

EOCIS (Earth Observation Climate Information Service)

Funded by the Earth Observation Investment Package



World-class EO research collaboration promoting exploitation of climate information in science and business

Snapshot

EOCIS is a world-class EO research collaboration promoting exploitation of climate information in science, decision-making and business.

The unique UK provision of trustworthy climate data that EOCIS generates can be translated into positive climate action, meeting UK business and government needs.

The challenge

EOCIS addresses UK calls for actionable, high-quality and trustworthy climate information to inform responses to climate change in science, decision-making and business. Demand for such climate intelligence is growing in the UK finance sector, with London being the premier financial centre for commitments to environmental improvements and climate finance.

EOCIS brings together world-class academic and research institute expertise in Earth Observation for climate information, facilitated by powerful UK digital infrastructure.

New and improved global and UK-focussed climate information is created, curated, disseminated, and exploited widely to better understand climate and inform climate action that make the UK more climate-resilient through avoided costs, disruption and health impacts.

Consequences

EOCIS sustains world-class capability in global climate information (eight climate datasets) previously involved in Copernicus services, and ongoing scientific advances of these capabilities.

EOCIS enables new developments of UK-focused climate information to address specific national priorities, including resilience capability (e.g., rapid wildfire detection) and climate impacts (e.g., temperature and water quality). Without EOCIS, the UK would not have its own sources of space-based climate information, nor be developing more detailed, actionable national capability.

EOIP funding also protected 25 expert posts in EO, which may have disappeared through loss of Copernicus service contracts. Such highly specialist capability is resource-intensive to recreate once lost. By protecting such skills in its space sector, the UK is able to deliver standalone, world-leading science programmes framed around national priorities.

'EOCIS is providing a new picture of how the UK is changing and how this information can inform and protect us in domains from health to finance. A resilient UK will be able to make improved decisions based on modern, high-quality EOCIS data streams both at home and abroad.'
– Professor John Remedios, NCEO-University of Leicester and EOCIS Investment Lead

How the project has been delivered

EOCIS is a project underpinned by the UK's National Centre for Earth Observation (NCEO), pulling together UK expertise from 11 universities and four research centres, supported by the government-business-academic network Space4Climate. NCEO's additional university and laboratory partners in the project are the National Physical Laboratory, the Centre for Polar Observations and Modelling, and the Universities of Southampton and Bangor.

EOCIS also engages partners external to the core collaboration in projects to develop new forms of climate information (climate data placed in a context) that support decision-making and climate actions.

Implementation partners, including businesses, the voluntary sector and government agencies, are funded to work with EOCIS on these projects, of which four have been commissioned so far (with an expectation of eight by the end of EOCIS's current funding).

Regular interaction at leadership and working level between EOCIS and the EO Data Hub project (an EOIP digital infrastructure investment) will enable the climate information created by EOCIS to be made available via the advanced platform the latter will create. The platform will enable the rich EOCIS datasets to be more easily interrogated for information, for science, decision-making and business.

Case study: Food supply-chain resilience in Africa

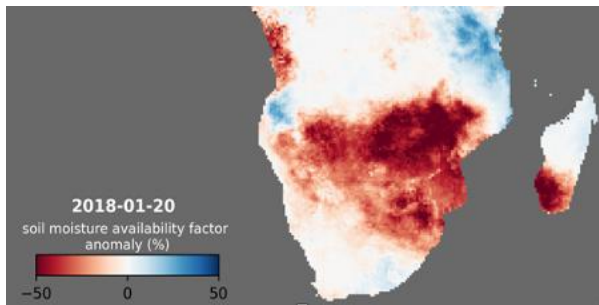


Figure: Example day for Southern Africa

Under EOCIS funding, NCEO-University of Reading and Risk Shield Consultants Ltd are piloting the use of information from a novel merging of established EO studies of precipitation across Africa with computer simulations of the landscape. By enabling a continent-wide picture of the water available in the soil to the roots of plants, smallholder farmers can via automated (index-based) insurance payouts for unfavourable growing seasons, stabilising their livelihoods through risk-sharing in this way, and enhancing investment in and resilience of food production.

A brighter future

EOCIS will facilitate new capabilities in government agencies, better geospatial information in public data offerings, and more accessible UK climate data for local authorities and people

Through the sustained provision of reliable climate information, EOCIS will also lead to better informed and trained UK commercial companies poised for growth, such as technology solution suppliers developing new climate service products.

Interim outputs as of March 2024

- Contracts worth £3.6 million won by UK entities linked to the project
- 135 jobs supported by the project
- Four contracts engaging external non-academic partners in exploiting EOCIS climate information, including first provision of high-resolution UK datasets to UK Health Security Agency
- Sustained availability of eight streams of global climate data
- UK urban heat datasets shared with Association of Science and Discovery Centres for their outreach project, Our World from Space
- Two new climate datasets produced (aerosol and Africa water availability)
- Presentation in scientific and other forums including COP28
- Many scientific publications in progress (these have significant lead times)

'EOCIS enables experts to focus on novel climate information with a UK focus, while maintaining global datasets as a UK contribution to international efforts on climate change.'
 – Professor Chris Merchant, NCEO-University of Reading and EOCIS Science Lead

How EOIP helped

Funding has enabled continuity of 'ex-Copernicus' capability and expertise. In turn, the project has become a national focus on new UK capabilities for climate information building on that expertise (which is not supportable within the Copernicus framework).

The ability to work closely with the digital infrastructure developments in the EO Data Hub project enables a step-change in the ambition to disseminate climate information effectively beyond the science community.

Joint exploitation projects involving the public sector (e.g., UK Health and Security Agency), and several commercial and charitable organisations are underway, with more to come.