Roadmap for Resilience:
A UK Food Plan for 2050
Summary Report

Stronger, more resilient farming

Smarter, more integrated land use

Healthier diets made easier

UK Research and Innovation

AFN Network+

The AFN Network+

The Agri-Food for Net Zero Network+ was established by UK Research and Innovation in 2022 to consider the challenge of transforming the UK's food system to meet our climate commitments. Since then, we've built a community of over 3,000 researchers, food and farming practitioners, and policymakers from across the UK dedicated to finding pathways to a more sustainable future.

Over recent years, the food system's vulnerability to sudden shocks has become increasingly apparent – from pandemic upheavals to conflict-driven price spikes and extreme weather events. These disruptions underscore why transformation cannot wait. This Roadmap comes at a pivotal moment, with the UK government launching a new food strategy process with an aspirational vision for change. The question now is how to turn vision into reality.

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Introduction

Transformation of the UK food system is inevitable. Pressures from the impacts of climate change, geopolitical instability and mounting health costs will result in our food, farming and landscapes changing radically over the next half century. The question is whether we respond haphazardly as changes are forced on us or actively manage change for the public good. By grasping this opportunity now, we can ensure everyone has access to healthy and sustainable food, nature flourishes, emissions fall, farmers have dependable livelihoods, and our food system becomes fair and secure – as well as bringing many other benefits to society.

The pressures from climate change and geopolitical instability are not just future threats. They are already making themselves felt – disrupting agricultural production and threatening food security. Poor diets are straining the NHS and undermining the UK's economic productivity. So while the UK's commitment to net zero by 2050 provides a framework for climate action, transformation is a wider economic and social necessity in an uncertain world, not simply a need to reach a target.

The AFN Network+ developed four plausible scenarios for how the food system may look in 2050 if the UK is to meet net zero targets.[1] Despite the differences between alternative futures, analysis shows certain transformations are unavoidable if climate goals are to be met, regardless of which future emerges. We therefore brought together expertise and evidence from across disciplines and sectors, synthesising diverse insights to create a Roadmap for transformational change.

This Summary Report sets out our headline findings, complementing our Technical Report which details the supporting analytical work and recommendations.

Our Five Key Messages

1. Change is coming – let's shape it, not be shaped by it

The way we produce and consume food in the UK is under mounting pressure – from climate change, global instability and health problems. But with these threats comes a pivotal opportunity: if we act now to shape the future, we can build a fairer, healthier, more secure food system that works better for *everyone*.

2. We need stronger, more resilient farming and food production

Farmers are on the front line of climate change and economic shocks. We must back them with a clear plan, with long-term financial confidence, transition support and skills development, that enables their businesses to flourish as diets shift – so we can grow more fruit, vegetables and pulses, reduce business over-reliance on livestock, and develop mixed farming systems that bring animals and cropping together. We must help farmers boost productivity and resilience so they are better able to feed us in difficult times, because food security *is* national security.

3. Smarter land use will benefit the nation

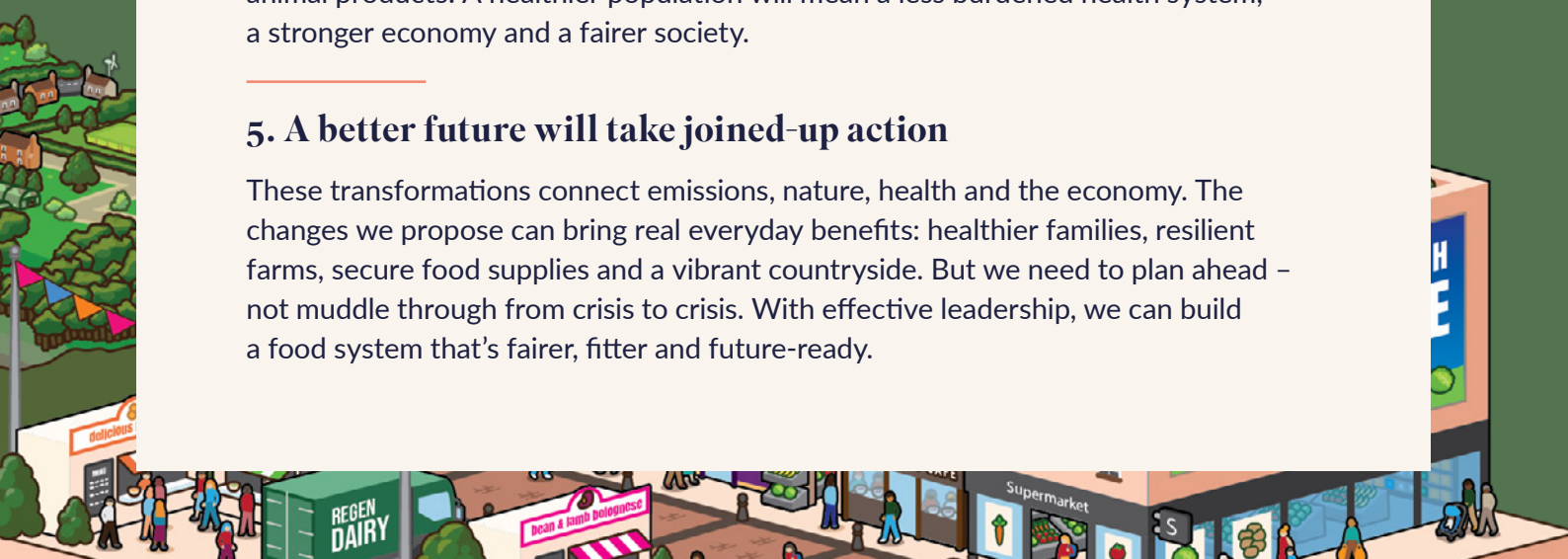
Land is a limited resource, and those who manage it are in a unique position of responsibility to meet the national interests of food production, habitat management, climate change mitigation and producing multiple other public goods. Working with farmers and land managers to collectively plan land use creates a major opportunity to better meet these needs for the nation, while giving farmers the clarity they need for their businesses. This requires government leadership, balancing trade-offs, and fair incentives for farmers and communities.

4. Healthier diets must become the easier option

Eating well shouldn't be a struggle. We need to make healthy food the easiest option for people. That means changing how food is marketed, sold and priced. As we eat differently, new opportunities will arise for UK farming to grow more of what we need for better health. Healthier diets will also reduce our dependence on imported animal products. A healthier population will mean a less burdened health system, a stronger economy and a fairer society.

5. A better future will take joined-up action

These transformations connect emissions, nature, health and the economy. The changes we propose can bring real everyday benefits: healthier families, resilient farms, secure food supplies and a vibrant countryside. But we need to plan ahead – not muddle through from crisis to crisis. With effective leadership, we can build a food system that's fairer, fitter and future-ready.



The Case for Transformation

Transformation is not based on net zero goals alone. Alongside climate change we face interconnected crises. Poor diet has become the UK's leading cause of ill health, with over 50% of adults potentially living with obesity by 2050.[2] We consume too many ultra-processed foods high in fat, salt and sugar, and not enough fibre, fruit, vegetables and oily fish.[3] Long-term financial pressures on farm production have led to changes in practice that threaten biodiversity and ecosystems essential for food production, while agricultural pollution contributes to poor river water quality.[4] Food price inflation has deepened inequalities, as healthier options remain less accessible in deprived areas. Geopolitics (together with climate change) is causing instability in supply chains.[5]

These mounting pressures make transformation inevitable. Our analysis shows climate change and resource constraints will force food system adaptation, regardless of plans or political preferences.

> *The evidence is mounting that there are problems ahead and indeed upon us… [W]hen I interviewed very senior head honchos of the British food system they were actually in no doubt the food system is heading for very difficult times.*[6]
>
> **Professor Tim Lang, Emeritus Professor of Food Policy, City St George's University**

The domestic UK food system accounts for 23% of national greenhouse gas emissions, but this rises to 38% once we factor in imports.[7] Agriculture contributes around half of food system emissions, mostly from livestock production. Meeting the UK's net zero commitment requires transforming a fifth of agricultural land for other purposes, and doing so without increasing food imports (and so compromising food security), is only possible through substantial changes in what we produce and consume.

> *We've had for a while now [a] focus on net zero as being the reason to do this. And my feeling is that that alone is not going to be a successful strategy for very much longer… Net zero has become a bit like a containment vessel for a load of political concerns… that are not really about net zero at all.*[8]
>
> **Chris Stark, Head of UK's Mission for Clean Power, UK Department for Energy Security and Net Zero and former Chief Executive of the UK CCC**

As a concept, 'net zero' has been problematically framed and often understood to be an imposition of rules and hardship upon farmers. Yet the net zero challenge can be approached in three ways – as a matter of morals, mechanisms or materiality – and the inclusion of the third is helpful for its reframing.

The dominant framing is morality – for example, the need to protect future generations from climate catastrophe. However, this faces growing political resistance. Mechanistic thinking, which treats transformation as essentially an engineering problem, enables planning but often overlooks human factors such as social norms, political resistance, and questions about who bears costs and benefits. What a materialist perspective brings is the recognition that the physical realities of our changing world make transformation unavoidable. These material forces – the underlying political and economic systems and physical constraints – can be limiting factors in the transition to a net zero 2050.

Current responses to the interconnected crises – including carbon markets, corporate supply chain initiatives and research investments – are important first steps but remain fragmented and insufficient. They're largely voluntary, piecemeal and lack the systemic coordination that transformation demands.

> *Food system transformation needs a systemic innovation approach. We cannot transform the food system piecemeal. It has to be seen as a system, as we know. It's a complex adaptive system, a sociological system, and we need to think, we need to have systems thinking, to be able to navigate the complexity.*[9]
>
> **John Ingram, Environmental Change Institute, University of Oxford**

The necessity and details of this transformation have been brought into focus by our scenario and modelling work.

USING FUTURE SCENARIOS

A scenario is a plausible, internally consistent set of assumptions about the state of the world in the future. Our scenario analysis stretches thinking beyond assumptions that the future will be a simple continuation of present trends. We developed four scenarios to explore how the food system might evolve by 2050, based on different assumptions about the future state of geopolitics, economics and markets, and social values:[10]

SCENARIO A

'BUILD BACK FAST AGAIN'

An unstable and globalised world, where economic growth is key (essentially business as usual)

SCENARIO B

'CIRCULAR WORLDS'

Geopolitically stable and globalised, underpinned by circular sustainable systems and values

SCENARIO C

'SELF-SUFFICIENCY'

An unstable, regionalised world, where a circular economy is driven by the need to save resources

SCENARIO D

'THE RIGHT TO FOOD'

A geopolitically stable world, with a globalised economy built on 'green growth'

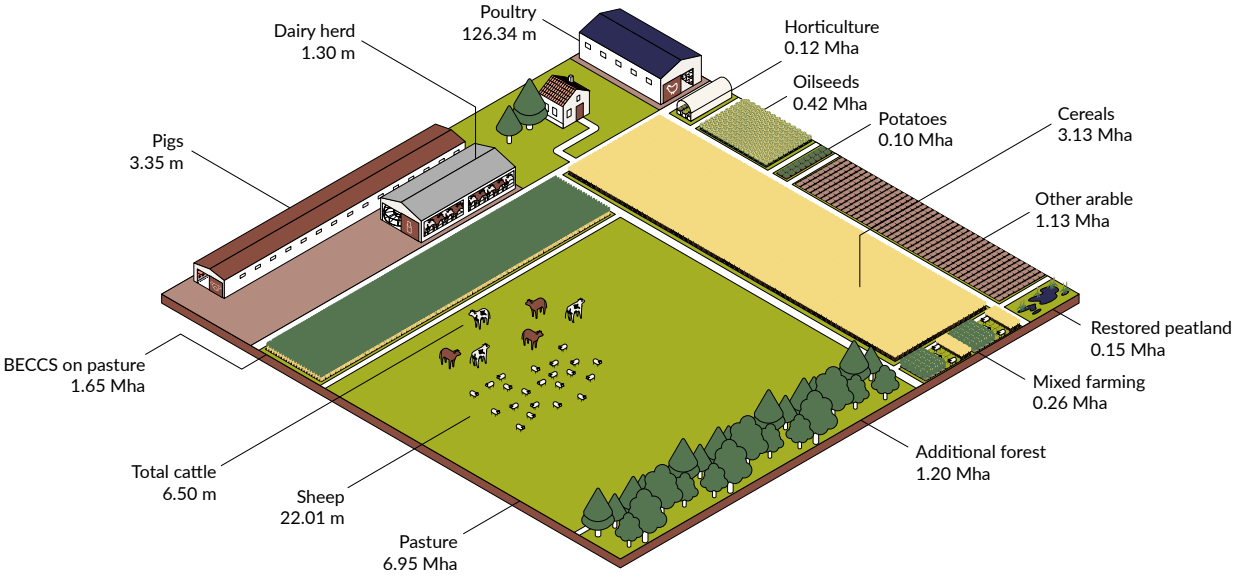
We used a modelling tool – the Future Food Calculator – to quantitatively assess how different interventions in food production, land use and dietary change might affect emissions, land use and food security across the four scenarios.[11] Four unavoidable truths emerged:

- We can't hit net zero across the UK economy without reducing food system emissions and increasing carbon capture through sequestration.
- Land use must change significantly to support climate, food and nature goals.
- Shifting diets and reducing animal numbers is unavoidable, and unlocks extensive benefits – from public health to farming resilience.
- More strategic planning is essential to reduce our vulnerability to global shocks.

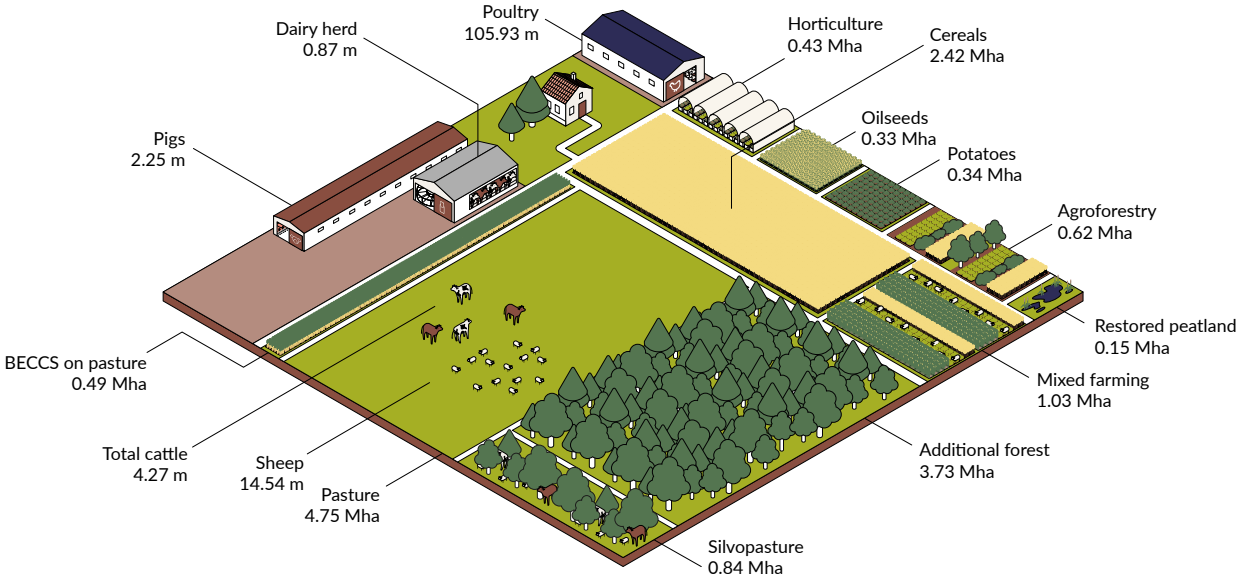
By the 2040s, the food system will be the UK's biggest source of greenhouse gas emissions. Our analysis shows that reaching net zero, even with technological advances, demands three interlinked transformations in what we produce, how we use land, and what we eat.

THE FOUR SCENARIOS ILLUSTRATED ▶

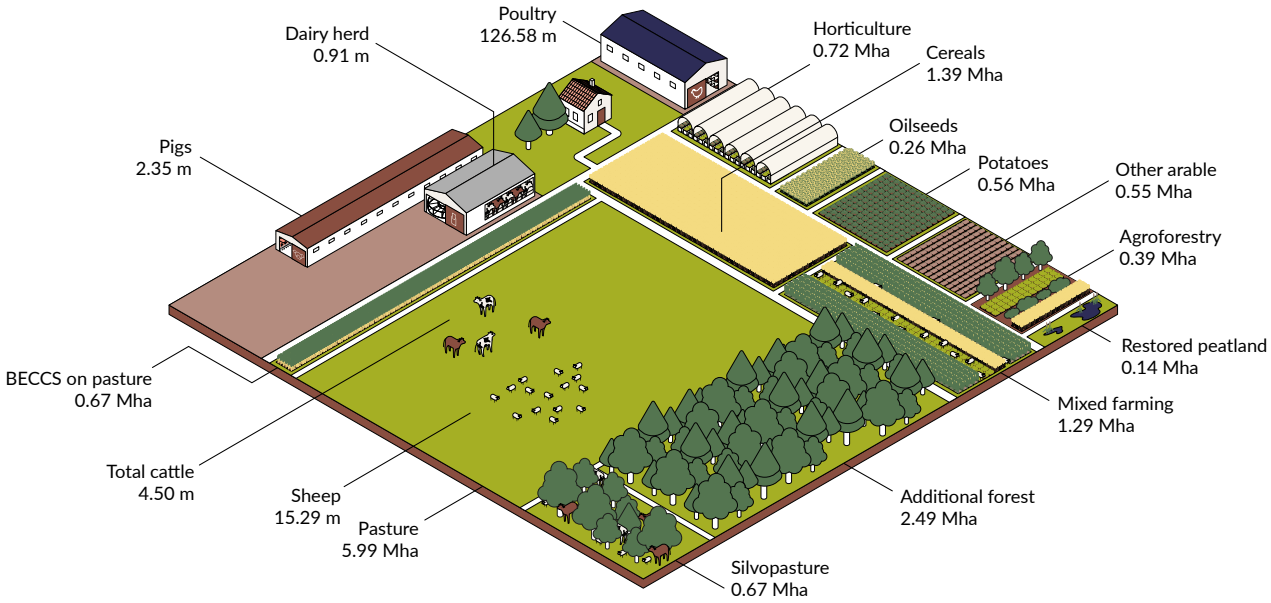
SCENARIO A: BUILD BACK FAST AGAIN



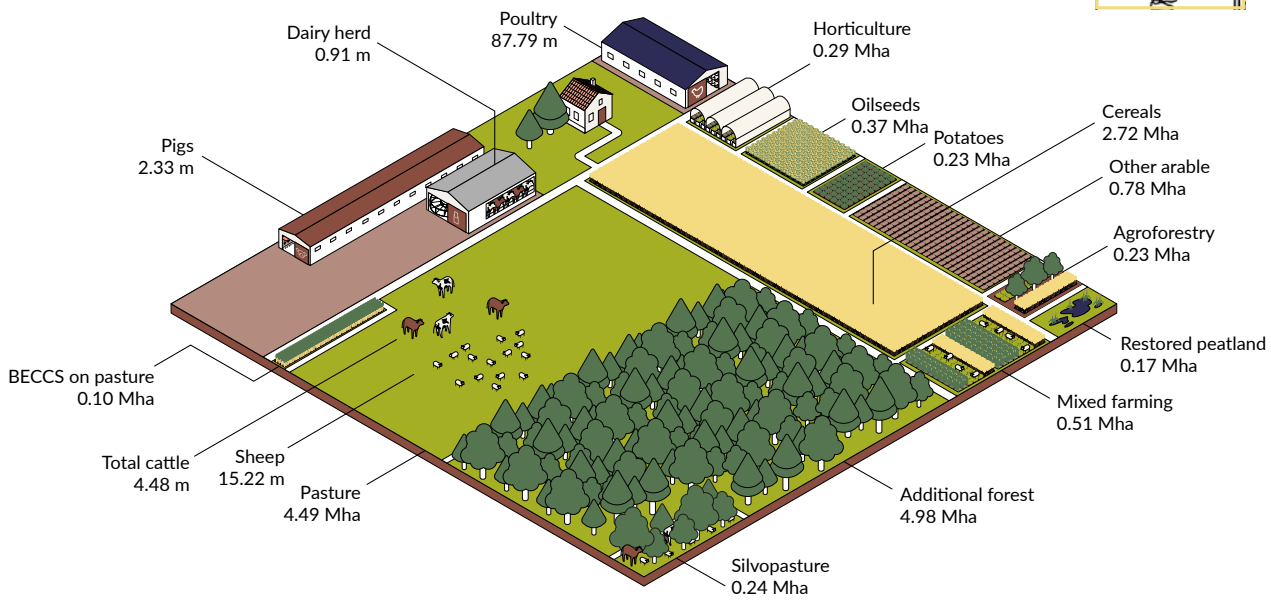
SCENARIO B: CIRCULAR WORLDS



SCENARIO C: SELF-SUFFICIENCY FOR SECURITY



SCENARIO D: RIGHT TO FOOD



One Future: Three Core Transformations

The three core transformations involve **resilient agricultural production**, **smarter land use** and **healthier diets**. Taken together, they create a virtuous cycle that can meet climate goals, health imperatives and nature recovery needs, underpinned by strengthened food security and economic resilience.

For each transformation, we have a vision of what success looks like in 2050, the benefits it will bring beyond emissions reduction and the key actions that are needed.

RESILIENT AGRICULTURAL PRODUCTION

Climate pressures and global instability mean farming will need to change whether we like it or not. But if we act now, we can adapt in a way that supports farmers and rural economies, and builds national resilience.

> *While we can get down to close to zero [emissions] for machinery, there's still quite a lot of emissions left in the system. At the moment, there's no silver bullet that can reduce emissions from livestock and soils down to zero.*[12]
>
> **Indra Thillainathan, Team Leader for Land, Agriculture and Nature, CCC**

The Vision

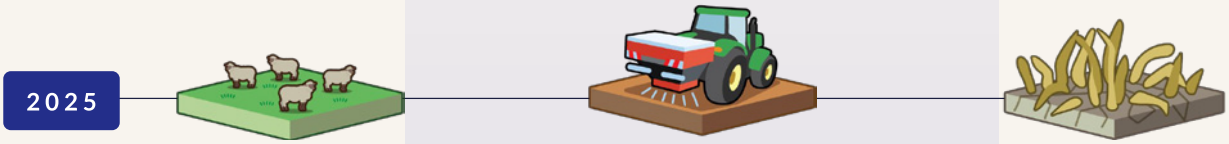
UK farms will operate as financially viable businesses within carbon budgets, producing the healthy foods our nation needs. Agriculture will feature integrated crop–livestock systems that enhance soil health and reduce import dependence. Domestic production of fruits, vegetables and plant proteins will have expanded dramatically, while livestock farming – though reduced in scale – remains valued for its role in mixed farming systems, soil health, ecology and landscape management. Farms will generate renewable energy, deploy precision techniques, and operate within circular resource flows that strengthen productivity and environmental stewardship.

> *[The horticulture sector is] having to rely on overseas workers like we have since the 1950s. That's not new, and that's not going to change anytime soon...*
>
> *[Y]ou're trying to encourage people into the industry because it is rewarding ... But there [are] so many other pressures that go with it. A lot of growers are discouraging their sons and their daughters from taking it on, because they know how hard it is, they know how they're treated by the retailers and they just don't want that for their family.*[13]
>
> **Lee Stiles, Secretary of Lea Valley Growers Association**

UK FOOD PLAN FOR 2050

3 essential transformations

Stronger, more resilient farming



2025

SPECIALISED FARMING

Largely livestock or crop monocultures, separated geographically

HIGH EMISSIONS

Dominated by livestock production, synthetic fertilisers and diesel machinery

VULNERABLE TO SHOCK

Dependent on imports for feed and manufactured inputs and exposed to extreme weather events

proactive planning & coordinated action

2050

MIXED & DIVERSE FARMING

Livestock and crops more integrated on farms and in regions, with more UK-grown vegetables, fruits and wholegrains

LOW-CARBON TECH

Full deployment of methane reduction and capture technologies, precision tools and renewable energy

FARM BUSINESS RESILIENCE

More diversified income sources and better matched to UK healthy dietary needs

A sustainable, prosperous and secure UK

Co-benefits

The transformation of UK agriculture brings benefits far beyond emissions reduction. It strengthens national food security by reducing vulnerability to import disruptions while directly tackling climate change through integrated crop–livestock systems that enhance soil carbon storage. Expanding domestic production of fruits, vegetables and wholegrains creates new rural employment in horticulture, agroforestry and their associated supply chains while supporting healthier UK diets. More diverse, climate-adapted farming systems deliver environmental gains through reduced water pollution and enhanced biodiversity while building resilience against the extreme weather events that are already disrupting UK agricultural production.

Priority Actions

UK agriculture is locked into patterns that drive greenhouse gas emissions, with 85% of farmland supporting livestock production. We import half our vegetables and most fruit, and are facing escalating climate risks. The following actions can build resilience across the industry:

Financial and transition support:

- Establish transition funds for farm businesses, providing grants and low-interest loans for diversification and infrastructure.
- Ensure farmers have 10-15-year-minimum security through long-term contracts and policy commitments.
- Support UK horticulture expansion with industrial strategy and capital grants for infrastructure to meet a projected five-fold increase in production.

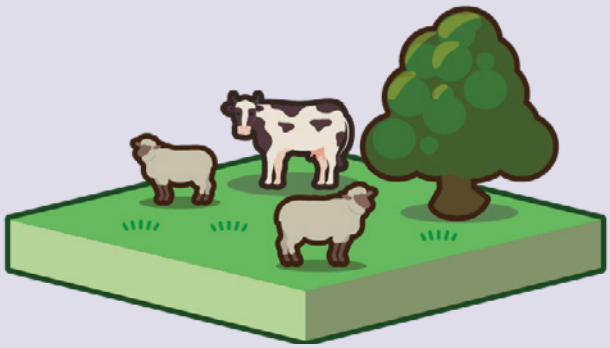
Policy and market mechanisms:

- Reform subsidies to reward sequestration, biodiversity improvement and sustainable production aligned with nutritional needs.
- Develop carbon and ecosystem service markets that properly value on-farm emissions reductions and nature-based solutions.
- Create structural adjustment mechanisms for communities most affected by transition.

Knowledge and innovation:

- Expand socioeconomic transition research on behaviour change, implementation pathways and distributional effects.
- Build knowledge exchange networks between researchers, advisors, farmers and food businesses.
- Strengthen interdisciplinary research addressing not just technologies but more fundamental questions about what is produced and consumed.

These interventions will enable UK agriculture to meet climate targets while delivering multiple benefits for farmers, communities and the environment.



UK FOOD PLAN FOR 2050

3 essential transformations

Smarter, more integrated land use

2025

SINGLE-PURPOSE LAND

Farming, nature and forestry largely kept separated

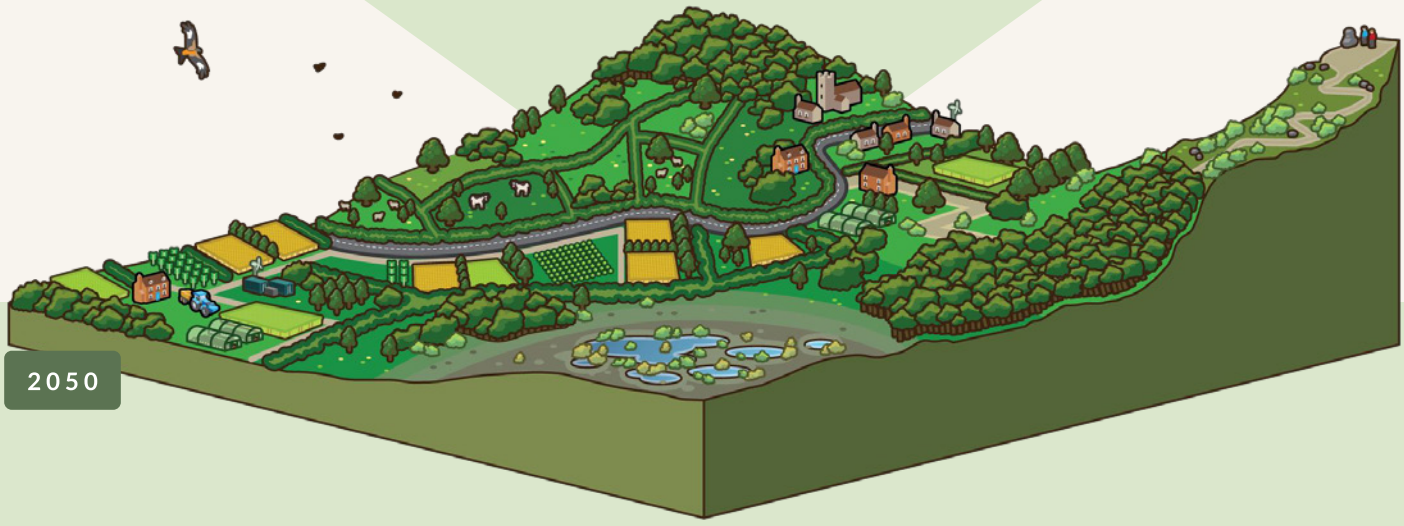
MINIMAL TREE COVER

The UK's 14% woodland cover is much less than Germany's 33% (and 46% across Europe)

DEGRADED PEATLANDS

Too much peatland emitting carbon rather than storing it

proactive planning & coordinated action



2050

MULTIFUNCTIONAL LANDSCAPES

Most land provides diverse types of food and also stores carbon and supports wildlife

ECOSYSTEM SERVICES

Harnessing nature to strengthen climate change resilience

EXPANDED WOODLANDS

At least 20% tree cover, integrated with farming

A sustainable, prosperous and secure UK

SMARTER LAND USE

Our modelling shows that the UK needs between 1.3 million and 5.1 million hectares of new woodland, space for energy crops and restored peatland. And all this needs to be achieved without undermining food security, while tailoring support for those whose livelihoods depend on the land.

The Vision

UK landscapes will provide multiple benefits through integrated management – sequestering carbon, producing food, enhancing biodiversity and building climate resilience. Forest cover will rise from 14% to around 20% and possibly higher, while restored peatlands shift from carbon sources to sinks. The 2.5 million hectares of UK land transitioning to woodland and energy crops will be carefully planned through community co-design, ensuring food security through greater productivity on remaining farmland.[14] Land management will balance private interests with public goods, creating multifunctional landscapes that serve national priorities.

Co-benefits

Strategic land use transformation creates cascading societal benefits. Nature-based solutions provide critical climate resilience through carbon sequestration to meet net zero targets, as well as natural flood defences for protecting properties.[15] These multifunctional landscapes restore biodiversity, with more appropriately managed grazing enabling wildlife recovery and helping meet the UK's commitment to protect 30% of land by 2030.[16] Rural economic diversification through new land and resource management activities offers alternative livelihoods. Expanded woodlands, rewilded areas and nature-rich farmland deliver proven mental and physical health benefits through increased access to nature.

Priority Actions

The UK is one of Europe's least wooded nations (14% coverage) and faces urgent needs for carbon storage, nature recovery and climate adaptation without clear coordination. The following actions can transform land use:

Financial and transition support:

- Dedicate funding for landscape-scale transformation, tripling tree-planting rates through enhanced grants and streamlined approval processes, particularly on marginal uplands.
- Provide landowners and tenants with long-term certainty through 15–25-year contracts for ecosystem services and carbon sequestration.
- Develop fair transition mechanisms for rural communities, ensuring new economic opportunities from woodland creation and nature recovery.

Policy and market mechanisms:

- Create integrated food and land strategies at national and regional levels balancing production, environmental and social needs.
- Develop carbon and biodiversity markets that benefit land managers and tenant farmers, not just large estates.
- Strengthen planning systems to deliver multifunctional landscapes that combine farming, biodiversity, carbon storage and community benefits.

Knowledge and innovation:

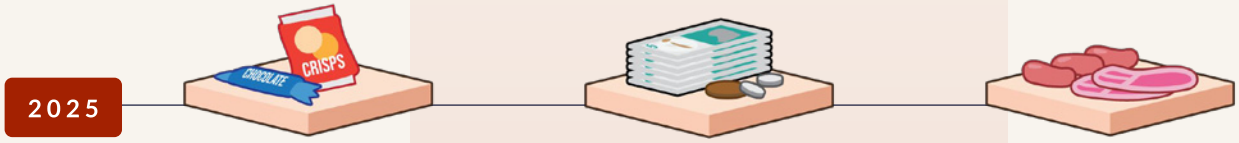
- Accelerate peatland restoration research and implementation to increase restored areas from 9% to 30% by 2040.
- Build comprehensive monitoring systems for all land uses to improve transparency and decision-making.
- Develop spatial planning tools integrating climate, biodiversity, productivity and social data, to support evidence-based decisions on priorities for different needs.

These interventions will enable unprecedented land use change while creating landscapes that deliver multiple benefits for climate, nature and thriving rural communities.

UK FOOD PLAN FOR 2050

3 essential transformations

Healthier diets made easier



UNHEALTHY IS THE DEFAULT

Foods high in fat, sugar and salt dominate our diets, with heavy marketing of unhealthy ultra-processed foods

HEALTH INEQUALITY

A healthy diet is **unaffordable for the poorest** in society

OVER-RELIANCE ON MEAT

85% of land supports animal agriculture, rather than diverse human diets

proactive planning & coordinated action

ACCESSIBLE HEALTHY FOODS

Fruit & vegetables, wholegrains and other plant-based options are **accessible and affordable**

BALANCED CHOICES

Some meat and dairy but **more plant-based and less unhealthy foods**

FOOD SECURITY

Thriving domestic food production, with large-scale expansion of UK fruit and vegetable production and consumption

A sustainable, prosperous and secure UK

HEALTHIER DIETS

Poor diets cost the UK dearly – through pressures on the NHS, lost productivity and poor quality of life. Shifting towards healthy diets is a win-win that cuts emissions, saves public money, and helps improve people's quality of life and workforce productivity.

The Vision

Healthy and sustainable eating will be easy, accessible and desirable. Most UK citizens will routinely meet nutritional guidelines, with food environments actively supporting healthy choices as the default. Ultra-processed foods high in fat, salt and sugar will occupy a diminished role as consumption shifts towards whole foods, including more fruits, vegetables and wholegrains. This dietary shift will drive and be reinforced by changes in domestic agriculture, creating a virtuous cycle where what we grow aligns with what we need for improved health.

Co-benefits

The economic case for dietary transformation is compelling: providing the Eatwell diet would cost £57 billion annually versus the £268 billion currently lost to diet-related illness and reduced productivity.[17] A population meeting nutritional guidelines would dramatically reduce cardiovascular disease, type 2 diabetes and certain cancers,[18] easing pressure on the NHS while creating a more productive workforce. Shifting towards plant-rich diets strengthens food security by reducing the large proportion of UK cereals currently fed to livestock, freeing land to produce food for direct human consumption and reducing dependence on imported animal feed. Ensuring affordable access to nutritious, sustainable food for all income groups breaks the cycle of diet-related ill health that disproportionately affects lower-income communities.

Priority Actions

Under 1% of people in the UK fully meet dietary guidelines. Poor diet is the UK's leading cause of ill health, with staggering economic costs, while healthy food remains unaffordable for millions. The following actions can reshape food environments:

Financial and transition support:

- Implement targeted subsidies and vouchers for healthy foods, so that lower-income households can afford nutritious diets.
- Regulate food manufacturers and retailers to support reformulation, diversification into healthier options, and sustainable supply chains.
- Extend financial incentives beyond soft drinks to make healthy foods more competitive, building on the successful Soft Drinks Industry Levy model.

Policy and market mechanisms:

- Require major food businesses to publish transition plans aligned with climate and health objectives, building on measures in the NHS *Fit for the Future* plan.
- Transform food environments through stronger advertising restrictions on high fat, salt and sugar foods, and mandatory front-of-pack labelling.
- Reform public procurement to increase plant-based options and reduce processed meat, leveraging public sector buying power.

Knowledge and innovation:

- Embed food system education across all school levels, using kitchens as learning labs to build food literacy.
- Accelerate research into plant-based alternatives that meet taste, texture and cultural preferences.
- Develop robust monitoring of dietary patterns and health outcomes to track progress and enable evidence-based policy adjustments.

These interventions can create food environments where healthy options become the easy options.

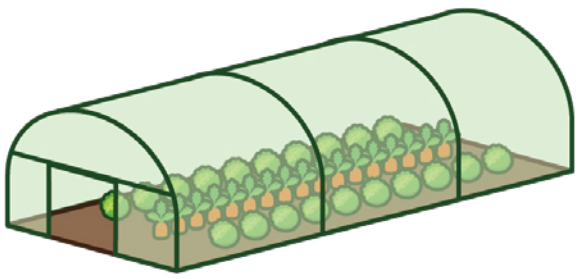
Making Change Happen

These transformations won't happen by accident and will need to unfold over time. Therefore, we need a pathway through the coming decades. This needs to be fair, and sensitive to the needs of different regions, communities and sectors.

Our Roadmap combines a **phased approach** – to ensure the right changes are introduced well and developed as needed – with **cross-cutting principles** that need to be enacted now and throughout to make this work.

PHASED IMPLEMENTATION TO 2050

Businesses, farmers and communities need time to adapt. Recognising this, the path from today's food system to 2050's transformed landscape follows three distinct phases to build momentum while being realistic about the pace of change.



PHASE 1: **BUILD FOUNDATIONS** (2025–2030)

The first phase represents a critical window for establishing the foundations of food system transformation. This phase focuses on winning hearts and minds, co-designing solutions with affected communities, and creating the conditions for accelerated progress. The objectives of Phase 1 are:

1. Forge political consensus beyond party lines
Cross-party agreement on core principles, similar to the consensus previously achieved on the Climate Change Act and net zero target, will provide stability for businesses, farmers and communities to invest in change with confidence.

2. Establish institutional architecture
New arrangements like a National Food System Transformation Committee reporting through the Cabinet Office to the Prime Minister will drive integrated policymaking and monitor progress.

3. Develop financing mechanisms
Farmers will benefit from newly established transition funds, functioning carbon markets, and agricultural subsidies that are aligned with transformation goals. Incentives for private sector investment will be created.

4. Launch demonstration projects
Early adopter farms will showcase profitable low-carbon systems, regions will pilot integrated land use planning, and communities will be supported to successfully shift dietary patterns.

PHASE 2:
SCALE SOLUTIONS
(2030–2040)

With foundations established, the second phase marks the decade of most intensive change. Success requires moving from pilots to mainstream adoption, and from incremental adjustments to structural change. The objectives of Phase 2 are:

1. Rapidly scale up proven approaches
Roll out successful pilots nationwide – for example, moving from hundreds of participating farms to thousands, and from regional programmes to national implementation – through streamlined processes and rapid knowledge transfer.

2. Support communities through structural change
Just transition mechanisms – including retraining programmes, diversification support and regional development funds – ensure rural economies emerge stronger.

3. Transform food environments at scale
Comprehensive reform of food marketing, retail environments and public procurement makes healthy, sustainable options the default.

4. Build resilient supply chains
Develop processing facilities, distribution networks and market linkages for expanding UK horticulture and emerging alternative protein sectors.

5. Accelerate natural capital investment
Scale tree-planting and peatland restoration with skilled workers and landscape-scale planning for multifunctional land use.

PHASE 3:
CONSOLIDATE PROGRESS
(2040–2050)

The final phase shifts focus from driving change to embedding and optimising new systems. By 2040, the food system will look fundamentally different. The objectives of Phase 3 are:

1. Embed transformation as the new normal
Sustainable practices become standard for a new generation of farmers while consumers expect healthy, sustainable food as default.

2. Optimise integrated systems
Fine-tune relationships between food production, land use and consumption. Agroforestry systems will mature, mixed farming approaches will be refined, and circular economy principles will be fully realised.

3. Address remaining high-emission sectors
Deploy next-generation technologies and practices to tackle stubborn emission sources through advanced feed additives, precision fermentation, or novel management systems, such as individual animal-level data on productivity and emissions.

4. Ensure resilience against climate impacts
Stress-test and adaptively manage the transformed food system against extreme weather, shifting growing conditions and global supply disruptions as climate impacts intensify.

5. Export knowledge globally
Systematically capture lessons learned and support other nations in their transitions, making UK expertise in low-carbon farming practices, just transitions and integrated governance a valuable export.

UK FOOD PLAN FOR 2050

Change is inevitable – how can we shape it?

Proactive planning & coordinated action

SHORT-TERM THINKING

Policy changes with each government, and with no long-term vision, the UK food system lurches from crisis to crisis

DEPARTMENTAL SILOS

Health, farming and environment policies too often work against each other

GROWING PRESSURES

A pressure cooker of increasing climate impacts, poor diets and nature decline

MISSED CONNECTIONS

Lack of recognition of how diet, farming and climate interact

25-YEAR PATHWAY

Long-term planning, clear phases with broad political consensus

COORDINATED GOVERNANCE

Cross-departmental arrangements to drive joined-up change

RESILIENT COMMUNITIES

Shorter supply chains with vulnerabilities addressed to better prepare for shocks

VIRTUOUS CYCLES

Healthy diets to support sustainable farming, better land use and improved health

3 essential transformations

Stronger, more resilient farming

Smarter, more integrated land use

Healthier diets made easier

A sustainable, prosperous and secure UK

CROSS-CUTTING IMPLEMENTATION REQUIREMENTS

This framework for transformation must operate durably over a 25-year period, with cross-cutting arrangements addressing the complexity of managing changes across agricultural production, land use and healthier diets fairly.

Governance and Coordination

Strong coordination across government departments is essential. A National Food System Transformation Committee reporting through the Cabinet Office to the Prime Minister could provide the necessary authority – potentially modelled on the cross-departmental Mission Boards. This must ensure:

- Health and diet changes are coordinated with food supply, production and land use planning
- Balance between financial incentives, regulatory mechanisms and active engagement
- Short-term measures reinforce the long-term plan
- Robust data and feedback mechanisms track progress across dietary patterns, agricultural production and land use outcomes

> *The good news is that we already have different skills that previous generations have not .... I think we're much happier to trial new ideas and take a risk in doing something a bit different, and we're probably more open to collaboration. The biggest challenge we face at the moment is not knowing which way to turn. Once we've got a direction, we'll run in it, but we need to know that direction soon, before too many people leave the industry.*[19]
>
> **Luke Cox, National Federation of Young Farmers' Clubs and agricultural policy advisor**

> *I hope we can move towards an 'OUR world' understanding, because what happens in Mayfair impacts on what happens in London Road Estate ... and it [is of] value to understand that interconnectedness to bring around transformation.*[20]
>
> **Dominic Watters, community researcher, University of Southampton**

A Just Transitions Framework

The three core transformations will reshape rural economies and livelihoods. Without attention to justice and equity, changes could make inequalities worse. Support must include:

- Targeted subsidies and voucher programmes for lower-income households accessing nutrient-dense foods
- Co-designed transition programmes for farmers, with comprehensive support for smaller farms and tenant farmers
- Inclusive governance that gives communities real influence over land use decisions
- Regular social impact assessments monitoring the distribution and balance between benefits and burdens
- A 25-year planning horizon to provide certainty for adaptation

> *Food choices in lower-income groups are strongly constrained by structural issues ... like affordability, accessibility of food, and this is a major barrier to consuming healthy and sustainable diets and achieving net zero in agri-food.*[21]
>
> **Professor Charlotte Hardman, Psychologist of Eating Behaviour, Institute of Population Health, University of Liverpool**

Technologies and Innovations

Continual innovation will accelerate progress and reduce transition costs. Examples include:

- New products – tasty, affordable alternatives through precision fermentation and plant-based development
- Better farming – precision techniques, methane-reducing feed additives, anaerobic digestion for renewable energy, and multipurpose agroforestry systems
- Land use innovations – tripling tree-planting rates through enhanced nursery production and planting techniques, natural regeneration alongside traditional forestry, and digital tools for optimal land use decisions
- Measurement systems – standardised emissions calculators and robust monitoring for carbon sequestration and biodiversity gains

Building and Maintaining Public Support

Sustained transformation over multiple electoral cycles requires building and maintaining public support. This can be ensured through:

- Compelling narratives connecting transformation to tangible benefits – healthier families, thriving rural communities, protected landscapes – not abstract emissions targets
- Cross-party consensus on core principles, providing stability for long-term investment
- Genuine participation through citizens' assemblies and deliberative forums
- Consistent messaging from trusted voices – farmers, health professionals and community leaders emphasising multiple benefits delivered together
- Visible progress through regular 'state of the food system' reporting, celebrating early wins connected to the larger transformation story

> *What we found is a lot of concern, and levels of anger about the state of things at the moment, concern about finding and affording the healthy, nourishing food that's around them. Concern about big food businesses ... concern about farmers ... and how they're coping, as well as concerns around the environment and so much more ... Really, it's not what that dominant narrative has said for years. I think just getting voices out there has really opened up a bit of a political opportunity.*[22]
>
> **Mhairi Brown, Head of Food Futures, Food, Farming and Countryside Commission**

> *We believe we're already net zero on farm because of the sequestration that we're doing, but it's getting the science to catch up with that. So I think one of the things we need is good methodology so that we can prove that what we're already doing is benefiting the environment.*[23]
>
> **Sophie Gregory, first generation organic dairy farmer**

Conclusion

The UK food system stands at a crossroads. Change is inescapable – driven by climate impacts, geopolitical instability and mounting health costs. The question is whether we shape change deliberately for public benefit or allow it to unfold chaotically through crisis.

Our analysis shows that by orchestrating three interconnected transformations – in what we produce, how we use land and what we eat – the UK can build a food system that is healthier, fairer and more resilient. These transformations reinforce each other, creating a dynamic cycle of benefits far beyond emissions reduction, including healthcare costs, rural and national economies, biodiversity, water quality, and food security. The pathway is technically feasible and economically beneficial, but success depends on acting now with the coordination and ambition the challenge demands.

These transformations are an opportunity to alter the direction of travel for the UK in a fast-changing world. Together we can address multiple challenges simultaneously and create a more secure future. The UK has the expertise, institutions and public support to lead this change.

TEN PRIORITY ACTIONS ▶

To drive food system transformation our key recommended actions are:

1. Reform agricultural subsidies to prioritise sustainable production, carbon sequestration, and biodiversity – while establishing transition funds to support farm diversification, new supply chains and infrastructure – for a just transition better aligned with climate adaptation, emissions reduction and improved national food security.

2. Set targets for dietary change and animal numbers, so that progress in reducing consumption of highest emitting foods can be monitored and more actively managed. Public procurement can be used to build new opportunities for suppliers, with one goal to make healthy and sustainable options more straightforward and affordable. Targets could be legislated for through a Good Food Nation Act to establish a statutory obligation on government and public bodies to give effect to food system transformation.

3. Require major food businesses to publish food system transition plans with measurable targets aligned with national climate and health objectives. The NHS *Fit for the Future* plan contains welcome steps but financial incentives for healthier food need to be extended far beyond soft drinks.

4. Create a National Food System Transformation Committee with cross-departmental authority to coordinate food, farming and climate policy. The Committee should oversee the three core transformations we set out to 2050, reporting through the Cabinet Office to the Prime Minister.

5. Develop more effective food systems data to track progress, promote transparency and accountability, and inform evidence-based decision-making. Monitoring and reporting requirements for food businesses need to be used to drive innovation along supply chains and inform public sector food procurement.

6. Introduce measures to protect and strengthen food security and ensure trade policies align with domestic transformation goals. Place food security on a par with energy security, as equally essential to national security. Trade deals require adequate scrutiny so as not to compromise the UK's food security and domestic production capacity.

7. Take advantage of emerging opportunities to offset emissions and inset within supply chains. Ensure carbon markets work to deliver incentives for change in land management, including adequate systems of monitoring, reporting and verification for buyers' and sellers' confidence. Establish a British quality standard for carbon calculator tools for estimating agricultural emissions.

8. Develop integrated 'Food and Land Strategies' at national and regional levels that balance production, environmental and social needs. Integrate current and new land use frameworks with large-scale changes in food production. Drive land use change at the sub-national and sub-regional levels, rather than leave it to the market.

9. Use citizens' assemblies and other deliberative tools to engage and build public understanding and consent for system-wide change, protecting it from culture war politics. Use new tools of dialogue and decision-making to gain common understandings among citizens and farmers, build consensus and handle complex trade-offs.

10. Expand interdisciplinary research on socioeconomic aspects of food transitions, focusing on behaviour change, implementation and distributional effects. Make interdisciplinary research the norm for agriculture and food systems research.

Time is our scarcest resource. Every year of delay makes transformation harder and more costly. Yet by acting now with coordination and purpose, we can realise numerous benefits and manage the change fairly.

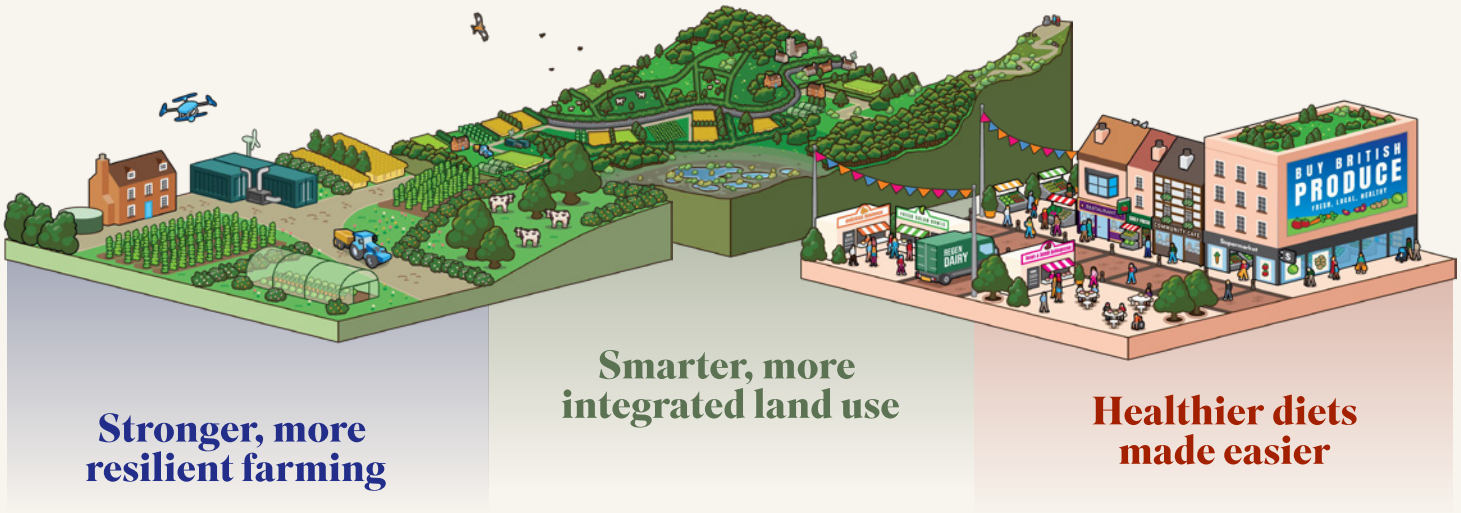
We call on all parties, public institutions, industry and civil society to unite behind this Roadmap – recognising that the health of our people, the vitality of our countryside and the security of our nation depend on getting this right. Change is coming to our food system – we can choose to make it work for everyone.

UK FOOD PLAN FOR 2050

3 essential transformations

A national opportunity for positive transformational change

Change is inevitable, and we must shape it. We have an historic opportunity to transform our food system, for a sustainable, prosperous & secure future.



these 3 transformations will:

£ SAVE BILLIONS IN HEALTHCARE COSTS
by reducing diet-related disease and disability

STRENGTHEN NATIONAL RESILIENCE
against global supply disruptions

PROVIDE HEALTHY FOOD FOR OUR SOCIETY
by supporting fairer access to affordable, nutritious food

IMPROVE WATER QUALITY
by reducing pollution risks from agriculture

CREATE NEW RURAL JOBS
in land management, forestry and food processing

ENHANCE BIODIVERSITY
through more nature-sensitive farming

A sustainable, prosperous and secure UK

ENDNOTES

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