Living With Environmental Change

UK National Ecosystem Assessment

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Ecosystem Approach – Taking Stock

Economic Perspectives from the NEA

Acknowledgement to Ian Bateman and Lucy Simpson for slide materials

Cyngor Cefn Gwlad Cymru Countryside Council for Wales

defra Department for Environment Food and Rural Affairs

E·S·R·C Economic & Social Research Council

Natural Environment Research Council

NIEA Northern Ireland Environment Agency www.ni-environment.gov.uk

The Scottish Government

Llywodraeth Cynulliad Cymru Welsh Assembly Government

UNEP WCMC

UK NEA Purpose and Scope

the UK's 1st attempt at a fully national scale assessment of the benefits that the natural environment provides to people

- **current status and trends**
- **drivers of change**
- **plausible scenarios**
- **valuation**

Provisioning

Provision of timber

Regulating

Regulation of climate

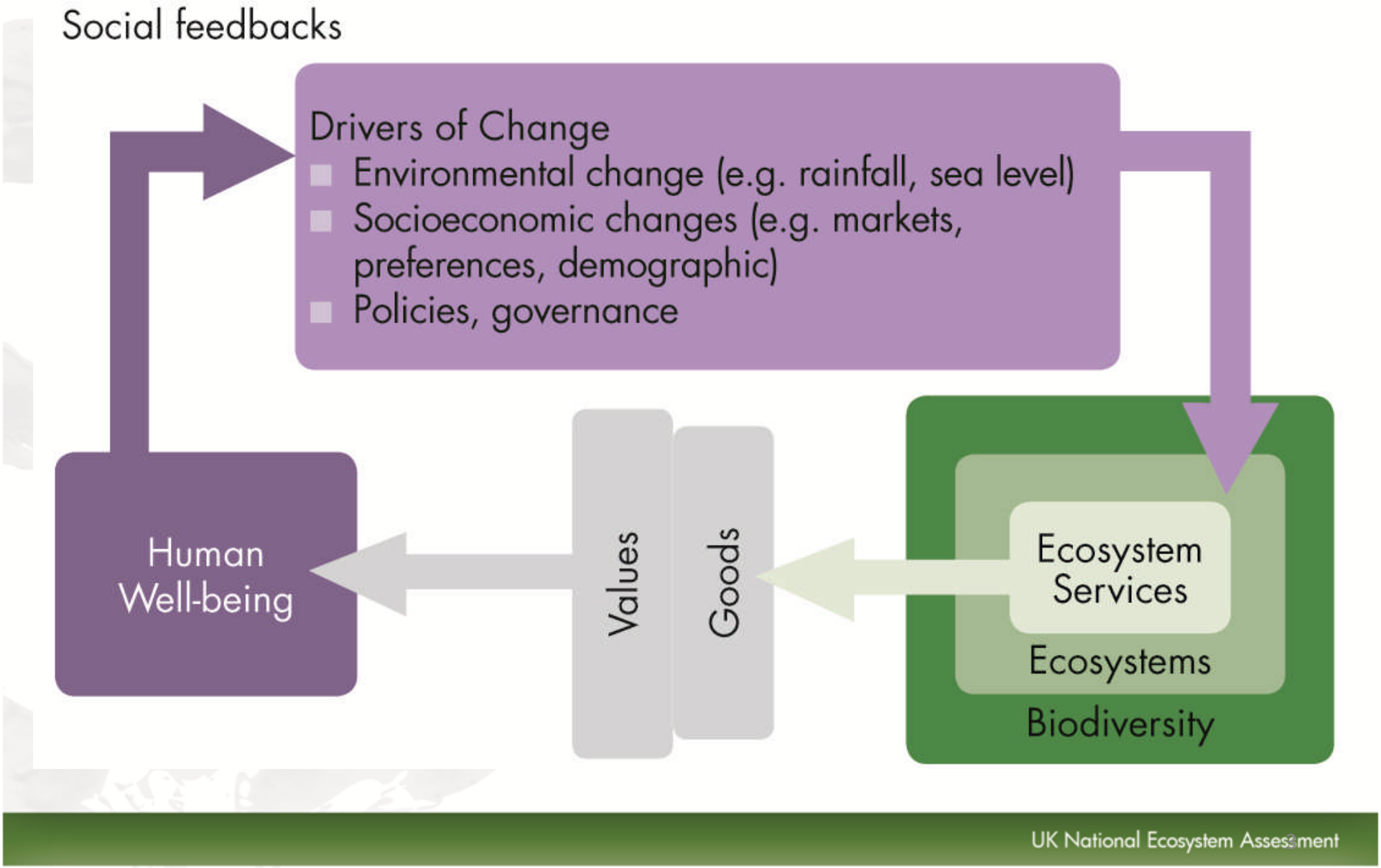
Cultural

Recreation and tourism

Supporting

Cycling of nutrients

UK NEA Conceptual Framework

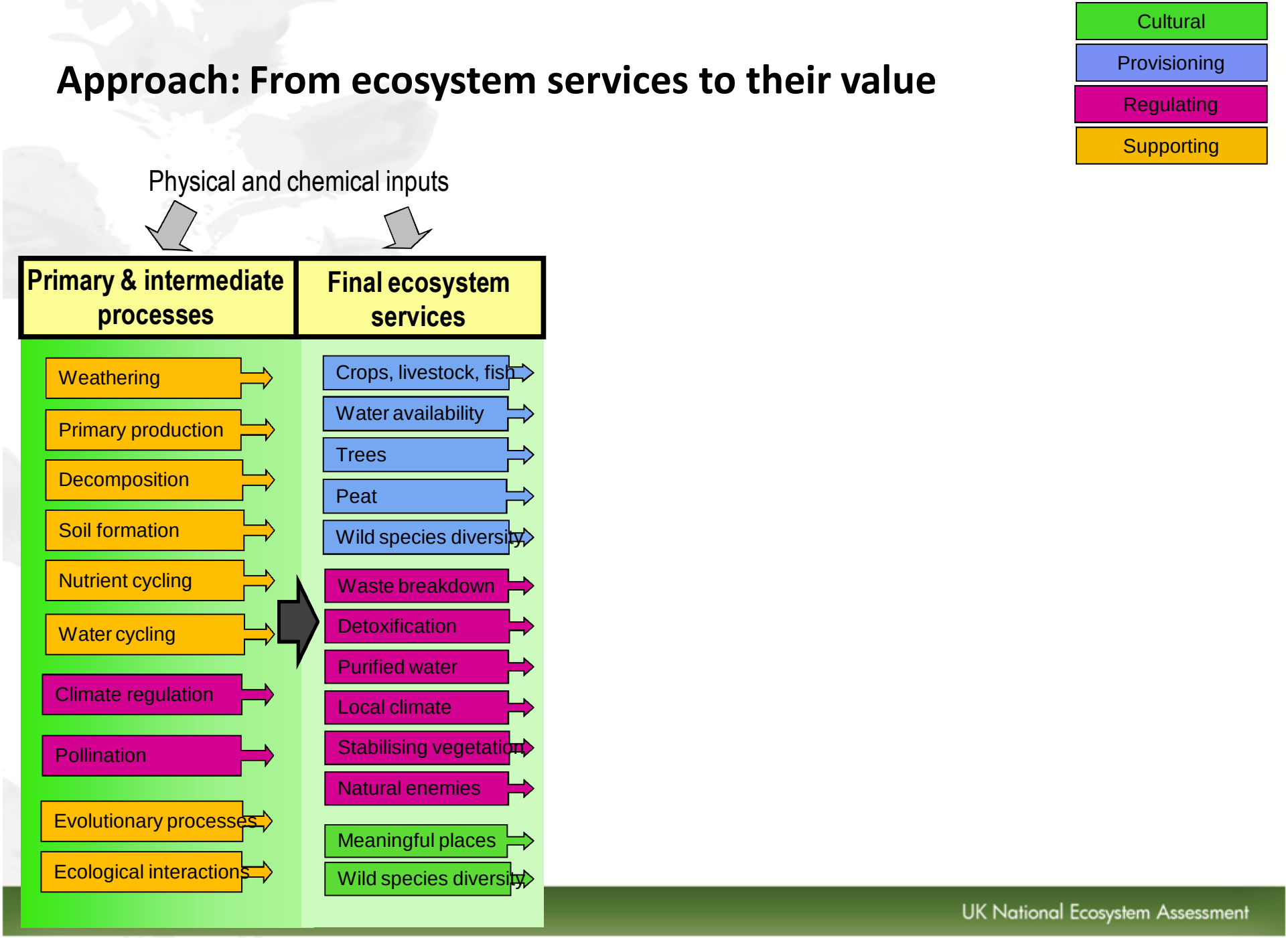


Economic Analysis of UK Natural Environment and Ecosystem Services

Why bother?

- Free, competitive markets are highly efficient allocators of market priced resources
- But market and governance systems fail to reflect the full costs and benefits of changes in natural resources and the environment
  - e.g. water quantity and quality, flood defence, recreation and tourism, fisheries, forestry, etc.
- Likely that decisions do not maximise values
- Welfare is compromised
- In the longer term, decisions may not be sustainable.

Approach: From ecosystem services to their value



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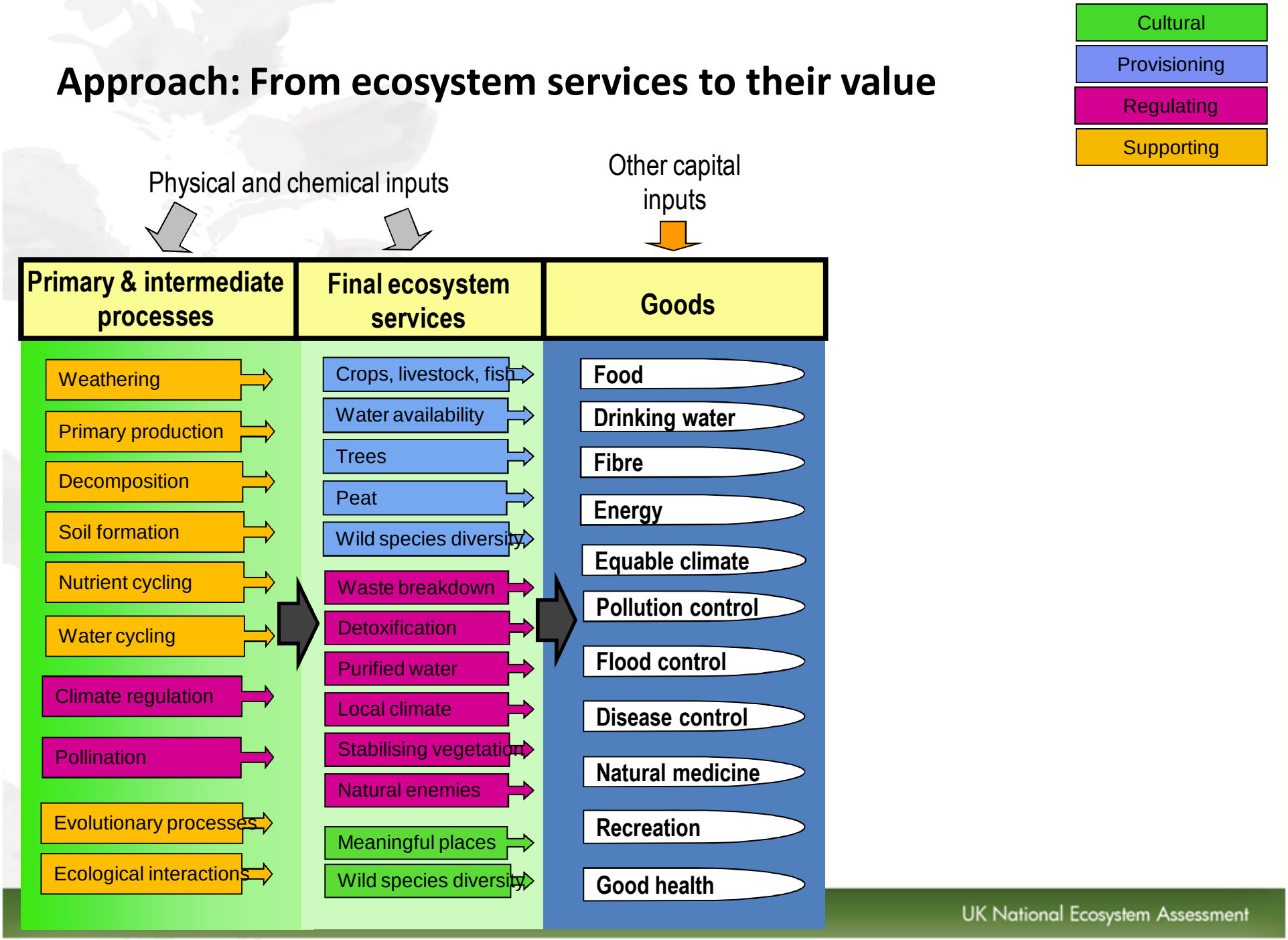

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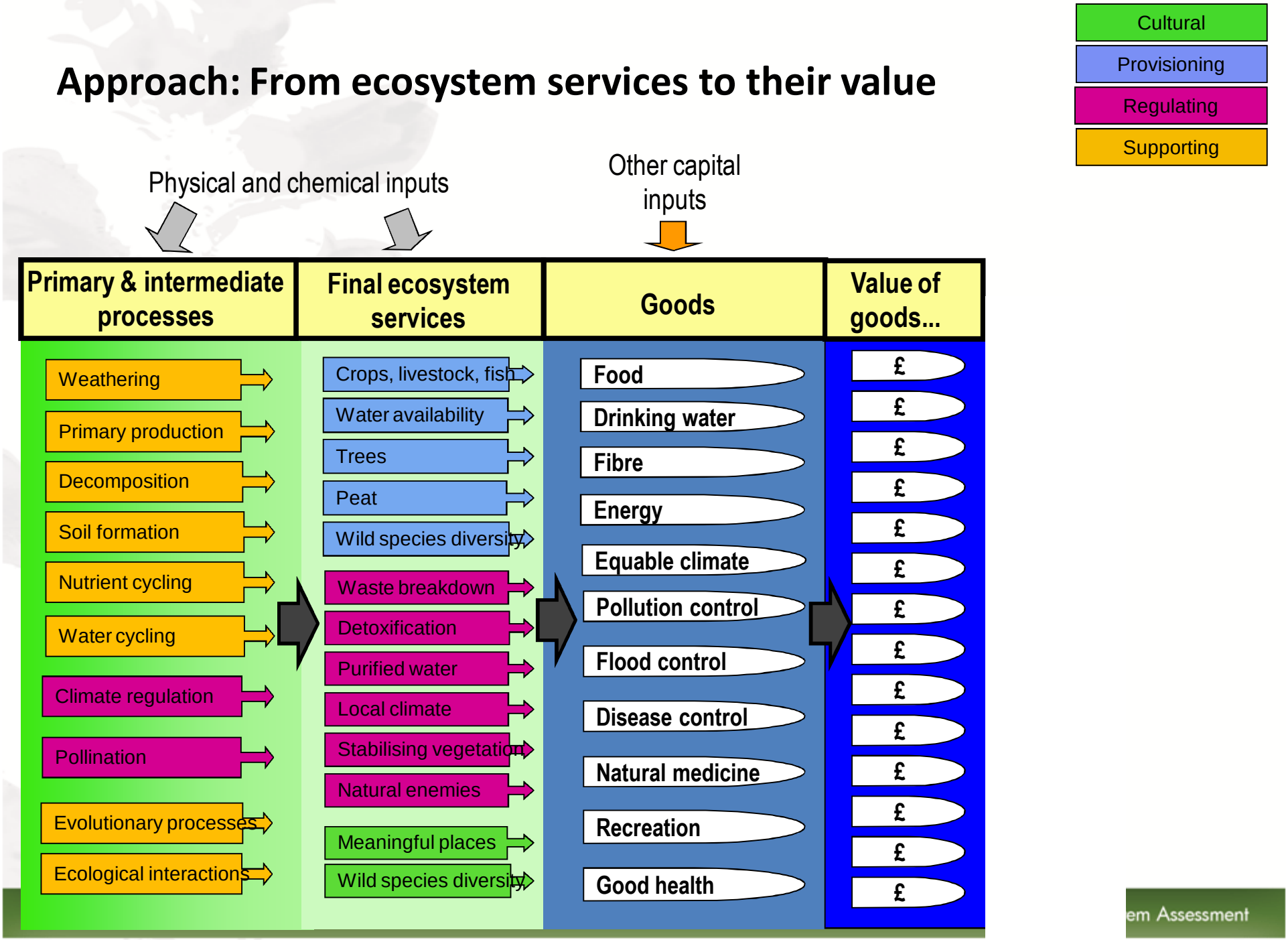

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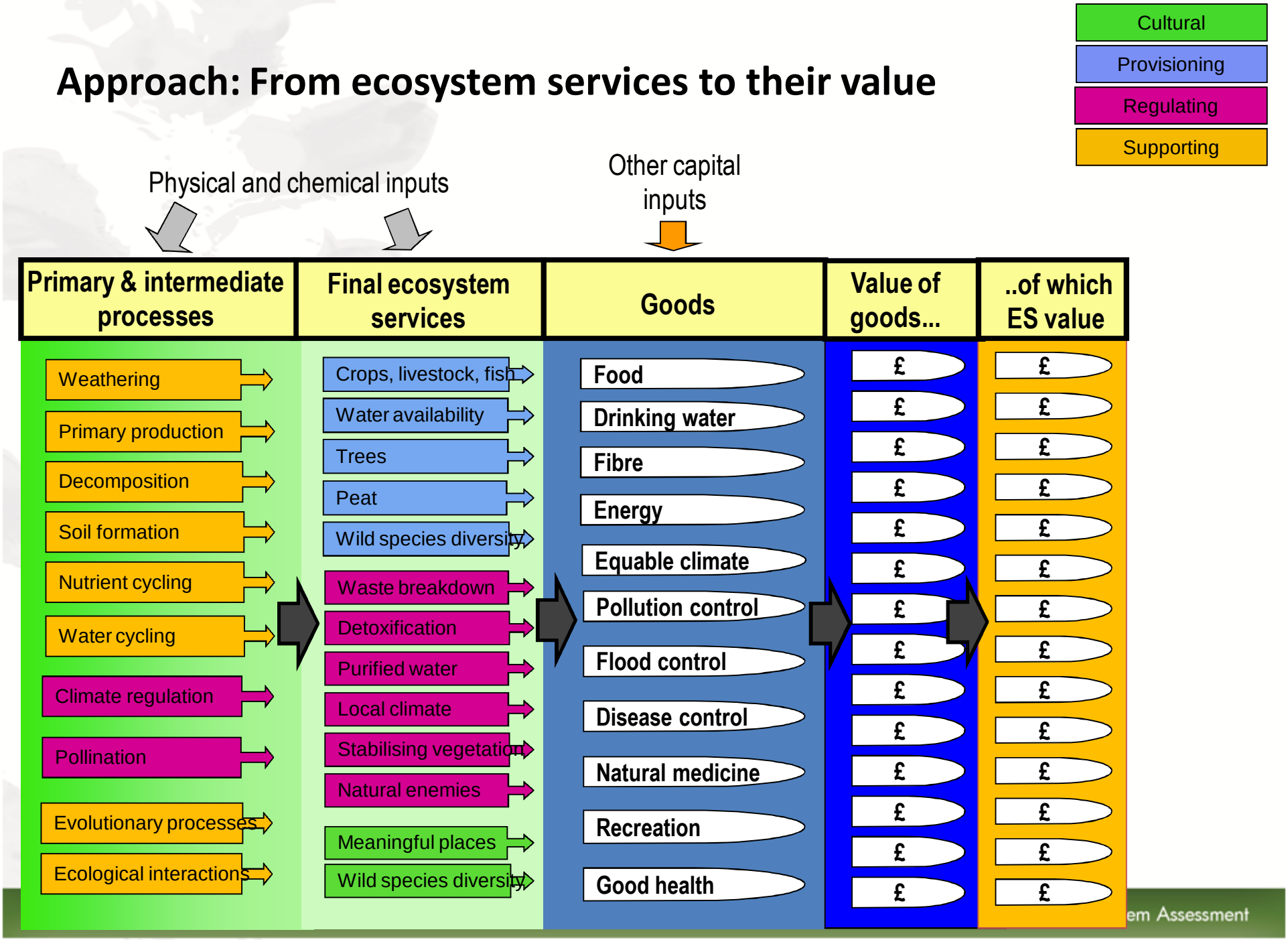

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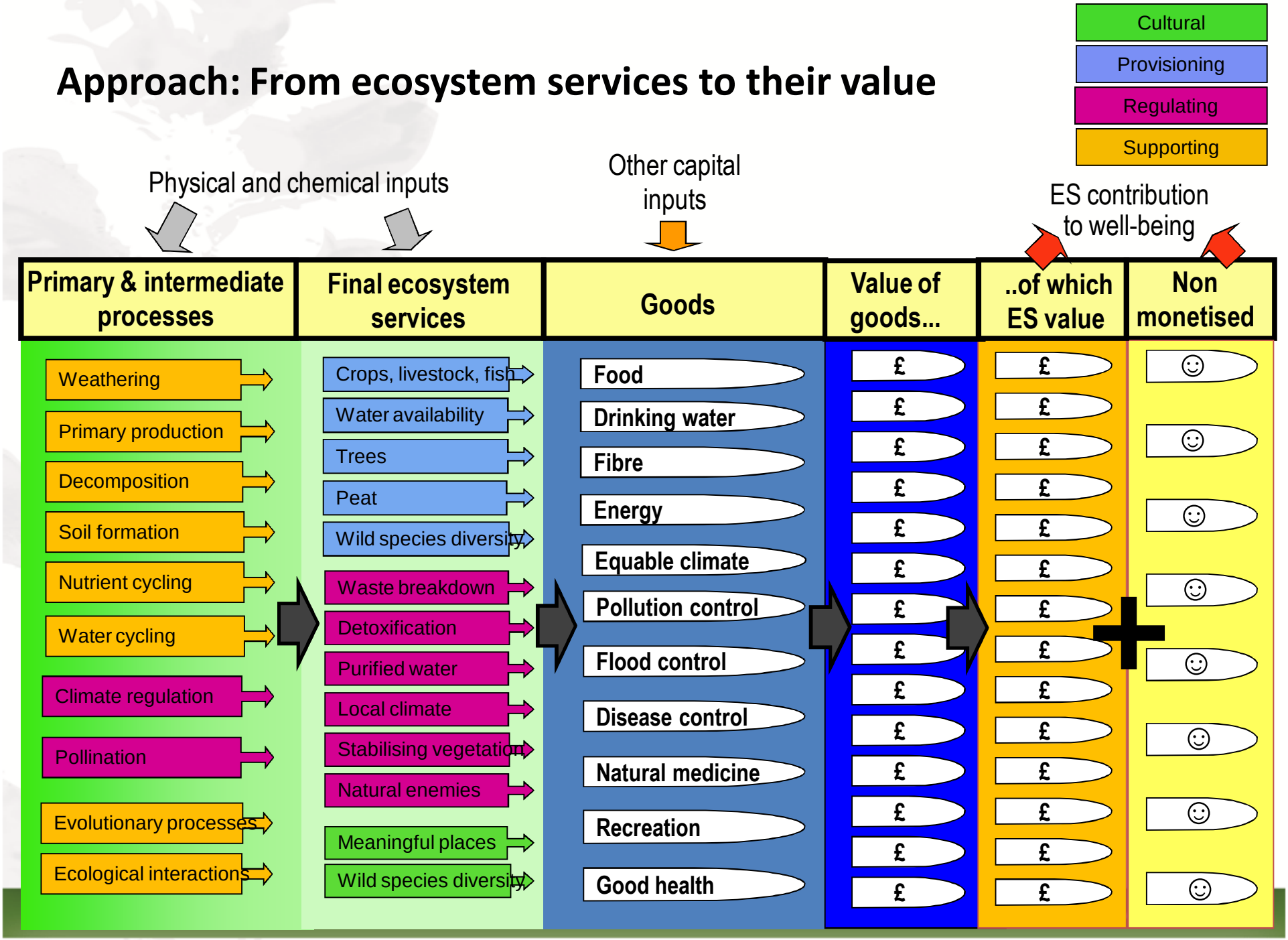

NEA: Ecosystem Service and Environmental Resource Related Goods

- Food production (agricultural, marine, other)
- Biodiversity: Use values (pollination, pest control, wildlife sport)
- Biodiversity: Non-use values (existence values)
- Raw materials (timber, aggregates, other)
- Climate regulation (carbon storage, GHG)
- Water quantity and quality
- Flood prevention (inland and coastal)
- Pollution remediation
- Energy
- Amenity values (landscape, urban greenspace, climate amenity, etc)
- Recreation and tourism
- Environmental effects upon health

For most goods we estimate:
1. Total value
2. Per unit value

Valued via adjusted market prices

Valued via contribution to output

Valued via avoided costs/official values

Valued via observed behaviour

Valued via stated preferences

Issues and challenges

- Understanding biophysical relations
  - Stocks/capital and flow/services
  - Feedbacks and thresholds
  - Handling variation, scale and uncertainty
- Valuation
  - Values, value and valuation
  - ‘Units of service’ and ‘final goods’
  - Benefit ‘transfer’
  - Integrating economic and non-economic valuation
- Governance and implementation
  - Engaging people: ‘buy in’
  - Making decisions: making a difference

http://uknea.unep-wcmc.org