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Trial of the Natural Capital Protocol for land-based businesses

- Andy Wells, Head of Property

Aims of the trial

To explore how useful /applicable the Natural Capital Protocol is to land-based businesses in Scotland

- Is it a practical and cost effective way to better understand impacts and dependencies on the natural environment?
- To identify benefits from applying the Protocol and use these to encourage its uptake
- To inform other work to enable widespread application of the Protocol by land-based businesses in Scotland




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Partners

CUMULUS CONSULTANTS
LAND - ENVIRONMENT - ECONOMY

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

SEPA
Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

SRUC

AECOM Imagine it. Delivered.

Scottish Land&Estates
Landowners Working for the Countryside

Scottish Wildlife Trust

The James Hutton Institute

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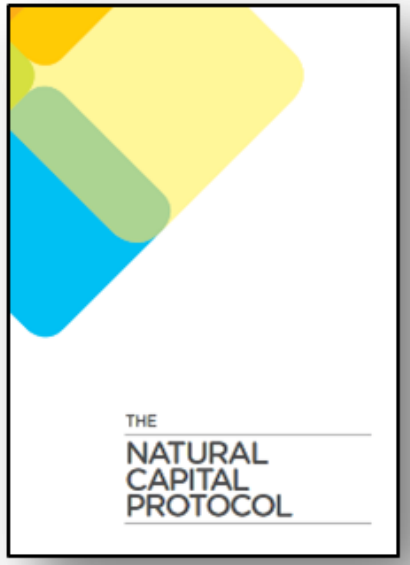
The Natural Capital Protocol

- A **standardized framework** for business to **identify, measure and value** its direct and indirect **impacts and dependencies** on natural capital
- Designed to help business generate trusted, credible, and actionable **information** for business managers to inform **decisions**
- Can help identify natural capital **risks and opportunities** for business
  - Operational
  - Legal and regulatory
  - Financing
  - Reputational and marketing
  - Societal



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The Natural Capital Protocol Framework

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The trial

- Focused on trialling the Protocol with three land-based businesses
  - Lowland mixed farm (128 ha)
  - Upland cattle and sheep farm (300 ha)
  - Upland estate (23,350 ha) supporting a variety of enterprises including crop and livestock production, whisky distilling, forestry, tourism, fishing and shooting

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Scope of the trial on each farm / estate

- Limited to farm/estate boundaries only
- Excluded consideration of supply chain impacts and dependencies although accounted for risks and opportunities beyond the farm gate where relevant
- Backward- and forward-looking
  - Assessed changes in natural capital since start of tenancy
  - Assessed flows of benefits from project-level interventions 50 years into the future
- Considered impacts and value from the perspective of the business (land manager) and wider society (‘public goods’)

What we did / what's needed?

- A defined set of **objectives** (i.e. why are you undertaking the assessment?)
- **Information** about the farm / estate enterprises, activities, land use/land cover types (extent and condition)
- Up to three **meetings**
  - Framing and scoping
  - Measuring and valuing
  - Review of findings and development of an outline action plan

Frame Stage: why?

Step 1: Get started

Step 2: Define the objective

- The Natural Capital Protocol can be applied to a wide variety of decisions
- Important to be clear about why you are doing the assessment, as it determines the scope of the assessment overall and where more or less effort may be required to generate the most relevant results.
- Two broad types of applications:
  - To understand how well you are managing your natural capital assets and/or to identify issues and opportunities.
  - To compare alternative options/scenarios to support a particular decision (e.g. a land use change, project or investment), accounting for private (financial) and societal costs and benefits

Frame Stage: examples of decision contexts

- What are my impacts and dependencies on natural capital and associated risks and opportunities, including potential for generating new revenue streams?
- What is the value of natural capital on my land and the benefits it provides and how has this changed over time?
- Where does it make business sense to my efforts in protecting, restoring or enhancing natural capital?
- How do options / opportunities to enhance natural capital compare?

Scope Stage: what?

Step 3: Scope the assessment

- Which business/enterprises are you going to cover?
- Are you considering the impacts and dependencies of operations within the boundaries of the farm/estate, or also the activities of the supply chain, upstream and/or downstream?
- Do you want to assess and value the impacts (positive and negative) from the perspective of business, society, or both?
- What is the appropriate time period (past and future) over which impacts should be assessed?

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Measure and Value Stage: how?

Step 4: Develop a natural capital asset register

- Identifies the natural capital assets present on the farm / estate and records their extent and condition
- Provides the baseline (or starting point) against which changes can be measured and monitored over time
- Draws largely on information already held by land managers supplemented, where necessary, by information from publicly available datasets

Assets (habitat types)	Unit of measure	Start of tenancy 2006		Current status 2017		Data source	Trends (impact)
		Extent	Condition	Extent	Condition		
Enclosed farmland:							
Cropland (arable & horticultural)	ha	36.42	Degraded	7.75	Adequate/improving	Soil tests	Decreased extent, improving condition
Temporary pasture (temporary improved grassland)	ha	61.8	Degraded	23.88	Adequate/improving	Soil tests	Decreased extent, improving condition
Permanent pasture (permanent improved grassland)	ha	51.91	Degraded	113.55	Adequate/improving	Soil tests	Increased extent, improving condition
Permanent unimproved pasture (semi-natural Grasslands)	ha		-		Adequate/improving	Soil tests	Increased extent, improving condition
Hedgerows	metres	-	-	4,500	Species rich	Survey	Increased extent, improving condition
Woodland (includes farm woodlands)	ha	11.265	Degraded	37.19	Degraded/improving	Farmer	Increased extent, static condition*
Mountains, Moorlands and Heaths	ha	102.95	-	117.1	Stable	Farmer	Static extent, static condition
Water (Openwaters, Wetlands & Floodplains)	length of streams in meters	3,373	Unknown	3,373	Degraded	Farmer	Degrading condition

Measure and Value Stage: how?

Step 5: Determine the impacts and/or dependencies

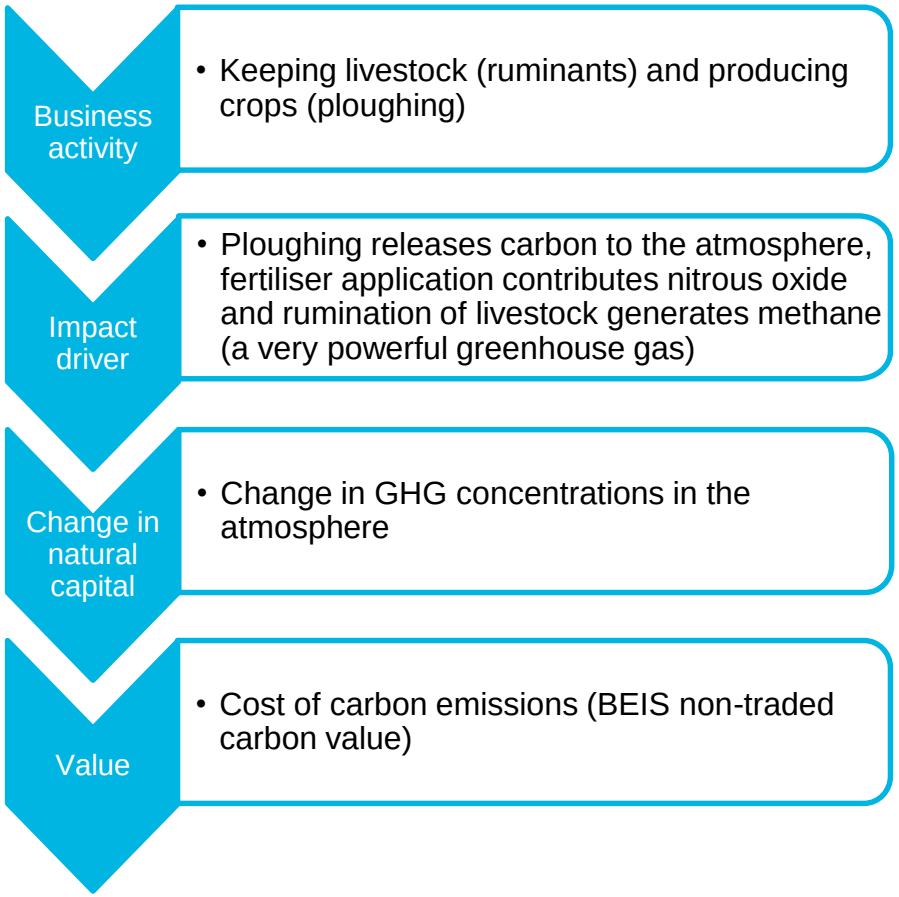
- Identify the impacts (positive and negative) and dependencies of farm/estate enterprises and activities on the services provided by natural capital assets
- Assess the materiality of the impacts and dependencies identified
  - Are they relevant to the objectives / the business decision at hand?
  - What is the likely significance of each impact or dependency?

		ECOSYSTEM SERVICES																			
		PROVISIONING SERVICES								REGULATING SERVICES							CULTURAL SERVICES				
Enterprises	*% area of land of enterprise*	Crops	Livestock	Wild foods (game)	Wild foods (venison)	Wild foods (fish)	Water Supply	Timber	Fibre	Climate regulation	Flood regulation	Water quality regulation	Soil quality & erosion regulation	Air quality regulation	Disease & pest regulation	Pollination	Wild Species Diversity	Recreation	Education	Cultural heritage	
Farm																					
Crop production	67																				
Livestock Grazing	33																				

Measure and Value Stage: how?

Step 6: Measure impact drivers and / or dependencies

- This stage measures impact drivers and dependencies
- Impact drivers are specific activities (e.g. fertiliser application, tree-planting, etc.) that result in changes in the quantity or quality of natural capital and related ecosystem services
- The use of impact and dependency pathways can help to map out how business activities impact or depend on natural capital, describe the nature of changes in natural capital and the implications of these changes for both the business and wider stakeholders
- Impact drivers are not always linear. Some impact drivers can hit tipping points, others may increase as the environment degrades and resilience is lost.



Measure and Value Stage: how?

Step 7: Value impacts and/or dependencies

- This step considers the changes in natural capital that are likely to result from the impact drivers measured or estimated in Step 6.
- It is important to separate out those changes that are attributable to business activities and those that are caused by external factors (e.g. the activities of others present in the landscape, climate change, etc)
- Once the consequences of change (costs and benefits for the business and society) have been identified, the nature and significance of these changes should be described and valued
- Valuation may be qualitative, quantitative or monetary
- An accompanying narrative is helpful to explain changes in natural capital extent and ecosystem service provision

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Apply Stage: what?

Step 08: Interpret and test the results

- Identify **risks and opportunities** associated with farm/estate dependencies and impacts, e.g.,
  - Potential changes to the level of government support to farmers
  - Implications of climate change for resilience to flooding, spread of pests and diseases, etc

Step 09: Take action

- List the proposed **actions for consideration** of the farmer /estate staff, e.g.,
  - Identify a few key indicators to track natural capital e.g. soil organic matter, biodiversity abundance/diversity index
  - Apply a natural capital approach to investment and land use decisions (e.g. taking on land, wetland creation)
  - Keep a watching brief on future public schemes for natural capital maintenance and enhancement

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Conclusions

1. The Protocol can be applied to land-based businesses

Challenges

- Integrating business overview and generic assessment
- Gauging which impacts to assess
- Impact or dependency?
- Availability and reliability of data

- Farm-scale easier than estate level
- Specific project/activity easier than whole business

Conclusions

2. The Protocol is useful for land-based businesses

- Improves understanding of:
  - Natural capital and ecosystem services
  - Business dependencies and impacts
  - Inter-dependencies
  - Broader benefits
- Being able to articulate the benefits for future payments

- More informed decision-making
- Enhanced economic and environmental performance
- Greater resilience
- Better understanding of risks and opportunities

Conclusions

3. Potential costs and resources

- 3-4 days for a consultant; 2-2.5 days for farmer
- More time for larger, more complex estates

4. Roll-out of the Protocol on basis of two applications

i. Assessing change over time and informing actions for business

ii. Informing decisions on significant projects or land use change

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Benefits

- Provides a systematic way of thinking about impacts and dependencies across the range of assets and services
- May reveal new insights relating to risks and opportunities (e.g. potential for new revenue streams)
- Can generate the evidence needed to show natural capital value added over a defined period of time
- Can help identify priority areas for action

"Has increased my awareness and potential effects on the business. You are subconsciously heading that way anyway, but quantifies and formalises it."

"Would recommend to anyone on a limited duration tenancy, as it shows the work you've done on the ground and the value you're leaving behind"

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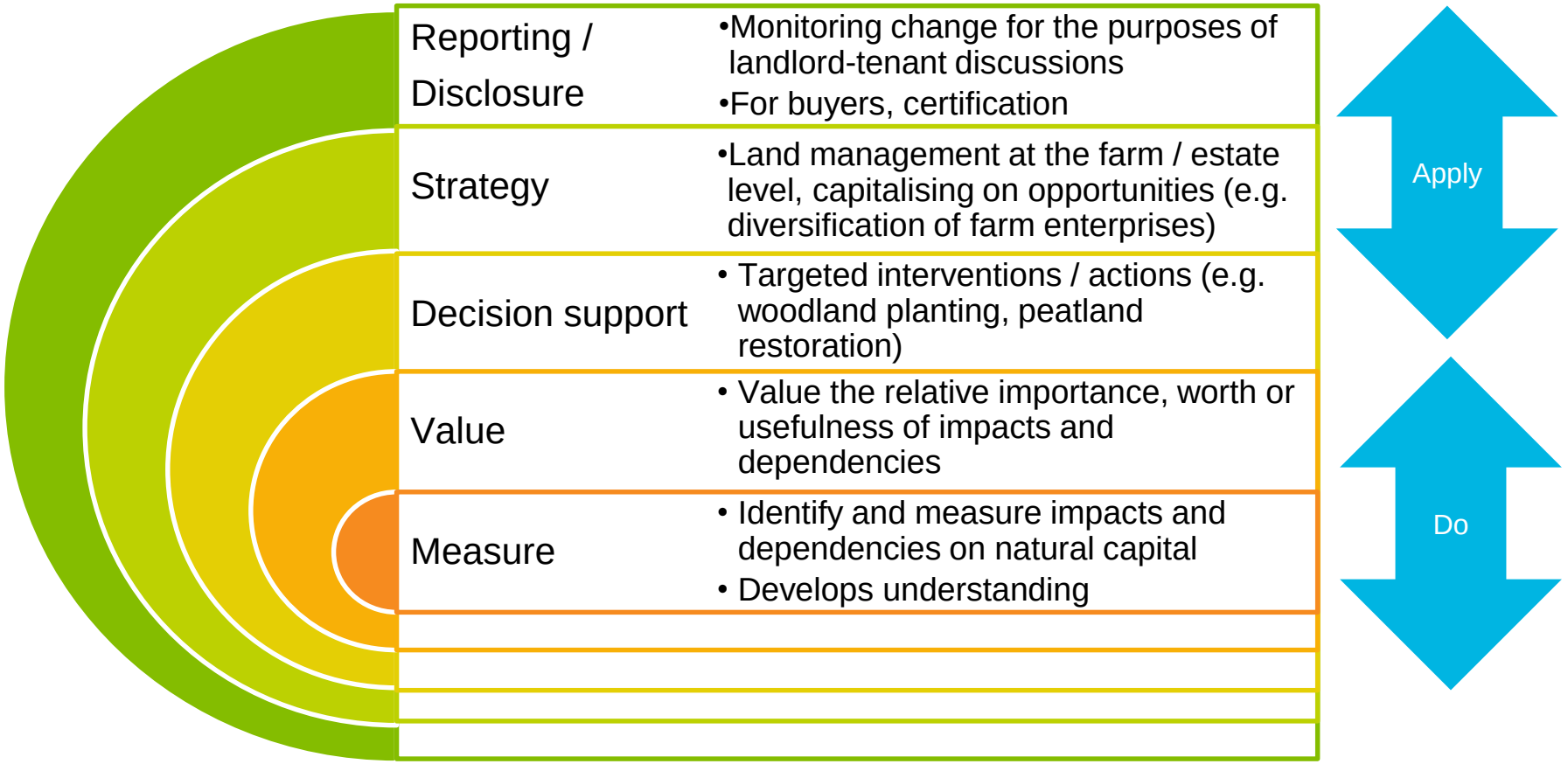
Practical Applications of the Natural Capital Protocol



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Recommendations

1. Progress specific actions outlined in the business reports
2. Introduce a series of natural capital metrics
3. Roll-out the Protocol on the basis of two key function/applications, with:
    - Templates
    - Guidance
    - Case studies
    - Tool to streamline process
4. Communicate the benefits

Policy Implications

Public policy and incentive mechanisms

The Scottish Government
Riaghaltas na h-Alba

The Protocol has the potential to contribute to the National Performance Framework in Scotland by:

- Driving more profitable, sustainable business and land management.
- Informing investment decisions and, where required, planning and other assessments.
- Encouraging future agri-environment scheme participation and informing option selection.
- Working alongside and integrating the use of existing tools, calculators and advice.
- Influencing and enhancing existing standards across the supply chain.

Sustainable farming

- Tools, calculators
- Farm advice

CFA COOL FARM ALLIANCE

LEAF LINKING ENVIRONMENT AND FARMING

Quality Assurance Schemes / Certification

ASSURED FOOD STANDARDS

QMS

LINKING ENVIRONMENT AND FARMING

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Future Plans

- Integration into existing farm business planning – Integrated Farm Management Plans
- Further trials on a dairy unit /other land use types – to build understanding or relevance across different farming activities
- Investigating opportunities for integration with policy
- Talking to farmers!

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Thank you