

The Future of Food in the Fens

2025

Recommendations

Drain near Eton - Nick Tearle



Contents

	2
Introduction	3
The problem	4
From diagnosis to recommendations: a strategy for the Fens	10
The strategy is based on five principles to ensure its robustness	11
1. The future of food in the Fens is intertwined with the future of water	12
1.1 Achieve a better balance between food production and flood protection	13
1.2 Better manage water as a shared resource for food production, households, industry, and nature	14
How may we progress the conversation on water management?	15
Will water management be a matter for companies, individuals, or communities?	15
How will the lowlands work with the uplands?	15
2. The Fens' capacity for adaptation and transformation must be strengthened	16
2.1 Strengthen the sense of community, with horticulture and good food as core components of shared culture and place-making	17
2.2 Make space for trial & error, and sharing experience	18
2.3 Cultivate diverse opportunities for farming and food	19
2.4 Coordinate food-focussed emergency and resilience planning on a landscape level	21
2.5 Build slack in the farming and food sector	22
2.6 Enable a change of mindset, from business-as-usual to cooperation and innovation	23
How may we progress the conversation on the capacity for adaptation?	24
How do we build capacity to adapt and transform in the future, without undermining the present?	24
3. The maintenance of current and future assets must be central to future plans	25
3.1 Maintain the fertility of Fen soil	26
3.2 Maintain transport infrastructures	27
3.3 Maintain the Fens' capacity to manage excess water	28
How may we progress the conversation on maintenance?	29
How far can storing water in the Fens address the risks of excessive precipitation and drought?	29
4. A rethink is needed on what food the Fens produce and for whom	30
Food FROM the Fens	31
4.1 Foods for a changing climate	31
4.2 Foods that sell	33
4.3 Foods that keep	34
Food FOR the Fens	35
How may we progress the conversation on Fens produce?	37
Will Fens' produce be affordable to the few or the many?	37
5. Regional and national stakeholders must work towards a long-term strategy for the Fens	38
5.1 Coordinate land use planning on a landscape level	39
5.2 Secure stable, patient capital to support the Fens' transition	40
How may we progress the conversation on a common vision for the Fens?	42
What and who is investment for?	42
How will the regional and national conversations interact?	42

Introduction

In November 2023, a diverse group of 30 people who live and work in the East of England Fens began meeting regularly to discuss the future of food in the Fens.

Over a period of two years, and eight successive half-day workshops convened by the Greater Lincolnshire Food Partnership, they discussed and imagined together the future of the region.

Their experience and expertise was rich and diverse, covering flood management, water, soil, crops, economics, community, biodiversity, technology, markets, planning, energy, manufacturing, horticulture, transport, coastal environments, policy and more.

They were drawn from 30 different organisations that are pivotal in different ways to food in the region, including private businesses, charities, local authorities, public agencies, professional associations, and universities.

The workshops were designed to explore Fens issues in depth, embracing their complexity; to imagine together a desirable future in a context of uncertainty; and to recommend the conditions needed to generate paths towards that future.

These recommendations are the result of their work.

The problem

The recommendations in this document build on two core facts. The first is that the Fens hold considerable assets and potential for further growth. The second is that those assets face critical risks.

The Fens are the vegetable basket of the UK

The Fens produce and supply currently a third of the country's vegetables, and significant shares of other foods too.

With 85,000 jobs and a nationally significant cluster of businesses involved in food production, processing and logistics, they are a major node in the UK's food system. The Fens are also a key point of passage and processing for foods produced elsewhere in the UK, and imported foods entering the country through the ports of the East coast.

They hold half of the UK's best, "Grade 1" land in an easily farmed flat landscape. The Fens have also grown a public-private research and development capacity in food manufacturing and food science, one that supports further innovation in the region and aims to provide the skilled workforce the sector needs to turn innovation into growth.

These features have made the Fens attractive to investors. In recent years, they have contributed to expanding the region's food sector in new directions, including novel foods and new production technologies.

As such the Fens is one of the places where ensuring the nation's future food security will be decided.

The future of the Fens is at risk

There has been an unprecedented level of uncertainty weighing on the future of the area and its food sector. Planning is key to food production, processing, and distribution, but planning under uncertainty is hard, and it has been getting harder. Indeed, food in the Fens is subject to multiple threats, which we briefly outline below.

Fluvial flooding has always been a risk in the Fens. More frequent and intense extreme weather is increasing the likelihood of severe flooding in the region, however. The winter of 2023-24 pushed the current system of infrastructures and those who manage them beyond capacity. Fields have been inundated for months on end. Crop losses have been significant. Scientists anticipate that more severe, similar fluvial floods will recur.

Tidal flooding has been a growing threat too. While sea levels have been rising, the rate at which they rise has been accelerating and will continue to increase further for the foreseeable future. Meanwhile, a significant proportion of the Fens lies below sea level and continues to shrink because of continuous drainage. Tidal storms that coincide with high tides may flood the land with salt water and silt. This could disable pumping infrastructure and make farmland infertile for at least several years. The Environment Agency has reported that tidal flooding defences in the Fens need urgent attention, much earlier than initially anticipated.

Drought is a growing challenge. The summer of 2022 was one of the hottest and driest on record, while the spring of 2025 was the driest in a century. Counter-intuitively, the continuously drained Fens have a major water problem during long spells of dry weather, which scientists anticipate will happen more frequently and with greater intensity. The risk of drought cannot be addressed unless it has been anticipated and prepared for. Yet, the Fens are not equipped for storing water for irrigation.

Soil depletion is being driven by extreme weather, including intense rainfall, drought, and wind. It is also accelerated by intensive farming exposing soil to oxidation, deteriorating soil structure, and compacting. Innovations in soil husbandry that address some of those challenges are still far from being rolled out across the Fens.



Road failures are a growing cause for concern. Roads are crucial to the Fens' food system, enabling access to fields and food transportation within the region, across it, and to other parts of the UK. The network of evolved roads in the Fens has been deteriorating more rapidly in recent years. Increasing traffic and increasingly heavy vehicles (including electrical vehicles brought in to contribute net zero objectives) have been weighing on thin-layered evolved roads sitting on an unfavourable geological substrate, itself fragilized by hotter, drier summers and wetter winters.

Heatwaves have been more frequent, with the summer of 2022 bringing record temperatures to the region. That episode triggered cooling failures at many food businesses across England. Engineers anticipate that the prospect of more frequent, intense, and long heatwaves will push cooling equipment commonly found across the food chain beyond its design parameters. This may lead to interruptions of supply when cooling during storage and transport fails. This is of direct concern for the Fens, where fresh vegetables are a core part of food production, processing and transport.

The disconnect between consumers and growers is not unique to the Fens, but it is particularly remarkable in parts of South Lincolnshire where some of the highest obesity rates in the UK are found within a landscape of vegetable production. While living in an intensively farmed landscape, many residents interact only little, if at all with growers. Understanding of how food is produced, processed, transported, and the challenges and aspirations of those who work in that sector, is limited. Equally, many in the farming sector may hold simplistic views of what “consumers” know and want. As a result, threats to the area’s food sector and to food security more generally are generally not perceived or debated beyond narrow circles. Furthermore, such a disconnect enables conflict and competition between the public and the farming world: a too familiar and unhelpful trope of public debates on the future of food.

Household struggles have increased in recent years, and farmer/grower households are no exception. In 2023, the Lincolnshire Rural Support Network received 93% more calls for support than in the previous year, many of them from farmers experiencing economic difficulties and mental health issues. Thus, alongside those demonstrating remarkable entrepreneurship, anticipating current and future challenges and opportunities, there are growers in the region who are hurting and finding it impossible to adapt. Seasonal workers have struggled too, and they are being referred to Food banks in increasing numbers.

Labour shortages now and in the future are a multi-faceted problem in the Fens. Many farmers are on the cusp of retirement but lack any successor. Too few are in training relative to the number of positions that need to be filled. This is a nationwide problem and a major uncertainty hovering over the future of ownership and/or management of what is currently farmed land. Seasonal work is another dimension of the labour shortage issue. Despite automation and mechanisation, seasonal workers remain crucial to the cultivation of core

crops in the Fens, particularly during the harvest period. They are foreign workers, as there is no foreseeable supply of domestic seasonal workers in sight. Food operators have found that recruiting them to be there at the right time and for the right amount of time has become very difficult under the current legal regime.

Concentration of food businesses has been a nationwide trend, with the Fens experiencing both mergers, and acquisition of large tracts of farmed land by UK and foreign buyers. Some operators in the Fens are so large that they are responsible in their own name for double digit shares of national supply of certain goods (e.g. brassicas). Should they stop operating because of one or many of the challenges they face, the impact on the region's output and the UK's food security could be significant.

Unclear politics and policy have been a major source of uncertainty. Years of political instability in central government, mixed and contradictory messages on key policies, such as seasonal labour and post-Brexit agricultural policy have shortened the horizon food professionals can rely on for planning. With few exceptions, the status of the Fens in relation to the current UK's food security has not been addressed in policy or political discourse yet. Furthermore, numerous initiatives to repurpose Fenland for carbon capture, energy production or other uses have been poorly articulated with food production. Will a consistent and reliable vision on the future of the region emerge from the Farming Roadmap, Food Strategy and Land Use Framework?

Market pressures have pushed many food operators to a very difficult position. Significant inflationary pressures on inputs (energy, fertilisers, seeds) since Russia's invasion of Ukraine have affected all players in the food system. Long-standing pressure from buyers (and government) to maintain low food prices mean that farmers have shouldered more and more of those costs, in addition to risks, without reaping the rewards. Multiple recent reports

have highlighted how these trends have undermined business profitability, endangering the viability of food businesses in the Fens and elsewhere.

Poor coordination is a central impediment to planning in the Fens. Addressing flooding, water access during drought, infrastructure maintenance, transport, net zero, land use, and so many other issues identified above requires a level of coordination that is absent from government, business, academia, and the third sector. While multiple initiatives have considered the Fens in recent years or months, too often they have followed narrow perspectives: focusing on one dimension or another, when interactions between them abound and trade-offs will need to be made.

Mindsets can be an enabler or an obstacle when facing up to a rapidly changing environment. The multi-faceted character of the issues, the pace of change, and the novelty of the responses they call for, all require a change of mindset: a readiness to look at the world in a new way because it is changing rapidly before our eyes; a disposition to think in scenarios, because there is so much uncertainty ahead that it would be foolish to plan only for the future we hoped for, rather than also preparing for the less desirable future we may get; and a readiness to work with others differently, because managing challenges like flooding in winter or insufficient water in summer will require new levels of coordination. These are considerable asks to make of anyone: the challenge of changing mindsets should not be understated.

Finally, the **complexity** of all the challenges and dimensions relevant to the future of food in the Fens is its own challenge.

This diagnosis shows how difficult the future could become for the Fens and its people. But it does not have to be so. There are considerable assets, know-how and good will in the region that can be harnessed to shape a good future for the Fens and the food produced there.

From diagnosis to recommendations

The recommendations are organised in 5 themes:

- Addressing the water challenge
- Growing the Fens' capacity to adapt
- Maintaining the Fens
- Adapting food production
- Gearing up towards a shared vision

These are by no means the last word on the future of the Fens, but a milestone in an ongoing debate. Underneath recommendations, this document outlines also a number of undecided issues that, like forks in the road ahead, will have to be considered next.

Crucially, the future of food in the Fens cannot be decided, nor the challenges mentioned earlier resolved, by any single organisation; it requires those working at different levels and for different purposes to cooperate with and make space for one another. These recommendations are therefore intended for multiple audiences, and should be read in relation to others, within that context.

The recommendations are based on five principles to ensure their robustness:

- **Durability** - They take a long term approach and are designed for adaptation;
- **Fairness and inclusivity** - They include consideration for young people and future generations;
- **Feasibility** - They involve making space to explore and test out multiple options, taking a broad view on experimentation and innovation;
- **Locally supported** - They were developed locally, and are designed to be widely supported;
- **Pluralistic** - They do not envisage a single path to a desirable future, but a landscape of possibilities.



1. The future of food in the Fens is intertwined with the future of water

Water is a prerequisite to continued food production in the Fens.

Sufficient, distributed water must be available during dry periods. Water levels need to be managed in times of abundant rain to avoid waterlogging or flooding. How the water challenge is addressed will determine the future of food in the region.

1.1 Achieve a better balance between food production and flood protection

Farming and the wider food sector in the Fens are increasingly disrupted by flooding; more frequent and worse flooding is likely to occur in the future. There is ongoing wider work on flood risk investment planning (e.g. Fens 2100 programme; Future Fens: Integrated Adaptation) that means to address this challenge, taking a long term, adaptive approach. Holding the line on coasts and rivers is projected to become ever more expensive, and unsustainably so. It is therefore reasonable to assume that more space on the coast and alongside rivers will be needed for water in order to protect farmed land.

Our recommendations:

1. Implement Natural Flood Management solutions where possible, including creating wetlands and saltmarsh, and reassigning tracts of land alongside waterways.
2. Better support the Environment Agency's efforts to engage farmers on flood risk management across the Fens, for example through Fens 2100+.
3. Compensate adequately farmers when their land is to be used to reduce the risk of flooding to others

1.2 Better manage water as a shared resource for food production, households, industry, and nature

Horticultural production in the Fens is at risk from diminishing water availability for irrigating crops, in a context of projected drier summers,

withdrawal of abstraction licenses, and increasing competition for water by industry and households.

Our recommendations:

4. Change the purpose of IDBs, from drainage to holistic water management, including raising water tables in coordination with farmers; implementing multiple approaches to catching and storing water, and reducing waste; ensuring fair distribution of water; and treating water as an asset for nature in alignment with resilient food production and flood mitigation
5. Adjust governance arrangements at IDBs and other water management bodies across the Fens so that the voice of all affected stakeholders is represented, recognising the interdependence between water management for farming, for households, and for industry within a shared river basin; increase transparency and accountability
6. Empower farmers and communities to capture water collectively, including through higher tier Environmental Land Management Schemes

How may we progress the conversation on water management?

The future of water and flooding management in the Fens raises at least two core questions to address urgently.

Will water management be a matter for companies, individuals, or communities?

Empowering companies and abstractor groups to share and trade water would help incentivise investment in water capture, storage and distribution, and thereby address water needs locally at the same time as meeting their own needs for water and income diversity, etc. It would allow more forward-thinking businesses to act more quickly and perhaps more innovatively. However, putting the onus on privatised solutions privileges those with more resources at the expense of fairer distribution. It may be less effective at maximising benefits across the landscape (including overall yield, quality, and benefits to nature) than could be achieved through a more coordinated approach. How could new legislation around water sharing and trading be coupled with obligations towards inclusive and fair distribution? What would enable IDBs to become more long-term and innovative in their thinking and investment?

How will the lowlands work with the uplands?

While there has been much discussion of managing water in the Fens, that conversation will need to involve stakeholders on a broader scale. Indeed, all who live and work in the river basins that the Fens belong to are also affected by efforts to keep the Fens dry or to keep its fields sufficiently watered. More water may be kept uphill (in soils, rivers and reservoirs) that will reduce flooding in the Fens and help replenish aquifers, and this will require action based on river catchment boundaries, rather than political boundaries. Although the case has not presented itself yet, water needs for agriculture in the uplands and those in the Fens during a prolonged drought may raise questions on how the water available in the system should be used. This conversation has yet to happen.

2. The Fens' capacity for adaptation and transformation must be strengthened

We need more robust responses to the multitude of interacting issues in the Fens. Too often, we think about them in silos. Economic, social and other constraints make it difficult to explore and experiment with new ways. What matters hence is growing capacity in the Fens to develop new solutions.

2.1 Strengthen the sense of community, with horticulture and good food as core components of shared culture and place-making

In the Fens as elsewhere in rural Britain, many of the ties that bound communities together have weakened or disappeared. In the face of worsening conditions, many farmers will not “adapt as they always have” and will need a conducive environment to make the changes that are needed of them. Healthy communities make collaboration and coordination between farmers and their wider communities possible. That is what facing up to tomorrow’s challenges requires. A stronger society is a key condition for a more resilient Fens.

Our recommendations:

7. Support re-growing social venues by making them available for free to host community activities and events, linked to additional services and advice, e.g. car pooling, citizens advice, mental health support, etc; invest in community owned renewable energy to support these venues’ running costs
8. Grow the community’s connection with their growers, e.g. through Open Farm Sundays, links with school education, and work placements
9. Task a third party, e.g. Lincolnshire Agricultural Society, British Growers Association with identifying opportunities for collaboration among farms, and facilitating contacts between them, including farm clusters and farm walks/events to share trials and learning

2.2 Make space for trial & error, and sharing experience

Shrinking margins and growing uncertainty have made it difficult for farmers/growers to try new things and afford to fail. Where trials have taken place, lessons may not be widely shared. However, *local* innovation in practices, techniques, technologies, business and tenure models is key for adapting food production in the Fens to the rapidly changing conditions there.

Our recommendations:

10. Make farming innovation funding beneficial to the wider Fens farming community, by requiring lesson sharing, publicly available outcomes (non-proprietary), and open to a wide range of technological and non-technological innovation ideas.
11. Make new Fens-appropriate Environmental Land Management Schemes that acknowledge transition to resilient food production as a public good and cover the costs of trial and error
12. Increase the number of Farm Clusters to foster cooperation, share risks, solve problems and reduce costs

2.3 Cultivate diverse opportunities for farming and food

Farming in the Fens is dominated by an intensive, large-scale model and conducted by a narrow and aging demographic. There are limited opportunities for new entrants, the next generation or other ways of farming. That limits capacity for innovation and experimentation. The less diverse farming in the Fens is, the more vulnerable it is to shocks.

To increase the resilience of food production and ensure opportunities for the next generation, the Fens needs to become a place of possibilities: favourable to learning, a wider diversity of enterprises, and jobs for many kinds of people.

Our recommendations:

13. Create opportunities for new entrants to horticulture:
 - boost access to land and capital to the next generation and those from non-farming backgrounds
 - increase edible horticultural training, apprenticeships and Higher Education provision; address perceived health & safety barriers to school visits, work placements and apprenticeships; and encourage farmers to take up training on hosting educational visits
 - make land available for new entrants and farm innovators in close proximity to residential areas or highly visible/accessible/tourist destinations

- generate new job- and business opportunities by forging links between agrifood and other sectors, e.g. sustainable engineering
 - locate horticulture research, engineering and tech creator jobs/opportunities in the Fens, to better understand and address the specific challenges of that landscape
14. Update county farmland policy and engage large landowners and land agents to:
- ensure that tenancies give priority to new entrants, ensuring viable farming units with appropriate housing, and support the creation of incubation/training units
 - make public farmland maps publicly available, and broker relationships between retiring and new farmers
 - ensure that new tenancies give priority to tenants with an innovative and cooperative mindset, looking to participate in farmer-led research networks, and willing to be demonstration farms

2.4 Coordinate food-focussed emergency and resilience planning on a landscape level

There is a lack of preparation for future shocks to food production and distribution, making the Fens more vulnerable than it should be. Better awareness of the region's fragilities and interdependencies, and food-focussed coordination will enable more robust emergency- and resilience planning.

Our recommendations:

15. Name a coordinator for an independent, standing Fens Food Resilience Forum, jointly funded by the Local Resilience Forums of Norfolk, Cambridgeshire and Lincolnshire, whose role is both emergency response planning and longer term resilience planning for production, distribution and access to food in the Fens.
16. Conduct yearly independent assessments of risks to food production across the Fens, including a review of the willingness of private insurers to offer insurance cover for farmland and crops in the region.

2.5 Build slack in the farming and food sector

Market pressures that force farmers to maximise yields in the short term at the expense of other metrics are trapping them into short term thinking and mal-adaptive practices. The drive to cut costs at all levels has left the food sector and farming vulnerable to shocks. Rebuilding slack in the sector will make it more resilient to the shocks ahead, whether they will be linked to geopolitics or climate or other projected change.

Our recommendations:

17. Support opportunities for cost saving and new revenues among farmers, including:
 - mid-level infrastructure sharing for water, energy and land
 - Watercourse Biodiversity Net Gain units, in cooperation with neighbouring Districts
 - extended participation in the Soil Association Exchange programme
 - Fen-adapted Sustainable Farming Incentive
18. Create new niches for food production through new, diverse routes to markets that allow higher returns to farmers

2.6 Enable a change of mindset, from business-as-usual to cooperation and innovation

In spite of remarkable entrepreneurial and community oriented examples, many in the food sector strive for continuing or upscaling “business as usual” rather than transformation. This is also a competitive mentality, particularly among farmers. A more cooperative culture will facilitate the learning, innovation and responses needed to face future challenges.

Our recommendations:

19. Make it a core objective of all Fens’ stakeholders to empower the new generation
20. Organise farm visits, open to all Fens farmers and potential new entrants (starting with a core group of farmers supportive of the strategy and happy to open their doors to colleagues) aimed at bringing different generations together and drawing out shared, non-competitive issues that farmers may cooperate on
21. Collect and share successful stories of cooperation among farmers from other parts of the country, or other countries

How may we progress the conversation on the capacity for adaptation?

How do we build capacity to adapt and transform in the future, without undermining the present?

Building capacity for adaptation and transformation is a goal many subscribe to, but the best path to doing so is debated. Preparing for a highly uncertain future is inherently difficult. Ideas for doing so can feel ill adapted to the present, even if they were to be eventually fit to the future. One point of debate is the shape of the farming sector to come. Only bigger farms, some argue, can be profitable. However, having a greater diversity of approaches in the Fens, others argue, could make the sector better able to explore multiple paths, some of which may prove successful and others not. This would make farming in the Fens more resilient as a whole. However, the economic viability of small farms has been decreasing. Therefore, some argue they are not a viable path towards greater diversity of approaches and resilience in the Fens, and that departing from the trend of land concentration is impossible.

While there is general agreement that farming in the Fens needs to become more resilient, the question is whether such resilience will be achieved by growing redundancy and diversity **within** larger farms, or **across** farms. How might larger farms achieve adequate internal diversity for long term resilient food production? What mechanisms and models would enable small and medium-sized farms to thrive and contribute to greater overall diversity?

3. The maintenance of current and future assets must be central to future plans

The accelerating deterioration of flood defences and roads has shown that the future of the Fens will depend not only on our ability to **adapt** and **transform**, but also on our ability to **maintain** and **improve**.

3.1 Maintain the fertility of Fen soil

The future of food in the Fens hangs largely on keeping its soil healthy and therefore productive. There is increasing awareness that better soil maintenance is needed across the Fens, and not only for peat, to address compaction, erosion, nutrient loss, salinisation and waterlogging.

Our recommendations:

22. Inform: invest in Fens-wide campaigns, guidance, and demonstrations to draw out farmers' knowledge and share best practice in relation to soil maintenance (e.g. weight of machinery, tillage, new technologies, etc.)
23. Extend rotations and share machinery/technology between farms
24. Incentivise better soil husbandry: develop Fens appropriate Sustainable Farming Incentive schemes, offer better pricing or lending conditions to farmers who follow soil husbandry best practice, incorporate requirements to follow soil husbandry best practice in tenancy agreements.

3.2 Maintain transport infrastructures

Good, reliable roads enable the transportation of people and goods within and through the Fens to other parts of the country, and continued access to farmland. Weather extremes and heavier traffic are becoming the leading causes of accelerated road failure in the Fens, however, leading to growing maintenance costs. To adapt, the region is already benefiting from cutting edge research on how to resurface roads so they will remain passable in spite of worsening conditions. Users will need to adapt too: heavy traffic shortens roads' lifespan. For Fens roads to remain functional, the pressure of usage must not go beyond their carrying capacity, given changing conditions and resources for maintenance.

Our recommendations:

25. Engage farmers on the win win benefits of using lighter machines, to reduce damage to roads and soil compaction in fields
26. Develop hydrogen vehicle infrastructure for heavy goods vehicles on long range routes, as hydrogen powered vehicles are a lighter alternative to electric vehicles; explore opportunities for reducing the costs of using green hydrogen vehicles in the Fens
27. Increasingly link the priorities of regional development policies with regularly updated assessments of the region's infrastructure, its carrying capacity and maintenance costs

3.3 Maintain the Fens' capacity to manage excess water

The recent experience of flooding and widespread waterlogging in the Fens have shown how vulnerable they are to more frequent and intense rainfall, in spite of the already considerable infrastructure dedicated to drainage. The Fens 2100+ and Future Fens programmes are exploring future investments in flood defences and their maintenance.

The food sector in the Fens is not just a beneficiary of the work of the drainage boards and the Environment Agency. It is also an active participant, because farmers' practices - soil maintenance, dyke maintenance - contribute to managing flood risks, for better or worse. The future challenges of even wetter winters or flash floods will require direct involvement of the farming community.

Our recommendations:

28. Raise awareness across the Fens and wider water catchments on the essential role soil plays for absorbing and storing water, and disseminate best practices to increase and maintain soil's "sponge" effect
29. Incentivise (and remove barriers to) farmers to add and maintain water storage on farm in the form of ponds and reservoirs, which can be filled by pumping from dykes and rivers when there is excess water in the system

30. Work with farmers, landowners and other stakeholders upstream to implement natural flood management that will help mitigate flooding in the Fens
31. Explore the potential and costs of adapting drainage structures and practices to reduce waterlogging, taking inspiration from the Netherlands

How may we progress the conversation on maintenance?

How far can storing water in the Fens address the risks of excessive precipitation and drought?

It can be tempting to say that storing more of the water during wet periods will address both flooding risks and drought risks. This would be a perfect solution, one that evens out the amounts of water in the Fens, and thus reduces the odds of waterlogged soils and rotten crops on the one hand, wilted crops and cracked dry soils on the other. There are limits to what storing more water in tanks, reservoirs, or the soil can achieve, however. How much storage would be needed (in addition to the drainage already happening) in order to keep the Fens dry during wet seasons is unknown. There is undoubtedly a maximum capacity, which may be insufficient in some circumstances. How much would be needed to keep the Fens wet enough for food production during hot, dry periods is also a key question, particularly if most future food production in the Fens is to be carried out, as it is now, in open fields. Addressing those questions would help make the case for future investments.

4. A rethink is needed on what food the Fens produce and for whom

The Fens have been a vegetable -basket for the UK, producing a considerable share of the root, brassica and leaf vegetables consumed nationally. Will this still be the case in 25 years? This is not certain.

The challenges ahead mean that it will be increasingly difficult to produce the same types of foods and in the same volumes, both in the Fens and other places globally from which the UK imports fresh produce. How will the Fens adapt in terms of what they produce and for whom?

Food FROM the Fens

What food the Fens will produce depends on what will be feasible given changing agro-climatic conditions, what there will be a market for, and what will be desirable. This section sets out recommendations for exploring opportunities. It does not prescribe what foods the Fens should grow in the future.

4.1 Foods for a changing climate

The 2024 Fens Climate Change Risk Assessment has warned that climate change will make the Fens less hospitable to the crops currently grown there. Imagining the Fens as a different “veg-basket” than it is now is difficult, especially considering opportunities in the near term to grow more of the vegetables the UK currently imports from other countries. Planning for future nutrient rich and climate adapted crops is necessary, however. The more time passes, the harder the transition will be.

Our recommendations:

32. Allocate economic development resources to farmer-led climate adaptation in farming, and on identifying and growing markets for new crops.
33. Encourage landowners (council and private) in collaboration with tenant farmers and academia (Universities of Lincoln,

Cambridge and East Anglia), to develop demonstration farms focussing on climate adaptation, for the long term benefit of farming in the county.

34. Encourage and support farm walks to share what works within the Fens' farming community including:
 - new varieties of commonly grown crops
 - new species of crops
 - new practices that help adapt Fens' farming to climate change, e.g. on crop rotation, crop mixing, water use, soil management, etc.
35. Re-think farm diversification as climate adaptation:
experiment and diversify food production to spread farm risks across different climate events (drought, flooding, heatwave) e.g. rotational or pulsed/seasonally inundated style aquaculture, glass/vertical production, mixed farming approaches, population crops

4.2 Foods that sell

The evolution of UK diets towards more processed, so-called convenience foods are not favourable, either to Fens producers or to population health. In addition to better support for UK food procurement through a national Food Strategy, Fens' produce needs better targeting and better marketing.

Our recommendations:

36. Establish a "Grown in the Fens" label as a synonym of geographical origin, quality and sustainability; one that may enable Fens' produce to be sold at a premium, while encouraging Fens' producers to progress towards better production practices and better, nutritive produce; set up a Fens development board that awards the label and invests in messaging on Fens' produce
37. Become a major provider of fresh vegetables and spices to the sizeable population of UK residents originating from the Indian subcontinent, and who currently consume largely imported produce that could well be grown in the Fens.

4.3 Foods that keep

The risks of food losses are growing: harvested produce may increasingly be lost to excess heat or waterlogging. It is crucial to respond to these challenges and keep losses to a minimum.

Our recommendations:

38. Establish Fenland “Cold Cooperative(s)”, engaging growers, packers, engineers and storage businesses to have oversight of cold storage, to address pre-competitive best practice and shared solutions, including smart monitoring and weather forecasting for extreme event planning
39. Coordinate knowledge exchange, research and investment into more efficient cold storage linked to renewable energy, and efficient transport of chilled and frozen goods, e.g. compartments in lorries so whole lorries do not have to be temperature controlled
40. Fund open source research into food safety aspects of changing temperatures for cold and frozen storage, to reduce energy requirements and understand tolerances to disruption in temperature

4.4 Food FOR the Fens

There is a gaping disconnect between food producers and their wider communities, between the production of vegetables and the epidemic of obesity in the Fens. This should be tackled as a matter of priority. As the first economic sector of the region, food production can be the glue that brings the Fens together, to face an uncertain future together. Communities that share in the benefits and the challenges of food production will be stronger and more resilient.

Our recommendations:

41. Grow the demand for locally grown food by:
 - making regional food procurement in the Fens the default for food services paid for by the public purse
 - encouraging holistic school food education (starting with Initial Teacher Training and In-Service Training for senior leadership, teaching staff, governors and school chefs) linking sensory taste education in the classroom with school meals, and opportunities for pupils to grow food on site, with an emphasis on Fens-grown horticultural produce
 - organising and funding more cultural food events to bring together local farmers, chefs, caterers, food businesses and residents
 - making space for urban food growing and shared dining focussed on fresh Fens produce, and adapt Public Health advice, support and engagement (e.g. healthy weight

management programmes) so that it makes direct links with them

42. Reinforce good food identity through leisure & tourism:
- Link promotions for mental health benefits of nature tourism and access to the countryside with the local food culture and economy
 - Highlight horticultural produce at food markets and festivals as part of local culture and place-making

How may we progress the conversation on Fens produce?

Will Fens' produce be affordable to the few or the many?

Much is uncertain about whether Fens produce will be widely affordable in the future. Will further intensification be successful, pushing yields higher and thus reducing costs to the supply chain and perhaps the end consumer, without increasing non-market costs? Will any future gains in productivity be enough to compensate for the growing losses that will be caused by temperature, flooding, soil depletion and sea level change? Will the growing infrastructure and maintenance costs of keeping the Fens dry and workable weigh on the costs of producing food in the Fens? Will a Fens brand for Fens produce make them substantially more expensive? Will government policy succeed in improving dietary health and reducing household food insecurity, and thereby increase demand and spending on vegetables?

5. Regional and national stakeholders must work towards a long-term strategy for the Fens

There is not at present a vision of what the future of the Fens should be like. The message that the land is threatened by climate change has been made loud and clear, most recently in the 2024 Fens Climate Change Risk Assessment report. This strategy sets out some directions, but it does not draw out a picture of what the future Fens should look like. There are strategic choices to make, and the following recommendations focus on the conditions that should be fulfilled so that those choices can be made in the most robust way.

5.1 Coordinate land use planning on a landscape level

Current land use practices are haphazardly responding to multiple, conflicting demands, resulting in unintended consequences such as increasing the likelihood of flooding, GHG emissions and soil depletion. There is a lack of coordination across local, county and national needs and investments. Taking a coordinated, multi-functional and patchwork approach will allow balancing, stacking and robust trade off decisions about food production; water flow and storage; nature; and appropriate development, energy and transport.

Our recommendations:

43. Establish a Fens Land Use Planning Partnership and work together to ensure the recognition at National level of the values and the vulnerabilities of the Fens (including its value to national food- and nutrient security, and vulnerabilities to flooding, water shortage, market pressures, etc); engage and involve Fenland stakeholders on how to set and implement a fair land use plan; build in diversity, including farm type and size; use a transparent method, and be explicit about trade offs.

5.2 Secure stable, patient capital to support the Fens' transition

None of the potential futures for the Fens are cheap. Adapting the Fens to a changing future will require funding. The prospect of securing long-term public funding for the Fens is highly uncertain, however. UK growth is low and therefore tax revenue is too.

Demands on the national budget from public health, defence, and recovery from shocks (whether climate-driven or not) are expected to rise in the foreseeable future: demands emanating from the Fens will increasingly compete with many others. Private investors often look for rapid returns and limited risks. However, the region needs a stream of external investment and internal reinvestment of profits to enable all actors to take a long-term perspective.

Our recommendations:

44. Take a multi-sectoral approach to financing the future of the Fens, spanning agriculture and food, tourism, energy, flooding, water, by:
 - articulating all funding for revenue generating activities (e.g. energy generation, “green water” collection, rain water harvest, storage and redistribution, food production) with funding for public goods (e.g. flood protection, infrastructure maintenance, future adaptation trials, community).

- facilitating discussions between Fens landowners and local authorities, so that waterways in the Fens may help address the national shortage of Biodiversity Net Gain units on watercourses, especially where there are co-benefits with flood protection, and thus provide long-term funding to landowners they can rely on for adaptation

45. Support the Fens2100+, Future Fens and Water Resources East long-term investment strategy, and advocate for the need to tie future investments with a vision for the future of farming in the Fens.

How may we progress the conversation on a common vision for the Fens?

What and who is investment for?

The future is not written. There are various different “future Fens”, reflecting different trade-offs and relationships between farming, biodiversity and economic development. More investment will be required, whichever pathway is taken. Some futures will require more, others less. Some futures reinforce current trends, others imply a more or less significant change of model for the Fens’ economy, landscape, and population. The decisions ahead are difficult and, at the same time, urgent to make.

Where does nature fit?

While these recommendations have not fully explored the place of nature in the future Fens, this is a key consideration that should be discussed and integrated. The Fens were and can be again a key environment for natural ecosystems to coexist with farming in a balanced manner.

What are the opportunities in relation to food manufacturing?

The role of, and opportunities around, food manufacturing in the Fens are also not addressed in these recommendations. The majority of manufacturers in the region are SMEs, strongly rooted in place and community; the large manufacturers are also key investors in the area. Both are key actors and employers in the region, and essential voices in the conversations as they progress. How will the regional and national conversations interact?

There are many initiatives hosting regional debates on the future of the

Fens. It is crucial that the people who live and work in the Fens are directly contributing to shaping their future. However, that future, whatever it is, will not just affect them. The Fens are not an island: what happens there will affect the rest of the UK. Financially, first. Some scenarios for the Fens' future assume very large, long-term contributions from the rest of the UK, via the national budget. When it comes to flood protection, for instance, the Fens is only one of several regions threatened by sea level rise. At a time of constrained public budgets, difficult decisions will be made, that call for a national debate too.

The other angle is security, and not just in relation to food. The Fens are nationally significant for the UK, providing food as well as energy to the rest of the country. Will the UK decide to commit to protecting the Fens against the many threats it is exposed to, because it is so significant (and potentially ever more significant if greater proportions of the nation's food supply come from there in the future)? Or will the UK seek to rebalance the risks to energy and food security, by redistributing assets, both food production and energy generation, across the country so that a smaller proportion is located in the Fens?

This is a crucial debate, and both pathways have considerable merits and drawbacks.