP.

Take this opportunity to also thank the different stakeholders that supported the training (if relevant).
We Value Nature’s Food & Beverage module 2 training is based on the Natural Capital Protocol and WBCSD’s BET training material.

Module 2 training content and material was developed in collaboration with Nature^Squared & Little Blue Research Ltd.
We Value Nature training is open

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<th>You are free to:</th>
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<tr>
<td>• <strong>Share</strong> — copy and redistribute the material in any medium or format.</td>
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- **Attribution** — You must give appropriate credit, link to the licence & indicate if changes were made (but not suggest endorsement).
- **No additional restrictions** — You may not legally restrict others from doing anything the license permits.

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A few “house rules” – virtual training

- Please rename (under Participants) to have your full name and organization.
- Put yourself on mute when not taking part in discussions.
- But please do feel free to use your camera even when not speaking.
- Use “speaker mode” to help focus your attention.
- Resist the urge to multi-task and be prepared to engage!

Point 1: Explain that for now are all muted but will unmute when open floor for Qs & discussion – will be flexible with time
Point 2: Encourage to participate – the more discussions, the more beneficial the VO
Point 3: Make sure to explain that will be able to write down their Qs directly in the google document
NOT FORGET to mention that we will then share with them the live document, as well as recording
A few “house rules” – in person training

- Taking part in discussions but respect people’s views and session timings.
- Chatham house rules will apply.
- We will be using some quizzes during the session.
- Please ask any questions during the presentations and exercises.
- Contribute and share your experiences – we can all learn from one another!
Module 1 focused on understanding natural capital and the relations with decision-making & risk management.

Module 2 will focus on acquiring the resources & understanding needed to scope a first natural capital assessment. An introduction to valuation techniques is also included in this training.
Learning objectives of module 2

At the end of the training, you will be able to:

❖ Understand how to identify natural capital impacts and dependencies that are important to your business;
❖ Acquire the necessary tools, resources and understanding to scope your own assessment;
❖ Be introduced to the key practical considerations and steps to take when undertaking a first natural capital assessment as well as some tools to help undertake an assessment;
❖ Understand materiality assessments in the context of impacts and dependencies and how to undertake them;
❖ Introduce valuation following on from the brief overview provided in module 1.

The objectives for today are…
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Mention that they should all have a ‘Participant workbook’ and explain that its purpose is to use it throughout the training. We have included in there some of the slides from the training but also additional information. There is space for them to regularly take notes as well as write down their key learnings through each chapter. The aim is that at the end of the training they have a useful resource to look back to when wanting to get started on the natural capital journey.
Introductions
Who is your support team for today?

Name
[insert logo of organization]

Name
[insert logo of organization]

Name
[insert logo of organization]
Introductions – who are you?

• Please tell us more by sharing:
  • Role
  • Any specific expectation(s) for today?
Introductions – who are you?

- Please tell us more about you by sharing your:
  - Role in the supply chain
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Who is in the room?
Introductions

- Ice breaker
  
  - Please introduce yourselves by sharing your name, company, role and why you are interested in scoping a natural capital assessment
Introductions

- **Ice breaker**

  - Please introduce yourselves by sharing your name, company, role and why you are interested in scoping a natural capital assessment.
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Setting the scene and a brief re-cap on natural capital
Keeping up momentum during the COVID-19 crisis

- Institutions urging a **green recovery from covid-19**
- Christine Lagarde, President of ECB: "transition towards a greener economy is a crucial part of economic recovery"
- "Business as usual" is vulnerable to a range of outside influences, not just market forces
- The need for business to take into consideration **all capitals**
- The crisis shows why understanding **stakeholder values** is important for decision making

What have we learned so far?
Optional videos to set the scene

- Pitch for nature video: https://www.youtube.com/watch?v=IyL272Q1N0s
- WBCSD video – what's your relationship with nature? https://www.youtube.com/watch?v=3nLuyyFUIlk
- GSFA 2019, WBCSD video – Business is investing in nature https://www.youtube.com/watch?v=LCvGh_UlqfE
Knowledge check

How do you define natural capital?
Knowledge check

What is NOT a form of natural capital?
### How to use Mentimeter

1. Go to [www.menti.com](http://www.menti.com)
2. Enter this code: XXXXXX
3. Submit your answer
Natural Capital Definition

Natural capital is the stock of renewable and non-renewable natural resources, (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of services to people. In turn, these flows provide value to business and society.

Biodiversity: the variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable.

We have started thinking about natural resources an agricultural producer relies and impacts on but what do we mean when we talk about natural capital? Well in fact, everything you have discussed through the previous example is natural capital is some form or another. Whether it is the assets/resources it represents (such as water and soil you have identified as needed for the farm) or the services it brings. From climate adaptation to ecosystem services, the environmental jargon is everywhere. What is important, is not to remember all the terminology used, but rather that these are all connected to the value of nature and that people have different entry points and priorities and will use one or another terminology based on that. But fundamentally, we are all speaking about the same things, just in different ways. This is the definition according to the Natural Capital Protocol. Refer to p. 12 of Natural Capital Protocol.

The stocks refer to the natural resources available to us (biodiversity, plants, animals, water, soils and minerals) while the flows refer to the different benefits people receive from ecosystems such as:
- Pollination
- Water regulation & purification
- Pest control
- Climate regulation
- Erosion regulation
- Nutrient retention
- Ecotourism
Abiotic services are benefits to people that do not depend on ecological processes but arise from fundamental geological processes e.g. – supply of minerals, metals and oil and gas, as well as geothermal heat, wind, tides, etc.

In the Protocol biodiversity (part of stocks) is considered to be critical to the health and also the stability of natural capital in so much that it provides resilience to shocks like:
- Floods
- Droughts
As well as supports fundamental processes such as:
- carbon and water cycles
- soil formation

Examples of values are fresh water and agriculture (food).

Bee example:
Bees pollinate 87 of the leading food crops worldwide. Insect pollination can increase crop yield by a quarter. (FAO, 2018)
**Ecosystem Services**

Ecosystem services are the benefits to people from ecosystems (e.g. climate regulation, water purification, soil biodiversity, pollination, timber, recreation, mental health). These services can be categorized into:

- **Provisioning**
- **Regulating**
- **Supporting**
- **Cultural**

Provide examples of ecosystem services that are relevant to F&B sector (water purification, soil biodiversity, pollination). Provide examples for provisioning, regulating, supporting, and cultural services.

Presenter to explain ecosystem services using the notes below and referring to p. 12 /111 of the Natural Capital Protocol:

- Ecosystem services are the benefits to people from ecosystems, where an ecosystem is defined as the interaction between complex plants, animals and microorganisms and their non-living environment
- Examples of ecosystem services include pollination, water regulation & purification, soil biodiversity, pest control, climate regulation, erosion regulation, nutrient retention
- Ecosystem services can be classified into provisioning, regulating, cultural and supporting services
  - Provisioning: material outputs from nature (e.g. fresh water, food) – the F&B sector is highly dependent on water and food to produce their final products.
  - Regulating: indirect benefits from nature generated through regulation of ecosystem processes (e.g. Erosion prevention and maintenance of soil fertility, pollination, biological control) – processes such as pollination and prevention of erosion improve soil fertility and can positively impact crop quality and yield.
  - Cultural: non-material benefits from nature (e.g. recreational, ecotourism, educational, spiritual, ethical) – while the benefits of cultural ecosystem services may not always be directly visible, they are part of the larger system around food &
beverage production. While these benefits are strongly interlinked, we have provided a dotted line for the services that are most discussed in the F&B sector.

- Supporting: fundamental ecosystem processes that support the delivery of other ecosystem services (e.g. nutrient cycling, water cycling) – without these services, the F&B sector would not benefit from the other services provided by the ecosystem such as pollination and fresh water.

Ecosystem services – key distinction between:
Supporting services: fundamental ecological processes that support the delivery of our ecosystem services
Regulating services: indirect benefits from nature generated through regulation of ecosystem processes e.g. – mitigation of climate change through carbon sequestration, water filtration by wetlands, erosion control and protection from storms

- There are many classification schemes for ecosystem services including the CICES and the FEVS-CS which measure ecosystem outputs that are directly consumed or used by beneficiaries
This slide describes the four categories of ecosystem services and provides examples for each of the categories. The green line highlights the ecosystem services that are particularly relevant for the F&B sector.

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- There are many classification schemes for ecosystem services including the CICES and the FEBS-CS which measure ecosystem outputs that are directly consumed or used by beneficiaries.
Business depends on & impacts natural capital

1. All businesses **impact and depend** upon natural capital.
   - Example impacts: harmful substances used in packaging (waste, greenhouse gas emissions, discharges to soil and water, water extraction)
   - Example dependencies: health of workers (energy, climate regulation, pollination, materials, erosion and soil regulation, water)

2. This relationship delivers **costs and benefits** back to themselves and to society.
   - Example costs: consumers get ill
   - Examples benefits: increased productivity due to a program of health checks

3. These in turn lead to **risks and opportunities** to the business
   - Example risks: operational, reputational and financial risk (**Increased raw material or resource costs, New regulations or license fees, Changing customer values**)
   - Example opportunities: operational opportunity (**Reduce the costs of resource inputs (e.g. through efficiency gains or switching suppliers), Reduce environmental fees and charges, Growing demand for credibly certified products**)

**What the examples show (rice example below) is that** natural, social and economic issues are fundamentally interconnected and cannot be separated from one another. It also illustrates how natural capital underpins all the other capitals and without it we would not have social and human or financial capital.

**Example: rice**

1. All businesses **impact and depend** upon natural capital
   - Example impacts: **water pollutants**
   - Example dependencies: water to flood the rice fields
2. This relationship delivers **costs and benefits** back to themselves and to society.
   Example costs: poor water quality can affect the quality of the rice produced / poor water quality can impact the health of downstream water users
   Example benefits: higher quality rice/less absence of employees due to an improved wastewater treatment system

3. These in turn lead **to risks and opportunities** to the business
   Example risks: This may pose operational risks if social conflict over polluted water adds to security costs
   Example opportunities: This may also pose societal opportunities if businesses use managed water catchments to improve water quality for local communities
Presenter to explain that natural capital should not be approached in isolation and that it is closely interlinked with other capitals (incl. social and human capital).

The International Integrated Reporting Council’s (IIRC) categorization of six capitals.

Sustainable development is composed of different “spheres” including the natural environment, society and economy. The Stockholm Resilience Institute (2016) represents nature – and natural capital – as the basis of the other development goals. Without a strong natural base, we will not be able to contribute to a resilient economy and just society.

The Natural Capital and Social & Human Capitals Coalition recognized the important linkages between social, human and natural capital, and united their efforts under the Capitals Coalition (2020). The Capitals Coalition works towards transforming the way decisions are made by including the value provided by nature, people & society.
UNDERSTANDING NATURAL CAPITAL
A lot is happening on sustainability and that can be overwhelming. Luckily, a lot of synergy exists between various concepts and efforts can often be aligned to contribute to several goals. In this infographic we aim to illustrate how natural capital is linked to many sustainability concepts that your company may already be working on.

Even if natural capital is a relative new concept to you or your organizations, you will find it is closely linked to other things you are already familiar with. Natural capital can be seen as an additional lens which allows you to uncover important issues for your organizations sustainability journey and connect the dots between various ongoing sustainability efforts. This infographic explains for each concept, goal, methodology, scheme or framework what it is and how it is linked to natural capital.
These are three examples of concepts. All key concepts can be found via this link (will be added later).

**Planetary Boundaries:** Planetary boundaries are a concept developed by Rockström of the Stockholm Resilience Centre, stating that earth has natural boundaries within we must operate. Crossing these boundaries may be catastrophic because this may cause abrupt environmental change within continental-scale to planetary-scale systems. The largest overshoot of these boundaries is currently occurring on the nutrient cycle, biodiversity and climate change. Natural capital assessments provide insight into how your company is performing against these ecological ceilings. If you are already reporting against indicators for the planetary boundaries, you already have performed at least a partial natural capital assessment.

**Sustainable Development Goals:** The Wedding Cake Model orders the Sustainable Development Goals (SDGs) across three layers: the biosphere, the sociosphere and the economic sphere. This model indicates the conditionality and hierarchy between the goals. The bottom layer (biosphere), consisting of Clear Water (6), Climate Action (13), Life Below Water (14) and Life on Land (15), forms a foundation for the layers above. If your company is already committed to the SDGs, securing goals 6, 13, 14 and 15 is essential to achieve the other goals. By working on natural capital, you are contributing to these goals and the SDGs as a whole.

**Integrated Reporting / SASB:** Integrated Reporting is a reporting standard that considers several (financial, manufactured, human, intellectual, natural and social) capitals, and aims to provide an integrated overview of how companies create value. The SASB reporting standard connects businesses and investors on the financial impacts of sustainability. These frameworks will be merged into the new Value Reporting Foundation in the foreseeable future.
future. Within this framework, Natural Capital is one of the key capitals to report on. Performing a natural capital assessment is a way to implement this framework on the element of natural capital.
### Additional guidance and tools

- **Natural Capital Protocol** – a standardized framework to help businesses identify, measure, and value their impacts and dependences on natural capital.

- **Food & Beverage Sector Guide** – a supplement to the NCP specifically developed for the F&B sector.

- **TEEBAgriFood operational guidelines** for business which helps the food & beverage industry better understand their specific impact & dependencies not just on natural capital, but also social & human capital.

- **BRI 6632 Natural capital accounting for organizations**

- **IUCN’s Global Standard for Nature-based Solutions** which provides clear parameters for defining Nature-based Solutions and a common framework to help benchmark progress.

- **The CBD post-2020 Global Biodiversity Framework**

- **IUCN’s biodiversity guidelines for planning and monitoring corporate biodiversity performance** (incl. key biodiversity indicators).

- **Science Based Targets** – targets to reduce GHG that are in line with science to meet the goals of the Paris Agreement (2020), with other targets underway through the Science Based Targets Network.

- **Unified reporting standards** - CDP, CDSC, GRI, SASB, and IIRC have co-published a framework for comprehensive reporting (2020).

- **Integrated capitals** – standardized natural capital accounting principles for business from the NCP and SHCP (2020).

- **Water guidance CDSC** – framework for water-related disclosures supported by the EU LIFE program (to launch in 2021).

- **TNFD** – banks, companies & governments have set up a Task Force on Nature-related Financial Disclosures (to launch 2021), in addition to the existing Task Force on Climate-related Financial Disclosures.

- **BSI 8632 Natural capital accounting for organizations**

- **IUCN’s Global Standard for Nature-based Solutions** which provides clear parameters for defining Nature-based Solutions and a common framework to help benchmark progress.
Collaboration and alignment on natural capital in the F&B sector

- There are various (Food & Beverage) network organizations working to advance natural capital, or sustainability more in general.
- Each network has its own focus and makes a unique contribution to positive impact on natural capital.
- Download the Network Analysis (covering 13 networks) through We Value Nature's Media Library.

<table>
<thead>
<tr>
<th>Network</th>
<th>Foundation Date</th>
<th>Description</th>
<th>Focus Areas</th>
<th>Stakeholders Involved</th>
<th>Key Partnerships</th>
<th>Goals</th>
<th>Key Contributions</th>
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<tr>
<td>Network 1</td>
<td>2005</td>
<td>Environmental conservation, biodiversity, ecosystem services</td>
<td>Agriculture, conservation, community engagement</td>
<td>Government, NGOs, farmers</td>
<td>Local stakeholders</td>
<td>Reduce deforestation</td>
<td>Increase biodiversity</td>
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<td>Network 2</td>
<td>2010</td>
<td>Water management, climate change mitigation</td>
<td>Water, energy</td>
<td>Private sector, government, academia</td>
<td>International organizations</td>
<td>Improve water efficiency</td>
<td>Reduce greenhouse gas emissions</td>
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<tr>
<td>Network 3</td>
<td>2015</td>
<td>Sustainable sourcing, responsible supply chains</td>
<td>Food, logistics</td>
<td>Supply chain companies, NGOs, consumers</td>
<td>Multinational corporations</td>
<td>Enhance traceability</td>
<td>Ensure responsible sourcing</td>
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Refer to p. 11 of your workbook.
Knowledge check

What is the Natural Capital Protocol?
How to use Mentimeter

1. Go to www.menti.com
2. Enter this code: XXXXXX
3. Submit your answer
The Natural Capital Protocol

The Natural Capital Protocol is an internationally standardized decision-making framework that enables organizations to identify, measure and value their direct and indirect impacts and dependencies on natural capital.

Harmonizing approaches with the goal to mainstream natural capital into decision-making processes as to support better informed decisions and to deliver benefits to employees, society, the broader economy, and the natural world.

- 4 stages and 9 steps
- Build upon 4 key principles
  - Relevance
  - Rigor
  - Replicability
  - Consistency

Refer to p. 12 of your workbook & p. 2 & 6 of the Natural Capital Protocol

The Natural Capital Coalition is a collaborative space to harmonize approaches to natural capital.
The network represents over 300 organizations across all parts of society and around the world.
Purpose: To mainstream the inclusion of natural capital in decision making, harmonizing approaches and getting them to scale, quickly.

The Protocol aims to support better decisions by taking into account how business interacts with natural capital in decision making. Until now, natural capital has for the most part and still is, being excluded from decisions. So it is to be understood as a Framework that was really designed to help generate trusted, credible and actionable information that business managers need to inform decisions by identifying, measuring and valuing impacts and dependencies on natural capital.

The Protocol builds upon many approaches already used within business. It acts as an overarching globally accepted framework to build and expand this information into robust natural capital assessments.

STRUCTURE of the Protocol:
4 overarching stages of frame (why), scope (what), measure and value (how) and apply (so what) and 9 logical steps. It should be easy to follow and should be suitable for any business across any sector or geography.
The stages and steps are iterative so expect that you may need to revisit a previous step.

4 principles:
Relevance: Ensure that you consider the most relevant issues throughout your natural capital assessment including the impacts and/or dependencies that are most material for the
business and its stakeholders (adapted from CDSB 2015 and WRI and WBCSD 2004).

**Rigor:** Use technically robust (from a scientific and economic perspective) information, data, and methods that are also fit for purpose.

**Replicability:** Ensure that all assumptions, data, caveats, and methods used are transparent, traceable, fully documented, and repeatable. This allows for eventual verification or audit, as required (adapted from GRI 2013).

**Consistency:** Ensure the data and methods used for an assessment are compatible with each other and with the scope of analysis, which depends on the overall objective and expected application (adapted from WRI and WBCSD 2004 and IIRC 2013).
Important to note that the NCP as an overarching framework, won't give you actual results and need to therefore use the Nat Cap toolkit to get tools. https://naturalcapitalcoalition.org/wp-content/uploads/2016/07/NCC_Primer_WEB_2016-07-08.pdf

❖ **Principle 1** — Consider all forms of capital and include all relevant capitals
You should take into account all potentially relevant capitals, based on your organization’s business model, and where any are deemed not relevant, you should state that they are not relevant, and why. This evaluation of relevance should be achieved through undertaking some form of *materiality assessment* that considers the significance of an issue to your organization and its stakeholders.

❖ **Principle 2** — Take into account the surrounding system and its inter-connections
To be recognized as an integrated capitals assessment, adopting a systems-based approach is essential. The relevant system(s) should be considered, in particular the material *inter-connections within, and between, the different capitals*. This exercise should be initiated in the *Frame and Scope Stages of a capitals assessment*. Systems in this context include for example landscapes, river basin catchments, the broader working conditions within countries of operation, the networks and stakeholders that may be able to help devise or deliver a solution and the inter-connections between nature, people and organizations within these boundaries.
Principle 3 — Apply an appropriate level of attribution based on your degree of influence
Identifying what you are fully or partially responsible for and the correct level of attribution is challenging but extremely important. There will be some impacts and dependencies that you are clearly responsible for and others where you may only have a limited degree of influence. To understand the extent to which your organization has actually contributed to a particular impact you should consider what would have happened anyway in the absence of your activity (i.e. a counterfactual scenario).
Levels of attribution: direct, partial direct, indirect, enabling

Principle 4 — Present values at an appropriately granular level for the decision being made
The aim of this principle is to ensure that information provided through an assessment is presented at the right level of detail to be useful in decision making. This means showing positive and negative values both for each capital, and within each capital, at a suitably granular level.

Principle 5 — Specify and address key differences in impacts and dependencies amongst all stakeholders
When deciding alternative courses of action, there will inevitably be some form of trade-off between and within the different capitals. The extent of relevant stakeholder groups becomes broader when more than one capital is part of an assessment, so a more comprehensive stakeholder mapping across all capitals is needed.
Highlight that the aim of the training will focus on the second and third stage of the Protocol: going into measurement and valuation technical details.
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The business case for assessing natural capital & common assessments

Some you might be familiar with this graphic, this is the WEF Global Risk Report. This puts the world’s risk every year into a global context, look how much it has changed since 2010. Aside from the obvious addition of Infectious disease from COVID-19 which has changed the world’s priorities drastically. But the Environment risk are still very significant in terms of likelihood and impact.
This shows the real crisis that we are in and that we need to act now.
Risks & Opportunities for business

The Protocol highlights key types / categories of risks and opportunities – Refer to p. 18 of the Protocol.

In years gone by, sustainability issues have sometimes taken business by surprise and companies have paid the cost. Companies are increasingly being impacted by the changing risk landscape discussed earlier (WEF report slide).

**Operational risk** – Crop failure and bankruptcy threaten farmers as drought grips Europe

Image source: [https://pixabay.com/nl/photos/korenveld-ma%C3%A9s-veld-akkerbouw-4240209/](https://pixabay.com/nl/photos/korenveld-ma%C3%A9s-veld-akkerbouw-4240209/)

**Reputational risk** – increased public & consumer awareness of environmental and social damages + consumers are increasingly demanding assurance that the products they buy are produced in way that protect our environment and respect human rights – link with SOCIETAL risks – health impacts on local communities, social license to operate

Image source: [https://unsplash.com/photos/ycW4YxhrWHM](https://unsplash.com/photos/ycW4YxhrWHM)


Image source: [https://unsplash.com/photos/OXGhu60NwxU](https://unsplash.com/photos/OXGhu60NwxU)

**Financial risk** – Underlying all of these risks & opportunities are financial ones! As we have seen, these risks imply important financial costs. Price of Thai Rice Skyrocket due to Drought in Thailand, Buyers Lean to InSlide
Biodiversity loss risk: Biodiversity loss comes at the nexus of many other business risks. E.g. through decreasing food security (which itself has economic ramifications) or increasing the likelihood of coastal flooding. Biodiversity loss can be felt through physical risks (increased cost of resources, disruption of operations due to natural disasters unmitigated by appropriate ecosystems), associated regulatory and legal risk, market risk from changing consumer preference as consumers become more aware & discerning RE biodiversity, and supply chain risks.

Examples:

- For example, a 28% reduction in mangrove cover between 1980 and 2000 in South East Asia to make way for commercial shrimp farming has contributed to a loss of natural protection against tsunamis and cyclones. This was tragically demonstrated during the 2004 South Asian Tsunami, when coastal areas still covered by mangroves were relatively less affected, with mangroves acting as a natural defense. In addition to their vital role in coastal protection, these coastal features are critical for many marine food chains, comprising vital nursery areas and habitats for commercially valuable fish and shellfish species. As we look to the future, with the prevalence of denser populations in coastal areas, the human and economic costs of damage to coastal ecosystems are set to grow.

- For example, in Guangdong province in China, deforestation and land conversion have led to encroaching desertification. Exacerbated by severe drought, this not only threatens further biodiversity loss but also agricultural productivity and community health.

- Measures to control deforestation and conversion to soy and palm oil production may significantly increase the prices of these commodities which form key inputs for many producers of food and household goods.

But good news is that, where there is risk, there is opportunity to:
- Secure natural resources
- Save costs
- Manage future risks
- Engage stakeholders

**Operational opportunity** – General Mills ups the ante on its regenerative agriculture push


Image source: https://pixabay.com/nl/photos/tarneweld-lente-zomer-frankrijk-3241114/

**Reputational opportunity** – Nespresso: every cup of coffee will be carbon neutral by 2022


**Legal opportunity** – Starbucks introduces straw free lids:


OR


Image source: https://pixabay.com/nl/photos/milieuvriendelijke-stro-netjes-3562628/
Financial opportunity – But when these risks are taken into account, we have seen how it can also lead to reduced financial costs, or improved access to finance. Companies like those you can see here have managed to secure substantial billion-dollar loan facilities where the interest rate of repayments is linked to ESG performance. That is to say if the company has strong environmental and social performance they pay back less on the loan.
Reflections, risks and opportunities

Individually reflect on whether each of these ecosystem services pose more of a risk or opportunity?

- Soil regulation
- Pollination
- Water extraction

• Soil regulation:
  - Risk: Leaving land sparsely will give wind and rain free rein, which can cause erosion. This can lead to land degradation.
  - Risk: In addition, the regular cultivation of land and the use of chemical fertilizers can affect the land to such an extent that the natural process of soil regulation is disturbed.
  - Opportunity: Reduce input costs (chemical fertilizers)

• Pollination
  - Risk: The use of pesticides endangers pollinators.
  - Risk: 75% of our crops need insects for pollination. Commercial value of the pollination contribution is 153 billion euro/year. Pollination losses therefore cost money.
  - Opportunity: A favorable environment for pollinators can therefore also offer opportunities and reduce costs.

• Water extraction:
  - Risk: increased resource costs, new regulations or license fees.
  - Opportunity: reduce the costs of resource inputs (e.g., through efficiency gains or switching suppliers).
Why assess your impacts & dependencies? The business case

Many natural capital risks and opportunities are becoming increasingly visible, and **businesses need a way to understand and manage these.**

- Understand **relationships with nature** in a structured way
- Challenge your **business model**
- Mitigate **risks**
- Increased **competitive advantage**
- Create **opportunities**
- Inform decisions that are really important to your business
- Access to **finance**
- Recruitment & retention of staff

There are evidently a lot of pertinent risks around nature and the environment facing businesses today. Where does natural capital come into this - how can it help you manage these risks?

**To assess natural capital is to assess your company’s impacts and dependencies on nature.**

It provides information that will help you to understand your relationship with nature. By focusing on impacts and dependencies, natural capital provides structure to this understanding.

Once you have a better understanding of your relationship with nature, you can use this to challenge your business model, mitigate risks and create opportunities. Natural capital can also be a valuable tool for broadening the conversation to include all parts of your business, including the finance team.
A natural capital assessment provides information. Whilst this can be valuable in its own right, this means there are also numerous ways to use this information for further purposes. The NCP focuses on using natural capital for decision-making, measurement and valuation, but it can also be used for disclosure and communication, or to help formulate strategy. The best way for your company to use natural capital information is highly individual – think back to the challenges and risks you identified earlier in the training and consider how exactly how more information could help you meet these challenges.
Data from the Natural Capital Coalition Case Study Database

Presenter to give an overview of the pie chart presented on the slide. Presenter to explain that natural capital assessments have been undertaking in a variety of sectors, including forest products, food & beverage, energy and utilities, and chemicals. Next to Forest products, the Food & Beverage sector is the largest sector in terms of assessments.
Overview of current assessments in the F&B sector

Data from the Natural Capital Coalition Case Study Database

Presenter to give an overview of the pie charts presented on the slide. Presenter to explain that the majority of assessments carried out include only natural capital, and that very few assessments measure social and human capital without also measuring natural capital. Presenter to explain that the majority of companies carrying out assessments are businesses, with governments carrying out ¼ of all assessments and finance carrying out the fewest.
Data from the Natural Capital Coalition Case Study Database

Presenter to give an overview of the pie chart presented on the slide. Presenter to explain that the main purpose for carrying out assessments are to estimate total value/or net impact of/on natural, or social and human, capital. The next greatest application is to assess risks and opportunities for the companies carrying out the assessment, and the third biggest reason is to assess company impacts on stakeholders.
Engaging the supply chain on natural capital

Engaging farmers and consumers towards a sustainable F&B sector

- Like in many other sectors, supply chains in the food & beverage sector can be complex.
- Every actor in the supply chain has a role to play in realising a sustainable food & beverage sector.
- Businesses in different parts of the supply chain do not operate independently from each other – they are strongly interlinked.
- For most companies, engaging with farmers and consumers is key as they are important leverage points for becoming more sustainable.

Like in many other sectors, supply chains in the food & beverage sector can be complex.
- Most supply chains are composed of a variety of actors, including input companies, farmers, traders, manufacturers, retailers and consumers.

Every actor in the supply chain has a role to play in realising a sustainable food & beverage sector.
- E.g. farmers produce the raw materials which are consequently transformed into final products. On the end of the chain – downstream – are the consumers who buy the final products.

Businesses in different parts of the supply chain do not operate independently from each other – they are strongly interlinked.
- Most supply chains are highly efficient: different actors along the supply chain work closely together, moving the product down through the chain up to the consumer.

For most companies, engaging with farmers and consumers is key as they are important leverage points for becoming more sustainable.
- Mouse click to make the blue arrows appear.
Why engaging with farmers on natural capital?

- The food and beverage sector is highly dependent on healthy and productive farmlands for the continuity of supply.
- When it comes to impact, the largest impact often occurs on the level of primary production (i.e. farming): Kering (2019), an industry leader in the textiles industry, published a ground-breaking report on the environmental impacts along their supply chain and found that the production and processing of raw materials together represent 76% of the total environmental impacts.

The food and beverage sector is highly dependent on healthy and productive farmlands for the continuity of supply.
GrainCorp, a large Australian agriculture business, reported that a drought cut its grain deliveries by 23%, leading to a 64% drop in 2014 profits. Unilever estimates that it loses some €300 million per year as worsening water scarcity and declining agricultural productivity lead to higher food costs.

The figure shows how the Group's environmental impacts across the supply chain are distributed. We see that the Group's most significant impacts are generated in the supply chain (92%), and in particular from the production and processing of raw materials that together represent 76% of the total environmental impacts. Kering's own operations represent only 8% of the impacts.
Why engaging with farmers on natural capital?

• Similar to the textiles sector, within the F&B sector the main impacts are also at the level of farmers.
  • E.g. looking at greenhouse gases, there is a high concentration at farm level.
  • Hence, there lies a huge opportunity for sustainable change at the level of agricultural production.

The story is not very different for the Food & Beverage sector. Environmental impacts are unequally distributed along the food chain with a high concentration at the level of agricultural production. This is the case for almost all food products (e.g. Beef, rice, coffee).


Ourworldindata, 2020: https://ourworldindata.org/environmental-impacts-of-food
The food and beverage sector is highly dependent on healthy and productive farmlands for the continuity of supply.

The report An enhanced assessment of risks impacting the Food & Agriculture sector by WBCSD/KPMG (2020) provides a holistic assessment of companies’ exposure to food system challenges. The report shows how the different risks are interrelated and categorizes them into:

Top influential risks:
- Understanding agricultural practices
- Regulation
- Inefficient production practices

Top influenced risks:
- Inefficient production practices
- Regulation
- Land degradation

This tells us that the top (influential and influenced) risks are related to primary production – and hence engaging with farmers should be a priority for companies in the food & beverage sector. Supporting farmers with improving agricultural practices is thereby the foremost important risk mitigation strategy.

The food and beverage sector is **highly dependent** on healthy and productive farmlands **for the continuity of supply**.

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How does a sustainable production landscape look like?

The food and beverage sector is highly dependent on healthy and productive farmlands for the continuity of supply.

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Agriculture-sector
How to organize sustainable change at farm level?

<table>
<thead>
<tr>
<th>Cooperation and partnerships</th>
<th>Certification and standards</th>
<th>Implementing Sustainability Standards in your company’s supply chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Can be formed around specific commodities or themes.</td>
<td>• Third-party verification enhancing accountability.</td>
<td>• Exercising more control over your supply chain e.g. by changing your sourcing model, drafting sustainability supplier requirements, and providing support to farmers.</td>
</tr>
<tr>
<td>• Pre-competitive – focus on mutual learning and jointly addressing challenges through shared solutions.</td>
<td>• Particularly beneficial for “commodity” supply chains – indirect sourcing.</td>
<td></td>
</tr>
</tbody>
</table>

Categorisation based on SAI report (2015) Sustainable Sourcing of Agricultural Raw Materials: a Practitioner’s guide:


The report is produced in collaboration with IMD, CSL, International Trade Centre, IDH the Sustainable Initiative with support from BSR, Sedex and the Sustainable Food Laboratory.

Strategies can also be combined.
Cooperation and partnerships

Biodiversity Monitor for Dairy Farming
The collaboration between dairy cooperative Friesland Campina, Rabobank, WWF and the Louis Bolk Institute is a great example of a project-led partnership. Together, they have developed the Biodiversity monitor for dairy farming. The monitor helps to quantify the actions of dairy farmers to strengthen biodiversity on their farms and beyond. It also aims to develop new revenue models across the supply chain to reduce dairy farmers’ dependence on government funding. Financial partner, Rabobank played a key role in this regard.


SAI platform: SAI Platform is one of the primary global food & drink value chain initiatives for sustainable agriculture. Non-profit network. https://saiplatform.org/

Sector/commodity-led roundtables:ables around specific commodities have come into being, including among others the World Cocoa Foundation, the Ethical Tea Partnership, the Global Roundtable for Sustainable Beef, the Roundtable on Responsible Soy association.

Project-led partnerships:
- Collaborative initiative between Rabobank, WWF and Friesland Campina (Dutch dairy producer) on the creation of a biodiversity monitor for the dairy farming sector: http://biodiversiteitsmonitormelkveehouderij.nl/docs/Biodiversiteitsmonitor_engels.pdf
Certification & standards

Certification schemes applicable to a wide range of commodities

- **Rainforest Alliance**
  Rainforest Alliance promotes collective action for people and nature. The standard focuses on 4 themes: forests, climate, human rights and livelihoods. Therewith, it touches upon social, economic and environmental sustainability.

- **Fairtrade International**
  Fairtrade aims to change the way trade works through better prices and decent working conditions. The focus is on farmers and workers to gain more control over their lives, but Fairtrade also works towards protecting the environment.

- **Organic**
  Organic agriculture Europe enables companies to sell their organic products within the EU. The essentials of organic production are: the absence of chemical fertilizers and pesticides, GM-free products, animal welfare and the overall protection of climate and the environment.

- **Certification and standards are often used within businesses as part of their sustainable sourcing strategy.**
  - There is a wide variety of certifications and standards:
    - There are **cross-sectoral certifications**
    - Others are focused on **specific sectors including multi-stakeholder endorsed standards**

Examples of cross-sectoral certifications in the food & beverage sector:
- Fairtrade - [https://www.fairtrade.net/](https://www.fairtrade.net/)
- Organic
- Rainforest Alliance - [https://www.rainforest-alliance.org/](https://www.rainforest-alliance.org/)

Examples of certifications/standards for specific commodities:
- RSPO: Roundtable for Sustainable Palm Oil - [https://rspo.org/](https://rspo.org/)
- RTRS: Roundtable for Responsible Soy - [https://responsiblesoy.org/](https://responsiblesoy.org/)
- Bonsucro: multi-stakeholder non-profit organization promoting sustainable sugarcane - [https://www.bonsucro.com/](https://www.bonsucro.com/)
Certification & standards

There are different sustainability tracing models, also called chain of custody systems. They describe the systems used to track the movement of products and their associated claims through a supply chain.

There are a range of different CoC models that describe the systems used to track the movement of products and their associated claims through a supply chain.

Four chain of custody systems can be identified (from a high level of traceability to a low level of traceability):

- **Identity preserved** – this system ensures that the certified product delivered to consumer is uniquely identifiable and can be related to the identity of the producer (farmer). Thus, you know which farmer produced the coffee beans for your cup of coffee. The system results in high costs due to the complex logistics, monitoring, reporting and verification.

- **Segregation** – this system ensures the consumer that the product has been developed in a way that meets all the requirements of a certification scheme. The difference with identity preserved is that the final product cannot be traced back to individual producers. Thus, while you can be certain that your coffee is produced according to the sustainability requirements, you don’t know who actually farmed the green beans. Due to economies of scale and increased competition, this model is less costly than identity preserved.

- **Mass balance** – this system ensures that the volume of certified products downstream equal the volume of certified products upstream. The system allows mixing of certified and non-certified produce along the value chain, as long as the volume of certified produce being bought and sold is the same. This means that your sustainable cup of coffee is likely to contain both beans that are certified and beans that are non-certified. As no separate storage, transportation and production processes are needed and less monitoring is required, costs are lower compared to the first two systems.

- **Book and Claim** – this system moves away from any physical link between the certified crop and the final certified product. Producers under this model can register their
sustainable produce at a trading platform and receive a tradable certificate. Companies further down the supply chain can in turn buy these certificates and use these to sell certified sustainable products to their consumers. The price for these certificates is dependent on demand and supply and may vary widely. The major advantage of this system is that no segregation, monitoring and registration is needed, allowing for easy trade of larger volumes of sustainable products.


The blue circles indicate which chains of custody are most commonly used for the certification in question.
Implementing Sustainability Standards in your Company’s Supply Chain

- Businesses can also directly implement sustainability standards in their own supply chain
- They can do this by:
  - Integrating sustainable sourcing requirements into the existing sourcing model (e.g. by including sustainability issues in supplier requirements) - or adapting the sourcing model (e.g. to a direct sourcing model);
  - Supporting farmers and suppliers (e.g. with trainings and premiums);
  - Monitoring the implementation of the sustainable sourcing strategy (including e.g. blockchain, tools and scorecards).

Jerónimo Martins

Jerónimo Martins made a commitment to only sell fish species whose capture or production does not cause overexploitation. To meet this commitment, the Group carries out an assessment every three years (following the IUCN Red List) of the level of vulnerability of all the fish species sold in their companies.

The assessment provides clear lines of action, informing Jerónimo Martins’ strategy on sustainable fishing. The group completely bans critically endangered species (such as eel) and no longer sells endangered species unless sourced from sustainably produced stocks or when sustainably certified. Moreover, the Group limits the sourcing of vulnerable species and finds the stocks that are best managed.

How to engage with farmers on the topic of natural capital?

- When discussing natural capital, it is key to bring farmers into the discussion. "Bring in the supply side companies to talk about challenges and solutions at farm level" (Ruth Thomas, director Global Agribusiness Alliance (GAA)). Also leverage their local knowledge of the area when addressing issues such as biodiversity, water, etc.

- Natural capital may not be the best entry point for a conversation. Rather, focus on the day-to-day realities farmers face – what specific issues are they confronting? What is urgent to them? “Be specific. Talk about soil or water for example. Do not use jargon” (Jane Duncan, SAI Platform).

- In a conversation, be clear about what natural capital is e.g. an integrated approach that includes so many areas that farmers are already working on. “You want to avoid is creating confusion by bringing in too many concepts” (Jane Duncan, SAI Platform). Start with practical on the ground issues that relate to other capital themes (e.g. biodiversity, air, climate).
How to engage with farmers on the topic of natural capital?

- On We Value Nature’s website, you can find action cards describing useful actions for a farmer & ways to engage others in the company on natural capital.
First ask respondents about the top 2 risks that they see for their company at farm level. The next question revolves around how they organize sustainable change at farm level, using the categories as explained in the previous slides:

- Industry wide cooperation & partnerships
- Standards and certification
- Implementing sustainability requirements in company’s supply chain
- Other
Moving to the other end of the supply chain: the consumer

- Moving downstream the supply chain, businesses engage with consumers who buy their food & beverage products.
- Here is where the marketing of your sustainability efforts take place and where consumers reward your efforts by buying your products.

Presenter to explain why businesses should engage with consumers on the topic of natural capital.
- Consumers are the actors in the supply chain who eventually buy the F&B products.

Finding a market for sustainably produced products is important for your business. It is therefore key to engage consumers on the topic of natural capital.

TEEB FOR AGRICULTURE AND FOOD: OPERATIONAL GUIDELINES FOR BUSINESS
Presenter to explain that there are positive consumer trends on natural capital.
Consumers find it increasingly important to buy products that are produced sustainably. The market for sustainable products is now growing faster than the market for conventional products.

However, we still see a mismatch in what people say and how they act (in the supermarket).

Harvard Business review 2019 survey
https://hbr.org/2019/07/the-elusive-green-consumer#

The European Union market for sustainable products (2019)
https://www.intracen.org/publication/The-European-Union-market-for-sustainable-products/

FMI-Label Insight (2018):

Unilever (2020) – Consumers and sustainability
https://www.unilever.com/sustainable-living/our-strategy/consumers-and-sustainability/ent%20survey%2065,about%2026%25%20actually%20do%20so.&text=We%20have%20been%20studying%20how,marketing%2C%20economics%2C%20and%20psychology.

2020 Global Buying Green Report
### How to engage consumers on natural capital?

<table>
<thead>
<tr>
<th>Third–Party Certification</th>
<th>Storytelling</th>
<th>Blockchain technology</th>
<th>True Cost Accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Useful mechanism to communicate wider sustainability efforts.</td>
<td>- Strong in communicating a narrative that helps to emotionally connect consumers to your product.</td>
<td>- Providing far-reaching transparency on the product’s supply chain.</td>
<td>- Strong in informing people about a wide range of sustainability aspects related to a product.</td>
</tr>
<tr>
<td>- Helps build credibility towards consumers as the sustainability performance has been verified by an external party.</td>
<td>- Particularly helpful to communicate about specific sustainability activities, above industry standards.</td>
<td>- Effective in communicating information on pricing and quality.</td>
<td>- Putting a price on social and environmental issues to influence consumer choices.</td>
</tr>
<tr>
<td>- Labelling is an effective instrument to guide consumer choices if done in a clear manner.</td>
<td>- Often not externally verified.</td>
<td>- Its strong traceability helps create trust among consumers.</td>
<td></td>
</tr>
</tbody>
</table>

Refer to p. 22 of your workbook

*Useful resource:* WBCSD: Food & Agriculture Roadmap – Chapter on policy recommendations from a consumer perspective

*Refer to p. 22 of your workbook*
In their quest to become more natural and reduce their impact on the environment, all Clipper teas are organic certified. This means that Clipper only uses ingredients from non-GM sources and that the use of chemicals is discouraged.

Clipper is committed to organic production as: “Frankly, there’s no reason not to choose organic tea! It’s better for wildlife and the environment and, arguably best of all, still tastes absolutely delicious”.

- Third-Party certification means that an independent organization has reviewed the production process of a product and has independently determined that the final product complies with specific standards for safety, quality or performance.
- There are various third-party certifications that include natural capital topics such as Fairtrade and Organic.
- These help create credibility towards consumers and can be communicated on-packaging.
Storytelling

Nespresso

"For over 30 years, we have been learning how to integrate sustainability into our activities, seeking to improve our operations and generate positive impact. Today, we call this The Positive Cup."

Nespresso is strong in communicating stories about the origin of their product: coffee. Through inspiring videos, Nespresso tells personal stories of farmers’ relation with nature and how their livelihoods have changed.

- Storytelling is about using a narrative to communicate a message. The aim is to convey a feeling to inspire people to take action.
- Storytelling is a process of emotionally connecting consumers to the product, i.e. how did the product come into being? Whose faces and stories are behind the product?
- It can be a useful instrument to engage consumers and give them sustainability ownership.
- Formulating a clear purpose and a set of values will serve as a critical reference point to your story.
- Storytelling can be done through on-product and off-product communication (e.g. website/social media/advertising).
Storytelling

https://www.youtube.com/watch?v=9iIB7ixa2o
Verstegen Spices & Sauces works together with Fairfood on the use of blockchain to make the production of nutmeg transparent. Through the use of QR-codes, blockchain technology provides insight to consumers into the origin of the nutmeg and gives farmers useful information about the supply chain.

Verstegen aims to involve consumers and strengthen collaborations with farmers by using blockchain. Ultimate goal is to empower farmers and stimulate farmer entrepreneurship.

- A blockchain is a digital record of transactions.
- Blockchain can be used to provide a high degree of transparency. Through the necessary encryption and control mechanisms, blockchain safeguards transparency by storing information in such a way that it cannot be altered without recording the changes made.
- Blockchain technology facilitates end-to-end traceability of a product, stimulating greater customer involvement. It can be used to create an honest and trustworthy brand.
- This can be done in an online environment (e.g., QR-codes/website/social media).
Eosta is a distributor of fair and organic fruits and vegetables. They have developed a practical tool for True Cost Accounting in the Financial, Food and Farming Sectors.

Eosta reveals the monetary value of social and environmental impacts that are related to organic and non-organic fruits and vegetables. This true pricing helps inform consumers about the hidden impacts of the products they buy in the supermarket. As the price of externalities is higher for non-organic products, the pilot can be an important mechanism to stimulate consumers to buy organic.

- True cost accounting is a new type of bookkeeping that does not just include the usual financial values within a company, but also the impacts on the natural and social environment in which a company operates. These impacts are calculated in monetary terms, so they can be incorporated into a new profit definition.
- A true price consist of the market price plus social and environmental externalities.
- True costs accounting shows consumers that there is an environmental and social price tag attached to the production of products. This creates awareness and helps conscientious consumers to choose the right product.

Useful resource: WBCSD – The true value of food
True Cost Accounting

https://www.youtube.com/watch?v=T3oh95Ec2p0

Useful resource: WBCSD – The true value of food
Creating an inducive company environment for integrating natural capital

- Integrating natural capital into business decision-making is a collaborative process.
- Each person in a company has its own role to play in driving sustainability. Sometimes, i.e. in the case of SMEs, one person can embody different roles.
- To empower your colleagues and managers and collaborate effectively, you need to be aware of the challenges and needs for each role.
- Please visit WeValueNature’s digital media library, to find all action cards describing useful actions for various roles & ways to engage others in the company on natural capital.

Companies need to secure internal buy-in to get the green light for starting a natural capital assessment and to ensure that the results will be used in future decision-making processes. Point out that under WeValueNature’s meSlide library, participants can find persona actions cards for key roles within a company (e.g. CEO, CFO, sustainability manager, procurement manager, marketing manager, farmer), describing useful actions that he/she can take, the challenges and needs, and guidance for effectively engaging on the topic of natural capital.
First ask respondents about the top 2 risks that they face in marketing their sustainability efforts. The next question revolves around how they engage with consumers, using the categories as explained in the previous slides:

- Third party certification
- Storytelling
- Blockchain technology
- True cost accounting
- Other
Creating an inducive company environment for integrating natural capital

Sustainability Manager

**Actions**
- Collaborate & identify allies
- Identify entry points
- Mitigate & manage your impacts and dependencies
- Set targets
- Monitor & report
- Integrate & take action

**Needs**
- Cross-collaboration & support
- Financial support
- More clarity on how and where to get started

**Barriers**
- Getting internal buy-in and support
- Translating complex environmental issues into a language that is understood by others
- Retrieving needed resources and datasets

**How to engage?**
- Be open to making changes
• Be curious and ask questions
• Discuss how natural capital relates to the current sustainability strategy
• Point out the most material natural capital impacts and dependencies

CEO
Actions
• Understand your company’s link to sustainability
• Strategize and allocate resource
• Governance
• Set ambitious goals and targets
• Develop and implement scalable solutions
• Be vocal and challenge peers
• Lead

Needs
• Clear and concise messaging
• Good understanding of the urgency and business case
• Information translated into actionable options

Barriers
• Understanding the complexities of sustainability
• Limited time
• Balancing responsibility for nature with responsibilities towards shareholders

How to engage?
• Paint the overall picture of why NC is important to the company
• Show how NC related to the current strategy
• Indicate what other companies are already doing
• Ask for commitment, even when starting small

All cards can be retrieved through: LINK FORTHCOMING
Concrete steps to undertaking a 1st natural capital assessment

Refer to p. 24 of your workbook

Presenter to explain the steps to undertaking a 1st natural capital assessment using the Slidegram on the slide.
Re-cap of the learning objectives module 2

❖ To understand how to identify natural capital impacts and dependencies that are **important** to your business

❖ Acquire the necessary tools, resources and understanding to scope your own assessment

❖ To be introduced to the key **practical considerations and steps** to take when undertaking a first natural capital assessment as well as some **tools** to help undertake an assessment

❖ To understand **materiality assessments** in the context of **impacts and dependencies** and how to undertake them

❖ To **introduce valuation** following on from the brief overview provided in module 1
### Agenda

<table>
<thead>
<tr>
<th>Time (xxx)</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Introductions</td>
</tr>
<tr>
<td>15</td>
<td>Setting the scene and a brief re-cap on natural capital</td>
</tr>
<tr>
<td>10</td>
<td>The business case for assessing natural capital &amp; common assessments</td>
</tr>
<tr>
<td>15</td>
<td>Identifying your natural capital impacts &amp; dependencies</td>
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<td>Coffee Break</td>
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<td>20</td>
<td>Scoping an assessment</td>
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<td>Introduction to monetary valuation for scoping an assessment</td>
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<tr>
<td>15</td>
<td>Case study presentation</td>
</tr>
</tbody>
</table>
Identifying your natural capital impacts & dependencies

Impact drivers and dependency pathways
Concrete steps to undertaking a 1st natural capital assessment

Presenter to explain the steps to undertaking a 1st natural capital assessment using the Slidegram on the slide. Presenter to explain that defining the objective has been explained in module 1. The next step is identifying your impacts and/or dependencies.

Collecting this information may involve:
• Seeking expert opinion and/or analysis, or leveraging existing information (e.g., results of an environmental impact assessment) and local knowledge of key issues;
• Consulting stakeholders (internal and/or external) (e.g., interviews, workshops, questionnaire surveys);
• Compiling publicly available information on specific issues (e.g., case studies from relevant locations, land-use maps, species threat assessments);
• Conducting a rapid assessment of value (e.g., what proportion of total sales revenue depends upon a specific ecosystem and/or abiotic service? What is the financial value of the production asset involved?); and, where available,
• Referring to dedicated sector guidance (e.g., sector guides accompanying the Natural Capital Protocol).

It is recommended to establish a panel of relevant people with a broad range of skills to complete the materiality assessment, and to ensure the panel is consistent throughout the assessment.
Optional video – practical example of impacts/dependencies

Source: example from Haagen-Dazs on their honeybees pollinator habitat project

https://www.youtube.com/watch?v=qtgm-3EQOU4
Presenter to provide detail on natural capital dependencies using the notes below and referring to p. 34 of the Natural Capital Protocol:

The protocol defines natural capital dependency as: A business reliance on or use of natural capital. This can occur in your direct operations or somewhere else in your value chain.

Presenter to link natural capital dependencies with the risks and opportunities material covered in M1, using the notes below. Presenter to elaborate on the business impact Slidegram, using some examples:

- Again, thinking back to some of the content in M1, we can see how natural capital dependencies can pose different risks and opportunities for businesses. This is useful in establishing the value of natural capital dependencies in relation to other inputs and services that you rely on.

- **Energy e.g. energy as a critical production input in a factory**
  - A reliance on energy may pose financial risks due to volatilities in the energy market which could impose higher costs on the business
  - This could also open up financial opportunities if “green funds” become available for more renewable energy sources

- **Pollination e.g. regulating service critical in agriculture**
  - This may pose an operational risk for agricultural sectors if pollination services start to vary

- **Materials e.g. reliance on food crops**
• This may pose a societal risk if local communities start to experience reduced access to woodland or related ecosystem services as a result of business activities
  • This may pose a societal opportunity if local communities start to benefit from agriculture

• Erosion and soil regulation e.g. essential for beverage companies
  • This may post legal and regulatory risk if businesses are faced with fines, penalties, compensation or legal cost from regulation efforts

• Water e.g. reliance on water to produce beer
  • This may pose reputational and marketing risk if loyalty of key suppliers of business services in the water industry falls

• Storm and flood protection e.g. local flood barriers
  • Reliance on flood barriers could pose increasing risk as climate change makes flooding more likely in certain regions
  • Investing in natural flood measures could provide wider benefits to local communities and thus benefit the business through reputation

• Recreation e.g. for tourist attraction
  • If businesses rely on recreation such as tourist attractions to raise employee morale, they may be at risk of attracting and attaining their employees due to the volatility of the tourism industry – this could lead to higher recruitment and retention costs

• Climate regulation e.g. natural filtration of water
  • This may provide an operational opportunity if businesses invest in green infrastructure like water filtration services, thus reducing overall costs
Dependency pathway

- Business activities can be dependent on specific features of natural capital
- A dependency pathway can identify how changes in specific features of natural capital can affect these activities
- Knowing how changes affect business activities helps you identify the cost of doing business

Refer to p. 24 of the F&B Sector Guide

Presenter to explain dependency pathways, using the notes on the slide.
Presenter to then walk through the sugarcane example using the notes below and referring to p. 24 of the F&B sector guide:

- Business activities at a sugarcane plantation have a dependency on water to irrigate the crops.
- Changes in natural capital cause the availability of water to decline due to:
  - Sugarcane farming itself, for example over-abstraction of water
  - Natural changes such as drought
  - Human-induced changes including other local farms and businesses abstracting water for their own purposes

The company may be paying more for the water now, but at some point, it may no longer have access to water in the area, no matter how much it costs - and this puts the company at risk, not just the cost of doing business.

Changes in natural capital affect business dependency (by paying more for water to out-compete other users), so water availability is important.

Links to risk – read one example from module 1
Presenter to provide detail on natural capital impacts using the notes below and referring to p. 16 of the Natural Capital Protocol:

The Protocol defines a natural capital impact as: The negative or positive effect of business activity on natural capital. They can arise directly from business operations or indirectly from the use of products and services. As a result of your impact on natural capital you can generate impacts on your business as well as impacts on society.

Presenter to link natural capital impacts with the risks and opportunities material covered in M1, using the notes below. Presenter to elaborate on the business impact Slidegram, using some examples:

- Thinking back to some of the content in M1, we can see how natural capital impacts can pose different risks and opportunities for businesses.

- **GHG emissions e.g. transportation, primary production**
  - This may pose societal risks for businesses due to the health risks arising from the effect of air pollution on respiratory disease
  - On the other hand, this could pose a reputational and marketing opportunity due to new revenue streams offered in areas like carbon offsetting

- **Land management e.g. forest management**
  - This may pose an operational risk by increasing natural hazard costs through degradation of natural ecosystems
• This may also pose an operational opportunity if businesses invest in sustainable and green land management, reducing costs by protecting against natural hazards and contributing to tackling the loss of biodiversity

• **Waste e.g. post-consumer waste**
  • This may pose legal and regulatory risks if new laws or license fees are established, charging more for waste disposal
  • This may also pose an operational opportunity for businesses if they minimise or add value to waste and recapture valuable materials otherwise discarded

• **Discharges to soil e.g. fertilizers & pesticides**
  • This may pose a financial risk if the business’ sales fall due to negative publicity about the business’ impacts on natural capital

• **Groundwater discharge e.g. wastewater**
  • This may pose operational risks if social conflict over polluted water adds to security costs
  • This may also pose societal opportunities if businesses use managed water catchments to improve water quality for local communities

• **Water extraction and management e.g. factory equipment cleaning**
  • This may pose a financial opportunity if businesses alter the way in which they go about water extraction, thus attaining “green funds” or investor interest in sustainability

• **Disturbances e.g. heavy machinery operation**
  • This may pose societal issues again as wider society is impacted negatively from heightened noise and light

**Links to risk – read one example from module 1**

Reputation risk – increased public & consumer awareness of environmental and social damages + consumers are increasingly demanding assurance that the products they buy are produced in a way that protect our environment (link to pollution)

Legal risk – California looks set to regulate groundwater for the first time


Financial risk – Underlying all of these risks & opportunities are financial ones! As we have seen, these risks imply important financial costs. Oatly, the plant-based brand, is facing consumer backlash following a recent investment round led by Blackstone – a name muddied by alleged ties with deforestation in the Amazon.


Campaigners defeat Coca-Cola plant in South InSlide because it would worsen the already existing water shortages in the area and bring more pollution into the area.

Links to opportunity
Operational opportunity – Adnams, a beer producing company in the UK, implemented rainwater harvesting and grey water recycling systems. The company uses around three pints of water for every pint of beer produced: that's almost half the industry average.

Reputation opportunity – Heineken’s goal is to be fully circular by 2030, with breweries that are completely climate neutral.
Impact drivers are:

- **Measurable quantities** of a natural resource used as an input to production (e.g. fresh water)
- Or:
- **Measurable non-product output** of a business activity (e.g. water discharges)

**INPUTS**
- E.g. Fresh water, land use

**OUTPUTS**
- E.g. Waste, manure, air pollution, discharges to water and soil

**Natural capital dependencies**
- E.g. fresh water, land, climate control, waste assimilation, pollination

Presenter to list some example impact drivers for the pork processor below:

**Pork processor**

**Inputs:** fresh water, land use

**Outputs:** waste, manure, water and soil discharges, air pollution
Impact pathway

- Business activities can impact specific features of natural capital.
- An impact pathway can identify how changes in specific features of natural capital can impact these activities.
- Knowing how changes affect business activities helps you identify the cost of doing business.

Presenter to walk through the slide, explaining the general steps of an impact pathway.
Presenter to walk through the slide, explaining the general steps of an impact pathway, using the notes below and referring to p. 23 of the F&B sector guide:

- Business activities produce an impact driver (e.g. water pollution)
- Impact drivers lead to changes in natural capital (e.g. polluted river)
- Changes in natural capital result in impacts (e.g. health problems, decreasing fish stocks)
Knowledge check

Are the following examples of impacts or dependencies, or both?

- Soil regulation
- Pollination
- Water extraction

Dependency / Impact

Refer to p. 28 of your workbook

Presenter to read the question on the slide.

Once poll is complete, presenter should explain that there are different answers:

- Impacts and dependencies are interrelated. Your assessment may cover your impacts, dependencies or both. This, in part, depends on business application and your objective. A complete assessment considers both impacts and dependencies to gain a full understanding of your company’s risk and opportunity related to natural capital.

- Soil regulation – fundamental ecological process related to maintaining soil health (e.g. nutrient cycling, soil formation)
  - Businesses can be dependent on soil regulation. For example in the agricultural industry, businesses may be dependent on nutrient cycling in the soil to grow crops.
  - At the same time, heavy use of soil by a business can degrade the quality of the soil. For example, if an agricultural company uses chemical fertilisers or pesticides on the soil which harm soil quality

- Pollination
  - Businesses can be dependent on pollination. Bees pollinate 87 of the leading food crops worldwide. Insect pollination can increase crop yield by a quarter. (FAO, 2018)
  - Yet agricultural practices themselves can profoundly affect pollinator supply and pollination. Extensive monocultures are associated with a limited pollinator supply and reduced pollination, whereas agricultural diversification can enhance both (Global Change Biology, 2019)
Water extraction

- Businesses can be dependent on water resources as critical production inputs in their business
- At the same time, water use by a company will often mean less water or lower quality water available for other stakeholders

This shows how dependencies on natural capital can result in natural capital impacts – they are interrelated
How to use Mentimeter

1. Go to www.menti.com
2. Enter this code: XXXXXX
3. Submit your answer
Business example – Los Fiordos

- Los Fiordos is a salmon farming company based in Southern Chile, specializing in the production of Coho and Atlantic salmon and producing a variety of goods as well as portions and filets.
- Los Fiordos is a vertically integrated company: they supply their own fodder, eggs and juvenile fishes, own the largest salmon processing plant in Chile, and manage the fright of the produced goods.
- Most of the company’s feedlot centers are located in Melinka and Puerto Cisnes, two high value conversation zones.

Source: An Ecosystem Services Review on Salmon Aquaculture in Chile – Los Fiordos (2016)

https://www.pexels.com/photo/photo-of-person-holding-knife-3296280/
• The majority of salmon produced by Los Fiordos is **exported to foreign markets** such as the US (23.3%), Japan (18.5%) and Brazil (16.4%).

• The company’s **main clients are supermarkets** (42.4%), traditional markets (44.6%), food service (12.8%), and industrial clients (0.2%) *(Agrosuper, 2014)*.

• The company is a frontrunner in adopting sustainable practices and is part of **different initiatives focused on the development of a sustainable aquaculture**.

• Los Fiordos is **one of the largest** aquaculture businesses in Chile.

Source: *An Ecosystem Services Review on Salmon Aquaculture in Chile – Los Fiordos (2016)*

https://fis.com/fis/companies/details.asp?l=e&company_id=31047
Quick recap of the different ecosystem services. This slide describes the four categories of ecosystem services and provides examples for each of the categories. The green line highlights the ecosystem services that are particularly relevant for the F&B sector.

- Ecosystem services are the benefits to people from ecosystems, where an ecosystem is defined as the interaction between complex plants, animals and microorganisms and their non-living environment.

- Examples of ecosystem services include pollination, water regulation & purification, soil biodiversity, pest control, climate regulation, erosion regulation, nutrient retention.

- Ecosystem services can be classified into provisioning, regulating, cultural and supporting services.
  - Provisioning: material outputs from nature (e.g. fresh water, food) – the F&B sector is highly dependent on water and food to produce their final products.
  - Regulating: indirect benefits from nature generated through regulation of ecosystem processes (e.g. Erosion prevention and maintenance of soil fertility, pollination, biological control) – processes such as pollination and prevention of erosion improve soil fertility and can positively impact crop quality and yield.
  - Cultural: non-material benefits from nature (e.g. recreational, ecotourism, educational, spiritual, ethical) – while the benefits of cultural ecosystem services may not always be directly visible, they are part of the larger system around food & beverage production. While these benefits are strongly interlinked, we have provided a dotted line for the services that are most discussed in the F&B sector.
• Supporting: fundamental ecosystem processes that support the delivery of other ecosystem services (e.g. nutrient cycling, water cycling) – without these services, the F&B sector would not benefit from the other services provided by the ecosystem such as pollination and fresh water.

• There are many classification schemes for ecosystem services including the CICES and the FEGS-CS which measure ecosystem outputs that are directly consumed or used by beneficiaries.
Provisioning
Goods produced or provided by ecosystems
- Food (crops, fish): crops and fish (anchovies and sardines) needed to feed the salmon

Regulating
Natural processes regulated by ecosystems
- Oxygen supply: the supply of oxygen in the water
- Water purification and waste treatment: purification of the water and the decomposition of organic matter
- Maintenance of soil quality: soil quality is important for primary production
- Pest mitigation: in a healthy and biodiverse ecosystem, pests are controlled through other species in the trophic chain.

Cultural
Intangible benefits obtained from ecosystem services
- Recreation and ecotourism: recreational pleasure people derive from natural or cultivated ecosystems
- Ethical and cultural values: conservation of certain species (which are important for the nation)
Group exercise in breakout rooms

- We will now split into breakout rooms
  - Approx. 3 groups of 4 persons
- You will work through a table of impacts & dependencies for Los Fiordos’ operations in Chile
- You will have 20 minutes to discuss in your group
- You will be notified when you have 5 minutes left
- Each group will have one of the support team members to take notes
- One member per group will be asked to provide feedback in plenary on the main points & reflections that came out of the discussion

Refer to p. 30 of your workbook
Group exercise at tables

• Form groups of 3-4 at your tables
• You will work through a table of impacts & dependencies for Los Fiordos' operations in Chile
• You will have 20 minutes to discuss in your group
• You will be notified when you have 5 minutes left
• Each group will have one of the support team members to take notes
• One member per group will be asked to feedback in plenary on the main points & reflections that came out of the discussion

Refer to p. 30 of your workbook
Priority ecosystem services are essential for the company’s performance (dependencies) or the company has a rather significant, real or perceived, negative impact on the availability of ecosystem services used by others.

**Questions to help determine dependency:**
Does it enhance/enable performance?
Does it have cost-effective substitutes?

**Questions to determine impact:**
Impact on quantity or quality
Does it affect the ability of others to benefit from ES?

**Provisioning:**
**Crops and industrial fisheries** (Medium impact and dependency: The company has a medium dependence on crops and industrial fisheries, as they constitute the main source of protein in the fodder. Crops have gained an increasingly important role in fish feed. There are cost-effective substitutes to feed-fish such as soybean.)

**Artisinal fisheries** (Low dependency: Los Fiordos has a low dependency on this priority ecosystem service, since artisanal fisheries do not enhance Los Fiordos’ performance. However, it is possible that some of Los Fiordos’ practices contribute to the degradation of ecosystems on which other stakeholders depend. High impact: Through potentially enhancing eutrophication and increasing hypoxia, Los Fiordos may have an impact on the quantity of the benthic species and thereby the quality of the ecosystem service)

**Regulating:**
**Oxygen supply** (High dependency: the oxygen level in the water is essential for salmon production. Artificial oxygen supply does not represent a cost-effective solution as it requires
high investments. **High impact:** The large quantity of salmon being grown in the area requires large amounts of oxygen and may limit the oxygen availability to other salmon farms and other organisms living near the concessions)

**Water purification, waste treatment, and maintenance of soil quality** (High impact and medium dependency: a number of organism in the marine ecosystem support the decomposition of organic matter generated by aquaculture. However, when the level of hypoxia reaches a certain threshold, the ability to treat waste degrades -> soil quality degradation which could lead to a loss in productivity)

**Pest mitigation** (High dependency: A healthy and biodiversity ecosystem control pests, decreasing the risk of virus outbreaks that negatively impacting salmon production. No effective vaccine has been found. Furthermore, use of antibiotics and vaccines may lead to a resistance of fish outside net pens against diseases. There is no cost-effective substitute to this ecosystem service. **High impact:** pests can spread more easily since aquacultures mainly produce one specific species.)

**Cultural:**
- **Ethical and cultural values** (Low dependency: Los Fiordos’ business operations are not directly affected by ethical or cultural values. **High impact:** one important ethical issue identified is the importance of the conservation of cetaceans. Whales and dolphins in particular, are national and pride symbols for the two locations. However, according to stakeholder representatives the number of cetaceans-sightings close to the shore has decreased since aquaculture operators started their business in the area. This could negatively affect the image of Los Fiordos as well as the willingness of communities to collaborate with the company)
- **Recreation and tourism** (Low dependency: Recreation and ecotourism is not a part of Los Fiordos’ value-chain. **High impact:** stakeholder representatives criticize the visual contamination net pens generate, arguing that they obstruct tourism activities in the area. Hence, the activities of Los Fiordos and other aquaculture companies have a high negative impact on this cultural ecosystem service)
Los Fiordos’ Value Added Statement

- The Ecosystem Services Review was the first step to create awareness of and to demonstrate the interdependence between a healthy aquaculture business and healthy ecosystems.
- They assess ecosystem services based on their importance to the company’s performance and their availability and value to other stakeholders.
- The analysis includes information from Los Fiordos’ production operations on the feedlot and pisciculture centers, located in the areas Melika and Puerto Cisnes.

Source: An Ecosystem Services Review on Salmon Aquaculture in Chile – Los Fiordos (2016)

What may be the most material natural capital impact and dependency for your business?

Individually reflect on what would be your business' natural capital impacts & dependencies

Write down 1 impact & 1 dependency that seem most material to your business at the moment.

Give participants 5' to reflect individually on both questions (again, depending on the time you have, you may want to spend more time on this).

Business impacts and dependencies are closely linked. For example, a company may depend on water, while the quality of its water management practices will affect the scale of impacts generated through its use of water.
<table>
<thead>
<tr>
<th>Learning Objective</th>
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<tbody>
<tr>
<td>To understand how to identify natural capital impacts and dependencies that are important to your business</td>
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<tr>
<td>❖ Acquire the necessary tools, resources and understanding to scope your own assessment</td>
</tr>
<tr>
<td>❖ To be introduced to the key practical considerations and steps to take when undertaking a first natural capital assessment as well as some tools to help undertake an assessment</td>
</tr>
<tr>
<td>❖ To understand materiality assessments in the context of impacts and dependencies and how to undertake them</td>
</tr>
<tr>
<td>❖ To introduce valuation following on from the brief overview provided in module 1</td>
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</table>
**Agenda**

<table>
<thead>
<tr>
<th>Time (xxx)</th>
<th>Session</th>
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<tbody>
<tr>
<td>10</td>
<td>Introductions</td>
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<tr>
<td>15</td>
<td>Setting the scene and a brief re-cap on natural capital</td>
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<tr>
<td>10</td>
<td>The business case for assessing natural capital &amp; common assessments</td>
</tr>
<tr>
<td>15</td>
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<td>15</td>
<td>Case study presentation</td>
</tr>
</tbody>
</table>
Scoping an assessment
Concrete steps to undertaking a 1st natural capital assessment

The following step is scoping an assessment. Based upon the business application you have chosen, you may decide to have a broad and shallow approach (i.e., assessing multiple impacts across the entire company or value chain) or you may choose a narrow and deep approach (i.e., fewer issues and a tighter scope with more detailed analysis).

The resources and skills required, and the degree of stakeholder involvement depend on the scope of your assessment.
The table shows the different components within the step 'scoping an assessment'.

**Organizational focus**: the part or parts of the business to be assessed (e.g., the company as a whole, a business unit, or a product, project, process, site, or incident). For simplicity, these are grouped under three general levels as below:

- **Corporate**: assessment of a corporation or group, including all subsidiaries, business units, divisions, different geographies or markets, etc.
- **Project**: assessment of a planned undertaking or initiative for a specific purpose, and including all related sites, activities, processes, and incidents.
- **Product**: assessment of particular goods and/or services, including the materials and services used in their production.

**Value-chain boundary**: The part or parts of the business value chain to be included in a natural capital assessment. An assessment of the full lifecycle of a product would encompass all three parts:

- **Upstream** (cradle-to-gate): covers the activities of suppliers, including purchased energy.
- **Direct operations** (gate-to-gate): covers activities over which the business has direct operational control, including majority owned subsidiaries.
- **Downstream** (gate-to-grave): covers activities linked to the purchase, use, re-use, recovery, recycling, and final disposal of the business' products and services.
**Value perspectives**: the perspective or point of view from which value is assessed; this determines which costs or benefits are included in an assessment.

- Business value: The costs and benefits to the business, also referred to as internal, private, financial, or shareholder value.
- Societal values: The costs and benefits to wider society, also referred to as external, public, or stakeholder value (or externalities).

**Impacts and/or dependencies**: the focus of your assessment; will you focus on measuring impacts and/or dependencies.

- Impacts on natural capital
- Dependencies on natural capital
- Both: an assessment that focuses both on the impacts created by business operations as well as their dependencies on natural capital

**Types of value**: The type of value you'll use when assessing your company's impacts/dependencies on nature (see next slide).

- Qualitative
- Quantitative
- Monetary
There are different ways of valuing – could be qualitative, quantitative and monetary.

Important to note that quantitative data and how it is calculated is similar to what companies are used to in sustainability reporting.

Important to note that monetary values without any context (i.e. accompanying quantification) are less meaningful!

The method you choose depends on which natural capital impact drivers or dependencies you wish to assess, the chosen value perspective (e.g. business, societal, or both), the ultimate objective of your assessment, and the time and resources available.
### Identifying stakeholders

<table>
<thead>
<tr>
<th>Examples of Internal Stakeholders:</th>
<th>Examples of External Stakeholders:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholders (if applicable)</td>
<td>Shareholders (if applicable)</td>
</tr>
<tr>
<td>Senior executives and directors</td>
<td>Investors</td>
</tr>
<tr>
<td>Heads of sustainability, environment etc.</td>
<td>Suppliers</td>
</tr>
<tr>
<td>Human resources or auditing and compliance</td>
<td>Government, regulators, customers etc.</td>
</tr>
<tr>
<td>Employees and contractors</td>
<td>Experts (e.g. academics, engineers etc.)</td>
</tr>
</tbody>
</table>
| Departments like finance, strategy, procurement, marketing, communications, reporting, public affairs, investor relations etc. | • Community and other affected stakeholders (local residents, schools, other businesses, special interest groups, farmers etc.)  
  • Civil society (NGO, labor unions etc.) |

Various stakeholders may contribute significant insights into the assessment and its results.

Internal stakeholders may be able to provide useful insights. E.g. colleagues from procurement have great knowledge of the supply chain. External stakeholder input can provide greater robustness and credibility to the results. Engaging with external stakeholders is certainly to be encouraged, bearing in mind that you may have to give some background on the basic concepts of a natural capital assessment.
Identifying target audience and obtaining buy-in

<table>
<thead>
<tr>
<th>Why do you need to identify a target audience?</th>
<th>Creating buy-in</th>
</tr>
</thead>
<tbody>
<tr>
<td>• In order to help define your objective, you need to identify the target audience and understand what drives them</td>
<td>• In order to help drive your project forward you will need to get internal buy-in this can be achieved by:</td>
</tr>
<tr>
<td>• The target audience is the main user of the assessment output, this means that outputs must be written with them in mind</td>
<td>• Identifying individuals with an interest in the project and getting them involved</td>
</tr>
<tr>
<td></td>
<td>• Identifying where company operations may be vulnerable in terms of dependencies</td>
</tr>
<tr>
<td></td>
<td>• Identifying areas of opportunity that fit within the remit of department leaders in product development, etc.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrating how the outputs of an assessment can help with decision making where investment decisions are currently being discussed</td>
</tr>
<tr>
<td></td>
<td>• Knowing how to adapt your language for the relevant department, to make options easy to understand</td>
</tr>
</tbody>
</table>

Identifying the target audience and understanding what drives them is key in defining your objective as it will influence the way the assessment is conducted, the type of outputs to be delivered, and the desired outcomes.

Support from key external stakeholders can also help to strengthen internal buy-in and improve the quality of the assessment.
Recap Business example – Los Fiordos

- Los Fiordos is a **salmon farming company based in Southern Chile**, specializing in the production of Coho and Atlantic salmon and producing a variety of goods as well as portions and filets.
- The company is a **subsidiary of Agrosuper** which is one of the largest animal food production companies in Chile.
- Los Fiordos is a **vertically integrated company**: they supply their own fodder, eggs and juvenile fishes, own the largest salmon processing plant in Chile, and manage the fright of the produced goods.
- Most of the company’s feedlot centers are located in Melinka and Puerto Cisnes, **two high value conversation zones**.

Source: *An Ecosystem Services Review on Salmon Aquaculture in Chile – Los Fiordos* (2016)

https://www.pexels.com/photo/photo-of-person-holding-knife-3296280/
Business example – Los Fiordos, Chile

<table>
<thead>
<tr>
<th>Target Audience:</th>
<th>Stakeholders:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

**Target Audience** = main user of the assessment output (i.e. those people that will read and use the output to make decisions)

**Stakeholder** = any individual, organization, sector or community with an interest or stake in the outcome of a decision or process

**Natural Capital Impact:**
The negative or positive effect of business activity on natural capital (e.g. water extraction)

**Natural Capital Dependency:**
Business reliance on or use of natural capital (e.g. pollination)
Who could the stakeholders and target audience be for Los Fiordos?

<table>
<thead>
<tr>
<th>Target Audience</th>
<th>Stakeholders:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO and Board of Directors</td>
<td>Departments of Finance, Communications, HR, Investor Relations, Operations and Environment</td>
</tr>
<tr>
<td>Shareholders committee</td>
<td>Employees</td>
</tr>
<tr>
<td>Sustainability Team</td>
<td>Investors, partners, suppliers</td>
</tr>
<tr>
<td>Salmon sector</td>
<td>Scientific community</td>
</tr>
<tr>
<td></td>
<td>Policy-makers</td>
</tr>
<tr>
<td></td>
<td>Local stakeholders (fishermen, residents, tourist sector)</td>
</tr>
</tbody>
</table>
### Business example – Los Fiordos, Chile

<table>
<thead>
<tr>
<th>Task</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine the organizational focus</td>
<td>Corporate / product / project</td>
</tr>
<tr>
<td>Determine the value-chain boundary</td>
<td>Upstream / direct operations / downstream</td>
</tr>
<tr>
<td>Specify whose value perspective</td>
<td>Business / society</td>
</tr>
<tr>
<td>Decide on assessing impacts and/or dependencies</td>
<td>Impacts / dependencies / both</td>
</tr>
<tr>
<td>Decide which types of value you will consider</td>
<td>Qualitative / quantitative / monetary</td>
</tr>
</tbody>
</table>

**Objective** – calculate the net value generated to society from their externalities to provide the company with a comprehensive view on how to retain, add or reduce value.
So what could the scope of work look like for Los Fiordos based on the information we have?

<table>
<thead>
<tr>
<th>Determine the organizational focus</th>
<th>Corporate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine the value-chain boundary</td>
<td>Upstream / direct production operations</td>
</tr>
<tr>
<td>Specify whose value perspective</td>
<td>Mix of business and societal</td>
</tr>
<tr>
<td>Decide on assessing impacts and/or dependencies</td>
<td>Impacts and dependencies</td>
</tr>
<tr>
<td>Decide which types of value you will consider</td>
<td>Qualitative</td>
</tr>
</tbody>
</table>

Refer to p. 42 of the Natural Capital Protocol

An Ecosystem Services Review on Salmon Aquaculture in Chile – Los Fiordos (2016)
### Business example – The Coca-Cola Company

- The Coca-Cola Company (TCCC) is the **world’s largest beverage company**.
- The TCCC has a truly global presence, collaborating closely with 225 bottling partners worldwide in more than **200 countries**.
- Coca Cola Europe is the largest Coca-Cola bottler by revenue.
- In 2007, the TCCC set an ambitious global water stewardship target with a view to **become water neutral by 2020**.

---

**The Coca-Cola Company**: The Coca-Cola Company (TCCC) quantified ecosystem services related to freshwater sources to better capture and communicate impacts of water community projects beyond replenishment. Having invested a lot in water replenishment projects, TCCC was driven to understand the variety of benefits that these projects provide to people and society beyond water volumes only. A natural capital assessment was initiated to monetize the ecosystem services in order to identify opportunities and maximize impact. Together with their partners, they developed and piloted a methodology in seven of their European projects. While monetizing impacts was not always easy, the results were clear: water restoration projects can enhance a range of other ecosystem services. If done right, these benefits outweigh the original project investment in a limited period of time. The assessment helped TCCC progress on their natural journey.
Business example –  

- Started undertaking a natural capital assessment in 2019 to quantify ecosystem services from their freshwater programs.
- The objective of the assessment is to increase the potential of Coca Cola’s replenishment programs by quantifying the ecosystem service benefits that arise from these programs. This may further enhance the impact of the renewed water strategy.

Source: Coca Cola Europe

Refer to p. 38 - 40 of your workbook
Business example – The Coca-Cola Company

Target Audience = main user of the assessment output (i.e. those people that will read and use the output to make decisions)

Stakeholder = any individual, organization, sector or community with an interest or stake in the outcome of a decision or process

Natural Capital Impact:
The negative or positive effect of business activity on natural capital (e.g. water extraction)

Natural Capital Dependency:
Business reliance on or use of natural capital (e.g. pollination)
Who could the stakeholders and target audience be for The Coca-Cola Company?

<table>
<thead>
<tr>
<th>Target Audience:</th>
<th>Stakeholders:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Coca-Cola Company senior management</td>
<td>NGO implementation partners (WWF)</td>
</tr>
<tr>
<td>Shareholders committee</td>
<td>Local communities</td>
</tr>
<tr>
<td>Sustainability team</td>
<td>Bottling partners</td>
</tr>
</tbody>
</table>
### Business example – The Coca-Cola Company

<table>
<thead>
<tr>
<th>Determine the <strong>organizational focus</strong></th>
<th>Corporate / product / project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine the <strong>value-chain boundary</strong></td>
<td>Upstream / direct operations / downstream</td>
</tr>
<tr>
<td>Specify whose <strong>value perspective</strong></td>
<td>Business / society</td>
</tr>
<tr>
<td>Decide on assessing <strong>impacts and/or dependencies</strong></td>
<td>Impacts / dependencies / both</td>
</tr>
<tr>
<td>Decide which <strong>types of value</strong> you will consider</td>
<td>Qualitative / quantitative / monetary</td>
</tr>
</tbody>
</table>

**Objective** – The objective of the assessment is to increase the potential of Coca-Cola’s replenishment programs by quantifying the ecosystem service benefits that arise from these programs. This may further enhance the impact of the renewed water strategy.
So what could the scope of work look like for The Coca-Cola Company based on the information we have?

<table>
<thead>
<tr>
<th>Determine the organizational focus</th>
<th>Project (water projects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine the value-chain boundary</td>
<td>Direct operations (bottling partners)</td>
</tr>
<tr>
<td>Specify whose value perspective</td>
<td>Society</td>
</tr>
<tr>
<td>Decide on assessing impacts and/or dependencies</td>
<td>Impacts</td>
</tr>
<tr>
<td>Decide which types of value you will consider</td>
<td>Quantitative and monetary (creating a better overview of the diversity of impacts)</td>
</tr>
</tbody>
</table>

Refer to p. 38 - 40 of your workbook
The Coca-Cola Company’s Natural Capital assessment

- The natural capital assessments allowed TCCC to assess and communicate the variety of impacts arising from their water programs.
- They are now planning to use the assessment as input for decision making and an important communication tool.

Source: Coca Cola Europe
Refer to p. 38-40 of your workbook
Individually reflect on the following questions in the context of scoping your own assessment:

- What would the value-chain boundary be?
- Would you assess impacts and/or dependencies?
- Which types of value would you consider?

The bottom line is that although carrying out a natural capital assessment is technical, it’s also achievable.

- What would the value-chain boundary be?
  - Upstream
  - Direct operations
  - Downstream
- Would you assess impacts and/or dependencies?
  - Impacts on your business (as a result of your impacts on natural capital)
  - Your impacts on society (as a result of your impacts on natural capital)
  - Your business dependencies (benefits that your business receives from natural capital)
- Which types of value would you consider?
  - Qualitative
  - Quantitative
  - Monetary
Presenter to explain that companies are experimenting and learning. On the We Value Nature MeSlide library, you can find inspiring examples of (F&B) companies who have undertaken a natural capital assessment, including practical information and tips and key lessons learned.

**Eosta**: a NL based, international distributor of organic fruits and vegetables. Eosta valued the true cost of various fruits and vegetables through developing an integrated profit and loss account of these products based on true cost accounting. It was the first Small and Medium sized enterprise (SME) in the food & agribusiness to do so. To inform better and more sustainable decision-making, EOSTA decided to develop a practical tool for True Cost Accounting in the Financial, Food and Farming Sectors (TCA-TFFF) that includes environmental and social values for a range of products. By monetizing their impacts, EOSTA moved up along their natural capital journey towards full integration of natural capital into business decision making.

**Metro**: a leading international specialist in food wholesale. METRO AG compared the hidden costs and benefits of METRO’s Food Service Distribution (FSD) business model with those of its traditional wholesale stores by monetizing their impacts on the society and the environment. In 2015, METRO started rolling out their Food Service Distribution model next to their traditional model of direct buying (Cash & Carry). To understand whether this was a positive development, METRO initiated an assessment to assess how these different business models impact the society and the environment. With the support of Denkstatt, METRO conducted sustainability accounting and found that the new FSD model was inherently more sustainable, offering additional benefits for customers, the society and the environment, valued at € 60 per € 1000 of sales.
The Coca-Cola Company: The Coca-Cola Company (TCCC) quantified ecosystem services related to freshwater sources to better capture and communicate impacts of water community projects beyond replenishment. Having invested a lot in water replenishment projects, TCCC was driven to understand the variety of benefits that these projects provide to people and society beyond water volumes only. A natural capital assessment was initiated to monetize the ecosystem services in order to identify opportunities and maximize impact. Together with their partners, they developed and piloted a methodology in seven of their European projects. While monetizing impacts was not always easy, the results were clear: water restoration projects can enhance a range of other ecosystem services. If done right, these benefits outweigh the original project investment in a limited period of time. The assessment helped TCCC progress on their natural journey.

Jeronimo Martins: a Portugal-based international group operating in the Food Distribution and Specialized Retail sectors. Jerónimo Martins applied the Natural Capital Protocol to measure and value the comparative life cycle societal impacts of PVC use and alternative plastic materials in packaging components. The environmental performance of PVC in packaging was highlighted as a key issue which triggered Jerónimo Martins to further research its effects and their options for sustainable packaging. Jerónimo Martins carried out an in-house natural capital assessment. While challenged by the lack of data, the assessment helped build in-depth knowledge on the societal impacts of the use of PVC, and prepared the company for comprehensive future assessments. In 2019, a roadmap on eliminating PVC from Private Brand packaging was defined.
Where we are in the learning objectives

- To understand how to identify natural capital impacts and dependencies that are important to your business
- Acquire the necessary tools, resources and understanding to scope your own assessment
  - To be introduced to the key practical considerations and steps to take when undertaking a first natural capital assessment as well as some tools to help undertake an assessment
  - To understand materiality assessments in the context of impacts and dependencies and how to undertake them
  - To introduce valuation following on from the brief overview provided in module 1
The following step is practicalities, which addresses technical issues and key planning issues.
Practical considerations
Planning an assessment

- **Timescale**: How quickly does the assessment need to be completed?
- **Funding/resources**: What budget and human resources are available?
- **Capacity**: What skills are available within the business to undertake an assessment?
- **Data availability and accessibility**: What constraints on data are anticipated?
- **Stakeholder relationships**: To what extent do you need to identify and establish relationships with stakeholders?

Your answers to the scoping questions outlined in the slides before may need to be adjusted in light of planning and resource constraints, which will determine what scope is actually achievable. These constraints may also be considered as “critical success factors”:

- Timescale
- Funding/resources
- Capacity
- Data availability and accessibility
- Stakeholder relationships
Other considerations

- **Baseline** e.g. current conditions
- **Scenarios** e.g. climate change based on published IPCC predictions
- **Spatial boundary** e.g. 3 largest manufacturing facilities, 3 largest plantations in Kenya
- What are the **corporate boundaries** (i.e. suppliers/contractors)
- **Temporal boundary** e.g. next 10 years

- **Baseline**: is the starting point or benchmark against which changes in natural capital can be compared.
- **Scenario**: The concept of valuation is based on being able to compare outcomes and impacts across at least two scenarios: the baseline discussed above, and a chosen scenario that is being “valued”.
- **Spatial boundary**: Establishing the spatial boundary means deciding what geographic area the assessment will consider. The answer depends on various factors, including the organizational focus, value-chain boundary, and chosen value perspective, which you will have already decided earlier.
- **Temporal boundary**: Identifying a temporal boundary means determining an appropriate time frame for the assessment (i.e., over how many days, months, or years should impacts and/or dependencies be assessed and compared?). The assessment period should relate to your objective and correspond to the organizational focus and material impacts and/or dependencies under consideration.
Practical tips & success factors

- Define a clear **purpose**
- **Engage stakeholders**
- Address relevant issues, make your project **tailor-made**
- **Simple and accessible** results
- Develop clear **recommendations and an action plan**
  - Highlight **insights** rather than absolute numbers

Some extra practical tips & success factors are..
Useful tools & resources

There are lots of useful tools out there. SHIFT.tools is a searchable repository of tools, including the Natural Capital Toolkit.

The slide shows that there are many tools out there, many of which are freely accessible and readily available for companies to use and start assessing their natural capital impacts and dependencies.

Briefly explain SHIFT platform, that it is a searchable repository of tools. It is an interactive database for businesses to find the right tools(s) to assess their relationship with nature or “natural capital”. The SHIFT platform includes the Natural Capital Toolkit. Can give further background on the reason why this toolkit was transferred onto the SHIFT platform – to encourage standardization & harmonization of tools.

The TEEBagrifood Operational Guidelines for Business brings together the TEEBagrifood Evaluation Framework and the Capitals Protocol. The guidelines:

• Provide context on why capitals are relevant to any business in the food system and how businesses benefit from them.
• Develop the business case for integrated capitals assessments in the food sector.
• Identify material impacts and dependencies on different capitals relevant to businesses across the value chain of the food sector.
• Use practical examples to demonstrate sector-specific business applications.
An example of how the platform works, providing a fictional scenario.

Conclusion is that:

There are no perfect answers!

The choice of tool will depend on various factors:

What is the objective / what are you trying to achieve? / What decision are you trying to inform? – Is it to inform business strategy? Business management? Or operating decision?

What is the scope? Are you looking at product, corporate level?

What perspective are you looking at? Business? Societal? Both?

How much resources do you have available to conduct the assessment?

How much information / data do you already have?

Will you need external help?

Etc.
Presenter to point out that there are a lot of useful tools out there that businesses can use to determine their impacts and dependencies. The tools differ in their focus: impacts/dependencies or both, the types of natural capital they include (only water, biodiversity?), and the method of valuation (qualitative, quantitative, monetary). Qualitative valuation is often considered to be very important at the start of an assessment as it can give businesses a good understanding of where their main impacts and dependencies are and where additional information may be needed to inform decision-making. The black dots mark the tools that require more technical knowledge and that are more difficult to implement.

- **ENCORE (Natural Capital Finance Alliance):** The aim of the project is to help financial institutions to better understand, assess and integrate natural capital risks in their activities. It helps measure impacts and dependencies in a qualitative way. [https://encore.naturalcapital.finance/en](https://encore.naturalcapital.finance/en)
- **SASB (Sustainability Accounting Standards Board):** Focus on financially material information on environmental and social topics and the governance of those topics. By focusing on financially material issues, SASB aims to help companies around the world to report on sustainability topics that matter most to investors. [https://www.sasb.org/](https://www.sasb.org/)
- **TEEB AgriFood Operational Guidelines for Business:** Developed to support businesses in implementing the TEEBAgriFood Evaluation Framework, these Guidelines provide a practical way for businesses to understand and act upon their impact and
dependency on natural, human, social, and produced capital.

- **I360X (Impact 360):** The tool can be used to make a qualitative and quantitative assessment of the sustainability impacts on a range of capitals, including natural, social and human capital.
  https://www.gistimpact.com/i360xn.php

- **Corporate Ecosystem Valuation (CEV):** This first-of-its-kind framework enables companies to consider the actual benefits and value of the ecosystem services they depend upon and impact, giving them new information and insights to include in business planning and financial analysis.

- **InVEST:** InVEST is a suite of free, open-source software models used to map and value the goods and services from nature that sustain and fulfill human life. If properly managed, ecosystems yield a flow of services that are vital to humanity, including the production of goods (e.g., food), life-support processes (e.g., water purification), and life-fulfilling conditions (e.g., beauty, opportunities for recreation), and the conservation of options (e.g., genetic diversity for future use).
  https://naturalcapitalproject.stanford.edu/software/invest
### Tools to Determine Impacts and Dependencies

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARIES</td>
<td>• Dependencies – how does nature provide benefits to people – linking ecosystems and the human economy – modelling</td>
</tr>
<tr>
<td>Toolkit for Ecosystem Service Site-Based Assessment (TESSA)</td>
<td>• Impacts on natural capital and ecosystem services of actual and potential changes at individual sites – qualitative and quantitative</td>
</tr>
<tr>
<td>Farm Sustainability Assessment</td>
<td>• Impacts across environmental, social and business - applicable to all agricultural crops - qualitative and quantitative</td>
</tr>
<tr>
<td>The Cool Farm Tool</td>
<td>• An assessment tool to measure impacts on greenhouse gases, biodiversity and water - quantitative</td>
</tr>
<tr>
<td>CROPWAT</td>
<td>• Dependencies – calculating the required water supply for a variety of crops – quantitative</td>
</tr>
<tr>
<td>BioScope</td>
<td>• Impacts on biodiversity – measuring major impacts on biodiversity arising from the supply chain - using the ReCiPe method for Life Cycle Impact Assessment</td>
</tr>
</tbody>
</table>

Presenter to point out that there are a lot of useful tools out there that businesses can use to determine their impacts and dependencies. The tools differ in their focus: impacts/dependencies or both, the types of natural capital they include (only water, biodiversity?), and the method of valuation (qualitative, quantitative, monetary). Qualitative valuation is often considered to be very important at the start of an assessment as it can give businesses a good understanding of where their main impacts and dependencies are and where additional information may be needed to inform decision-making. The black dots mark the tools that require more technical knowledge and that are more difficult to implement.

- **ARIES**: ARIES redefines ecosystem services assessment and valuation in decision-making. The ARIES approach to mapping benefits, beneficiaries, and service flows is a powerful new way to visualize, value, and manage the ecosystems on which the human economy and well-being depend. [http://shift.tools/iframe/1377?](http://shift.tools/iframe/1377?)

- **Toolkit for Ecosystem Service Site-Based Assessment (TESSA)**: Understanding the impacts on natural capital and ecosystem services of actual and potential changes in state at individual sites to promote better planning decisions and support biodiversity conservation and ecosystem service delivery. This toolkit is designed to provide practical guidance on how to identify which services may be significant at a site of interest, what data are needed to measure them, what methods or sources can be used to obtain the data and how to communicate the results. [http://tessa.tools/](http://tessa.tools/)

- **Farm Sustainability Assessment (FSA)**: is a set of tools for food and drink businesses that want to assess, improve and validate on-farm sustainability in their supply chains. The
tools enable effective and efficient supply chain collaboration right down to the level of the farmer.  
https://saiplatform.org/our-value/what-we-do/#Programmes_and_Tools:

- **The Cool Farm Tool:** An online greenhouse gas, water, and biodiversity calculator for farming (free for farmers)
  https://coolfarmtool.org/coolfarmtool/

- **CROPWAT:** CROPWAT is a decision support tool developed by the Land and Water Development Division of FAO. It facilitates the calculation of crop water requirements and irrigation requirements based on soil, climate and crop data. CROPWAT informs the development of irrigation schedules for different management conditions and the calculation of required water supply for varying crop patterns.  

- **BioScope:** Platform BEE’s BioScope provides businesses with a simple and fast indication of the most important impacts on biodiversity arising from their supply chain. The focus is on climate change and agricultural land occupation as these are the two main impact drivers on biodiversity. 
  https://bioscope.info/
## Where we are in the learning objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>To understand how to <strong>identify natural capital impacts and dependencies</strong> that are <strong>material</strong> to your business</td>
</tr>
<tr>
<td>✔️</td>
<td>Acquire the necessary tools, resources and understanding to <strong>scope your own assessment</strong></td>
</tr>
</tbody>
</table>
| ✔️ | To be introduced to the key **practical considerations and steps** to take when undertaking a first natural capital assessment as well as some **tools**  
  ❖ To understand **materiality assessments** in the context of **impacts and dependencies** and how to undertake them  
  ❖ To **introduce valuation** following on from the brief overview provided in module 1 |
## Agenda

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<th>Session</th>
</tr>
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<td>Introductions</td>
</tr>
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<td>Setting the scene and a brief re-cap on natural capital</td>
</tr>
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</tr>
<tr>
<td>25</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>20</td>
<td>Scoping an assessment</td>
</tr>
<tr>
<td>20</td>
<td>Materiality</td>
</tr>
<tr>
<td>20</td>
<td>Introduction to monetary valuation for scoping an assessment</td>
</tr>
<tr>
<td>15</td>
<td>Case study presentation</td>
</tr>
</tbody>
</table>
Measure & value: Materiality
The following step is Measure and Value. This step consists of materiality assessments, identifying changes in natural capital, assessing trends, selecting valuation techniques and ecosystem valuation tools.
In the Protocol, an impact or dependency on natural capital is **material** if consideration of its value, as part of the set of information used for decision making, has the potential to alter that decision.

**A materiality assessment** is the process that involves identifying what is (or is potentially) material in relation to the assessment’s objective and application.
Once you have compiled a short list of potentially material issues, you will need to identify criteria to judge which impacts and dependencies are most significant. Before you identify the criteria though you will need to identify who the impacts and dependencies are most significant for.

Potential criteria may include:
- **Operational**: the extent to which the natural capital impact or dependency may significantly affect business operations, project implementation, or the value of existing or new product(s).
- **Legal and regulatory**: the extent to which the natural capital impact or dependency may trigger a legal process or liability (e.g., emission fees or extraction quotas, environmental impact mitigation requirements).
- **Financing**: the extent to which the natural capital impact or dependency may influence "cost of capital" or your access to capital, investor interest, or insurance conditions.
- **Reputational and marketing**: the extent to which the natural capital impact or dependency may affect the product portfolio, company image, or relationship with customers and other stakeholders (e.g., changing customer preferences).
- **Societal**: the extent to which the natural capital impact or dependency may generate significant impacts to society.

Based on the materiality criteria you have selected, you should next gather the necessary information to assess the potential material significance of each natural capital impact and/or dependency.

The type of information you collect might include:
- Type of impact and/or dependency
- Scale of impact and/or dependency
- Consequence of impact and/or dependency (on business, society, or both)
- Time scale (short, medium, and long-term)
Based on the following points, which impacts and dependencies would be material?

- A small seafood company based in Amsterdam undertook a materiality assessment to see where their biggest impacts and dependencies were.
- The company grows vegetables and herbs and is also involved in local fishing in the North Sea.
- The company moreover processes food and packages the food and is involved in transporting the food to and from storage.

Presenter to point out that this is an example of a Dutch SME company in the seafood industry who has undertaken a qualitative natural capital assessment.

**Materiality** – an impact or dependency on natural capital is material if consideration of its value, as part of the set of information used for decision making, has the potential to alter that decision.

**Materiality assessment** – the process that involves identifying what is (or is potentially) material in relation to the natural capital assessment’s objective and application.
Food industry example - material impacts

<table>
<thead>
<tr>
<th>Environment Impact</th>
<th>Agriculture</th>
<th>Fishing</th>
<th>Processing</th>
<th>Transport</th>
<th>Distribution &amp; Storage</th>
<th>Packaging</th>
<th>Composting &amp; Waste Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIMATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER USE</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR QUALITY</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>LAND USE CHANGE</td>
<td></td>
<td></td>
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<tr>
<td>SOIL QUALITY</td>
<td></td>
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<tr>
<td>WATER QUALITY</td>
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<tr>
<td>BIODIVERSITY</td>
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</tbody>
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Source: NatureSquared
This is an example of how you can conduct a qualitative assessment of your natural capital impacts and dependencies and how this can already translate into concrete actions. This slide only displays the impacts, but the same exercise was undertaken for dependencies too. To complete the work, they discussed relative importance with different stakeholders and simply provided relative orders of magnitude, based on resources but also on influence on the issue. From this, they were able to identify most material elements of their practices and then prioritise which actions to take.

One of the surprising insights for this company, a seafood producer, producing soups and burgers, was that they had a blind spot on the sourcing of vegetables, although they used a higher share of vegetables than actual seafood in many of their products.

This exercise can be repeated in consultation with your own employees and stakeholders. You don’t necessarily need to measure and value your impacts. This type of assessment can already be very informative without taking up a lot of time, expertise or budget. Again, it depends on what the objective is.

Most material practices:
- Fishing
- Growing vegetables & herbs
- Packaging
- Outbound logistics & sales
- Product development
Where we are in the learning objectives

- To understand how to identify natural capital impacts and dependencies that are important to your business,
- Acquire the necessary tools, resources and understanding to scope your own assessment,
- To be introduced to the key practical considerations and steps to take when undertaking a first natural capital assessment as well as some tools
- To understand materiality assessments in the context of impacts and dependencies and how to undertake them
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<tr>
<td>20</td>
<td>Materiality</td>
</tr>
<tr>
<td>20</td>
<td>Introduction to monetary valuation for scoping an assessment</td>
</tr>
<tr>
<td>15</td>
<td>Case study presentation</td>
</tr>
</tbody>
</table>
Introduction to monetary valuation for scoping an assessment

Photo by Micheile Henderson on Unsplash
The following step is Measure and Value. This step consists of materiality assessments, identifying changes in natural capital, assessing trends, selecting valuation techniques and ecosystem valuation tools.
Assessments: Measure & Value

To measure ≠ to value

- **To measure**: determine the amounts, extent and condition in physical terms
  - e.g. m3, tons, number of injuries, number of jobs
- **To value**: estimate the relative importance, worth, or usefulness of natural / social / human capital to people (or to a business), in a particular context.

There are different ways of valuing – could be qualitative, quantitative and monetary

Important to note that monetary values without any context (i.e. accompanying quantification) are less meaningful!

The method you chose depends on which natural capital impact drivers or dependencies you wish to assess, the chosen value perspective (e.g. business, societal, or both), the ultimate objective of your assessment, and the time and resources available.

Monetary valuation: some find it difficult to accept or interpret monetary valuation of certain benefits (e.g. spiritual values). In such situations, special efforts may be required to explain the advantages and also to acknowledge the limitations of monetary valuation.

Advocates of natural capital are sometimes accused of ‘putting a price on nature’ or ‘pricing the priceless’, but in fact our core assertion is that prices have failed to reflect the true value of the natural world, and that the economic systems that we are using are broken.

We use the common definitions of price and value: Where price is ‘the quantity of one thing that is exchanged or demanded in barter or sale for another/the amount of money given or set as consideration for the sale of a specified thing’ and value as ‘The regard that something is held to deserve; the importance, worth, or usefulness of something i.e. “your support is of great value”. If something is not for sale, we do not describe it as having a ‘price’, but we may nevertheless recognise the value that it holds, and make decisions on this basis.
Before monetary valuation can occur, impacts and/or dependencies must be measured. The following slides provide an introduction to monetary valuation so that those considering an assessment may consider whether they want to include this approach as part of their project ambition.

Monetary valuation: some find it difficult to accept or interpret monetary valuation of certain benefits (e.g. spiritual values). In such situations, special efforts may be required to explain the advantages and also to acknowledge the limitations of monetary valuation.

Advocates of natural capital are sometimes accused of ‘putting a price on nature’ or ‘pricing the priceless’, but in fact our core assertion is that prices have failed to reflect the true value of the natural world, and that the economic systems that we are using are broken.

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Three examples of qualitative, quantitative and monetary valuation

<table>
<thead>
<tr>
<th>Qualitative</th>
<th>Quantitative</th>
<th>Monetary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees sequester carbon</td>
<td>One hectare of forest sequesters 5 tonnes of CO₂-equivalents per year</td>
<td>One hectare of forest is worth €80,000 in carbon sequestration a year.</td>
</tr>
<tr>
<td>Soil organic matter (SOM) increases soil water infiltration</td>
<td>An increase of 1% SOM equals an increase of 3 – 4 mm available water</td>
<td>An increase of 1% SOM could lead to postponing a sprinkler irrigation application or to not apply this at all, this could save €600/year</td>
</tr>
<tr>
<td>A rich diversity of plants, bacteria and animals provides a good habitat for bees</td>
<td>Pollinators, including bees, flies, beetles and moths, help in the production of nearly 75 percent of crops and roughly 80 percent of all flowering plants.</td>
<td>Pollinators contribute more than 24 billion dollars to the United States economy.</td>
</tr>
</tbody>
</table>
### Measure & Value in practice

#### Qualitative

<table>
<thead>
<tr>
<th>Valuation of pollination in kiwifruit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 05:</strong> Measure impact drivers and dependencies</td>
</tr>
<tr>
<td><strong>What?</strong> Pollination by bees</td>
</tr>
<tr>
<td><strong>How?</strong> Workshop</td>
</tr>
</tbody>
</table>

#### Quantitative

<table>
<thead>
<tr>
<th>Valuation of water consumption in rice production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 05:</strong> Measure impact drivers and dependencies</td>
</tr>
<tr>
<td><strong>What?</strong> Water use</td>
</tr>
<tr>
<td><strong>How?</strong> $m^3$ water used</td>
</tr>
</tbody>
</table>

#### Monetary

<table>
<thead>
<tr>
<th>Valuation of fish stock losses due to fertilizer use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 05:</strong> Measure impact drivers and dependencies</td>
</tr>
<tr>
<td><strong>What?</strong> Kilograms of phosphorus in fertilizers applied</td>
</tr>
<tr>
<td><strong>How?</strong> On-farm data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valuation of water consumption in rice production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 06:</strong> Measure changes in the state of natural capital</td>
</tr>
<tr>
<td><strong>What?</strong> Reduced water availability</td>
</tr>
<tr>
<td><strong>How?</strong> Life Cycle Impact Assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valuation of water consumption in rice production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 07:</strong> Value impacts and dependencies</td>
</tr>
<tr>
<td><strong>What?</strong> Impact of water consumption</td>
</tr>
<tr>
<td><strong>How?</strong> Quantitative – human health impact of water scarcity using DALYs per unit of water consumed</td>
</tr>
</tbody>
</table>

- **Step 05:** Measure impact drivers and dependencies
  - **What?** Pollination by bees
  - **How?** Workshop

- **Step 06:** Measure changes in the state of natural capital
  - **What?** Effectiveness of pollination
  - **How?** Expert judgement

- **Step 07:** Value impacts and dependencies
  - **What?** Effectiveness of pollination
  - **How?** Relative valuation (low, medium, high)

- **Step 05:** Measure impact drivers
  - **What?** Water use
  - **How?** $m^3$ water used

Refer to p. 48 of your workbook & p. 82 of the Natural Capital Protocol.
Step 06: Measure change in capital

What? Reduced water availability

How? Life Cycle Impact Assessment

Step 07: Value impacts

What? Impact of water consumption

How? Quantitative – human health impact of water scarcity using DALYs per unit of water consumed

- Monetary valuation techniques
  Valuation of fish stock losses due to fertilizer use

Step 05: Measure impact drivers

What? Kilograms of Phosphorus in fertilizers applied

How? On farm data

Step 06: Measure changes in capitals

What? Change in number of species in water ecosystems due to changes in nutrient level in water (eutrophication)


Step 07: Value impacts

What? Loss of fish stocks

How? Market valuation

Note: If the monetary valuation is used, it should be clear whether the value used was market price only, as this can make a difference.
Why is monetary valuation useful and/or contentious?

<table>
<thead>
<tr>
<th>Useful</th>
<th>Contentious</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Common unit of measure</td>
<td>• Not everything can be quantified in monetary terms (e.g. biodiversity)</td>
</tr>
<tr>
<td>• Can measure social preferences</td>
<td>• Can be time consuming/expensive depending on technique or approach used</td>
</tr>
<tr>
<td>• Used to determine overall value for money of a project (i.e. whether it should go ahead or not; do the benefits exceed the costs)</td>
<td>• Need to avoid double counting</td>
</tr>
<tr>
<td>• Can be used to measure risks and mitigate them before these are quantified by others</td>
<td>• Potential reputational impacts</td>
</tr>
<tr>
<td>• Can be used as a communication tool (internal and external)</td>
<td></td>
</tr>
</tbody>
</table>

Refer to p. 49 of your workbook & p. 37-38 of the Natural Capital Protocol
The total economic value of biodiversity includes what economists refer to as “existence value”: the value that people place on the continued existence of species or ecosystems, regardless of whether they themselves will ever encounter the species or experience the ecosystem.
Reflections, total economic value

Individually reflect on what value your business gets from different ecosystem goods or services

- Direct value
- Indirect value

Direct value = Outputs that can be consumed directly, such as fish, medicines, wild foods, recreation etc.
Indirect value = Ecological services, such as catchment protection, flood control, carbon sequestration, climatic control, aesthetics, etc.

Presenter to read the question and the definitions on the slide. Once reflection is complete, presenter should explain that the type of value your business extracts from ecosystem goods and services is dependent on many factors.

Direct value: Outputs that can be consumed directly, such as fish, medicines, wild foods, recreation
Indirect value: Ecological services, such as catchment protection, flood control, carbon sequestration, climatic control, aesthetics, etc.
## Overview of Valuation Techniques (type, time and resources)

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
<th>Time</th>
<th>Budget</th>
<th>Resources</th>
</tr>
</thead>
</table>
| Market and financial prices      | - Costs/prices paid for goods and services traded in markets  
- Other internal/financial information (e.g. estimated financial value of liabilities, assets, receivables)  
- Other interpretations of market data (e.g. derived demand functions, opportunity costs, mitigation costs/aversive behavior, cost of illness) | Days -   | $100s - 1000s; low budget | Market prices of ecosystem goods and/or services, and costs involved to  
process or bring the product to market (e.g. crops)                      |
| Production function (change in  | Empirical modelling approach that relates change in the output of a marketed good or service to a measurable change in natural capital inputs (e.g. the quality or quantity of ecosystem services) | Days -   | $100s - 1000s; low budget | Data on changes in output of a product, and data on cause and effect  
relationship (e.g. crop losses due to reduced water availability)         |
| production)                      |                                                                                                                                                                                                          | Weeks     |                  |                                                                          |

Refer to p. 52-54 of your workbook & p. 84-87 of the Natural Capital Protocol.
### Overview of Valuation Techniques

**Type, time and resources**

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
<th>Time</th>
<th>Budget</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost Based Approach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement Costs</td>
<td>The cost of replacing an ecosystem good/service with artificial or man-made products etc., in terms of expenditures saved</td>
<td>Days - Weeks</td>
<td>($100s-1000s; low budget)</td>
<td>Cost (market price) of replacing an ecosystem good or service with a man-made equivalent e.g. bottled water in production processes</td>
</tr>
<tr>
<td>Damage costs avoided</td>
<td>The costs incurred to property, infrastructure, etc. when ecosystem services which protect valuable assets are lost (i.e., expenditures saved).</td>
<td>Weeks</td>
<td>($100s-1000s; low budget)</td>
<td>Data on costs incurred to property, etc. as a result of loss of ecosystem services.</td>
</tr>
<tr>
<td><strong>Stated Preference Approach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingent valuation</td>
<td>Infer ecosystem values by asking people directly what is their willingness to pay (WTP) for them or their willingness to accept (WTA) compensation for their loss saved.</td>
<td>Weeks</td>
<td>($10,000s – 100,000s; high budget)</td>
<td>Stated value that people place on an ecosystem good or service.</td>
</tr>
<tr>
<td>Choice experiments</td>
<td>Presents a series of alternative resource or ecosystem use options, each defined by various attributes set at different levels and asks respondents to select which option</td>
<td>Weeks</td>
<td>($10,000 – 100,000s; high budget)</td>
<td>As for CV above, although CE contrasts several different scenarios (appropriate set of levels needed for different parameters).</td>
</tr>
</tbody>
</table>

Refer to p. 52-54 of your workbook & p. 84-87 of the Natural Capital Protocol.
### Overview of Valuation Techniques
(type, time and resources)

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
<th>Time</th>
<th>Budget</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revealed Preference Approach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Prices</td>
<td>How much it costs to buy an ecosystem good or service, or what it is worth to sell.</td>
<td>Days</td>
<td>($100s-1500s; low budget)</td>
<td>Market price of ecosystem goods or services e.g. timber Costs involved to bring the product to market</td>
</tr>
<tr>
<td>Effect on Production</td>
<td>Relates changes in the output of a marketed good or service to a measurable change in ecosystem goods.</td>
<td>Days</td>
<td>($100s-1500s; low budget)</td>
<td>Data on changes in output of a product Data on cause and effect relationship</td>
</tr>
<tr>
<td>Travel costs</td>
<td>Using the amount of time and money people spend visiting an ecosystem for recreation purposes to elicit a value per visit</td>
<td>Weeks/months</td>
<td>($10,000s; high budget)</td>
<td>Data on time and money that people spend visiting ecosystems for leisure e.g. nature reserves Motivations for travel</td>
</tr>
<tr>
<td>Hedonic pricing</td>
<td>The difference in property prices or wage rates that can be ascribed to the different ecosystem qualities or values.</td>
<td>Weeks</td>
<td>($100,000s-15,000s; medium budget)</td>
<td>Data on differences in property prices or wage rates that can be ascribed to the different ecosystem qualities</td>
</tr>
</tbody>
</table>

Refer to p. 52-54 of your workbook & p. 84-87 of the Natural Capital Protocol.
### Overview of Valuation Techniques

**Value Transfer**

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
<th>Time</th>
<th>Budget</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Transfer</td>
<td>Involves transferring value estimates from existing economic valuation studies to the study site in question, making adjustments where appropriate.</td>
<td>Days</td>
<td>($100s-$1000s; low budget)</td>
<td>Valuations from similar studies elsewhere. Data on key variables from different studies (e.g. GDP per person)</td>
</tr>
</tbody>
</table>

Refer to p. 52-54 of your workbook & p. 84-87 of the Natural Capital Protocol.
Two hypothetical case studies:

- Vegetarian products (soy-based)
- Dairy company

The idea here is that the participants must choose a valuation approach or technique for each hypothetical case study example. They can choose an approach from the next slide.
Hypothetical Case Study examples – which valuation techniques would you use?

Refer to p. 84-87 of the Natural Capital Protocol.

One page 84-87 of the NCP, an overview of different valuation techniques can be found. The participants have to choose which technique fits the case study best.
Hypothetical Company: Vegetarian Products – Valuation Techniques Discussion

Objective: implement targeted measures to achieve more environmentally-friendly production and distribution of products

Other details: 3 months, £10,000, 1 country, no economist, hiring outside consultancy

Ecosystem quality for raw materials: water
- Cost based approach like replacement cost or value transfer approach using contingent valuation
- Days – Weeks; Low Budget

Ecosystem quality for raw materials: soil and crops
- Market price approach linked to effect on production
- Days; Low Budget

Hypothetical example: Vegetarian products

- Raw materials: water
  - Cost based approach: cost or value transfer approach using contingent valuation (days – weeks, low budget)

- Raw materials: soil and crops
  - Market price approach: linked to effect on production (days, low budget)

Figure: https://keringcorporate.dam.kering.com/m/788c4d5588730055/original/Kering-EP-L-report-2019.pdf
Hypothetical company: Dairy – Valuation Techniques Discussion

**Objective:** calculate the net value generated to society from their externalities to provide the company with a comprehensive view on how to retain, add or reduce value

**Other details:** 6 months, £50,000, 5 countries of operation, external consultants provided

**Water use across the entire company**
- Cost based approach like replacement cost or applying shadow prices for water
- Days-Weeks; Low Budget

**Biodiversity lost as a result of company operations**
- Stated preference approach like contingent valuation
- Alternatively, value transfer using data on fragmented habitats
- Weeks-Months; High Budget

---

Hypothetical example: Dairy company

- **Water use across entire company**
  - Cost based approach: replacement cost or applying shadow prices for water (days-weeks, low budget)

- **Biodiversity lost as a result of company operations**
  - Stated preference approach: contingent valuation
  - Value transfer: using data on fragmented habitats
  - Weeks – months, high budget
## Ecosystem Quantitative Valuation: data sources

<table>
<thead>
<tr>
<th>Cross thematic</th>
<th>Theme specific</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ecoinvent</strong> – Lifecycle Inventory Database on the environmental impact for thousands of products</td>
<td><strong>IUCN Red List</strong> – list of threatened species</td>
</tr>
<tr>
<td><strong>AGRIBALYSE program</strong> – Lifecycle Inventory Database of the main French agricultural products at farm gate</td>
<td><strong>WWF Living Planet Report 2020</strong> – trends in biodiversity</td>
</tr>
<tr>
<td><strong>World Food LCA Database</strong> – high-quality emissions factors and environmental footprint data (including carbon, water, and land)</td>
<td><strong>Eurostat</strong> – statistics on waste generation and treatment</td>
</tr>
<tr>
<td><strong>EFSA Comprehensive European Food Consumption Database</strong> – data on food consumption across Europe</td>
<td><strong>The Marine Plastic Footprint</strong> – data on marine plastic leakage</td>
</tr>
<tr>
<td></td>
<td><strong>EPA</strong> – air emissions</td>
</tr>
<tr>
<td></td>
<td><strong>EMEP/EEA</strong> – European air pollutant emissions</td>
</tr>
<tr>
<td></td>
<td><strong>WaterStat</strong> – statistics on water footprint</td>
</tr>
<tr>
<td></td>
<td><strong>Greenhouse Gas Protocol</strong> – GHG calculation tools</td>
</tr>
</tbody>
</table>

- **Ecoinvent**: a life cycle inventory database. The ecoinvent database provides process data for thousands of products, helping you make truly informed choices about their environmental impact.
- **Agribalyse program**: The AGRIBALYSE® program consisted in elaborating a database of Life Cycle Inventories (LCI) of the main French agricultural products at the farm gate.
- **World Food LCA Database**: The World Food LCA Database provides players across the agri-food value chain with high-quality emissions factors and environmental footprint data (including carbon, water, and land) to help them better understand the impacts of their products and bolster decision-making.
- **EFSA Comprehensive European Food Consumption Database**: a source of information on food consumption across the European Union (EU). It contains detailed data for a number of EU countries. The database plays a key role in the evaluation of the risks related to possible hazards in food in the EU and allows estimates of consumers’ exposure to such hazards.
- **IUCN Red list**: The International Union for Conservation of Nature’s Red List of Threatened Species is the world’s most comprehensive information source on the global conservation status of animal, fungi and plant species.
- **WWF Living Planet Report (2020)**: The Living Planet Report documents the state of the planet—including biodiversity, ecosystems, and demand on natural resources—and what it means for humans and wildlife.
- **Eurostat** – waste: Eurostat produces regular statistics on waste generation and treatment for the whole economy and on specific waste streams.
- **The Marine Plastic Footprint**: a comprehensive framework to measure the inventory of marine plastic leakage, step-by-step and using a life-cycle perspective. It also offers generic data that can be used to calculate marine plastic leakage for a defined list of...
identified sources, including plastic waste, textile fibres, tyre dust, micro beads in cosmetics, and fishing nets.

• EPA – air emissions: Emissions factors are tools for building emissions inventories, guiding air quality management decisions and developing emissions control strategies. This website provides current information on these tools and provides support for using them.

• EMEP/EEA: The EMEP/EEA air pollutant emission inventory guidebook is prepared by the UNECE/EMEP Task Force on Emissions Inventories and Projections (TFEIP) and published by EEA. The Guidebook provides a guide to European atmospheric emissions inventory methodologies and emission factors

• WaterStat: statistics on the water footprint. Part of the Water Footprinting - the Global Water Footprint Assessment Standard lays out the internationally accepted methodology for conducting a Water Footprint Assessment.

• Greenhouse Gas Protocol: Greenhouse Gas Protocol provides the world's most widely used greenhouse gas accounting standards for companies.
Ecosystem Monetary Valuation: data sources

Cross thematic

- **EVL: The Environmental Value Look-Up (EVL) Tool** is a searchable database which contains indicative monetary values for a range of environmental impacts.

- **EU KIP-INCA**: An integrated natural accounting system for ecosystems and their services and associated data sets is being developed by the Knowledge Innovation Project (KIP INCA).

- **De Groot et al. (2012)**: This paper gives an overview of the value of ecosystem services of 10 main biomes expressed in monetary units.

- **TEEB**: The aim of TEEB is to assess the economic impacts of biodiversity loss and to offer practical responses to ecosystem decline.

- **ESVD**: The Ecosystem Services Valuation Database (ESVD) is a follow-up to the “The Economics of Ecosystems and Biodiversity” (TEEB) database which contained over 1,300 data points from 267 case studies on monetary values of ecosystem services across all biomes.

- **Social Costs of Carbon**: The SCC is a tool that estimates, in dollars, the economic damages that would result from emitting one additional ton of greenhouse gases into the atmosphere.

- **Social Value UK**: database of over 800 social value, SROI and cost benefit analysis report.

- **Environmental Prices Handbook EU28 version**: Environmental prices are prices for the social cost of pollution, expressed in Euros per kilogram pollutant. Environmental prices indicate the loss of economic welfare that occurs when one additional kilogram of the pollutant finds its way into the environment. Captured in a single monetary unit.

- **OECD Meta-analysis of Value of Statistical Life estimates**: It is increasingly common to include estimates of value of statistical life (VSL) in analyses of proposed policies that affect people’s mortality risks. The analysis is presented in the publication *Mortality Risk Valuation in Environment, Health and Transport Policies*. 

Theme specific

- **The Economics of Ecosystems and Biodiversity (TEEB)** — economic impacts of biodiversity loss.

- **Ecosystem Services Valuation Database (ESVD)** — monetary values of ecosystem services across all biomes.

- **Social Cost of Carbon (SCC)** — costs resulting from emitting one additional ton of GHG into the atmosphere.

- **Social Value UK**: database on social values, social return on investment, and cost-benefit analysis.

- **Environmental Prices Handbook EU28 version**: prices for the social cost of pollution (e.g., air, water, soil).

- **OECD Meta-analysis of Value of Statistical Life estimates**: Mortality Risk Valuation estimates in Environment, Health and Transport policies.
ENCORE: The aim of the project is to help financial institutions to better understand, assess and integrate natural capital risks in their activities. It helps measure impacts and dependencies in a qualitative way.

NatCap checker: The Natural Capital Checker (NatCap Checker) provides a self-assessment tool to enable users to assess, communicate and improve the level of confidence in their natural capital assessment.

TESSA: The Toolkit for Ecosystem Service Site-based Assessment (TESSA) is a rapid, low-cost, participatory valuation tool designed to be used by non-experts for assessing the benefits that people get from nature (ecosystem services).

CEV: This first-of-its-kind framework enables companies to consider the actual benefits and value of the ecosystem services they depend upon and impact, giving them new information and insights to include in business planning and financial analysis.

ARIES: ARIES redefines ecosystem services assessment and valuation in decision-making. The ARIES approach to mapping benefits, beneficiaries, and service flows is a powerful new way to visualize, value, and manage the ecosystems on which the human economy and well-being depend.

InVEST: InVEST is a suite of free, open-source software models used to map and value the goods and services from nature that sustain and fulfill human life.

Note: some of these tools (e.g. ARIES and InVEST) require a lot of data and effort. But there are also less complicated tools (e.g. Encore and NatCap checker – but these are not monetary valuation tools)
Several tips for valuation are…

<table>
<thead>
<tr>
<th>Tips for Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Test more than one value (sensitivity testing)</td>
</tr>
<tr>
<td>• Report a range</td>
</tr>
<tr>
<td>• Convert values to the same time period</td>
</tr>
<tr>
<td>• Consider local country context of values</td>
</tr>
<tr>
<td>• Understand where the tipping point leads to a change in a decision</td>
</tr>
<tr>
<td>• Consider using peer reviewers</td>
</tr>
</tbody>
</table>

Refer to p. 60 of your workbook
Where we are in the learning objectives

- To understand how to identify natural capital impacts and dependencies that are important to your business
- Acquire the necessary tools, resources and understanding to scope your own assessment
- To be introduced to the key practical considerations and steps to take when undertaking a first natural capital assessment as well as some tools to help undertake an assessment
- To understand materiality assessments in the context of impacts and dependencies and how to undertake them
- To introduce valuation following on from the brief overview provided in module 1
<table>
<thead>
<tr>
<th>Time (xxx)</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Introductions</td>
</tr>
<tr>
<td>15</td>
<td>Setting the scene and a brief re-cap on natural capital</td>
</tr>
<tr>
<td>10</td>
<td>The business case for assessing natural capital &amp; common assessments</td>
</tr>
<tr>
<td>15</td>
<td>Identifying your natural capital impacts &amp; dependencies</td>
</tr>
<tr>
<td>25</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>20</td>
<td>Scoping an assessment</td>
</tr>
<tr>
<td>20</td>
<td>Materiality</td>
</tr>
<tr>
<td>20</td>
<td>Introduction to monetary valuation for scoping an assessment</td>
</tr>
<tr>
<td>15</td>
<td>Case study presentation</td>
</tr>
</tbody>
</table>
3 speakers from 3 different companies will be invited to the training to share their experience in integrating natural capital into their business decision-making processes.

Speakers will be encouraged to share:
- Their experience
- The solutions put in place
- Challenges/barriers faced, how these were overcome and what would they do differently looking back
- Collaboration with stakeholders involved in the process – who was key in supporting the solution, making it happen and perhaps also discussion around communications, how do you have to communicate differently e.g. if trying to convince risk management vs

During presentation of case studies, participants will be encouraged to take note of:
- Challenges & barriers
- Solutions, activities
- Key stakeholders / enablers in the process

Encourage case studies speakers to also discuss how they would have done things differently.
Case study presentation from xyz

Pay attention to the following elements while listening to the presentation:

- Barriers, challenges and how overcame these
- Objective of assessment & process undertaken (incl. tools, methodologies adopted)
- Decision-making, collaboration, next steps

Refer to p. 61-66 of your workbook.
Key take-aways / Closing word

1. Business impacts and depends on nature
2. Identifying, measuring and valuing your natural capital impacts and dependencies helps make better and more informed decisions
3. The Natural Capital Protocol provides the framework to go through that process
4. There are many existing tools & resources: the one you choose depends on the objective & scope of your assessment
5. The first steps to assessing natural capital are to define your objective, identify your impacts and/or dependencies, and scope your assessment

ADDITIONAL BACKGROUND INFORMATION

How much will an assessment cost?
Some of the Protocol pilot testers - like our members Nestlé and Roche - estimated they spent about USD $50,000 on consulting services for their assessments over a six-month period. Some companies spend less, others spend more.
Dow, Kering and Natura have invested significantly more over a longer term, for in-depth assessments that contribute to their multi-year strategic ambitions.
The Protocol can help companies navigate these kinds of situations by making sure the services required align with the assessment's objective.

Skills & data needed:
It's usually much more efficient to build on existing data that's readily available in-house, and the Protocol provides guidance on gathering and using that data too.
For example, many companies have data on their own GHG emissions, water, waste, and some also have results of product Life Cycle Assessments - this existing information can provide a really good starting point for a natural capital assessment. How applicable it is will depend on the objectives and scope of the assessment though, so it's important to find the balance between getting perfect data (e.g. from monitoring in the field) and using proxies that are not as accurate but can be more practical and still lead to better decisions.

**Internal buy-in:**
In many cases, natural capital assessments can be a bottom-up effort. Trying to drive natural capital assessments from sustainability, environment or health and safety departments is sometimes difficult, but nevertheless, the Protocol provides guidance on integrating the assessment into the business itself. One way to facilitate engagement internally can be to show that "many companies are already doing natural capital assessments; they're just using different terminology and steps. To support this engagement, it is important to look beyond those benefits that can be valued through the natural capital assessment itself, and acknowledge how a natural capital approach can motivate organizational change in support of broader business goals." This means that there will be more leadership from the top to better measure, value and then integrate natural capital into business.

**The bottom line is** that although carrying out a natural capital assessment is technical, it's also achievable. Not every assessment has to be a huge undertaking, so companies should start off with a scope that makes most sense to their situation. The Protocol will help you do this. Finally, we must make sure the information obtained from the assessment is included in core business decision-making. This will ensure you have the best possible impact on your business, and on the environment.
Through Mentimeter, we will ask you to share:

2 key learnings that were most useful to you today,

1 concrete next step / activity you could take to move your company forward in the natural capital journey?
How to use Mentimeter

1. Go to www.menti.com
2. Enter this code: XXXXXX
3. Submit your answer
Eager to get started?

Check out NCC's interactive training videos.

Make use of WVN's training resources.

Natural Capital Protocol Training

Through this series of videos you will be able to take the role of a sustainability or strategy representative and decide where your company needs to make a net contribution. It will walk you through the stages of a natural capital assessment and show you how to collaborate with your company’s leadership, become immersed in the natural capital conversation, and eventually work towards a compelling business case.

Whatever your sector, the natural capital approach taken in the example, and the questions it raises, will be relevant to you.
Next steps that YOU can take

- Download & familiarize yourself with the Natural Capital Protocol - Food and Beverage sector guide
- Share training learnings & material with colleagues and your manager over coffee
- Use & present the training slides to your team & manager – You want to find some allies!
We are here to help!

- Deep-dive webinars
- In-person training
- Helpdesk calls
- Virtual office hour: Q&A
- Online training
- Train-the-trainer

Keep in touch & sign-up:
wevaluenature.eu
Exchange with peers:
We Value Nature - Natural Capital uptake support group
Provide your feedback: Survey

Next call: Next training:

What ELSE would you need? What support would you need?
Sign-up for in-person day training, t-t-t
If want support, need to fill out survey (Google form survey)
Refining training further, keen to know how have used this training and catch-up via call (if don’t want to, let us know)
Disclaimer

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