Can land use decision making tools be effective?

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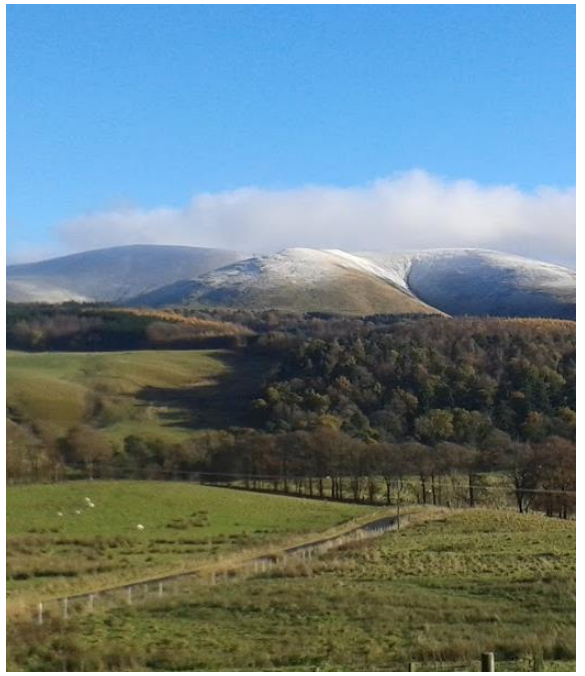
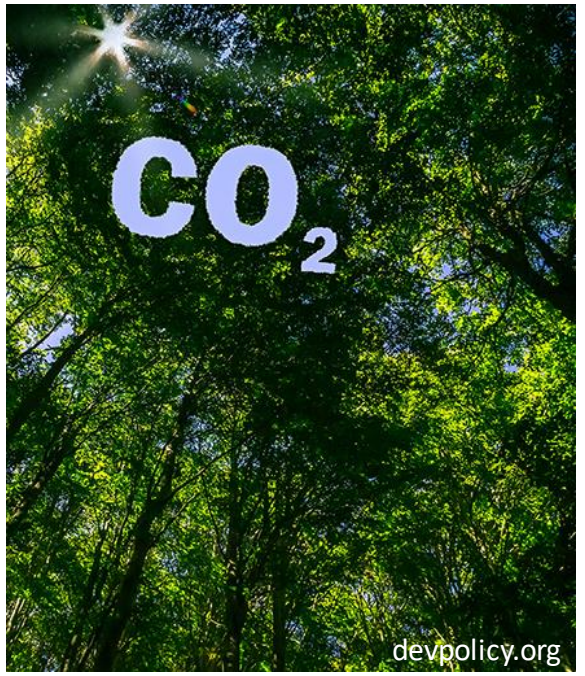
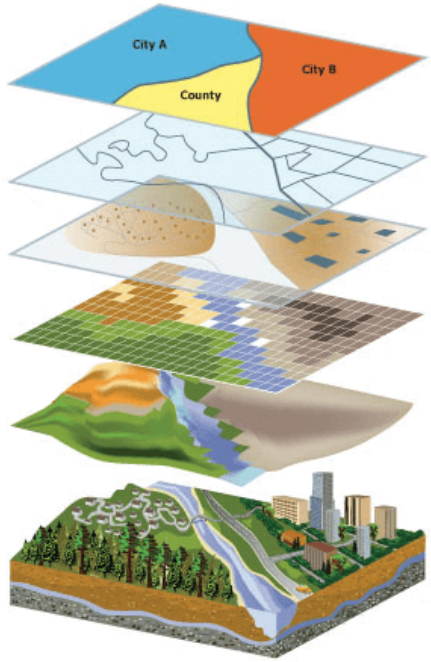
Source: Tweed Forum

Need for tools?

- Climate and nature emergencies, requiring increasing demands on land and ‘multifunctional’ landscapes
- Current policy processes (e.g. ELMs in England; English Land Use Framework; Scotland’s Regional Land Use Frameworks)
- Increasing private sector interest in natural capital (e.g. carbon and biodiversity)
- Greater access to landscape scale datasets

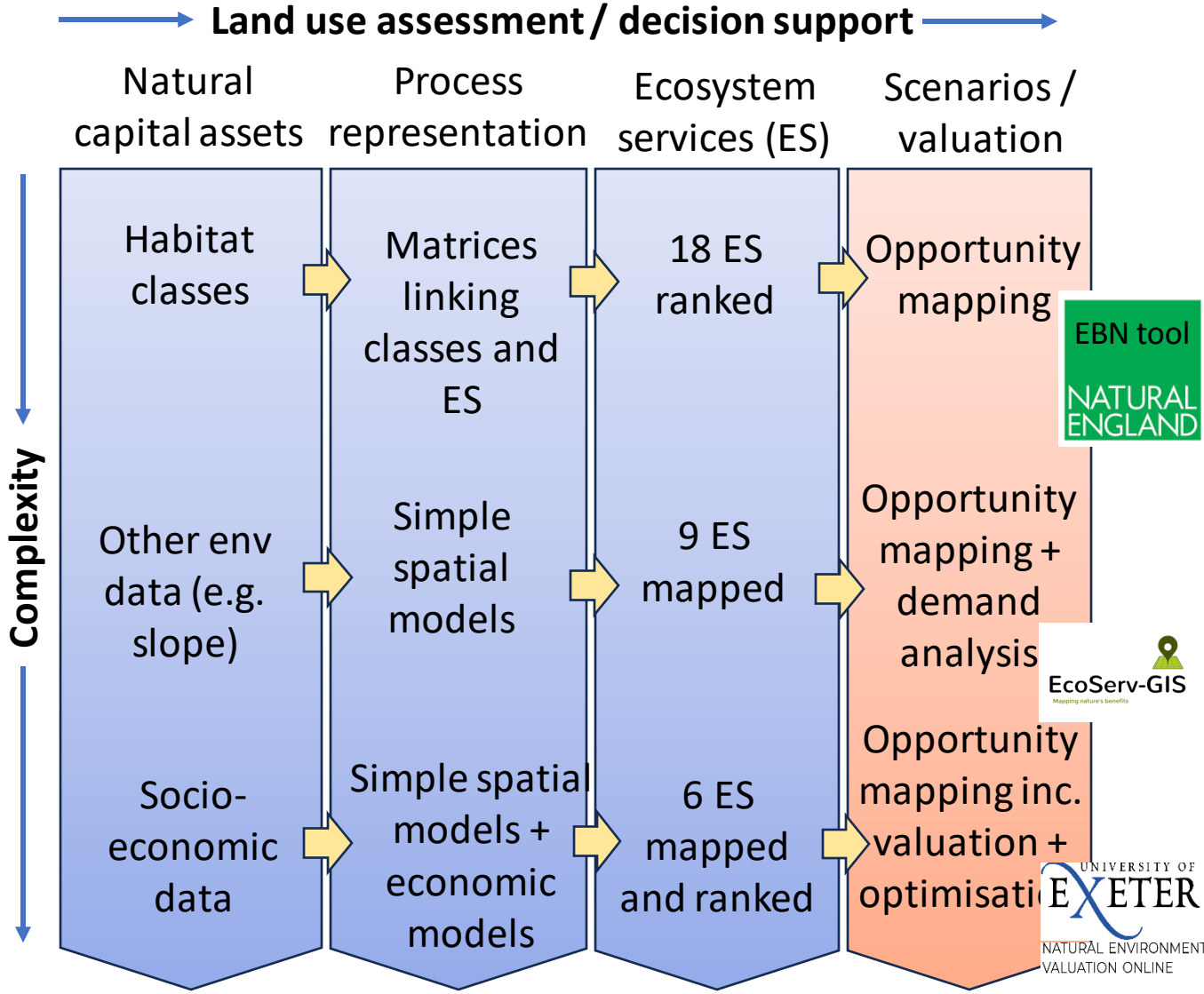






What are they?

- Huge range of processes, guidebooks, workbooks, and digital models
- Often software packages with a user interface that:
  - Utilise quantitative or semi-quantitative data
  - Account for multiple ‘natural capital’ assets (e.g. carbon, biodiversity)
  - Incorporate environmental valuation



Key challenges

- Data:
  - Quality indicators
  - Hard to quantify services
  - Quantifying uncertainty
- Governance of tool landscape
  - Proliferation of approaches
  - Regulation and access
  - Politics
- Impact on decisions?

NATURE TOOL

EBN tool
NATURAL ENGLAND

Department for Environment Food & Rural Affairs
Biodiversity Metric

Co$ting Nature
UNEP WCMC

InVEST
integrated valuation of ecosystem services and tradeoffs

ciriabest

EcoservR

i-Tree
Tools for Assessing and Managing
Forests & Community Trees

HYDRO-GIS LTD

GI-Val

Cyfoeth Naturiol Cymru
Natural Resources Wales

Key challenges

CSFL policy brief on this topic: https://era.ed.ac.uk/handle/1842/40623

Natural capital assessment in landscape-scale land use planning: how it works and key challenges

Key points

- The term 'natural capital' refers to natural assets such as soils and freshwater, that underpin the provision of services to society such as food and drinking water. Using a natural capital approach usually refers to the process of quantifying and potentially valuing these assets to help build nature into decision making. This is increasingly being done spatially, for example to help develop strategic land use plans at city, local authority, or regional scale.
- A wide range of tools is now available to help quantify natural capital assets and the services they help provide. Tools vary in their approach to quantification, whether assets are monetised, and in their suitability to different scales and situations. All tools make significant simplifications of natural processes. They therefore need to be carefully selected to suit the required purpose, and their uncertainties, assumptions and the implications clearly communicated.
- Key challenges in natural capital assessments include difficulties in:
  - appraising the quality rather than just quantity of assets;
  - adequately representing complex natural processes in simplified models;
  - incorporating dynamic and future changes such as the effects of climate change on assets;
  - quantifying and representing uncertainty;
  - incorporating services that are hard to quantify, such as 'cultural' values linked to nature (e.g. how landscapes provide a sense of place) and local or other 'unofficial' forms of knowledge, and;
  - ensuring transparency.
- Given the large number of tools available, it is becoming increasingly important to develop clear frameworks for their use to help ensure quality and comparability in different contexts, and to avoid duplication and lack of coordination across sectors.

Policy makers, land managers and investors are increasingly interested in considering nature – and the services it provides – in decision making. It is expected that quantifying and valuing natural assets will help drive decisions that are more environmentally, economically, and socially sustainable, and help address the climate and biodiversity emergencies. Government and private sector actors are increasingly looking to better recognise this 'natural capital' in public and corporate policies. This is driving a thriving industry of assessment frameworks, methodologies, and tools to quantify natural capital 'assets' ranging from stored carbon to biodiversity. But the sheer number of approaches and the language of natural capital can be confusing. This makes it hard to know which tools may for improve decision-making. This brief introduces natural capital terminology, provides a summary of the 'natural capital approach', outlines its relevance to strategic, landscape scale land use planning, and introduces some of the tools being developed to support the approach.

1 What is 'natural capital'?

Natural capital refers to those natural resources such as soils, rocks, water and biodiversity, that have value to society. Known as natural assets, they provide goods and services such as food, fibre, water purification, and pollination (Fig. 1). The terminology has developed over time and has generated much confusion.

It is the source of key tensions between different communities interested in environmental protection, including:

Figure 1: Summary of the link between natural capital assets, ecosystem services and benefits to society. Source Eftec, 2015

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