

UK National Ecosystem Assessment

Key Findings

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Conceptual Framework of the UK National Ecosystem Assessment

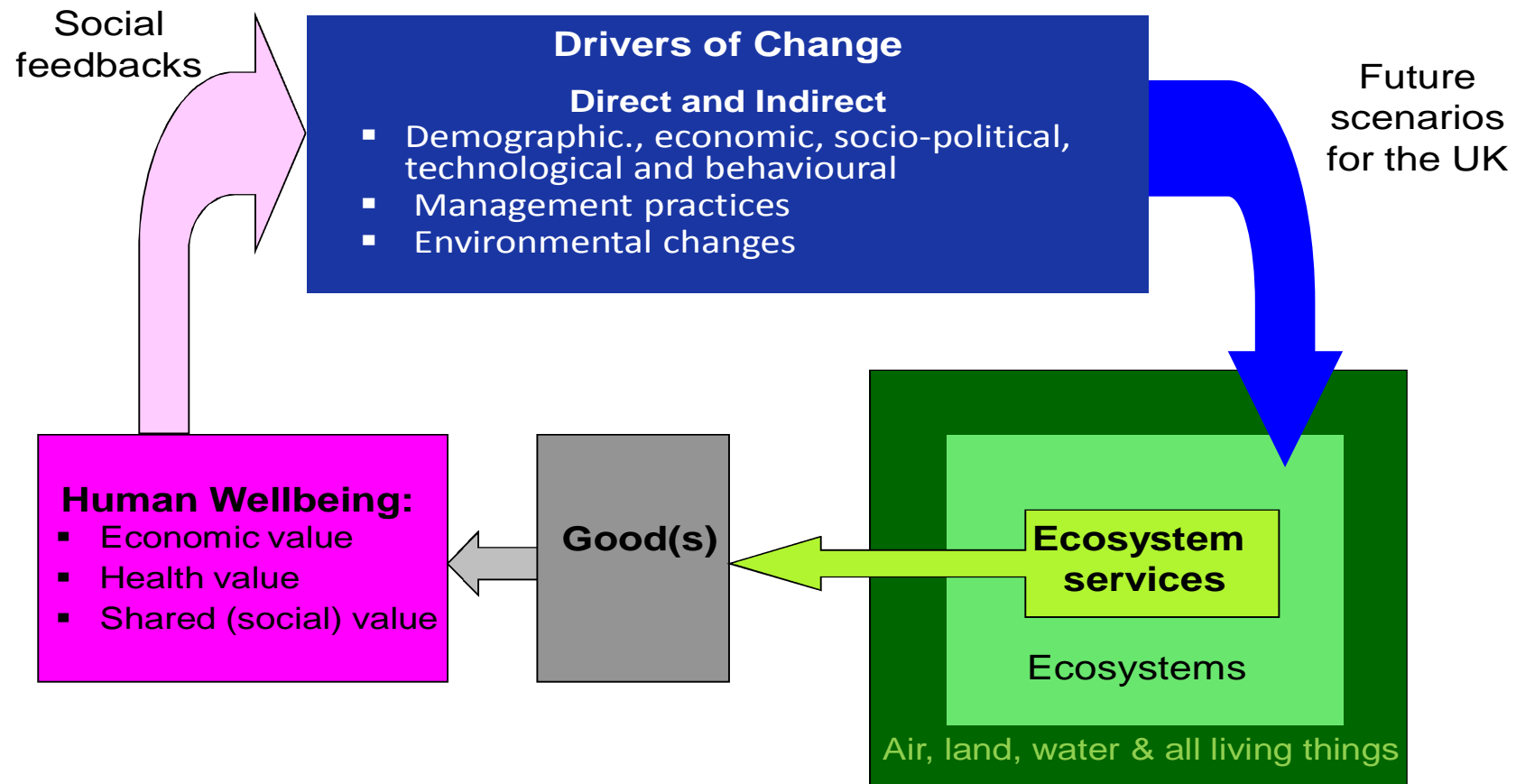
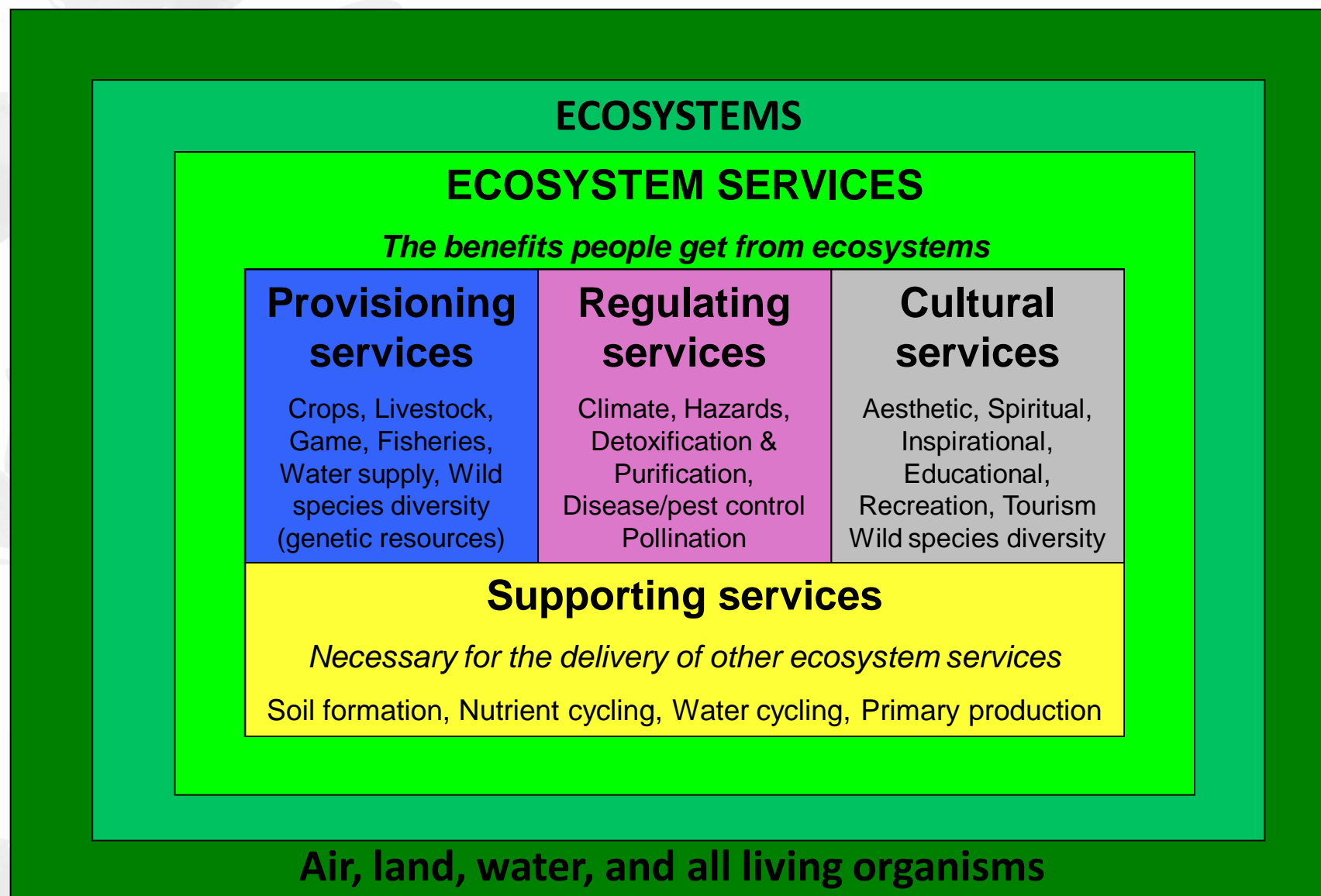


Figure 1

Building on the Millenium Ecosystem Assessment



Key Messages of the UK National Ecosystem Assessment

The benefits that we derive from the natural world and its constituent ecosystems are critically important to human well-being and economic prosperity, but are consistently undervalued in economic analysis and decision-making

Ecosystem and ecosystem services are constantly changing, driven by societal changes – demographic, economic, socio-political, technological and behavioural – which influence demand for goods and services and the way we manage our natural resources.

From the late 1940s onwards, emphasis in the UK was placed on maximising provisioning services to meet human needs for food, fibre, timber, energy and water

While productivity increased, there was a decline in the delivery of a wide range of ecosystem services, particularly those associated with biodiversity and air, water and soil quality

Changes in national policy and legislation, latterly often driven by EU policy, along with technological developments and changing attitudes and behaviour, have led to improvements in some ecosystem services, particularly in the past 10-20 years

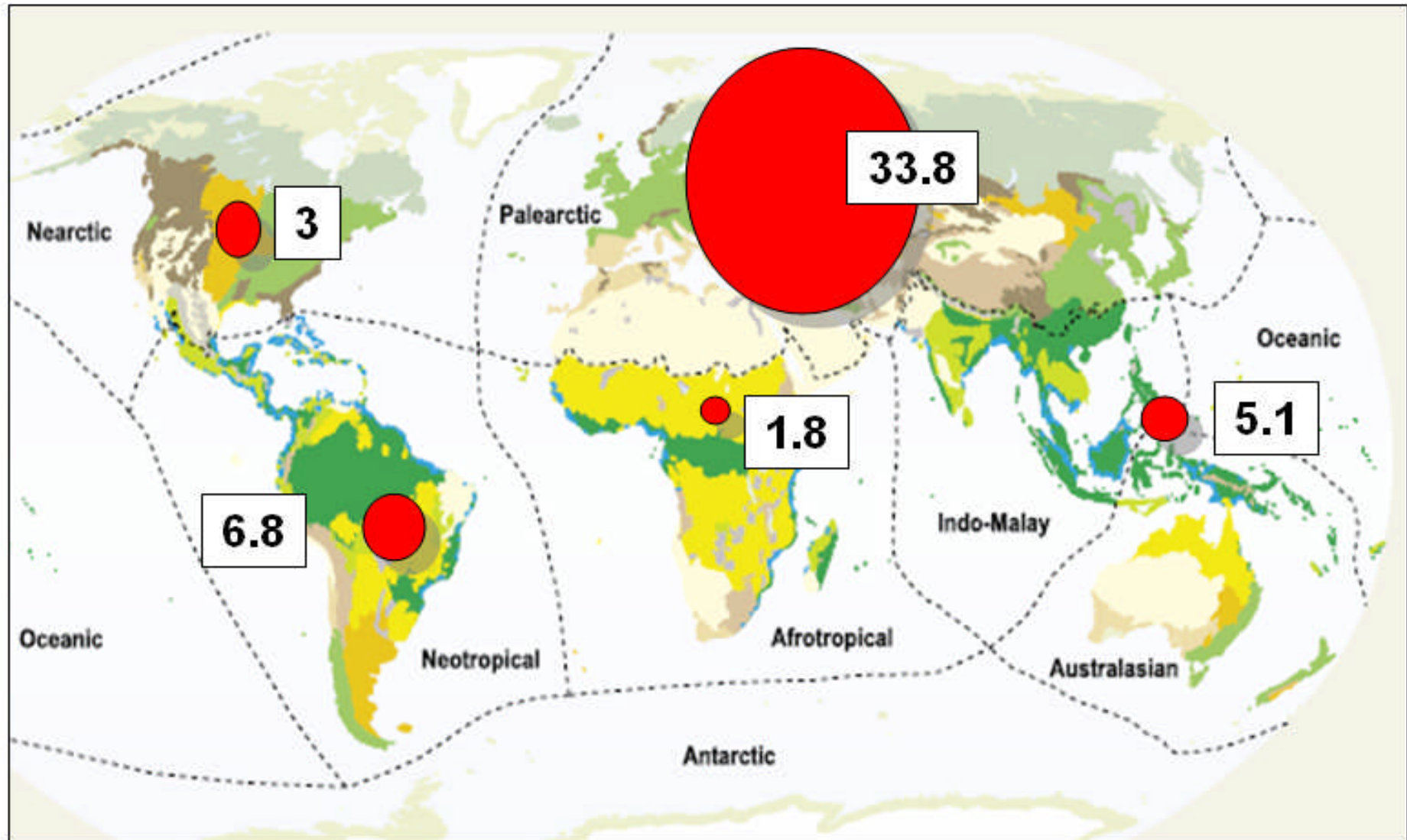
Key Messages of the UK National Ecosystem Assessment

Despite improvements many ecosystem services are still far below their full potential – often as a consequence of long-term declines in habitat extent or condition, or both – and some continue to deteriorate, with adverse impacts on human well-being

A growing population and the increasing impacts of climate change mean that the future is likely to bring more challenges.

The UK will remain an active trading nation, with substantial flows of biomass across its borders, generating a substantial ecological ‘footprint’ overseas and continuing to be affected by social, economic and ecological changes elsewhere

UK Dependence on non-UK Ecosystems



Key Messages of the UK National Ecosystem Assessment

We need to find new, more resilient ways of managing our ecosystems, and find a better balance between production and other ecosystem services

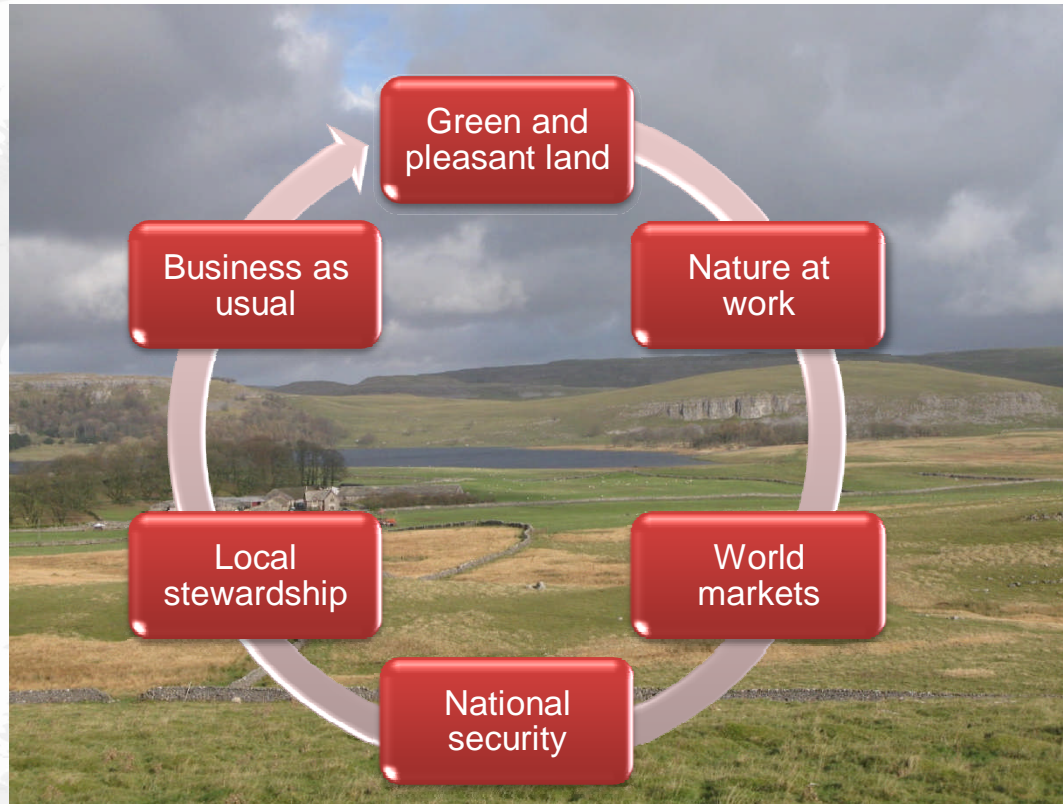
A key challenge is to increase food production while reducing the environmental footprint of agriculture through sustainable intensification.

This will entail taking into account the values (market and non-market) of a wide range of ecosystem services. Contemporary techniques allow us to do this.

Exploring some of the plausible futures open to us shows that there is a huge range of potential outcomes for the state of the nation, its people and its ecosystems in the coming decades. Decisions that we all make now and in the immediate future will have a major impact on these outcomes

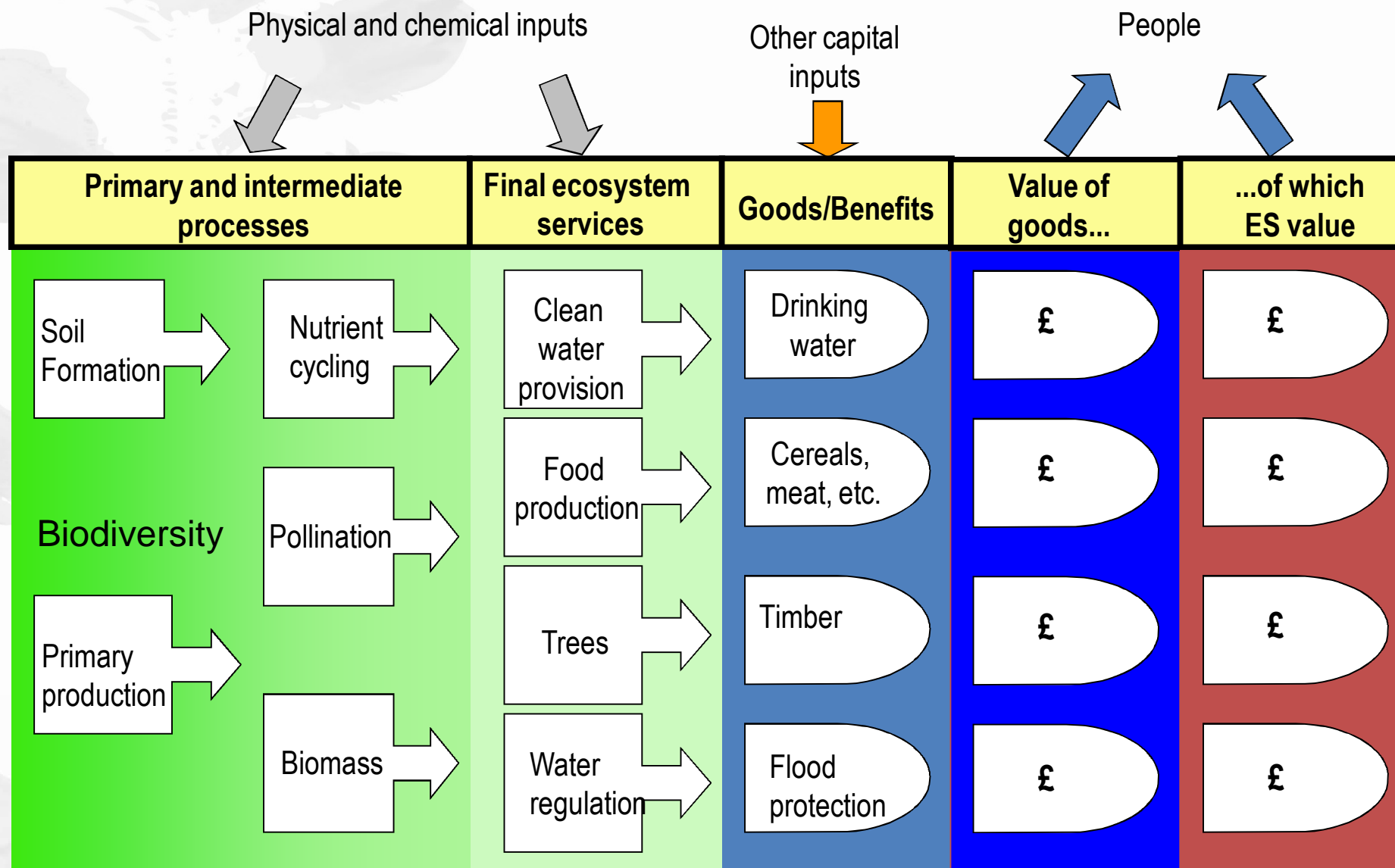
Plausible Future Scenarios

How might ecosystems and their services in the UK change in the future under plausible scenarios? For example under climate change.



What are the future possible effects of changes in ecosystems on human well-being and who might most be affected?

Avoiding double accounting – adapted from Fisher *et al* 2008

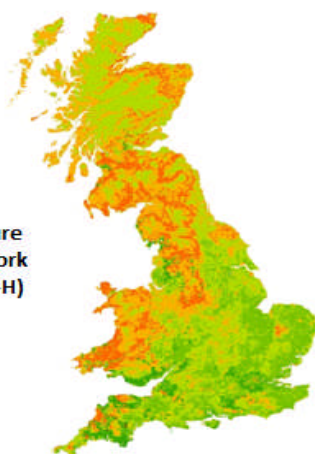


Economic Implications of Storylines

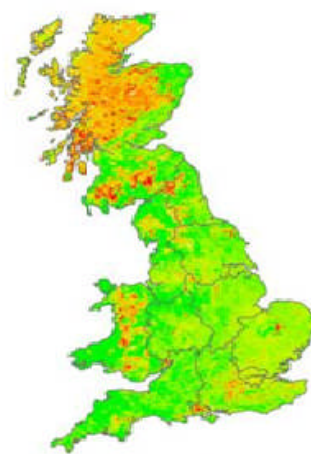
	BAU	GPL	LS	NS	NW	WM
Market agricultural output values*	220	-290	350	680	-510	420
Non-market GHG emissions†	-800	2410	-100	3590	4590	-2130
Non-market recreation‡	5710	6100	1540	4490	24170	5040
Non-market urban greenspace¶	-1960	2350	2160	-9940	4730	-24000
Total monetised values§	3170	10570	3950	-1180	32980	-20670
Rank: Market values only	4	5	3	1	6	2
Rank: All monetary values	4	2	3	5	1	6

Spatial Economic Implications of Two Storylines

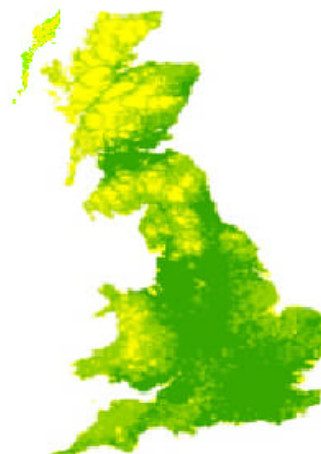
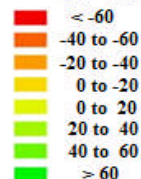
Nature
at Work
(NW-H)



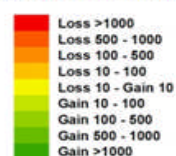
Change in agricultural
values (FGM £/ha/yr)



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



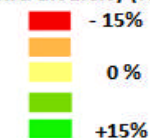
Change in recreation value
(£'000/5km cell/yr)



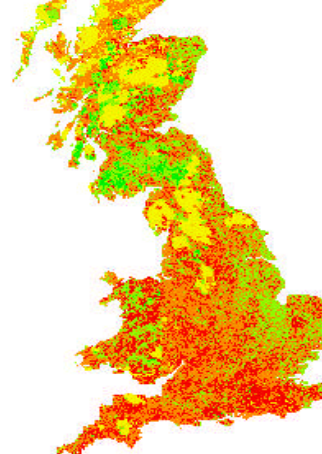
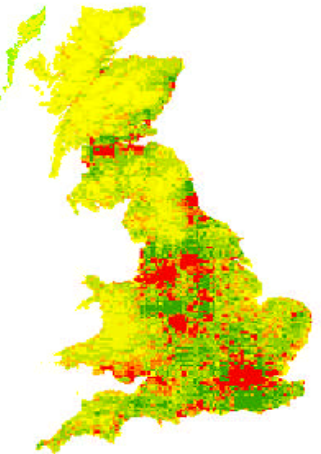
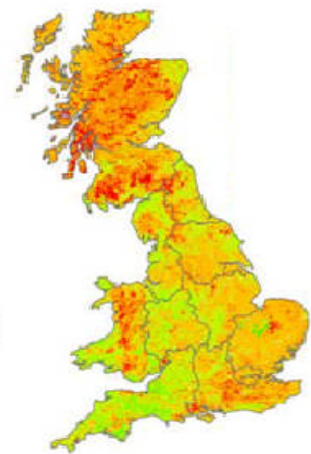
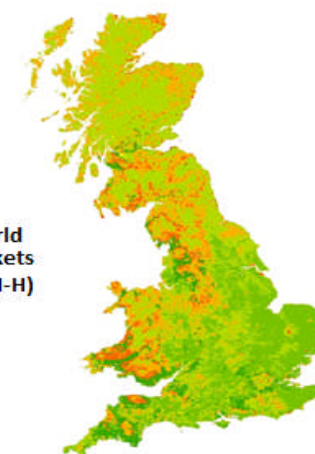
Change in urban greenspace
values (£/household/yr)



Biodiversity index:
Change in general
bird diversity (%)



World
Markets
(WM-H)



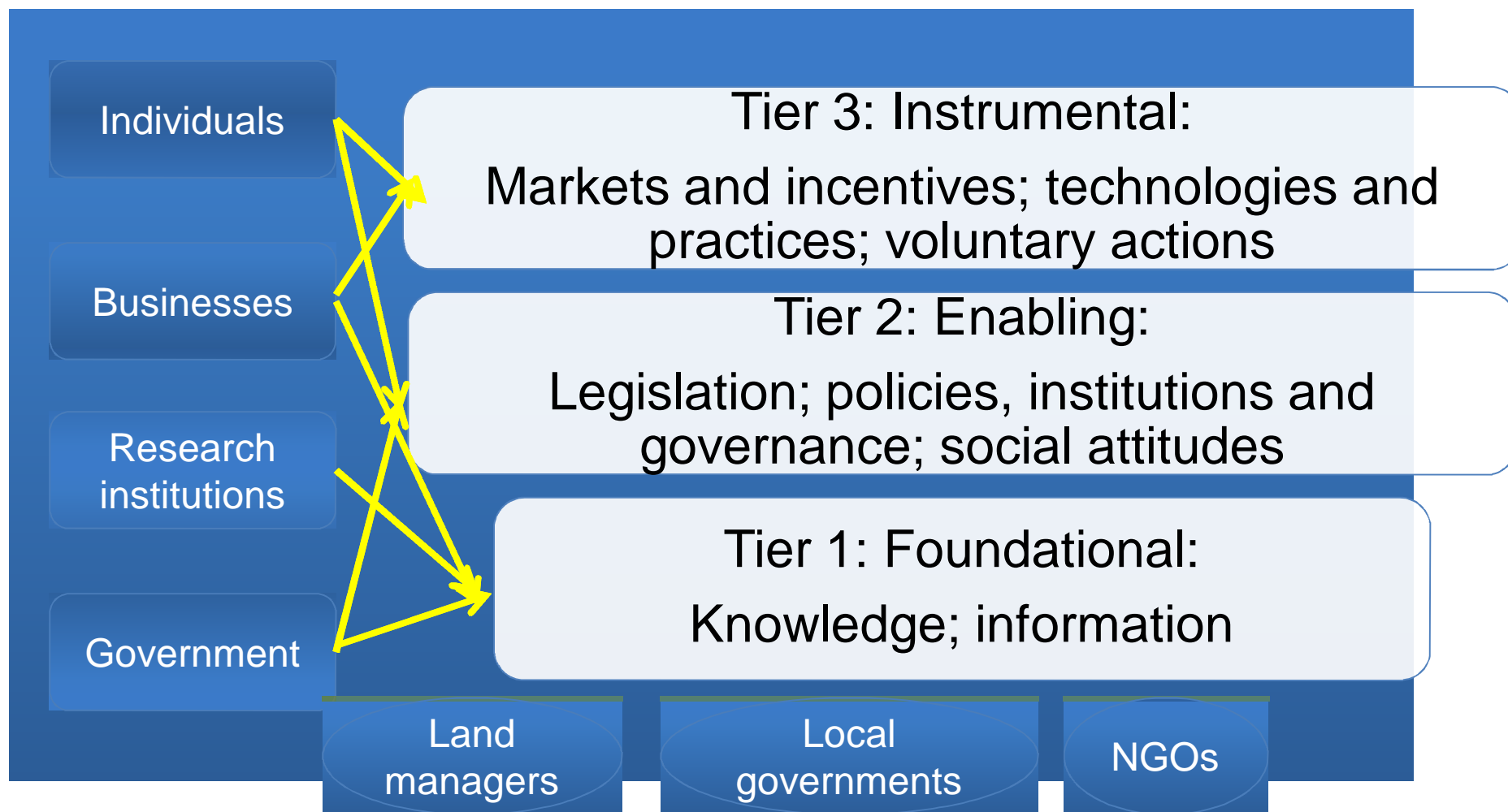
Key Messages of the UK National Ecosystem Assessment

A move to sustainable development will require changes in individual and societal behaviour and adoption of a more integrated approach to ecosystem management

This will require an appropriate enabling environment (regulations, incentives and behaviour change) and the involvement of a wide range of different actors, including government, the private sector, voluntary organizations and civil society at large

We already have enough information to manage our ecosystems more sustainably and good evidence of the benefits of doing so

Actors and responses



What is needed to promote ecosystem health and prevent biodiversity loss?

- **INTEGRATION:** responses that are initiated within a single sector often impact on other sectors and services; key element of ecosystem service based thinking
- **THINKING ACROSS SCALES:** spatial and temporal
- **COLLABORATION:** responses may be initiated by particular actors, but usually require engagement with others; collaborative partnerships between stakeholders
- **MULTIPLE RESPONSES:** require a mix of approaches, e.g. legislation and regulations supporting attitudinal changes, underpinning markets and incentives, technological innovation and voluntary compliance