

## KNOWLEDGE EXCHANGE AND ENTERPRISE (KEE) FUND

The WSI Knowledge Exchange Fund supports interdisciplinary socio-technical projects in the areas of web science, data science and/or human-centred AI. These projects are collaborations with business, industry, local government, public sector or charitable organisations, community bodies, and the wider public.

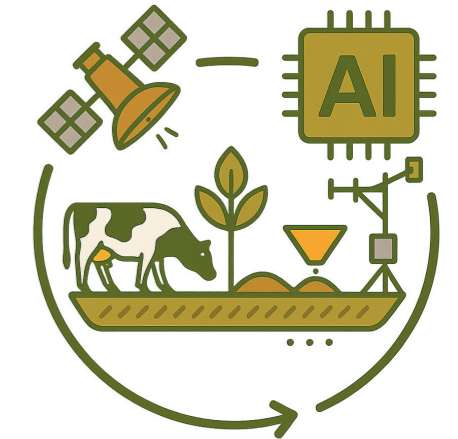
### USING AI TO SUSTAINABLY MANAGE UK GRASSLANDS

**This project will help translate cutting-edge research into practical tools that can support sustainable UK grassland management in the face of climate change, ultimately enhancing food security and ecosystem resilience across the UK.**

Grasslands cover approximately 40 per cent of the UK's land area and are essential for food production, carbon sequestration, and maintaining ecosystem health. However, increasing climate extremes are straining grassland systems, impacting feed availability, livestock productivity, and carbon storage.

Despite the critical role of grasslands, management practices remain insufficiently informed by the latest data and modelling tools, limiting the ability to adapt to climate stress. The Unified FLUXes (UFLUX) framework, a hybrid model combining process-informed AI with ecological models, has been globally validated for assessing the resilience of land ecosystems under climate change but it is not yet widely available or implemented for practical land management decisions.

Led by Dr Songyan Zhu, a Lecturer of Geospatial Data Science, this project aims



to translate the established UFLUX research into a user-friendly tool with game theory that provides actionable insights to grassland managers across the UK.

Academics from Geography and Environmental Science, Electronics and Computer Science and GeoData, will work with end-users including the Centre for Ecology and Hydrology and Rothamsted Research to incorporate their needs, such as grazing intensity and fertiliser applications, into the framework.

### CREATING A VISION OF AN AI CITY OF EXCELLENCE

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Led by the University of Southampton, the project draws together academics from across the University with an established network of Civic AI partners, including the Future Towns Innovation Hub, local authorities, businesses and residents of Southampton.

The project will develop a bottom-up vision of an AI City using participatory design (PD) methods. Currently there is no single guiding idea for what an AI city might, or should be.

Dr Richard Gomer, Lecturer in Computer Science, said: "To be truly excellent, we need to embed AI technology responsibly into the fabric of the city in a way that enriches people and place, and perhaps challenges some of the top-down visions being offered to us.

"Doing so demands attention to the wide range of experiences and aspirations that the people of Southampton have, and the different roles that they play in the life of the city. The opportunities for businesses, charities, communities, and individuals, need to be explored and understood; and then formed into a cohesive vision that can be pursued collectively."

The team will host a series of workshops with diverse stakeholders to answer the question



'What is an AI city and what should it be like to live in one?'

The findings will be used to form an outline vision that can be used as a catalyst for more detailed discussions with key partners including local authorities at local and regional level.

### ENHANCING MIGRANT WOMEN'S ACCESS TO INFORMATION THROUGH GENERATIVE AI AND CULTURAL EXCHANGE

**This interdisciplinary project will support migrant women to use generative AI (GenAI) tools to enhance their access to essential health and daily life information resources.**

The project is led by Dr Chiying Lam, a Lecturer in Community Music and Social Justice, and Dr Tan Viet Tuyen Nguyen, a Lecturer in AI. The project will integrate a Multimodal Large Language Model with Retrieval-Augmented Generation (RAG) to deliver real-time, context-specific information through multimodal channels such as texts, images and music.

University students will then engage with migrant women to understand how their cultural knowledge and lived experiences can

be effectively incorporated into the training and refinement of these AI models.

In collaboration with Nagina Kaleem, founder of the Cross-Culture Hub - a social enterprise dedicated to empowering and integrating immigrants into society - the project team will support participants in developing the skills needed to effectively use GenAI tools to access health, education, and civic resources.

Chiying said: "Music helps build community trust across generations and cultures, creating a shared foundation. This trust is essential when exploring the use of GenAI, as it ensures that any technology introduced is meaningful, inclusive, and shaped by the people who use it."

