

Sustainable Food Systems

Insight Paper | Land, Water, Nature, Food Panel
October 2023



Delivering Impact

This paper was developed collaboratively through the Yorkshire & Humber Climate Commission's Land, Water, Nature, Food panel and authored by Sam Herbert. It draws together insight from YHCC Commissioners, panel members and a focused investigative session with eighteen participants including invited speakers Chris Clark and Dr Chris Yap and the research and evidence listed in the bibliography. The approach is strongly guided by the work of the region's FixOurFood project. [A recording of this session is available.](#)

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The Yorkshire & Humber Climate Action Plan

The Yorkshire & Humber Climate Action Plan was developed by the Yorkshire and Humber Climate Commission with the help of more than 500 people from across the region. It calls for meaningful climate leadership from larger institutions in government and the public and private sectors to deliver “significant, tangible contributions” to help tackle the climate and ecological emergency.

The Plan includes the following actions related to food systems:

19. Prepare the food and farming sector for current and future changes through research and innovation, skills and knowledge development, networks building and stakeholder engagement, acknowledging the huge opportunity for farmers to help address the climate and ecological emergencies if provided with the necessary support.

45. Support net zero agriculture and food production by developing and sharing best practice, promoting new start-ups, and sustainable, nature-friendly and where appropriate community-based food production, enabling changes in consumer behaviour (including to local/regional and seasonal produce and to more sustainable food sources) and facilitating reductions in food waste.

What's the issue?

The Yorkshire and Humber region has a population of just under 5.5 million people (ONS, 2021) who all need healthy, nutritional, affordable food. 20.6% of people in the region were reported to be experiencing food insecurity in 2022¹, which is significantly higher than the 15.5% UK average². The correlation between wealth inequality and malnutrition is unsurprising, as more healthy foods have been shown to be nearly three times as expensive as less healthy foods³.

The challenge of ensuring people have nutritional food becomes even more complex when we take into account multiple pressures on land-use. Scaling up forms of sustainable energy, the need for housing developments and of course, food production all impact how land is managed. Yorkshire is home to between 13-17% of the UK's crop production area (for cereals, oilseed rape, potatoes, field vegetables and crops grown in glasshouses) and 10-14% of the UK's livestock headcount (cattle, sheep and poultry)⁴. Approximately 1.1m hectares (just over 70%) of the region's land area is farmland⁵. Monoculture plantations (where only one type of crop is grown) are common but often lack resilience, and in a changing climate there is uncertainty about what will grow effectively in the future.

In addition, our current land-management, food production and consumption practices are contributing to loss of biodiversity, emission of greenhouse gases, accelerating climate change, and generating pollution and waste. Much of our food comes from complex, global supply chains adding to all of these impacts, and making the system vulnerable to political, social and environmental changes that disrupt these chains. Whilst there are some excellent examples of good and best practice in the region of regenerative farming, it is also true to say that we are living in an unbalanced, unsustainable and inequitable food system which needs to change.

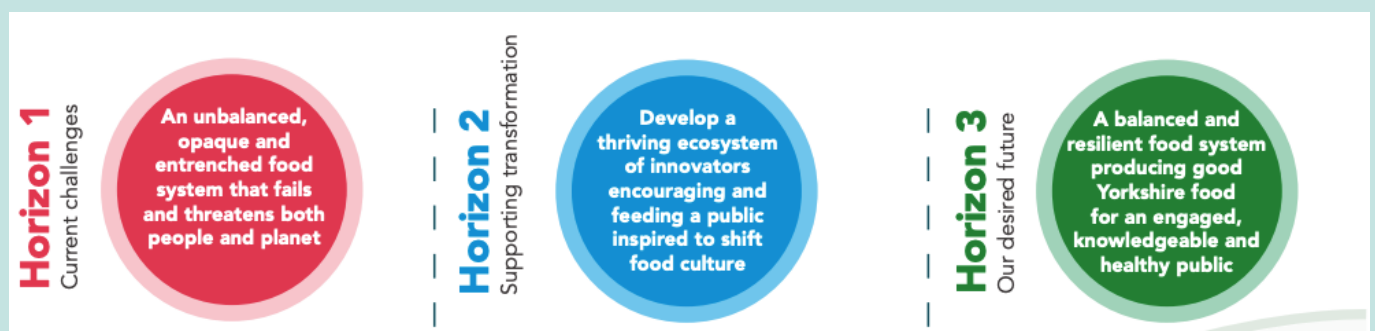


Figure 1: Three horizons analysis of the Yorkshire region's food system. Fix Our Food, 2022

What could be happening and where should we be headed?

The Fix Our Food project has outlined a vision of a sustainable food economy for the region (figure 2, next page), which could set the foundations for an equitable and resilient food system. Their future vision is of multi-functional land use, delivering food alongside supporting nature and a fully circular food system where waste has been designed out of the process. Supply chains are shorter, with local food at the heart of our diets and are more focused on nutrition and health. This would also need to be supported by better education around nutritious diets, and ensuring food is universally accessible and affordable. Governance of the system needs to embrace the breadth of small and large actors – distributing power across a much more diverse range of organisations.

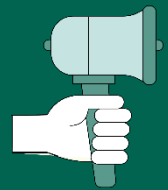
The YHCC's Land, Water, Nature, Food Panel want to explore the issue of sustainable, regional food system according to the following four strategic principles. These are:

- Everyone in the region has enough food
- People are eating a healthy, sustainable diet
- All farms are profitable, sustainable and nature-positive
- Food production is resilient to changes in the climate

Public views

We asked people from Yorkshire and Humber to share their views on sustainable food systems via the consultation platform Commonplace. Of the 54 people who responded:

- **77%** think this is an important issue
- Just **5%** are confident that the issue is being addressed
- **52%** think it's possible to do more to address this issue in Yorkshire and Humber without significant changes in national policy.



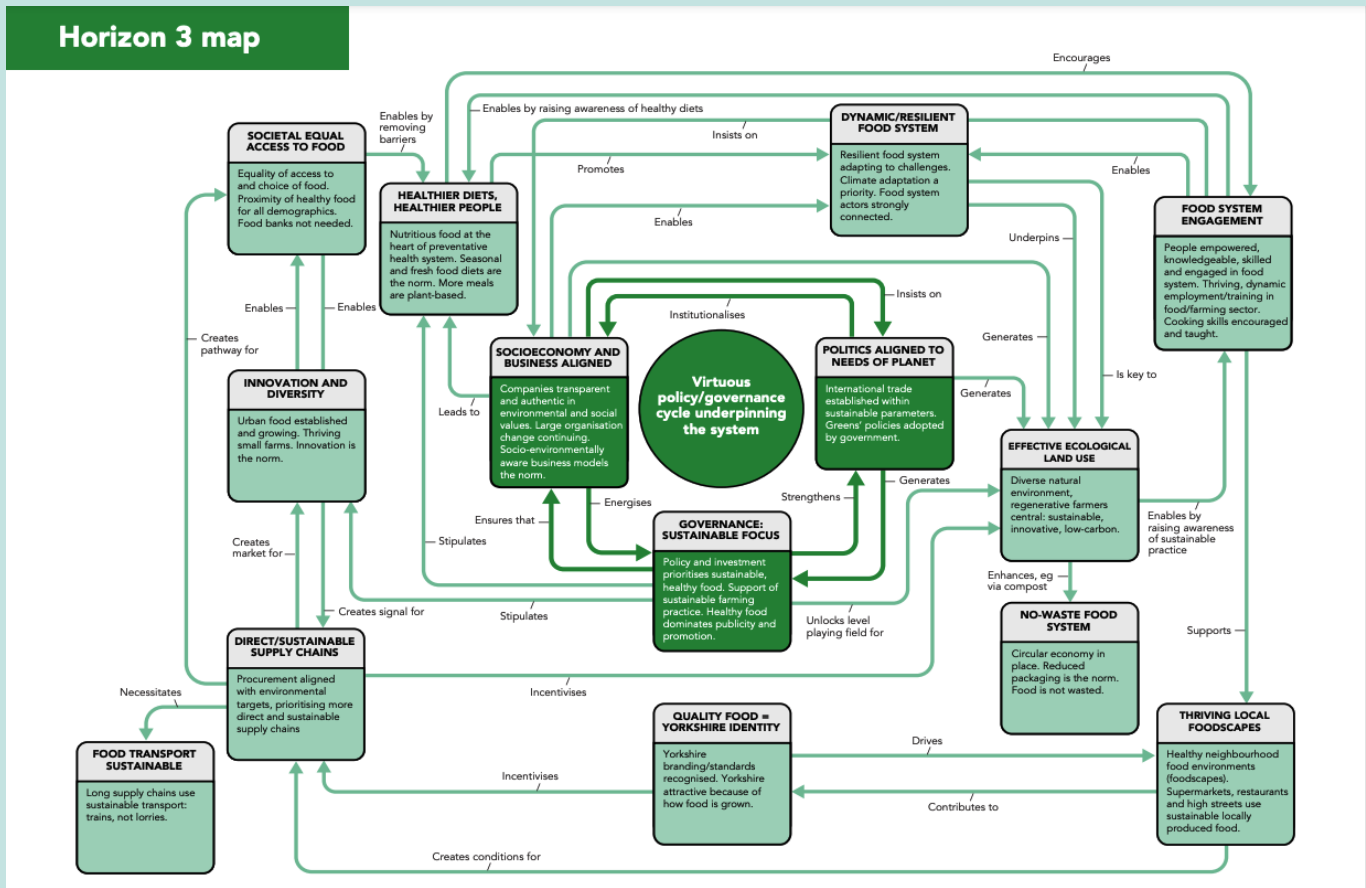


Figure 2 – Horizon map three, transformation of Yorkshire’s food economies. Fix Our Food, 2022

Principle 1: Everyone in the region has enough food

Why is it not happening?

The power to influence our current food system doesn’t often lie with small, local suppliers or retailers. This can mean those closest to communities, who can see what needs there are, don't have agency to disrupt and challenge the status quo and resolve the problems.

Since the austerity of war times, European legislation and subsidies have driven the production of large quantities of food at a lower cost to the consumer. But in our existing system the amount of food produced doesn’t necessarily correlate with how many people are accessing and eating it. One issue is waste. At present between a quarter and a fifth of food in the UK is wasted each year from households, hospitality, manufacture, retail and wholesale⁶. Food banks attempt to capture this waste food and redistribute it to those struggling to afford or access food – a service that shouldn’t be needed if we had a successful food system.

Imports and exports of food also complicate the relationship between production and access to food. Around 46% of the food on our plates comes from outside the UK⁷. Reliance on complex supply chains and imported food can create inflexibility and unpredictability in food supply. Labour shortages and disruptions to distribution networks lead to food shortages, as well as increasing waste⁸ and when these supply chains are disrupted, prices go up.

Food insecurity can be at an individual, regional or national level and can be short or long term. The aim of the Land, Water, Nature, Food Panel is to explore long-term resilience in our regional food system.

Principle 2: People are eating a healthy, sustainable diet

Why is it not happening?

There is a lack of understanding around nutrition, as well as limited awareness of seasonality of foods. The emphasis of many diets in the region is primarily meat and dairy with vegetables and fruit as a supplement. The reverse of this would be the foundation of a more nutritional, more sustainable diet⁹.

The complexity of food supply chains and lack of transparency make it very difficult for people to understand where their food is coming from or what processes it has undergone. As well as meaning it's almost impossible to know if the food we're eating has been produced through unethical labour practices, it also means there is little clarity about how nutritional food is or could have been if it had been produced differently.

The global food system tends to be focused on production of cheap calories such as grain rather than high nutrition such as fruit and vegetables, so good nutrition is often more expensive¹⁰. Commercially-driven products such as junk food are promoted as being good value, convenient and pleasurable. As a result, it is often cheaper to eat high fat, high sugar and highly processed foods than locally grown, organic, healthy food. It also often uses less energy to cook instant or pre-cooked meals, an increasingly prevalent problem in the current fuel crisis. For many, a healthy diet is unaffordable.

Principle 3: All farms are profitable, sustainable and nature-positive

Why is it not happening?

Many farmers are using fertilizers, herbicides and pesticides, some in very large quantities. Increased usage leads to diminishing returns as soil degrades and higher quantities of these supplements are required. This is a strong indication that the food system, and the pressure and incentives it places on farmers, is operating beyond the natural capabilities of the land. It is not a sustainable food system. Pesticides, herbicides and fertilisers are known to be detrimental to biodiversity but there is little readily available information about alternatives to encourage the transition away from chemical use and a number of barriers such as spreading regulation and not having the necessary equipment¹¹. In addition, a third of farmers in the region are tenants on their land¹², and despite many of them wanting to do what is best for the environment¹³ without the assets to secure funding they face significant challenges investing in or adapting their farming practices.

Farming subsidies do not adequately support the protection and restoration of habitat or sufficiently reward biodiversity improvements. The transition towards Environmental Land

Management Schemes (ELMS) is intended to address this, but is attracting significant criticism from farmers and environmentalists. These concerns include confusion about the payment structure, insufficient guidance to allow farmers to plan and collaborate and predictions that uptake of the scheme will be low, potentially leading to farmers resorting to more intensive farming methods that are detrimental to nature¹⁴.

Landowners, managers and farmers are often at the mercy of the commercial systems and markets we currently operate in and rely on. Coupled with a lack of transparency in supply chains, many farmers find themselves unequipped to negotiate with big business for fair prices on their produce. Efficiencies in production are countered by inefficiencies that have been created in the rest of the food system across processing, packaging, distribution, retail, access, nutrition and waste (Figure 3)¹⁵. Farmers are under pressure to adapt their practices to increase yield. Change takes time when dealing with growing and production cycles, and much more certainty of the supporting structures is needed for farmers to commit to a transition.

Principle 4: Food production is resilient to changes in the climate

Why is it not happening?

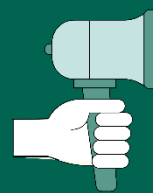
Monoculture farming (where only one kind of crop is grown) is common practice in the region. Healthy ecosystems require more diversity to balance nutrients in the ground, encourage natural predators of pests and support “nature’s gardeners” such as worms who naturally produce and till soil. Without a healthy ecosystem to thrive in, crops naturally have a low resilience, regardless of climate change impacts.

Food production and manufacturing processes often contribute to pollution, affect water and air quality and cause high emissions. Developing a symbiotic relationship between nature and food production can break these problematic cycles, creating balanced food production that reduces these problems, rather than perpetuating them.

There is a lack of integration across the different aspects needed to create a more robust, resilient food system. Farming and production policies and practices tend to be separate to those of processing, selling, consumption and waste cycles. Urban food production is often overlooked when considering options for increasing access to locally grown, healthy food. In addition, the complexity of types of land in the region is often lost in the bigger picture. Climate solutions and securing food production aren’t often thought about in different land terms such as upland, lowland, coastland and urban.

In addition, many farmers need more support in creating adaptation and resilience plans, and net zero strategies to help decarbonise their operations.

Public priorities



Those who responded to our consultation felt the following actions are most important:

- Developing a regional food strategy
- Supporting industry into more sustainable practices
- Transitioning to regenerative farming
- Improving nutrition education

Views that emerged from the consultation included:

New regulations and incentives required

A number of suggestions were put forward for new regulations and incentives that would support a change in the food system. These included improvements to labelling of products to include food miles; taxing foods with a large carbon footprint; regulating supermarket promotions; and incentivising farmers to farm in more nature/soil friendly manner and to grow more food in general.

"Farmers should be encouraged (with reasonable incentives) to have nature and their soil at the top of their priorities."

Promote community-based action

A number of comments argued for greater community-based action, principally encouraging small scale growing within communities in community gardens, allotments etc and making more space available for this. Examples of existing projects given include Kirstall Community Farm, Leeds Permaculture Network and Incredible Edible Todmorden.

"Community groups involved in growing and producing food locally can play a part in encouraging people to feel engaged in the vision for sustainable food production. Allotments, voluntary gardening organisations, charities, community gardens and even homeowners with growing space can be enlisted to support the initiative."

This is not just regional – it's a national and global issue

While the consultation focuses on regional action, some comments argued that the role of national government is crucial and supportive national policies and finance is essential. Others situated the issue within a global context, with views that we need to tackle hunger and climate impacts in the global south first; and that the real issue is global population growth.

"Much as we might want to a regional approach will not address the identified issues - central government is all powerful and holds all meaningful purse strings and at present central government is pretty clueless"

Scepticism of premise / consultation process

A significant number of comments were sceptical of the consultation for a number of reasons. The design of the questionnaire came in for some criticism with a view that the questions are leading and/or do not allow divergent views. A number of commenters argue that this topic should be left to farmers who have the expertise to tackle it, and that the paper does not reflect their knowledge.

“Less words; more action. Everything is far too slow and the time for endless consultation and debate was 20 years ago; not now. This is an 'emergency'; treat it as such, before it's too late. Nature is on the precipice now and our landscapes are beyond knackered. They are ecological deserts. A little less pandering to niche interests would be most welcome, if we are to stand any chance. I'm all for a just transition. It's essential. But what I see now are delaying tactics galore, which is just going to perpetuate the status quo. This isn't the systemic change we need to see.”

Power of supermarket chains must be addressed

The power of supermarkets in our food system was highlighted. Supermarket pressure on suppliers is leading to more intensive farming and a food strategy cannot succeed without looking at the vested interests in our system.

“So many interests to reconcile and so many powerful players, skilled at defending own interests -especially supermarket chains.”

Dietary change required

Dietary change should be promoted to encourage less eating of meat and fish / adoption of veganism. Plant based food should be more widely available in institutional contexts.

“Eat less meat and fish. Provide a wider range of plant based/vegan options in school canteens, work canteens, local authorities events and promote the benefits for the planet and health.”

This is not needed because the climate is not changing

A number of respondents did not believe the underlying science behind climate change which leads them to question the need for these interventions.

Regional priority actions

Governance

- Explore the need for an integrated urban and rural regional food production strategy as part of a regional approach to land use. Create holistic approaches to food systems, integrating urban production into the thinking by drawing on principles such as those outlined in the Milan Urban Food Policy Pact
<https://www.milanurbanfoodpolicypact.org/wp-content/uploads/2020/12/Milan-Urban-Food-Policy-Pact-EN.pdf>
- Openly consider modern land-ownership structures. Explore shifts towards a regional governance model and distributed power. The Scottish land commission is a good example of progress towards distributed land management
<https://www.landcommission.gov.scot/>
- Establish and strengthen land management partnerships and regional food networks.

Production practices

- Support farmers in understanding and sharing knowledge around ‘multiple benefit’ use of land and regenerative farming. For example, the Fix Our Food initiatives around regenerative farming in the region <https://fixourfood.org/what-we-do/our-activities/regenerative-farming/>
- Improve connections between local producers and retailers to facilitate conversations about shorter supply chains. Host ‘Meet the Buyer’ days to open dialogue between procurement officers and producers.
- Explore creating a Maximum Sustainable Output (MSO) analysis of the region and facilitate all farmers in conducting their own MSO calculations and strategy. MSO is a method of farm productivity analysis that helps farmers reach optimal yield in balance with nature. Nethergill Associates designed the technique based on practical experience with over 100 farmers in the region: <https://www.nethergillassociates.co.uk/maximum-sustainable-output>
- Support farmers in accessing best practice and education on regenerative and nature-positive farming techniques.
- Drawing on insight from examples across Europe¹⁶ review distribution networks exploring how to lessen the miles travelled by food and ensure all communities have access to fresh, healthy, affordable food and that these networks are resilient to climate impacts.
- Support industry leaders to transition, such as working with farming chemical manufacturers to transform the industry away from fertiliser and pesticide production towards regenerative farming technologies, creating new green jobs and supporting workers into a new skill area.
- Consider how urban land can be dedicated to local food production initiatives, facilitating entrepreneurship in the urban food sector.

- Create shared knowledge and technology programmes to allow farmers to explore new technologies for urban growing, such as Grow it York: vertical urban farming initiative <https://growityork.org/> and precision farming techniques outlined by the European Commission <https://ec.europa.eu/eip/agriculture/en/digitising-agriculture/developing-digital-technologies/precision-farming-0>

Healthy diets

- Work across local authorities and school networks to improve sustainable food education through initiatives such as the Fix Our Food schools network <https://fixourfood.org/what-we-do/our-activities/schools-and-nurseries/fixourfood-in-schools/> and Food Wise Leeds: <https://foodwiseleeds.org/>
- Support improved school meal schemes connecting council-run and community-led initiatives, and enable schools to make best use of their outside spaces to help children actively see the link between growing crops and eating food.
- Raise visibility of schemes like The Bread and Butter Thing, working to redistribute food into low-income communities.

What role should the Commission play in enabling these actions?

- Continue to develop and explore the case for a regional, integrated land-use strategy.
- Support Fix Our Food and other similar initiatives in attracting schools to their food education network through the YHCC networks.
- Share toolkits and case studies of community initiatives within the region to increase their presence, encourage more to set up and increase the collective power of small actors in the system.
- Attract large corporations within the food system to sign the YHCC business pledge and commit to improving their resilience, the resilience of their supply chains (to climate risks)
- Facilitate conversations about land-use policy which may be restricting the ability for farmers to transition towards regenerative techniques and reduce the need for chemical pesticides, herbicides and fertilisers.

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