



**Centre for
Food Policy**
Shaping an effective food system

An introduction to the (industrial) food system

Making Sense of UPFs
Public Dialogues
April to May 2025

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Food
Standards
Agency



UK Research
and Innovation



Who am I?

Reader at the Centre for Food Policy.

- Focus on sustainable food systems and food waste.
- Supporting the FSA/Defra through research projects. Scottish food systems research (ZWScotland). Household Simulation modelling (WRAP). Local food strategy development.
- Nutrition Society Food Systems theme lead. IFST Sustainability working group.
- Research funding from UKRI, NIHR, Wellcome trust, and Alpro foundation.
- Received payments through City St Georges, University of London for consulting work with WRAP (a UK NGO), Zero Waste Scotland, DEFRA, and the FSA (UK government departments).
- Expert interviews or advisory groups on a pro bono basis with several organizations, including Collider Lab, YUM Brands (2020), Fwd (2020), Greener Beans (2020), QUT Digital Media Research Centre (2020), Haier Israel Innovation Center, Ltd. (2021), and the Almond Board of California via Porter Novelli (2022).
- Conducted pro bono grant reviews for the Fruit Juice Science Centre in 2023 and received a speaker's stipend from The Folger Institute in 2020.
- Chaired panels and presented at various organizations on a pro bono basis, including the British Nutrition Foundation (2023), Nutrilicious (2022/23), MyNutriWeb (2022/2023/2024), the Nutrition Society (2022/2023/2024/2025 - registration and travel expenses covered by the Nutrition Society), and Aprifel (2018/2023, in 2023, his registration and travel expenses were covered by Aprifel).
- Secured competitive research funding from the Alpro Foundation in 2020, amounting to €49,858.



The food system: actors involved, activities and processes within the system, connections between them...

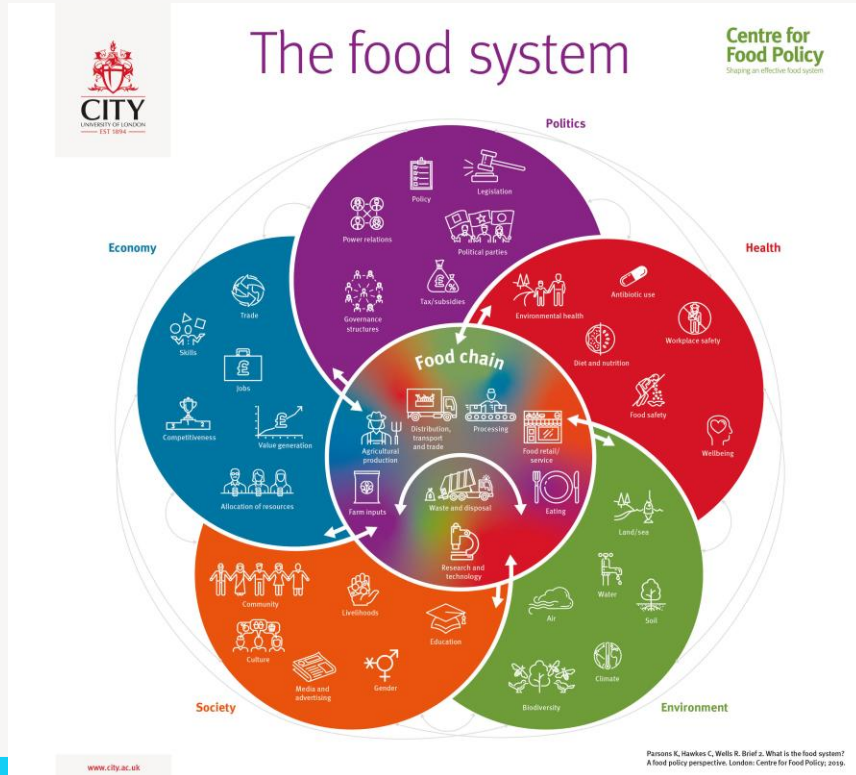


Challenges of the UK food system

- The UK grows 62% of its food. The EU is our biggest trading partner.
- **Climate change**, and extreme weather events continue to have a significant effect on UK and global production.
- Most people do not meet government dietary recommendations (5-a day)
- 64% of adults in the UK were either overweight or **obese** in 2022.
- 10% of UK households are **food insecure** (vary greatly by demographics)
- Rising food prices: Food and non-alcoholic beverages **inflation** peaked in March 2023 at 19.2%!
- Levels of **trust** in Food Standards Agency (FSA) and Food Standards Scotland (FSS) have remained relatively high.
- Food waste: 1 in 5 bags of shopping are **wasted**! (10 million tonnes!)



All of these challenges are part of “the food system”



- The food system =
- the interconnected system of everything and everybody that influences, and is influenced by, the activities involved in bringing food from farm to fork and beyond

■ *(Parsons, Hawkes and Wells, 2019)*

Food systems include:

- The chain of activities from producer to consumer;
- The factors that influence the chain of activities and are influenced by it; these are drivers and outcomes of the food chain, which have economic, political, environmental, health and social dimensions;
- The many entities, institutions and people directly and indirectly involved;
- The connections between all these elements, meaning that action in one part of the system has repercussions across the system.

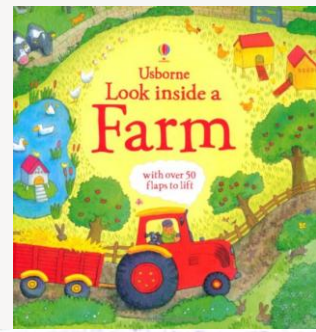


The food system

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We now have an industrialized food system



- Food is seen as a commodity like cars, made in a factory, traded, profited from, turned into other things, becomes an ingredient.
- Efficiency (time pressure), stability, and profit as drivers, since ~1850s



SS Dunedin brings first consignment of frozen meat from New Zealand to London in 1882



Modern reefer refrigeration ships

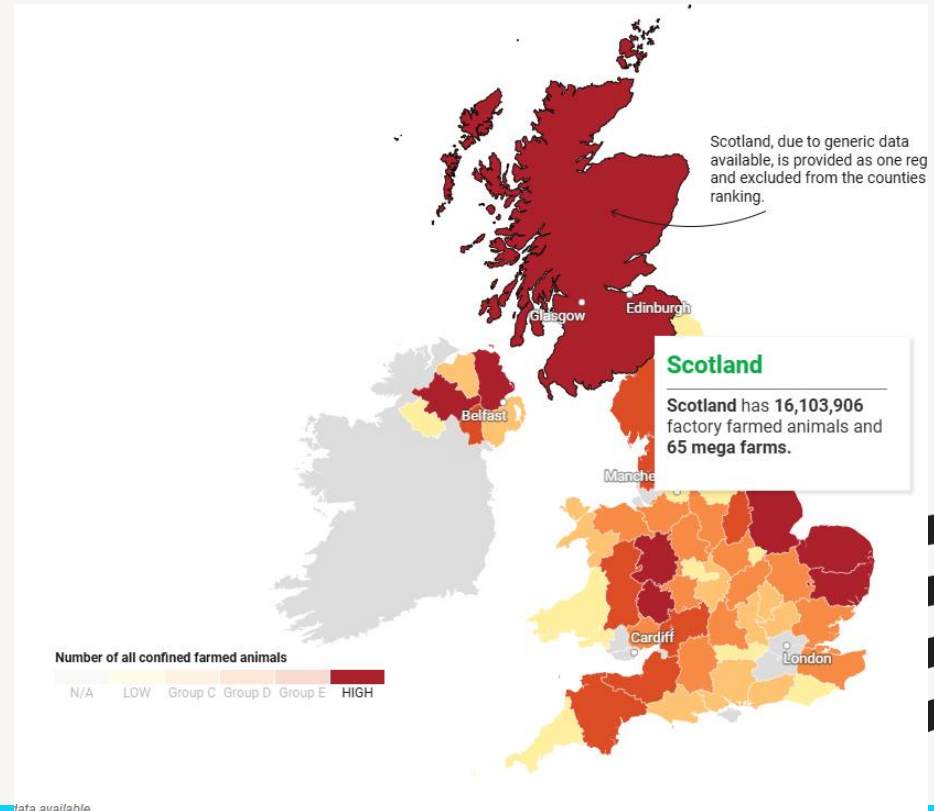


Animals (and crops) are produced at a massive scales

- *Over a billion farm animals are reared every year in the UK, as well as many millions of fish.*

This scale means:

- Grain-feed (not waste)
- Indoor and/or controlled environment
- New breeds + Artificial Insemination
- Animal welfare legislation
- Breeders / [corporations control farmers](https://www.civf.org.uk/our-campaigns/factory-farming-map/)



An industrialised food system also means ...

- New products
 - *Margarine to replace Butter (1869)*
- Processing, (First stage through to Ultra processing)
 - *flour milling, sugar refining, edible vegetable oils;*
- Creation of secondary products,
 - *animal feed; powdered milk etc.*
- Application of 'new' technology:
 - *eg canning (Nicolas Appert in 1809) -> refrigeration;*
 - *Alternative protein and 'cultured' meats (2010s)*
- Ingredients suppliers to food manufacturers;
 - *preservatives, flavourings, fortifications, colorants, emulsifiers, texturisers*
- Farm and Retailer logistics and big data
 - *Satellite tracking; consumer monitoring; informatics*

Our Process Efficiencies

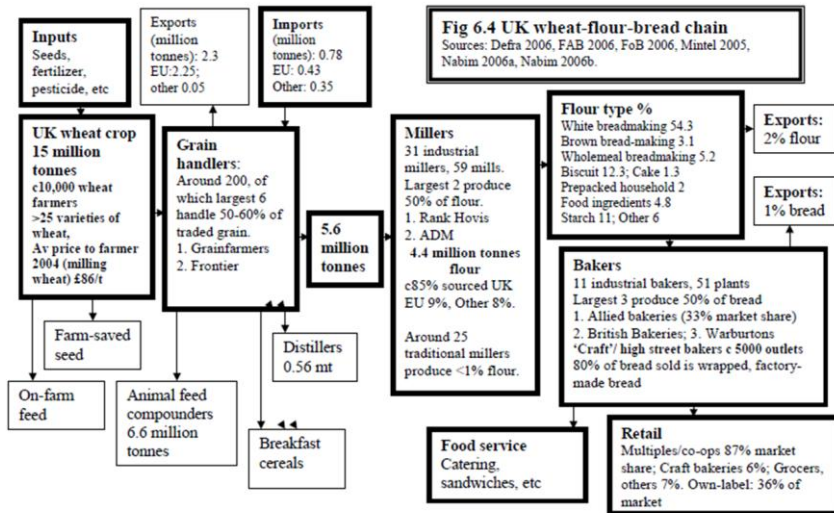
We develop and sell a diverse range of sustainable products. From sugar to electricity and tomatoes to animal feed, each product we market responds to customer needs, whilst making a contribution to our efficient use of raw materials. This process map demonstrates the way our Wissington factory operates.

"Increasing our operational agility enables us to explore and develop new product streams..."



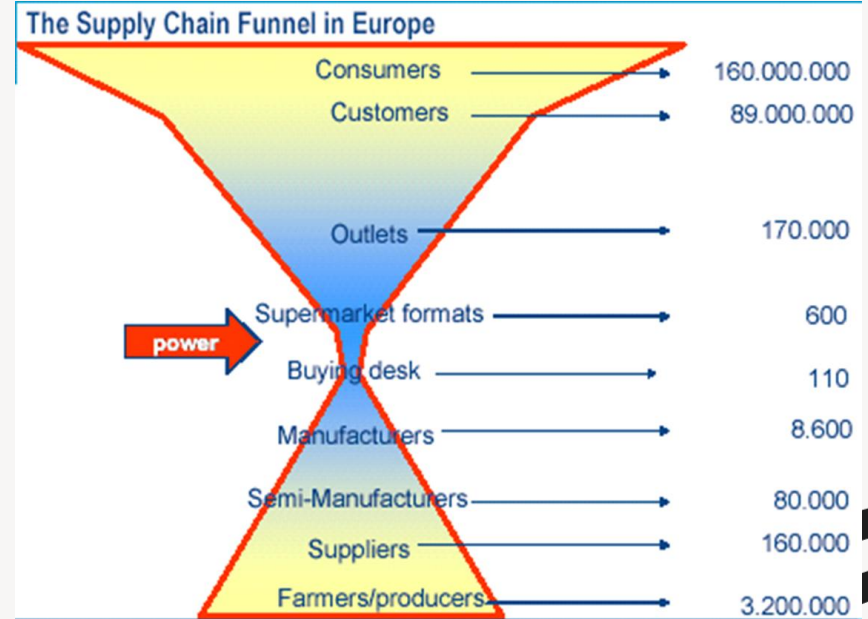
Transforming sugar beet into a wide range of sustainable products...

So many actors in the industrial food system



The complexity of ‘simple’ bread chain

Source: Sharpe, Barling & Lang in Coff et al (2006), *Ethical Traceability and Communicating Food*. New York: Springer. chapter 6



Whoever controls bottlenecks has power: Supermarket buyer concentration in EU Food Supply in the early 2000s (Source: Grievink (2003))

Who makes Food Policy in England?

- The UK has National, Devolved, and Local/Municipal governments all with different policy responsibilities.
- Each with many departments working on "food"



Recap

- We are living in an industrial food system
- There are many layers of businesses and government between the consumer and the farmer.
- Keep it simple if you like:

