FOOD SYSTEM CHALLENGES:

OPERATIONALIZING FOOD SYSTEMS THINKING?

DR MONIKA ZUREK
ECI, UNIVERSITY OF OXFORD
FOOD AND NUTRITION SECURITY

... exists when all people, at all times, have physical, economic and social access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

(UN-FAO World Food Summit 1996, 2012)

... is universally applicable
... is more than food production
... is underpinned by food systems
CURRENT FOOD SYSTEM OUTCOMES – NO FOOD SECURITY AND LARGE EXTERNALITIES

• ‘Triple burden’ of the food system and obesity problems on the rise across developed and developing nations

• Agriculture and food chains as the key driver of many environmental degradation problems
  – Large contributor to GHG emissions
  – Biodiversity loss
  – Water issues
  – Soil health degradation

• Food systems carry large question marks with respect to equity considerations both within the food system as well as with respect to its outcomes

• Food safety issues

• Animal welfare issues

• .................
...WHEN WE TALK ABOUT FOOD SECURITY: TRIPLE BURDEN OF MALNUTRITION

‘Hidden Hunger’
Food systems and environmental change: A two-way street
FOOD SYSTEM ‘ACTIVITIES’ SERIOUSLY DEGRade NATURAL RESOURCES

- Soil 33% degraded
- Fresh water 20% aquifers overexploited
- Biodiversity 60% of loss
- Marine resources 29% over-fished; 61% fully-fished
- Minerals >80% losses farm-to-fork
- Fossil fuels 30% of all fossil fuel use

And 24% of total GHG emissions
Who holds the ‘power’ in the food system?
Example from the NL

Concentrations in **food chains** in the Netherlands

- **65,000** Farmers
- **6500** Food processing industry
- **1500** Suppliers
- **4000** Supermarket chains
- **16.7 million** Supermarkets
- **7 million** Households
- **1.67 million** Consumers

Consumers spend 10% to 15% of their income on food.

Strong concentration in the food chain enables purchasing agencies of supermarket chains to exercise a great deal of power.
FOOD SYSTEM CHALLENGES ARE INTERCONNECTED

Current goal:
To achieve food security for a growing, wealthier, urbanising population while minimising further environmental degradation and diet-related diseases against a background of stresses and shocks:
- natural resource depletion
- many stagnating rural economies
- changing climate
- social, socio-cultural and economic changes

A transformation of the current food system is needed!
THE NEED FOR FOOD SYSTEM TRANSFORMATION – THERE IS NO FREE LUNCH!

• Our current food system does not produce the food system outcomes that we need and want and is one of the key drivers for of environmental and social change

• We need a coordinated transformation not just of one or more parts but of the system as a whole -> system’s perspective needed

• How can we operationalize food systems thinking and use it to create new approaches and tools to enable transformation?
Food systems: A set of activities...
...carried out by a set of actors

...who all have different motives and incentives.
HOW CAN WE OPERATIONALIZE FOOD SYSTEMS THINKING TO ENABLE THE FS TRANSFORMATION?

Source: Foresight4Food
Food system change:
Many actors - various goals

- Healthy and balanced diets
- Reduced environmental impacts
- Competitiveness of the food sector
- Social equity outcomes

How to balance these goals?

Clear need for a new dialogue and new approaches

- mapping the food system
- bringing actors together
- understanding their goals
- assessing the food system status
- assessing innovation options
- assessing implications
- deciding on course of action
- deciding on who has to do what
- monitoring

Working with partners towards EU food systems that contribute to health, environment, equity and viable enterprise...

...by delivering high-quality research on metrics, models and foresight to support evidence-based policies and innovation strategies for a sustainable and food and nutrition secure EU.
An approach for enabling a new debate on and monitoring food system change – WP1

1. The creation of a participatory environment;
2. The development of a conceptual framework mapping out the driving forces, actors, outcomes and goals for the EU food system (Zurek et al. 2016);
3. An approach to devising a set of performance metrics for assessing the food system’s status and innovation options across four key policy goals formulated by food system actors (Zurek et al. 2017);
4. A modelling strategy for quantifying the sustainability status of FNS in the EU/performance metrics (Kuiper et al. 2017);
5. A visualization tool that allows food system actors to assess the outcomes and associated trade-offs of possible innovation options in an integrated manner across the policy goals (the SFNS visualizer) (Zurek et al. 2018).
1. The participatory environment: Stakeholder core group (SCG)

35 members in the Stakeholder Core Group from the public sector, food industry and NGOs

4 meetings:
1) conceptual framework, driving forces, approach to metrics
2) performance metrics, scenarios for the EU food system
3) innovations in the livestock and fish sector
4) consumer research and innovations in the fruit and vegetable sector, overall findings and messages emerging from the project and how to relay them

Feedback/questions in-between meetings
Assessing the sustainability of food systems in the EU – in 16 performance metrics

<table>
<thead>
<tr>
<th>Policy goal</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced and sufficient diets for EU citizens</td>
<td>Energy balance</td>
</tr>
<tr>
<td></td>
<td>Adequate Nutrient intake</td>
</tr>
<tr>
<td></td>
<td>Adequate Food intake</td>
</tr>
<tr>
<td></td>
<td>Reduced burden of diet-related diseases</td>
</tr>
<tr>
<td>Equitable outcomes and conditions</td>
<td>Equity among consumers (outcomes)</td>
</tr>
<tr>
<td></td>
<td>Equity among producers and chain actors</td>
</tr>
<tr>
<td></td>
<td>Equity in the use of natural resource</td>
</tr>
<tr>
<td></td>
<td>Equity in conditions in the food systems: ethics and justice</td>
</tr>
<tr>
<td>Reduction of environmental impacts</td>
<td>Climate stabilisation</td>
</tr>
<tr>
<td></td>
<td>Clean air and water</td>
</tr>
<tr>
<td></td>
<td>Biodiversity conservation</td>
</tr>
<tr>
<td></td>
<td>Preservation of natural resources</td>
</tr>
<tr>
<td>Competitiveness of the EU agri-food business</td>
<td>Value added</td>
</tr>
<tr>
<td></td>
<td>Productivity &amp; innovation</td>
</tr>
<tr>
<td></td>
<td>Job creation</td>
</tr>
<tr>
<td></td>
<td>Emission price gap</td>
</tr>
</tbody>
</table>
Framework to assess the sustainability performance of EU food systems – managing trade-offs of the transformation
TRANSFAV PROJECT IDEAS FOR AN APPROACH TO FS TRANSFORMATION

An approach to transformation management:

• Mapping food system stakeholders, policies, dynamics and outcomes
• Visioning potential transformation pathways and assessing consequent outcomes
• Determining the viability of potential transformation pathways
• Action planning with stakeholders to determine how to deliver the desired transformations
• Evaluating the systems approach and its transferability
Thank you!

monika.zurek@eci.ox.ac.uk