

“Workshop on UK Climate and Socio-economic Scenario Data Products”

29 April 2021 (10am to 12pm)

We would like to invite you to an interactive workshop on climate and socio-economic scenarios for the UK. The online workshop will describe a new set of downscaled and enriched climate and socio-economic scenario datasets and products for the UK, and gather feedback on how these products may be made available to the community to support future research and policy on UK climate risk and resilience.

The workshop is part of the UK-SCAPE (UK Status Change and Projections of the Environment) project being undertaken by the UK Centre for Ecology & Hydrology as part of its NERC-funded National Capability portfolio. One component of UK-SCAPE known as SPEED (**S**patially-explicit **P**rojections of **E**nvironm**E**ntal **D**rivers) is producing projections of key environmental variables for the UK over the 21st century, including climate, socio-economics, land use and pollution. The aim is to produce linked and consistent sets of variables that can be used by the wider community in researching future environmental change. This will ensure consistency among different projects.

The projections are being linked to the most recent set of widely applied scenarios for investigating climate change risk and resilience - the IPCC-community Representative Concentration Pathways (RCPs) and Shared Socio-economic Pathways (SSPs). We have been working to produce downscaled and enriched RCP and SSP datasets and products specifically for the UK. More detail is given overleaf. We want now to share these data and products with the community, discuss how they might be used, and gather feedback on how best to make these data and products available.

The online workshop (via Zoom) will be professionally facilitated and target potential users of these datasets, with a focus on researchers. The workshop aims are:

- to describe what scenario datasets and products have been created and the methods used
- to explain and discuss the basis and potential use of these datasets and products
- to assess how the wider community might want to use the data and products
- to discuss the best approaches to making the RCP climate data available and usable by the community

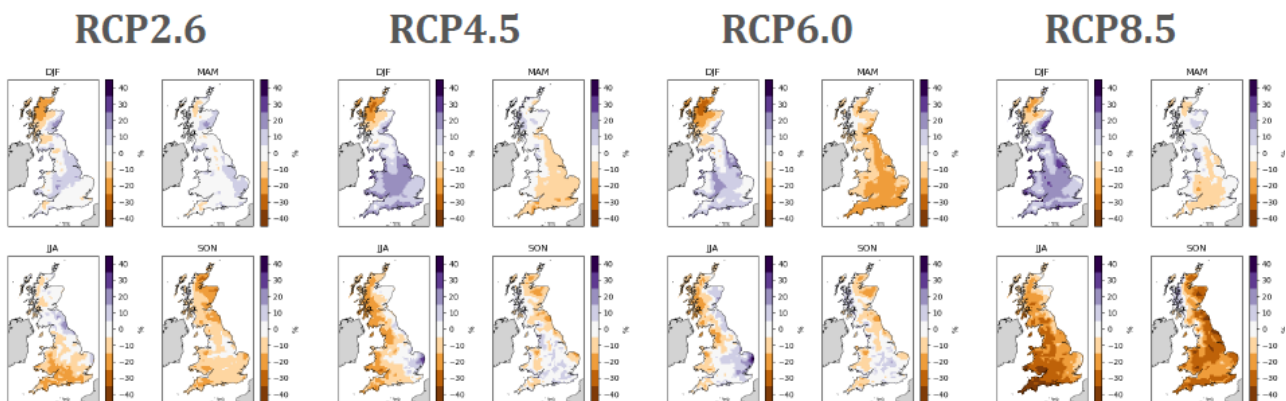
The workshop is ticketed, but free. Bookings end 14th April. Register at

<https://www.eventbrite.co.uk/e/workshop-on-uk-climate-and-socio-economic-scenario-data-products-tickets-144386472827>

Further details on the UK RCP and SSP scenario datasets and products

UK Climate Scenarios based on the Representative Concentration Pathways (UK-RCPs)

In order to provide UK climate change data that have high temporal and spatial resolution, are consistent with historical observations and demonstrate a range of possible climate change scenarios, SPEED has developed the CHES-SCAPE future climate data set. This is derived directly from climate model output provided by UK Climate Projections 2018 (UKCP18), but extends it by: (i) downscaling to 1 km resolution based on physical and empirical relationships; (ii) bias-correcting to the CHES-met observation-based data set; and (iii) developing alternative RCP scenarios, derived from the original RCP8.5 scenario provided by UKCP18. CHES-SCAPE provides several physical climate variables to 2080 at 1 km spatial resolution and time steps ranging from daily to decadal averages. The initial release of CHES-SCAPE is derived from a single member of the UKCP18 12 km RCM ensemble, and a future release will extend this to three more ensemble members.



UK Shared Socioeconomic Pathways (UK-SSPs)

The SSPs describe a set of alternative plausible trajectories of societal development, which are based on hypotheses about which societal elements are the most important determinants of challenges to climate change mitigation and adaptation. SPEED has been working with partners¹ to develop UK versions of the SSPs through a participatory process involving stakeholder workshops, interviews and questionnaires to spatially, temporally and sectorally extend global and European versions of the SSPs.

The UK-SSP products¹ are available to 2100 and comprise: (i) narratives of socio-economic developments for the UK and four UK nations; (ii) system diagrams that visualise the interrelationships between socio-economic drivers within each SSP; (iii) tables of semi-quantitative trends in 50 key socio-economic variables; and (iv) spatially-explicit quantitative projections for key socio-economic variables.

UK-SSP1 Sustainability

Abstract

A shift towards sustainability is triggered by increases in the frequency and magnitude of natural disasters, the vulnerability of many job sectors, and worsening standards of living that are perceived to be connected to environmental degradation. Local green political networks and initiatives for change emerge, leading to strong support for regionalisation. New legislation stimulates green transitions in lifestyles and in the technology, economic and energy sectors. Policies are developed based on clear and well-enforced polluter pays legislation at all levels of production. Society becomes more egalitarian, with all individuals actively contributing to the sustainability agenda. A UK-wide green alliance is established across countries and delivers the policies and technologies that maximise sustainability. Collaboration domestically and internationally plays a key role in the green alliance, ensuring technologies, ideas and projects are shared to gain mutual benefits. By 2100, the UK becomes a fully functional circular economy.

Full narrative

Present to 2040

With a growing occurrence of natural disasters linked to anthropogenic pressures, and related awareness-raising and social media campaigns, public opinion increasingly recognises the importance of the environment and the role of sustainability. This gradually developing sustainability narrative focuses on the association between environmental degradation and threats to jobs and standards of living. Public perception of the importance of the environment for sustaining their own wellbeing grows as multiple media channels offer platforms to disseminate the sustainability narrative. This leads to widespread support for a move towards a sustainable future.

With local political green networks emerging and active promotion of initiatives for change, substantial support for regionalisation arises. This leads to stronger and more autonomous local governments that are able to act rapidly and effectively to meet citizens' demands for a sustainable future, whilst also being held accountable. The wider public becomes actively engaged with this political process and people are empowered to transform their lifestyles. In rural communities, people work together to protect the environment in which they live, perceiving the landscape as part of their cultural heritage. In urban areas, people are motivated to minimise their negative environmental and societal impacts, and become more aware of the impacts of their consumer choices on agricultural practices in rural areas. Society becomes more egalitarian, with the sustainability agenda being pushed forward by the whole of society, not just the privileged few. All individuals are galvanised to monitor their environmental footprint, account for their actions and actively contribute to the sustainability agenda. This results in changes to consumer behaviour that stimulate local shopping, trading and production, supported by taxes and subsidies from local and national governments.

New legislation integrates green development into lifestyle changes and across economic and energy sectors, facilitating a rapid development of green technologies. Policies are developed based on clear and well-enforced polluter pays legislation at all levels of production. For example, fossil fuels become heavily taxed, while greener foods and energy sources are promoted and made more affordable for all. Renewable energy sources are promoted, i.e. wind, solar and bioenergy, and to a lesser extent, tidal energy. Incentives are given for innovation in green energy technology, which is developed with a strong focus on minimising environmental impact.

New legislation withdrawing inheritance tax relief on land ownership by the 2030s leads to land being sold more readily. This, in turn, leads to changes in land use investments, resulting in the breaking up of large

¹The UK-SSPs products have been jointly developed with Cambridge Econometrics, University of Edinburgh and University of Exeter through co-funding from the Met Office as part of the UK Climate Resilience Programme (DN420214 – CR19-3).

