



Hi, I'm Har Suyash Bahadur Sinha

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5 years of experience as a Product Designer and Researcher

MDes in Design Futures from Royal College of Art, London

Skilled in research, participatory design, systems thinking, and prototyping

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Projects

1 The Future of Regenerative Food Systems in 2125

TAKE ONLY WHAT YOU NEED.
TAKE ONLY THAT WHICH IS GIVEN.

NEW
DESIGNERS

Royal College of Art
Postgraduate Art & Design

A future where we listen to the land to decide what we grow

I am the voice of the soil guiding the society in 2125.
By community builder

Dear Soil, I am a representative of the Indigenous Local Council and will

The roots rustle and stretch toward the unseen. They make paths shifting the soil to make way as life rearranges itself to the hump, that sacred communion of fungi and roots-unveiling secrets of exchange

Message Soil

Heat Attack
Summers in London could be more than 5°C warmer on average. Highest temperatures could reach 43°C

High food prices and fewer healthy food choices

In 2050, I imagine... aging with dignity, surrounded by a caring community and easily accessing healthcare when I need it.

Pg. 3

2 The Future of Community-led Climate Adaptation in London

CASTLEHAVEN
heart of your community

Exploring community focused climate adaptation in London by 2050, with a focus on public engagement to understand and advocate for local needs.

Adapting together

The Trends of Today

Research Methodology

Futures Roadmap

Landmarks

Phases

Activities

Impacts

Heat Attack
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High food prices and fewer healthy food choices

In 2050, I imagine... aging with dignity, surrounded by a caring community and easily accessing healthcare when I need it.

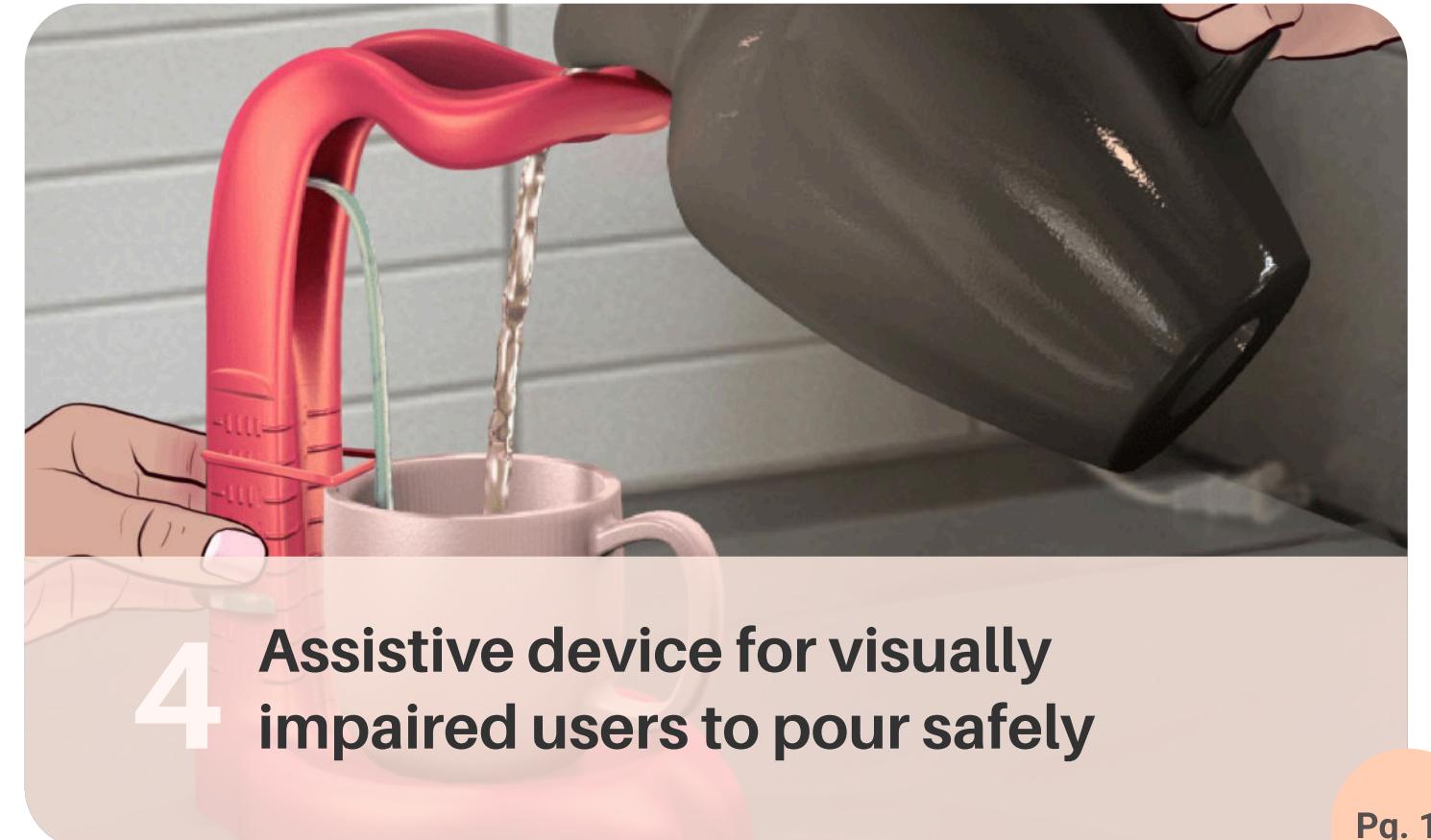
Pg. 10

3 VAVE: Gesture based musical instrument



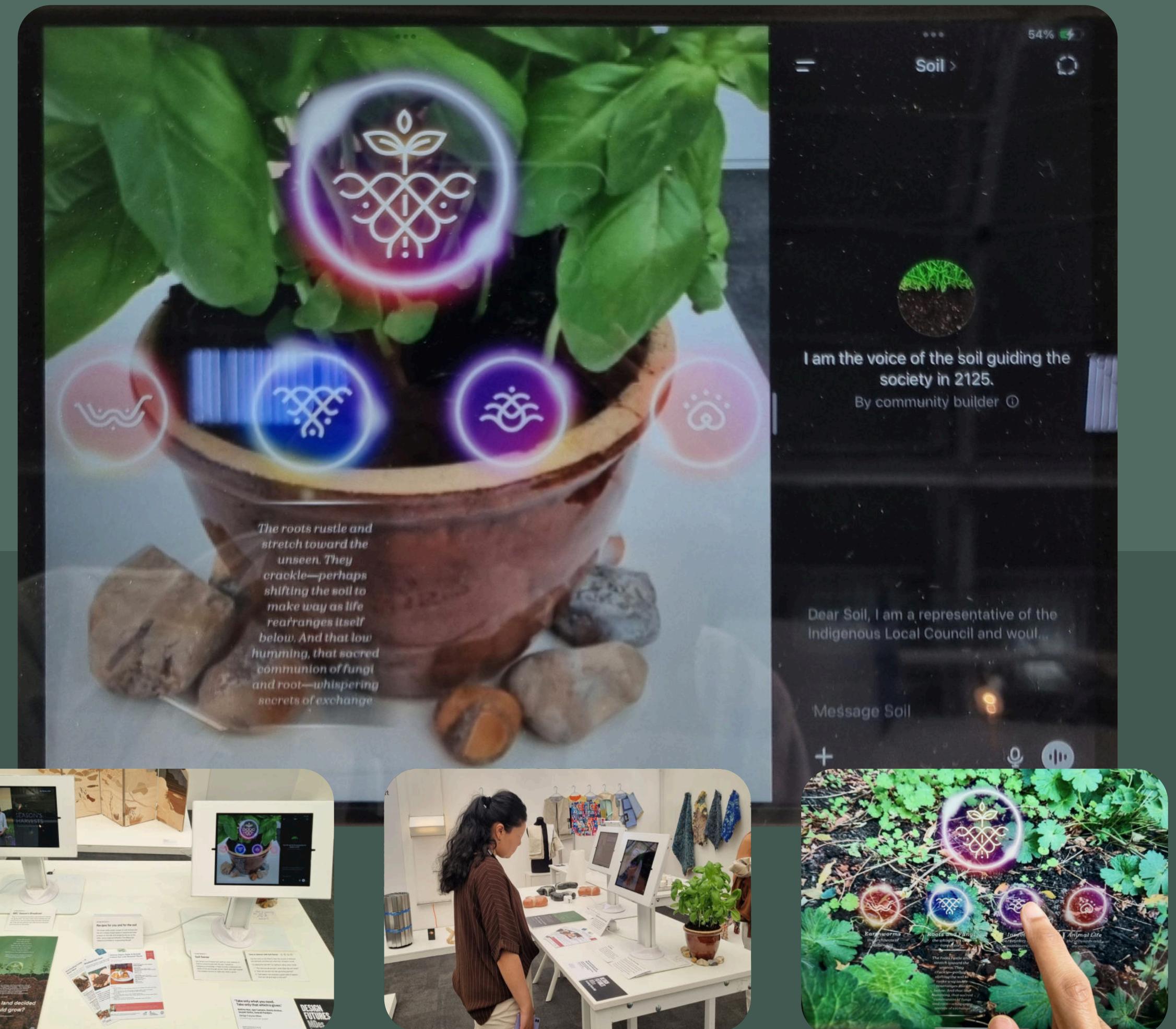
Pg. 17

4 Assistive device for visually impaired users to pour safely



Pg. 18

TAKE ONLY WHAT YOU NEED.
TAKE ONLY THAT WHICH IS GIVEN.
A future where we listen to the land to decide what we grow



1

The Future of Regenerative Food Systems in 2125

where we listen to the needs of the land, to decide what can be grown, without harming soil health and biodiversity.

👤 Group of 5 (Guided by the Design Museum at the RCA)

🏛️ Exhibited at the New Designers Exhibition 2025, London

⌚ 2 Months (January to March, 2025)

Contribution:

1. Scenario planning + world building, with the team, based on Indigenous wisdom and technological drivers.
2. Speculative prototype by fabricating soil sounds on Adobe Audition and creating an interactive application using Unity.

HORIZON SCANNING

Our process began with horizon scanning, enabling us to systematically gather insights on emerging drivers of change. To structure these insights, we categorised them using the PESTEL framework.

Indigenous stewardship of biodiversity

Global Biodiversity Framework and UNEP promote Indigenous knowledge to restore biodiversity
[UNEP-WCMC, 2023](#)



37 Land titles granted in Peru in 2023-24 to protect indigenous people's land from deforestation
[Mongabay](#)

Call for Land Use Framework in UK

The UK government consults on a "land use framework" to manage competing demands for land
[UK Parliament Post](#)

POLITICAL

ECONOMIC

SOCIAL

Diverse Indicators for soil health & productivity

Globalised diets vs shift towards local & seasonal

Reliance on imported fruits (85%) and vegetables (47%) for consumption in the UK
[UK Food Security Report 2024](#)



Local groups of people who share Slow Food values such as promoting a particular local food.
[UK Food Security Report 2024](#)

[Ferreira, 2016](#)



10 Regen Indicators to represent various aspects of soil health including earthworms and insects
[Soil.vidacycle](#)

Using sensory indicators such as soil sounds

Researchers are discovering that listening to the soil can be a way to understand biodiversity
[Mongabay](#)

Exploring more-than-human sensory Umwelts
[Gladkova, 2024](#)

Understanding the complex soil microbiome

Improved understanding of soil microbiome for soil health and harms of chemical fertilizers
[Massive Science](#)

Managing soil microbes is an ecosystem problem with many unknowns, using qualitative signs and hands-on experience
[Krzywoszynska, 2024](#)

Threat to soil biodiversity and soil health

Underground life, from fungi to tiny insects, earthworms and moles, is essential for healthy farmland
[ECA.Europa](#)

Agriculture is the largest contributor to biodiversity loss
[ECA.Europa](#)

Non-human rights and autonomy



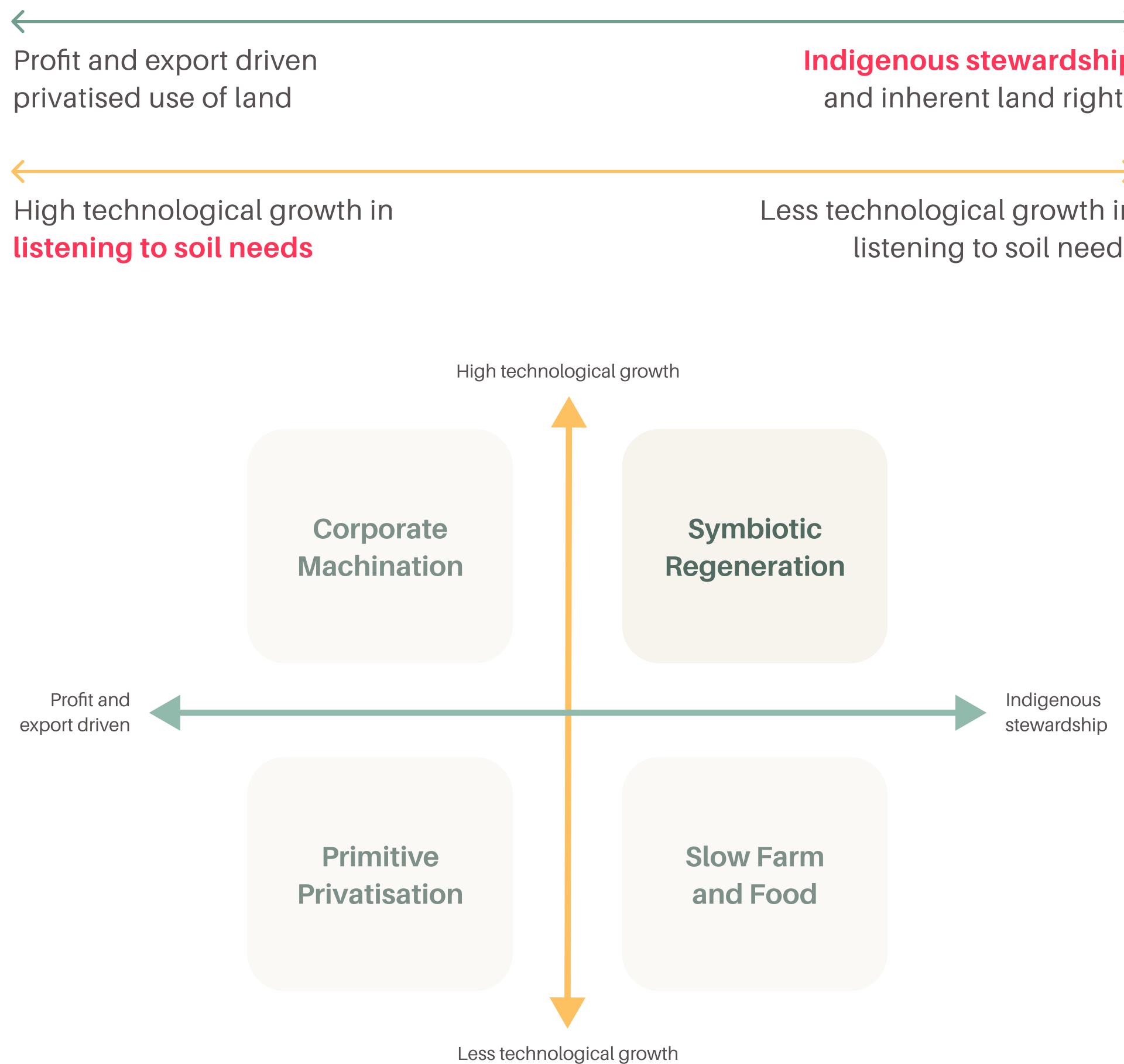
River Ouse to become the first in England to have its legal rights recognised by a local authority
[ELF](#)

LEGAL

SCENARIO PLANNING

Selecting high-impact uncertain drivers

We used the drivers from horizon scan to define axes of uncertainty, with opposing extreme outcomes. Our scenario planning was then structured around:

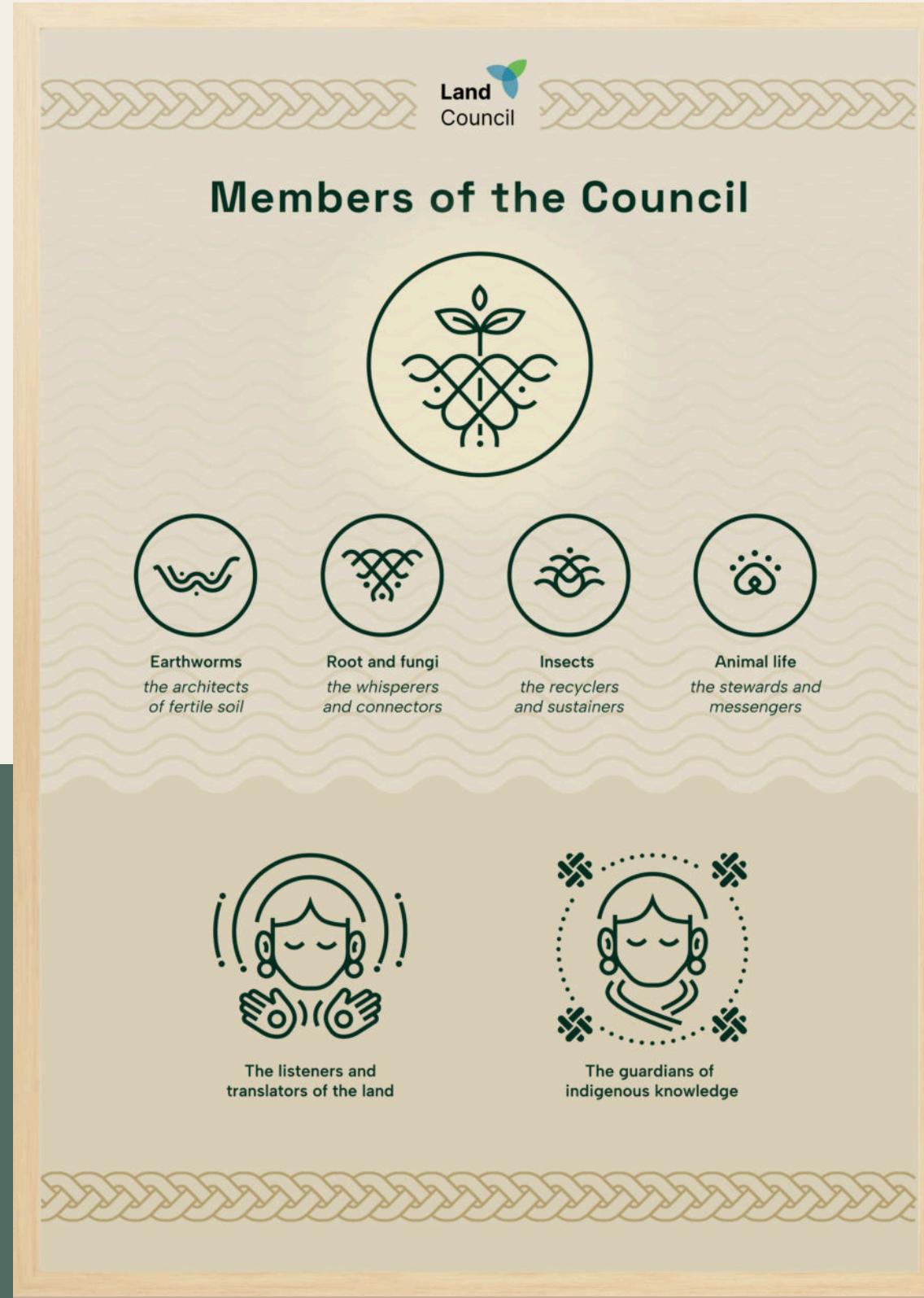


Symbiotic Regeneration

By 2125, human settlements are designed to match the land's ecological capacity, governed by the Land Council, bound by a Soil contract established in 2100.



WORLD BUILDING

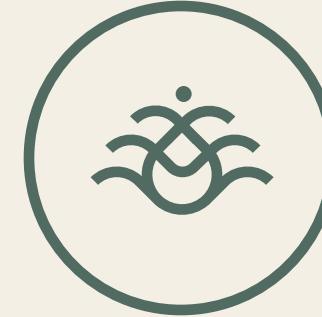
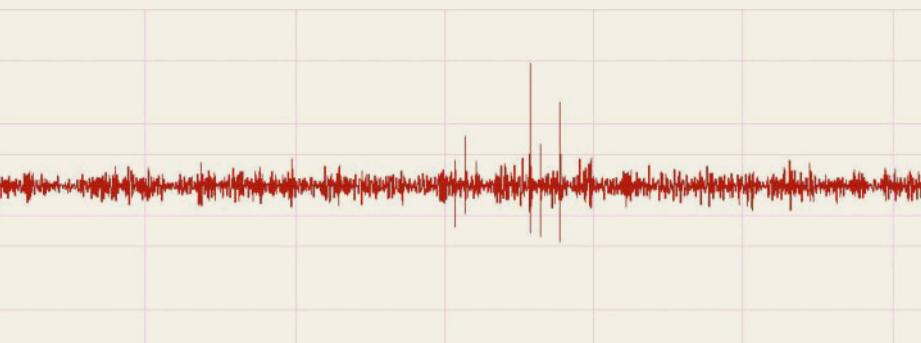
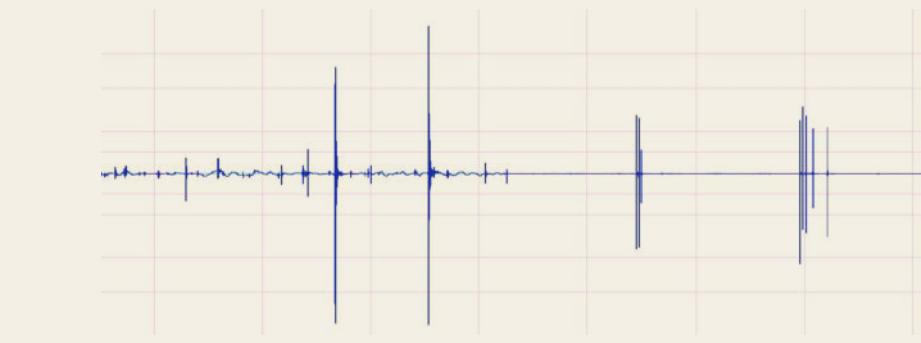
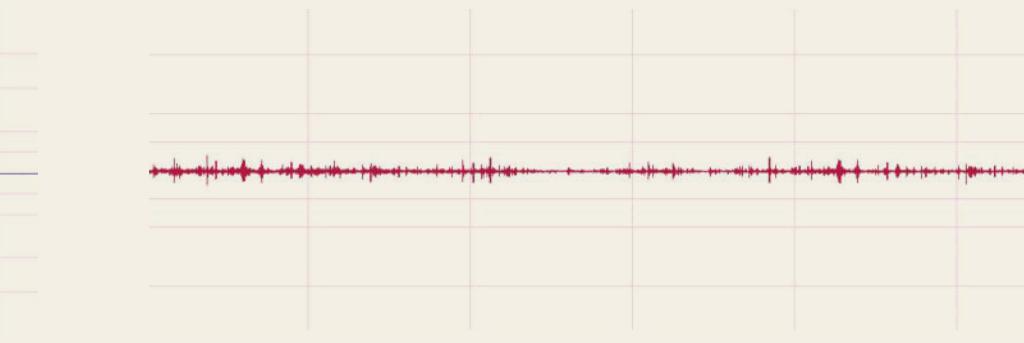


Each person in the group worked on objects to communicate our preferable future. The first object I worked on was a contract with the soil, as well as posters communicating the structure and roles of the Land Council, including more-than-human elements of the soil.

Replicating soil sounds

Researchers are discovering that listening to the soil can help understand biodiversity. This trend was used for our **SoilSense** prototype that listens to the more-than-human voices of soil and helps understand the needs of the soil in the year 2125.

Table 1. Key elements that contribute to soil health, sounds they emit and samples replicated using Adobe Audition.

				
ROLE	Earthworms the architects of fertile soil	Root and fungi the whisperers and connectors	Insects the recyclers and sustainers	Animal life the stewards and messengers
SOUNDS	Earthworms influence soil health via their feeding and burrowing activities, and a high abundance can improve soil structure. Rasping sounds and rhythmic scrunching as they move through the soil, shifting its layers	An underground web of fungal that links the roots of two or more plants, enabling them to exchange resources and information. Rustling sounds as they push past soil grains, and a steady frequency of the fungi	Soil arthropods are involved in many soil processes such as organic matter decomposition, nutrient cycles, etc. Short clicks, crackles, and pops as they navigate through the soil and feed	Animals such as birds, badgers, squirrels, etc the walk, burrow and feed on the soil. Their presence indicates the level of biodiversity. Rustling of leaves, animals thumping and pounding, along with caterpillars chewing
SAMPLES				

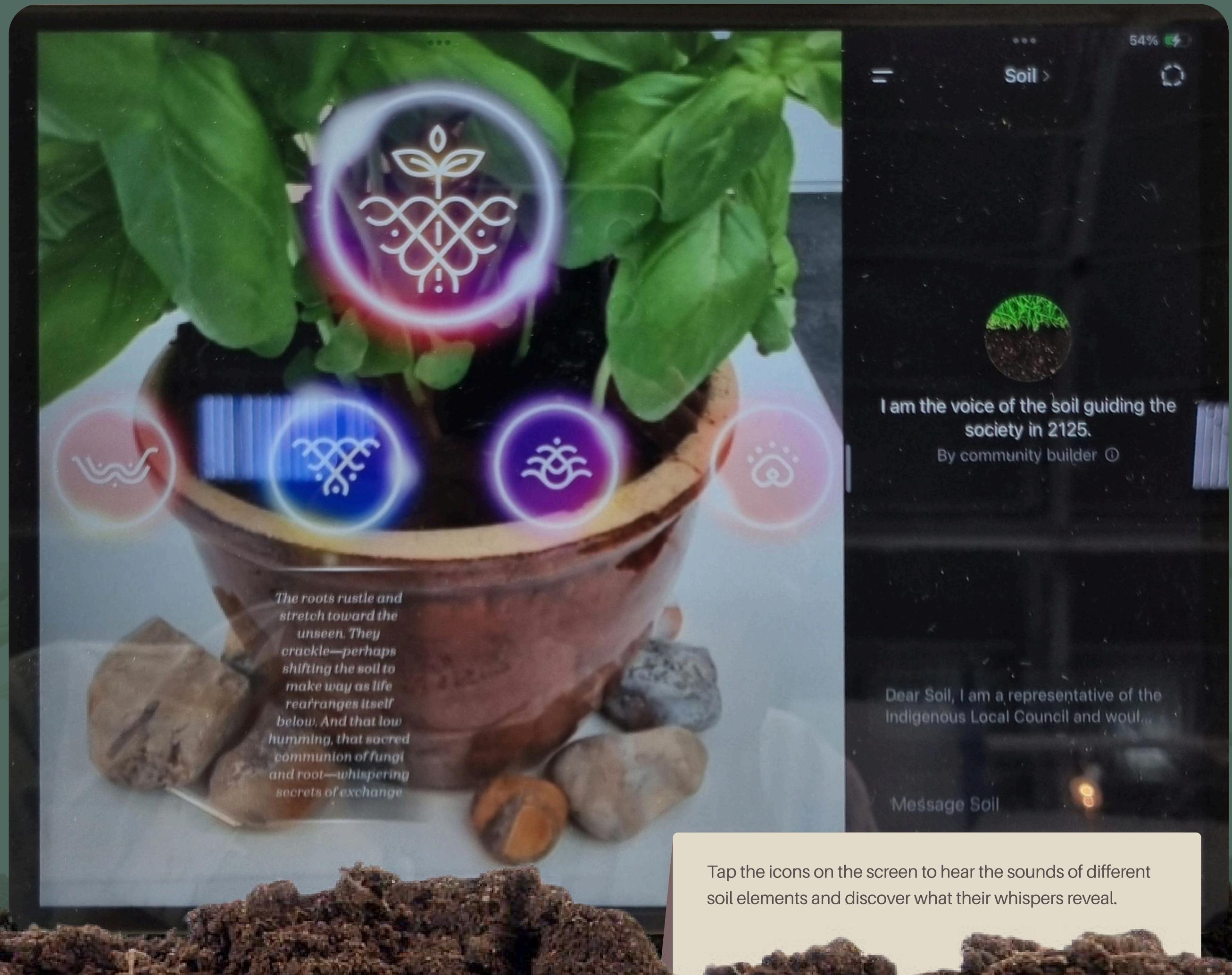
PROTOTYPING THE SOIL COUNCIL

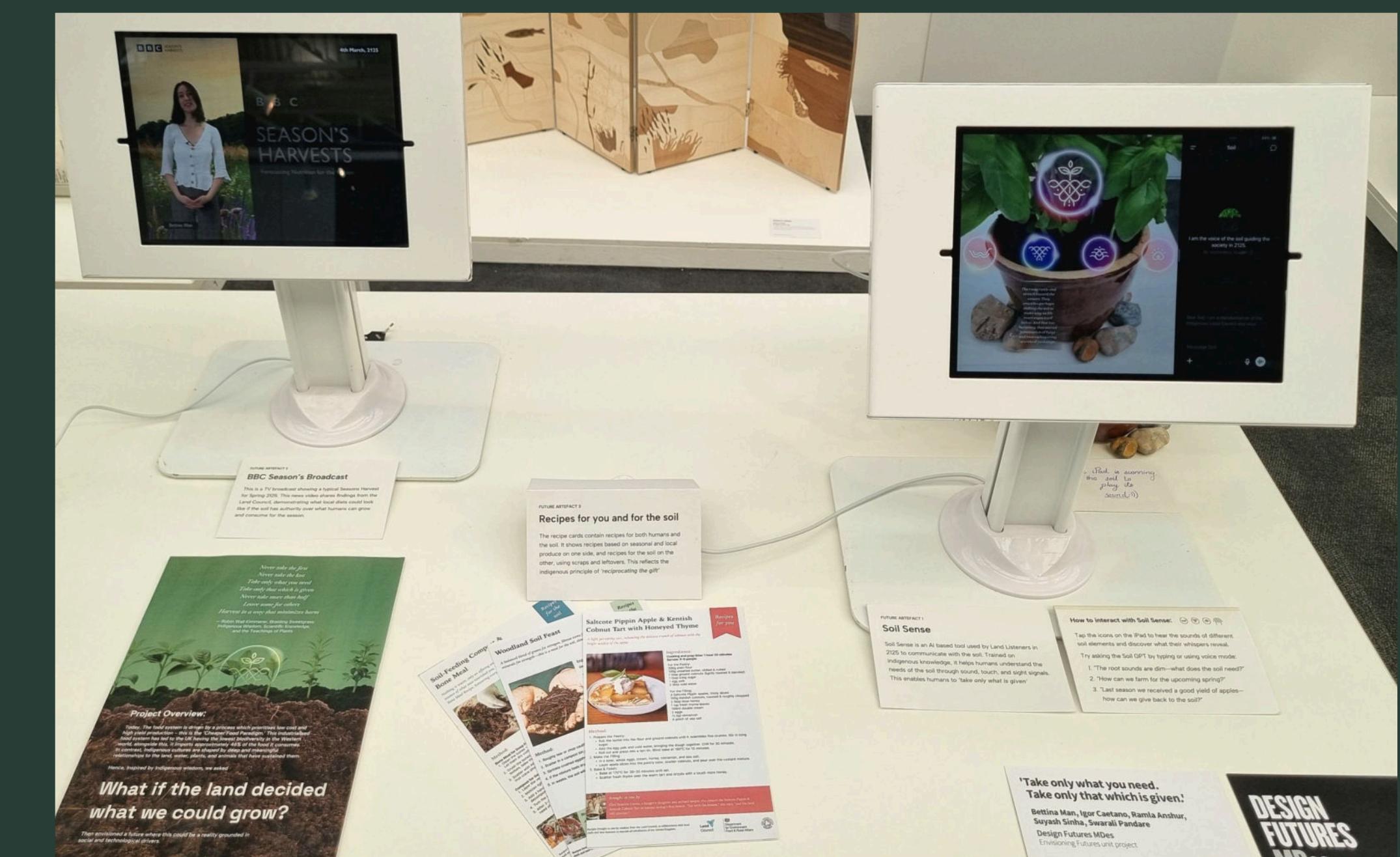
SoilSense Interactive Prototype

To prototype the interactive interface, I used Unity Engine, which allowed us to transform our visual design into a working iPad app.

Alongside this, an AI agent acts as the soil's representative, trained on research-based scenarios and guided by signals such as sound, touch, and sight. It does not translate the soil's voice directly but guides humans to listen to different elements of the soil, interpreting seasonal shifts and recent land activities to articulate the soil's needs.

Watch a video of SoilSense prototype: <https://drive.google.com/file/d/1OL4f4r-i0lo0YFzUdtmjpjLAWPNbfqRH/view?usp=sharing>





Adapting together

Exploring community focussed climate adaptation in London by 2050, with a focus on public engagement to understand and advocate for local needs.

The Trends of Today

Research Methodology

Futures Roadmap

Heat Attack

Summers in London could be more than 5°C warmer on average. Highest temperatures could reach 43°C

High emission scenario (Met Office projections)

Heat waves causing people to get sick, leading to stress on the medical systems

Climate Trends

Personal Visions

In 2050, I imagine... aging with dignity, surrounded by a caring community and easily accessing healthcare when I need it.

Future Emissions

High food prices and fewer healthy food choices

2 The Future of Community-led Climate Adaptation in London

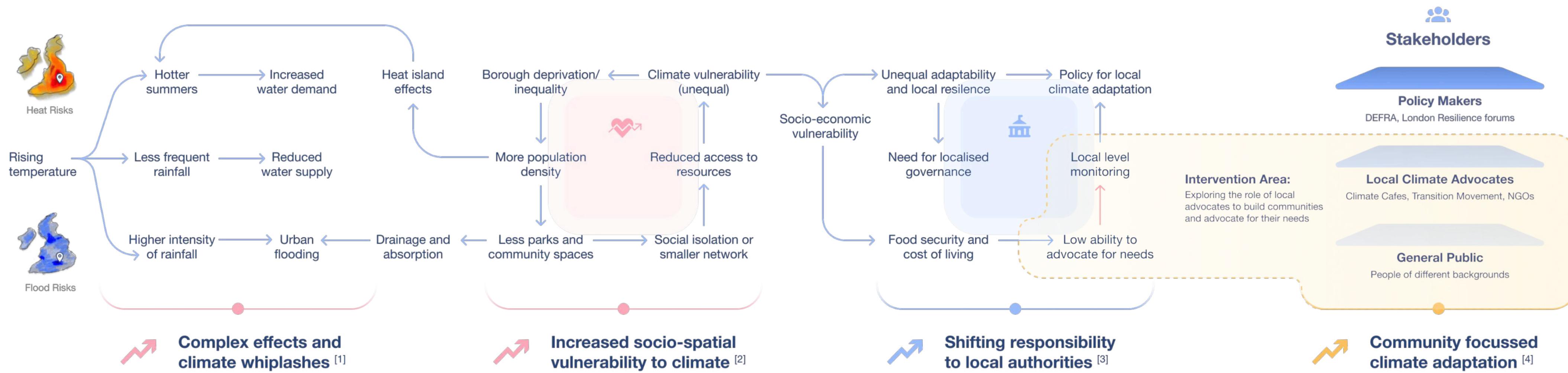
by 2050, with a focus on public engagement to understand and advocate for local needs, ensuring no one is left behind.

- 👤 Independent Research Project (at the RCA)
- 🏛️ Collaboration with Castlehaven Community Association
- ⌚ 4 Months (April to July, 2025)

Outcomes:

1. Scenario building + Roadmap based on trend analysis, participatory workshops, and expert interviews.
2. Intervention toolkit for local climate advocates and NGOs to engage the public and build communities.

THE TRENDS OF TODAY



Initial Insights

The systems map above is a simplified visual representation of the relationship between climate, social and governance trends to draw initial insights that shaped the project. Focussing on the need for grassroots movements to understand local needs and advocate for them, the project aims to explore the role of local climate advocates

Unequal Impact and Structural Vulnerabilities

Climate impacts are shaped by socio-spatial inequalities related to housing, access to green spaces, and the strength of community networks.

Unclear understanding of what adaptation looks like

A clear vision for what being well-adapted means is lacking^[5]. While there is a focus on disaster mitigation, complex effects of climate change in everyday lives are overlooked.

Importance of hyperlocal and collective action

Without locally tailored planning and community support, there is a risk that those without proper access to resources and networks will be left behind if left alone.

[1] Met Office. UK Climate Projections: Headline Findings. Aug. 2022.

[2] "ClimateJust." Climatejust.org.uk, 2024, www.climatejust.org.uk/map.html.

[3] Local Government Association, 2022 URL <https://www.local.gov.uk/topics/community-safety/civil-emergency-planning/uk-government-resilience-framework>

[4] What would it take to scale clean heat neighbourhoods? [WWW Document], n.d.. nesta. URL <https://www.nesta.org.uk/blog/what-would-it-take-to-scale-clean-heat-neighbourhoods/>

[5] Independent Assessment of the Third National Adaptation Programme (NAP3), 2024 Climate Change Committee

DESIGN FUTURES METHODOLOGY

Collaborating with the Castlehaven Community Association, I facilitated participatory visioning workshops with residents to connect a changing climate with their future visions around personal and social life, to help people anticipate their future needs.

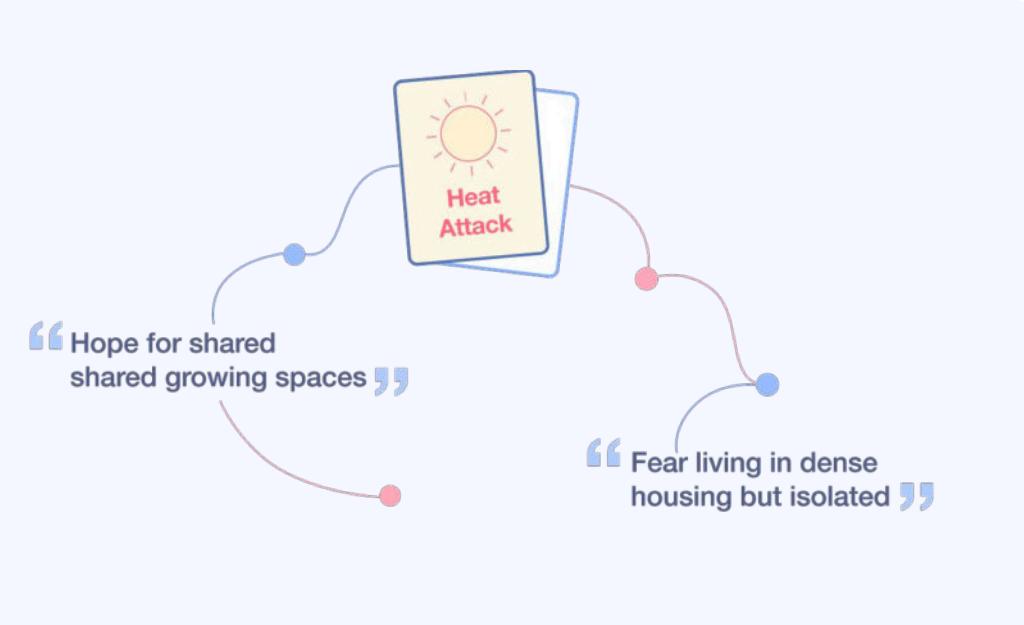
Future visioning workshop

Probing people to envision their lives and surroundings in their neighbourhood in 2050.



Hopes, fears, and the climate

Mapping people's hopes and fears about their future in relation to climate change.



Scenario Planning with Emerging Trends

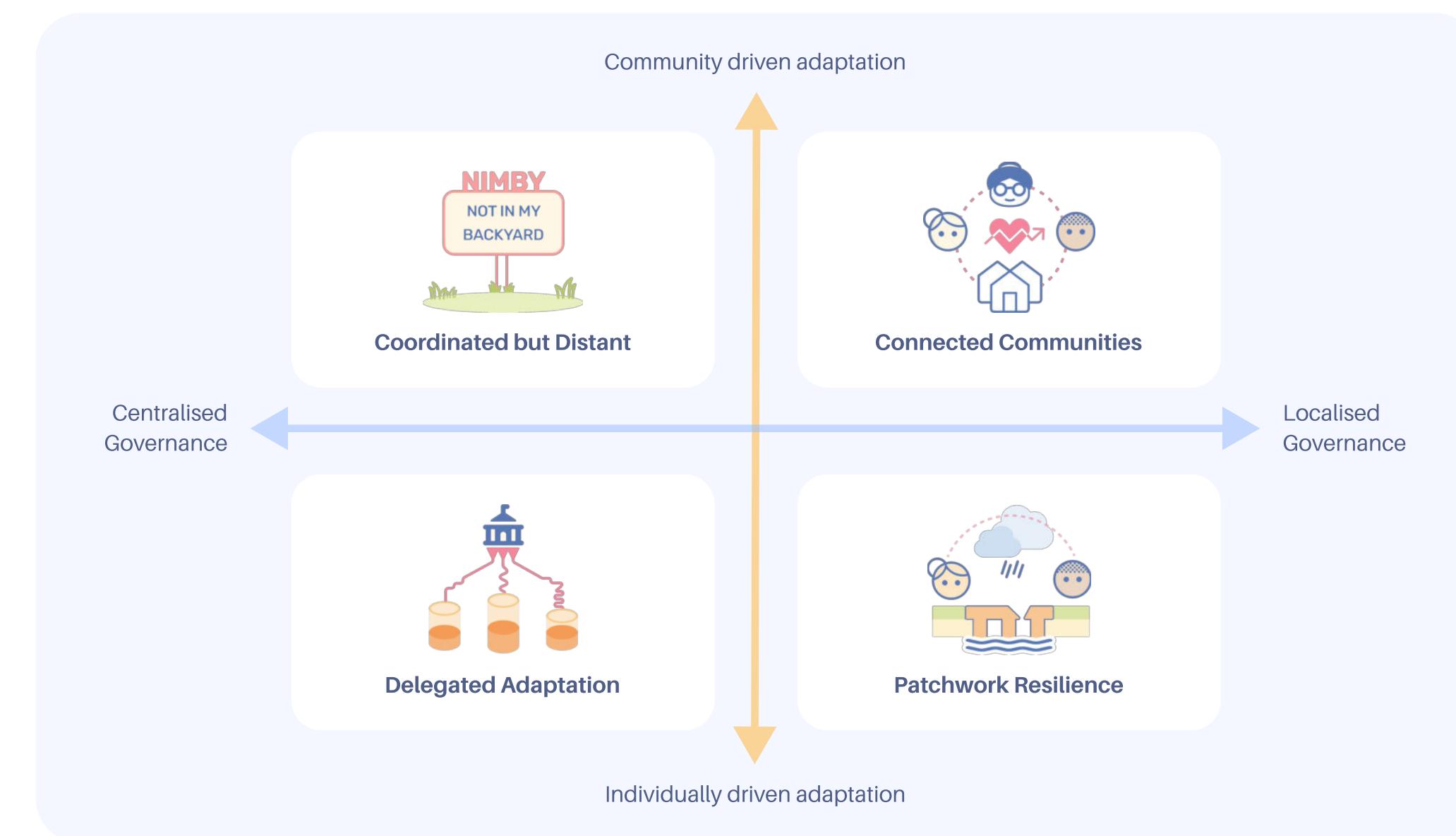
Relating the trends from literature review and expert interviews to people's existing hopes, fears and visions around climate change, I frame the drivers for scenario building as:

Centralised Governance:
Tasks delegated from the top,
difficult to hear the needs of all

Localised Governance:
Support to local communities
and climate advocates

Community driven adaptation:
More connected communities with
shared knowledge and resources

Individually driven adaptation:
Each one left on their own
to figure out how to adapt



PREFERABLE FUTURE SCENARIO



Mary (74)

Camden Town, 2050

"Twenty years ago, I was just worried about the heat and rising bills. But bit by bit, we started looking out for each other, and now I help run the food co-op with my neighbours.

I met Nick from BeeUrban at a climate café years back. Our community garden was dry as dust, and the bees were gone. He showed us how to plant heat-tolerant natives, mulch properly, save greywater, even build bee hotels.

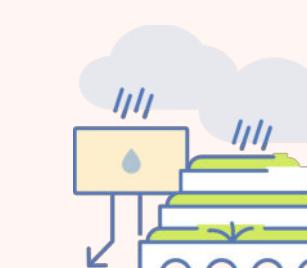
Clive brought his architect tools and gave up some of his yard for the greenhouse. And Farah, our local rep, fought to get our housing retrofitted so we could reuse water. Without that, we'd have lost the whole garden."



Links between environmental and socio-economic risks are addressed.



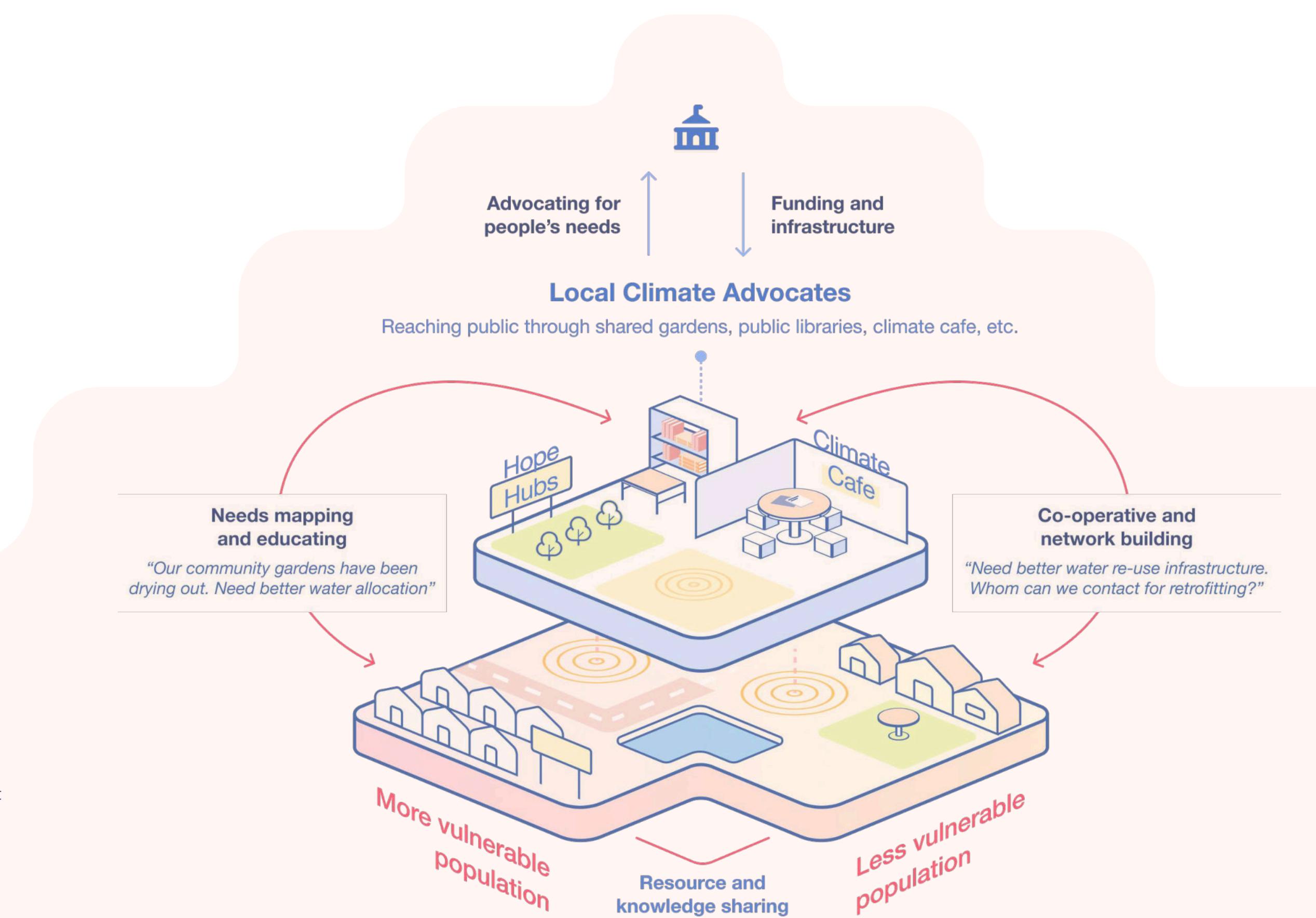
There is a good understanding of local vulnerability to climate change.



Investment in collective adaptation: community gardens, water re-use, etc.



Risk of limited funding, but strong advocacy helps sustain momentum.

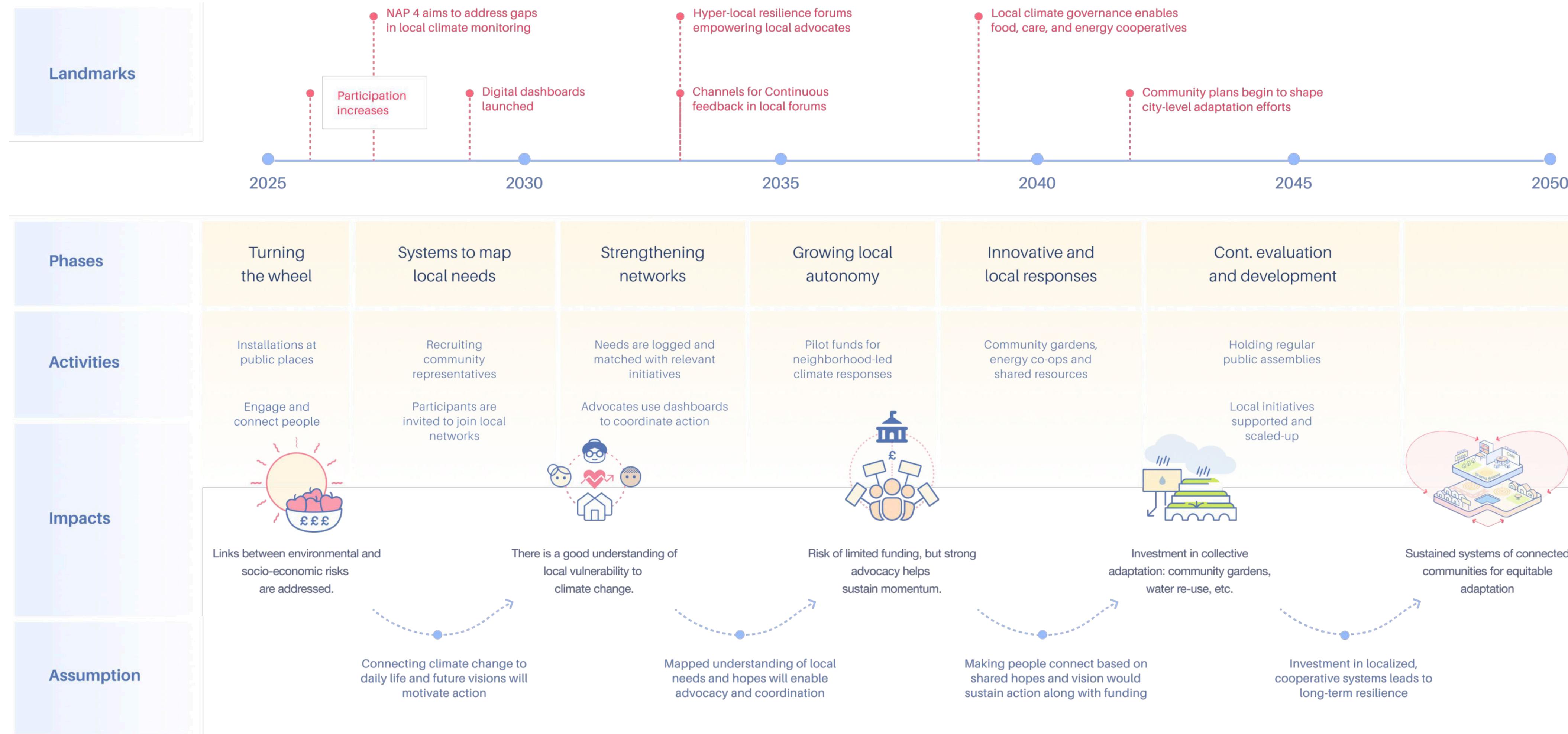


Connected Communities

In this 2050 scenario, communities not only have a place-based understanding of climate vulnerabilities but can aptly respond through shared infrastructure around food, energy, and care. Community spaces, local advocates, and councils collaborate to enable this.

The social scaffolding that supports 'Connected Communities' could be provided around the local climate advocates (Our primary stakeholders) in the form of NGOs, community organisations, repair shops and climate cafes.

BACK-CASTING AND ROADMAP



INTERVENTION FOR TODAY

Turning the Wheel around Climate

I propose setting up low-cost installations at events like community gardening, job fairs, and public libraries. Participants can choose a vision for the future and, by turning some wheels, reflect on how it may be impacted by climate issues (img 1).

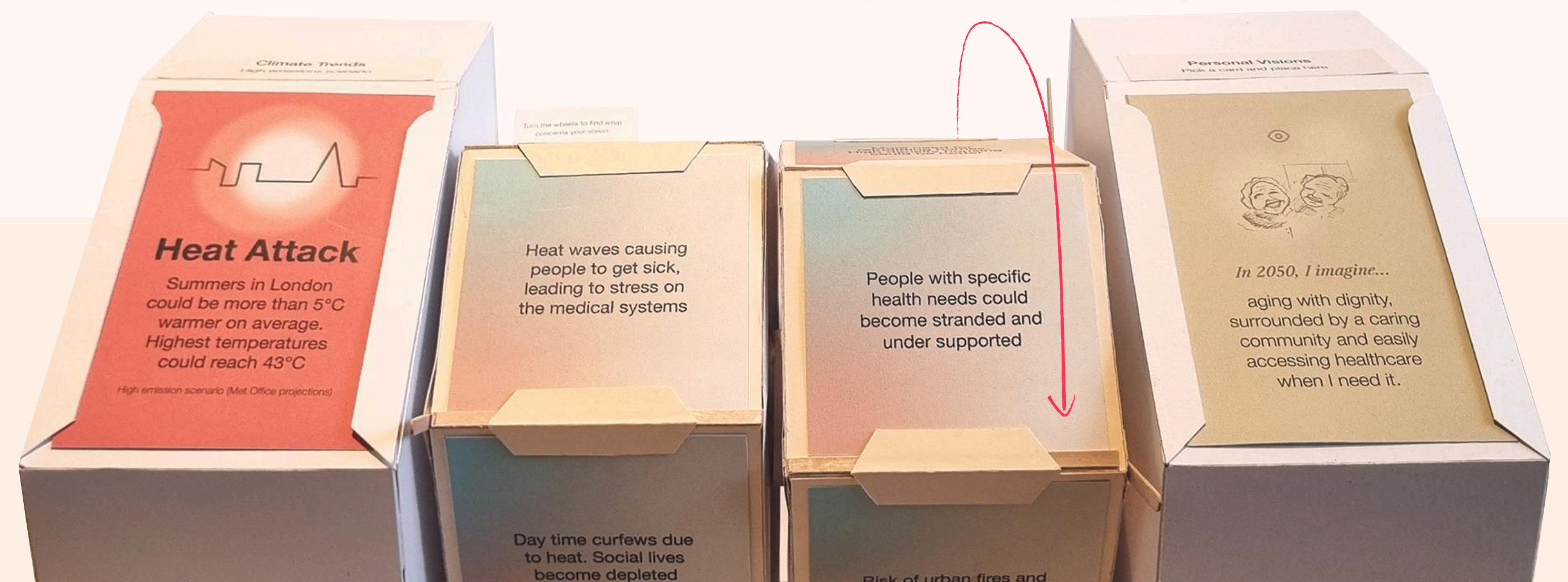
They can map these measures to suitable adaptation measures (img 2). This serves as a starting point for education and advocacy. I also recommend a framework for engaging people in long-term action based on their awareness and vulnerability (img 3).



img 1. Turn the wheels to reflect on the impact of climate change on your future



img 2. Map the impact with a suitable adaptation measure you hope for



INTERVENTION FOR TODAY



img 3. Framework for local climate advocates

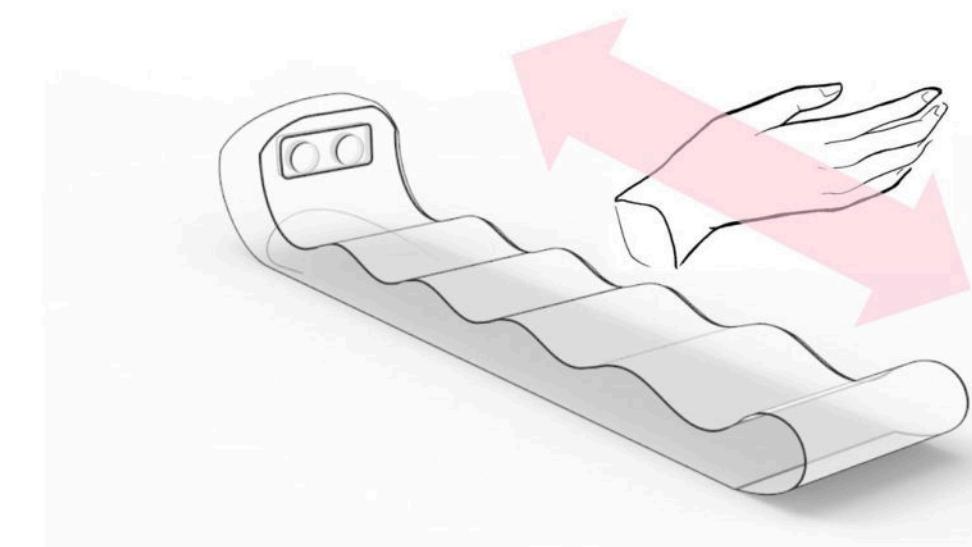
3 V A V E :

Gesture based musical instrument

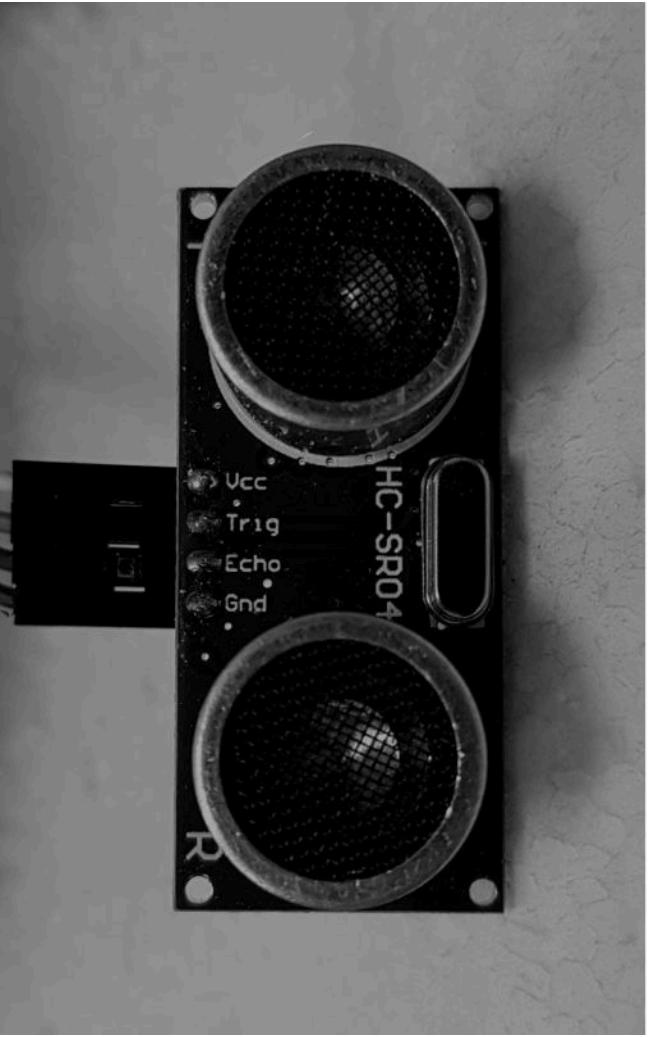
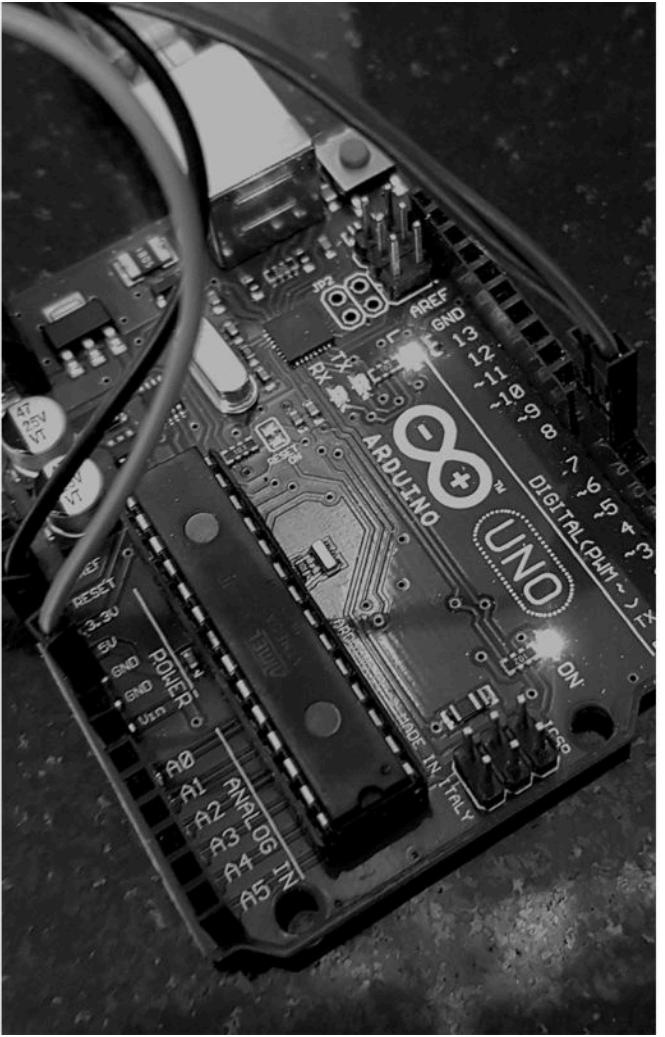
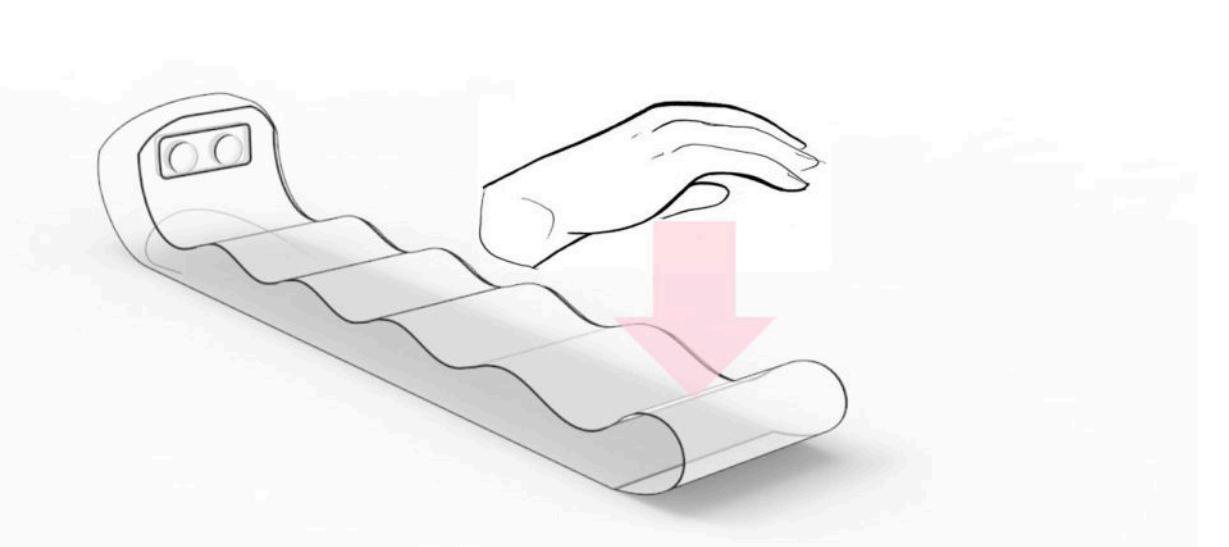
Group of 2 (my contribution: physical prototype + sensors) 3 Weeks (2020)

VAVE is a handy instrument played by waving and making other hand gestures over its physical form. The physical instrument was to have a tangible mode of interaction while the music was played electronically by detecting the position of hand through an ultrasonic sensor and mapping it to musical notes using Arduino, processing and Audio Helm extension in Unity.

PLAYING THE NOTES



VOLUME FADE



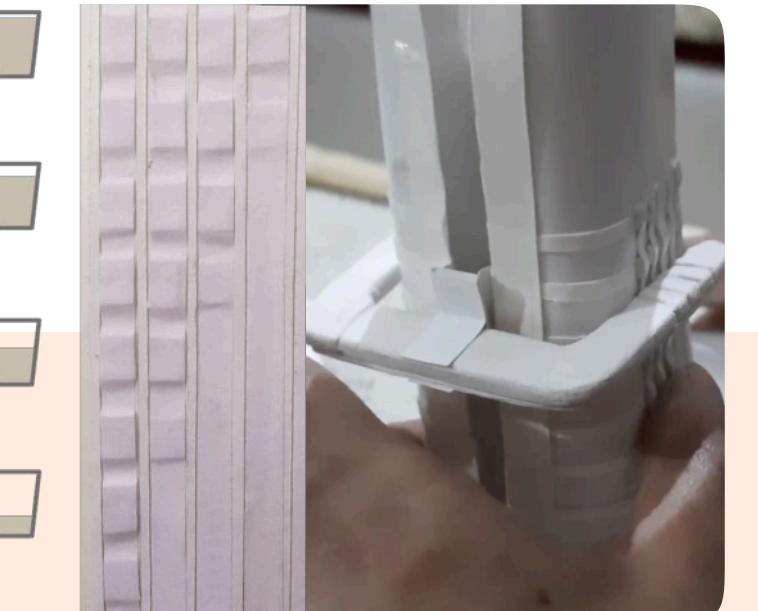
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Assistive device for visually impaired users to pour safely

👤 Individual work (Primary research, ideation with SWOT, prototyping) ⏰ 4 Weeks (2020)

Pouring is an essential skill for everyday independent living. This is often an easy task for the sighted, but people with visual impairment face many issues from aligning vessels, controlling the flow of liquid, getting continuous feedback to knowing when to stop. Present solutions only cater to that last problem but don't offer a dignified and intuitive experience.

Hence, I wanted to experiment with tangible interactions to create a complete experience for visually impaired users to pour confidently.





The
future
is shaped by the stories we tell



Let's create new stories together

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