OUR RATIONALE

Since its official launch in April 2013, the Environment and Sustainability Institute (ESI) has grown significantly in scale and impact. Up to 30 academics and their research groups focus on understanding the role of ecosystems, energy and engagement in the transition to sustainable futures. Initially funded by the European Regional Development Fund Convergence Programme and the South West Regional Development Agency, with significant support from the Higher Education Funding Council for England, the ESI provides "an inspirational driving force for innovation and economic growth in Cornwall and the Isles of Scilly."[i] Working in partnership with knowledge-oriented businesses and organisations in the region, the ESI has led internationally-recognised research to find out how to work with natural systems to create sustainable futures. Flagship examples of this activity include Cornwall Council's *Environmental Growth Strategy (now Nature Recovery Strategy)*, the *Tevi* project which develops new models for sustainable business and *Making Space for Nature* which increases biodiversity in public spaces. The ESI has also had an important transformational impact on the wider university, advocating for the development of a more sustainable university campus.[ii]

After almost a decade, the ESI's mission is more important than ever. Given the impacts of COVID-19 as well as the pressing challenges of climate change and biodiversity loss, there is an urgent need to rethink and remake established models of socio-political-economy to become more sustainable. Our knowledge of socio-ecological systems and sustainable energy production can be used to engage people in transformative change to work with natural systems for sustainable futures.

The ESI team conduct internationally-recognised blue-skies and applied research at the frontiers of knowledge about socio-ecological systems and technological developments, as well as inter-disciplinary problem-oriented research that is driven by a quest for solutions. Although there are many overlaps between the academics leading this work, there are three main foci for activity:

(i) **Ecosystems:** Researchers are exploring fundamental questions about the relationships between humans, other organisms and their changing environments. This involves research into evolution and environmental interactions in marine and terrestrial ecosystems above and below ground as well as exploring the bio-chemical impact of these relationships for sustaining life on earth.

(ii) **Energy:** Engineers and scientists are developing renewable energy technologies with a particular focus on solar energy, and the integration of renewable energy generation technologies in the built environment and future landscapes. They are also developing new tools to discover, extract and manage the resources embedded in products and services, proposing more sustainable methods of production and consumption.

(iii) **Engagement:** Researchers are developing new citizen-science applications; working with partners to embed ecological and adaptive thinking in organisational practices; exploring ways of valuing natural capital in public policy and landscape management; and supporting participation in the transition to sustainable systems of resource use and governance.

OUR ACTIVITY

(i) **Conducting internationally-recognised, high-impact research** in an environment that nurtures innovation by breaking-down traditional disciplinary boundaries. We work locally, but our research also makes a difference globally. We attract researchers from around the world and are continually seeking new ways to work with partners to tackle the biggest problems facing the planet. We aim to maximise and increase our space in order to host more of this activity in future. A key focus remains on securing large, inter-disciplinary grants to pursue our research and its impact. To foster further innovation in research and impact we hold monthly **'state of the art'** talks with associated communications activity, and support a successful series of '**think tanks**'.

(ii) **Generating research questions and finding solutions by working in partnership** with key institutions and organisations in Cornwall, Isles of Scilly and the wider region. Through collaboration, co-production and experiment with our partners, we want the region to be show-case sustainable alternatives in land use, marine management, economic practices, energy generation and socio-political organisation. We work closely with the University's Innovation, Impact and Business (IIB) team and can use the lagas platform to visualise some of this activity and its impact. Our goal is also to identify new commercial opportunities via ongoing entrepreneurial support initiatives.

(iii) **Training the next generation of researchers** through contributing to a range of undergraduate programmes and leading MSc degrees in Sustainable Development; Marine and Coastal Sustainability; Renewable Energy Engineering; Applied Data Science (with four pathways including Environment and Sustainability); Mining Environmental Management; and Pathogen Evolution. Providing a home for outstanding **PhD students** and early career researchers (ECRs) to pursue cutting edge interdisciplinary research and launch their careers. We have an active self-organised **ECR network** that holds regular meetings to share research challenges and best practice.

(iv) **Exchanging ideas via new media** through the successful Creative Exchange programme that links researchers and artists to create new work in collaboration with local partners and the University Arts and Culture programme, aiding the development of transdisciplinary research and impact techniques.

(v) **Demonstrating leadership** and supporting ongoing activity to ensure that Exeter becomes a more sustainable university.

The ESI provides important infrastructure to underpin this activity, including:

Research support: convening inter-disciplinary networks and teams to share and generate ideas, facilitate funding applications and support new awards (the organisers of new university-wide research networks in Microbes and Society @ Exeter and Exeter Biodiversity and People are based in the ESI, and staff are also active in those focused on research in Exeter Food and Exeter Marine).

Facilities: including laboratories, research equipment, meeting spaces and technical support.

Operations: including administration, logistics, reception and events.

Communications: widening the impact of research activity and findings via the website, newsletter, Facebook, Twitter and Instagram accounts.

Hospitality and social space: in the ground floor café.

If you have any thoughts about how to augment this work and/or do it more effectively, please tell us.

Updated: May 2022

[i] Taken from the University's application to the ERDF submitted in 2009. This application declared an ambition to conduct: "innovative interdisciplinary research of the highest quality into the causes and consequences of environmental change and how to manage its effects" with a focus on three themes: "clean technology, natural environment and socio-economy."

[ii] For the University's climate emergency plan and policy see: https://www.exeter.ac.uk/sustainability/newsandevents/climate/