



MAPPING THE UK FOOD SYSTEM

A Report for the UKRI Transforming UK Food Systems Programme

Saher Hasnain, John Ingram and Monika Zurek

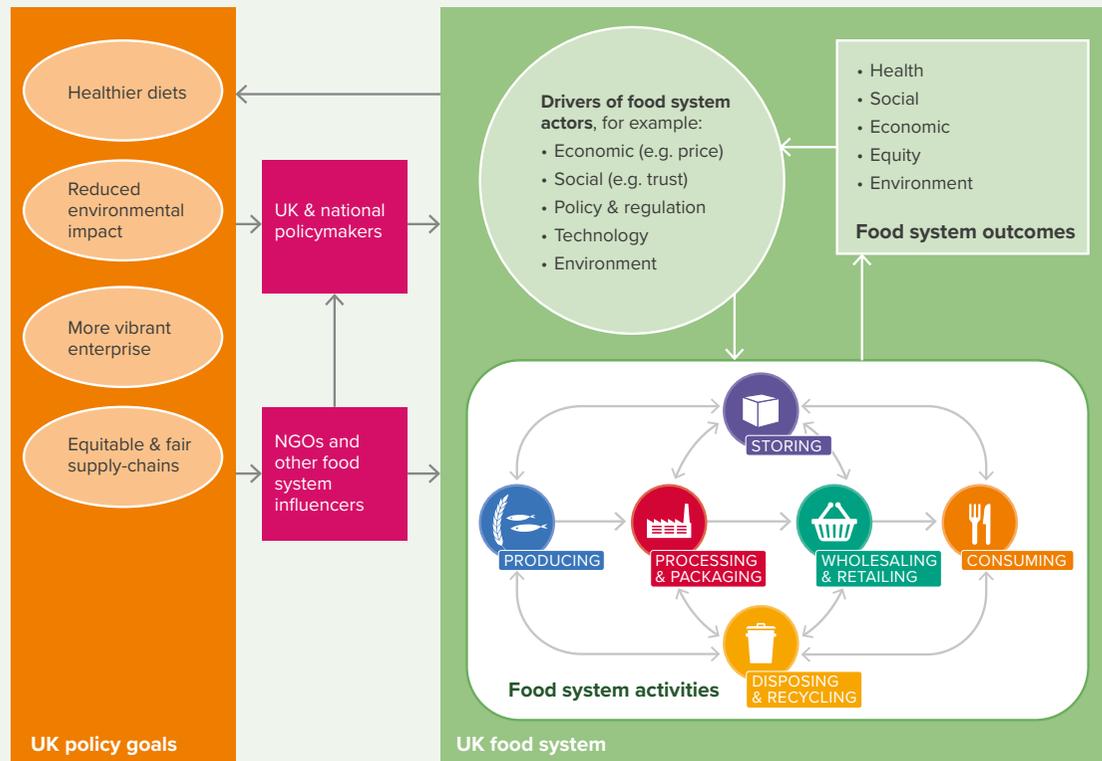
This report quantifies the distribution of economic value, the number of enterprises, and levels of employment across the UK food system. It has ‘mapped’ UK food system activities as described by their economic value, employee and enterprise numbers. This provides a first assessment of the overall shape of the UK food system and a foundation to build on for further analyses.

The UK food system is complex. It includes a wide range of food system ‘activities’ (e.g. producing, processing, retailing, consuming, and disposing) undertaken by a wide range of ‘actors’ operating across multiple levels on spatial, temporal, and jurisdictional scales. These actors are influenced by many different socioeconomic and biophysical ‘drivers’ which shape the behaviour and future direction of the food system.



Figure 1: Conceptual framework for the UK food system. Adapted from the SUSFANS project.

The food system activities and their actors are supported by a diverse range of facilities (e.g. transport and market infrastructure, financial services, trade, logistics and IT systems), and are governed by regulations, policies, laws, certifications, and norms across multiple sectors. The activities of these actors result in a wide range of ‘outcomes’ affecting food security and nutrition, other aspects of economic and social well-being, and environmental sustainability. **Figure 1** gives a conceptual framework for the UK food system.



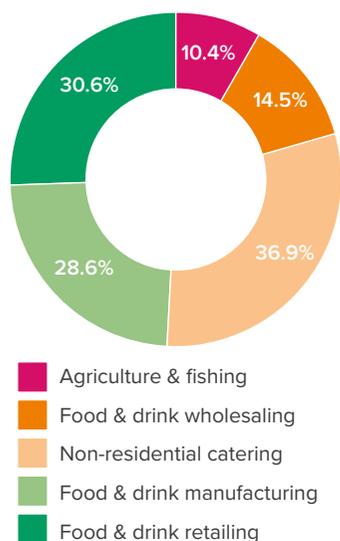
The ‘food systems’ approach is frequently used in analyses and planning of agri-food development. Taking a food systems approach allows for exploring multiple perspectives, addressing differing objectives, analysing trade-offs of transformations, and for dealing with complexity. It helps to identify the motives of different food system actors and the range of policy, market, social, technological, and biophysical environmental drivers that influence their activities. It functions as a necessary foundation for this report as the approach also allows food-chain activities to be identified and linked to their social, economic, and environmental contexts.

Report highlights

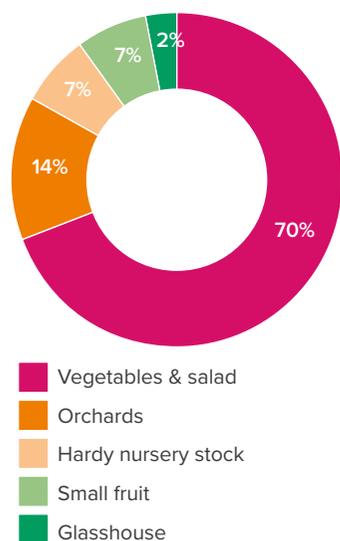
The UK agri-food sector is a major driver of economic growth. Overall, in 2018 it contributed £121 billion or 9.4% to national Gross Value Added (GVA) and the wider system employed 4.3 million people. Food and drink accounts for 20% of the total manufacturing sector by turnover and employs over 430,000 people in the UK. Of these, 46,000 were employed and £4.04 billion of value added in Scotland; 23,750 were employed and exports worth £0.54 billion in Wales; and 20,776 were employed and £1.55 billion in value added in Northern Ireland.

Although there are enormous economic benefits from the UK food system, it faces multiple challenges. Diets too rich in fat, sugar, and meat and too low in fruit and vegetables are contributing to obesity and related health problems, especially in deprived households. Unsustainable production methods are driving biodiversity loss, soil degradation, pollution, water scarcity and climate change in both the UK and overseas. Poor working conditions persist, especially for low-skilled labour in the food sector. Meanwhile, stresses and shocks including climate change, COVID-19, and EU-exit highlight the need for greater resilience. It is clear that transformational change is needed, but this must balance with complex trade-offs and competing needs and interests across the food system.

Gross value added of the agri-food sector, 2018.



Breakdown of total horticultural area, June 2019.



Some of the major findings in this report include:

- Concentration in the UK economy has increased with time. There are ten large food retailers. Together, the top five food manufacturers have a £30 billion turnover. There are two main UK big players in contract catering while US multinationals dominate fast food alongside SMEs.
- While the food sector is the biggest employer in the UK, 30% of food manufacturing employees are from the EU (63% of which are in meat processing plants). Other sectors in food employment have low wages, and there is an increasing issue of a lack of appropriate workplace skills.
- The UK has the third highest volume sales of ultra-processed foods per capita out of 80 high- and middle-income countries, and the most processed diet of countries in Europe. This contributes to the 63% of UK adults being obese or overweight.
- Land use is dominated by animal and cereal production (e.g. 52% of croppable area in the UK is covered with cereals).
- The UK heavily relies on external food sources, particularly the EU. 53% of food consumed in the UK in 2018 was produced domestically, followed by 23% sourced from the EU. There are financial deficits in all food categories, except for drink (due to whisky exports). The UK is importing food that can be grown here, albeit often dictated by seasonality.

Despite extensive searching, it is clear that data gaps exist in a number of important areas:

- The proportion of food-related employment, enterprises, and turnover in supporting activities such as freight, logistics, storage, packaging, and trade.
- The proportion of food-related packaging.
- Enterprise breakdown in food retailing, catering, and wholesaling.

It is also important to note four major caveats of the report:

1. Much of the available data is aggregated so disaggregating it to display in discrete food system activities is not always possible.

2. For the purposes of this report, differences between the UK (England, Scotland, Wales, and Northern Ireland) and Britain (England, Scotland, and Wales) matter because of the data sources. Not all data sets include all countries, and this has been made apparent where relevant.
3. Whenever possible, the data has been taken from the most recent available source. This has resulted in a data spread from 2012–2020. The source year has been made apparent.
4. The complexity of the food system can be observed in the data where disaggregating food-focused activities, employers, and enterprises is challenging, particularly for activities in import and export, logistics, and other key supporting services. This has been noted where relevant.
5. Data sets relate to different activities and actors within the food system including the ‘food sector’, ‘agri-food sector’, ‘food and drink sector’ and ‘food and drink manufacturing sector’ as well as the broader ‘food system’ itself.

Despite these caveats, the report does indicate important future research challenges:

1. An extended analysis of the structure of the UK food system by a deeper examination of the connections and interactions between the different food system activities. This would describe, for example, material and information flows, to identify potential vulnerabilities of the food system.
2. An analysis of how the identified driving forces are impacting on specific food system actor groups and what this means for the functioning and the outcomes of the food system.
3. An analysis of which actors are more influential than others to determine who is shaping actor behaviour across the system; the role of concentration in particular food system actor groups and whether and how this impacts power relationships in the UK food system.

This report should be studied hand-in-hand with the interactive web-based product at: www.foodsecurity.ac.uk/uk-food-mapping

This visually demonstrates the main information and underlying data.

Acknowledgements

Saher Hasnain, John Ingram and Monika Zurek
Food Systems Transformation Group | Environmental Change Institute

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Get in touch

Dr John Ingram, Food Systems Transformation Group Lead
Email: john.ingram@eci.ox.ac.uk

Reference

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About

The Food Systems Transformation Group is based in the Environmental Change Institute, University of Oxford. Taking an integrated food systems approach and using innovative methods and tools, the Group helps a wide range of stakeholders develop and implement enhanced food system policy and practice. Research is aimed at delivering outcomes that are better balanced across food security, livelihoods and enterprise, and environmental goals.

The collaborative projects and initiatives that the Food Systems Transformation Group undertakes aim to:

- Shape the future of food
- Create food systems thinkers
- Build food systems resilience

UKRI Transforming UK Food Systems Programme

The £47.5M UKRI programme on 'Transforming the UK Food System for Healthy People and a Healthy Environment' is led by the Global Food Security Programme, in partnership with BBSRC, ESRC, MRC, NERC, Defra, DHSC, PHE, Innovate UK and FSA. It aims to fundamentally transform the UK food system by placing healthy people and a healthy natural environment at its centre, addressing questions around what we should eat, produce and manufacture and what we should import, taking into account the complex interactions between health, environment and socioeconomic factors. By co-designing research and training across disciplines and stakeholders, and joining up healthy and accessible consumption with sustainable food production and supply, this programme will deliver coherent evidence to enable concerted action from policy, business and civil society.



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