

Falling between stools?

Straddling disciplines within academia and discovering the limits of quantitative approaches in transdisciplinary research



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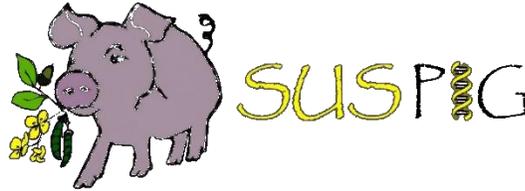
Academic background – pre postdoc

- BSc – Chemistry
- MSc – Clean Technology (Engineering)
- PhD – Animal Science: Modelling the environmental impacts of pig farming systems and the potential of nutritional solutions to mitigate them



Modelling environmental impacts of animal production systems

Recent work in this area:



- The potential of genetic change and breeding to reduce the environmental impact of pig production
- The potential of smart management technologies to mitigate the environmental impacts of livestock systems
- The implications of Animal health issues for the environmental impacts of livestock production

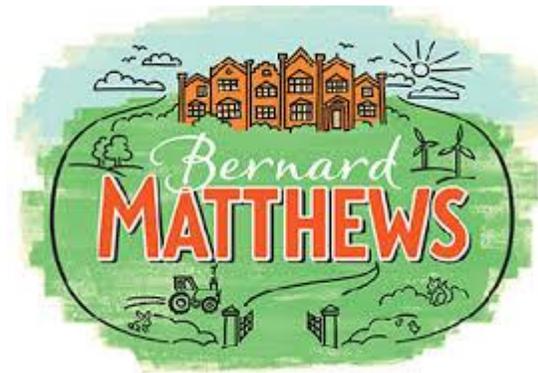
Modelling Techniques

- Life Cycle Assessment
- Marginal Abatement cost curves (Bio-economic modelling)
- Genetic selection indices
- Linear programming for system optimisation – e.g. feed formulation for livestock
- Novel applications of uncertainty and sensitivity analysis techniques

Some of the industry partners from projects on livestock systems



NOBLE
FOODS



SHARECITY



SHARECITY is a 5-year research project funded by the **European Research Council** which is exploring the practice and sustainability potential of city-based food sharing economies.

Aims & Objectives

To establish the **significance** and **potential** of food sharing economies to transform cities onto more sustainable pathways

- 1) Develop **deeper theoretical** understanding of contemporary food sharing
- 2) Generate **comparative international empirical** data about food sharing activities within cities
- 3) Assess the **impact** of food sharing activities on urban food sustainability
- 4) Explore how food sharing in cities might **evolve** in the future



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European Research Council
Established by the European Commission



Horizon 2020
European Union funding
for Research & Innovation

Food sharing definition used - having a portion [of food] with another or others; giving a portion [of food] to others; using, occupying or enjoying [food and food related spaces to include the growing, cooking and/or eating of food] jointly; possessing an interest [in food] in common; or telling someone about [food]" (Davies and Legg, 2018: 237)

Why focus on urban food sustainability?



~ 70% of global population living in cities by 2050

Issues for Urban Food Systems

Social

- Increased Isolation (dining alone), Food Poverty, Detachment from Food and Nature

Environmental

- Land Use Change, Food Waste, Increased Meat Consumption

Economic

- Fair Returns to Farmers, Affordability and Accessibility, New & Diverse Food Economies



SOCIETAL META-CHALLENGE

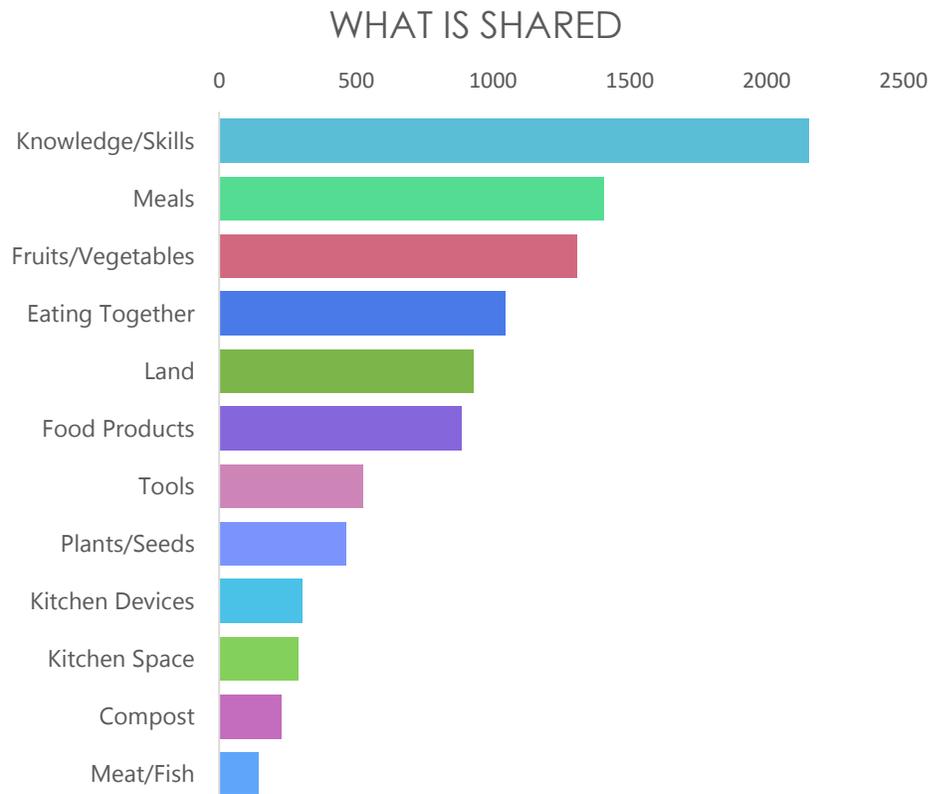
To transform urban food systems in a just and sustainable manner

SHARECITY INNOVATION

Reframing debates to include city-based food sharing economies

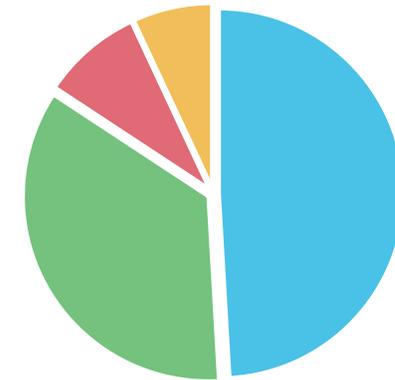
Food sharing - very diverse

- 70 % of initiatives share multiple food related stuff, spaces or skills
- 53 % of initiatives share via multiple methods
- 21 % of initiatives use multiple organisational structures



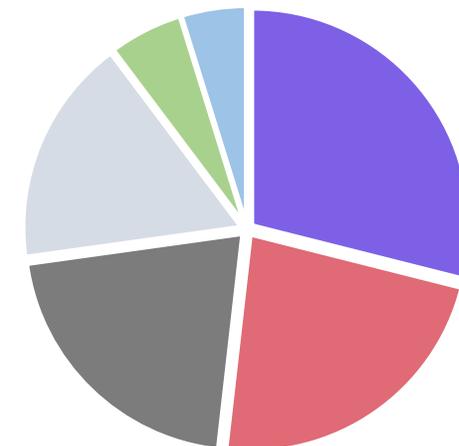
- Gifting
- Selling
- Collecting
- Bartering

HOW IT IS SHARED



SHARING ORGANISATION

- Nonprofits
- Associations
- Forprofit
- Informal
- Cooperatives
- Social_Enterprises



Case study example: Be Enriched

Name: Be Enriched

Focus: Eating; Redistribution



Summary: Be Enriched is a charity sharing food, knowledge and skills through gifting.

Stated Goals: *"Be Enriched is a **youth and community** charity set up in 2013 focused on supporting and developing the community. . . . [W]e develop **programs which balance inequalities whilst building community cohesion and developing skills in young people.**" "We believe in **enriching local life through connecting people through community activities and cultivating respect over a bite.**"*

Impacts: There are some limited quantitative figures included on the website and references to community building.

BE ENRICHED



Summary of Be- Enriched activities:

- Provide important shared eating experiences to those who may otherwise not have them
- Provide weekly access to balanced cooked meals using fresh ingredients for those who otherwise may not get them
- Provide education on food safety, nutrition, cooking skills and food budgeting for youth groups and broader audiences in the form of cooking classes and take home educational materials
- Use platform (particularly online) to engage in activism to promote changes in food policy and increase access to healthy, affordable food for everyone through grassroots campaigns

The tricky bits: the value of shared eating experiences

- Be-Enriched quite specific that participants in their canteens say they come for the company not the food!
- Shared eating is known to alleviate loneliness and increase levels of life satisfaction, happiness and trust in local community (Dunbar, 2017)
- Dining habits themselves, and more specifically the number of meals consumed by an individual that are shared and with whom, are a modern indicator of social capital (Julier, 2013)
- In fact the frequency of social dinners has been shown to be correlated with the size of an individuals close support network (Dunbar, 2017)
- But can delivering shared eating experiences be reported as an impact in its own right? What value frequency, regularity etc.?

The SHARE IT toolkit

SHARE CITY Sustainability of city-based food sharing

Home About Toolshed Talent Garden Greenhouse Register Login

SHARE IT
The SHARECITY sustainability Impact assessment Toolkit



Toolshed

The Toolshed will support you to create a full sustainability impact report for your initiative and a short summary to quickly communicate these impacts to others.

[Find Out More](#)



Talent Garden

The Talent Garden is a space for food sharing initiatives to share stories about their activities and impacts.

[View Talent Garden](#)



Greenhouse

We have created a space called the Greenhouse where food sharing initiatives can connect with others around the world to share experiences and learn from each other.

[Learn About Greenhouse](#)

SHARE CITY Sustainability of city-based food sharing

Sustainability Impact Summary

CO2

WHO WE ARE

Name: Communities against loneliness
Location: Abingdon

GOALS AND ACTIVITIES

Goals: To combat loneliness in cities through hosting shared eating events
Activities: Shared Cooking/Eating, Redistribution

OUR IMPACT AREAS

Our key areas of significant impact are

- Increased confidence and participation in cooking
- Food waste reduction
- Reducing pressure on food budgets

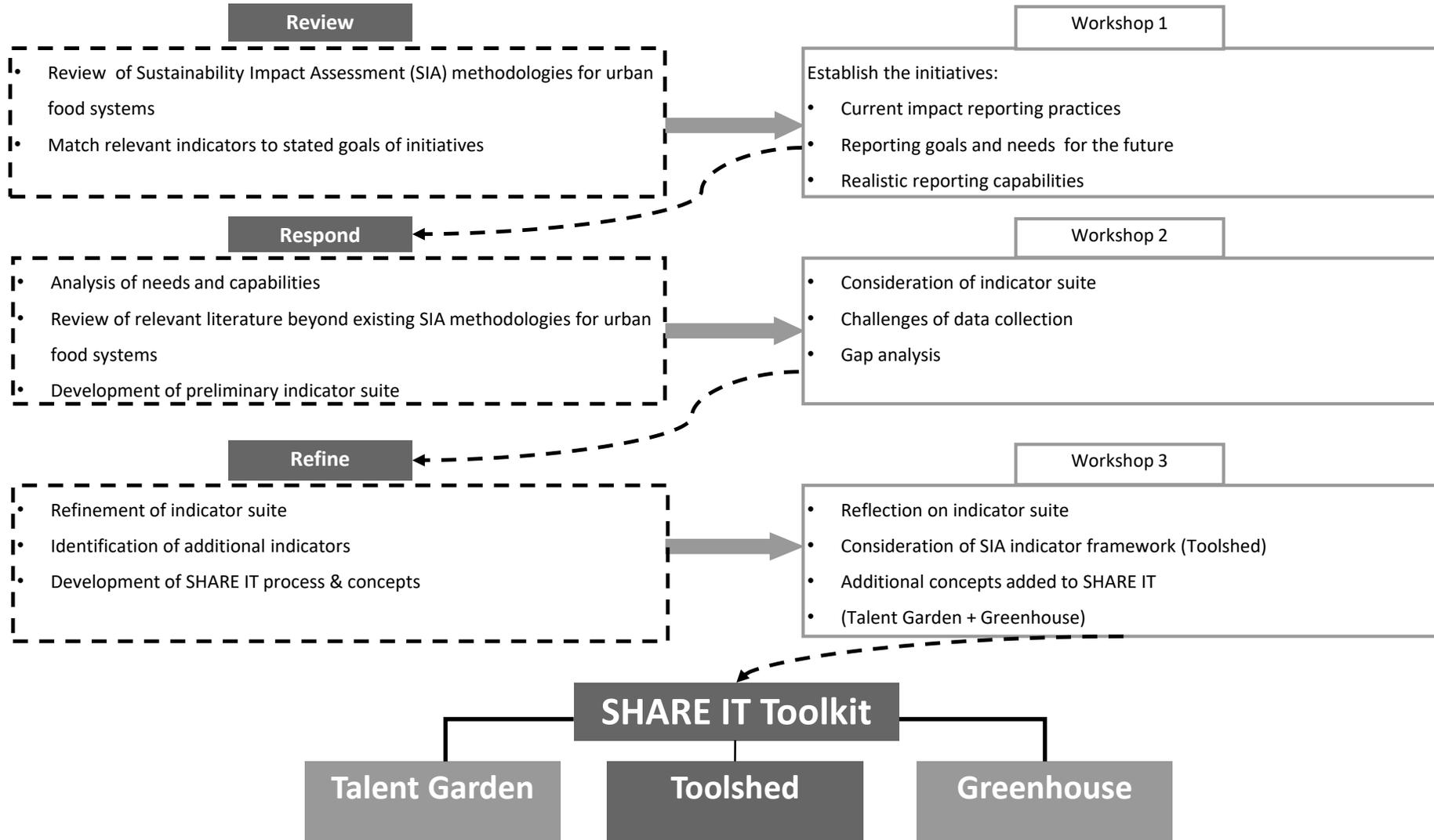
SPECIFIC IMPACTS INCLUDE

400 people shared meals at our events	300 volunteers reported improved self-confidence	30000 total saved to peoples food budgets through our activities
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Direct co-design with initiatives

Desk based research

The Co-design process



SHARE IT – FUNCTIONS

shareit.sharecity.ie



The Toolshed

A resource where initiatives can create a full Sustainability Impact Assessment report of their activities.

Also produces a 3 page summary report of impacts as a communication tool for potential funders etc.



The Talent Garden

The Talent Garden is a space for food sharing initiatives around the world to share stories about their activities and impacts.

These can be written stories, images, videos or even reports that are generated in the Toolshed.



The Greenhouse

A space where food sharing initiatives can connect with others around the world to share experiences and learn from each other

The Toolshed

- Driving the Toolshed is a sustainability impact assessment (SIA) framework developed specifically for food sharing initiatives
- The framework contains 34 indicators across 4 pillars of sustainability: Economic, Environmental, Governance and Social
- Framework based on existing SIA frameworks + novel indicators specific to the activities of food sharing initiatives
- The tool links reported impact areas directly to the relevant UN sustainable development goals
- The framework is designed to consider impact at the organisational level



Contents lists available at ScienceDirect

Environmental Impact Assessment Review

Journal homepage: www.elsevier.com/locate/eliar

SHARE IT: Co-designing a sustainability impact assessment framework for urban food sharing initiatives

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ARTICLE INFO

ABSTRACT

Keywords:
Food sustainability
Urban
Sharing
Co-design
Impact assessment
Indicators

Urban food systems must undergo a significant transformation if they are to avoid impeding the achievement of UN Sustainable Development Goals. One reconfiguration with claimed sustainability benefits is ICT-mediated food sharing – an umbrella term used to refer to technologically-augmented collective or collaborative practices around growing, cooking, eating and redistributing food – which some argue improves environmental efficiencies by reducing waste, providing opportunities to make or save money, building social networks and generally enhancing well-being. However, most sustainability claims for food sharing have not been evidenced by systematically collected and presented data. In this paper we document our response to this mismatch between claims and evidence through the development of the SHARECITY sustainability impact assessment Toolkit (SHARE IT); a novel Sustainability Impact Assessment (SIA) framework which has been co-designed with food sharing initiatives to better indicate the impact of food-sharing initiatives in urban food systems. We demonstrate that while several SIA frameworks have been developed to evaluate food systems at the urban scale, they contain few measures that specifically account for impacts of the sharing that initiatives undertake. The main body of the paper focuses on the co-design process undertaken with food sharing initiatives based in Dublin and London. Attention is paid to how two core goals were achieved: 1) the identification of a coherent SIA framework containing appropriate indicators for the activities of food sharing initiatives; and 2) the development of an open access online toolkit for in order to make SIA reporting accessible for food sharing initiatives. In conclusion, the co-design process revealed a number of technical and conceptual challenges, but it also stimulated creative responses to these challenges.

1. Introduction

The interconnected environmental, social and economic dimensions of food systems means that food is being proposed as a common thread linking all 17 UN Sustainable Development Goals (SDGs) (The Economist Intelligence Unit, 2018). Beyond this, there is broad agreement that achieving global food sustainability is a key societal priority, although there is less agreement on exactly how such sustainability might be achieved (Garnett, 2014). Certainly, understanding the impacts of practices across the food system, from production to con-

challenges involved, this paper outlines and reflects on insights from a co-design experiment to support enhanced sustainability assessment of an under-studied but growing set of activities with claimed sustainability potential - urban food sharing initiatives.

Embedded within the unsustainability of our global food system are worrying trends for urban food (Serraj and Pingali, 2018). As research identifies a movement towards planetary urbanisation (Brenner and Schmid, 2012), concerns are being expressed about abhorrent geographies of both urban food waste and food poverty (Edwards and Davies, 2018). However, recent research suggests there are grounds for

Impact areas not traditionally considered

The Toolshed integrated a number of impact areas beyond those traditionally considered in SIA of food systems:

- Increasing levels of meal sharing
- Increasing the friendship/support network of participants
- Increasing levels of self-efficacy amongst participants
- The potential of food sharing initiatives to influence the choices and values of participants with respect to food

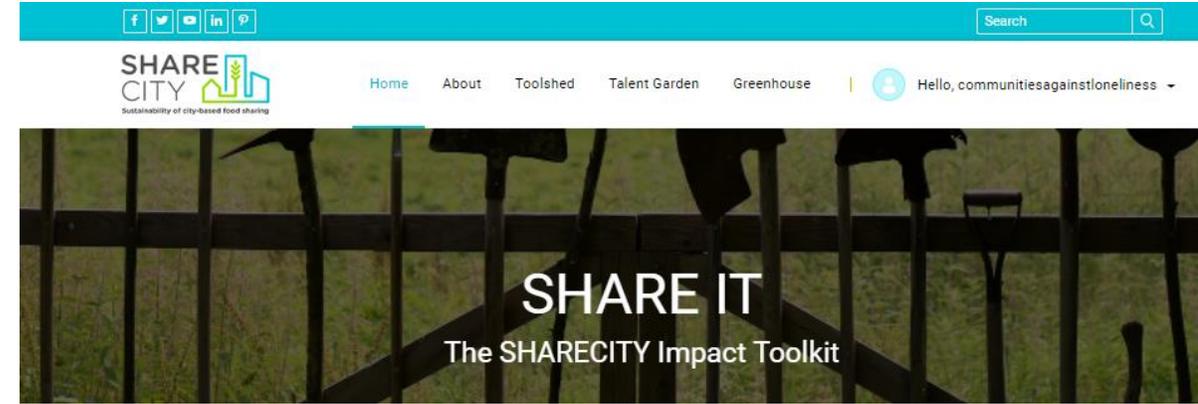
The screenshot shows the 'SHARE IT Sustainability Impact Summary' dashboard. At the top, there are navigation buttons for 'Home' and 'More'. The 'WHO WE ARE' section includes details: Name: Food Waste Fighters, City: Dublin, Scope: Reduce the amount of food being wasted, and Activities: Volunteerism. The 'OUR IMPACT' section features a circular radar chart and text explaining the impact on food waste and the SDG framework. The 'WHY WE SHARE FOOD' section lists three key statistics: 1/3 of all food produced for human consumption is wasted worldwide; Food waste is the 3rd largest carbon footprint in the world after USA and China; and UK initiatives could save up to 2000 million if scaled up. The 'SHARE STORIES' section includes a paragraph about the initiative's goals and a bar chart comparing 'Direct benefits' and 'Indirect benefits' across categories like Community, Economic, and Environmental. The 'SHARING IMPACT STORIES' section lists five numbered stories, each with a brief description of the impact. At the bottom, there is a 'SHARING & THE SDGs' section with icons for SDGs 1, 2, 3, 8, 9, 10, 12, and 17.

Research challenges

- Ensuring the Sustainability Impact Assessment is both accessible and informative for initiatives who may have little time and resources to dedicate to impact reporting
- But any assessment also needs to be considered rigorous enough for its outputs to be valued by funders and policy makers
- Understanding the temporal considerations around the impact of sharing is a wicked problem!
- Ethical considerations around the application of quantitative sustainability assessment to food sharing initiatives

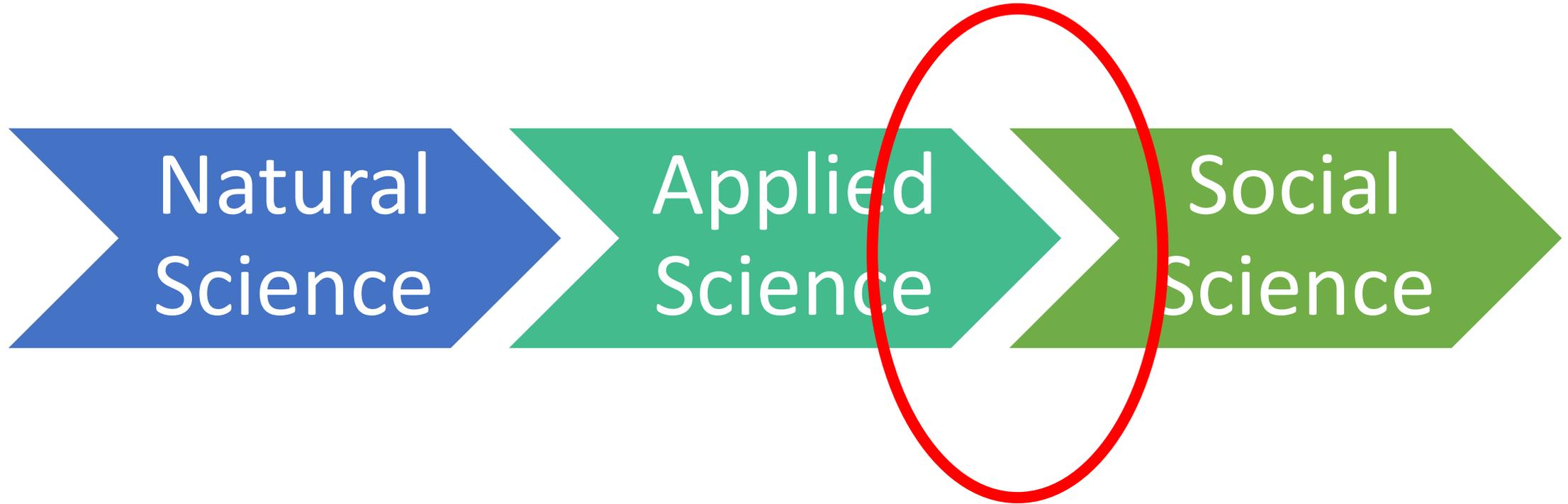


The SHARE IT toolkit



- Launched in last week check it out - shareit.sharecity.ie
- Already 14 food sharing initiatives registered
- National initiatives including FoodCloud in Ireland and Ackerdemia in Germany have already made their reports

Some reflections from experience



Straddling the boundary between natural and social sciences is challenging but can be a rewarding space to operate in

Some reflections from experience

- Non-academic partners come in many different forms and need different approaches
- Know exactly why you are taking a particular postdoctoral role
- Don't be surprised to experience imposter syndrome if changing research focus

Thank you for your attention

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Recent papers

- Mackenzie, S.G. and Davies, A. (2019) SHARE IT: Challenges and opportunities in co-designing a sustainability assessment framework for urban food sharing initiatives. Environmental Impact Assessment Review. 79. [Available online](#)
- Ottosen, M., Mackenzie, S.G., Wallace, M. and Kyriazakis, I. (2019) A method to account for the effect of genetic traits of pigs on the environmental impacts from their production system. International Journal of Life Cycle Assessment. [Available online](#)
- Tallentire, C.W., Mackenzie, S.G. and Kyriazakis, I. (2018) Can novel ingredients replace soybeans and reduce the environmental burdens of European livestock systems in the future? Journal of Cleaner Production 187: 338-347.
- Mackenzie, S.G., Wallace, M. and Kyriazakis, I. (2017) How effective can environmental taxes be in reducing the environmental impact of pig farming systems. Agricultural Systems. 152: 131-144