



VALUING NATURE

Session F Natural Capital Protocol


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Natural Capital Protocol
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**NATURAL
CAPITAL
COALITION**

 [@NatCapCoalition](https://twitter.com/NatCapCoalition) #NatCapProtocol



**NATURAL CAPITAL
COALITION**



**NATURAL CAPITAL PROTOCOL
AND SECTOR GUIDE
DEVELOPMENT**



Harmonization

There are many different approaches to natural capital and a lot of work has been carried out already. The Natural Capital Protocol standardizes this into a single global framework





A unique collaborative process

Developed the Protocol

Developed the sector guides, and managed the business engagement and pilot testing



The Coalition is hosted by ICAEW.





NATURAL
CAPITAL
COALITION

Leading companies tested the draft Protocol

Over 50 businesses contributed to the Protocol piloting program

Deep Dives



HUGO BOSS



*Piloted the
entire
Protocol*



Pearson



BRIGHT SCIENCE. BRIGHTER LIVING.



PHILIPS

LVMH

Piloting companies



*Piloted
different
steps of the
Protocol*



A Tarkett Company

SKANSKA



LEGADO
DAS ÁGUAS

interloom



NOVARTIS

Interface®

M&S
EST. 1884



Design & Consultancy
for natural and
built assets



Draft Protocol and sector guides released in November 2015 for consultation

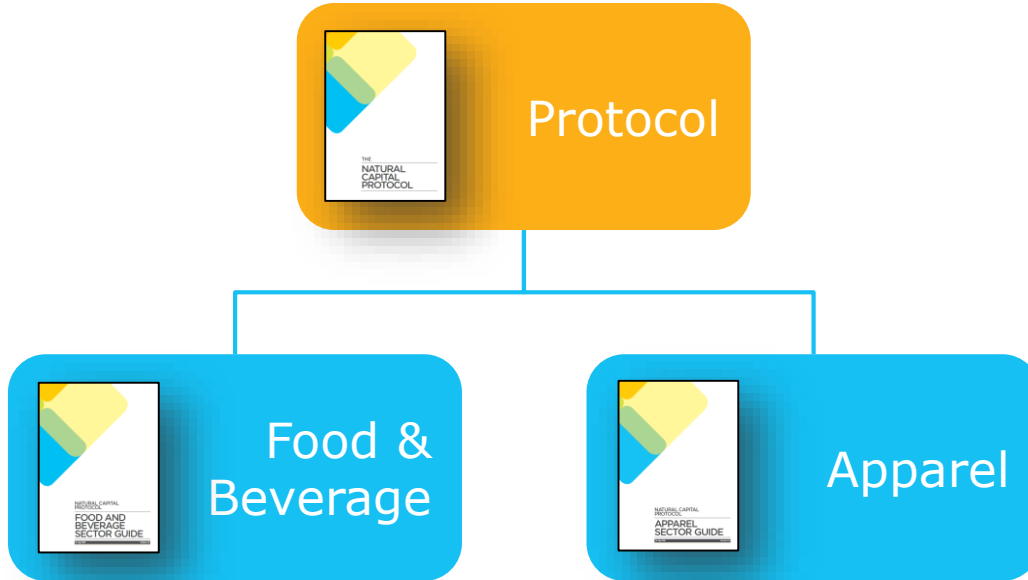
- ❖ 3,230 comments
- ❖ 453 individuals
- ❖ 143 organizations
- ❖ 5 continents covered
- ❖ 22 countries covered



The consultation was carried out using the online collaboration tool Collaborase



Which sectors?



The Coalition will develop new guides in partnership with sector initiatives and associations

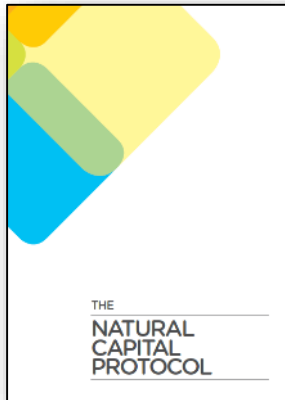
- Under development:
- Real Estate
 - Finance
 - Forest



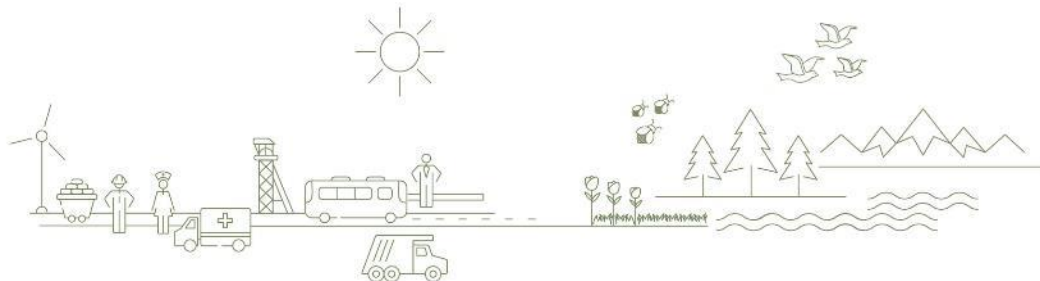


**NATURAL CAPITAL
PROTOCOL**

Introducing the Protocol



The **Natural Capital Protocol** is a **standardized framework** for **business** to **identify, measure and value** its direct and indirect **impacts and dependencies** on **natural capital**





Definitions

The **Natural Capital Protocol** is a standardized framework for business to identify, measure and value its direct and indirect impacts and dependencies on natural capital

The **stock** of **renewable** and **non-renewable natural resources** (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people





The **Natural Capital Protocol** is a **standardized framework** for **business** to **identify, measure and value** its direct and indirect **impacts and dependencies** on **natural capital**

Internationally applicable across **all business sectors, geographies and scopes**; leverages **existing approaches**





Definitions

The **Natural Capital Protocol** is a
standardized framework for **business**
to **identify, measure and value** its direct and
indirect **impacts and dependencies**
on **natural capital**

Aimed at informing business **decision making**
with trusted, credible and actionable information





The **Natural Capital Protocol** is a **standardized framework for business** to identify **measure and value** its direct and indirect **impacts and dependencies** on **natural capital**

- **To measure:** determine the **amounts, extent and condition** of natural capital, in physical terms, e.g. m³, tons
- **To value:** estimate the **relative importance, worth, or usefulness** of natural capital to people / business, in a particular context. Can be **qualitative, quantitative or monetary**





The **Natural Capital Protocol** is a
standardized framework for business
to **measure and value** its direct and indirect
impacts and dependencies
on **natural capital**

- **Impact:** negative or positive effect of business activity on natural capital
- **Dependency:** A business reliance on or use of natural capital



What the Protocol does and does not do

The Protocol...





- ✓ Builds on existing tools, guides, methods and techniques
- ✓ Focuses on improving internal management decision making
- ✓ Provides a standardized process that is also flexible
- ✓ Provides a process to internally standardize the approach that you take

The Protocol does not...

- ✗ Seek to create new tools and methods
- ✗ Provide a framework for external financial reporting
- ✗ Explicitly promote specific tools, methodologies or approaches
- ✗ Necessarily produce results that are comparable within or between different businesses or applications



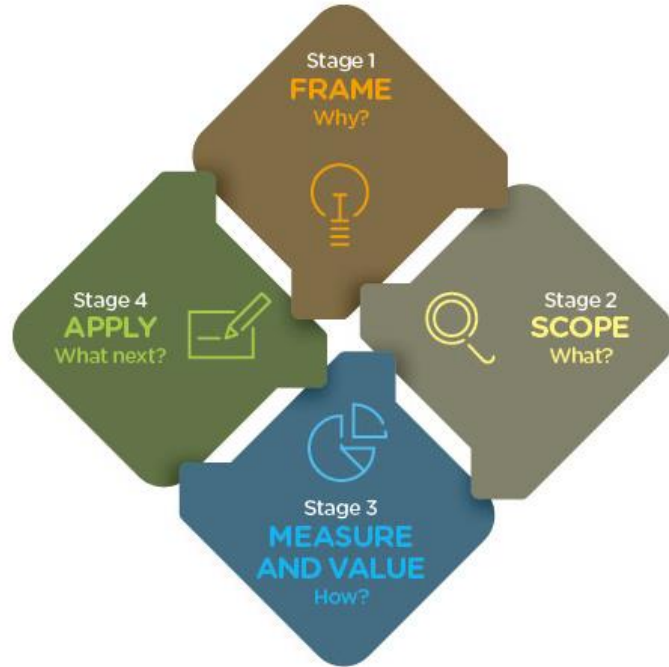


| | | | | | | | | | |
|----------------------------|---|---|--|--|---|---|---|--|--|
| | FRAME Why?  | | SCOPE What?  | | MEASURE AND VALUE How?  | | APPLY What next?  | | |
| Step | 01 Get started | 02 Define the objective | 03 Scope the assessment | 04 Determine the impacts and/or dependencies | 05 Measure impact drivers and/or dependencies | 06 Measure changes in the state of natural capital | 07 Value impacts and/or dependencies | 08 Interpret and test the results | 09 Take action |
| Questions this will answer | Why should you conduct a natural capital assessment? | What is the objective of your assessment? | What is an appropriate scope to meet your objective? | Which impacts and/or dependencies are material? | How can your impact drivers and/or dependencies be measured? | What are the changes in the state and trends of natural capital related to your business impacts and/or dependencies? | What is the value of your natural capital impacts and/or dependencies? | How can you interpret, validate and verify your assessment process and your results? | How will you apply your results and integrate natural capital into existing processes? |

PRINCIPLES: Relevance, Rigor, Replicability, Consistency

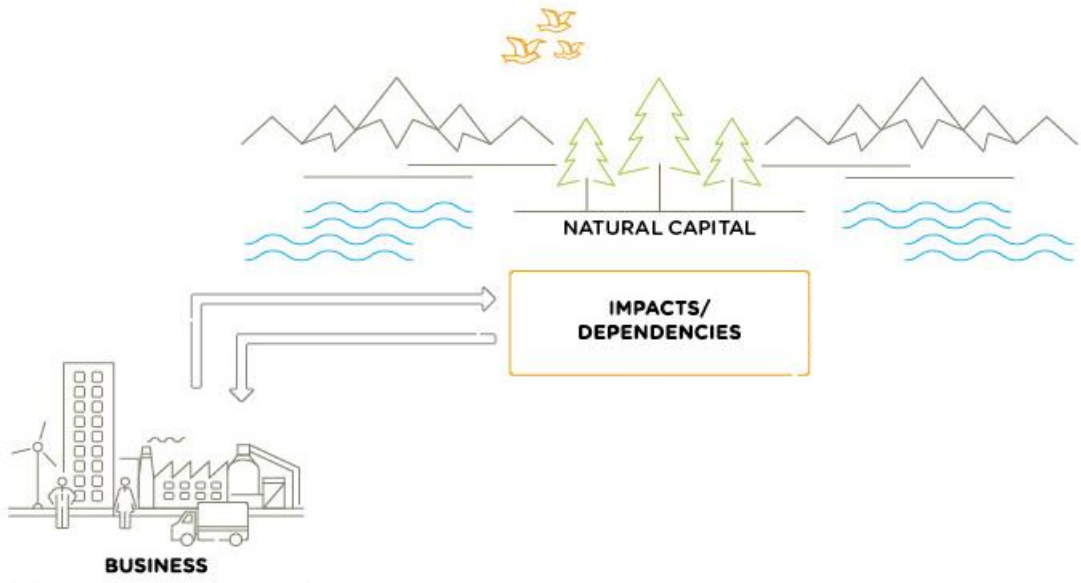


The Stages are connected and iterative



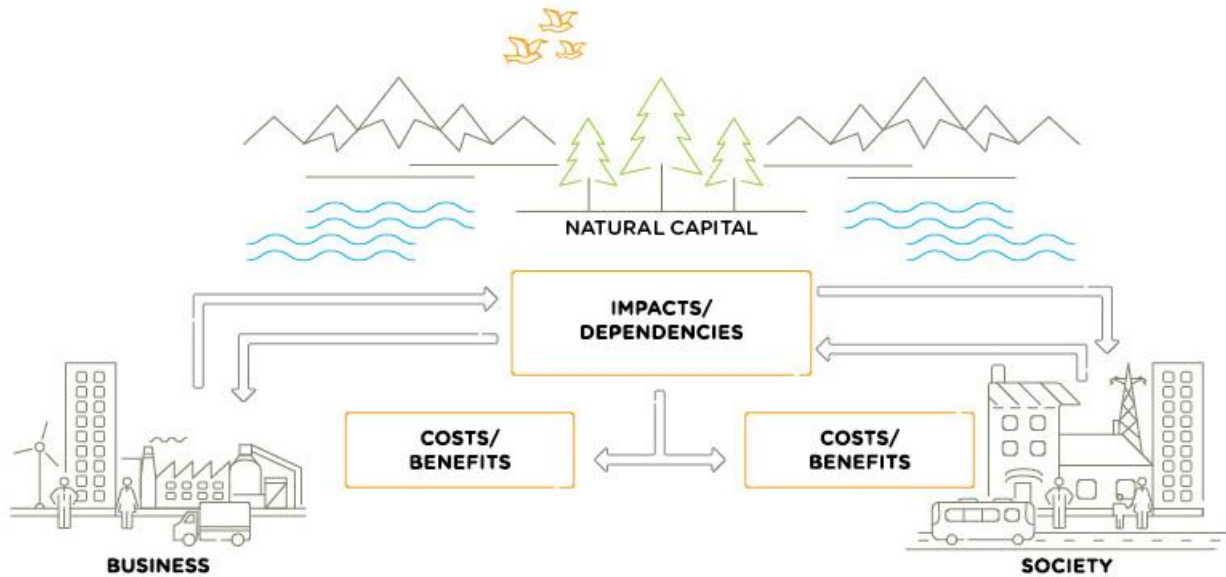


Get started: Conceptual model



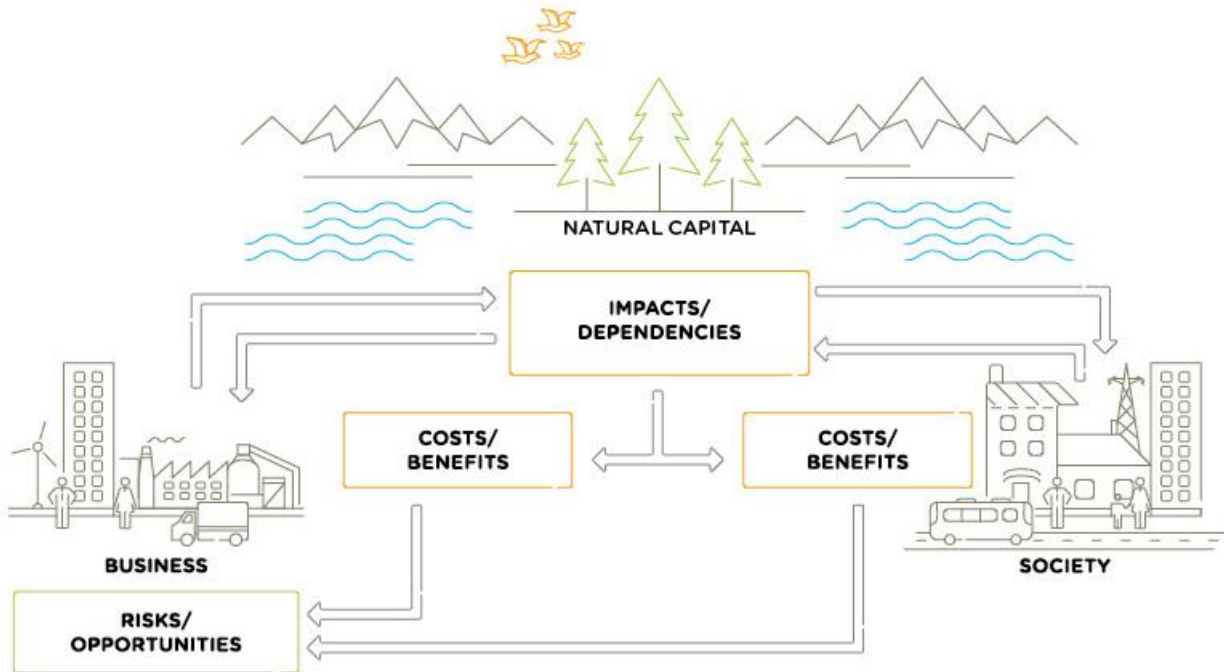


Get started: Conceptual model





Get started: Conceptual model





Impact pathway: How an impact driver results in changes in natural capital and how these changes affect stakeholders.

Business activities at a chemical manufacturing plant produce air emissions, which are an **impact driver**

Step 05: Measure impact drivers

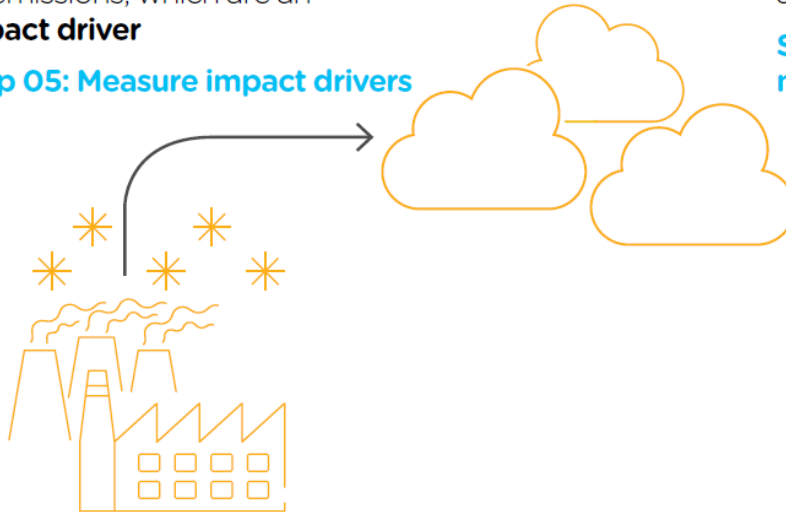




Impact pathway

Business activities at a chemical manufacturing plant produce air emissions, which are an **impact driver**

Step 05: Measure impact drivers



Impact drivers lead to **changes in natural capital**, in this case reduced air quality

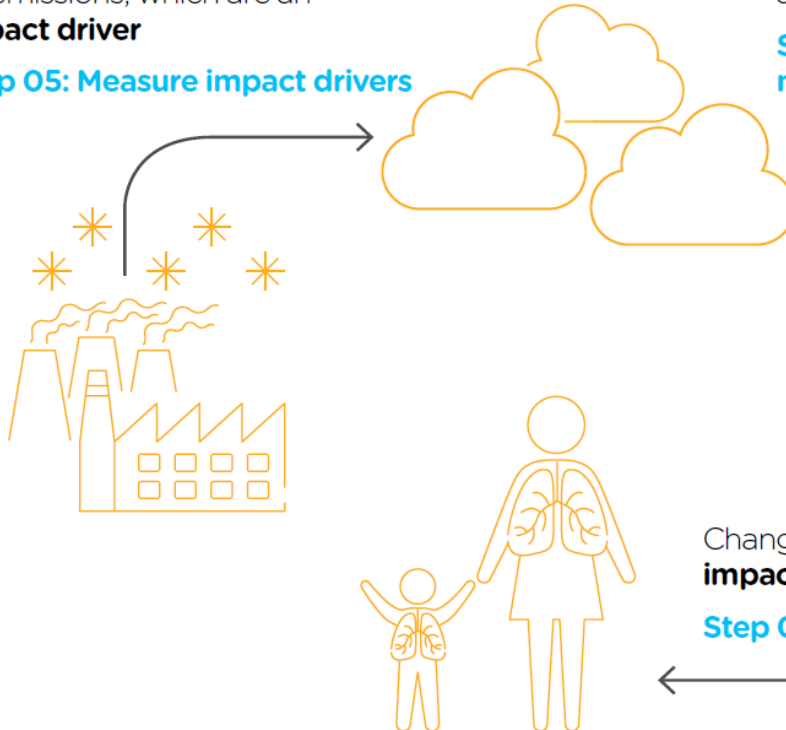
Step 06: Measure changes in natural capital



Impact pathway

Business activities at a chemical manufacturing plant produce air emissions, which are an **impact driver**

Step 05: Measure impact drivers



Impact drivers lead to **changes in natural capital**, in this case reduced air quality

Step 06: Measure changes in natural capital

Changes in natural capital result in **impacts**, in this case health problems

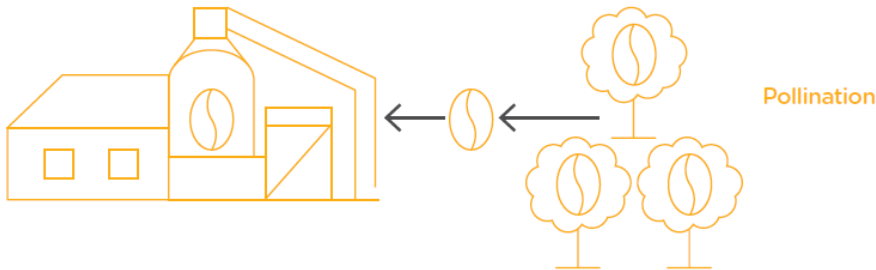
Step 07: Value impacts



Dependency pathway: How a business activity depends upon natural capital

Business activities at a coffee production plant have a **dependency** on the pollination of coffee plants

Step 05: Measure dependencies

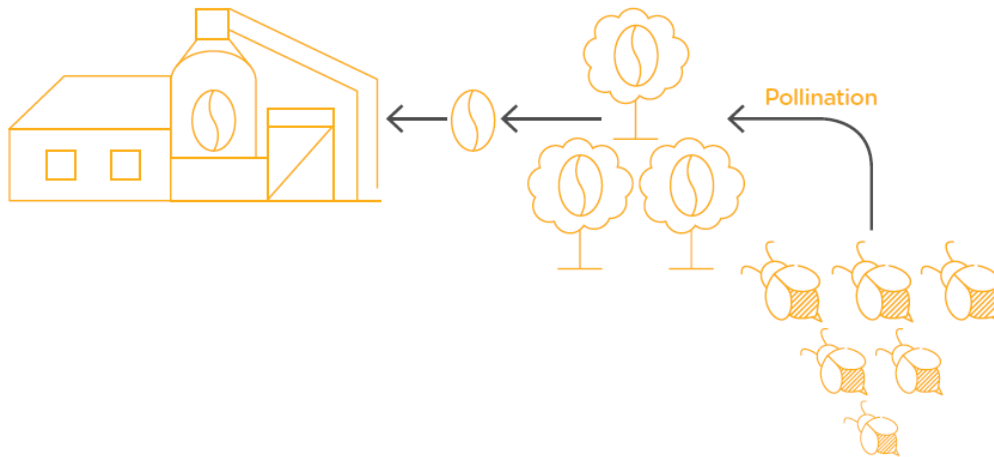




Dependency pathway

Business activities at a coffee production plant have a **dependency** on the pollination of coffee plants

Step 05: Measure dependencies



Changes in natural capital cause the bee population to decline, due to:

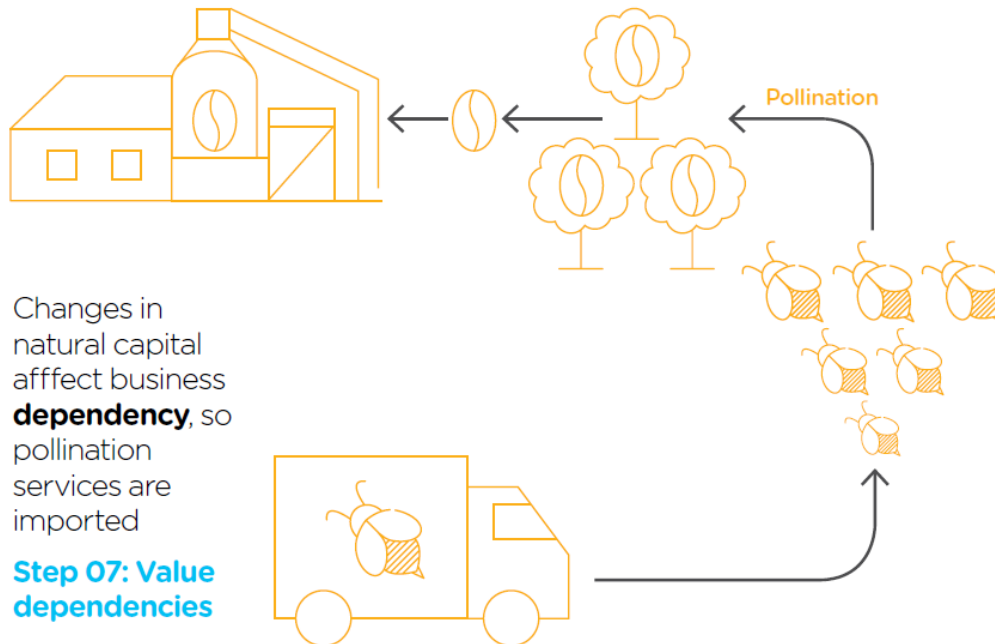
- The business itself, e.g. overuse of pesticides
- Natural changes e.g. extreme weather events
- Human-induced changes, including due to the activity of other businesses, e.g. habitat change

Step 06: Measure changes in natural capital

Dependency pathway

Business activities at a coffee production plant have a **dependency** on the pollination of coffee plants

Step 05: Measure dependencies



Changes in natural capital affect business **dependency**, so pollination services are imported

Step 07: Value dependencies

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- The business itself, e.g. overuse of pesticides
- Natural changes e.g. extreme weather events
- Human-induced changes, including due to the activity of other businesses, e.g. habitat change

Step 06: Measure changes in natural capital



**CASE STUDIES AND
EXAMPLES**



Example: food retailer

- ✓ A large diversified food and beverage retailer sells multiple brands as well as its own-brand product line, where it has been investing in sustainability improvements on an ad hoc basis.
- ✓ It would like to communicate to its own-brand product line outperforms other brands in sustainability terms

Scope: Why

| Stage | FRAME Why? | | SCOPE What? | | | MEASURE AND VALUE How? | | | APPLY So what? | |
|----------------------------|---|---|---|--|---|---|---|--|---|---|
| Step | 01 Get Started | 02 Define the objective | 03 Scope the assessment | 04 Determine the impacts and/or dependencies | 05 Prepare to measure and value | 06 Measure or estimate impacts and/or dependencies | 07 Measure or estimate changes in the state and trends of natural capital | 08 Value impacts and/or dependencies | 09 Interpret and use the results | 10 Embed |
| Questions this will answer | How is natural capital relevant to your business? | What is the objective of your assessment? | What scope of analysis is appropriate for your objective? | Which impacts and/or dependencies are most relevant? | What do you need to consider before you start to measure and value? | How do you measure or estimate your impact drivers and/or dependencies? | How do you measure or estimate the changes in the state and trends of natural capital related to your business impacts and/or dependencies? | What is the value of your natural capital impacts and/or dependencies? | How can you interpret, validate, verify and apply the assessment and the results? | Should you continue the use of natural capital assessments in your business and if so, how? |

PRINCIPLES: Relevance, Rigor, Replicability, Consistency

FRAME: WHY?

- ❖ STEP 01: Why should you conduct a natural capital assessment?
 - ❖ To enhance **reputational opportunities** such as increased competitive advantage over other brands and market share from being recognized as a leader in the field.



Scope: What

| | | | | | | | | | |
|----------------------------|--|---|--|---|--|---|--|--|--|
| Stage | FRAME Why? | | SCOPE What? | MEASURE AND VALUE How? | | | APPLY What next? | | |
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| Questions this will answer | Why should you conduct a natural capital assessment? | What is the objective of your assessment? | What is an appropriate scope to meet your objective? | Which impacts and/or dependencies are material? | How can your impact drivers and/or dependencies be measured? | What are the changes in the state and trends of natural capital related to your business impacts and/or dependencies? | What is the value of your natural capital impacts and/or dependencies? | How can you interpret, validate and verify your assessment process and your results? | How will you apply your results and integrate natural capital into existing processes? |

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SCOPE: WHAT?

- ❖ **STEP 02: What is the objective of your assessment?**
 - ❖ Objectives: To measure the extent to which products within **own-brand portfolio impact and depend on natural capital**. This will inform a corporate strategy of reducing future impacts and risk associated with volatile supply.
 - ❖ Target audience: **Customers**
 - ❖ Specific benefits: **Winning market shares** due to market differentiation

SCOPE: WHAT?

- ❖ STEP 03: What is an appropriate scope to meet your objectives?
 - ❖ Organizational focus: **Product**
 - ❖ Value chain: **Whole value chain** (upstream, operational and downstream)
 - ❖ Value perspective: **Society**
 - ❖ Types of values: **Monetary values**
 - ❖ Technical issues: Baseline (**competitor product range**), Spatial boundaries (**a single product line**), time horizon (**last financial year**)
 - ❖ Key planning issues: **Internal resource** (sustainability department)

SCOPE: WHAT?

- ❖ **STEP 04: Which impacts and dependencies are material?**
 - ❖ **GHG emissions** from growing, manufacturing, transportation and retail of the products
 - ❖ **non-GHG emissions** from growing, manufacturing, transportation and retail of the products
 - ❖ **Water use**
 - ❖ **Solid waste** by consumers



Measure and Value: How

| | | | | | | | | | |
|-----------------------------------|--|---|--|---|--|---|--|--|--|
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SCOPE: HOW?

- ❖ STEP 05: How can your impact drivers and/or dependencies be measured?
 - ❖ GHG emissions: **Ton eq. CO₂**.
 - ❖ Non-GHG emissions: **Kg of CO, NH₃, SO₂, NO_x, VOCs and PM**
 - ❖ Water use: **m³ of water**
 - ❖ Solid waste: **tons**



SCOPE: HOW?

- ❖ STEP 06: What are the changes in the state and trends of natural capital related to your business impacts and/or dependencies?
 - ❖ **Concentration** of CO₂e in atmosphere.
 - ❖ **Concentration** of non-GHG air pollutants in local air
 - ❖ **Change in available** water resources
 - ❖ **Disamenity** due to solid waste disposal



SCOPE: HOW?



❖STEP 07: What is the value of your natural capital impacts and/or dependencies?

Key features of monetary valuation techniques

| Technique | Description | Data required |
|--|--|--|
| Market and financial prices*** | <p>This includes several related approaches, including:</p> <ul style="list-style-type: none">- Costs/prices paid for goods and services traded in markets (e.g. timber, carbon, value of water bill or pollution permit)- 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) | <p>Market prices of ecosystem goods and/or services</p> <p>Costs involved to process and bring the product to market (e.g., crops)</p> |
| Production function (change in production) | <p>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)</p> | <p>Data on changes in output of a product</p> <p>Data on cause and effect relationship (e.g., crop losses due to reduced water availability)</p> |



Key features of monetary valuation techniques

| Indicative duration | Indicative budget | Skills required | Advantages | Disadvantages |
|---|-------------------|--|--|--|
|  Days - weeks | \$ | Economics—or econometrician | <ul style="list-style-type: none">- A transparent and defensible method since based on market data- Reflects actual willingness to pay (WTP) | <ul style="list-style-type: none">- Only applicable where a market exists for the good or service and price data are readily available- Market prices may be distorted by imperfect competition and/or policy failures, hence not a good measure of societal value |
|  Days - weeks | \$ | Economics, (potentially agronomist, hydrologist and/or process engineer, etc) | <ul style="list-style-type: none">- If all required data are available, the technique can be implemented fairly easily- Can link natural capital dependencies to financial accounts | <ul style="list-style-type: none">- Necessary to recognize and understand the relationship between a change in natural capital, ecosystem services and/or abiotic services, and output of product- Can be difficult to obtain data on relevant changes in natural capital, the ecosystem service and effect on production |



Key features of monetary valuation techniques

| Technique | | Description | Data required |
|--------------------------------|----------------------|---|---|
| Cost-based approaches | Replacement costs | The cost of replacing natural capital with an artificial substitute (product, infrastructure, or technology). May be estimated, observed, or modeled | The cost (at market prices**) of replacing natural capital (or associated ecosystem goods or services) with man-made equivalents (e.g., replacing flow regulation of habitat with flood defense scheme) |
| | Damage costs avoided | The potential costs of property, infrastructure, and production losses due to natural capital degradation, treated as a "saving" or benefit from conserving natural capital. May be estimated, observed, or modeled | Data on costs incurred to property, infrastructure, or production as a result of decline in natural capital or the loss of associated ecosystem services Damages under different scenarios |
| Revealed preference (indirect) | Hedonic pricing | Based on the observation that environmental factors are one of the determinants of the market price of certain goods (e.g., the environmental quality of a neighborhood affects the prices of properties located there). This technique models variations in market prices, controlling for other variables to isolate the environmental factor of interest. The extent to which price varies with this factor reveals its value | Data relating to differences in property prices or wages that can be ascribed to the different natural capital qualities (e.g., status of river, area of green space, distance from forest) |
| | Travel costs | Based on the observation that environmental and marketed goods and services are often complements (i.e., you need to spend money and valuable time on travel to visit a place where you can enjoy natural features). Measures travel and other costs incurred when visiting a natural asset for recreation or leisure, to elicit a value per visit. Assumes such spending is a minimum expression of the value of individuals' experience (otherwise people would not take the trouble) | The amount of time and money people spend visiting a site for recreation or leisure purposes Motivations for travel |



Key features of monetary valuation techniques

| Technique | | Description | Data required |
|-------------------------------|---------------------------|--|---|
| Stated preference | Contingent valuation (CV) | Infers ecosystem values by asking individuals their maximum willingness to pay (or willingness to accept compensation) for a specified change in the relevant non-market good or service from natural capital | Socio-economic and demographic information on survey respondents |
| | Choice experiments (CE) | Individuals are presented with alternative goods/ options with different characteristics (i.e., various attributes or levels, such as distance, number of species present, or some other aspect of natural capital), as well as different prices. They are asked to choose their preferred option, from which the value for the relevant non-market good or service from natural capital may be inferred | As for CV above An appropriate set of "levels" are required for key parameters (e.g., poor, medium, good, and excellent river water quality) |
| Value Transfer | | | |
| Value (benefits) transfer**** | | Values an impact driver in one context based on valuation evidence (identified using one or more of the above techniques) determined in another context. Specific adjustments should be made to account for differences between the two contexts | Valuations based on above techniques applied to similar studies elsewhere; A very common starting place for most companies Data on key variables from different studies (e.g., GDP per person) |



SCOPE: HOW?

- ❖ STEP 07: What is the value of your natural capital impacts and/or dependencies?
 - ❖ GHG emissions: **Social cost of carbon**
 - ❖ Non-GHG emissions: **contingent valuation**
 - ❖ Water use: **contingent valuation**
 - ❖ Solid waste: **hedonic pricing**



Apply: What's next

| Stage | FRAME Why? | | SCOPE What? | | MEASURE AND VALUE How? | | | APPLY What next? | |
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SCOPE: HOW?

- ❖ STEP 08: How can you interpret, validate and verify your assessment process and results?
 - ❖ **Sensitivity analysis** of monetization coefficients and discount rates to ensure results remain within the same order of magnitude
 - ❖ Validation: **external validation** process to evaluate whether sources of data, methodology and assumptions fit for purpose
 - ❖ The assessment is designed to inform external stakeholders to help **strengthen company communication on sustainability and differentiate** its own-brand product portfolio from competitors.
 - ❖ Strengths and weakness: data coming from secondary sources and LCIA. The work could be strengthened using more **primary data**.

SCOPE: HOW?

- ❖ **STEP 09: How will you apply your results?**
 - ❖ **Effective communication** with external stakeholders in monetary terms generated reputational benefits from own-brand differentiation
 - ❖ Business decision: the company can extend its external reporting and communication efforts into a comprehensive own-brand portfolio **Environmental Profit and Losses (EP&L)** account to enable comparison of financial performance with impact reduction achievement



The business case



"It is increasingly apparent that traditional financial accounting practices are failing to recognise all relevant business impacts and risks. The natural capital protocol is a real world first in bringing structure and a standardised common framework for natural capital assessment."

Liz Barber, Yorkshire Water



"We learned where the most important impacts and vulnerabilities are, and this provided a clear focus for driving improvement in the company's impact."

Connie Hensler, interface



"I believe business and commerce should use the National Capital Protocol to embed the holistic decision making necessary to not only manage risk, but more importantly deliver corporate culture change."

Chris Brown, Olam International (UK) Ltd



"The assessment has helped the business to set clear priorities for interventions in the highest impact value chains."

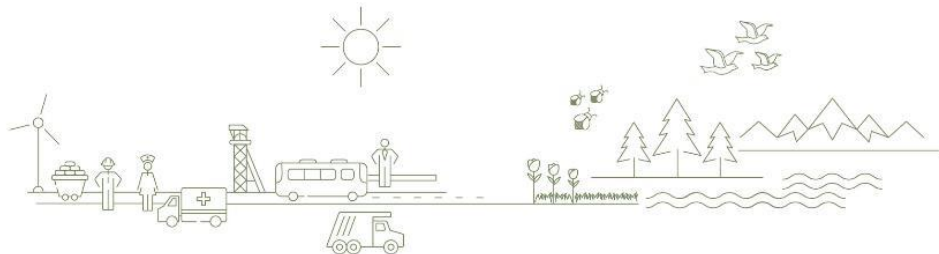
Ian Ellison, Jaguar Land Rover



"The Protocol was helpful in evaluating approaches to valuation and alternatives for a secure fresh water supply."

Mark Weick, The Dow Chemical Company

| | |
|--|---|
| Operational <i>Regular business activities, expenditures and processes</i> | <ul style="list-style-type: none"> • Reduce raw material costs and risk of interruption to supply from extreme weather, flooding etc. • Realize efficiency gains |
| Legal and regulatory <i>Laws, public policies, and regulations that affect business performance</i> | <ul style="list-style-type: none"> • Identify future legislation • Reduce compliance costs and risk of fines and penalties |
| Financing <i>Cost of and access to capital including debt and equity</i> | <ul style="list-style-type: none"> • Reduce financing costs and increase margins • Improve access to finance - attracting investors |
| Reputational and marketing <i>Trust and relationship with stakeholders, customers, suppliers and employees</i> | <ul style="list-style-type: none"> • Identify new revenue streams and differentiate your products • Improve ability to attract and retain employees |
| Societal <i>Relationships with wider society</i> | <ul style="list-style-type: none"> • Identify benefits and negative impacts to local communities through improved natural capital (e.g., water quality) • Support a social license to operate |





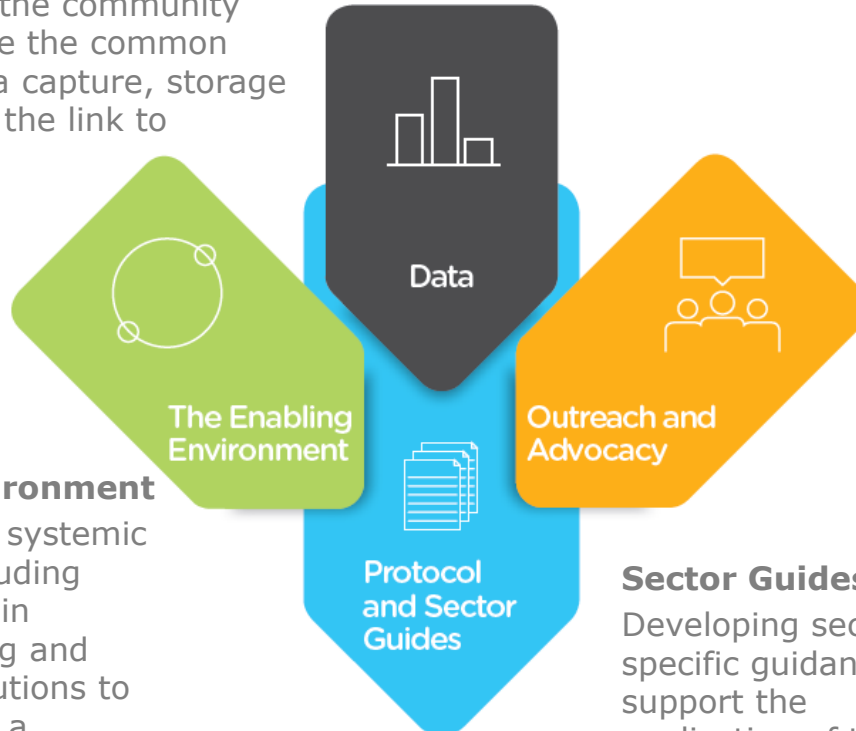
**SUPPORTING THE
PROTOCOL**



Future work of the Coalition

Natural Capital Data Framework

Bringing together the community together to explore the common issues around data capture, storage and provision and the link to decision making



Enabling Environment

Identifying the systemic barriers to including natural capital in decision making and developing solutions to address this at a regional or country level.

Protocol Application Program

Supporting the application of the Protocol, and building the evidence for its further use.

Sector Guides

Developing sector specific guidance to support the application of the Protocol



www.naturalcapitalcoalition.org