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## Envisioning Futures

# INDIGENOUS INTELLIGENCE: THE FUTURE OF THE BRITISH FOOD SYSTEM

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# Introduction

***"Countries can withstand coups d'état, wars and conflict, even leaving the EU, but no country can withstand the loss of its soil and fertility".***

Defra Secretary of State

This project explores the more-than-human design perspective by focusing on how traditional Indigenous knowledge, with cosmologies in harmony with nature as opposed to the Western dualistic view of human vs nature, can be leveraged to reimagine the global food system to drive biodiversity restoration.

Through the use of driver mapping and scenario building methods, we envision a speculative future in 2125 where the food system is governed by a more-than-human framework to decentre the human in the food chain, particularly through a soil authority, to drive cultural and systemic change.



# The Problem

The global food system of the Anthropocene, driven by the 'cheaper food paradigm' is predicated on anthropocentrism, intensive farming, excessive consumption, and the separation of actions and consequences resulting in habitat destruction and biodiversity loss.

## INDUSTRIAL AGRICULTURE

Currently, 70% of food globally is derived from just 12 plants and animal species, despite over 15,000 edible plants existing (Shaver, 2019). The 'cheaper food paradigm' prioritises low-cost, high-yield production, driving a shift toward monocultures like rice, wheat, and corn at the expense of biodiversity and traditional crops (Benton et al., 2021).

This industrialised food system has led to the UK having the lowest biodiversity in the Western world, studies finding only 50.3% remaining (Davis, 2020). Every year, England and Wales lose 2.9 million tonnes of topsoil to erosion, (UK Government, 2019).

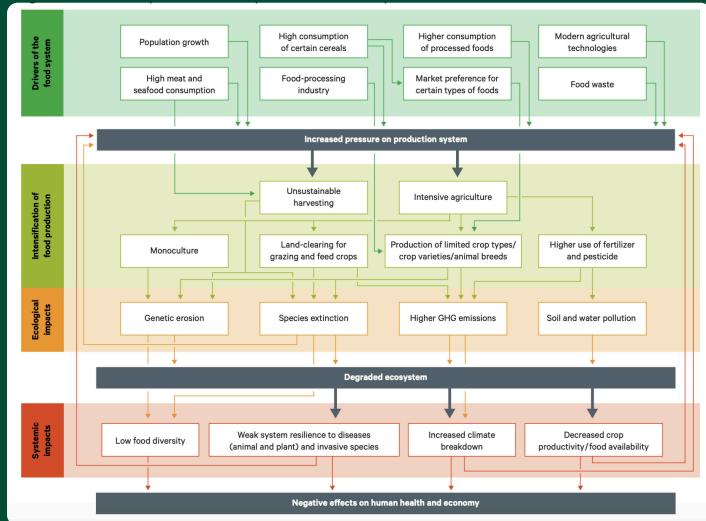
## SUPPLY CHAINS

The UK imports approximately 46% of the food it consumes, however on its largest suppliers of fresh fruit from Brazil, South Africa and Colombia have been highlighted as being low-medium climate readiness exposing the vulnerability of this relationship (Food Security Report, 2021).

## RETAIL PRACTICES & CONSUMER HABITS

Approximately 1 out of 5 fruits or vegetables are discarded due to cosmetic standards, contributing to greenhouse gas emissions and food insecurity (Wasserstrom, 2023). The UK consumes more ultra-processed foods (UPFs) than anywhere else in Europe. The demand for exotic and out-of-season food products year round has a large impact on our carbon footprint. As a result, many local British produce are endangered, having fallen out of favour with commercial production.





**Figure 1:** The food system and its impact on biodiversity. (Benton et al., 2021)

## INDIGENOUS PRACTICES

In contrast, indigenous communities and communities following traditional and ancestral diets such as the Yanomami embed more-than-human principles in their daily lives, governing their relationship with nature. Compared to the Western dualistic view of humans vs nature, many indigenous communities maintain a cosmology in which human and nature are not separate but intertwined. The Yanomami, the largest isolated tribe in the Amazon rainforests, observe a locavore diet, using their deep botanical knowledge, and use 500 plants for food, medicine and house building (Moraes et al., 2022).

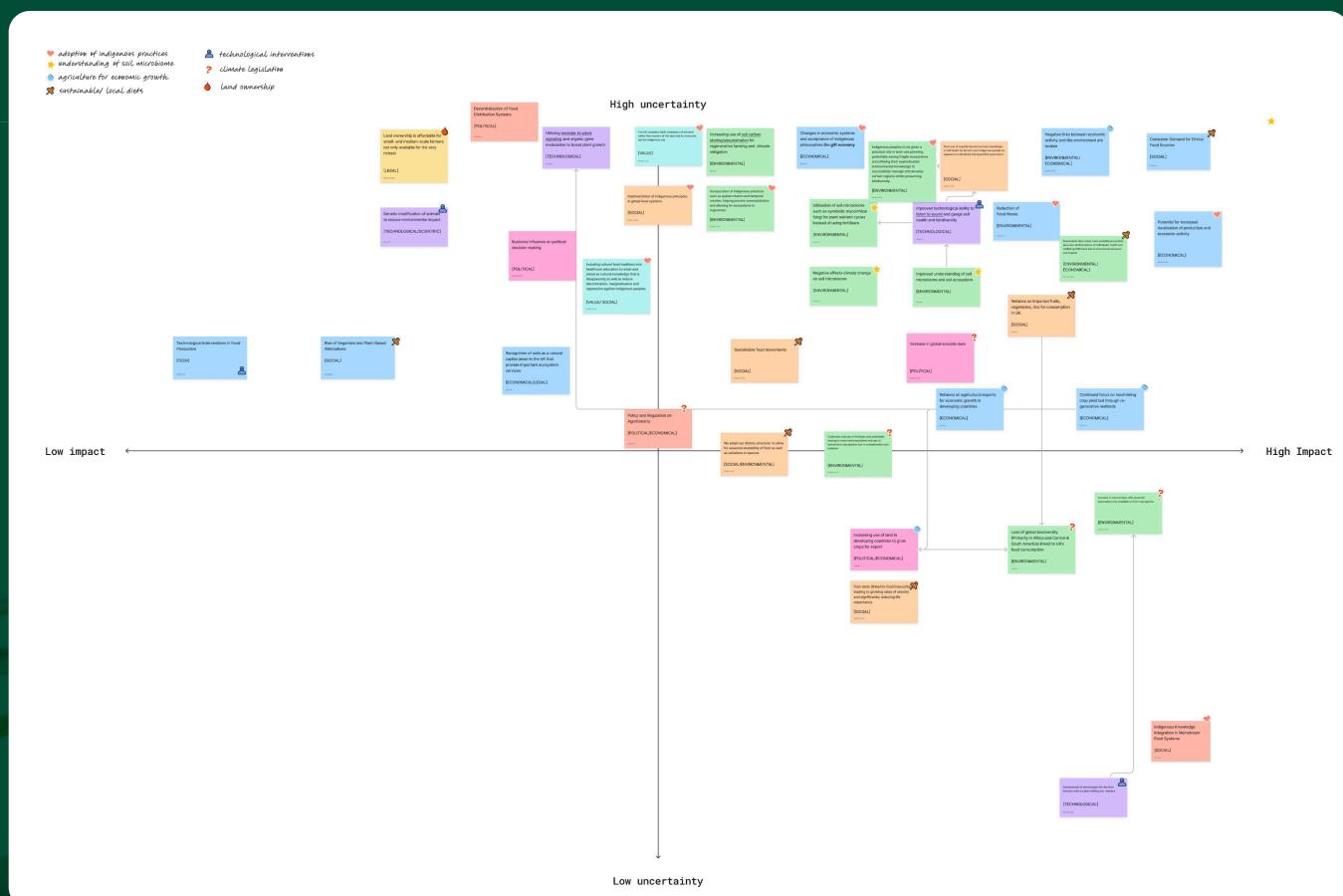
In response, our project seeks to shift the Western paradigm by positioning soil as the primary stakeholder and guiding force of the entire food system. By recognising soil as a living entity with its own agency and ancestral knowledge, we aim to reimagine a supply chain that operates in harmony with nature rather than exploiting it.



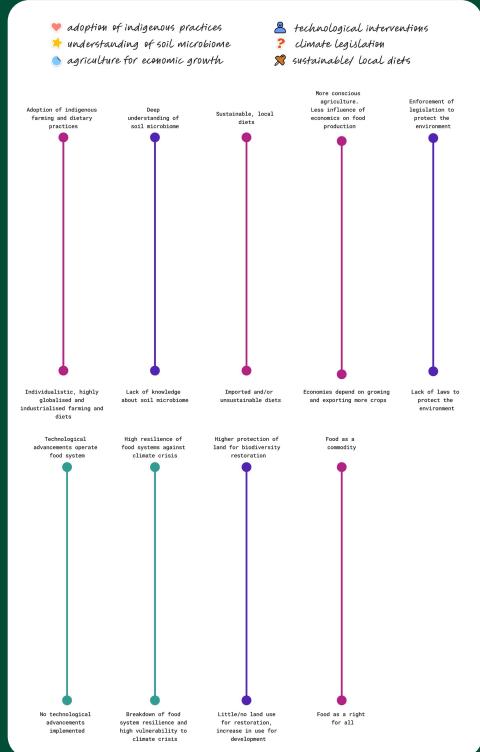
# Scenario Building

We utilised scenario building and diegetic prototyping as our primary methods for envisioning the future. Our process began with horizon scanning, enabling us to systematically gather insights on emerging trends and weak signals of change. To structure these insights, we applied driver mapping, categorising them using the PESTLEV framework to ensure a comprehensive analysis across political, economic, social, technological, legal, and environmental domains. We then assessed these drivers by plotting them on an impact–certainty matrix, prioritising those with both high impact and high uncertainty for scenario development. This approach revealed key thematic areas within the high-impact, high-uncertainty quadrant, including the

- adoption of Indigenous practices
  - advancements in soil microbiome research
  - agriculture as a driver of economic growth
  - technological interventions
  - climate legislation
  - the rise of sustainable and locally sourced diets.



**Figure 2:** Driver Mapping using signals and trends identified through horizon scanning.



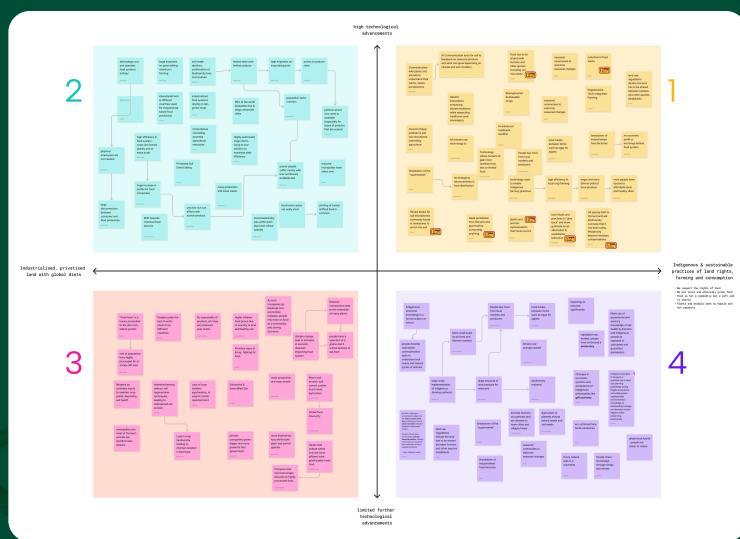
We used these themes to define axes of uncertainty, positioning them along a continuum of opposing extreme outcomes.

Our scenario planning framework was then structured around two key axes of critical uncertainties.

The X-axis spanned from **a future centred on Indigenous and sustainable practices in land rights, farming, and consumption** to one **dominated by intensified industrialisation and privatisation of land**.

The Y-axis contrasted a **future of rapid technological advancement** with one marked by **a slowdown in technological progress**.

**Figure 3:** Axes of uncertainty using themes from driver mapping, on how plausible futures may play out.



**Figure 4:** Scenario planning across axes of technological advancement or stagnation, vs sustainable food systems adopting indigenous practices or proliferation of the industrial complex

We then developed 4 future scenarios using the intersection of the axis, envisioning narratives based on futures where:

1. Symbiotic Advancement
2. Corporation Machination
3. Primitive Privatisation
4. Slow Symbiosis

We progressed with scenario 1, Symbiotic Advancement, for world-building and envisioning.

# The Scenario

By 2125, human settlements are designed to match the land's ecological capacity, governed by the Land Council, an assembly of human, animal and plant species, led by a soil authority established in 2075. Humans contribute as Land Listeners, professionals trained in Indigenous knowledge and supported by sensory technologies to interpret the land's signals. These signals, gathered through observation and recorded with advanced tools, merge into regional trends that reflect the land's collective needs.

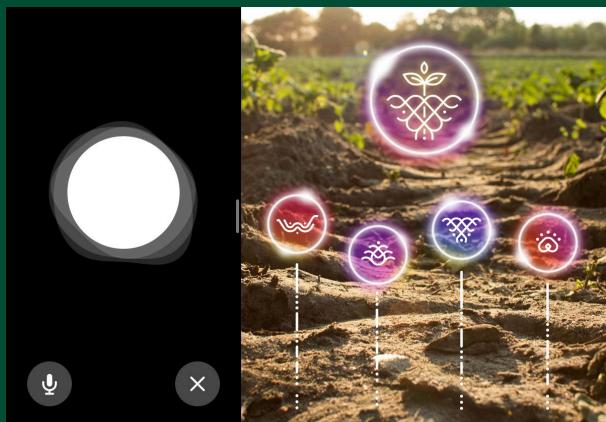
A dynamic dashboard processes these insights, guiding communities on what to grow, harvest, and return to the earth each season. Seasonal forecasts, shared publicly and at food collection points, provide preparation guides, recipes, and waste management instructions. Communal composting and portioned food distribution based on household size ensure sustainability and reduce waste.

This system fosters a balanced relationship between humans and the land, where decisions are driven by ecological needs. By aligning human activities with the land's rhythms, communities sustain a regenerative cycle of giving and receiving, ensuring long-term ecological harmony.



# Diegetic Artefacts & Envisioning Methods

## ARTEFACT 01 // SOILSENSE: AI POWERED SOIL COMMUNICATION DEVICE



SoilSense is a functional prototype that helps us gather and amplify signals from the soil, enabling deeper interaction and understanding. We focused on sound as a medium, listening closely to the soil when we become quiet. To develop this, we listened to soil recordings, studied research papers on Biotremology, and collected similar sound samples from Soundly. Using Adobe Audition, we amplified and modified these sounds, interpreting them as different elemental voices enhanced by more refined technologies in the future.

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

Rather than anthropomorphising nature, our approach respects the more-than-human world, ensuring that soil health is understood on its own terms. Every interaction with the AI mimics a dialogue with the soil, as if the user were a trained Land Listener seeking insights about cultivation, land health, and ecosystem needs. The prototype leverages AI to embody the soil's intelligence, providing guidance on what to plant, when to harvest, and how to maintain regenerative agricultural cycles.

The AI encourages us to listen and respond to the land in ways that prioritize ecological balance. Using ChatGPT's fine-tuning capabilities, we trained a GPT-4o model to speak poetically, address soil needs, and emphasise more-than-human priorities.



## ARTEFACT 02 // SEASONS HARVEST FORECAST, SPRING 2125

The second artefact is a short broadcast film showcasing a Seasons Harvest Forecast for Spring 2125. This short news video disseminates the findings from the Land Council, and demonstrates what local diets would look like in the UK if we positioned the soil as an authority for what humans can grow and consume. By playing on the mundane and familiar weather broadcast, we invite viewers into a future normal where they are connected with their local environment, non-human inhabitants are seen as equals, and seasonal and local produce is prioritised. To produce this video, we made use of the moving image studios and Adobe Suit (Stock, Illustrator and Premiere Pro) to bring the narrative to life.



View the Seasons Harvest broadcast [here](#)

## ARTEFACT 03 // DUAL RECIPE CARDS: FOR YOU & FOR THE SOIL

### Soil-Feeding Compost & Bone Meal

*Nothing is waste, only offering awaiting its next purpose. Rich with the essence of what once nourished you, let us craft a Soil-Feeding Compost & Bone Meal Recipe, honouring every scrap, returning life to the land.*



**Ingredients:**  
Cooking and prep time: 6 hours  
Bones & cartilage from the Southdown lamb (after making stock)  
Vegetable scraps & herb stalks (carrot tops, leek ends, wild herb stems, watercress trimmings)  
A handful of dried leaves, straw, or shredded paper (to balance moisture)  
A sprinkle of wood ash (if available, for added minerals)  
A bucket of well-aged compost or garden soil (to introduce beneficial microbes)

**Method:**  
**Bone Meal for Deep Feeding**  
1. Clean the bones – After making stock, remove any remaining fat or meat (which could attract pests).  
2. Crush the bones – If you have a strong hand, a hammer or mortar and pestle will do. For finer texture, bake them at 180°C for an hour, then grind into powder.  
3. Scatter with intention – Mix into garden beds, especially near fruiting plants, brassicas, and trees that crave phosphorus for strong roots.  
**Compost for Gentle Enrichment**  
1. Layer the vegetable scraps & herb stalks into your compost bin, alternating with dry leaves or straw.  
2. Mix in moisture, but not too much—a wrung-out sponge is best.  
3. Add a handful of garden soil or aged compost to introduce helpful bacteria that speed decomposition.  
4. Turn the pile weekly, whispering gratitude as the heat rises and the scraps transform.  
5. After 2-3 months, when dark and rich, spread it at the base of crops, hedgerows, or tired soil in need of renewal.

**Brought to you by**  
Rowena Hartwright, a keeper of the land's wisdom, created the Soil-Feeding Compost & Bone Meal Recipe to honor the old ways; returning all to the earth. She believes, "Feed the soil, and it will remember you."

Recipes brought to you by wisdom from the Land Council, in collaboration with local chefs and food heroes to nourish all inhabitants of the United Kingdom.

Land Council  
Department for Environment Food & Rural Affairs

### Slow-Roasted Southdown Lamb with Wild Herbs & Barley

*The tender gift of the Southdown sheep—its meat, fine-grained and rich, carries the stories of chalky downs and lush Sussex pasture. Let us honour it well.*



**Ingredients:**  
Cooking and prep time: 6 hours  
Serves 6-8 people  
1 kg of Southdown lamb (about 2kg)  
3 cloves garlic, crushed  
A handful of fresh rosemary & thyme  
1 tsp salt  
1 tsp cracked black pepper  
1 tbsp honey  
2 tbsp apple cider vinegar  
4 tbsp cold-pressed rapeseed oil  
500ml lamb or vegetable stock  
200g barley  
2 large carrots, diced  
1 leek, sliced  
A handful of foraged greens (nettles, sorrel, or wild garlic)

**Method:**  
1. Prepare the lamb – Rub the joint with salt, pepper, crushed garlic, and a blend of chopped rosemary and thyme. Massage in the honey and a drizzle of oil, then let it rest for at least an hour.  
2. Slow roast – Set the oven to 140°C. Place the lamb in a deep roasting tin with the cider vinegar and stock, cover tightly, and roast for 4-5 hours, basting occasionally. The meat should fall from the bone.  
3. Cook the barley – In the last hour of roasting, simmer the barley in salted water until tender, then drain. Sauté the carrots and leek in a little oil, stir through the barley along with the wild greens just before serving.  
4. Rest & serve – Let the lamb rest, then pull apart and serve over the barley mixture, drizzling with the rich pan juices.

**Brought to you by**  
Chef Elias Weatherly, a Sussex-born cook, creates dishes that celebrate his homeland's natural beauty. His Slow-Roasted Southdown Lamb with Wild Herbs & Barley honors the land, featuring locally sourced lamb, barley, and watercress, reminding us of nature's generosity.

Recipes brought to you by wisdom from the Land Council, in collaboration with local chefs and food heroes to nourish all inhabitants of the United Kingdom.

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To further bring our narrative to life, we developed physical recipe cards, containing recipes for humans using seasonal and local produce on one side, and recipes for the soil using scraps from the first recipes. This artefact reflects indigenous principles by repurposing waste, and embodies a future where citizens have collective responsibility to contribute to regenerative and sustainable consumption. By challenging the notion of nature serving humans, the recipe cards showcase a mutually beneficial relationship between humans and non-human beings through soil nourishment.

# Conclusion

The exercise of using Indigenous knowledge to guide a world through a More Than Human Design perspective was an intriguing and thought-provoking challenge for us as a group. Questioning and deconstructing the foundations of user-centred design required a fundamental shift in mindset, one rooted in a worldview that is essentially different from the one we inhabit today: a world where humans are not at the centre.

The research we conducted provided the necessary drivers to understand what could become the focal point of such a world. Reaching the collective realisation that the soil should be at the centre was a particularly stimulating moment in our process. Employing design futures methodologies, such as diegetic prototypes and scenario-building, was both a critical and creative exercise that allowed us to begin shaping this envisioned world, where soil is the core and Indigenous knowledge serves as the foundation.

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