

**Future Fens:
Integrated Adaptation**



Fens and Lincolnshire Reservoirs

Anglian Water Services Limited

Future Fens: Integrated Adaptation

Food and Farming Opportunities Study (FAFOS) Summary Report

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Food and Farming Opportunities Study

Context

The Food and Farming Opportunities Study (FAFOS) report summarises the results of a study undertaken for Anglian Water by Collison and Associates Limited, to look at the agricultural and food chain impacts and the potential opportunities from the Lincolnshire and Fens Reservoir proposals [Investing in two new reservoirs](#).

The region in which the reservoirs are needed is agricultural and so there will be a loss of agricultural land to create the reservoirs. The statutory environmental impact assessment (EIA) process will be used to assess these impacts and the mitigations to be used, prior to seeking planning permission through a Development Consent Order (DCO) process, in response to the EIA. Some of the ideas presented in the FAFOS report, e.g. improved water management, are likely to be part of the formal reservoir design submitted through the DCO process, but other areas will fall outside of this process. The purpose of the FAFOS report is to explore how the reservoir development might also enable these wider agricultural benefits.

Whilst this report sets out potential ways in which the reservoirs could benefit the agriculture and food sectors, it is ultimately up to each business to decide which of the ideas presented below, or other ideas, could most benefit their business.

Anglian Water want to use this report to start a conversation with farmers, food producers and the region to understand how the final reservoir design could benefit the farming and food sector.

This report will also inform the work of the Fens and Lincolnshire Reservoir Water Partnerships, and the wider partnership working facilitated through the Future Fens Integrated Adaptation (FFIA) Taskforce. The FFIA programme is a [strategic partnership initiative](#), working independently across the Fens to determine the actions partners involved in managing water can jointly take to secure a vibrant future for the Fenland community.

FFIA will build on Anglian Water's work to engage with regional partners, including the Mayors, Councils, water management bodies (e.g. IDBs), planners, business groups and other stakeholders to understand how collectively we can ensure the reservoirs unlock new opportunities for the region's important and UK leading agriculture and food sectors.

Scope

The FAFOS work was conducted in three phases:

1. Assessing the economic impacts on agriculture resulting from the loss of the land needed to construct the reservoirs and infrastructure linking the reservoirs to the wider water system.
2. Developing a long list of opportunities, which were debated with the project steering group, to agree a list of 9 priority opportunities covering: increased agricultural production; the potential for new farm enterprises; and the potential for environment and sustainability gains.
3. Developing an outline scope for each of the 9 priority opportunities to set out what could be delivered, and how and by whom the opportunity could be facilitated.

Potential Opportunities Created for Agriculture by the Reservoirs

The Agricultural Transition and government policy is promoting increased domestic food production, reduced environmental impact and improved water management, impacting all farm businesses and increasing pressure to be more productive and diversify farm incomes. These options below explore the potential to address these needs through opportunities to grow farming and food output.

The opportunities labelled 'direct' will be taken forward through the DCO process, whilst those labelled 'indirect' could be delivered via the FFIA and/or other stakeholders.

Opportunity		Scale of opportunity	Role of DCO in leadership
Farm Production	Water for high value crops – the reservoirs will improve regional water infrastructure and the water transfer routes could be designed/consented to allow farms to capture & store peak flow water for high value crops	Potentially large, but uncertain	Indirect, by helping farmers secure water for high value crops
	Controlled Environment Agriculture (CEA) – the UK needs more greenhouses to increase fresh produce production & the reservoirs could deliver water source heating & lower cost water storage options for these	Large	Indirect, by helping farms invest in CEA/greenhouses & linked water storage
	Sustainable Energy – the reservoir construction process needs renewable energy, with regional food & farming business well placed to help deliver	Medium	Direct, led by AW & food & farming businesses
Environment & Sustainability	Eco system services – farmers develop environmental projects along the water transfer routes to and from the reservoirs, supported by ELMs & similar schemes	Medium	Indirect, reservoirs create new water transfer routes
	Regional flood risk management – flood risk reduced for agriculture if the reservoirs use flood water to fill the reservoirs and thus reduce regional flood risks	Medium	Direct, reservoir operation captures flood water
	Sustainable fertiliser supplies – low C fertilisers produced by Anglian Water from water treatment to help farmers reduce their carbon footprint	Modest, but uncertain	Direct if using nutrients from PWS treatment works
New Enterprises	Tourism & recreation – farmers create new tourism enterprises (food, activities, accommodation) to benefit from increased visitor footfall created by the reservoirs	Large	Indirect, led by farms investing in tourism
	Farm tenancies – Anglian Water offer tenancies for crop or livestock production, or maintenance contracts (e.g. mowing) to farmers on land adjacent to the reservoirs & water management infrastructure	Modest	Direct, AW offer tenancies and opportunities to bid for contracts
	Labour and other supplies for reservoir construction – Anglian Water could offer contracts to farmers & food chain businesses for workers, vehicles, secure storage or accommodation for visiting contract workers	Medium	Direct, AW offer contracts for farmers to supply services

Impact of the Reservoirs on Agriculture

The impact of the construction of the reservoirs on agriculture was assessed, before any mitigation, by estimating the areas of land likely to be impacted and assessing the current agricultural use and output of this land, which was also sense checked with satellite data. The estimated impact was based on DEFRA agricultural datasets and the John Nix Farm Management Pocketbook. The current land use was assessed to give estimates (using 2023/24 data), of the:

- Volume of food produced on this farmland;
- Additional income from farm diversification and environmental schemes, which when added to the value of crops and livestock, gives an estimate of farm output value;
- Jobs supported by this farm output, both on the impacted farms and in the wider supply chain.

Lincolnshire Reservoir - the estimated impacts, before mitigation are (using 2023/24 data):

- Significance: the loss of farm output is equivalent to 0.2-0.3% of Lincolnshire farmland, and 0.1-0.15% of the value of Lincolnshire's agricultural output and food chain jobs.

Fens Reservoir - the estimated impacts, before mitigation are (using 2023/24 data):

- Significance: the loss of farm output is equivalent to 0.4-0.6% of Cambridgeshire farmland, 0.4-0.6% of the value of Cambridgeshire's agricultural output and 0.3-0.5% of jobs in the supply chain.

The impacts above are measurable, but are a worst case scenario before any mitigation actions are taken. Once mitigations are used, the report finds there are potential uplifts in farm and food chain activity which could increase farming output at a regional level.

Potential Uplift from the Identified Opportunities

The FAFOS study concludes that if the opportunities which the reservoirs could deliver for agriculture, both directly and indirectly as detailed above, are realised the reservoirs can:

- **Increase the volume and value of food output** - e.g. through facilitating production of more higher value open field or greenhouse crops e.g. salads, vegetables and fruit, by increasing water supply for high value crops or supporting more greenhouses. For example, less than 25 hectares of greenhouses could replace the volume of crop output impacted by one of the reservoirs (tomato yield c.100 times the wheat average) and increase the value of crop grown.
- **Support more jobs** - mainly through options such as higher value crop production or by facilitating new on farm tourism enterprises. For example, tourism enterprises on farms support many more jobs per hectare than broad acre crop production.
- **Deliver environmental benefits** - through increasing the supply of sustainable fertilisers, enabling more farmers to deliver environmental schemes and through sustainable water management.

Of course, this conclusion does not mean that every farm business in the area will gain benefits from the reservoirs. The farms negatively impacted through the loss of land will be supported through the normal compensation arrangements which apply for national infrastructure projects. However, this assessment shows that

at the regional level, there is real potential to deliver a net benefit to farming and the food chain by unlocking new income options for farmers.

Next steps

The reservoirs are being delivered in regions which are important for agriculture and where local partners have well developed plans for industry growth. The EIA and DCO processes will deal with the farming impacts of the reservoirs and develop appropriate mitigations. But, to deliver the agricultural benefits which are possible, it is also important to work with regional stakeholders, through FFIA and other regional processes, so a full range of opportunities can be delivered, including by working with:

- **Water Management Bodies** – water management bodies including the EA, IDBs, Abstractor Groups and Lead Local Flood Authorities (LLFAs) have a key role to play alongside Anglian Water and Cambridge Water in delivering improved water management to benefit farmers.
- **Business and Industry** – individual businesses, the NFU, CLA, UK Fresh Produce Network and other agrifood organisations such as the UK Food Valley, can help to deliver the food chain opportunities. Working with these organisations can help to accelerate delivery and secure commercial investment for the developments needed to realise the opportunities.
- **Mayoral Combined Authorities, Planners and Economic Development Bodies** – the opportunities deployed need to link with the delivery of regional economic plans, which the reservoirs will also support through improved public water supply. Many of the development opportunities for farmers, e.g. tourism enterprises, greenhouses etc, will require planning permission and it is important that Councils adopt an enabling planning environment to support these opportunities.
- **Innovation Community** – many of the opportunities identified by the FAFOS project require the delivery of innovative solutions. There are clear opportunities to link to academic centres in the region, including the Universities of Cambridge, Cranfield, Lincoln and UEA, and research centres such as NIAB, to work on relevant topics. The need for innovative business solutions, notably on agritech, also means Barclays Eagle Farm Lab, LINCAM, Ceres AgriTech, Agri-TechE and Fenland Soils, could have key roles to play working alongside the water companies and FFIA.
- **Funding and Finance Organisations** – whilst some of the opportunities will be linked to the delivery of the DCO and thus funded, at least in part, through the reservoir process, the expectation is that most of the agricultural opportunities will be funded commercially or through a combination of grant and commercial finance. It is therefore important to work with DEFRA and the RPA who provide agricultural project grants, and agricultural teams in the banking sector, to secure the financial support needed to support farm investment.
- **Business Advice and Support** – the established business support bodies, such as Growth Hubs, provide advice to farmers and food businesses. It is important to work with these bodies to ensure they promote a range of relevant business opportunities with farmers and food sector clients in the areas impacted by the reservoirs.

By working together, the region can ensure that the net benefit of the reservoirs can be positive for the agriculture and food sectors. Anglian Water and FFIA look forward to working with stakeholders over the coming months and years to explore how the reservoirs can deliver benefits for the agrifood sector and the wider regional community.

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