

Resilient Food Systems for One Health: informing nutritionally balanced diets of the future

Supervisory team:

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Project description:

Motivated by the Eatwell Guide, a policy communication tool developed by Public Health England and designed to provide recommendations for a healthy, balanced diet, this project aims to explore the interactions within the food system associated with different diet choices, and to assess the sustainability of the UK food system to deliver a range of nutritionally-balanced diets.

Taking a data science approach, involving statistical analysis, mathematical modelling and life cycle assessment/economics, the project will explore:

- How different diets (both current and future) lead to different forms of malnutrition, both deficiencies and excesses
- How current diets differ from the Eatwell Guide but could be modified to meet these recommendations
- The micro-nutrient composition provided by the components of different diets
- How different food production systems (e.g. arable/livestock, intensive/organic) impact on the provision of micro-nutrients

Combining data on the impact of food production systems on the update of micro-nutrients, on the sustainability of different cropping systems, on population-wide variation in diets and food intakes, and on health outcomes and socio-economic patterns, the project will use modelling approaches to identify the key interactions between the health of food production systems and the health of the human population, as influenced by diet choice.

The project will assess how different diets are influenced by and impact on the four pillars of Health, Environment, Economics and Culture, and how changes to achieve any identified optimal diets might impact on the sustainability of food systems and the food supply chain, particularly considering how quickly food systems could adapt to sudden changes in demand.

The project will consider the consequences and costs associated with changes in diet, in terms of both the primary production of food components, and the delivery of those components to the UK population. This project is timely given the current development of a National Food Strategy, led by Henry Dimbleby, and the need identified by the government, in response to the Covid-19 pandemic and the departure of the UK from the EU, to build a robust food system for the future, balancing health and nutrition with sustainable and environmentally responsible food production.

