UK SOCIO-ECONOMIC SCENARIOS

Ornella Dellaccio (Cambridge Econometrics)
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Motivation for the project

- No regionally enriched versions of the global SSPs are publicly available for the UK to combine with the UKCP18 climate projections
- Main aim was to develop a set of internally consistent socioeconomic scenarios for the UK that is coherent with the global SSPs
- Outputs are intended to provide the basis for further UK research on climate risk and resilience
Extensions to the SSPs are required to support more detailed analyses of impacts, risks and response options in particular sectors, locations or at different scales:

- **Spatial extensions**: The global SSPs are used to contextualise regional scenario development.

- **Temporal extensions**: The SSPs describe general trends for the 21st Century. Extensions can provide additional detail on relevant temporal aspects and how sequential events may arise over time.

- **Sectoral extensions**: The SSPs provide only broad indications on sectoral developments that can be expanded.
Key project activities

- Literature review & stakeholder engagement
- Full specification of the variables to be included in scenarios
- Report on linkages

Scoping of indicators and linkages between them

Extension of the SSP narratives

- Stakeholder workshop
- SSP narratives
- Tables of trends
- System visualisations for each SSP

Quantification of the SSPs

- Identification and collection of relevant data, testing and validation
- Visualisations of the scenarios
- Database of quantitative indicators for all scenarios
- Open source tools
Project outcomes

- **Narratives for all five SSPs** for the UK and its constituent countries that have been regionally, sectorally and temporally extended from the global SSPs

- **A set systems diagrams** that visualise the interrelationships between the key drivers represented in the scenarios

- **Tables of semi-quantitative trends** for a wide range of socioeconomic indicators

- **Quantifications for specific indicators** at the appropriate temporal and spatial resolution
Semi-quantitative trends

A set of 50 key socioeconomic variables and their semi-quantitative trends

**Society**
- Population
- Ageing
- Physical mobility
- Public transport
- Migration
- Social mobility
- Urban population
- Urbanisation
- Education
- Health investments
- Health care
- Social cohesion
- Human capital
- Social capital

**Technology**
- Technology development
- Green technology
- Tech transfer
- Diffusion of tech
- Infrastructure
- Renewables
- Bioenergy
- Energy efficiency
- Water abstraction change
- R&D
- Manufactured capital

**Environment**
- Protected areas
- Land use regulation
- Agricultural yields
- Agriculture area
- Fertiliser use
- Natural capital

**Economy & Lifestyle**
- GDP
- Household income
- Tourism
- Industry
- Funding transfers
- Inequality
- Consumption level
- Consumption source
- Meat consumption
- Resource waste
- Financial capital

**Policies & Institutions**
- Imports of natural resources
- Globalisation of trade
- International cooperation
- Environmental policy
- Effectiveness of institutions
- Participation in governance
- Devolution of decision-making
- Public engagement

**Variables and Definitions**

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<thead>
<tr>
<th>Variables</th>
<th>UK 2021</th>
<th>UK 2025</th>
<th>UK 2030</th>
<th>UK 2040</th>
<th>UK 2050</th>
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<tbody>
<tr>
<td>Technological development</td>
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<td>Green technology</td>
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<td>Proportion of green technologies</td>
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<td>Technological transfer</td>
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<td>Intensity of exchange of technology and know how between countries and areas</td>
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<td>Diffusion of technology across different segments of the country</td>
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Quantified indicators

**Society**
- Population
- Urbanisation
- Health
- Social Cohesion
- Education

**Economy & Lifestyles**
- GDP
- GVA
- Employment
- Incomes
- Savings
- Inequality
- Food demand and trade
- Pro-environ Lifestyles

**Environment**
- Emissions
- Land use
- Food production
- Agricultural inputs

**Technology**
- Energy
- Technological development
- Produced Capital

**Policies & Institutions**
- Regional Transfers
- Healthcare
- R&D
- Road Infrastructure
- Rail Infrastructure
Key challenges

- **Internal consistency of narratives, semi-quantitative trends and quantifications** at national and smaller scales
- **Importance of ongoing communication** with stakeholders
- **Meeting the varied requirements of stakeholders** in terms of topics, indicators and outcomes
- **Quantifications for specific indicators** at the appropriate temporal and spatial resolution
How these product could be used

- **Qualitative analysis** of the existing narrative content (e.g. to assess factors related to climate risks, adaptive capacity, barriers/enablers to actions, etc.)
- Use to **stress-test the robustness of climate** (or other policies) under the different futures
- Use as the basis for co-creating **adaptation/mitigation/transformation pathways** to desirable futures or policy goals (e.g. net zero)
- Use as the basis for further **extensions:**
  - For specific regions, e.g. LADs, cities
  - For specific sectors, e.g. health, water
  - For specific time periods, e.g. next 10 or 30 years, or climate or societal extremes/shocks
  - Semi-quantifications/quantification of variables not already covered
- Build on the systems diagrams, e.g. further elaboration, **participatory systems modelling**
- Use alongside **climate modelling frameworks**
PROJECT OUTPUTS CAN BE FOUND HERE:

PRODUCTS OF THE UK-SSPS PROJECT - (UKCLIMATERESILIENCE.ORG)

CONTACT US
ORNELLA DELLACCIO OD@CAMECON.COM