

# Systems maps

LAND USE FUTURES PROJECT



# **Land Use Futures: Making the most of land In the 21st century**

## **Systems maps**

### **This report is intended for:**

Policy makers and a wide range of professionals and researchers whose interests relate to all aspects of land use. The report focuses on the UK, but will also be relevant to the interests of many other countries.

### **This report should be cited as:**

Foresight Land Use Futures (2010).  
Systems maps.  
The Government Office for Science, London.



The Government Office for Science would like to thank the firm ShiftN which led the systems work within the Foresight Project on Land Use Futures, and also the many experts and stakeholders from the UK who contributed to this work.

*The Foresight Programme in the UK Government Office for Science is under the direction of the Chief Scientific Adviser to HM Government. Foresight strengthens strategic policy-making in Government by embedding a futures approach.*



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# 1 Introduction

This catalogue provides the systems diagrams produced within the Foresight Project on Land Use Futures.

The aim of this Project has been to use the best available scientific and other evidence to take a broad look at:

- The most important challenges and opportunities for land use in the UK over the next 50 years – particularly those that merit decisive action.
- What can be done to use and manage land more sustainably and to unlock greater value for people and the economy – now and in the future.

The catalogue is not intended as a stand alone document, but rather should be used in conjunction with the Project Report, as a tool to aid interpretation of the report's key themes and messages.

For greater detail on these diagrams, and the background behind them, a report has been produced by the firm ShiftN, who undertook the systems work for the Project. The contractual report expands on the systemic perspective taken in formulating these maps and provides detail behind several of the maps. ShiftN's report can be ordered from the Foresight website: <http://www.foresight.gov.uk/>

## Production of the systems maps

The production of these maps involved consultation with a range of leading experts involved with the Project. They are intended as visual representations of complex systemic interactions. They are not comprehensive in their coverage, and are subject to caveats in their design. Therefore, in the detail of the maps there is likely to be disagreement amongst some readers. However, these maps are not intended as definitive truths, but rather as valuable tools for understanding the complexities of aspects of the land system.

## Use of the diagrams within the project

The systems diagrams deal with a range of issues affecting land use. Some have specific reference within the report, but it is hoped that all of the maps will help offer a clearer understanding of interactions of various components which influence land use in the UK.

Specifically, it is hoped that these diagrams will add value through:

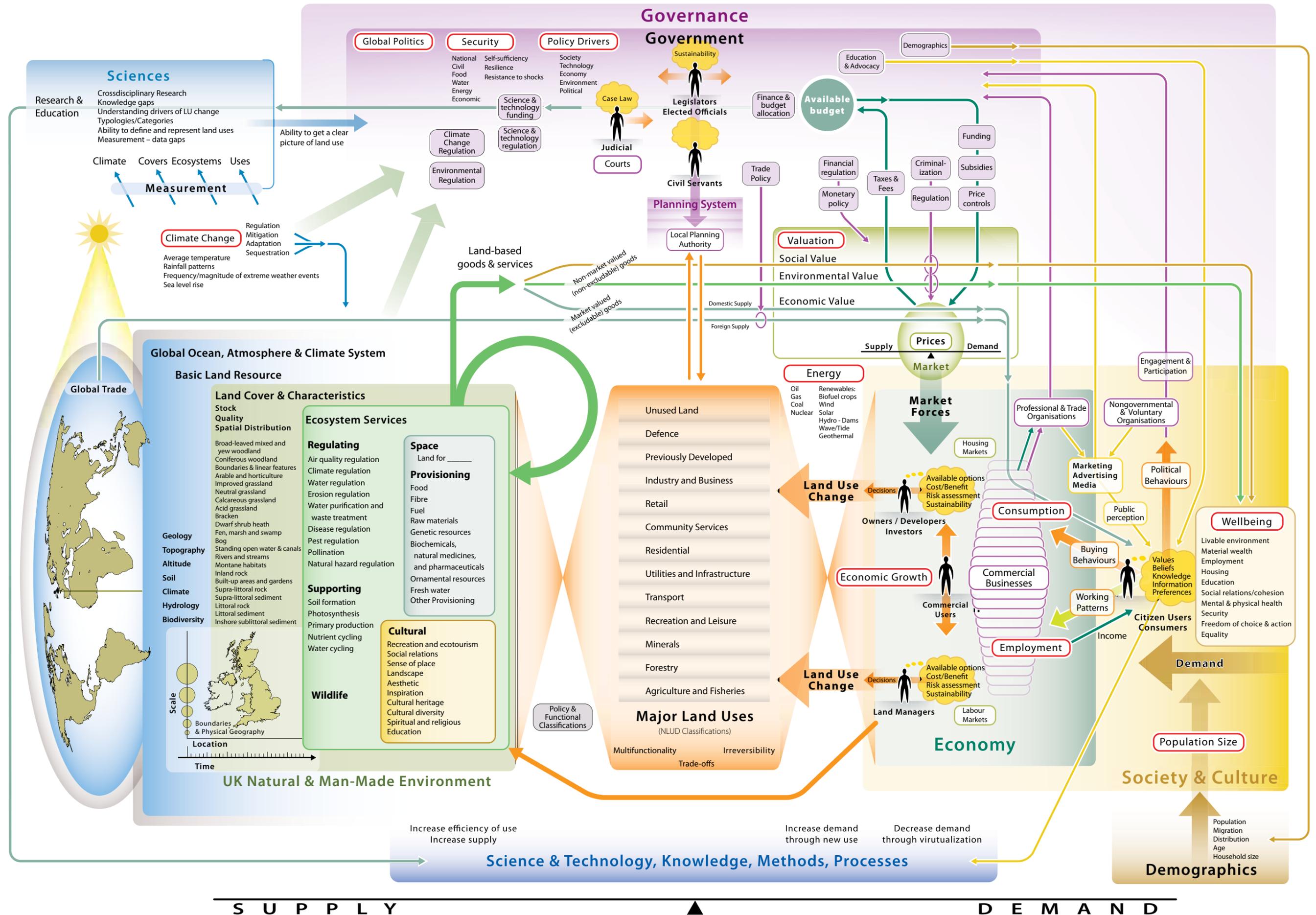
- Showing the 'bigger picture'.
- Integrating specialist knowledge.
- Communicating complex information.
- Stimulating stakeholder engagement.

# 2 Catalogue of diagrams

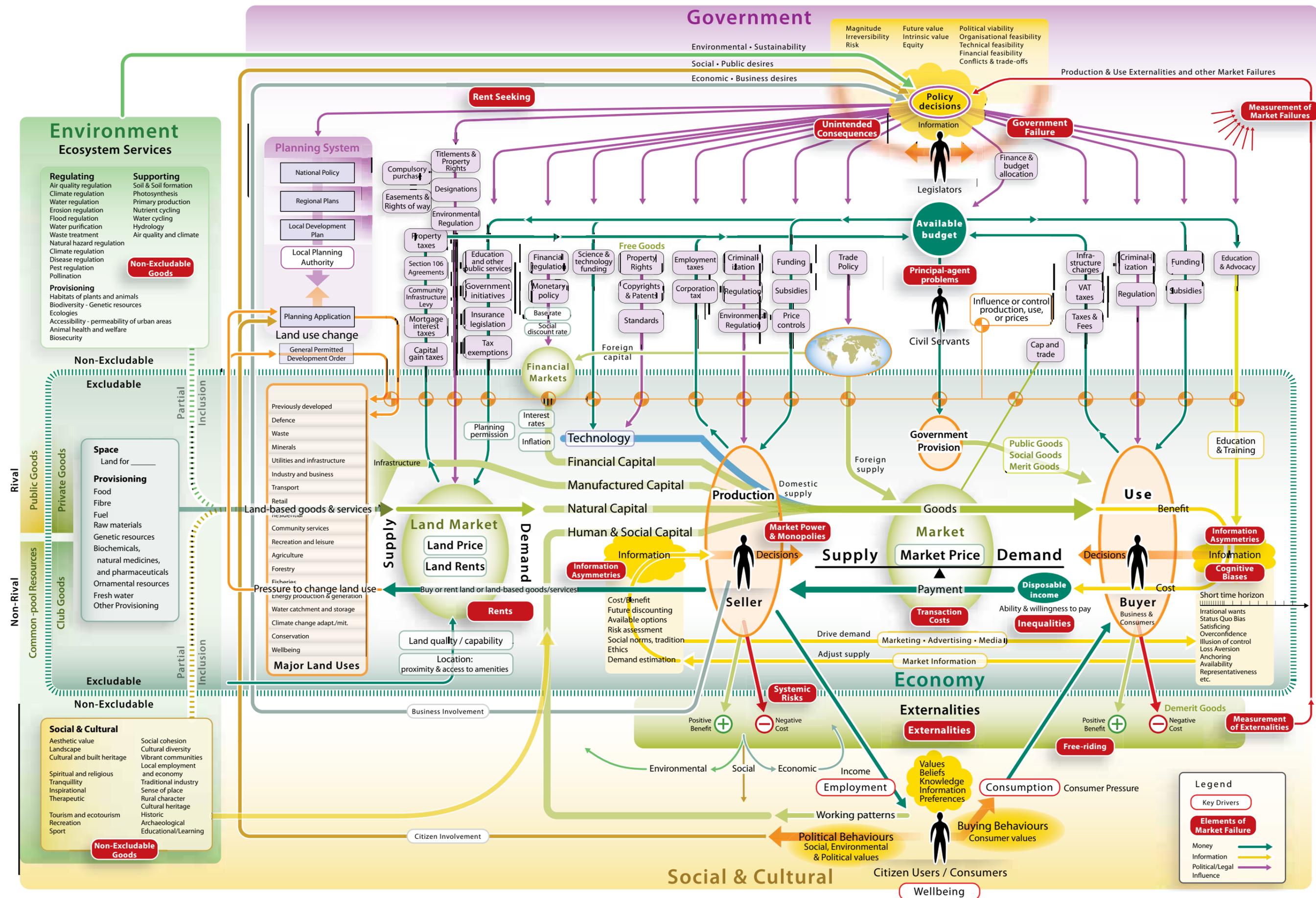
The following table lists the systems diagrams that are reproduced here, together with a brief description.

Page	Systems map
3	<b>Land systems framework – component parts of the current UK land system</b> A broad overview of the key elements of, and forces acting on, the land use system, incorporating a diverse range of drivers; from the economic to the environmental.
4	<b>Valuation framework – overview</b> This outlines the market forces, governance mechanisms and market failures that may influence land use allocation.
5	<b>Valuation framework – key drivers</b> Shows the particular impact of market dynamics on the land system and governance decisions.
6	<b>Governance framework – overview</b> This demonstrates the interaction between some of the governance influences particularly on developed land use in England.
7	<b>Governance framework – key drivers</b> Shows the specific influences on the planning system and governance of developed land in the UK.
8	<b>Wellbeing framework – overview</b> This helps to visualise the relationship between land use and citizens' personal health and wellbeing.
9	<b>Land system – influence diagram</b> Provides a broad overview of the key elements of, and forces acting on, the land use system.
10	<b>Land system – clustered influence diagram</b> Demonstrates the broad areas of government responsibility for some of the key factors influencing UK land use.
11	<b>Land system – clustered influence diagram by Government department</b> Shows the range of English Government departments responsible for factors influencing land use.
12	<b>Land system – influence and sustainability diagram</b> Matches influences on UK land use with performance of DEFRA's Sustainable Development Indicators in Your Pocket (2009).

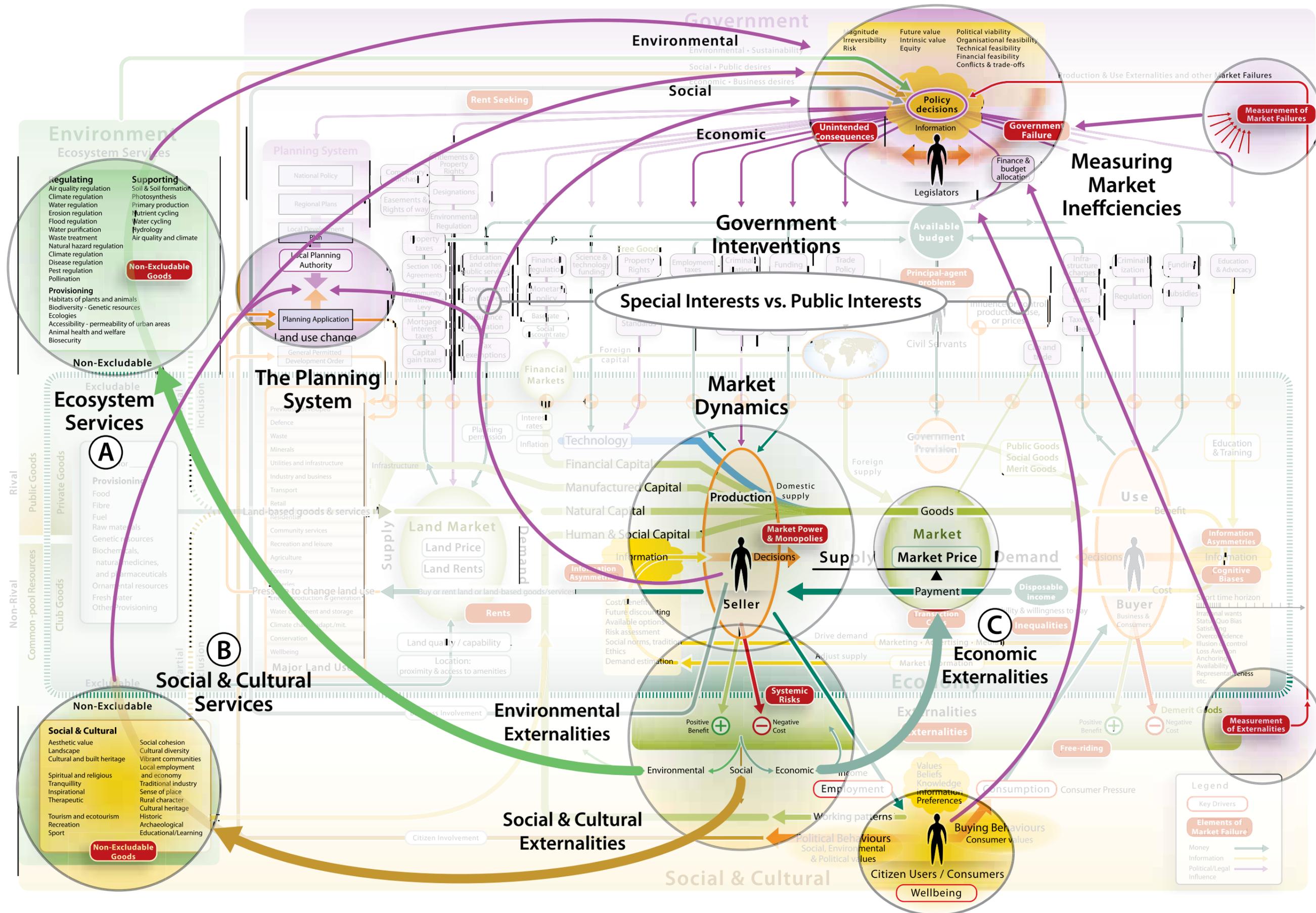
Land system framework – component parts of the current UK land system



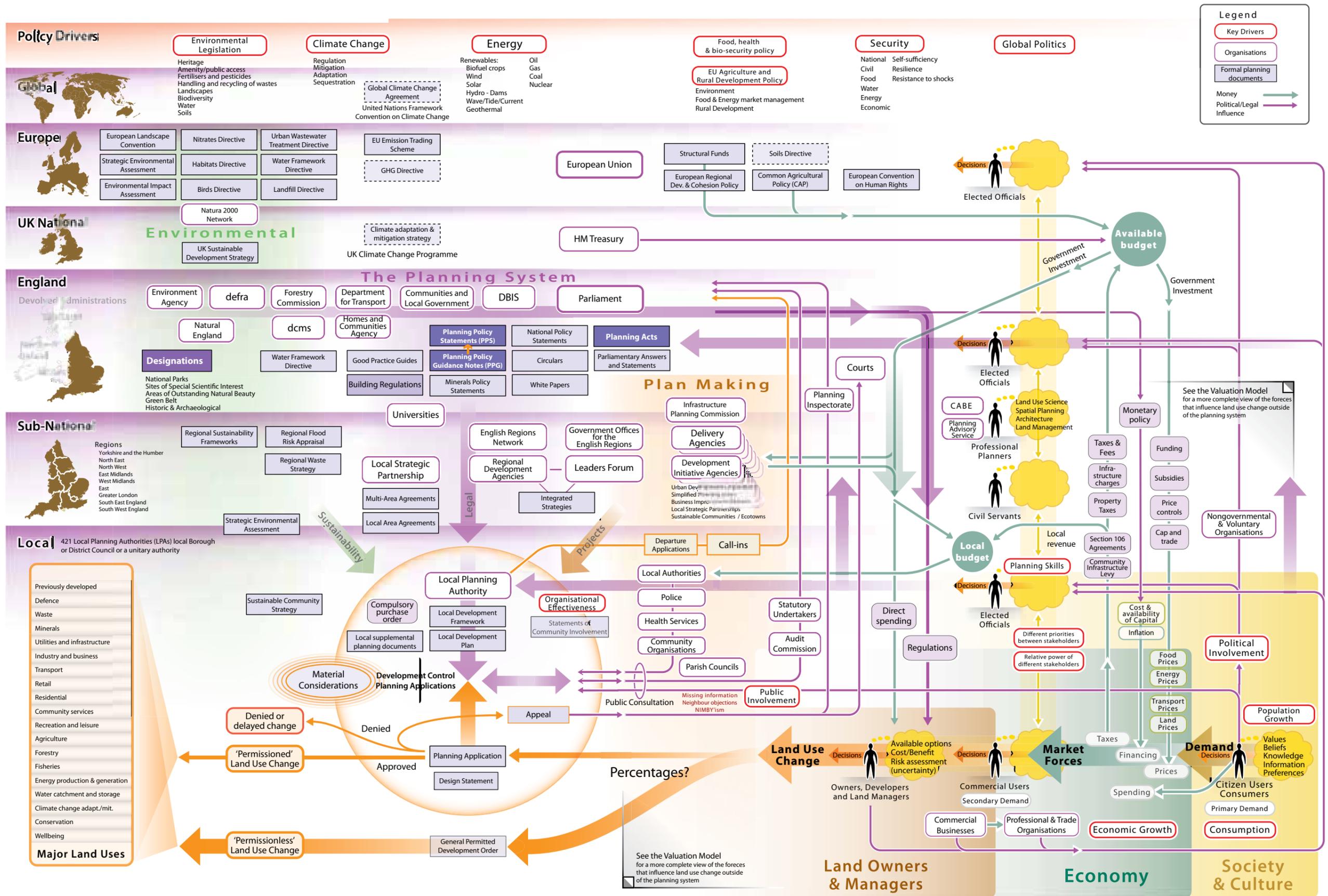
Valuation Framework – overview



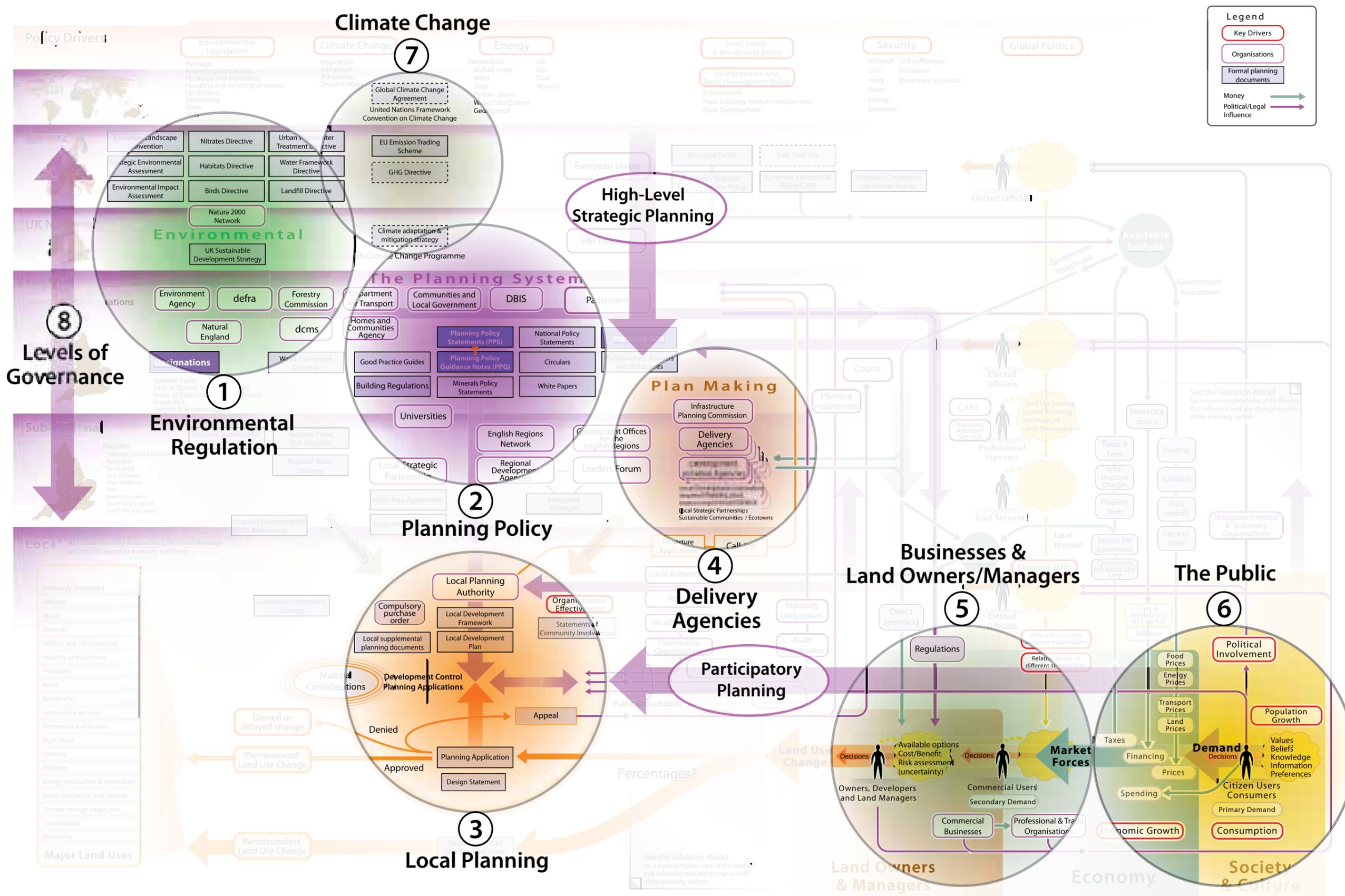
Valuation Framework – key drivers



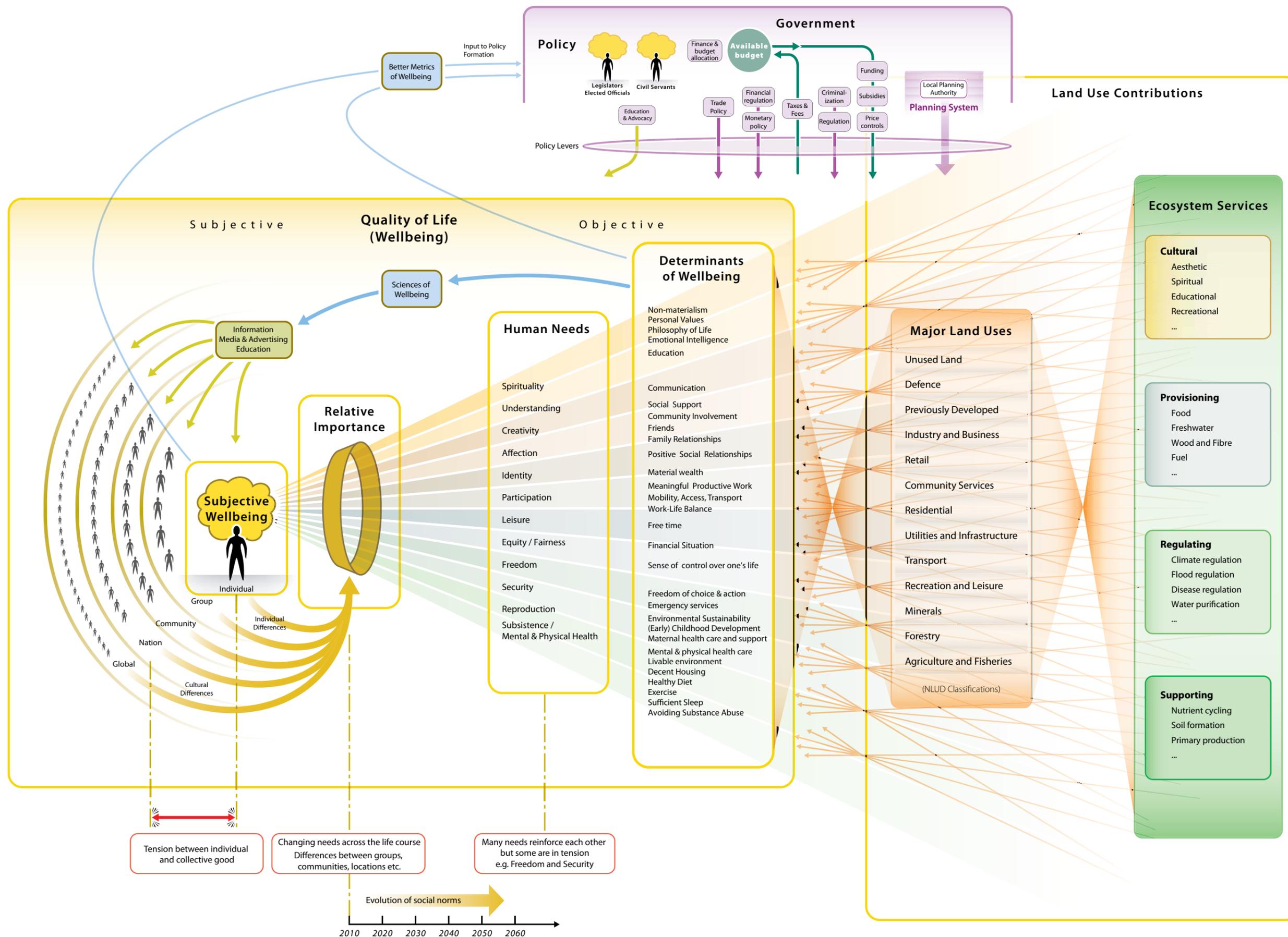
Governance framework – overview



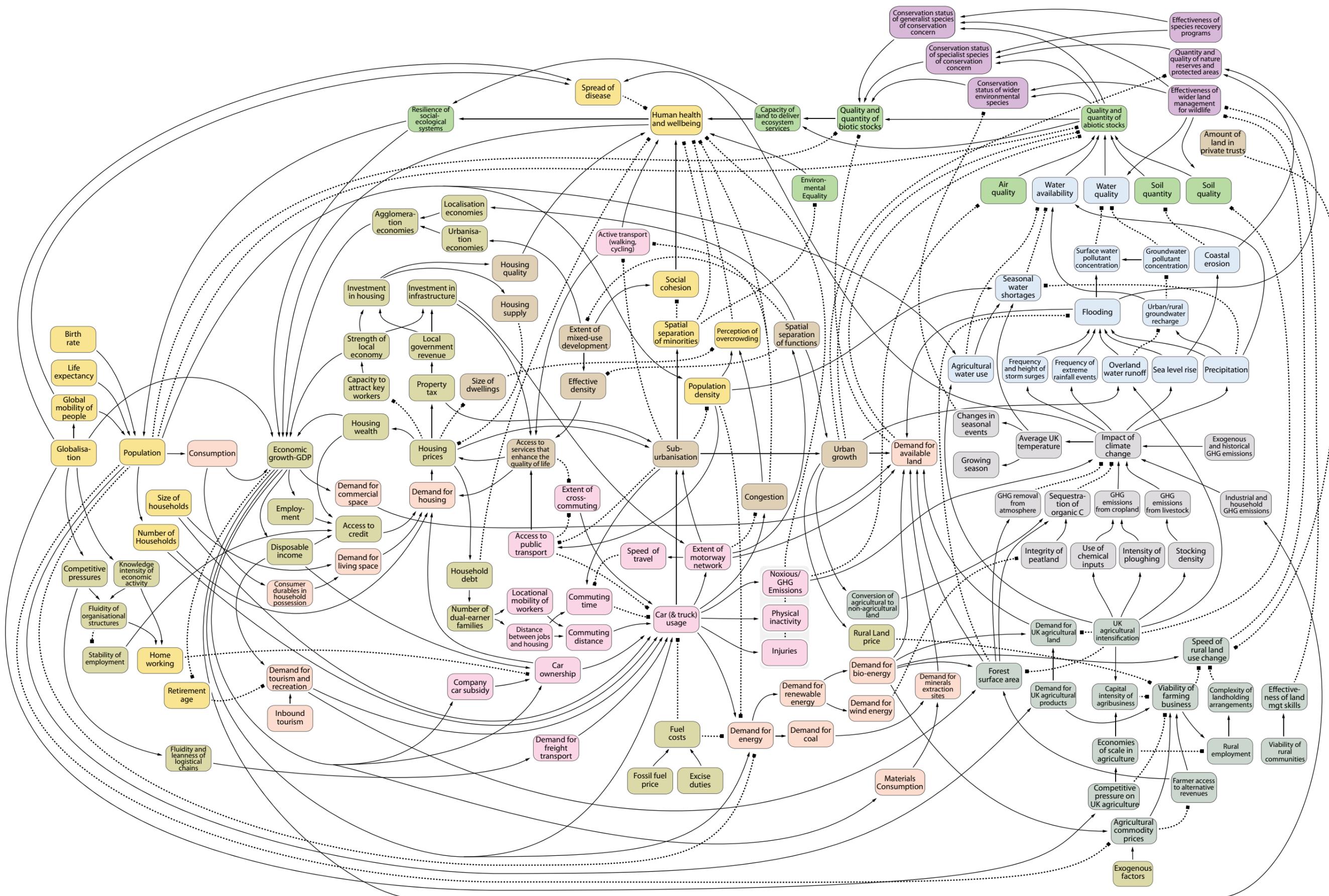
Governance framework – key drivers



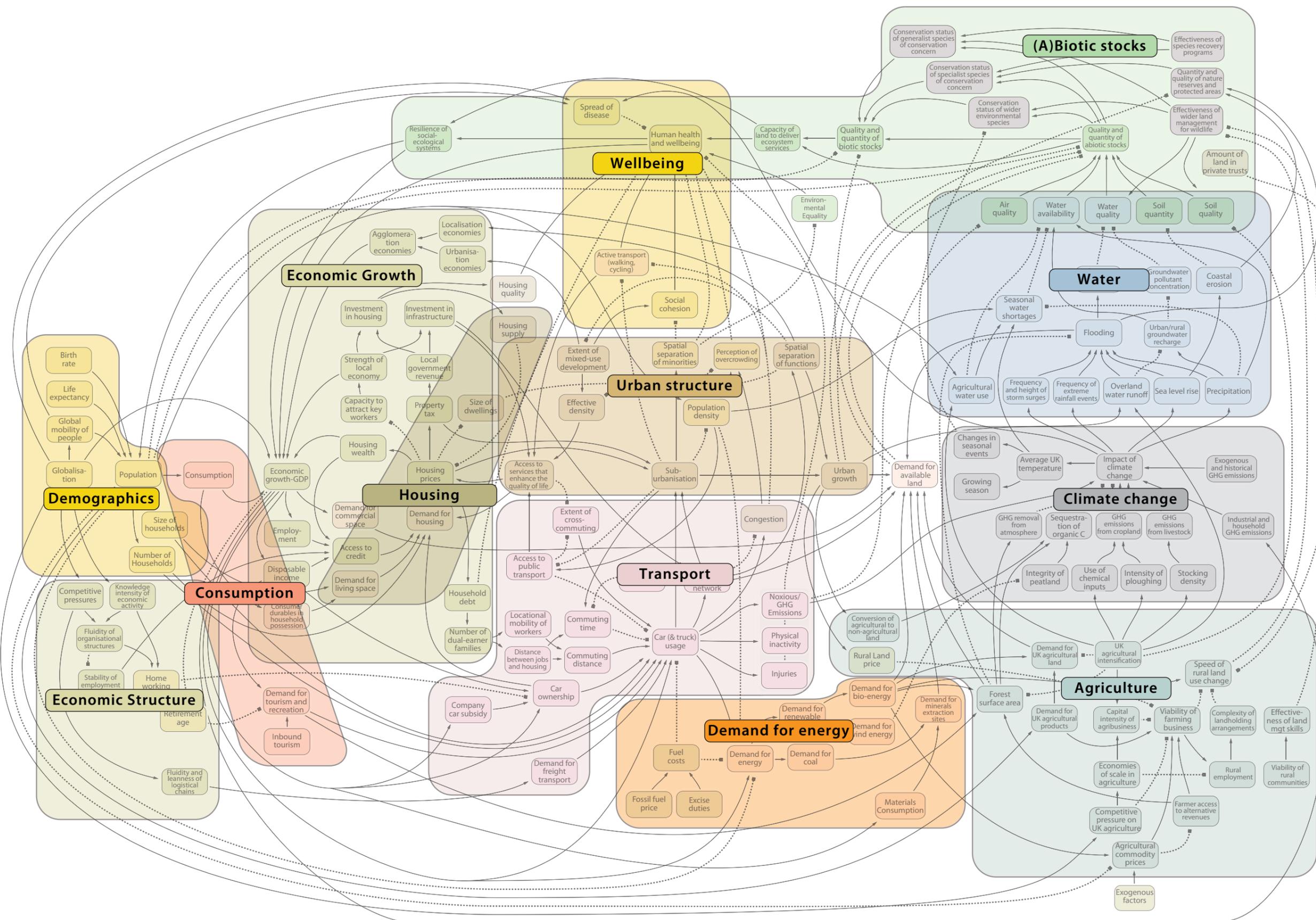
Wellbeing framework – overview



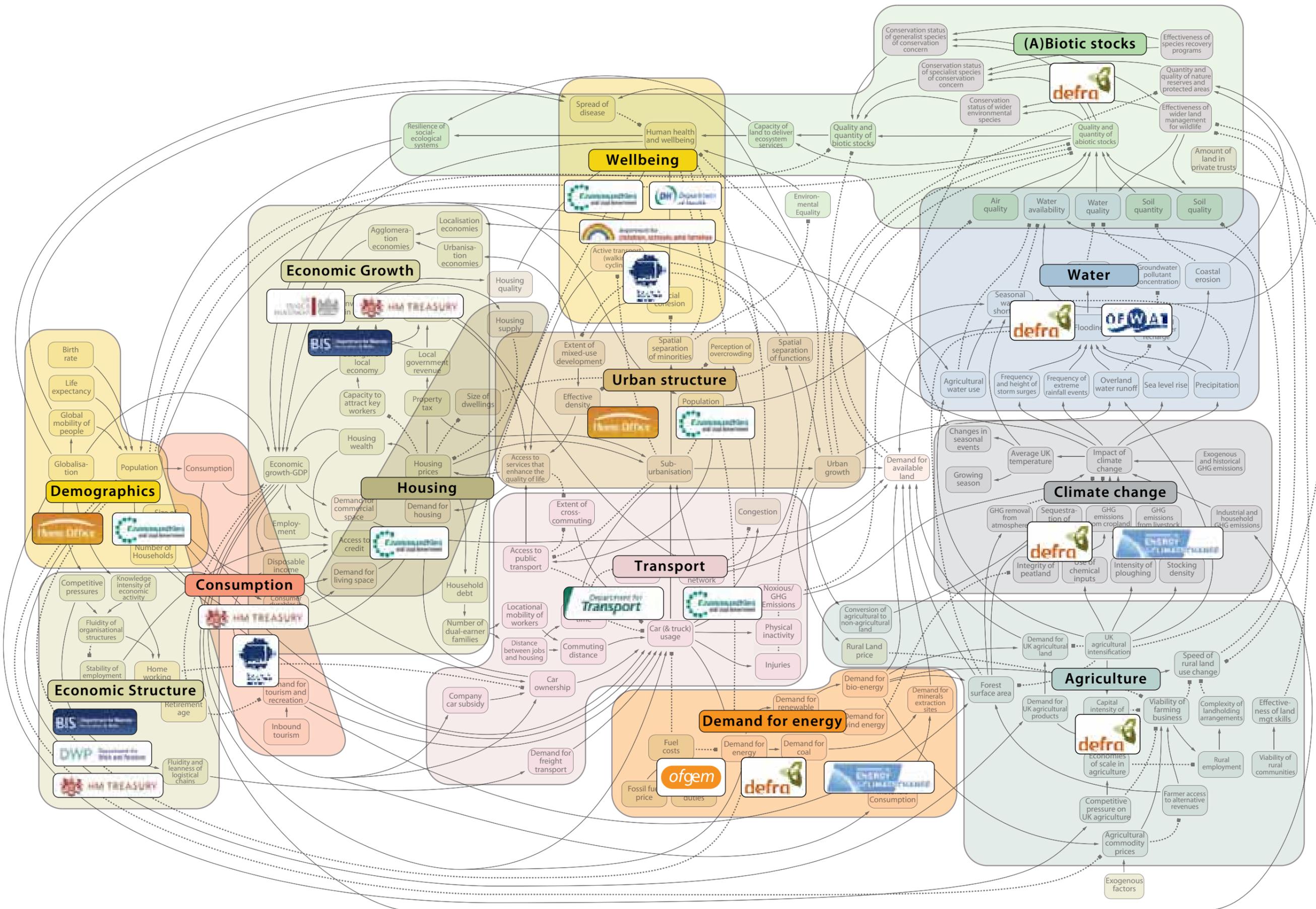
Land system – influence diagram



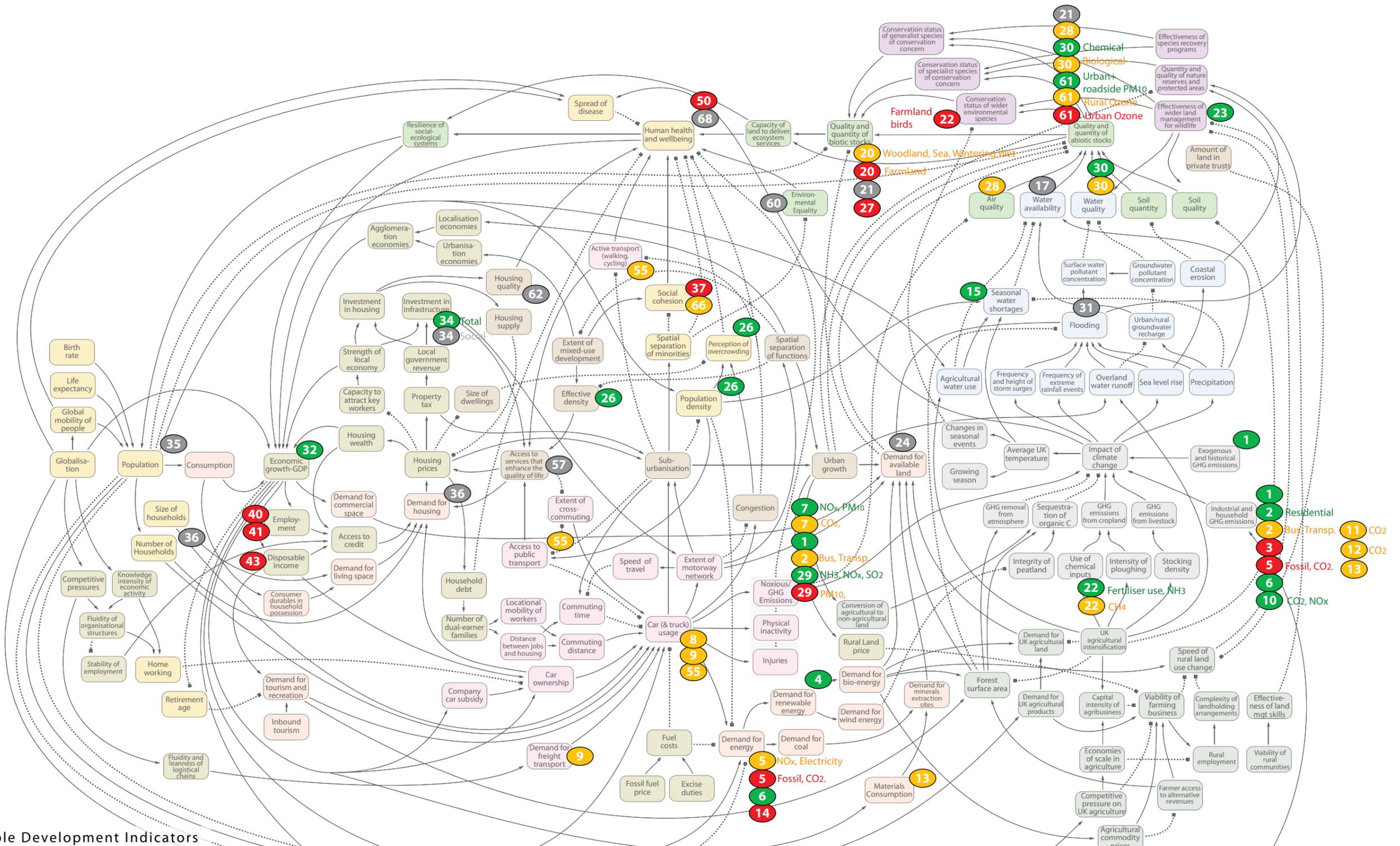
Land system – clustered influence diagram



Land system – clustered influence diagram by Government department



Land system – influence and sustainability diagram



Sustainable Development Indicators

- |   |  |  |  |   |   |  |   |
|---|--|--|--|---|---|--|---|
| <ul style="list-style-type: none"> <li>● 1. Greenhouse gas emissions</li> <li>● 2. Carbon dioxide emissions by end user</li> <li>● 3. Aviation and shipping emissions</li> <li>● 4. Renewable energy</li> <li>● 5. Electricity generation</li> <li>● 6. Household energy use</li> <li>● 7. Road transport use</li> <li>● 8. Private cars</li> <li>● 9. Road freight</li> <li>● 10. Manufacturing sector</li> <li>● 11. Service sector</li> <li>● 12. Public sector</li> </ul> | <ul style="list-style-type: none"> <li>● 13. Resource use</li> <li>● 14. Energy supply</li> <li>● 15. Water resource use</li> <li>● 16. Domestic water consumption</li> <li>● 17. Water stress</li> <li>● 18. Waste</li> <li>● 19. Household waste per person</li> </ul> | <ul style="list-style-type: none"> <li>● 20. Bird population</li> <li>● 21. Biodiversity conservation</li> <li>● 22. Agriculture sector</li> <li>● 23. Farming and environmental stewardship</li> <li>● 24. Land use</li> <li>● 25. Land recycling</li> <li>● 26. Dwelling density</li> <li>● 27. Fish stock</li> <li>● 28. Ecological impacts or air pollution</li> <li>● 29. Emissions of air pollutants</li> <li>● 30. River quality</li> <li>● 31. Flooding</li> </ul> | <ul style="list-style-type: none"> <li>● 32. Economic growth</li> <li>● 33. Productivity</li> <li>● 34. Investment</li> <li>● 35. Demography</li> <li>● 36. Household and dwellings</li> <li>● 37. Active community participation</li> <li>● 38. Crime</li> <li>● 39. Fear of crime</li> </ul> | <ul style="list-style-type: none"> <li>● 40. Employment</li> <li>● 41. Workless households</li> <li>● 42. Economically inactive</li> <li>● 43. Childhood poverty</li> <li>● 44. Young adults</li> <li>● 45. Pensioner poverty</li> <li>● 46. Pension provision</li> <li>● 47. Education</li> <li>● 48. Sustainable development education</li> </ul> | <ul style="list-style-type: none"> <li>● 49. Health inequality</li> <li>● 50. Healthy life expectancy</li> <li>● 51. Mortality rates</li> <li>● 52. Smoking</li> <li>● 53. Childhood obesity</li> <li>● 54. Diet</li> <li>● 55. Mobility</li> <li>● 56. Getting to school</li> <li>● 57. Accessibility</li> <li>● 58. Road accidents</li> </ul> | <ul style="list-style-type: none"> <li>● 59. Social justice</li> <li>● 60. Environmental equality</li> <li>● 61. Air quality and health</li> <li>● 62. Housing conditions</li> <li>● 63. Households living in fuel poverty</li> <li>● 64. Homelessness</li> <li>● 65. Local environment quality</li> <li>● 66. Satisfaction in local area</li> <li>● 67. UK international assistance</li> <li>● 68. Wellbeing</li> </ul> | <p>Since 2003</p> <ul style="list-style-type: none"> <li>● Clear improvement</li> <li>● Little or no change</li> <li>● Clear deterioration</li> <li>● Insufficient data to compare</li> </ul> |
|---|--|--|--|---|---|--|---|

Source: Sustainable development indicators in your pocket 2009. Published by DEFRA.

*This report has been produced as part of the UK Government's Foresight Project, Land Use Futures.  
The views expressed do not represent the policy of any Government or organisation.*

