RESILIENCE OF THE UK FOOD SYSTEM IN A GLOBAL CONTEXT

A Global Food Security Programme

GFS-FSR/OECD-CRP Conference Part 2 (April 2022)

WELCOME!

Global Food Security

Programme Activity: Resilience of the UK's Food System

RESILIENCE OF THE UK FOOD SYSTEM IN A GLOBAL CONTEXT

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SHAPING POLICY AND PRACTICE

TOTAL FUNDING
£14.5 million

LAUNCHED
2016

FUNDED BY
BBSRC, ESRC, NERC and Scottish Government

13
COLLABORATIVE PROJECTS

THREE OVERALL THEMES

PRODUCTION SUPPLY CHAINS CONSUMPTION

DURATION
5 YEARS

RESILIENCE OF THE UK FOOD SYSTEM IN A GLOBAL CONTEXT

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GFS-FSR/OECD-CRP Conference Part 1 (December 2021)

Summary and Main Messages

Global Food Security

Programme Activity: Resilience of the UK's Food System

Defining Resilience
4 Questions

Resilience…

1. Of what?

2. To what?

3. From who's perspective?

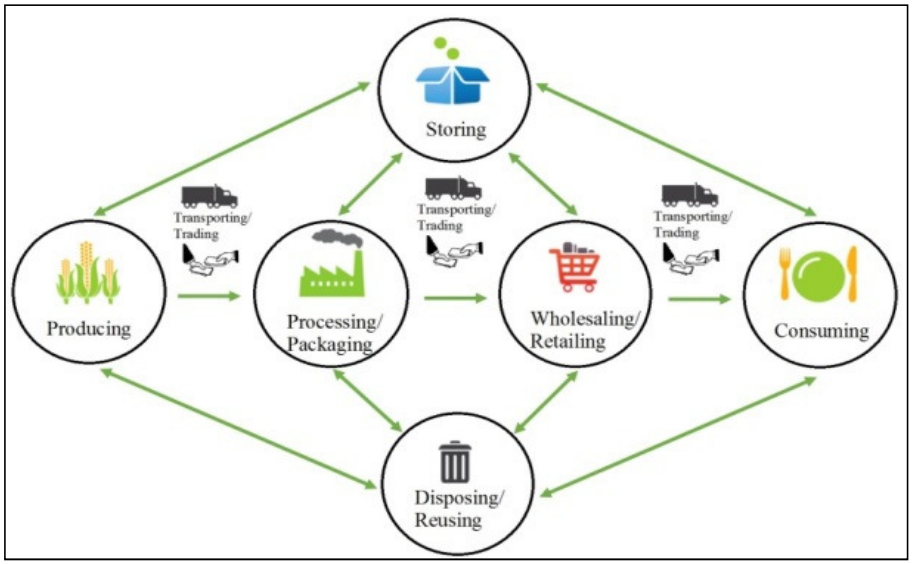
4. Over what time period?

=> Clear 'boundary' of the issue at hand

Adapted from: Helfgott, European Journal of Operational Research, 2017

1. Of what?

Food System
Functioning
(Activities)



OR

Food
System
Function
(Outcomes)

Food System OUTCOMES

Social Welfare
- Health
- Employment
- Health
- Social capital
- Political capital
- Ethics
- …

Food Security
- Food Utilisation
- Food Access
- Food Availability

Environment
- Climate change
- Water availability
- Water quality
- Biodiversity
- Biogeochemistry
- Soil degradation
- …

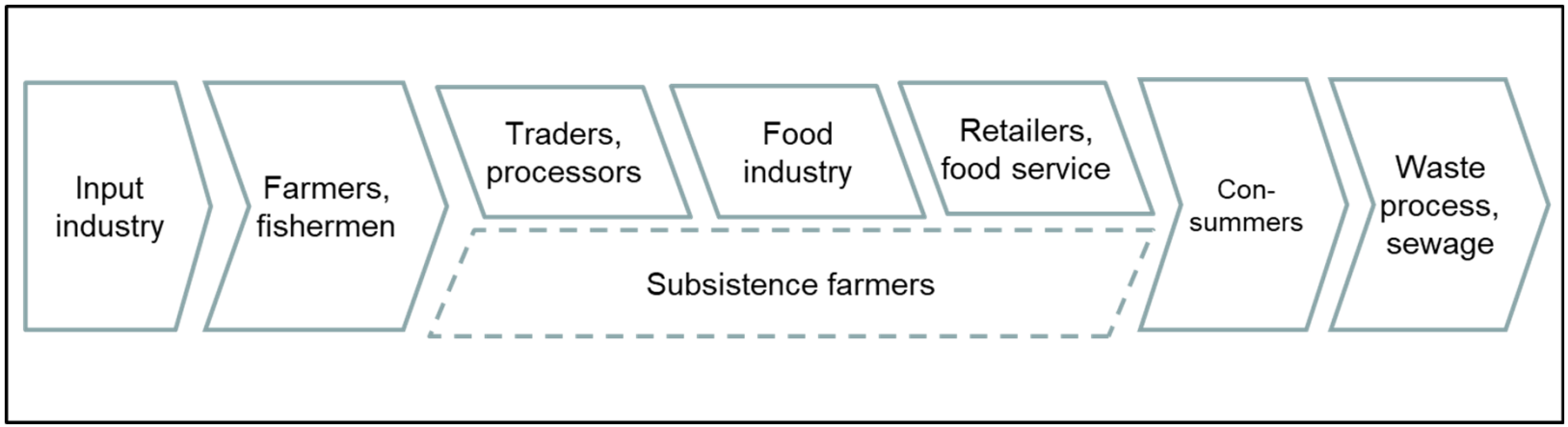
Adapted from: Ingram, Food Security, 2011

2. To what?
Food System Stresses and Shocks

Stress ***pressure or tension exerted on a system***	**Shock** ***sudden surprising event affecting a system***
Demography	Trade wars
Social & cultural norms	Geophysical events
Natural resource degradation	Food scares
Climate change	Extreme weather
Urbanisation	Election and Referenda results
Automation	Pandemics
Science and Technology	
Geopolitics & Conflict	

3. From who's perspective?

Food system 'actors'?



And/Or from others' perspectives?

Policy, private interests, 3rd Sector, society, …

4. Over what time period?

- **Short-term *interruptions* (usually due to shocks)** to e.g.:
  - Fishing or agricultural activities (due to e.g. extreme weather)
  - Critical ingredient shortfall (due to e.g. disease outbreak)
  - Just in time groceries delivery (due to e.g. IT malfunction)
  - Consumer shopping patterns (due to e.g. food scares)
- **Longer-term *disruptions* (usually due to stresses)** to e.g.:
  - Natural resource degradation
  - Energy price
  - Low-carbon emission regulations
  - Change in dietary preferences

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Strategies for enhancing the Resilience of Food System Outcomes (the 3 'Rs')

1. Robustness Aim to resist disruption to ***existing*** FS outcomes

2. Recovery Aim to return to ***pre-existing*** FS outcomes after disruption

3. Reorientation Aim to accept ***alternative*** FS outcomes before or after disruption

Each involves ***adapting*** food system activities

Strategies for enhancing resilience of food system outcomes

Adapting food systems activities

Either:

Adapt food system activities to maintain or return to *status quo* [Robustness & Recovery]

Or:

Adapt food system activities to transform food system outcomes [Reorientation]

Enhancing Resilience 1
Adapt the Food System Activities

Do the "doing" words differently

Enhancing Resilience 2
Reorganise the Food System 'Environments' (drivers)

Social: *education, media, household structure, social movements, health care systems, …*

Policy: *agri-environment schemes, nutrition, labour, health and safety, …*

Market: *preference, market structure, competition, trade, …*

Sci & Tech: *farm inputs, food processing, food preparation, logistics and health technologies, …*

Biophysical: *climate, soil, water, pollution, biodiversity, …*

Adapted from: The Institute of Medicine & The National Research Council of the National Academies, 2015

Enhancing Resilience 3
Reorientate our 'views' of Food System Outcomes

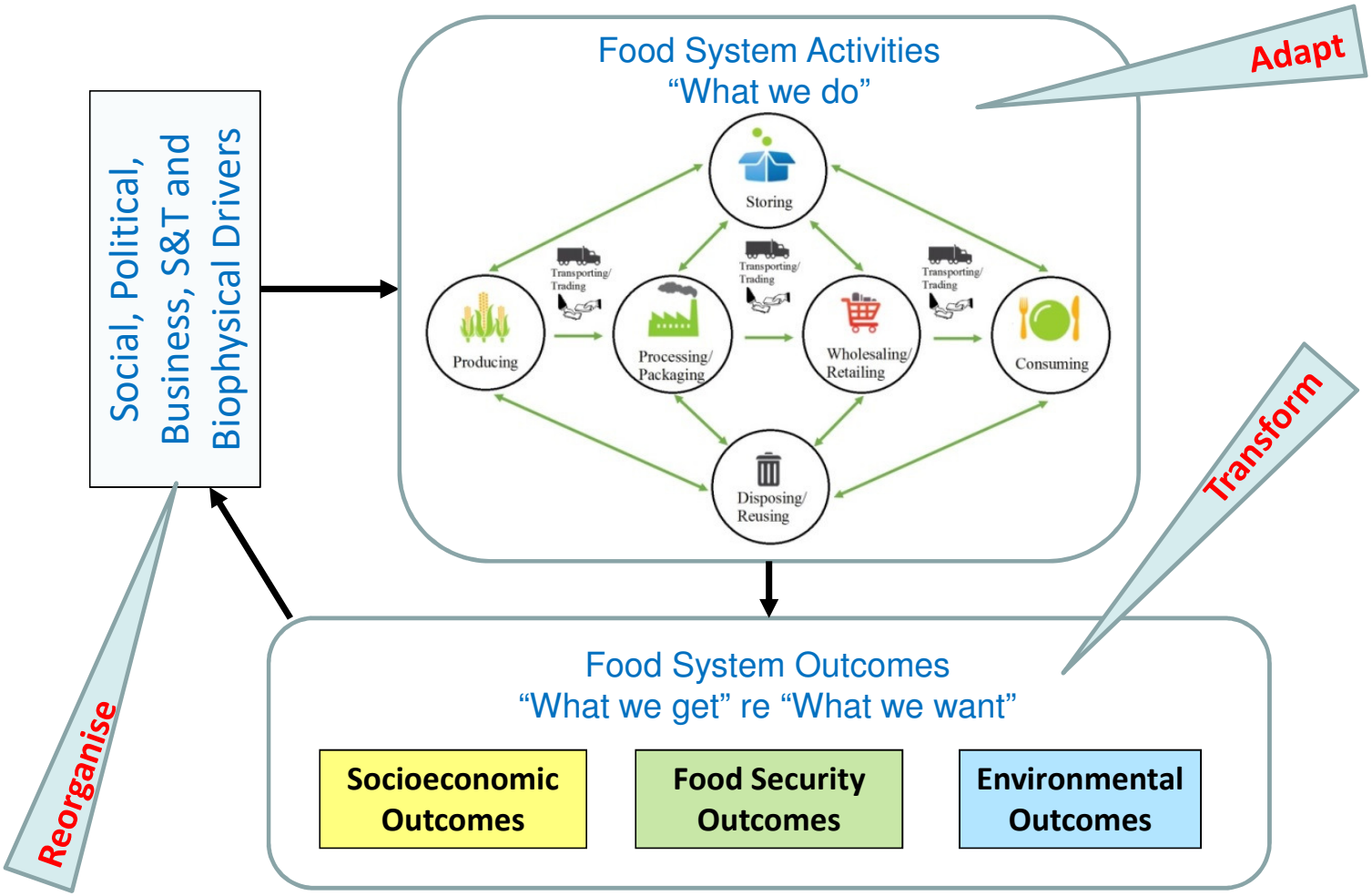
"Providing a healthy, affordable, and environmentally-friendly diet for all people will ***require a radical transformation of the system***."

This will depend on, ***for example***:

- ✓ **Recognising different livelihood strategies for food chain actors**
- ✓ **Being satisfied with consuming less meat**
- ✓ **Valuing food which is nutritious rather than cheap**

InterAcademy Partnership: 28 Nov 2018

Reorientate to reconcile the "What we get" with the "What we want" (Transform Food System Outcomes)



General Programme-level Messages

There is no overall 'solution' as **strategies to enhance food system resilience need to be context specific**. Further, prescriptive approaches to a specific food system component may have negative consequences for other components.

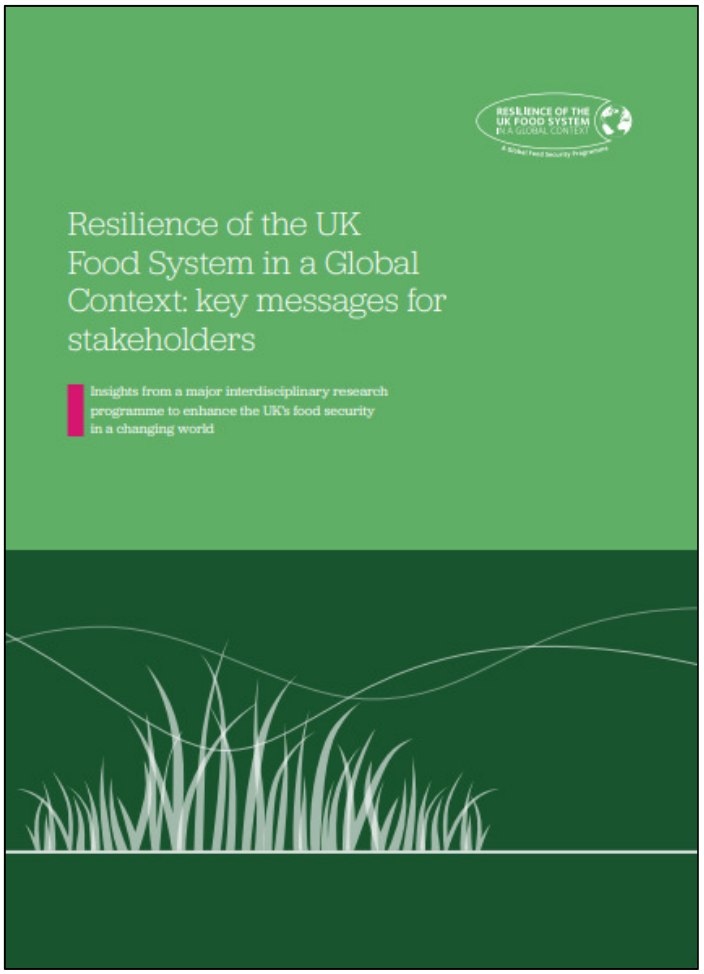
Sustainability and resilience are not the same. A strategy aimed at 'robustness' or 'recovery' may not necessarily be sustainable, and a strategy aimed at enhancing sustainability may not be resilient. But the twin aims of **sustainability and resilience can be positively synergistic within a 'reorientation' strategy**.

Enhancing food system resilience using combinations of the '3Rs' will require a range of interrelated actions in policy and practice, based on evidence derived from interdisciplinary research and applied across spatial, temporal and jurisdictional scales.

Programme-level Messages for Specific Communities

- **Governmental** policy formulation should **take a whole food systems approach** across government departments and agencies and spatial, temporal and jurisdictional levels. This should be based on latest food systems and foresight approaches.
- **Industry** should **respond to the current negative relationship between food price and health and sustainability** to reorientate towards a more healthy, sustainable and resilient food system.
- **NGOs** should **play a more substantial, evidence-based role** in holding government and business to account. As many NGOs focus on a specific part of the food system, **more collaboration is needed among them** to take a whole systems view of resilience.
- **Finance and Investment sectors** should **include financial stress testing of their portfolios to a wide range of exposures** including implications for investments from disruption in production and food supply chains.
- The **research establishment** (comprising public and private funders and researchers) will have an **increasingly important role in helping to enhance the resilience of the UK food system**.

Messages captured in Programme-level outputs



Submitted publication from the GFS FSR Programme

Enhancing food system resilience: Applying a multi-dimensional concept to transform food system outcomes

Programme-level paper invited by
Annual Review of Environment and Resources
Impact Factor > 11

- 10,000 words, 147 references
- Submitted Oct 2021
- Under review for 2022 volume
- All Project PIs and several team members contributed

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Abstract

Food systems need to be made more resilient for society to better cope with further risks from shocks and stresses, such as the COVID-19 pandemic or climate change. However, food system resilience has multiple dimensions. We draw on 'food system' and 'resilience' concepts and review resilience framings of different communities.

We present four questions to frame food system resilience (resilience of what? to what? from who's perspective? and over what time period?), and three approaches to enhancing resilience ('robustness', 'recovery' and 'reorientation'; the three 'Rs'). We note that reorienting societal views of what constitutes 'better' (i.e. transformed) food system outcomes is a key to enhancing resilience, and that transforming food system outcomes requires adapting food system activities.

New approaches to including different food system actors' perceptions and goals are needed to build food systems that are better positioned to address the short- and long-term challenges of the future.

December Breakout Group Discussions
Some main points

1. View of resilience very much depends on one's 'position' in the food system and worldview *(cf Q3: from who's perspective?)*.

2. Interaction between different stakeholders is important, noting who could disrupt the system, lessons learnt from stakeholder interventions and (especially) feedback loops.

3. Businesses are key to enhancing resilience and able to take action now, but interventions need to be better couched in business language and consumer compelling.

4. Terminology between resilience and sustainability needs to be clearer and better understood.

5. Importance of combining food systems thinking *with* foresight thinking to enhance resilience

6. More emphasis is needed on links between food system resilience and (i) supply chains, (ii) food waste, (iii) net zero, (iv) public procurement, (v) consumer behaviour, and (vi) justice and fairness.