Transitioning to a circular economy
Everyday circular behaviours

SEFARI

The James Hutton Institute

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Introduction

To help Scotland's transition to a more circular economy, this interdisciplinary project aims to develop the evidence base on the social and behavioural dimensions that are crucial to move away from the current linear 'make, take and dispose' economy.

Our focus is how to promote behaviours that align with a wider system change towards circularity in everyday life within households, businesses, and organisations.

Research questions
- What are the barriers and opportunities for businesses and organisations to adopt more circular practices?
- How can households and individuals contribute towards the transition to a circular economy?
- What factors drive behaviours and decisions?
- What policy interventions might help to promote circular behaviours?

A systems-based approach
To properly understand behaviours, we need to investigate individual behaviours within their physical and social context; within a social network; and in terms of the wider range of environments (e.g. workplaces, communities) they encounter, and the diversity of institutions that influence them.

What are circular behaviours?

Circular behaviours are behaviours that contribute to resource efficiency, as well as the circular flow of materials, in everyday life (adapted from Gomes, *et al* 2022). Moving from the familiar 'reduce, reuse, recycle' we have identified 8 'R-terms' with relevance to everyday circular behaviours (see Reike, *et al* 2018)

	R-terms	Description
Short loop processes	R0: Refuse	Refraining from buying
	R1: Reduce	Using less, retaining for longer, sharing use of products
	R2: Resell/reuse	Buying or receiving second hand items, selling or passing on items for reuse
	R3: Repair	Making a product work again by repairing or replacing parts
Medium loops	R4: Refurbish	Replacing several key modules or components to produce an upgraded product
	R5: Remanufacture	Full disassembly, cleaning and replacement of key modules or components in an industrial process
	R6: Repurpose	Developing new product with a new function using components of an old product
Long loop	R7: Recycle	Processing of waste streams (e.g. through shredding, melting) to capture materials for the production of new products

Methods

Research with businesses and organisations

We are conducting interviews with businesses, public sector, social enterprises and charities about their engagement in the circular economy. We will also conduct sectoral roundtables with practitioners, policymakers and researchers to identify solutions to overcoming current challenges.
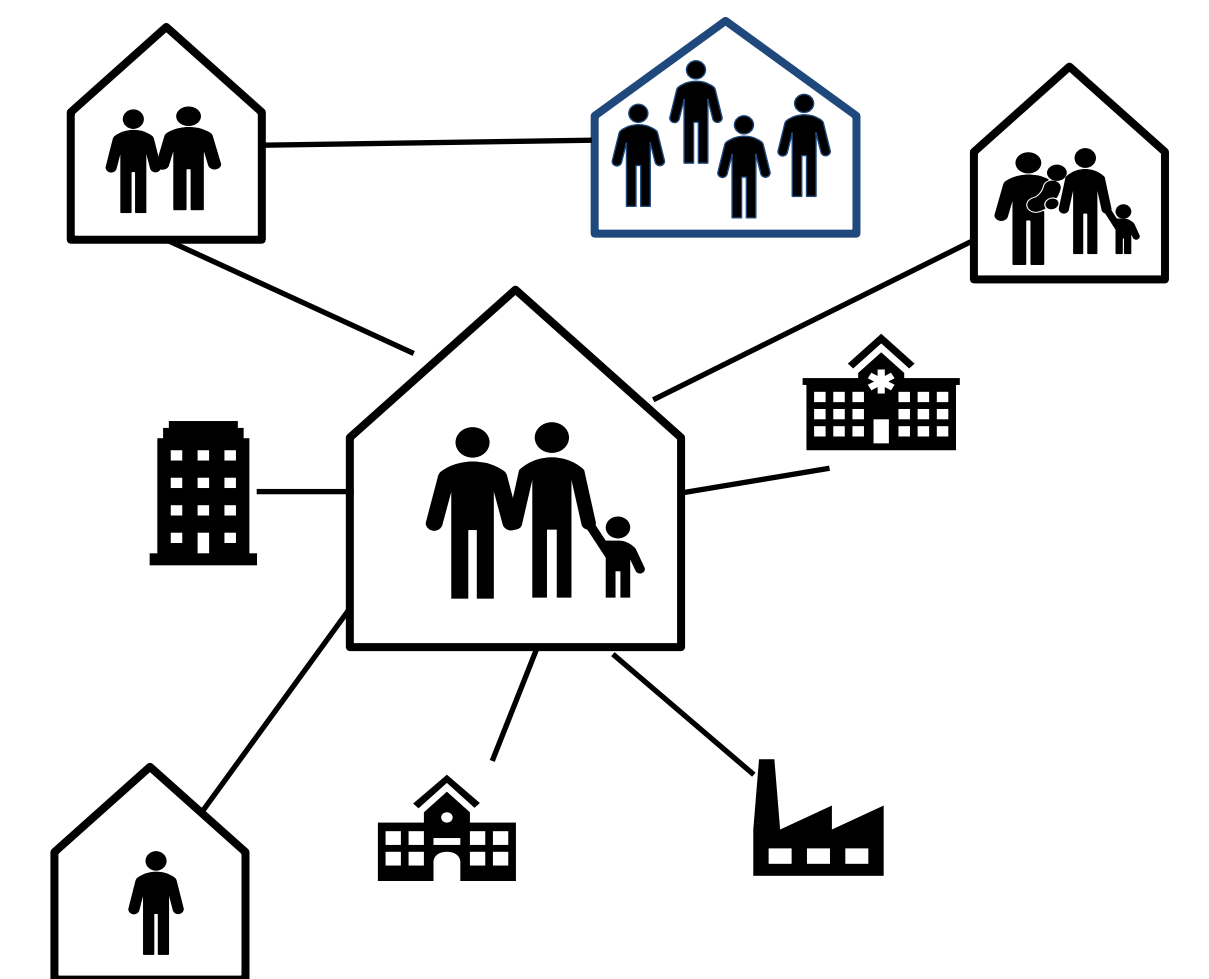
Everyday household behaviours

We are developing indicators to measure the uptake of circular behaviours in households for a national-level survey later this year. Future work will explore household circular behaviours in context, through a series of mixed-methods case studies.

Modelling approach

Agent-based modelling

- ABM is a computational method to create, analyse and experiment with models of 'agents' that interact within an environment
- ABM is an 'artificial social laboratory' modelling the macro-level outcomes of micro-level behaviours and interactions within the system
- We will integrate qualitative and quantitative data from research with households, businesses & organisations to investigate the potential effects of different policy interventions
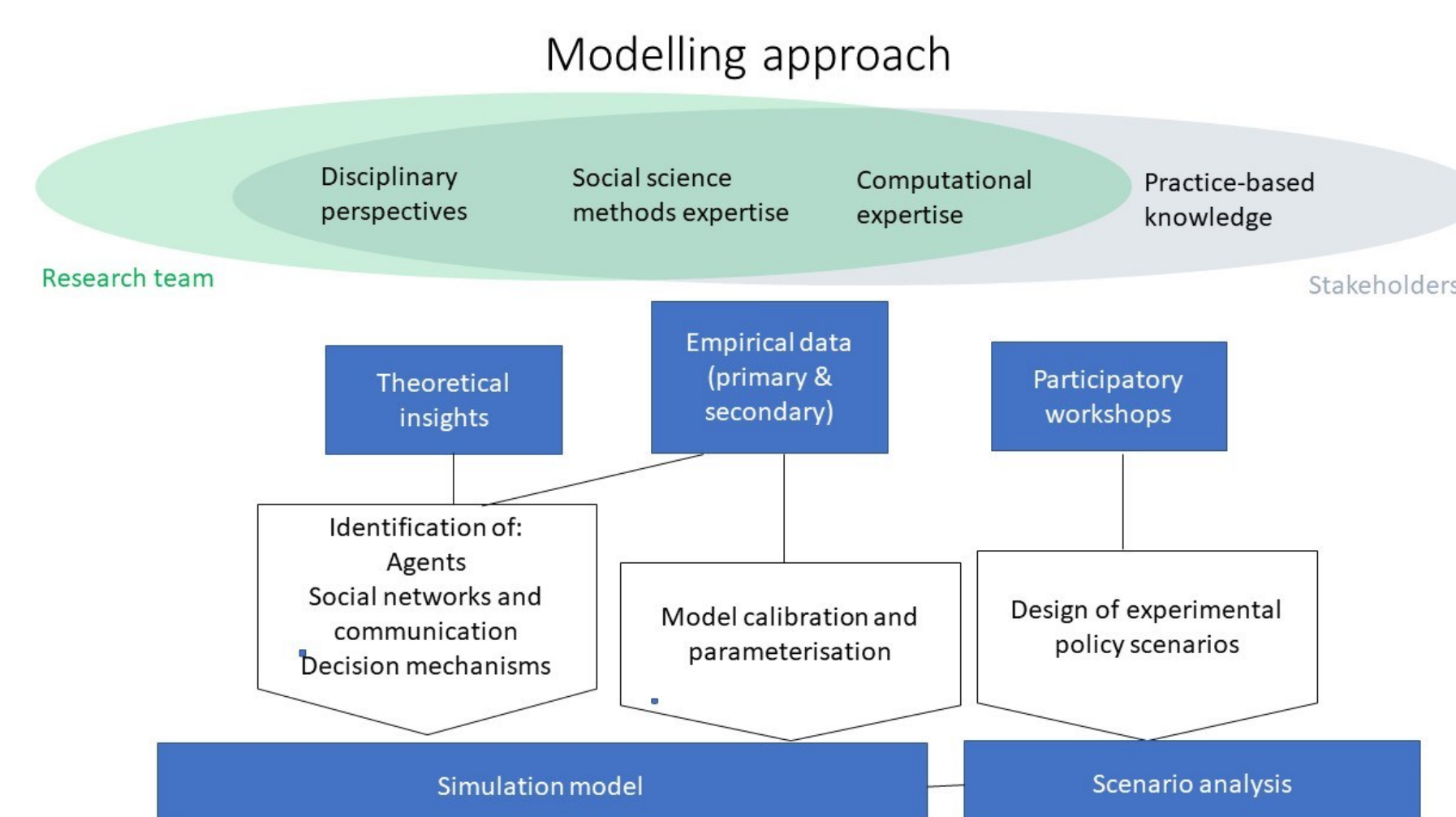
Key messages

- Understanding circular behaviours is essential if we are to transition to a more circular economy
- A huge diversity of different behaviours contributes to short, medium and long loops. Short loops make the biggest impact
- A systems perspective and interdisciplinary approach offer potential to build in-depth understanding of these behaviours
- Social simulation (ABM) can help to design and test potential interventions for introducing greater circularity and reducing the use of natural resources