

UK National Ecosystem Assessment

Follow-on

The UK NEA and its follow-on project

*First meeting of Expert Panel, Funders Group,
Stakeholders & Principal Investigators*

3-4 July 2012, London



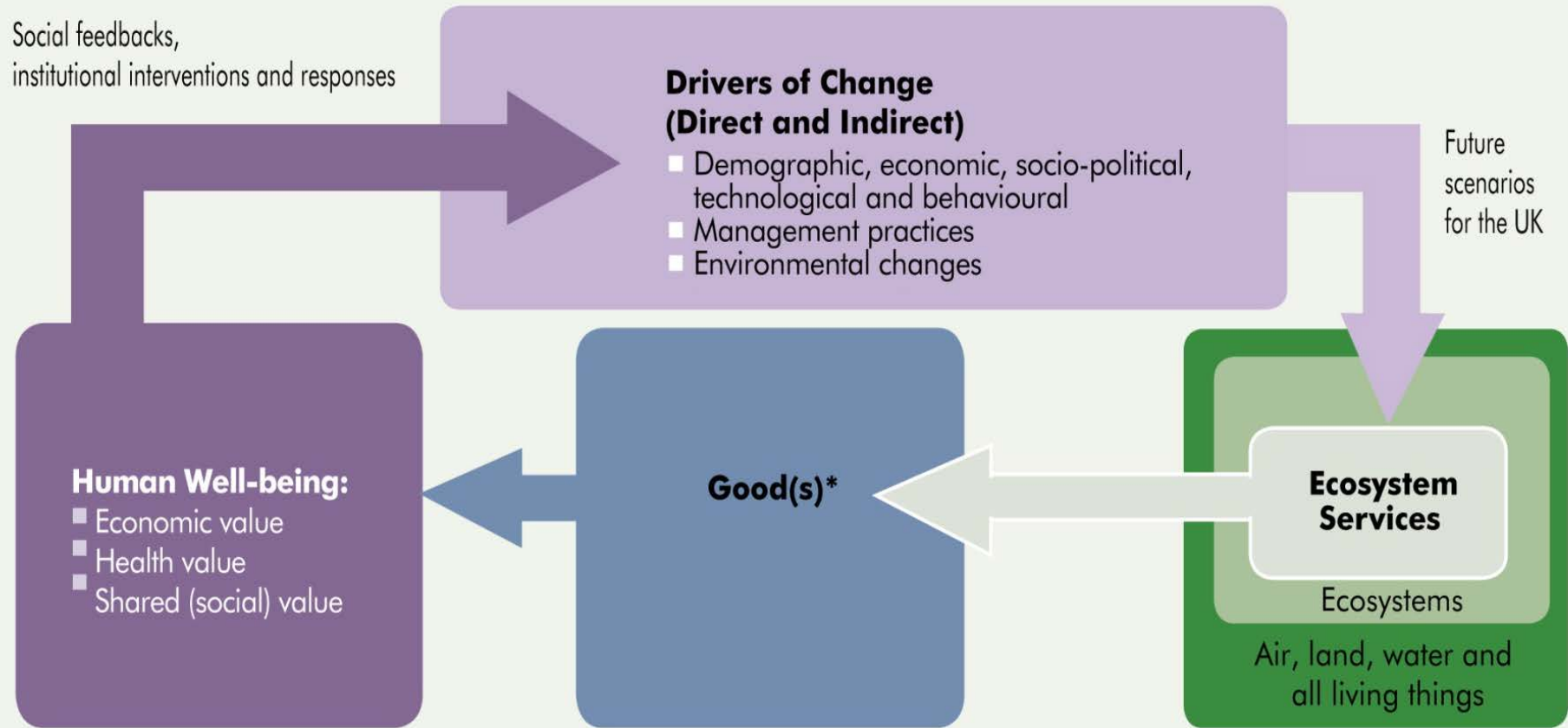
UK NEA published last year

- Synthesis & Key findings - June
- Technical report - November
- 1,465 pages in 27 Chapters – some 5 kg!
- 500 authors
- Most comprehensive sub-global assessment to date
- But more to do on valuation, scenarios & decision-making “tools”



<http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

Conceptual Framework – evolution from the MA



Conceptual Framework – focus on well-being

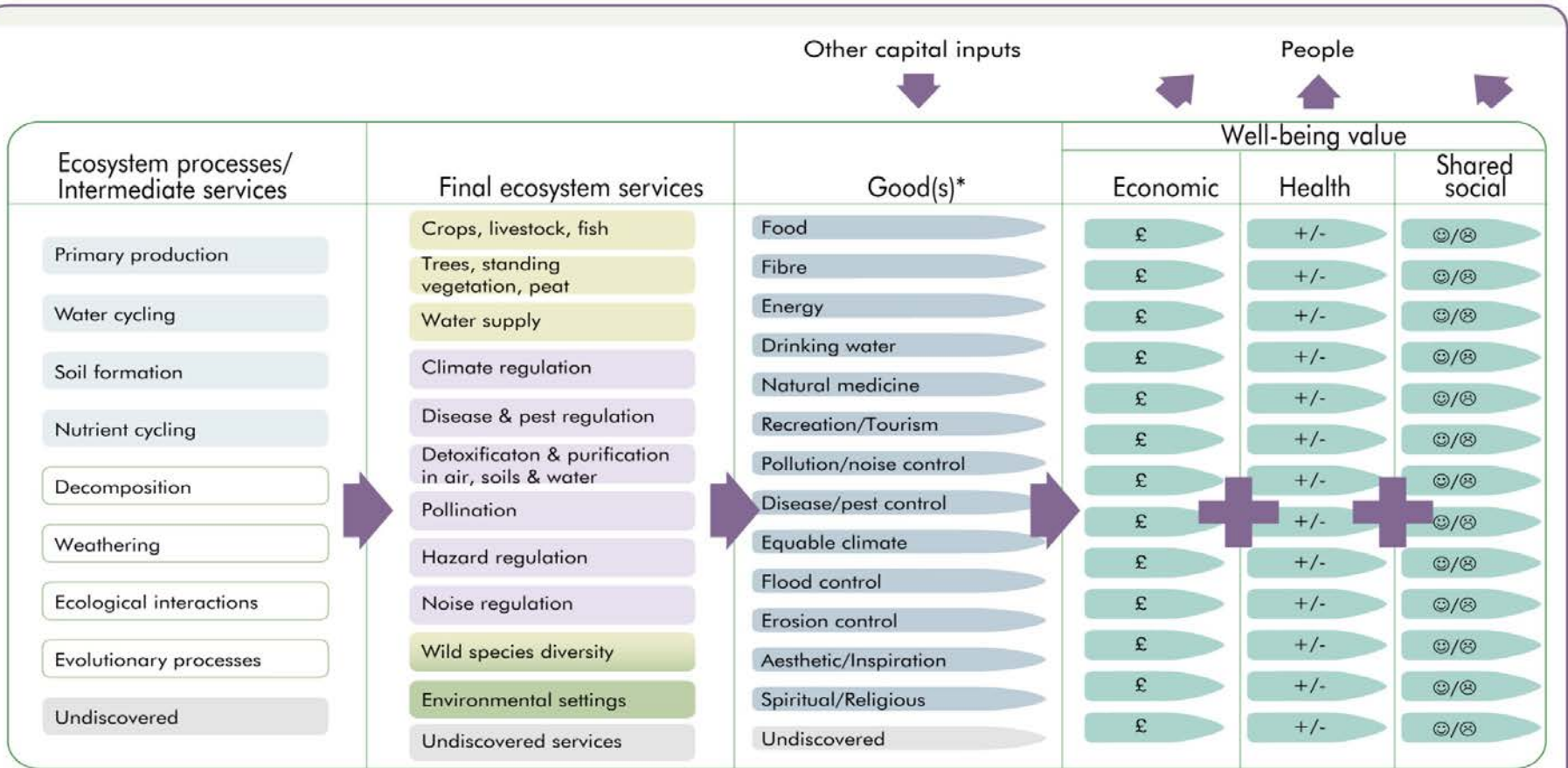
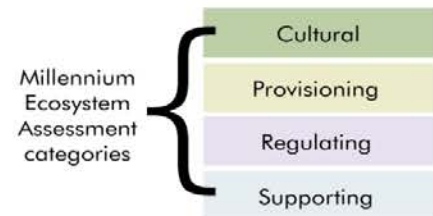


Figure 10 The full set of ecosystem processes, services, goods/benefits and values used in the UK NEA. Note that some ecosystem services can be both intermediate and final services. For simplicity, in this figure, services are shown only in the most final position that they occupy. Services such as pollination and climate regulation that also play important roles further back in the chain are not represented here. Cells with no colour are ecosystem processes/services that were not in the Millennium Ecosystem Assessment classification. *Note that the term good(s) includes all use and non-use, material and non-material outputs from ecosystems that have value for people. Source: adapted from Fisher *et al.* (2008).

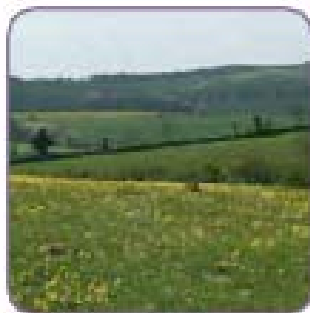


UK Ecosystems (Broad Habitats)

Mountains/Moors/Heaths



Semi-natural grasslands



Woodlands



Enclosed farmland



Freshwater/Wetlands



Urban (settlement)



Coastal margins



Marine



Relative importance of Habitats for Ecosystem Services and direction of change since 1990

Service Group	Final Ecosystem Service	Mountains, Moorlands & Heaths	Semi-natural Grasslands	Enclosed Farmland	Woodlands	Freshwaters – Openwaters, Wetlands & Floodplains	Urban	Coastal Margins	Marine	
Provisioning	Crops		↔	↑		↓	↗	↓		
	Livestock/Aquaculture	↓	↗	↔	↔	↓	↔	↓	↗	
	Fish					↓	↔	↓	+	
	Trees, standing vegetation, peat	↓	↔	↗	↗	↓	↔	↓		
	Water supply	↔	↓	↓	↔	↓	↔	?		
	Wild species diversity	↔	↓	↓	↗	↓	↔	↓	↓	
Cultural	Environmental settings: Local places	↔	↔	?	↗	↗	↔	↔	?	
	Environmental settings: Landscapes/seascapes	↔	↔	↔	↗	↔	↔	↗	?	
Regulating	Climate	↔	↔	↘	↗	↔	↓	↗	↘	
	Hazard	↓	↔	↘	↗	↓	↓	↔	↘	
	Disease and pests	↔	↔	+	↘	↓	?	+	↘	
	Pollination	↓	↓	↓	↔		↔	↔		
	Noise	↔	↔	?	↗	↔	↘	↔		
	Detoxification & purification	Water quality	↔	↗	+	↔	+	+	?	↔
		Soil quality	↔	↘	↓	↔	↓	↘	↓	
		Air quality	↔	↔	↗	↗	↔	↔	↔	?

Importance and Trends in Drivers affecting Services

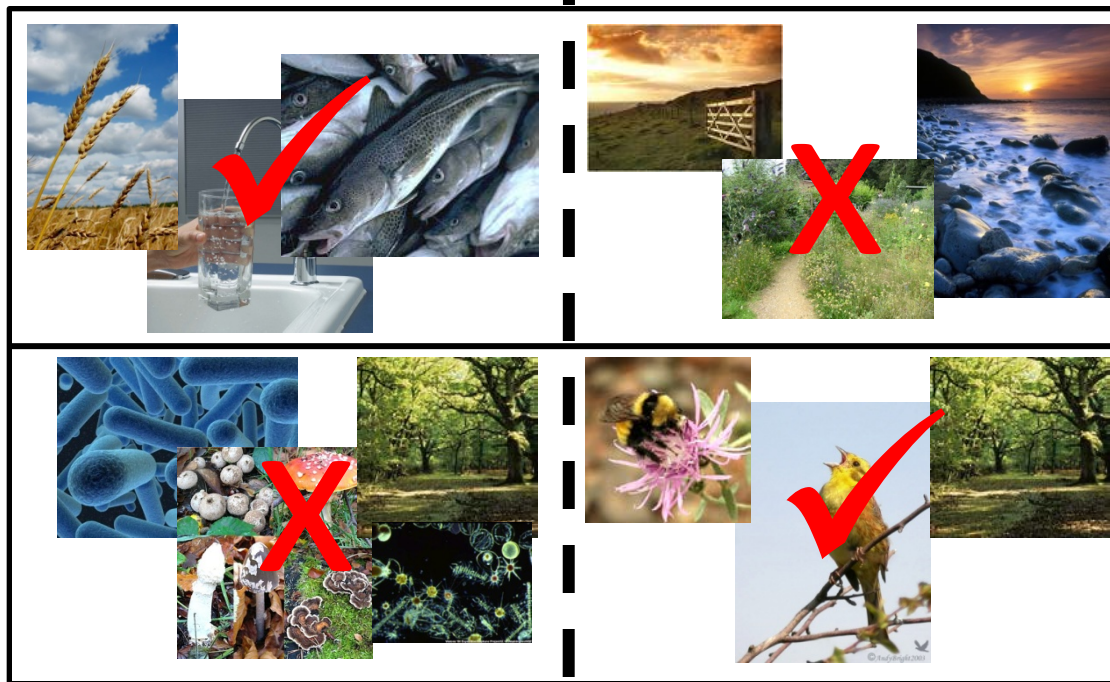
Service Group	Final Ecosystem Service	Habitat Change*	Pollution & Nutrient Enrichment	Overexploitation	Climate Change	Invasive Species
Provisioning	Crops	→	→	→	↗	→
	Livestock	→	→	→	↗	↗
	Wild fish	↗	↘	→	↑	→
	Farmed fish (aquaculture)	→	→	↗	↗	↗
	Timber	↗	→	↗	↑	↑
	Water	→	↗	↗	↑	↗
	Peat	→	→	↘	→	→
	Wild game	↗	→	↘	↗	→
	Honey	↗	→	↗	↑	↑
	Ornamentals	↗	→	↗	↗	→
	Genetic resources	→	→	↗	↗	→
	Wild species diversity	↗	↘	↗	↑	↗
Cultural	Environmental settings	↗	→	→	↗	↗
Regulating	Climate	→	→	↘	↑	→
	Hazard	→	→	↗	↑	↗
	Disease and pests	→	→	↗	↗	↗
	Pollination	→	→	→	↗	↗
	Noise	→	→	↗	→	→
	Water quality	→	↘	→	↗	→
	Soil quality	→	→	↘	↗	→
	Air quality	→	↘	→	↑	→
Supporting	Soil formation	↗	↘	↗	↑	↗
	Nutrient cycling	→	→	→	↗	→
	Water cycling	→	↗	↗	↑	→
	Primary production	→	→	→	↑	→

Biodiversity – ‘The Cultural Service Divide’

Provisioning and
Regulating services

Cultural services

Well-being value



Biodiversity

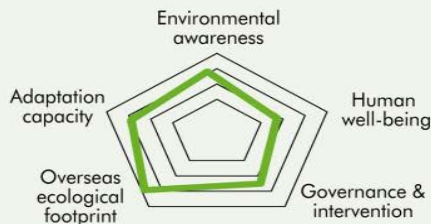
Challenges:

- Improve our understanding of how different biodiversity groups underpin ES
- Identify key indicator groups, changes in which have an important impact on ES
- Develop UK comprehensive, integrated monitoring programme for these indicator groups

Six Contrasting Scenario projections

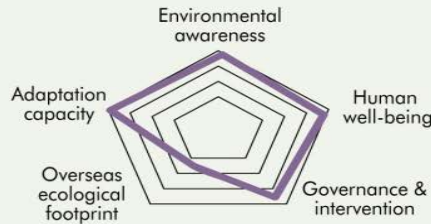
Green and Pleasant Land

A preservationist attitude arises because the UK can afford to look after its own backyard without diminishing the ever-increasing standards of living.



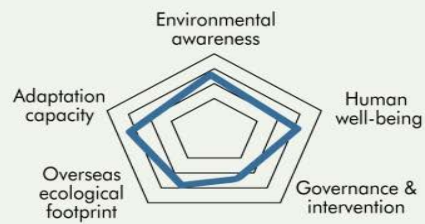
Nature@Work

The belief that the promotion of ecosystem services through the creation of multifunctional landscapes is essential for maintaining the quality of life in the UK is widely accepted.



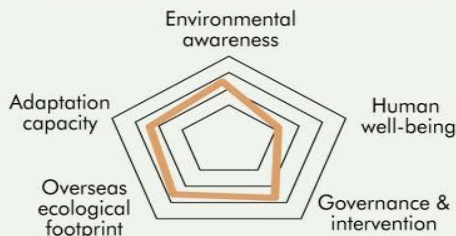
Local Stewardship

This is a future where society is more concerned with the immediate surroundings and strives to maintain a sustainable focus on life within that area.



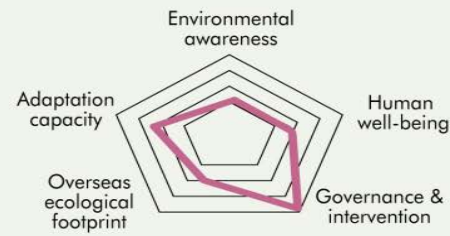
Go with the Flow

This scenario is essentially a projection based on current trends and results in a future UK that is roughly based on today's ideals and targets.



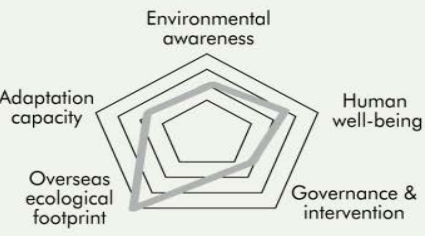
National Security

Under this scenario climate change results in increases in global energy prices forcing many countries to attempt greater self-sufficiency (and efficiency) in many of their core industries.

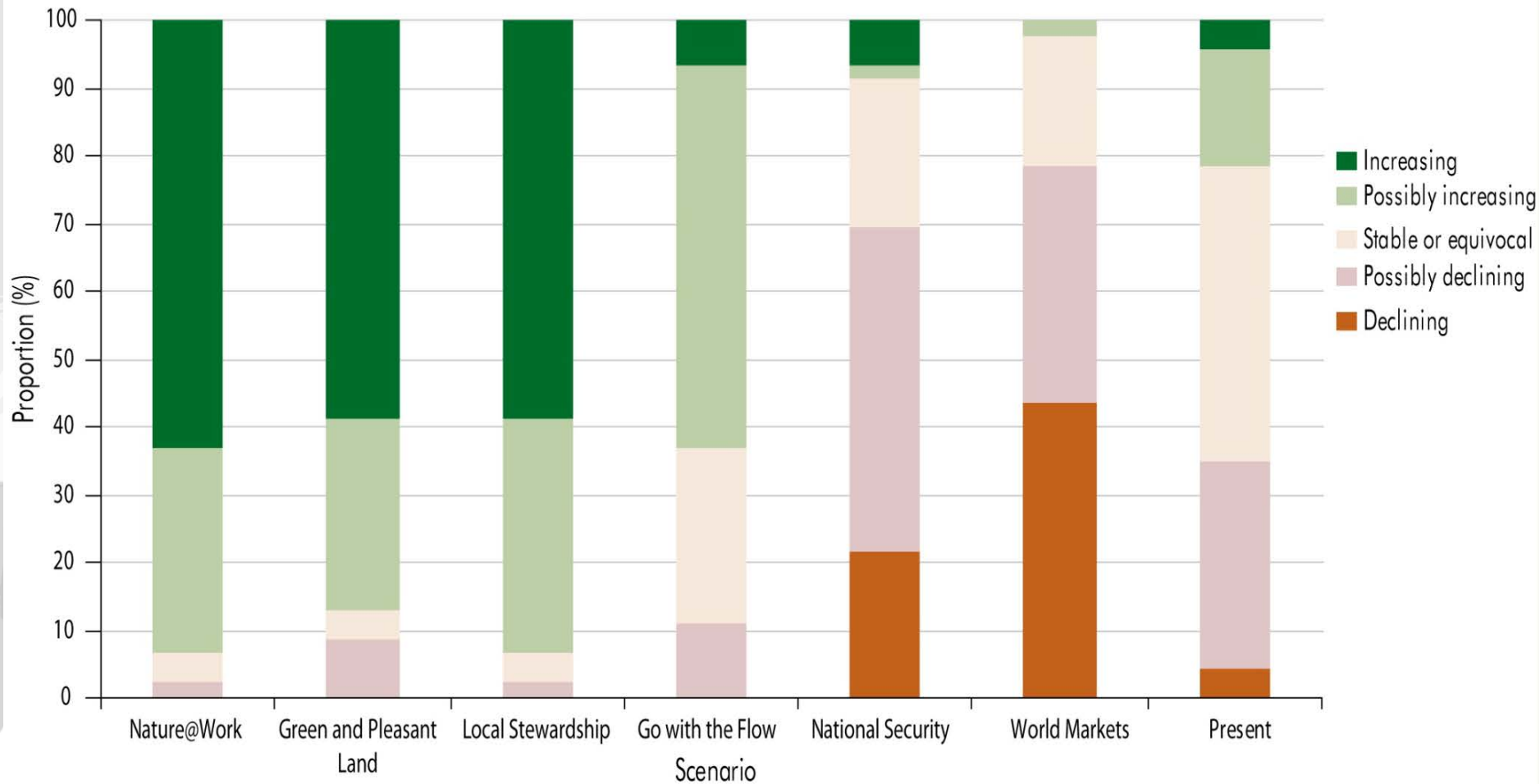


World Markets

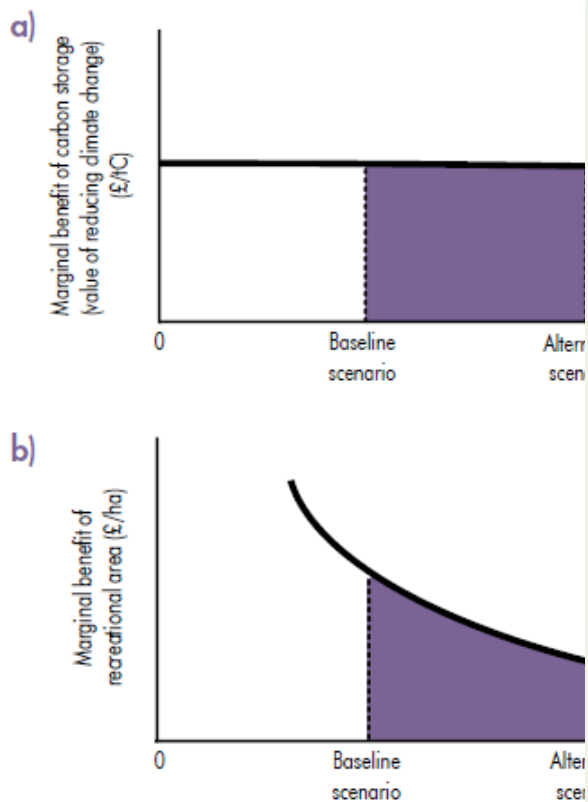
High economic growth with a greater focus on removing barriers to trade is the fundamental characteristic of this scenario.



Implications of 'storylines' on Ecosystem Services



Economic Implications of contrasting 'storylines'

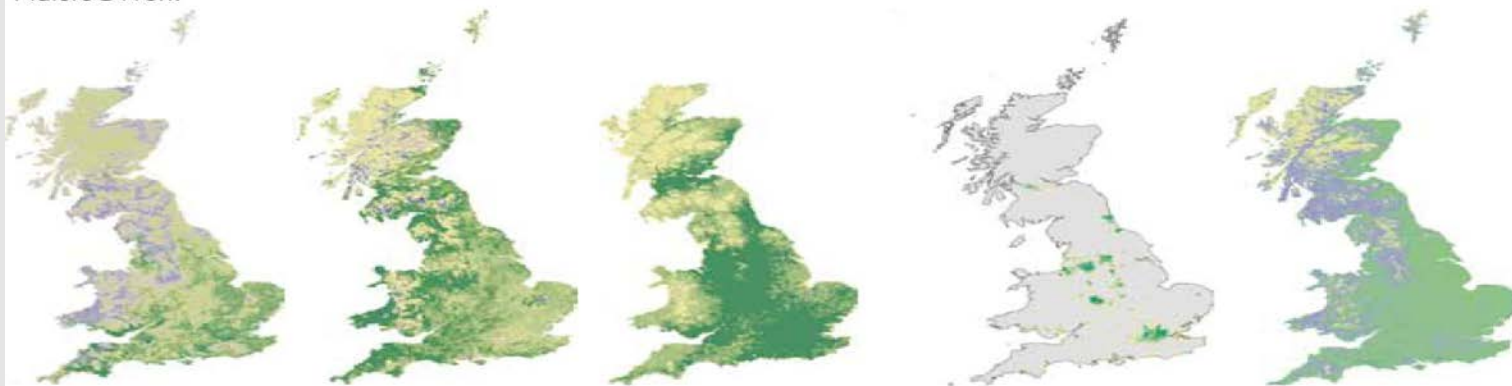


	GF	GPL	LS	NS	NW	WM
Market agricultural output values *	220	-290	350	680	-510	420
Non-market GHG emissions †	-800	2,410	-100	3,590	4,590	-2,130
Non-market recreation ‡	5,710	6,100	1,540	4,490	24,170	5,040
Non-market urban greenspace ¶	-1,960	2,350	2,160	-9,940	4,730	-24,000
Total monetised values §	3,170	10,570	3,950	-1,180	32,980	-20,670
Rank: Market values only	4	5	3	1	6	2
Rank: All monetary values	4	2	3	5	1	6

Figure 22.1 Marginal value curves for two goods: a) carbon storage (tonnes of carbon, tC) and b) recreational area (hectares, ha).

Spatial Economic Implications of two 'storylines'

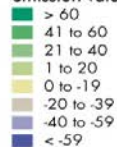
Nature@Work



Change in agricultural values (FGM £/ha/yr)



Change in GHG emission values (£/ha/yr)



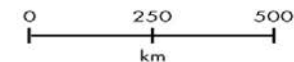
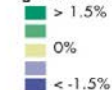
Change in recreation value (£'000/5km cell/yr)



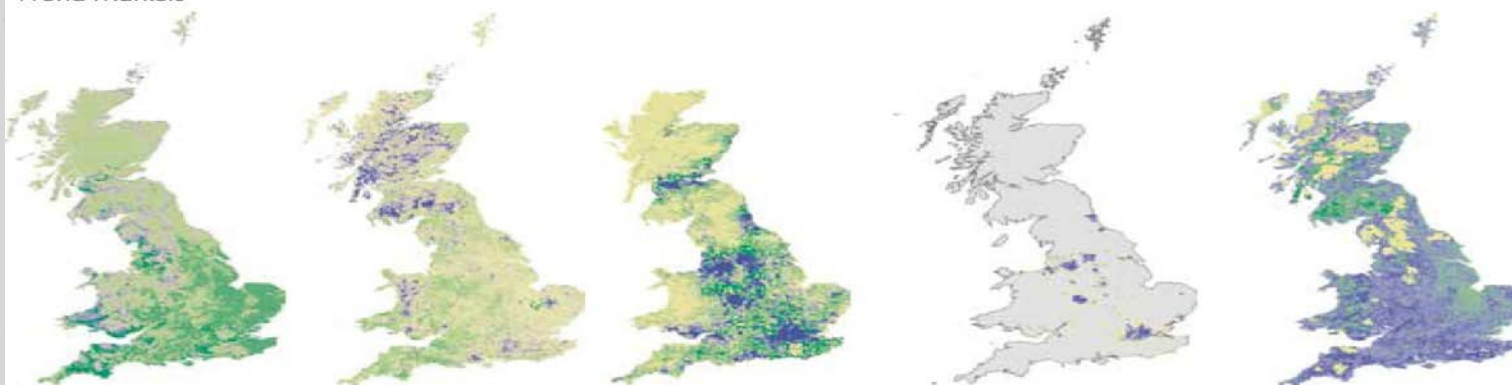
Change in urban greenspace values (£'000/household/yr)



Biodiversity index: Change in general bird diversity (%)



World Markets



NEA Summary

1. Already enough information to manage our ecosystems **more sustainably** and good **evidence of the benefits** of doing so.
2. But a more sustainable development will **require changes in individual and societal behaviour** and adoption of a **more integrated approach** to ecosystem management .
3. A priority is to **improve our understanding of how changes** in our ecosystems, e.g .: halting the loss of biodiversity, **influences the delivery of ecosystem services.**
4. While illustrated how considering **both market and non-market values** from ecosystem services can influence economic prosperity, we **need to develop methods to incorporate health and social values in decision making.**

Adoption in Policy – Natural Environment White Paper (England)

Commitment 1:

“Building on the National Ecosystem Assessment, the Government will support a further phase of ground-breaking research. It will investigate the mix of **future actions most likely to secure the most benefits for nature and for people** from our ecosystems. It will also **develop practical tools to assist decision-makers** in applying the lessons of the NEA.”



Adoption in Policy – Land Use Strategy (Scotland)

Vision

A Scotland where we fully recognise, understand and **value the importance of our land resources**, and where our plans and decisions about land use deliver improved and enduring benefits, **enhancing the wellbeing of our nation.**

Objectives

- Land based **businesses working with nature** to contribute more to Scotland's prosperity
- Responsible stewardship of Scotland's natural resources **delivering more benefits to Scotland's people**
- Urban and rural communities better connected to the land, with **more people enjoying the land and positively influencing land use**



Adoption in Policy – A Living Wales



Llywodraeth Cymru
Welsh Government

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A Living Wales - a new framework for our environment, our countryside and our seas

[SHARE](#) ... Last updated 27 September 2011

We all need to rethink the way we view, protect and manage the Welsh environment.



Many people have become disconnected from their surroundings and underestimate the contribution that a healthy environment plays in their everyday lives. So it is not surprising that the environment doesn't feature strongly in many decisions we make about our future or our personal well being.

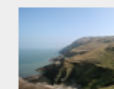
With everyone's help, we want to change this. We want to make the health and quality of our natural environment a focus for everyone and a key part of decision making.

The Minister for Environment and Sustainable Development has launched the next steps in delivering Wales' new approach to managing its natural environment in a Written Statement. This can be found under related links.

We have published the consultation responses, our summaries of responses and our statement of next steps. These documents can be found at the bottom of the consultation page (available on the right).

Related Links

Updates from meetings



Updates from the Living Wales groups.

Written Statement - The Natural Environment Framework 'A Living Wales'

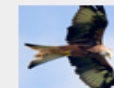
John Griffiths, Minister for Environment and Sustainable Development

Vision for Living Wales



A brief explanation of what we want our Natural Environmental Framework to achieve.

Living Wales - Key messages



This explains what the issues are, why change is needed, what this could mean and how to get involved.

Influenced setting up of Natural Capital Committee

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Natural Capital Committee



The Natural Environment White Paper, *the Natural Choice: Securing the Value of Nature*, announced the creation of the Natural Capital Committee. This Committee will report to the Economic Affairs Committee (chaired by the Chancellor of the Exchequer) and aims to provide independent expert advice on the state of English natural capital.

The Natural Capital Committee is designed to ensure that Government has a better informed understanding of the value of Natural Capital, and will help it to prioritise actions to support and improve the UK's natural assets. By reporting into the EA Committee and the Chancellor, this Committee has the opportunity to truly influence the economic policy of the UK for the good of the natural environment.

Latest News

- [Defra appoints Dieter Helm as Chair of the Natural Capital Committee](#)

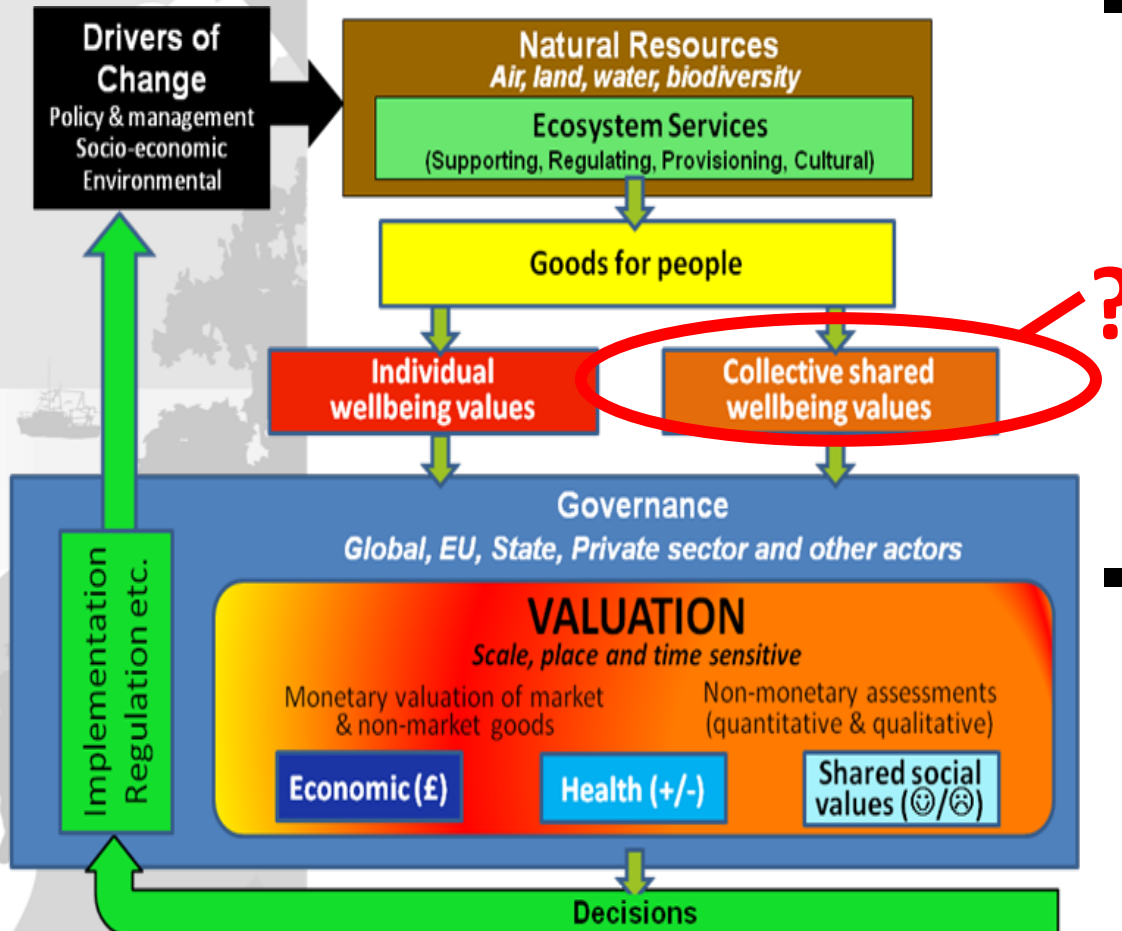
Related information

- ▶ [Defra's ecosystems services research programme](#)
- ▶ [National Ecosystems Assessment](#)
- ▶ [Natural Environment White Paper](#)
- ▶ [The Economics of Ecosystems and Biodiversity](#)

NEA2 – 1) Natural Capital Accounting

- Developing the evidence for a Natural Capital Asset Check
- Macroeconomic implications of ecosystem service change and management
- Valuing a wider set of ecosystem service flows, and extending to the marine environment

NEA2 – 2) Deeper understanding of Well-being



- Further exploration of cultural ecosystem services to extend the theoretical, methodological and practical understanding.
- How shared and plural values for ecosystem services can inform decision making, along side economic considerations?

NEA2 – 3) Broadening the Scenarios

- To deepen the analysis of UK NEA scenarios so that they support both economic and macro-economic analysis of Objective 1, and explore how these influence well-being values.
- To use these enhanced scenarios to undertake analysis of the impacts of a wide range of societal responses to ecosystem change, at a range of spatial and temporal scales.

NEA 2 – 4) Enhancing knowledge exchange and enabling decision-making

- Understanding and influencing culture and behaviour to maintain and enhance the delivery of ecosystem services.
- Engagement with end users and exploration of a framework to prioritise tool development.
- Development and enhancement of tools and resources for the dissemination the findings/ methods of the UK NEA.