



Putting nature and people at the centre of food system transformation

Training

The Economics of Ecosystems and Biodiversity
for Agriculture and Food
Operational Guidelines for business



**CAPITALS
COALITION**

Module 4

Stage 4 Apply: how to interpret and verify the results of the assessment and how to take action?

Structure

- Introduction & Module 4 learning objectives
- Your business case
- WHAT NEXT - Apply stage: interpret and test the results
- WHAT NEXT - Apply stage: Take action
- High level business action for nature and people: Assess, commit, transform, disclose
- Summary of lessons learned





Module 4

Chapter 4.1

Module 4 Learning objectives



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Overall course learning objective

By the end of the course, you will:

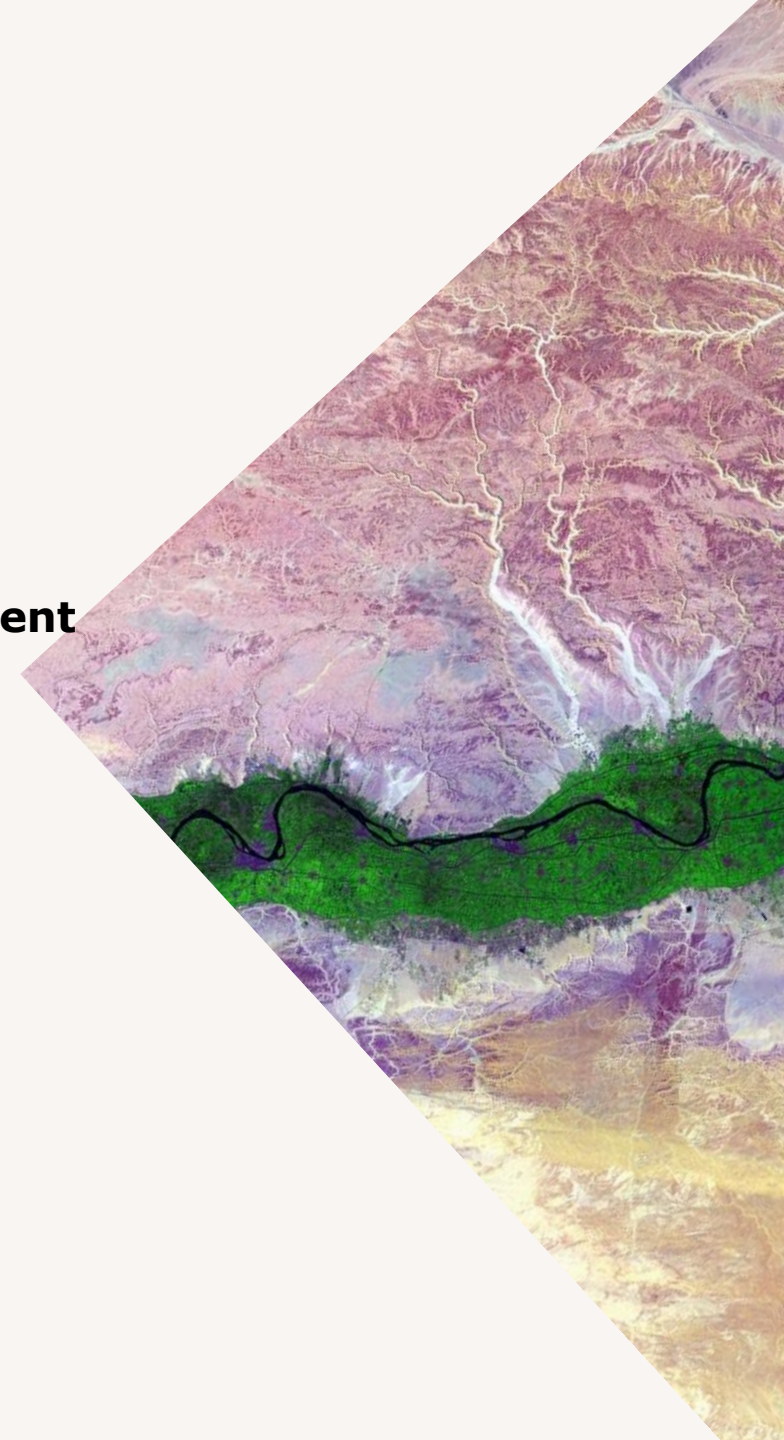
- Understand how the capitals approach provides direction for better **business decision-making**.
- Be familiarized with how to assess **business risks and opportunities** based on natural, social, human capital.
- Have a basic understanding on how to assess, **measure and value your impacts and dependencies** on nature and people across operations and **value-chains**.
- Be familiarized with the process of a **capitals assessment** and be equipped with the tools to start an assessment in your company.
- Be inspired to **drive change** within your organization, by sharing data, setting targets and **transforming business actions**.



Learning objective module 4

By the end of this module, you will:

- Understand the ways to **interpret**, validate and verify your **assessment** process and results
- Have an understanding of the ways in which you can **communicate your results** internally and externally
- Have learned how businesses can apply the results of a capital assessment to **drive transformative and impactful change**





Module 4

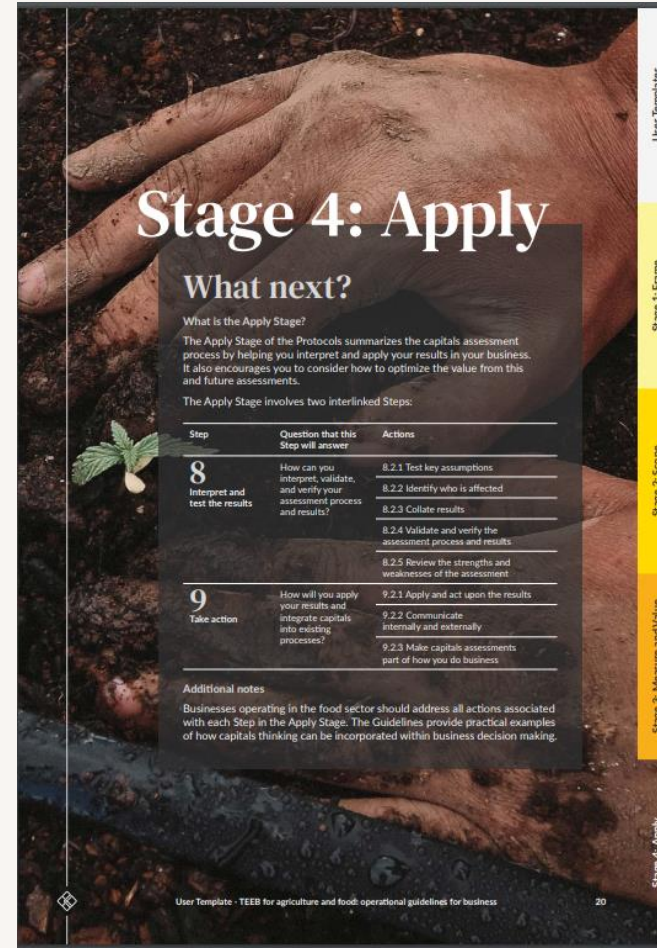
Chapter 4.2

Your business case



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User Template



Your business case

8 Interpret and test the results

Outputs that you should achieve from this step:

- ◆ Results collated in a way that makes sense and can be interpreted internally and for other relevant audiences.
- ◆ Key messages, caveats, assumptions, and uncertainties, including the results of sensitivity analysis if appropriate.
- ◆ Output(s) from validation and internal/external verification (if appropriate) of the assessment process and results, including an objective acknowledgement of key assumptions and uncertainties around the results.
- ◆ Notes on the review process itself, including how critical assumptions were tested, what level of confidence was deemed necessary, and why.

Your business case

9 Take action

Outputs that you should achieve from this step:

- ◆ Actions that you will take as a result of the assessment.
- ◆ A communication plan about results and decisions.
- ◆ A plan for making capitals assessments part of how you do business.



Module 4

Chapter 4.3

Apply stage: interpret and test the results



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Stage 4: Apply

What next?

What is the Apply Stage?

The Apply Stage of the Protocols summarizes the capitals assessment process by helping you interpret and apply your results in your business. It also encourages you to consider how to optimize the value from this and future assessments.



Step

Question that this Step will answer

Actions

8

Interpret and test the results

How can you interpret, validate, and verify your assessment process and results?

8.2.1 Test key assumptions

8.2.2 Identify who is affected

8.2.3 Collate results

8.2.4 Validate and verify the assessment process and results

8.2.5 Review the strengths and weaknesses of the assessment

9

Take action

How will you apply your results and integrate capitals into existing processes?

9.2.1 Apply and act upon the results

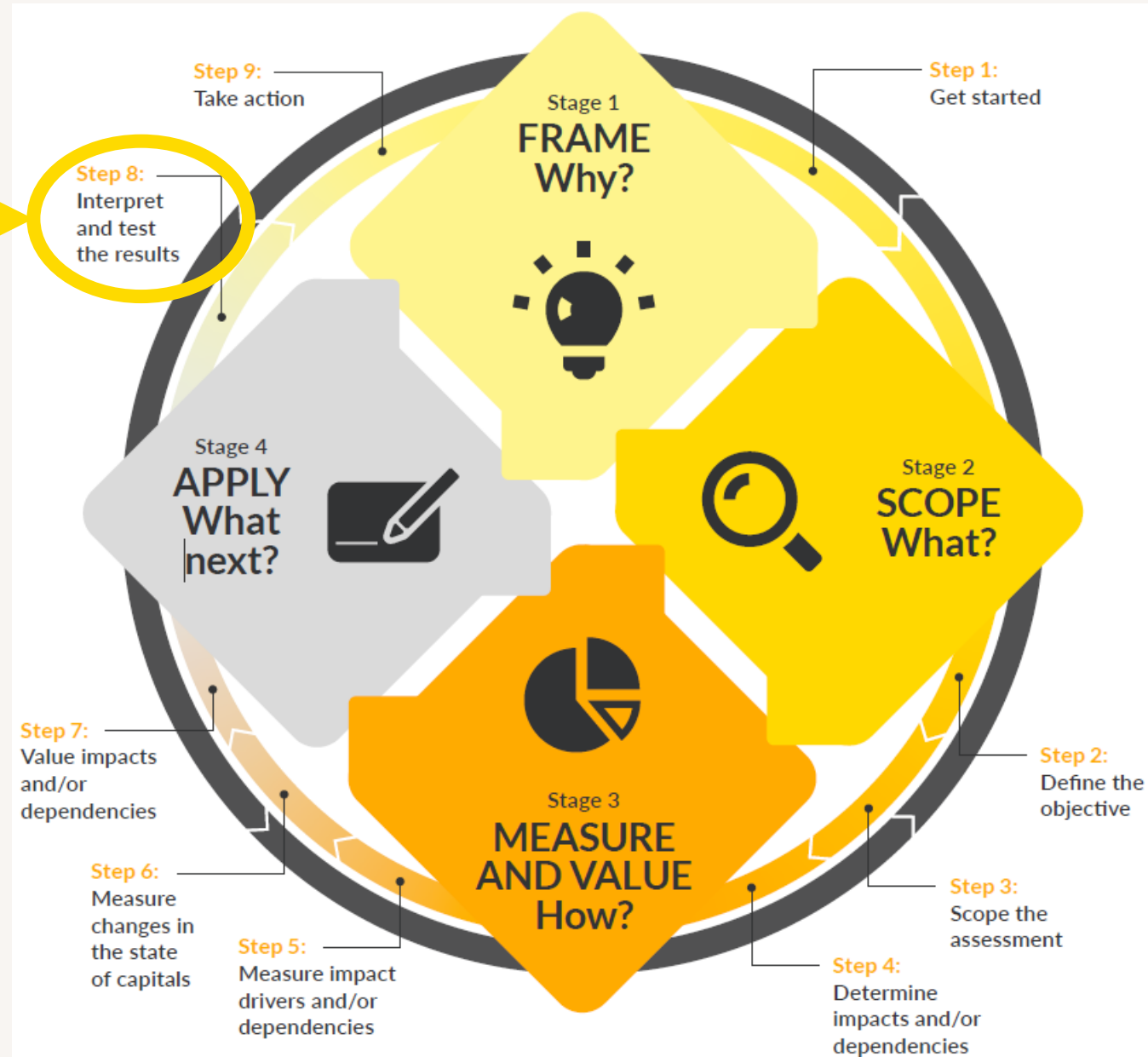
9.2.2 Communicate internally and externally

9.2.3 Make capitals assessments part of how you do business

Step 8

You are here

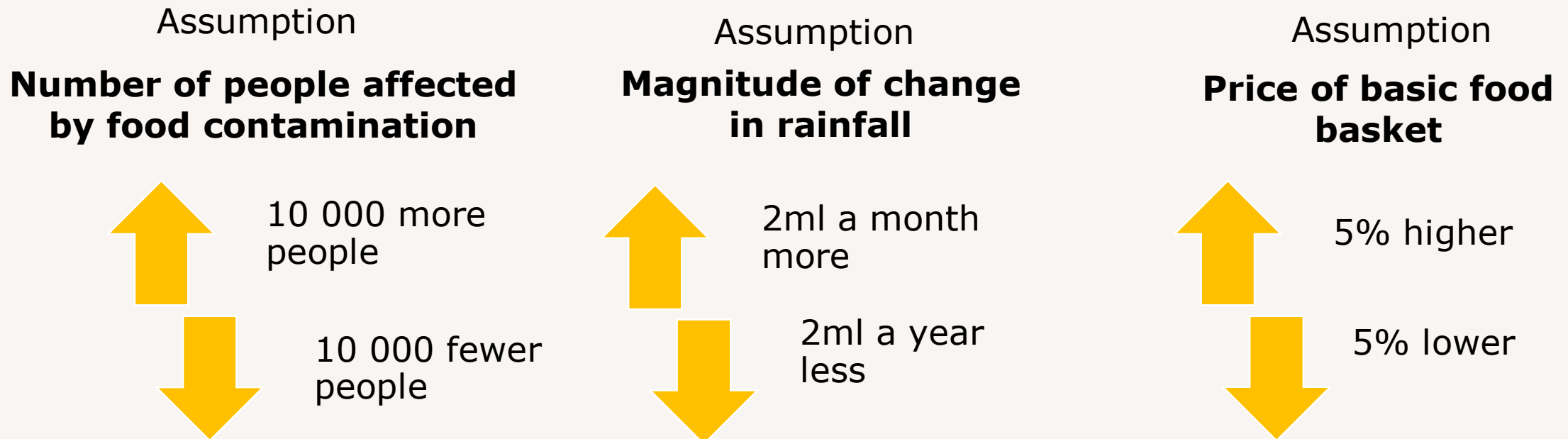
Question:
How can you interpret, validate and verify your assessment process and results?



APPLY STAGE: What next?

Test Key Assumptions

Sensitivity analysis: test how changes in assumptions or key variables affect the results, to ensure results are reliable



This provides a range of estimates, rather than one single number, which may reflect varying levels of confidence.

APPLY STAGE: What next?

Identify who is affected



The business
itself and financial
beneficiaries



Workers in a
business workforce



Workers in the
value chain



Affected
communities



End users –
customers and
consumers



Business perspective



Societal perspective

APPLY STAGE: What next?

Collate your results

Bring the values together in a way that helps the interpretation of results

Environmental Profit & Loss (EP&L)

Accounting framework that places monetary valuation of impacts into a structure similar to financial statements

K E R I N G



Cost-Benefit Analysis

An approach that compares the costs and benefits of different options (i.e. a project)



YorkshireWater

Total Impact Measurement

An approach that accounts all the impacts



pwc

EP&L

K E R I N G



Environmental Profit and Loss Accounts helps to:

- ✓ Visualise monetary **impact along value chain** for each impact driver
- ✓ Easily compare and monitor performance on a yearly basis

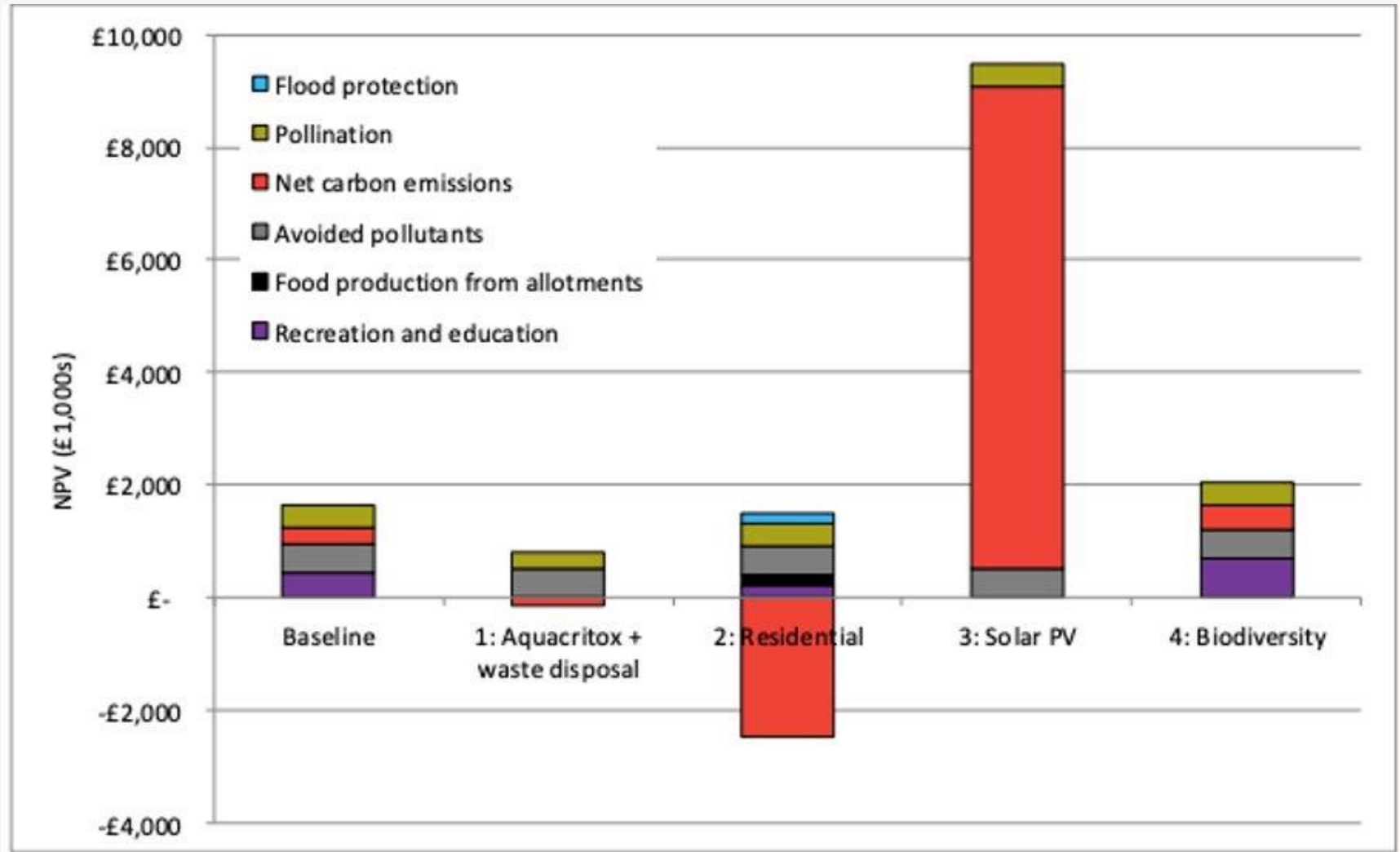
	TIER 0: STORES, WAREHOUSES, OFFICES	TIER 1: ASSEMBLY	TIER 2: MANUFACTURING	TIER 3: RAW MATERIAL PROCESSING	TIER 4: RAW MATERIAL PRODUCTION	TOTAL IN MILLIONS:
AIR EMISSIONS 						7% €34.9
GHGs 						36% €186.0
LAND USE 						32% €169.8
WASTE 						6% €32.3
WATER CONSUMPTION 						6% €33.3
WATER POLLUTION 						13% €68.0
TOTAL IN MILLIONS:	8% €41.7	6% €33.3	10% €53.7	11% €55.8	65% €339.8	100% €524.3

Cost Benefit Analysis



YorkshireWater

- ✓ Clearly compared options for investment
- ✓ Shows **Net Present Value** for each impact driver, which is the sum of costs and benefits



Total Impact Measurement



Locally grown and sourced barley

Total Impact Measurement



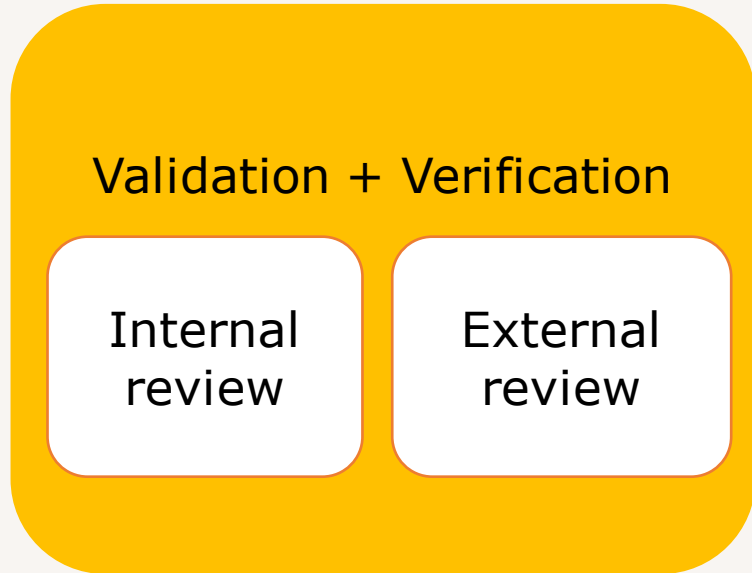
Imported barley

Aggregating Results:

- ✓ Disaggregated results is more powerful to **understand each element** rather than having one single aggregated number
- ✓ Aggregating values must be done at a granular level to show both positives and negatives
- ✓ The capitals are not **interchangeable, natural capital** underpins all other capitals

APPLY STAGE: What next?

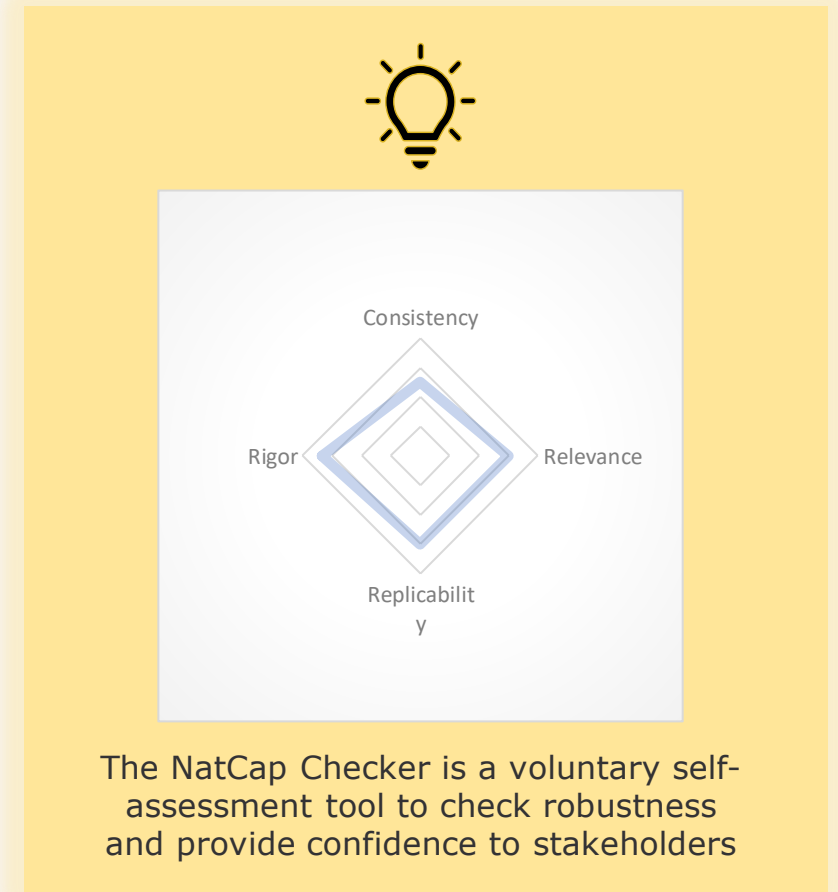
Validate and verify the assessment process and results
Review the strengths and weaknesses



Strengths



Weaknesses



Reflection exercise



Open your workbook to apply
your new knowledge



Verification and validation: 10 min

- With the 5 principles of an assessment in head, reflect on how you can run a verification processes.
- Write down your ideas
- Share it with you colleagues in a group discussion

Relevance: Ensure the consideration of the most relevant issues throughout your capitals assessment, including the impacts and/or dependencies that are most material for your business and stakeholders. This will help you identify the most important relationships between your business's activities and capital impacts and/or dependencies.

Rigor*: Use fit-for-purpose, technically robust* information, data, and methods. This will ensure the data your analysis produces is as reliable as possible for the context in which it was produced.

Replicability: Ensure that all your assumptions, data, caveats, and methods are transparent, traceable, fully documented, and repeatable. This facilitates the iterative development and application of your approach and implementation across your business and may allow for verification or audit if required.

Consistency: Ensure the data and methods you use for each assessment are compatible with each other and with the scope of the analysis. This will support you as you scale and integrate measurement and valuation across your business.

Responsibility: Integrated capitals assessments* require decisions to be made that can influence who is impacted and who isn't impacted by an assessment. Throughout the assessment process you will be presented with complex information and required to make active decisions that require ethical judgements and trade-offs. The reality is that certain stakeholders, issues, or locations may benefit from your assessment, whereas others may not, and it is rarely feasible for organisations to consider and address absolutely everything. It is therefore essential that decisions are made from a position of strong ethical and moral judgement. Ethics should guide users to make decisions that they believe are morally correct and lead to positive outcomes. There are numerous ethical frameworks that can be explored and may help to inform our process, such as utilitarianism, consequentialism, the rights approach, or the common good approach. Guidance is provided in [Box 5.1](#) on how to tackle some of the most common ethical issues encountered during capital assessments.



Module 4

Chapter 4.4

Apply stage: Take action

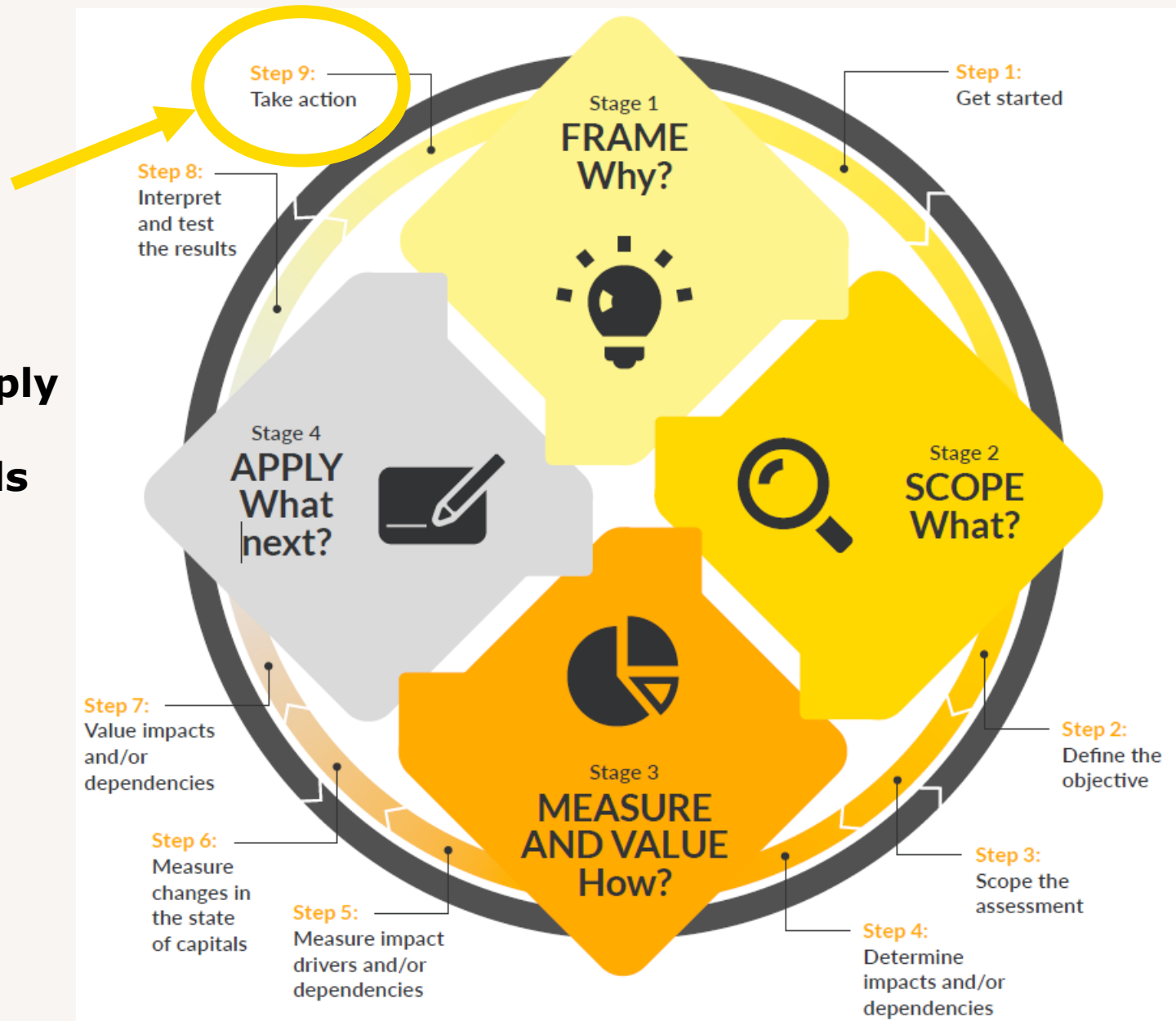


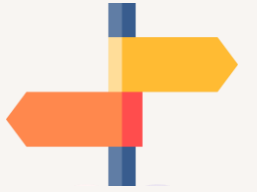
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Step 8

You are here

Question:
How will you apply your results and integrate capitals into existing processes?





TEEB Framework applications

Objective & Results



Objective: Evaluate the human and ecological cost of water use per kilogram of seed cotton. It's an option comparison between Better Cotton principle and conventional practices.
Results: Results show that they reduced by 49% the damage to human health and ecosystem quality.



Objective: Effectively communicate the uniqueness and positive impacts of its business model on nature and people.
Results: 10% decrease in food loss, 18% reduction of production cost, 7.5% increase in (farmers) income levels. 14% reduction in production cost due to less chemical inputs



Objective: Assess positive impacts of pineapple leaf fiber upcycling for textile supply chains.
Results: more efficient water use, reduction of waste, creation of secure jobs and contribution to local growth

APPLY STAGE: What next?

Apply and act upon results

WHAT was assessed?

Soil use

Employee health

Food loss or waste

Social acceptance and trust

Carbon emissions

WHAT was the business decision?

Business adopts a regenerative soil strategy

Business redesigns the work schedules to avoid burn out

Business introduces new product lines made from food that otherwise would have been lost or wasted.

Business joins a local community engagement group who meet with regularly to discuss concerns

Business set target and act to be carbon neutral in 10 years

APPLY STAGE: What next?

Communicate internally and externally

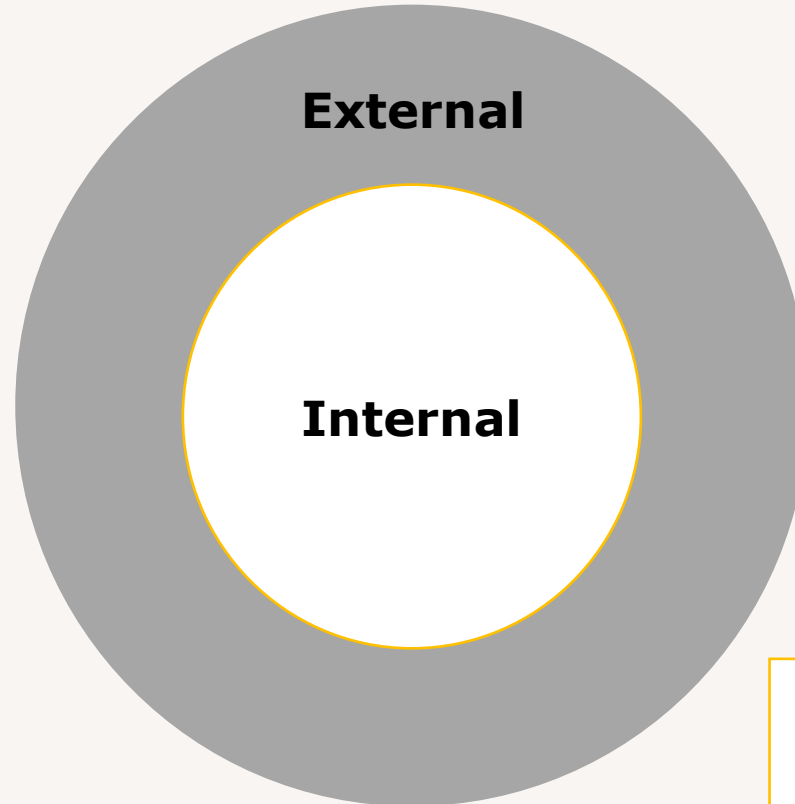
How much information will you share?

Who will you communicate findings to and how?

How will you present your findings?

How much did the assessment inform your decision?

Are you ready to discuss your findings with external stakeholders?



APPLY STAGE: What next?

Make capitals assessments part of how you do business

Existing business processes

Risk assessment

Financial accounting

Annual report

Value added of a capitals assessment

Valuation in decision making provides richer information to business, and introduces a broader range of measures of value to assess risk in context.

Allows to specify which costs, revenues, assets, and liabilities are related to different capitals and to develop a set of shadow prices or accounts for environmental costs and benefits, based on societal values.

Enhance corporate reputation and reduce market risk by providing more rigorous, reliable information to shareholders and other stakeholders.

Shengmu Organic Milk - China

Considerations and caveats in a natural capital assessment

Shengmu Organic Milk, the largest organic dairy company in China. The company produces raw milk in a circular way integrating planting and cow raising in the Ulan Buh desert.

Shengmu chose to use natural capital accounting to further understand their relationship with nature, incorporate natural capital into enterprise management, and provide information for corporate strategy, management, and operational decisions.



Shengmu Organic Milk - China

Apply: WHAT NEXT

Following the mitigation hierarchy of 1) avoid, 2) reduce, 3) mitigate, 4) restore, the business is pursuing solutions for each risk identified. They committed to science-based targets aligned with Paris Climate Agreement. They recognized challenges about: lack of standardization and integration of biodiversity and carbon strategies

Measure & Value: HOW

Shengmu identified several impacts and dependencies as water and land use, skills and knowledge, which they valued in quantitative or monetary terms. As a good practice, the company acknowledged where data on value were not available. They documented their sources on the value used in calculations as a reference.



Frame: WHY

They chose to use natural capital accounting to further understand their relationship with nature and provide information for corporate strategy, management, and operational decisions.

Scope: WHAT

The baseline is 2019, with temporal boundaries to 2022. The spatial boundaries include headquarters, subsidiaries, pastures and all production zones. The company did a costs-benefits analysis of its direct operations both from a business and societal perspective.

Reflection exercise



Open your workbook to apply
your new knowledge



How to integrate results into decision making

- A. How and with who do you plan to communicate the results?
- B. How can the assessment results be used to inform decisions to contribute to a nature positive and equitable food system.

Think about your target audience (decision-makers) and integration with existing business processes (risks assessment, reporting, financial accounting)



Module 4

Chapter 4.5

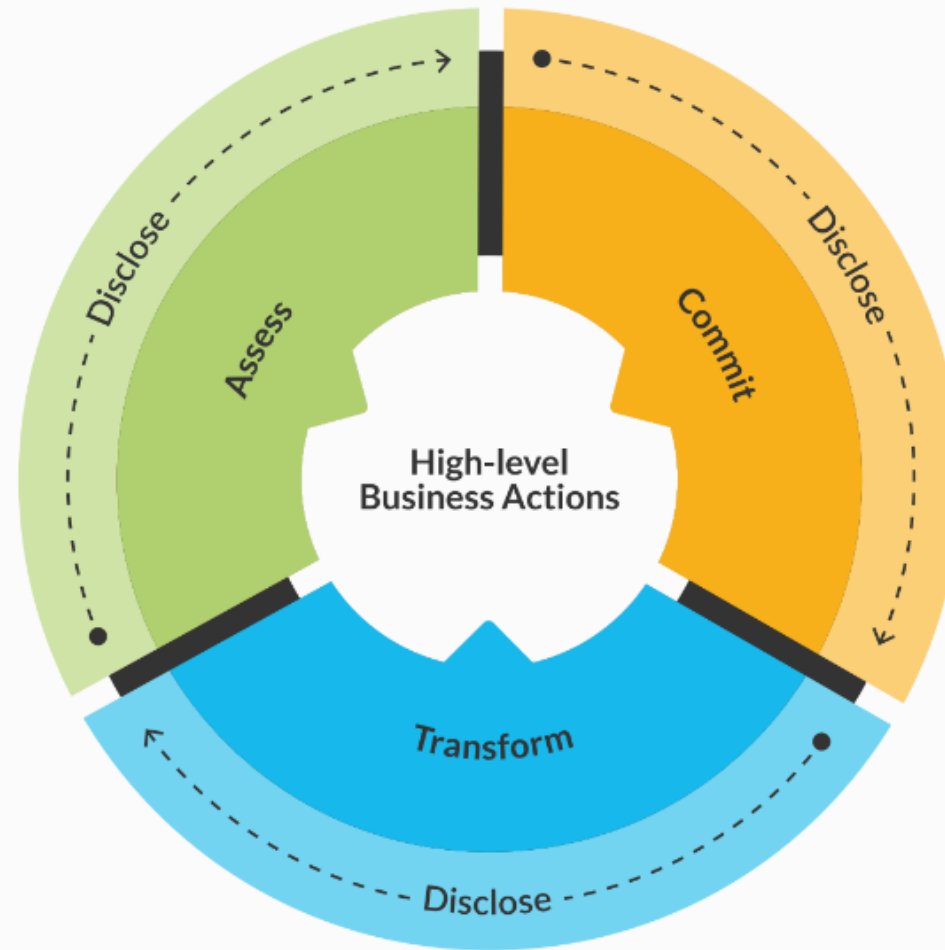
**High level business
action for nature and
people: Assess,
commit, transform, disclose**



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High-Level business actions on nature

ACT-D: Assess,
Commit,
Transform,
Disclose



Aligned with Business for Nature, World Business Council for Sustainable Development, the TaskForce on Nature Financial Disclosure, Science Based Targets Network, World Economic Forum and WWF



Assess

Assess impacts and dependencies on nature in an assessment

Commit

By setting targets for improvement, as Science-based targets, carbon emission reduction

Transform

Process in which the business acts on the information, making better decision and making changes to its practices. Transformation is about making improvement to created value for the company and for society

Disclose

Voluntary or mandatory accountability process where the business share progress with stakeholders. It should be a positive process where the business can share positives impacts and dependencies on the capitals and the opportunities to improve or reduce negative impacts.

Agronegocios del Plata - Uruguay

Decision-making system based on multi-capital analysis for the production and commercialization of meat and grains with added value

ADP is a family-run agribusiness producing grains and livestock. They face risks of negative perception due to its sector's impact.

Despite its "negative" sector impact reputation, ADP identifies opportunities to offer a differentiated product, positioning itself as a leader that considers sustainability, animal welfare, and well-being.



Agronegocios del Plata - Uruguay

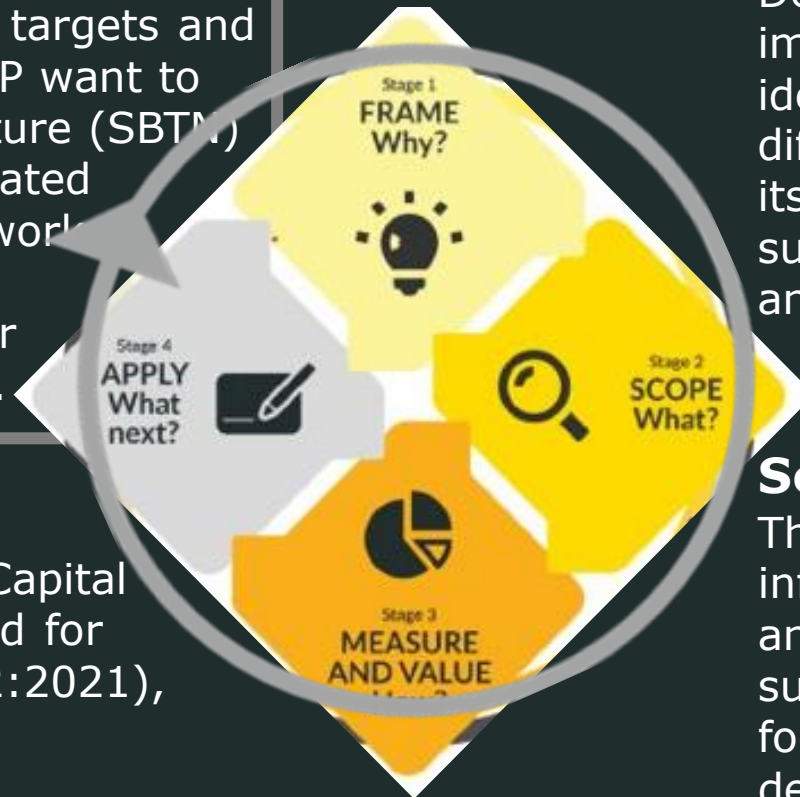
Apply: WHAT NEXT

The visualization of natural capital in a balance sheet is helping the company to set targets and actions towards nature-positive. ADP want to define science-based targets for nature (SBTN) and use the Taskforce on Nature-related Financial Disclosures (TNFD) framework. The assessment is helping to communicate results, inspiring other businesses to implement a change.

Measure & Value: HOW

ADP developed a Corporate Natural Capital Account following the British Standard for Natural Capital Accounting (BSI:/632:2021), which involves producing:

- ◆ A Natural Capital Balance Sheet
- ◆ A Natural Capital Income Statement that shows a yearly flow of benefits and disbenefits linked to natural assets. See next slide



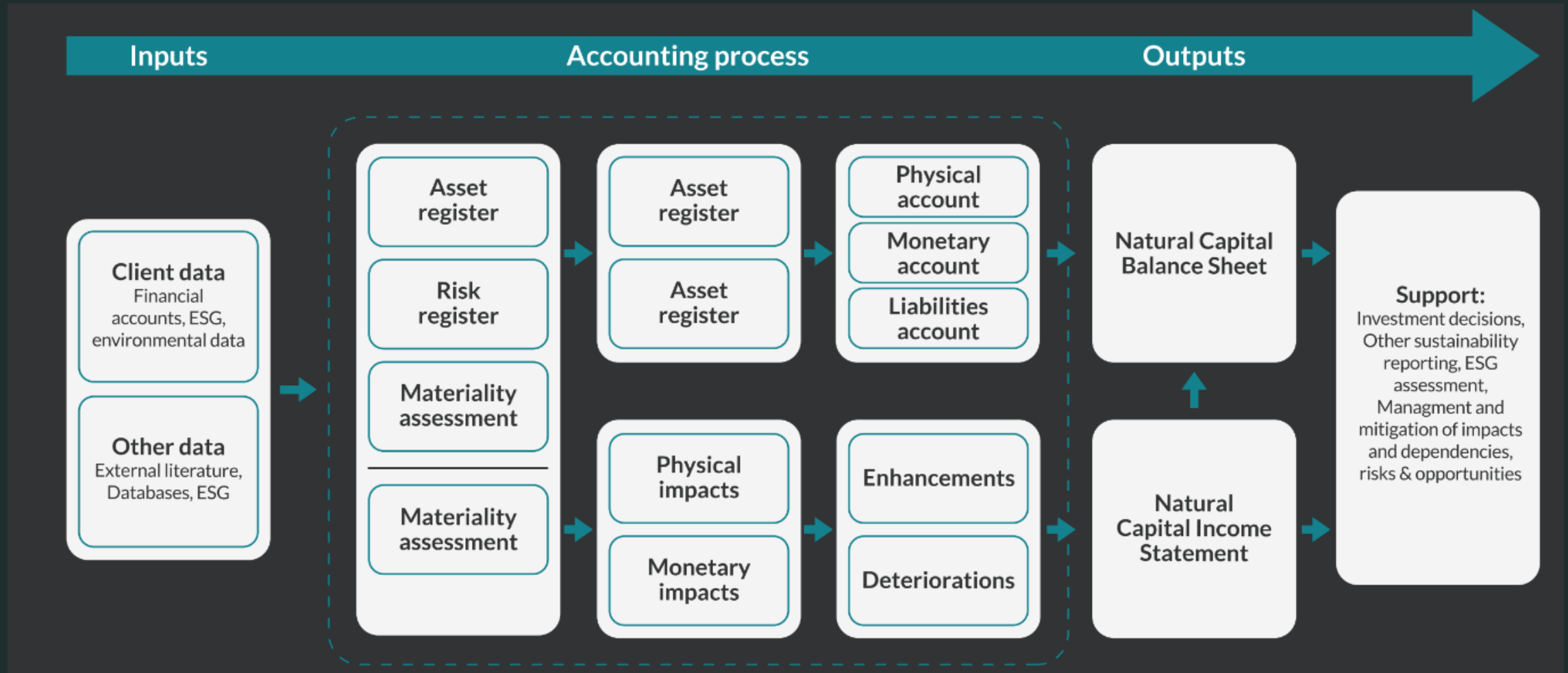
Frame: WHY

Despite its "negative" sector impact reputation, ADP identifies opportunities to offer a differentiated product, positioning itself as a leader that considers sustainability, animal welfare, and well-being.

Scope: WHAT

The objective was to generate information and tools to make strategic and operational decisions to integrate sustainability. The assessment focused on their impacts and dependencies on food provisioning, carbon sequestration and emissions, water quality, soil fertility, animal welfare, and biodiversity.

Agronegocios del Plata - Uruguay





Module 4

Chapter 4.6

Summary of lessons learnt



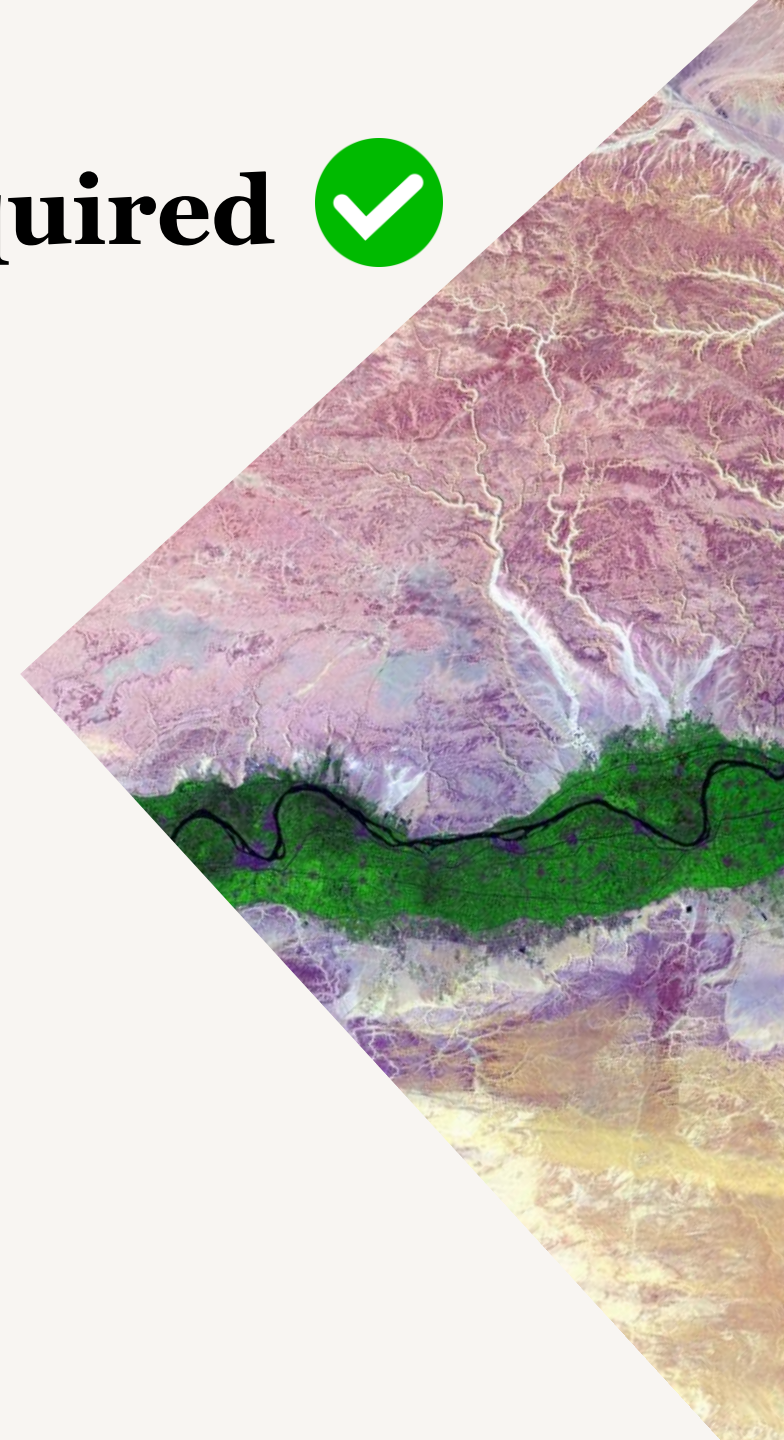
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Check-in: learning objective acquired



Now, you have:

- Understood the ways to **interpret**, validate and verify your **assessment** process and results
- an understanding of the ways in which you can **communicate your results** internally and externally
- learned how businesses can apply the results of a capital assessment to **drive transformative and impactful change**



Key highlights



- ❖ **Sensitivity analysis** helps to test assumptions and gain confidence in the assessment
- ❖ Presenting the **results attractively**, for e.g along the value-chain, with visual graphs and matrix, with yearly progression, help decision-makers and stakeholders to act adequately
- ❖ It's important to **validate results** internally, review strengths and weaknesses and get external verification process
- ❖ **Act upon results** making meaningful decisions. **Embed indicators and assessments into existing business processes.**

Key highlights



- ❖ Recognized Corporate sustainability stakeholders (WBCSD, Business for Nature, TNFD, SBTN, WED, WWF, Capitals Coalition) agreed upon "High-Level business actions on nature: ACT-D".
- ❖ ACT-D stands for **Assess** (impacts & dependencies), **Commit** (to set science-based target), **Transform** (business practices to create value for the company and for society) and **disclose** (reporting, accountability to share progress with stakeholders).



Module 4

Chapter 4.7

**Annex: additional guidance
and resources**



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References & resources

For a long list of relevant content, explore the Guidelines's bibliography (p.143-153) and Annex A (p. 155-165)

A - F	G-P	Q-Z
Accounting for Sustainability	ISO 14008:2019 & 14007:2019 on monetary valuation of environmental impacts & Environmental management	TEEB Measuring what's matters in agrifood
Aries	Millennium Ecosystem Assessment	TEEB Scientific and Economics Foundations
British Standard on Natural Capital BS 8632:2021	Natural Capital Accounting British Standard	TNFD Nature-related Risk & Opportunity
Convention on Biological Diversity COP 15 Targets	Natural Capital Protocol	True Cost Accounting AgriFood handbook
Ecosystem Services Partnership	Natural Capital Toolkit	Science Based Targets 2022 Forest land & agriculture
Esmeralda Maes Explorer	OECD-FAO Guidance for Responsible Agricultural Supply Chains	UN Global Guidance for Life Cycle Impact Assessment Indicators
FAO: SAFA, natural capital impact in agriculture, land use, Geodata portal, FAOSTAT, etc.		UN System of Environmental Accounting – Ecosystem Accounting
		World Benchmarking Alliance – Methodology for the food & Agriculture Benchmark
		WBCSD – Nature positive roadmap for Food & Agriculture

Collaborative online platform



Manage group

TEEB AgriFood

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Thank you



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