

BALANCING FARMING, FOOD PRODUCTION AND GOVERNMENT POLICY

BCPC/Farmers Club Technical
Seminar

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PEOPLE & PARTNERSHIP

Team of 50

4 Offices

Variety of Work

22 BASIS & FACTS

Ceres Property





QUESTION: HOW BEST TO LAY THE FOUNDATIONS NOW TO ACHIEVE FUTURE POSITIVE CASH FLOW AND PROFITABILITY?

1. Direction of Government Policy?
2. Embrace available Grant Funding
3. But, don't get distracted, Focus on the Business
4. Non-farming income more important than ever



KEY OBJECTIVES OF GOVERNMENT

1. Environment and Water Quality is better for next generation
2. Maintaining self-sufficiency levels (producing more from less)
3. Reducing carbon emissions (Net Zero by 2050)

Are these achievable?

Our aim is to help businesses be profitable





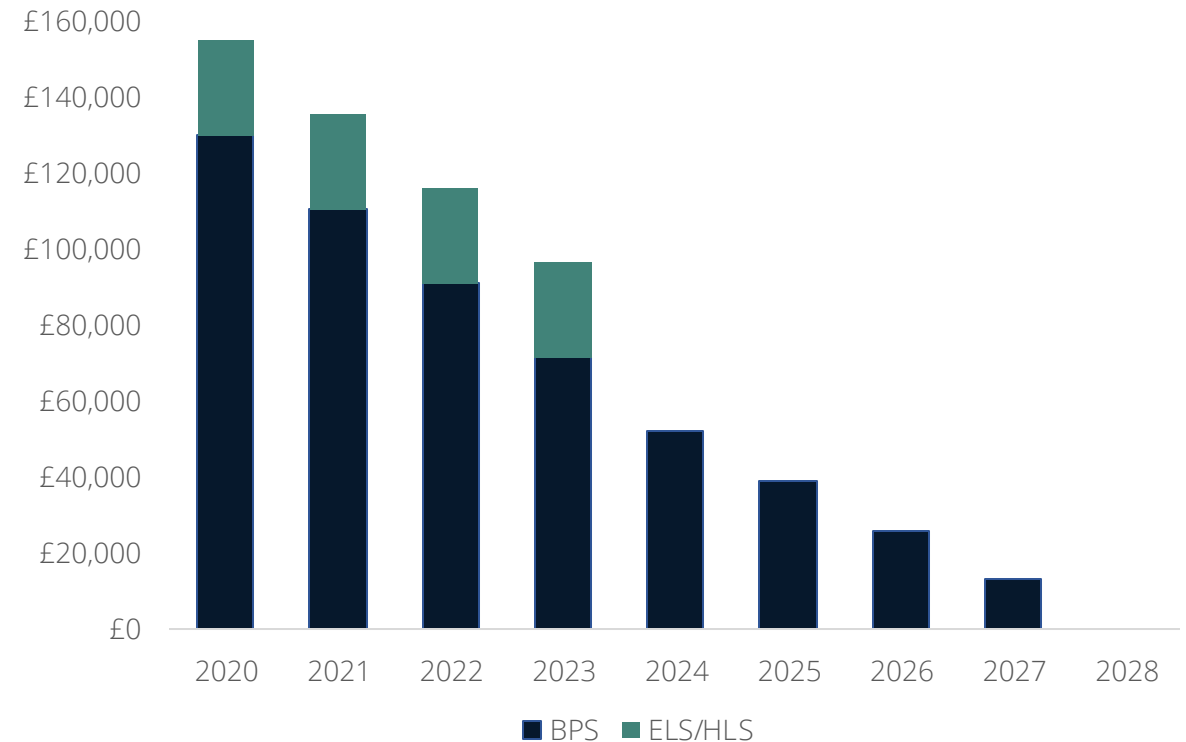
INTEGRATING NEW FUNDING SCHEMES

550HA ARABLE FARM

- Commercial arable farm with a family shoot
- Run in hand with modern machinery
- Growing combinable crops & sugar beet
- In a historic ELS/HLS agreement

In 2020

- BPS £130,247 per year
- Existing stewardship ELS/HLS £25,000 per year
- Reducing to £0 by 2028 if no changes are made



How can we mitigate the £230/ha loss by 2028?



SUSTAINABLE FARMING INCENTIVE (SFI)

Standard	Level	Payment
Arable and horticultural soils	Introductory	£22 per hectare
	Intermediate	£40 per hectare
Improved grassland soils	Introductory	£28 per hectare
	Intermediate	£58 per hectare
Moorland	Introductory	£10.30 per hectare
	Additional payment	£265 per agreement



Arable Soils Intermediate Standard now open for applications – **£40/ha**

- Test soil organic matter, undertake a soil assessment, produce a soil management plan
- Alleviate soil compaction
- Green cover on **70%** area, of which **20%** multi species
- Increase OM on **33%** area

Additional Management Payment of £20/ha for first 50ha included = additional £1,000 per year



CASE STUDY

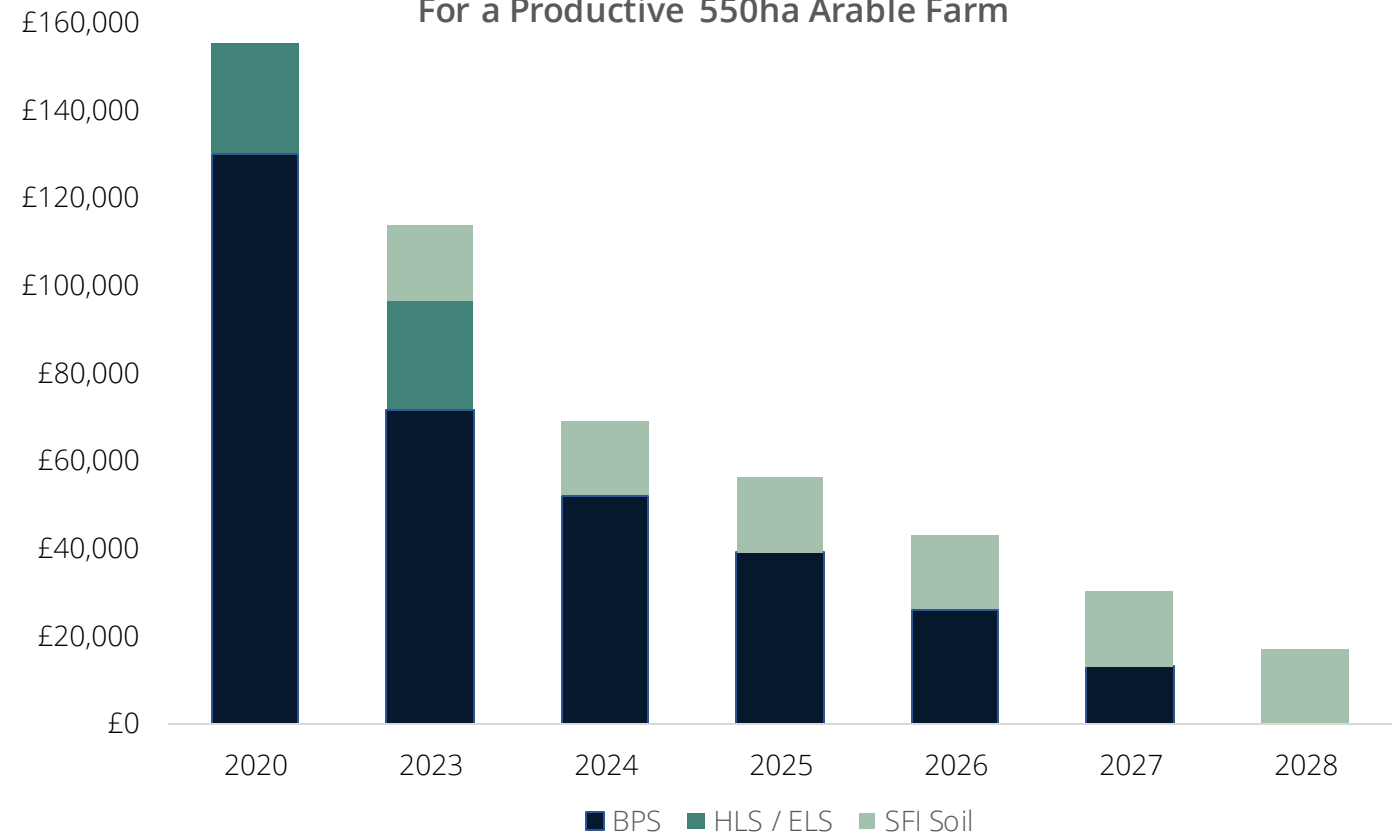
ADDITION OF SFI

Enter the farm into the SFI
Intermediate level – £40/ha

How to meet the criteria:

- Farm currently conducting soil tests
- Introduce OSR companion crop for multi-species winter cover
- Increase organic matter via straw chopping, sewage sludge, and a straw-for-muck deal

Future Farming Income 2020-2028
For a Productive 550ha Arable Farm





WHAT CLASSES AS A MULTI SPECIES WINTER COVER?

Multi-species cover crops are a sown mix of plant species grown together on the same area of land to protect the soil & improve its health.

- A mix of brassicas, legumes, grasses or cereals, or herbs
- Flexible on mix and proportion, e.g. companion crops
- Covered by December until end of February (unless early planting)
- Can be grazed lightly & for destruction, but not if it causes compaction



COUNTRYSIDE STEWARDSHIP (CS)

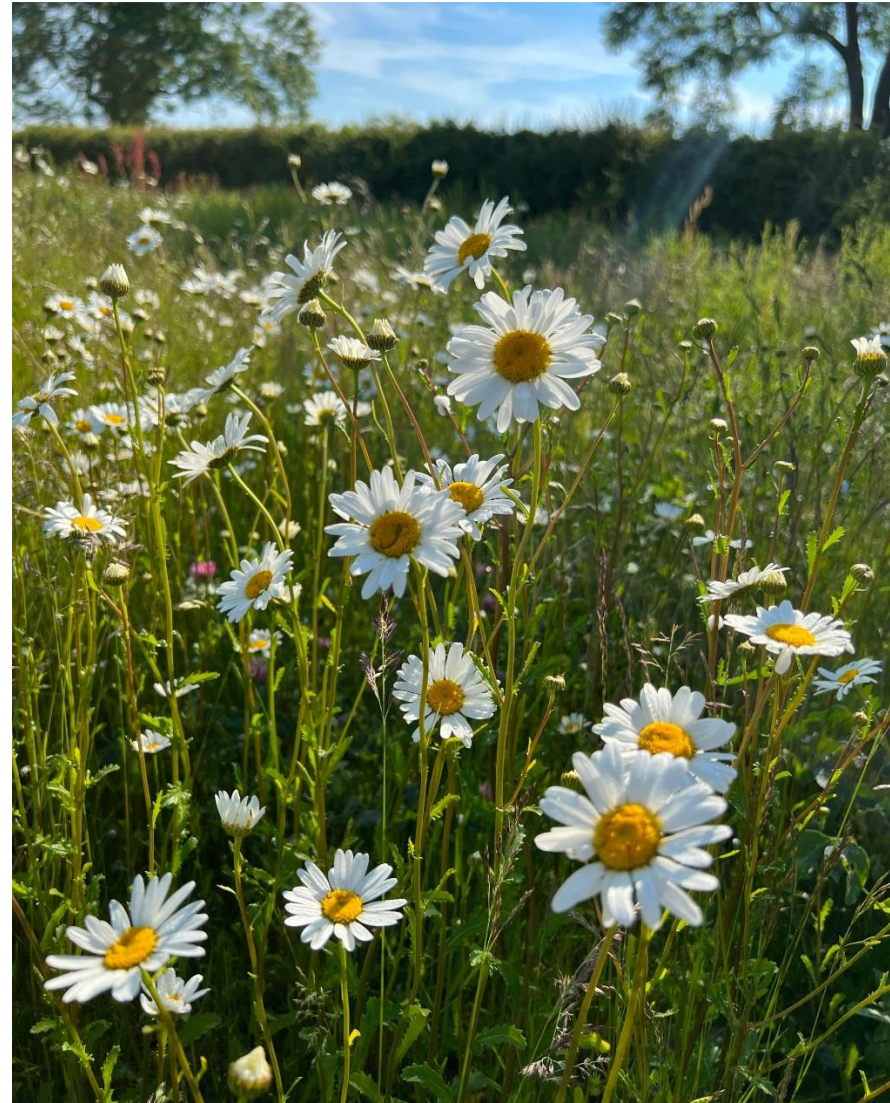
CS has now become 2nd tier of ELMS instead of Local Nature Recovery

Revenue payments rates have increased – on average by **10%**

Approach to inspections and penalties has changed post Brexit – ***Outcome Focussed & Proportionate***

There are currently 22,000 CS agreements in England however only 30% of agricultural land is under an agri-environment agreement

Payments – 1 December each year. NB for some autumn established options such as AB6 this constitutes a payment **in advance** for the harvest year



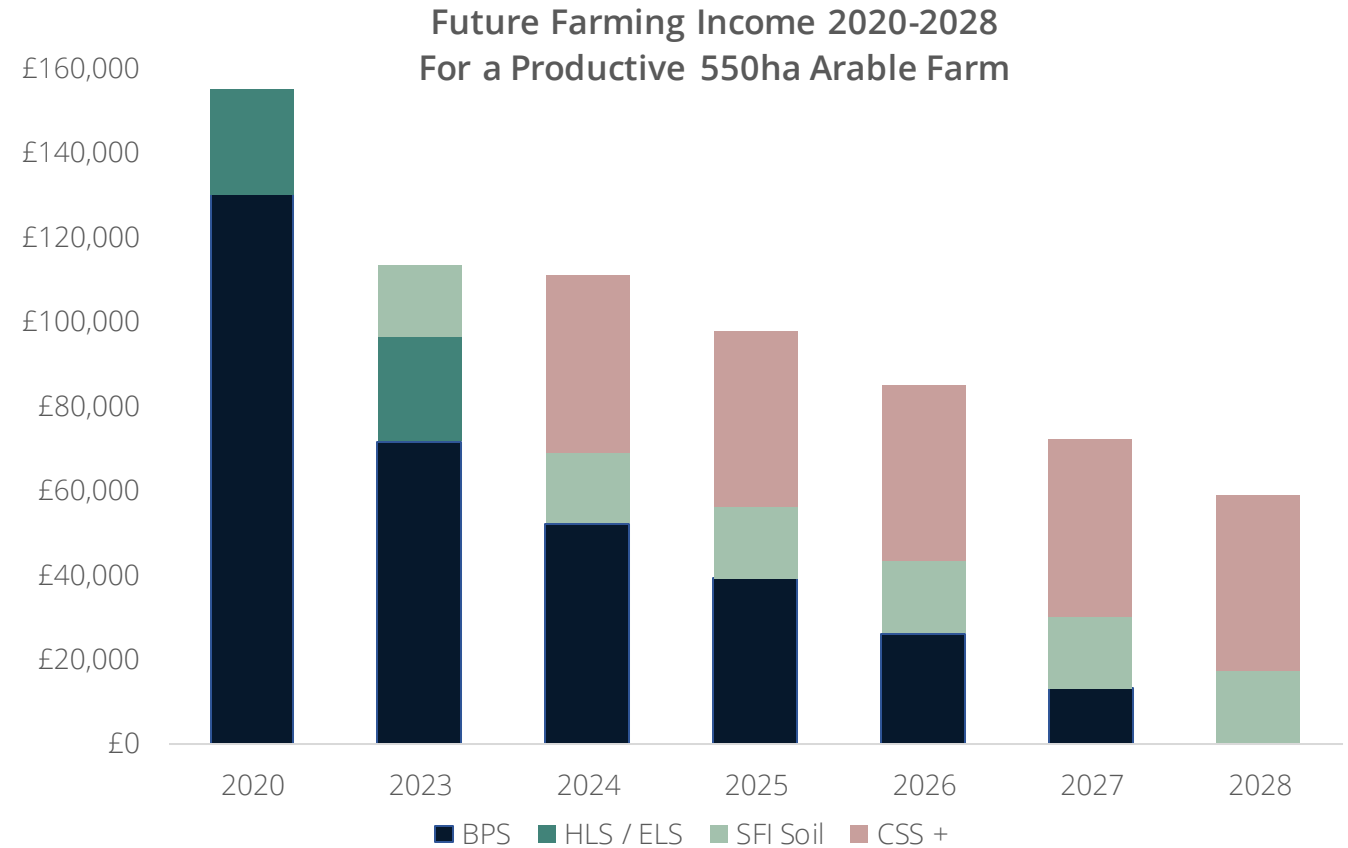


CASE STUDY

ADDING COUNTRYSIDE STEWARDSHIP

Strategic Placement of CS Options

- Grass margins upgraded to AB8 – £673/ha (increased from £628)
- Implement AB9 winter bird food – £732.00/ha (increased from £640)
- AB12 supplementary feeding £669 per tonne





FUTURE SFI STANDARDS

Nutrient Management Standard:

- Must create Nutrient Management Plan, assessing current nutrient requirements with a FACTS qualified adviser within first 12 months of agreement – £589/yr

Integrated Pest Management (IPM) Standard:

- IPM Plan: £989/yr
 - BASIS qualified adviser must visit farm to assess current approach to IPM, produce written plan annually
- No use of Insecticide - £45/ha
- Companion Crop - £55/ha



CASE STUDY

ADDITIONAL SFI STANDARDS

Nutrient Management Standard:

- NM Plan: £589/yr

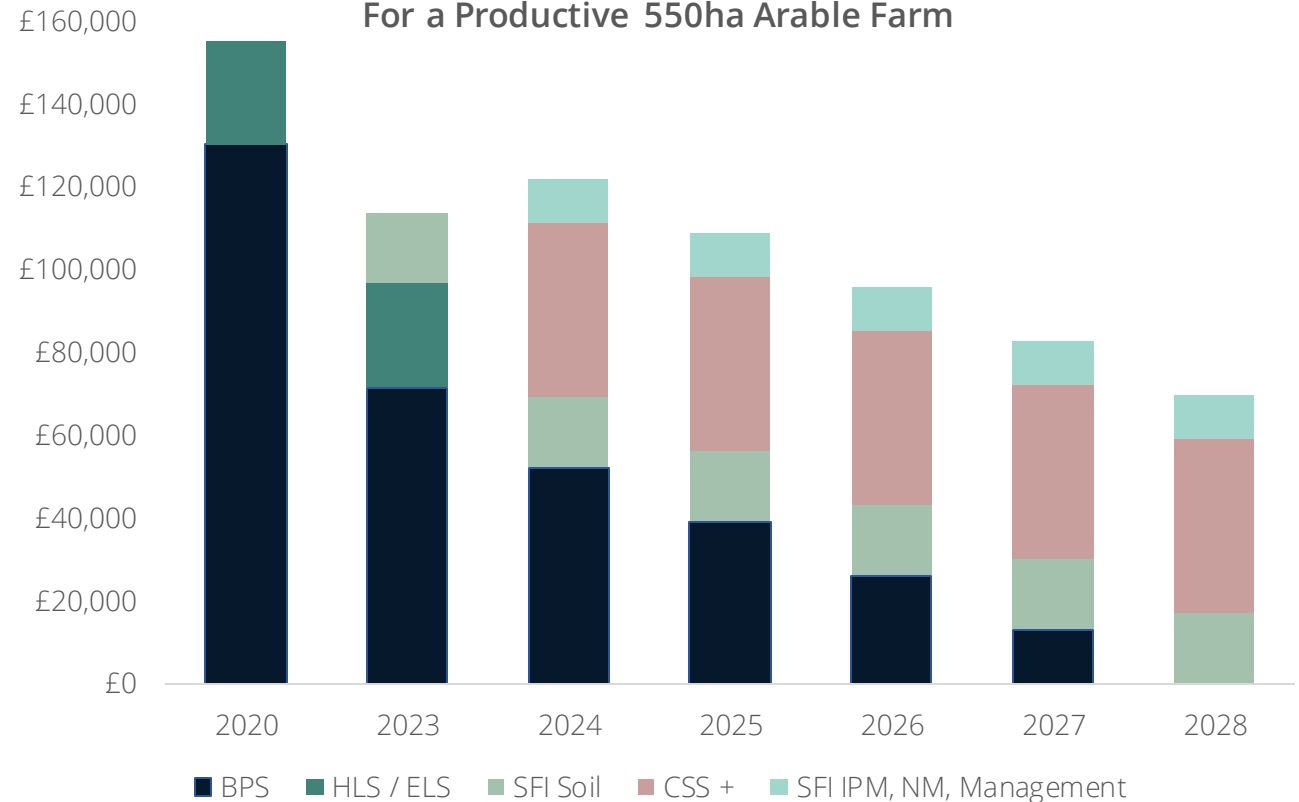
IPM Standard:

- IPM Plan: £989/yr
- No use of insecticide: £45/ha on 2/5 of rotation (spring barley / wheat after beet / beans)

SFI Intermediate Standard:

- Management payment: £1,000/yr

Future Farming Income 2020-2028
For a Productive 550ha Arable Farm





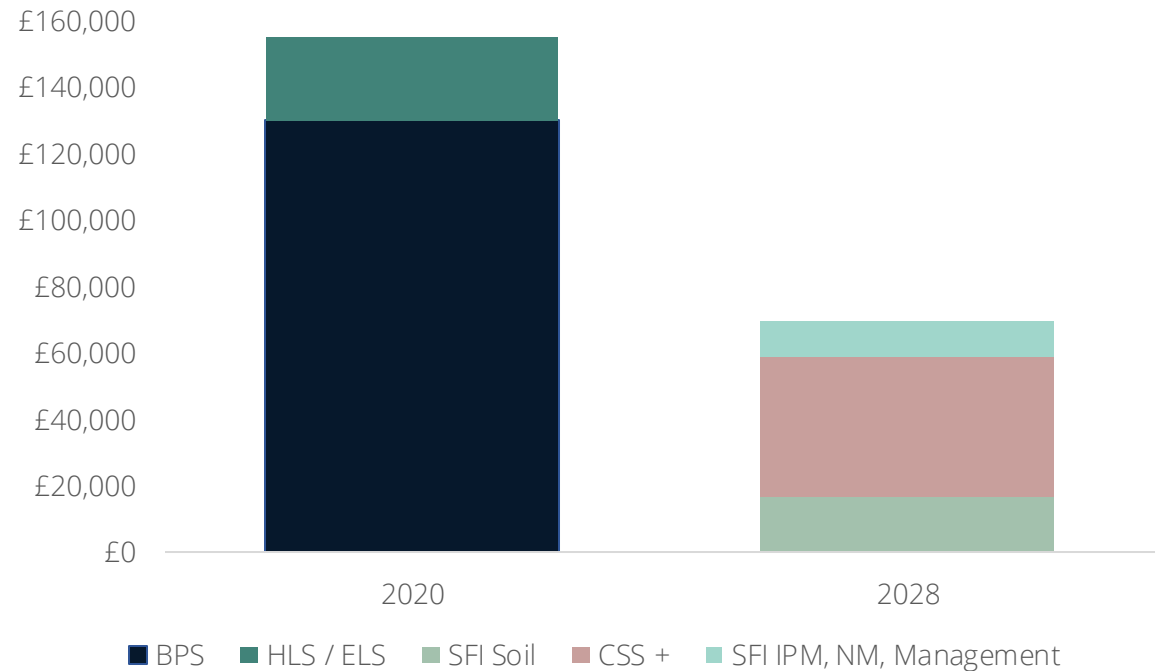
CASE STUDY

550HA ARABLE FARM

Taking no additional areas out of production & selecting strategic options from SFI & CS the farm is able to reach £45,000 additional annual income – **£80/ha**.

This equates **35%** of its 2020 income from BPS, however there are actions required to achieve this income including management time.

Future Farming Income 2020-2028
For a Productive 550ha Arable Farm





CASE STUDY

200HA 'REGENERATIVE' ARABLE FARM

2020 BPS £46,600/yr

£8,000 existing ELS/HLS Agreement ended in 2022

Enter Introductory SFI Soils Standard

160ha at £22/ha

Apply for CSS Agreement at new higher rates

SW6 winter cover crop followed by AB14

harvested low input cereal over 1/5th of the farm, 40ha:

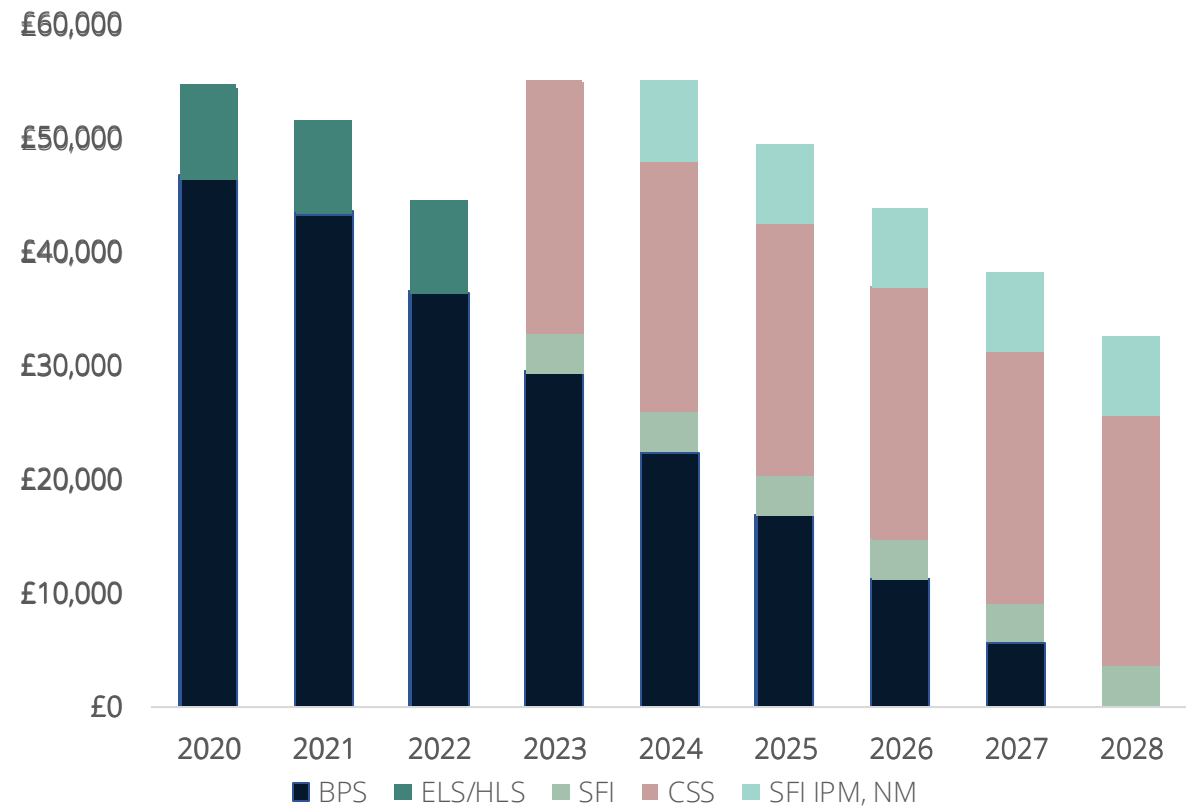
£280/ha (£350-£70 cover crop costs)

Implement NM & IPM Plans:

£589/yr & £989/yr

No use of insecticide on 100ha: £45/ha

SFI management payment: £1,000/yr



2020
BPS = £230/ha
ELS/HLS = £40/ha

By **2028** combined income from additional schemes = £124/ha
53% of 2020 BPS



OTHER GRANT FUNDING

Hedgerow planting

£22/m



Livestock and Machinery hardcore tracks

£44/m





OTHER GRANT FUNDING

Forestry trailer purchased 2022

Cost £11,619

Grant £3,425



Weaving drill 6m sabre tine

Cost £55,800

Grant £18,780





FOCUS ON THE BUSINESS

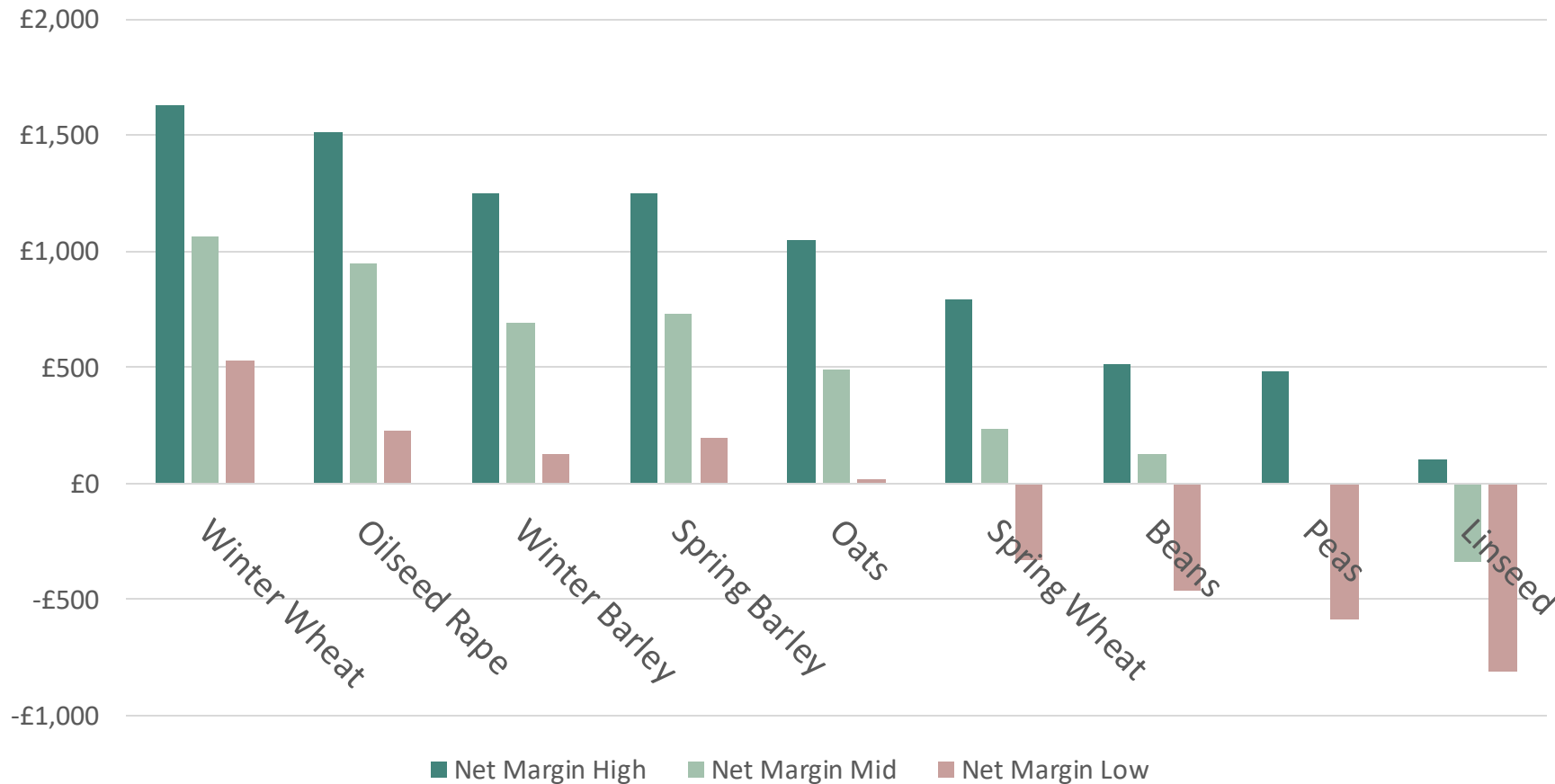
- However, none of these are BPS replacements
- Profitability is key to any environmental objectives
- There are a lot of distractions
 - Talk of ELMS, Natural Capital, Private Finance
- Focus on the business and what you can control





ARABLE NET MARGINS - 2022

2022 - AHDB Farmbench Net Margins £/ha
after Rent & Finance, ex BPS. c. 500 farms



Labour & Machinery Cost
of the Top 25% :

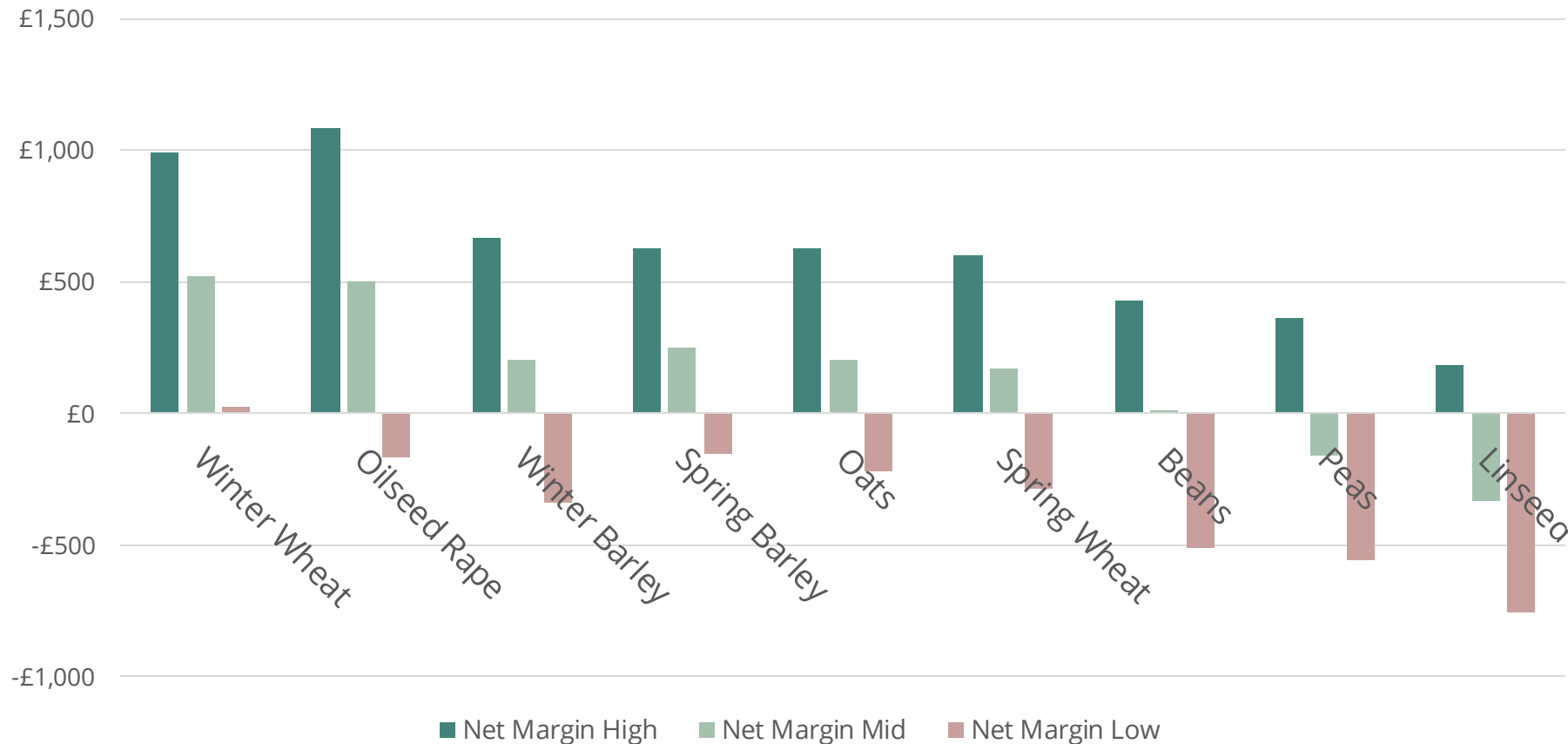
£459/ha





ARABLE NET MARGINS - 2021

2021 - AHDB Farmbench Net Margins £/ha
after Rent & Finance, ex BPS. c.750 farms



Labour & Machinery Cost
of the Top 25% :

£383/ha





HIGH ATTENTION TO DETAIL

- Good land – reasonable financial returns can still be made
- Poorer land – very high attention to detail will be needed
- Weather extremes felt the hardest on the marginal land
- Blackgrass pressure not easing
- CSS alternatives looking more favourable for 2024 harvest



BE PREPARED FOR OPPORTUNITIES

- Time of change for the industry
- A greater number of CFA / FBT / JV opportunities are likely
- Start budgeting now for 2024 harvest and cropping options – fertiliser prices are known
- Novel rotations may be required, e.g 8 Year: GS4 Herbal Ley, GS4 Herbal Ley, Wheat, Wheat, Pulse/Oilseed, Wheat, AB6 Fallow, Wheat
- Finding an optimum for Labour & Machinery / Grain Storage





CARBON AUDITING

The UK aims to be Net Zero by 2050, yet the NFU has set the industry the target of net zero by 2040 & most supermarkets are pushing for 2030.

For a business to make a change, we need to understand the current position regarding **emissions** & sequestration

“Farming overestimates its role for others but underestimates what it will need to do”

“...in the journey to net zero mitigation should first focus on reducing emissions, then on countering them within the business and only last looking to offset them elsewhere.... agriculture at 0.5 percent of GDP is responsible for 10 percent of the UK's emissions. Farming will need to reduce that for itself, not others”

Jeremy Moody, CAAV

THE CERES RURAL & MAP OF AG APPROACH

GHG ACCOUNTING



Carbon Stock	Annual GHG emissions balance
Balance Sheet	Profit and Loss
Fixed Assets	Profit (annual sequestration)
Farm woodland & trees	Increases in C stock in:
Hedgerows	Grassland
Permanent grass	Woodland
Wetland	Trees / other woody biomass
	Other soil
Current Assets	
Temporary grass	Emissions loss
New tree plantations	Fertiliser
Soil	Feed
	Fuel
Liabilities	Livestock (manure, enteric fermentation)
Land use changes	

Our focus is to **reduce emissions**: control & reduction through efficiency measures.
E.g. lower CO₂e per tonne of grain

Secondarily, we will show the potential availability to **increase sequestration**





Our approach is to model GHG emissions based on farm KPIs, which are easy to collect and enter, to provide an estimation of GHG emissions

Inputs

Cropping

- Nitrogen use/Ha
- Fuel Use/Ha
- Plant Protection passes
- Yield
- Basic soil texture information

Beef

- Fertility
- DLWG
- Slaughter Age
- Feed use/conversion
- Fertiliser/ Forage Ha
- Output weights

Dairy

- Fertility
- Milk production/quality
- No.lactations
- Age at first calving
- Feed Rate
- Fertiliser/ Forage Ha

Lamb

- Ewe Efficiency
- Lambing %
- Weaning weight
- Slaughter age and weights
- Feed use
- Fertiliser inputs

Outputs

- Provides an emissions intensity calculation based on input data that is understood by the farmer
- Provides a tool to show the impact of actions to reduce GHG and improve production efficiency.



WHAT WILL IT SHOW YOU?

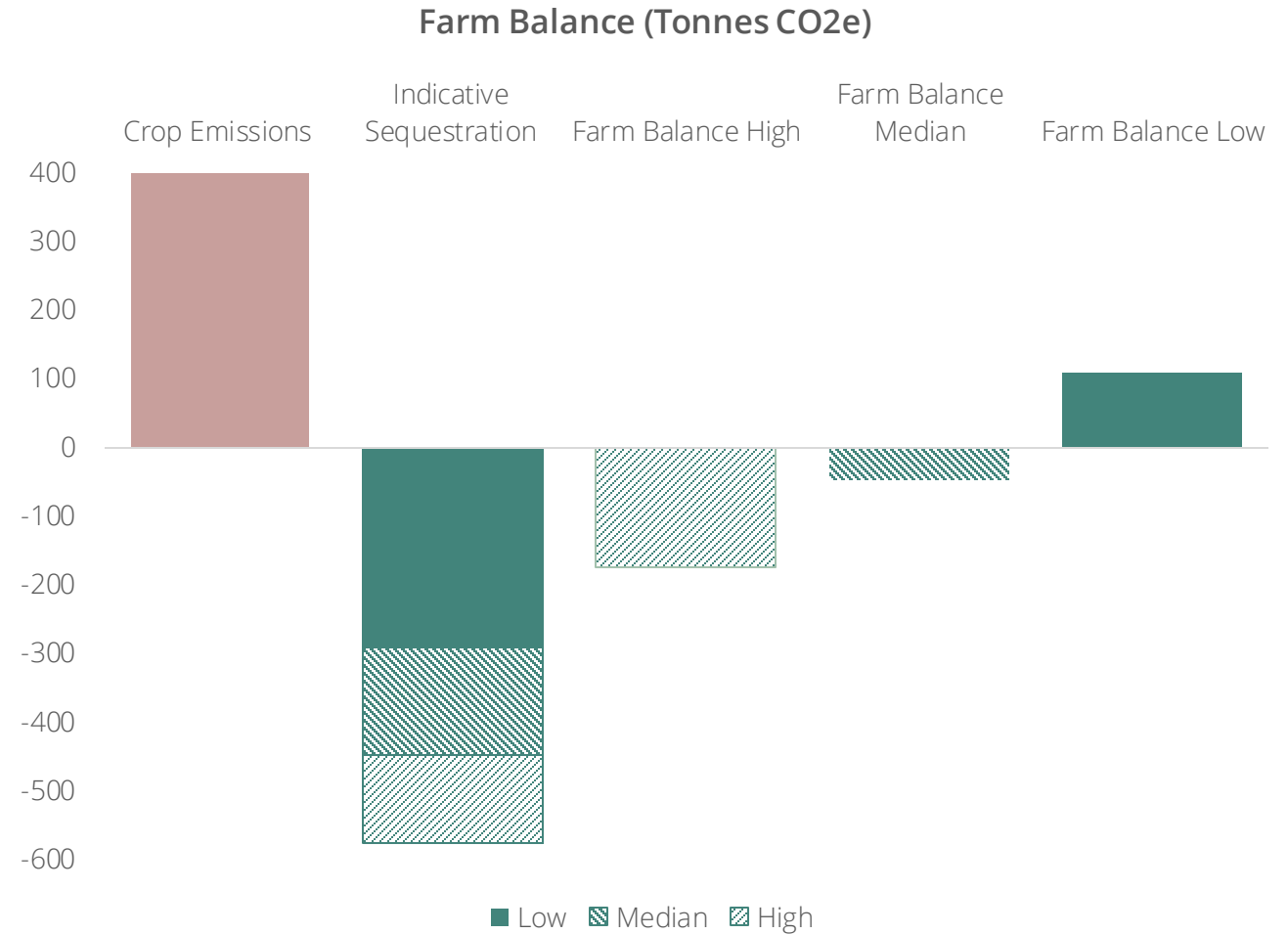
250ha farm

155ha arable, 80ha permanent grass,
20ha woodland

Total crop emissions = **399.5 T CO₂e**

Potential sequestration = **302 to 596 T CO₂e**

Farm balance = **97.5 to -196.5 T CO₂e**



However – don't get distracted by sequestration!





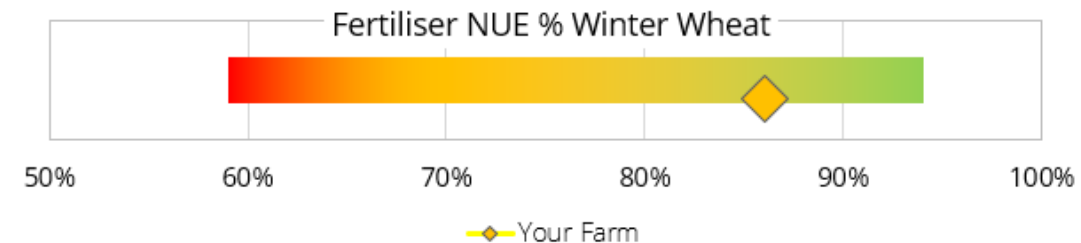
NITROGEN USE EFFICIENCY

Challenging the optimum N rate for yield from the historic 220kgN/ha for Feed Wheat

- continuing the attitude of 2023

YARA long term 2006-2021 data suggests:

- First 100 kgN = 2.7 t/ha yield increase
- Next 60 kgN = 0.77 t/ha yield increase
- Final 60 kgN = 0.38 t/ha yield increase



Changes in economic optimum N rate factoring Nitrogen and Grain price

Changes in economic optimum N rates/ha for Feed Winter Wheat depending on N price and crop value											
	AN 34.5%N/t	£207	£276	£345	£414	£483	£517	£587	£690	£863	£1,035
	Urea 46%N/t	£276	£368	£460	£552	£644	£690	£782	£920	£1,150	£1,380
	LiqN 37%N/1000L	£222	£296	£370	£444	£518	£555	£629	£740	£925	£1,110
	Cost £/kgN	£0.60	£0.80	£1.00	£1.20	£1.40	£1.50	£1.70	£2.00	£2.50	£3.00
Change in applied N/ha for FEED winter wheat from standard N rate of 220 kgN/ha											
Expected Grain Price (£/t)	£137-£162	+10	0	-20	-30	-40	-50	-60	-75	-95	-100
	£163-£187	+20	0	-10	-20	-30	-45	-50	-65	-85	-95
	£188-£212	+30	+10	0	-10	-30	-40	-50	-60	-80	-90
	£213-£262	+30	+20	+10	0	-20	-30	-40	-55	-75	-85

2024

2023



UNDERSTANDING CROP EMISSIONS

N₂O Direct Emissions

Nitrous oxide (N₂O) emissions arising from soils following the application of nitrogen (inorganic and organic source) and emissions from residual soil nitrogen and crop residues. Emissions arise as a natural by-product of nitrification and denitrification in soils. The amount of nitrogen lost as N₂O is relatively small but N₂O is a particularly potent greenhouse gas with a global warming potential 273* times that of carbon dioxide.

N₂O Indirect Emissions

Secondary loss of nitrous oxide (N₂O) emissions, mainly from leached nitrate to water and, to a lesser extent volatilised nitrogen (lost to air).

Fertiliser Production

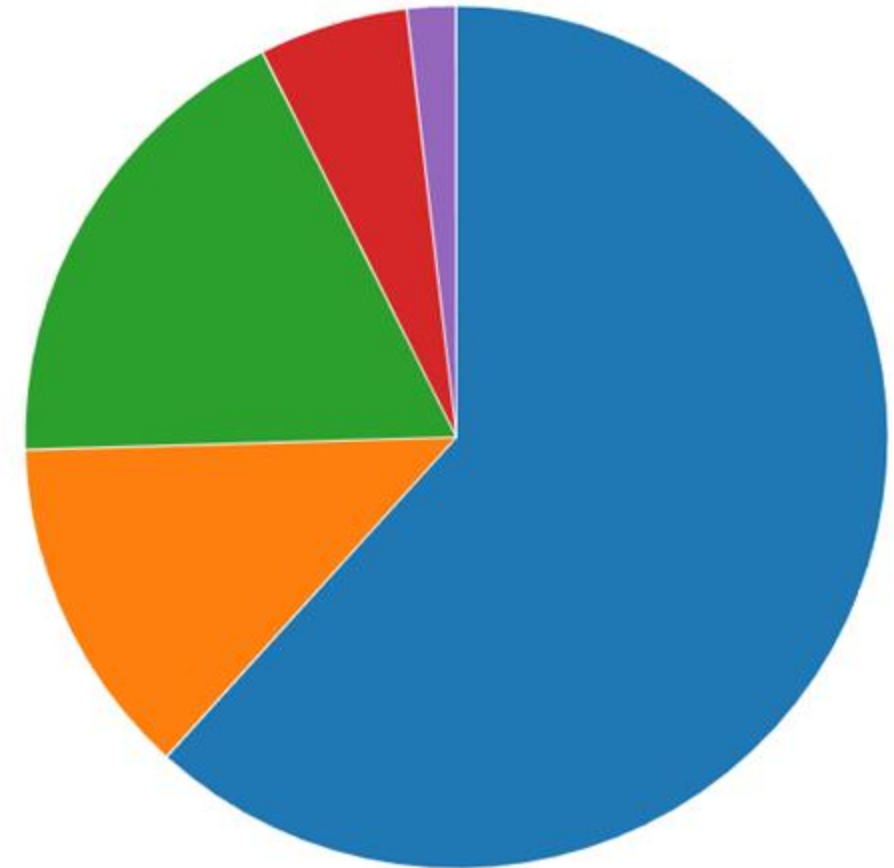
Emissions that arise from the production of fertiliser. This is predominately driven by the energy intensive process of producing nitrogen in fertilisers. Fertilisers do have different emissions depending on the energy source and nature of the nitrogen content (e.g. Ammonium Nitrate vs Urea)

Energy

Emissions arising from the production and use of energy sources such as fuel and electricity

Crop Protection

Emissions arising from the production or plant protection products



*According to IPCC Assessment Review 6 (August 2021)

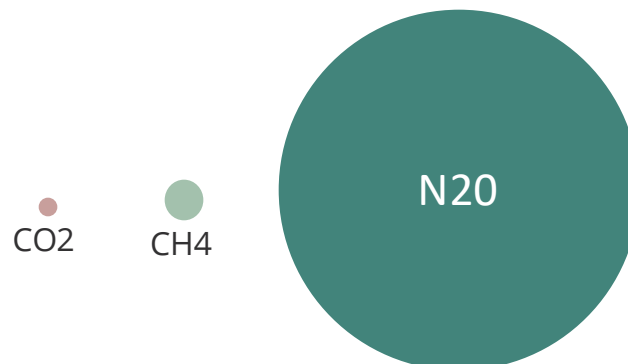
SCENARIO PLANNING

AND WHAT IF?

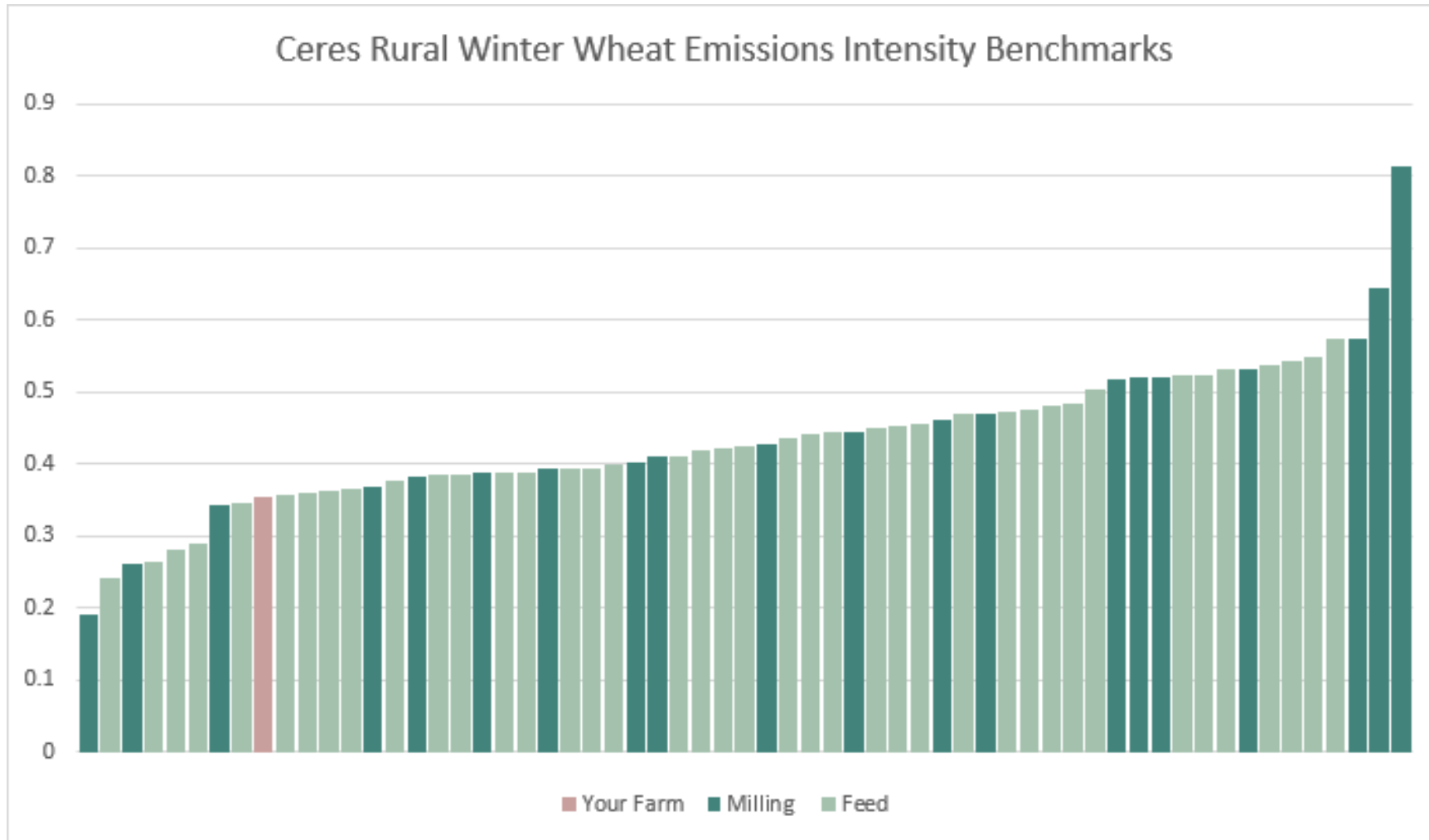


Example recommendations and effect on GHG emissions

Recommendation	Potential Impact on CO ₂ e
Reduce artificial N input by 40kgN by using biosolids application (20kgN) and spring sap testing	Assuming the same yield is achieved, the GHG emissions intensity will be reduced by 0.29 T CO ₂ e/ha
Change from heavy cultivation pass to light	11 lts diesel/ha potential saving will reduce GHG emissions intensity by 0.03 T CO ₂ e/ha



ALIGNING PRODUCTION AND POLICY



Generally higher yielding farms had a lower T CO₂e /ha emissions intensity

Focus on efficient nutrient cycling



OUTCOMES FROM THE FARM TO FORK SUMMIT

In addition to pledges on: **Sufficient Labour, Fruit & Veg Aid Scheme, Fairer Supply Chains, Boosting Exports, and Energy Security:**

1. Innovation in the Farming and Food Sector

- APR a block to Innovation?

2. Water Security

- Abstraction licences more flexible and Water Resource Plan

3. Cutting Red Tape

- Review of planning barriers to farm diversification





DIVERSIFICATION OPPORTUNITIES

- A fresh pair of eyes can help identify opportunities for maximising value from each asset on the farm
- Mindset change often required to how to capitalise on local populations
- Recent examples include:
 - Field rented for drone testing
 - Grain store rented for BBQ storage
 - Redundant barn let for apple pressing
- Renewables and Biodiversity Net Gain



FREE ADVICE

FUTURE FARMING RESILIENCE FUND

17 providers to support up to 32,000 farmers & land managers

Provide free tailored support to farm businesses from local advisers to help farmers identify the changes necessary to adapt to changes

Running now until March 2025, Ceres Rural are providing 1,500 farmers with free business advice including **farm resilience reports, benchmarking, business plans & carbon audits**





SUMMARY

1. Embrace available grant funding that fits your farming system
2. Focus on the business and what you can control. De-risk the rotation. Be prepared for opportunities
3. Understand your current GHG Emissions intensity and how this interacts with potential changes in system to reduce this. Know your NUE - policy and production are aligned!
4. Maximise the return from every farm business asset



ceresrural.co.uk/service/free-business-advice/



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ANY QUESTIONS?



INTERESTED IN COLLABORATING?
HAVE A QUESTION?
START YOUR JOURNEY.

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