

# **Farm Business Survey**

## **2012/2013**

### **Crop Production in England**



Ben Lang



## Crop Production in England 2012/2013

Copies of this report may be obtained from:

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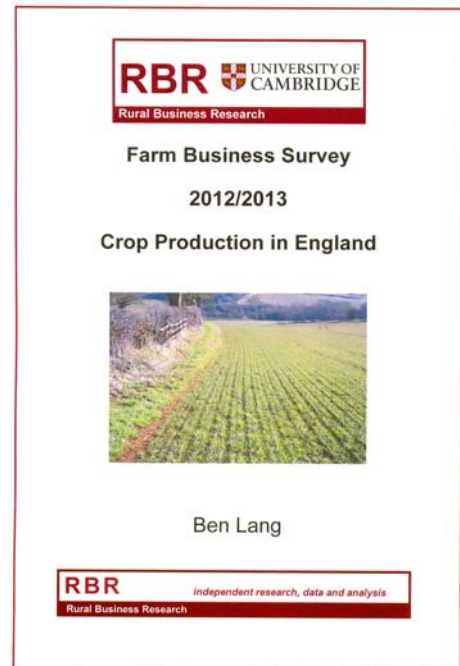
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## Crop Production in England 2012/2013

The full printed version of the report is now available and comprises:

- Overview of Profitability, Assets and Liabilities
- Arable Farm Performance: Agriculture
- Agri-environment, Diversification, Single Payment
- Crop Enterprise Performance
- Crop and Input Prices
- Oilseed Rape Rotations and Performance



Appendix 1 Agricultural Output and Costs Comparison by  
Farm Type, District, Size and Performance (36 tables)

Appendix 2 Gross Margin Results for Comparison by Farm Type,  
District, Size and Performance - Non Organic (110 tables)

### **Price £20 including postage and packing**

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Drawing upon data from the financial year 2012 to 2013, this eighth series of reports arguably represents a turning point in the average financial fortunes of agricultural and horticultural businesses in England. Across the sectors, average Farm Business Income (FBI) fell by 30% from the previous year's results, albeit with specialist pig and poultry farms bucking this trend. Looking across the most recent five years' FBI performance, we may yet look back to the harvest of 2011, and the 2011-12 financial year more generally, and conclude this represented a high point for the industry, in aggregate, at the start of the 2000s. Therefore, as we provide the 2012-13 results for particular farm types and enterprises, it is opportune to consider the driving forces of economic performance as we look to the future.

Having written about Common Agricultural Policy (CAP) reform numerous times within the forewords to these series, one would be forgiven for thinking that we must have by now arrived at a point of certainty and clear policy direction. However, at the start of 2014, while the direction of the CAP is certainly clearer, there remains considerable uncertainty over how the broad CAP reform package that has been agreed will be implemented. The modulation rules over the movement of monies from Pillar I to Pillar II of the CAP will almost certainly lead to a more uncommon implementation of the CAP within the EU, and even within the UK. One of the largest unknowns of the new CAP is how the greening rules will be implemented by member states – discussions of crop rotation and permanent pasture will take on a whole new meaning and focus around the kitchen tables of farm households, while understanding what is meant by an Ecological Focus Area is already bringing forward yet more terminology and rules for farmers and producers to get to grips with.

No preface to the 2012-13 agricultural and horticultural financial year data analysis would be complete without reference to the prevailing climatic conditions over the April 2012 to March 2013 period. After the early spring 2012 drought conditions gave way to one of the wettest summers on record, the main grass and crop growing and harvest season of 2012 will not quickly fade from the memories of those at the sharp end of primary food production. The exceptionally cold late winter of 2012/13 and spring 2013 then placed increased pressures on many businesses, placing immediate financial pressures on livestock farmers. The results presented in this eighth series must therefore be set against the prevailing conditions of this, hopefully atypical, 12 month period. However, the impacts of yields and costs are only part of the story; output prices, exchange rate fluctuations, policy support and diversification opportunities all contribute to the changing fortunes of the various sectors that we report on in our series. As businesses look to the future, all of these aspects, and many more, will be at the forefront of their thinking. To help businesses assess their own strengths, weaknesses, opportunities and threats, we hope that the data and independent analyses contained within *Rural Business Research's (RBR)* series of reports provide useful and essential information to facilitate the task.

Once again, I particularly thank all the farmers and producers who take part in the FBS research programme; without the voluntary contribution of these individual businesses it would not be possible to provide such a breadth and depth of data and information to the wider industry.

**Dr Paul Wilson**

Chief Executive Officer, Rural Business Research  
January 2014

[www.ruralbusinessresearch.co.uk](http://www.ruralbusinessresearch.co.uk)

### ACKNOWLEDGEMENTS

Rural Business Research is very grateful to the farmers who have voluntarily provided records and information on which the FBS and this report are based.

Rural Business Research staff across England collected farm data. At the Rural Business Unit, Richard Dexter and Mark Reader designed the reporting system and Joy Meyrick and Stephen Horsley contributed to production of the report.

## Executive Summary

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The trend since 2005 towards higher arable Farm Business Income (FBI) has apparently stalled in 2011 and 2012 due mainly to cost inflation, albeit at a time of improved sales values of farm commodities. However, many of the prevailing conditions in 2012 /2013 were specific to the season.

Dull and excessively wet weather was the cause of reduced crop yield and quality in the harvest 2012 year. High commodity prices largely mitigated the reduced volume of production.

Variable costs rose sharply; on Cereals farms, seed fertiliser and crop protection expenses increased by 22, 29 and 30 per cent respectively. All categories of fixed costs increased, by six and four per cent respectively on Cereals and General Cropping farms. The price increases were consistent across labour, machinery, overhead and occupancy costs, and not just due to increased energy costs as observed in recent years.

On Cereals farms, FBI reduced by 31 per cent reduction to £343 per hectare. The improved performance of the potato crop was the main reason for the six per cent improvement on FBI of General Cropping farms to £437 per hectare.

The wheat area increased by 2.2 per cent, to 1.86 million hectares but generated a lower gross margin than oilseed rape, beans, spring wheat, winter barley and winter oats. The winter wheat crop yielded 19 per cent below the five year average and quality was very poor due to exceptionally low specific weight. In the case of milling wheat, Hagberg levels were low despite high protein levels. Group 1 milling wheat varieties nevertheless yielded well.

The trend of increasing oilseed rape area continued, up eight per cent in the year and up 34 per cent since 2006. Winter oilseed rape achieved the highest gross margin of all combinable crops for a second year, but at £817 per hectare this was 24 per cent lower than in 2011. The 15 per cent reduction in yield to 3.4 tonnes per hectare was the main reason for the reduced performance. Peas and linseed failed to thrive in the wet conditions of 2012.

The sugar beet crop achieved an average gross margin of £1,034 per hectare (£1,302 in 2011). The less favourable performance was due to a lower yield of 60.4 tonnes per hectare (70 tonnes per hectare in 2011) and a nine per cent increase in variable costs.

The average gross margin for all ware potato production systems averaged £4,998 per hectare (£2,462 per hectare in 2011), despite a very low yield of 31.6 tonnes per hectare. At £224 per tonne, the price was twice that received in 2011.

Of the non agricultural revenue streams, the reduction in revenue from the single payment scheme had the greatest impact on FBI. In the prevailing strong rental market, diversification income was maintained during the difficult economic climate of 2012 but agri-environment scheme receipts reduced.

In Chapter 6, we use FBS data to look at the performance of oilseed rape according to its level of inclusion within the rotation. Experimental work on different crop rotations has provided evidence of possible yield reductions when oilseed rape is grown too frequently. The trials evidence for reduced oilseed rape in short rotations is clear, but our evaluation of commercial production provides no conclusive evidence of economic impact of short rotations.

**Ben Lang**

# 1 Overview of Profitability, Assets and Liabilities

## 1.0 The Whole Farm

This report relates to the 2012 harvest, and the financial year ending on 5 April 2013 for most farms. Results are presented on a per hectare basis and relate to the total area of the farm including any woodland, roads, tracks or buildings.

Dull and excessively wet weather was the cause of reduced crop yield and quality in 2012. The winter wheat crop yielded 19 per cent below the five year average. High commodity prices largely mitigated the reduced volume of production.

Variable costs rose sharply with increases in seed, fertiliser and crop protection. On Cereals farms, the increase was 19 per cent on average whilst on General Cropping farms the increase was 12 per cent.

All categories of fixed costs increased, by six and four per cent respectively on Cereals and General Cropping farms. The price increases were consistent across labour, machinery, overhead and occupancy costs, and not just due to increased energy costs as observed in recent years.

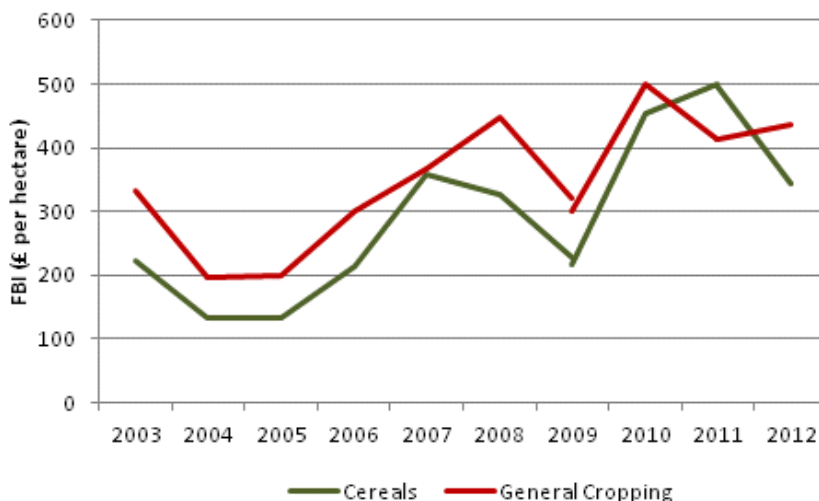
On Cereals farms, the result was a 31 per cent reduction in Farm Business Income (FBI) to £343 per hectare.

A recovery in the potato price was the driver of a greatly improved gross margin from £2,462 per hectare in 2011 to £4,998 per hectare in 2012. The improved performance of the potato crop was the main reason for the six per cent improvement on FBI of General Cropping farms to £437 per hectare.

## 1.1 Time Series Farm Business Income on Cereals and General Cropping Farms

The figure below shows the FBI of Cereals and General Cropping farms since 2004.

Time Series FBI on Cereals and General Cropping Farms in England, 2004 to 2012



The trend over this time period has been towards higher FBI. However, the improvement in incomes has stalled. This is mainly due to cost inflation including all variable costs, higher rents and increased machinery costs. Commodity price cycles have introduced high input costs in years of reduced crop sales revenue.

# 1 Overview of Profitability, Assets and Liabilities

## 1.2 Farm Business Income 2012/2013

The Tables below summarise the profitability of Cereals and General Cropping farms in 2011/2012 and 2012/2013.

Cereals Farms - Farm Business Income			General Cropping Farms - Farm Business Income		
	2011	2012		2011	2012
Number of farms	325	330	Number of farms	163	161
Area of farm (ha)	188	199	Area of farm (ha)	244	210
	£ per ha	£ per ha		£ per ha	£ per ha
Crop output	1,042	1027	Crop output	1,404	1522
Livestock output	42	42	Livestock output	51	75
Agri-environment	41	37	Agri-environment	44	37
Other output	195	198	Other output	162	192
Single Payment	210	192	Single Payment	209	185
<b>Total Output</b>	<b>1,530</b>	<b>1496</b>	<b>Total Output</b>	<b>1,870</b>	<b>2011</b>
Variable costs	449	533	Variable costs	644	724
Fixed costs	593	626	Fixed costs	819	857
<b>Total costs</b>	<b>1,042</b>	<b>1160</b>	<b>Total costs</b>	<b>1,464</b>	<b>1580</b>
Profit on sale of assets	10	6	Profit on sale of assets	7	6
<b>Farm Business Income</b>	<b>498</b>	<b>343</b>	<b>Farm Business Income</b>	<b>413</b>	<b>437</b>
Less labour	13	20	Less labour	11	18
Add interest	20	22	Add interest	23	28
Less rental costs	94	95	Less rental costs	96	98
<b>Net Farm Income</b>	<b>411</b>	<b>250</b>	<b>Net Farm Income</b>	<b>329</b>	<b>349</b>

### Variable and Fixed Costs

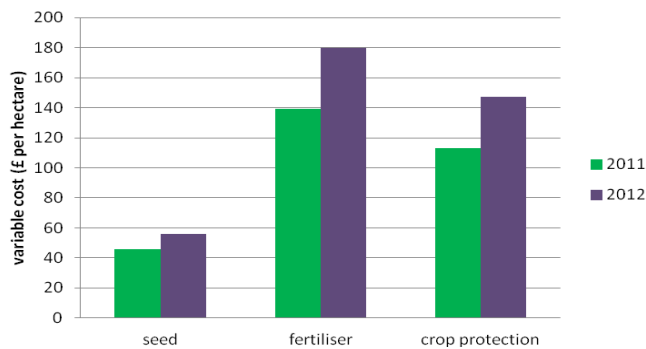
The following figure shows the change in variable cost expenditure between 2011 and 2012 and the next figure shows the increase in all fixed cost categories on cereals farms in 2012/2013 in comparison with the previous year.

The average expenditure on seed fertiliser and crop protection increased by 22, 29 and 30 per cent to £56, £180 and £147 respectively per hectare.

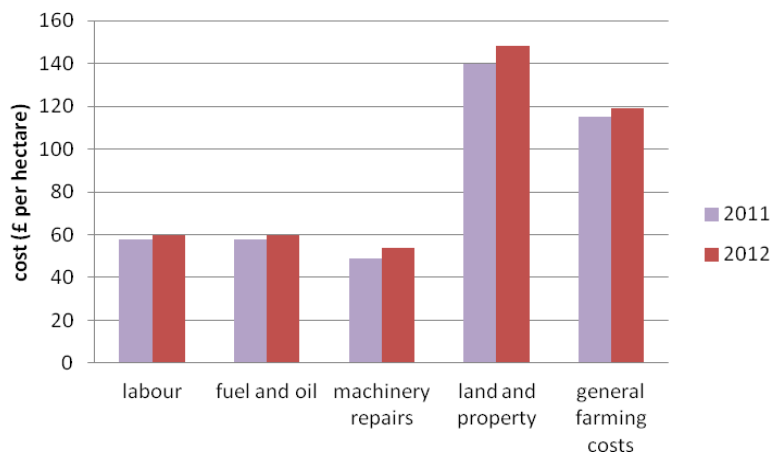


# 1 Overview of Profitability, Assets and Liabilities

## Cereals Farms, Variable Costs 2011/2012 and 2012/2013



## Cereals Farms, Fixed Costs 2011/2012 and 2012/2013



### Labour

The cost of paid labour continued to increase; on Cereals farms by two per cent to £70 per hectare and on General Cropping farms by eight per cent to £208 per hectare. In October 2012, automatic pension enrolment was introduced, requiring employers to ensure that staff would save towards a pension.

There was also evidence of demographic change of the agricultural workforce with an increase in the number of graduates and of women<sup>1</sup>. In the UK, there were 23,000 female farmers in 2012 compared to 17,000 in 2011.

### Rent

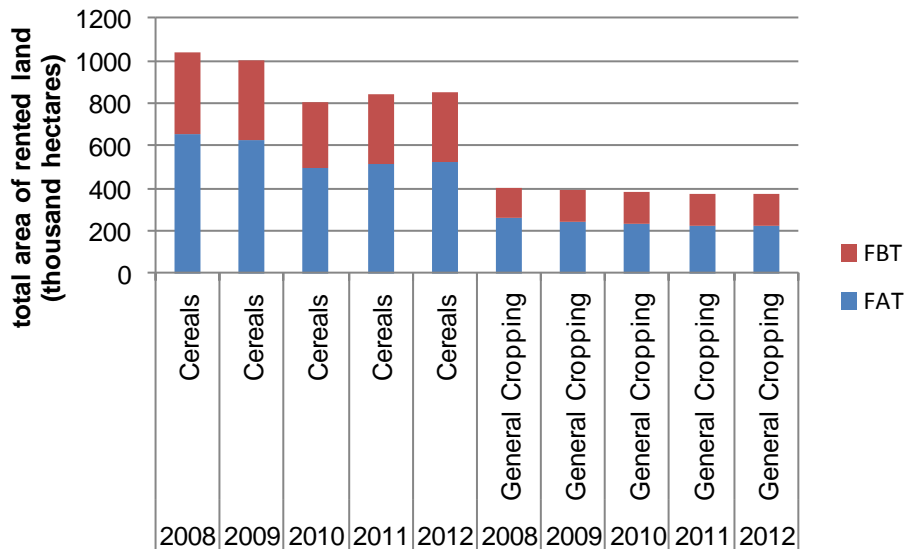
The following figure summarises the area of land rented on Full Agricultural Tenancies (FATs) and Farm Business Tenancies (FBTs) on Cereals and General Cropping farms in England. The area of land rented on FATs has reduced over time as agreements have expired and as landlords and tenants have replaced with FBTs on different terms.

<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 11 January 2013



# 1 Overview of Profitability, Assets and Liabilities

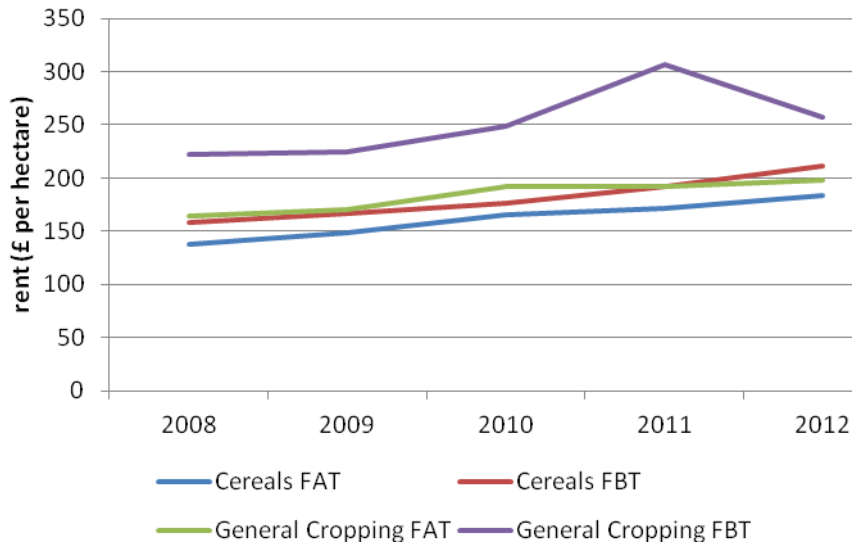
Total Area of Land Rented on FAT and FBT Agreements in England, 2008 to 2012



Source: Farm Rents 2012/13 – England, Defra

The figure below shows rents paid by farmers on Cereals and General Cropping farms, on both FATs and FBTs in recent years. Due to a change in weighting, data from 2010 and earlier has been calculated on a slightly different basis to that from 2011.

Average Rent Paid on Land Rented on FAT and FBT Agreements in England, 2008 to 2012



The year was characterised by further rent rises on Cereals farms and for FATs on General Cropping farms, but FBT rents on General Cropping farms reduced.

## 1.3 Assets and Liabilities

The balance sheet for Cereals and General Cropping farms are shown in the following tables. These farms saw increases in their net worth of ten and five per cent respectively. Continuing increases in land prices and investment in machinery were the main change to the balance

# 1 Overview of Profitability, Assets and Liabilities

sheet. Please note that the land values shown are the average value of land owned by the farm business divided by all hectares, owned and rented, so the figure is lower than the average land value. The value of Single Payment entitlement reduced a little whilst current assets (bank deposits and debtors) were little changed. Liabilities increased in the year.

Cereals Farms Balance Sheet (£/ha)

	Opening 2012	Closing 2012
Number of farms	330	330
Area of farm	199	199
Assets		
Land and buildings	7,852	8,841
Machinery	701	746
SPS Entitlement	269	253
Other fixed assets	39	44
Current assets	1,247	1,227
Liabilities	860	897
Net Worth	9,248	10,211

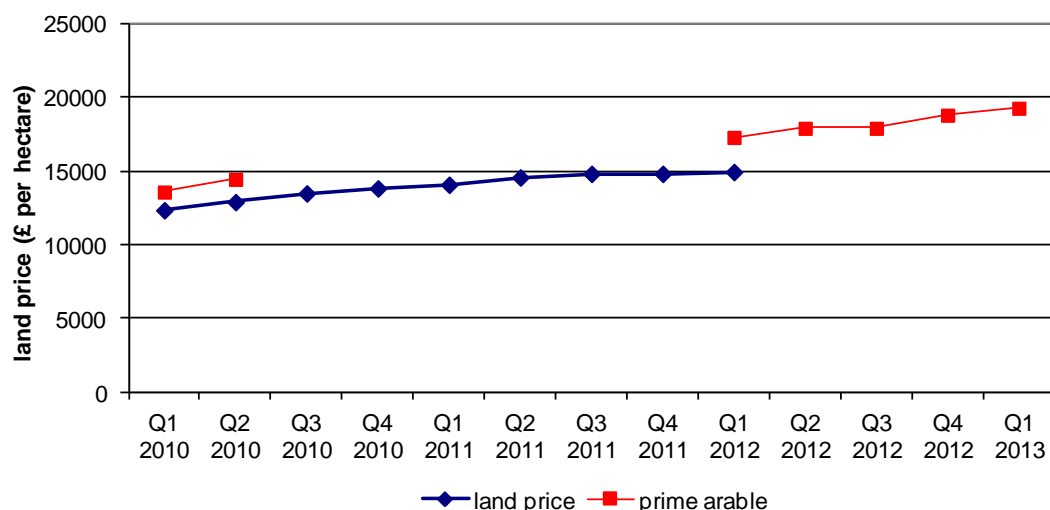
General Cropping Farms Balance Sheet

	Opening 2012	Closing 2012
Number of farms	161	161
Area of farm	210	210
Assets		
Land and buildings	7,622	8,433
Machinery	798	839
SPS Entitlement	261	244
Other fixed assets	87	97
Current assets	1,308	1,308
Liabilities	1,180	1,215
Net Worth	8,817	9,705

## Land

The figure below shows increasing arable land values in 2010 to April 2012.

Price of Arable Land in England 2010 to April 2013



Source: Savills Research

In a market of reduced supply of agricultural land and ready funds for investment, land prices continued to increase in 2012/2013. Agricultural land continued to be an attractive investment for both farmers and those outside agriculture seeking investment opportunities outside the stock market.

## Crop Production in England 2012/2013

# 1 Overview of Profitability, Assets and Liabilities

The value of prime arable land in England increased by 8.7 per cent in 2012 from an average of £17,300 to £18,800 per hectare<sup>1</sup>.

## Single Payment Entitlement

The trade for Single Payment Entitlement in 2012 was carried out with the understanding that it would have no value after CAP reform, but there was also no certainty about the date for implementation of the reform proposals. So there was a possibility of an increase in the market value of Entitlement if reform was delayed.

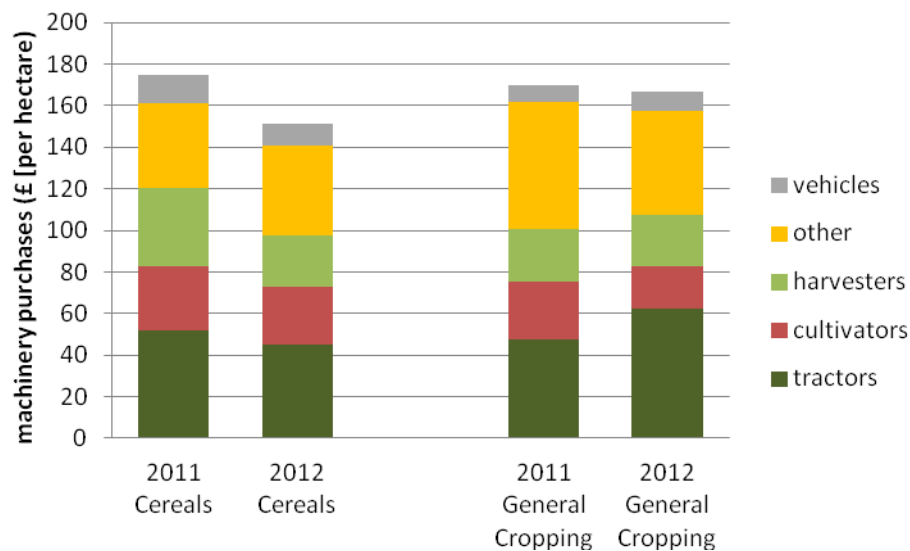
Single Payment entitlement traded for around £210 per hectare in autumn 2011 prior to 2012 claims<sup>2</sup>. Closing entitlement values as calculated using FBS methodology were £253 and £244 respectively on Cereals and General Cropping farms. This calculation provides an estimate of the net present value of the Single Payment entitlement based on future revenue from Single Payment after deductions for expected modulation and financial discipline.

## Machinery

Annual investment allowance reduced from £100,000 to £25,000 per year from April 2012. This would be a reason for farmers to opt for leasing as an alternative to purchase of machinery. The Chancellor of the Exchequer's Autumn Statement brought news of the temporary reintroduction of £250,000 for two years from 1 January 2013<sup>3</sup>.

Expenditure and closing values of machinery are shown in the following two Figures.

Machinery Expenditure on Cereals and General Cropping Farms 2011/2012 and 2012/2013



In a pattern of investment that largely tracks the previous year's profitability, considerable sums continued to be invested in machinery in 2012/2013. Net expenditure of £151 per hectare on cereals farms and £167 on General Cropping farms exceeded depreciation and the closing value of machinery increased on both farm types.

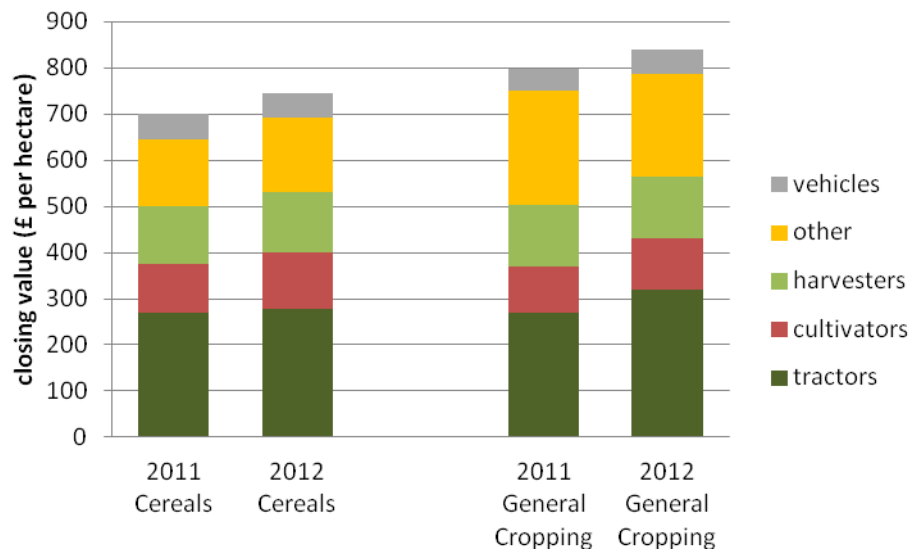
<sup>1</sup> Savills World Research, Farmland Market

<sup>2</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 15 December 2011

<sup>3</sup> Inside Track. December 2012 /January 2013

# 1 Overview of Profitability, Assets and Liabilities

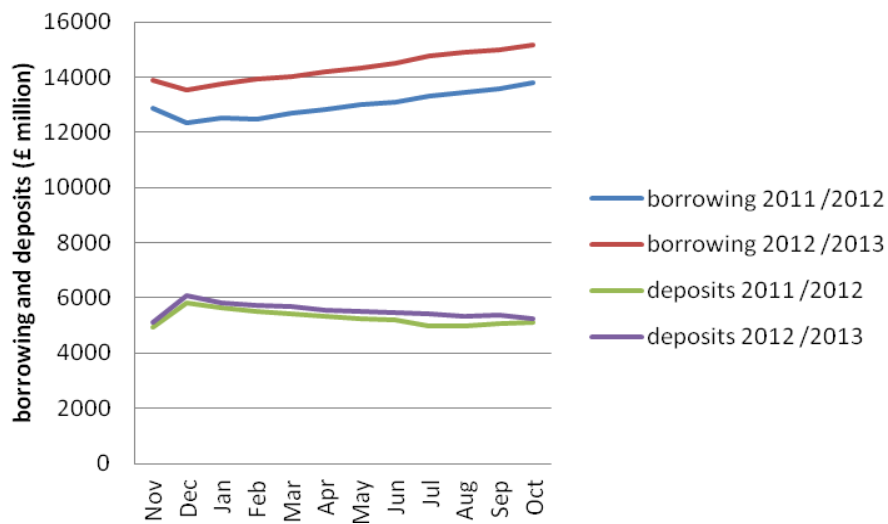
Closing Valuation of Machinery on Cereals and General Cropping Farms 2011/2012 and 2012/2013



## Liabilities

At October 2012, lending to agriculture exceeded a record £15,000 million. In part, the additional borrowing was funding investment, but poor crop performance also contributed to this. Deposits and lending to agriculture are shown below.

Deposits and Lending to Agriculture 2011/2012 and 2012/2013



Source: Bank of England

The average closing liabilities of Cereals and General Cropping within the FBS were £897 and £1,215 per hectare respectively. At four and three per cent, the increases exceeded inflation. Relative to net worth, this additional borrowing was entirely affordable for the average business. For most businesses, the increase in asset values exceeded the increase in borrowing.

## 2 Arable Farm Performance: Agriculture

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### 2.0 The Cost Centre Approach

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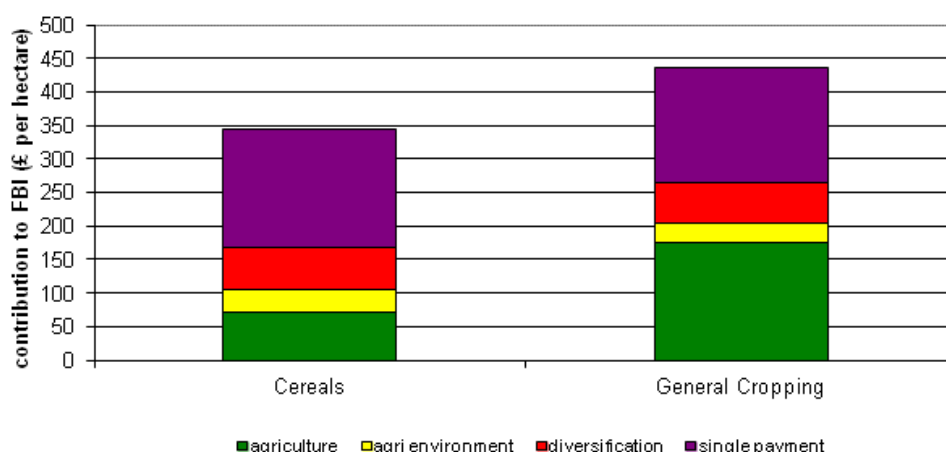
The results presented in this Chapter relate solely to the activity of **agriculture**. The outputs, costs and agricultural Farm Business Income (FBI) attributable to this activity can be summed with that from agri environment scheme participation, diversification outside agriculture and the Single Payment Scheme to give results for the whole farm business. Whilst output and variable costs can be readily split between cost centres, some element of estimation is needed in order to share labour, machinery, property and overhead costs. Within the FBS, this is carried out on a consistent basis using an agreed approach<sup>1</sup>.

### 2.1 Agriculture, Agri-environment, Diversification and Single Payment

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The figure below shows the contribution from agriculture, agri-environment, diversification and single payment that sum to give the FBI for the average business.

Contribution to Farm Business Income by Cost Centre on Cereals and General Cropping Farms



### 2.2 Cropping and Crop Areas

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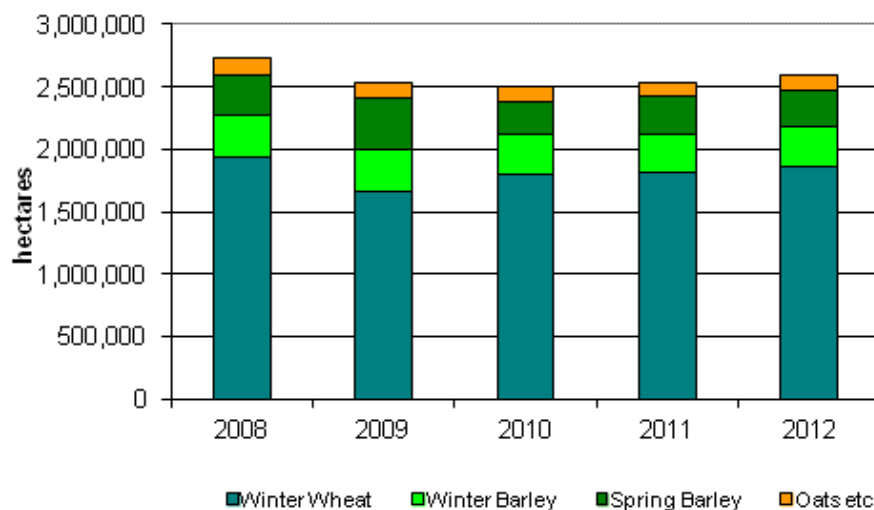
The following figure shows a second annual recovery in the cereal area. The wheat area increased by 2.2 per cent to 1.86 million hectares and the overall barley area by 1.3 per cent to 623,000 hectares, whilst the oat area returned to 2010 levels. There was a small reduction in the area of other cereals. Favourable crop prices and dry drilling conditions were drivers of the increase in crop area and shift from spring to winter cropping, especially in the case of barley. The prospect of favourable malting premiums was a further driver of increased barley area.

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<sup>1</sup> Appendix 2 (Item VI) Farm Accounts in England 2008/2009 Defra statistics

## 2 Arable Farm Performance: Agriculture

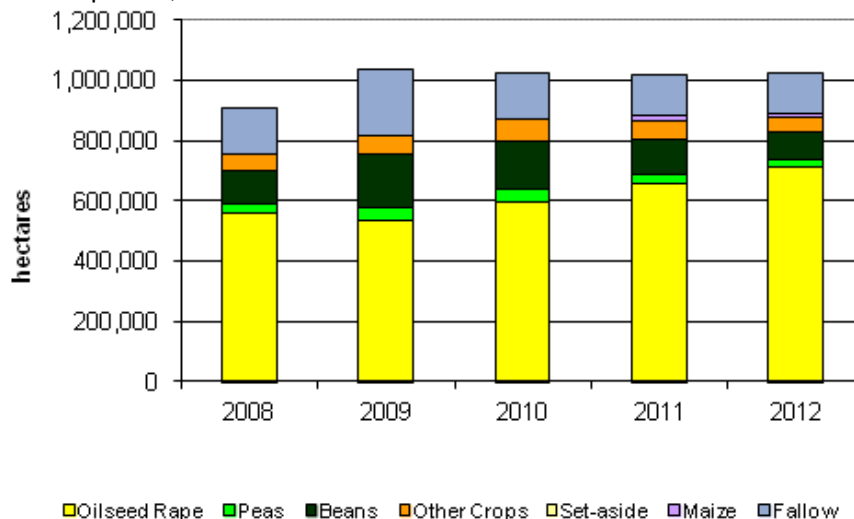
Cereal Crop Area, 2007 to 2012



Source: Defra June Survey

The following figure demonstrates the continued trend of increasing oilseed rape area, up eight per cent in the year to 713,000 hectares and up 34 per cent since 2006. Persistent high world prices, resulting from increased oilseed demand for food and energy, were the driver of this increased production. In relative terms, projected pea and bean margins were less attractive, and the areas of these crops reduced by 18 and 24 per cent to 24,000 hectares and 91,000 hectares, respectively. Other crops totalled 52,000 hectares and included 11,000 hectares of short rotation coppice and *Miscanthus*.

Break Crop Area, 2007 to 2012



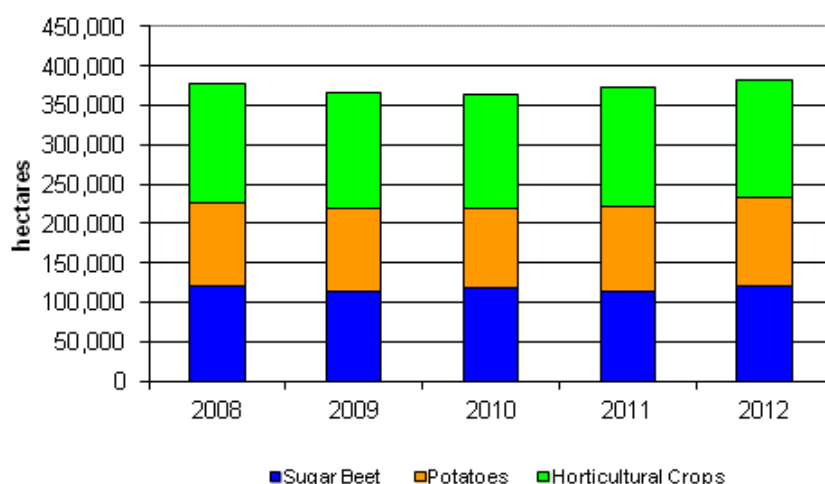
Source: Defra June Survey

The figure below shows a 6.5 per cent increase in the sugar beet area to 120,000 hectares due to the availability of additional tonnage in the form of industrial beet contracts. Despite trade predictions (in February) of a reduced potato area, the area increased by four per cent to 112,000 hectares, as growers anticipated favourable prices due to drought. The area of horticultural crops reduced by two per cent; this was mainly due to a reduction in the area of vegetables for human consumption.

## 2 Arable Farm Performance: Agriculture

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Sugar Beet, Potato and Horticultural Crop Area 2007 to 2012



Source: Defra June Survey

### 2.3 Cereals Farms Performance

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Cereals farms experienced a reduction in agricultural FBI to £72 per hectare. This is similar to the six-year average of £66 per hectare, but lower than the £165 and £213 per hectare of the last two years.

Although it was a very different production year to 2011/2012 with very low yields but high prices, output was one per cent lower at £1,167 per hectare. However, the more significant change was the 24 per cent increase in variable costs to £445 per hectare.

Fixed costs increased by six per cent overall, and reflected inflation of all agricultural costs, rather than the energy related rise in prices experienced in recent years. Paid regular and casual labour costs increased by eight per cent to £68 per hectare, whilst machinery costs increased by six per cent overall. Overhead costs increased by four per cent, to £102 per hectare. Higher rents were the main driver of the nine per cent increase in occupancy costs to an average of £176 per hectare.

#### Cereals Farms - Tenure

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As observed in previous years, the Mixed Tenure farms achieved the highest agricultural FBI per hectare on the basis of tenure. This was due to their more intensive production and resulting higher output (of £1,241 per hectare). Although variable and fixed costs were higher than for rented or owner occupied farms, their overall agricultural FBI was £93 per hectare.

The Owner Occupied and Tenanted farms showed similar performance in many respects, the main difference was the rent charge levied to the tenanted farms. With rent costs of £160 per hectare, the agricultural FBI of the Tenanted farms was -£14 per hectare. The agricultural FBI on Owner Occupied farms averaged £76 per hectare.

#### Cereals Farms – County

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In our comparison of agricultural FBI performance by County, we include results only if there are at least 10 farms in the survey in the County, so our comments relate only to the subset of farms for which sufficient data is available. In comparison with the previous year, agricultural



## 2 Arable Farm Performance: Agriculture

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FBI increased on farms in Hertfordshire, Suffolk and Essex. Farms in Essex achieved the highest agricultural FBI in 2012/2013, at £273 per hectare. These farms incurred the highest fixed costs, averaging £780 per hectare, and their agricultural FBI was £182 per hectare. Farms in Cambridgeshire, Hertfordshire, North Yorkshire and Suffolk also made agricultural sales exceeding £1,300 per hectare. With the lowest depreciation, of only £69 per hectare, the farms in Wiltshire had the lowest fixed costs, of £551 per hectare.

### Cereals Farms – Performance Group

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Comparing the agricultural FBI per hectare from their agricultural operations, there were similarities in many of the physical characteristics of farms in the different performance bands. The farms were of similar size, some kept livestock and some carried out other agricultural activities such as agricultural contracting.

Farms in the higher performing quartiles owned a greater proportion of the land that they farmed, rather than farming rented land and therefore incurred a lower charge for rent. However, the cost of paying rent accounts for only a small proportion of the variation in performance. Higher performance was associated with a greater proportion of wheat and oilseed rape in the rotation. The top quartile farms cropped 45 per cent of their land area with winter wheat and 20 per cent with oilseed rape. The bottom quartile grew 32 per cent wheat and 17 per cent oilseed rape. Differences in agricultural output accounted for the greatest part of the variation between businesses and ranged from £1,434 per hectare for the top quartile farms to £971 per hectare among the bottom quartile businesses.

The bottom quartile farms carried higher costs than the higher performing businesses. However, the agricultural FBI measure accounts for costs as they are incurred, with rent, paid labour and interest costs included within the account, even though these will vary according to the proportion of land owned and the use of 'unpaid' farmer labour. The best performing businesses spent more on machinery, as reflected in the depreciation charge and on property maintenance. It is not clear whether this expenditure was a tax efficient way to spend farm profits or whether the modern machinery and well maintained property contributed to the improved farm profitability.

### 2.4 General Cropping Farms Performance

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Averaging £174 per hectare, the agricultural FBI of General Cropping farms was 37 per cent higher than the six year average and 13 per cent higher than the previous year. The main reason was the recovery of performance of the potato crop, despite reduced performance of sugar beet.

At £1,692 per hectare, output was ten per cent higher than in 2011. Variable costs increased by 14 per cent.

Overall, fixed costs increased by six per cent. For labour, machinery, utilities and occupancy, the increases were ten, six, five and five per cent respectively.

### General Cropping Farms - Tenure

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The same pattern of performance that was observed for Cereals farms was repeated on General Cropping farms. The more intensive, higher output, higher cost Mixed Tenure farms achieved the highest agricultural FBI of £222 per hectare. Tenanted farms paid rent of £235 per hectare before recording an agricultural FBI of £88 per hectare. The Owner Occupied Farms had an agricultural FBI of £77 per hectare.

## 2 Arable Farm Performance: Agriculture

### General Cropping Farms – Performance Group

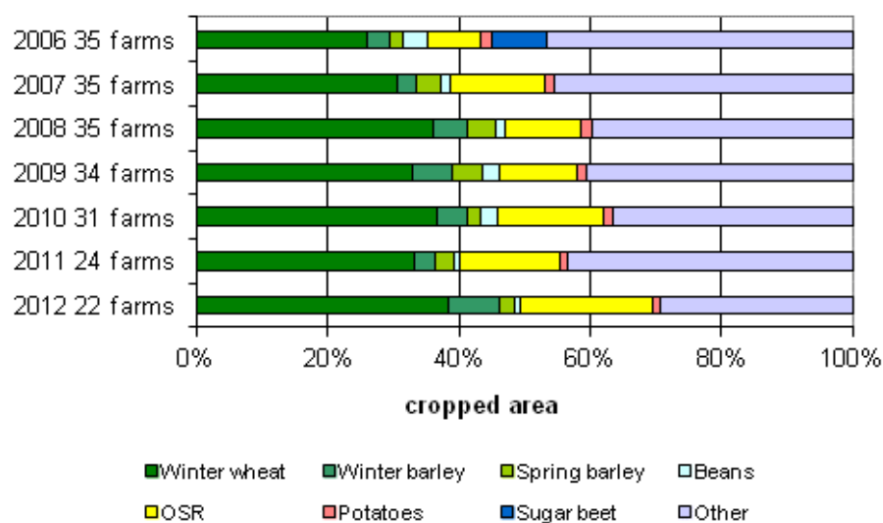
On the basis of agricultural FBI performance per hectare, the farms growing a greater area of potatoes tended to be more profitable. The top quartile farms cropped seven per cent of their farm with potatoes and achieved an average agricultural FBI of £704 per hectare. Their output averaged £2,690, reflecting the high value crops produced. Their variable and fixed costs were higher than those of farms in the remaining quartiles.

Farms in the lower three quartiles carried similar cropping; an average of three per cent of their land was committed to potato production. Output was the main contributor to better agricultural FBI performance and ranged from £1,199 on the bottom quartile group to £1,672 per hectare for the upper mid quartile group. The bottom quartile achieved an agricultural FBI of -£264 per hectare, whilst the upper mid quartile group achieved £259 per hectare.

### Beet Discontinuers

The following figure tracks the cropping choices of farms that ceased sugar beet production in 2006, these include farms in the West Midlands and Yorkshire that previously supplied the Allscott and York sugar beet factories. Favourable wheat, barley and oilseed rape prices have allowed these farms to expand production of these crops.

#### Cropping on Farms Ceasing Sugar Beet Production After the 2006 Harvest



### 3 Agri-environment, Diversification, Single Payment

#### 3.0 The Cost Centre Approach

The results presented in this Chapter relate to **agri environment scheme participation, diversification outside agriculture and the Single Payment scheme**. The outputs, costs and net income attributable to these activities can be summed with that from agriculture to give FBI for the whole farm business. Whilst output and variable costs can be readily split between cost centres, some element of estimation is needed in order to share labour, machinery, property and overhead costs. Within the FBS, this is carried out on a consistent basis using an agreed approach<sup>1</sup>.

Of these non agricultural revenue streams, the reduction in revenue from the Single Payment Scheme had the greatest impact on whole farm FBI. On Cereals farms, the Single Payment receipt reduced from £210 per hectare in 2011 to £192 per hectare in 2012.

In the prevailing strong rental market, diversification income was maintained during the difficult economic climate of 2012. However, agri-environment scheme receipts reduced, mainly due to a change in timing of payments.

#### 3.1 Agri-environment

The following table shows receipts from agri environment schemes in 2012 relative to 2011. As the 'legacy' Countryside Stewardship and Environmentally Sensitive Area schemes drew towards their conclusion, almost as many (130,131) new Higher Level Stewardship (HLS) agreements were started, but not necessarily on the same farms<sup>2</sup>. Nationally, some 371,417 new Entry Level Stewardship (ELS) agreements were created and the annual spend for agri environment schemes increased by two per cent.

Agri-environment Output and Costs, Cereals and General Cropping Farms 2011/2012 and 2012/2013

	Cereals		General Cropping	
	£ per hectare			
	2011	2012	2011	2012
Agri environment output	41	37	44	37
Agri environment costs	8	6	10	6
Agri environment FBI	33	32	34	31
Whole business FBI	498	343	413	437

The lower payment is partially explained by the change in timing of Environmental Stewardship payments as some farms received only one payment in the year<sup>3</sup>. The figure below shows agri environment output on farm types with land, and reveals a decline in agri environment output on Cereals and General cropping farms.

<sup>1</sup> Appendix 2 (Item VI) Farm Accounts in England 2008/2009 Defra statistics

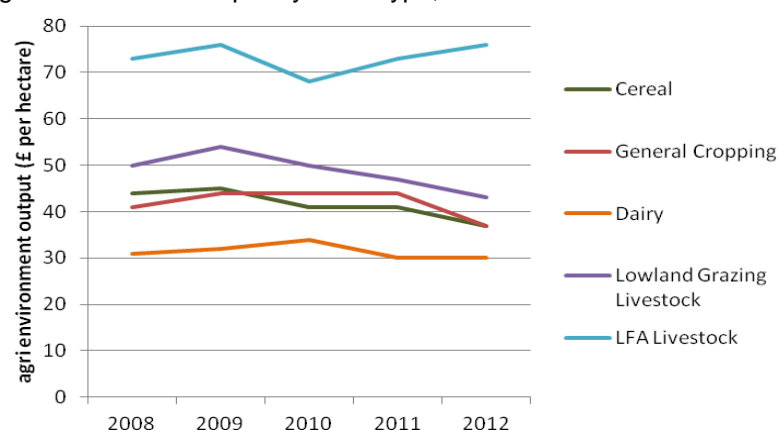
<sup>2</sup> Land Management Update, Natural England, April 2012 and May 2013

<sup>3</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 8 March 2011

### 3 Agri-environment, Diversification, Single Payment

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Agri environment Output by Farm type, 2008/2009 to 2012/2013



For many, the autumn of 2012 and spring of 2013 marked renewal time for agreements at their five year anniversary. Up to October 2012, the ELS renewal rate was 75 per cent<sup>1</sup>. In January 2013, new ELS options were introduced whilst points values changed for 10 options and 11 options were given changed prescriptions. The net result was that there were fewer points available for popular options including hedgerow management and buffer strips forcing farmers to concentrate on scheme priority options.



#### 3.2 Diversification

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Diversification activity varies greatly in type and scale between farms, so trends are only apparent in large groupings of farms. Across all farm types, output from diversification increased by £9 per hectare, and increased rents were the main reason for this.

The table below shows that Cereals and General Cropping farms received higher diversification income, and rental income. This trend was common across farms of all types.

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<sup>1</sup> Farmers Weekly, 19 October 2012

### 3 Agri-environment, Diversification, Single Payment

Diversification Output and Costs, Cereals and General Cropping Farms, 2011/2012 and 2012/2013

2012/2013		Cereals		General Cropping	
		£ per hectare			
	2011	2012	2011	2012	
Diversification output	100	100	71	97	
Of which:					
Rental	76	78	46	65	
Recreation	9	9	6	5	
Food processing and retailers	4	1	5	9	
Tourism	5	3	4	8	
Other	7	9	10	10	
Costs	39	37	38	37	
Diversification FBI	61	63	33	60	
Whole farm FBI	498	343	413	437	

Classified under rental income, there were 60,000 telecommunications installations in 2012, many of which were situated on farmland<sup>1</sup>. Rents typically exceed £5,000 per year. However, operators tried to negotiate rent reductions to £3,500 to £4,000 per installation hinting that they might leave sites if farmers did not agree. However the likelihood of operators moving was reduced as the costs of commissioning a new site are around £100,000.

Following the Government's initiative to provide 90 per cent of households with superfast (24 mega bytes per second) broadband by 2015, the Country Land and Business Association (CLA) devised advisory wayleave rates of 25 pence per metre per year or a one off £3.75 per metre for fibre or ducts<sup>2</sup>.

#### 3.3 Single Payment

The 2012 Single Payment in England was based entirely on 'Regional Average' payment; for the first year since the introduction of the scheme there was no 'Historic' element. Based on a conversion rate of £0.79805 and following combined EU and UK modulation amounting to 19 per cent, the lowland Single Payment was £209.50 per hectare. No premium was payable for protein crops from 2012.

Although there was no change to the Single Payment legislation, the Rural Payments Agency (RPA) updated its guidance to applicants to ensure that they fulfilled the 'land at your disposal' requirement of the scheme<sup>3</sup>. In response to this guidance, some advisors advised the use of tenancies in which entitlements were transferred out and then back again. However, we understand that correctly worded cropping licences remain acceptable. Anecdotal evidence suggests that some farmers opted to cease letting activity and avoid the cost and administrative burden of such arrangements.

The actual average payments received are shown in the following table below. They are lower than the prevailing payment rate because the total farm area, used to calculate results

<sup>1</sup> Farmers Weekly Interactive, [www.fwi.gov.uk](http://www.fwi.gov.uk), 16 January 2013

<sup>2</sup> Farmers Weekly Interactive, [www.fwi.gov.uk](http://www.fwi.gov.uk), 16 January 2013

<sup>3</sup> Farmers Weekly Interactive, [www.fwi.gov.uk](http://www.fwi.gov.uk), 12 March 2012

### 3 Agri-environment, Diversification, Single Payment

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on an area basis, includes land that is not eligible for claims for Single Payment. Also, some farmers rented land for which they received no Single Payment. Payments were made promptly in 2012, easing cash flow. Some 98,000 English farmers (91.4 per cent of the total number) were paid on 3 December 2012<sup>1</sup>.

Single Payment Scheme Output and Costs, Cereals and General Cropping Farms 2011/2012 and 2012/2013

	Cereals		General Cropping	
	£ per hectare			
	2011	2012	2011	2012
Single Payment	210	192	209	185
Costs	16	16	17	13
Single Payment FBI	193	177	193	172
Whole farm FBI	498	343	413	437

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<sup>1</sup> Farmers Weekly Interactive, [www.fwi.gov.uk](http://www.fwi.gov.uk), 6 December 2012

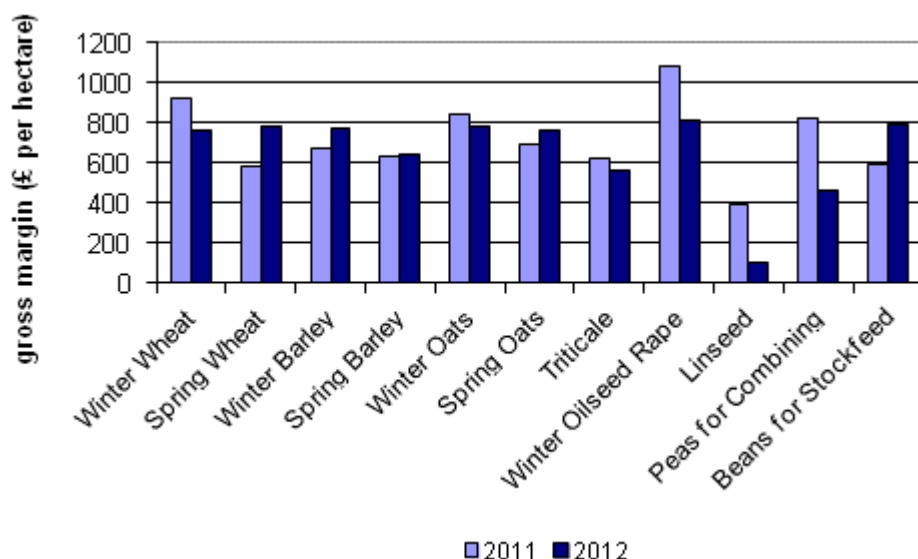
## 4 Crop Enterprise Performance

### 4.1 Crop Gross Margins

In this Chapter, we report the gross margin performance of arable crops grown under conventional production schemes and therefore exclude results from crops grown organically. Gross margins for organic crops are available in Organic Farming in England 2012/2013 in this series of reports.

The figure below reveals the unusually poor performance of the winter wheat crop in 2012 as it generated a lower gross margin than oilseed rape, beans, spring wheat, winter barley and winter oats. Peas and linseed also failed to thrive in the wet conditions of 2012.

Gross Margins of Arable Crops 2011/2012 and 2012/2013



Heavy rainfall, low solar radiation, high disease pressure, high blackgrass populations and difficulty with making timely applications of crop protection materials and fertiliser conspired to reduce the yield and quality of wheat and other crops in 2012.

### 4.2 Winter Wheat

The winter wheat gross margin fell by 17 per cent to £765 per hectare. Dull, wet weather late in the growing season resulted in average yields of 6.9 tonnes per hectare which were 17 per cent lower than the previous year. The yield reduction was largely mitigated by record prices of £179 per tonne so the value of output was four per cent lower than in 2011.

The main reason for the reduced gross margin was the 22 per cent increase in variable costs which averaged £535 per hectare.

#### Agronomy and Harvest

The table below shows farmers' selection of varieties. Whilst the proportion of nabim Group 1 wheats has remained at around 17 per cent for four years, there was a reduction in Group 2 in favour of Group 3 varieties.



## 4 Crop Enterprise Performance

Wheat Share in Great Britain by NABIM Group: Per cent of Area Drilled

	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
Group 1	15	17	17	17	17
Group 2	17	19	15	11	9
Group 3	23	13	11	15	21
Group 4	37	47	51	54	52

Group 1 - Varieties that produce consistent milling and baking performance

Group 2 - Varieties that have bread-making potential but are not suited to all grists

Group 3 - Varieties that are soft and suited to making biscuit, cake and other flours

Group 4 - These varieties are grown mainly as feed wheats

Sources: HGCA Grower Survey and nabim

At £69 per hectare, seed costs were 15 per cent higher than in 2011. Fertiliser costs increased by 25 per cent, to £230 per hectare, and crop protection costs increased by 25 per cent, to £198 per hectare.

Blackgrass grew unchecked on many farms. The dry 2011 autumn reduced the efficacy of residual herbicides but the greater problem was growing resistance to the commonly used herbicides including Atlantis (iodosulfuron and metosulfuron), but also to cycloxydim and clodinafop<sup>1</sup>. Wet weather also provided ideal conditions for development of the weed. The dry spring conditions reduced lodging risk.

The incidence of mildew was low, but most crops were infected with *Septoria tritici* and there was a relatively high incidence of brown and yellow rust<sup>2</sup>. Yellow rust was widespread in crops in the North and East by March<sup>3</sup>. The worst affected variety was Oakley. Since 60 per cent of the season's crops had just four parent varieties so breakdown of rust resistance in one variety can lead to weaknesses in related varieties<sup>4</sup>. Persistent April rainfall gave rise to the highest *Septoria* pressure in 12 years<sup>5</sup>. Overall, high yield responses to fungicides were recorded in crop trials in a year of high disease pressure<sup>6</sup>. Over the last two years, there has been a marked reduction in the use of strobilurin fungicides in favour of SDHI products. Ear disease was a problem at harvest with very high levels of both *Fusarium* and mycotoxins.

<sup>1</sup> Farmers Weekly, 2 November 2012

<sup>2</sup> Crop Monitor, [www.cropmonitor.co.uk](http://www.cropmonitor.co.uk)

<sup>3</sup> Farmers Weekly, 23 March 2012

<sup>4</sup> Crops, 10 March 2012

<sup>5</sup> Farmers Weekly

<sup>6</sup> Farmers Weekly, 1 February 2013



### Yield

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The yield of only 6.9 tonnes per hectare was 19 per cent lower than the five year average. It seems that the yield reduction occurred in feed varieties, whilst Group 1 milling yield, at 7.4 tonnes per hectare, was almost unchanged on the previous year.

Despite the potential for a harvest offering high yield and quality, weather conditions conspired to greatly reduce the potential. Light radiation reached only 60 to 70 per cent of normal levels during the critical months for grain fill in June and July<sup>1</sup>. At the same time, soil was waterlogged due to twice the usual June rainfall and *Fusarium* proved to be difficult to control.

### Quality

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The table below shows the quality of wheat crops at the 2011 and 2012 harvests.

Cereal Quality Survey 2011 and 2012

	Specific weight Kg/hl 2011	Specific weight Kg/hl 2012	Hagberg s 2011	Hagberg s 2012	Protein % 2011	Protein % 2012
Group 1	79.8	70.7	308	245	13.0	13.3
Group 2	79.4	71.3	304	276	12.6	13.0
Group 3	78.4	68.9	246	225	11.5	12.4
Group 4	77.7	69.0	230	221	11.1	11.9

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Source: HGCA Cereal Quality Survey 2011 and 2012

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<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 9 October 2012

## 4 Crop Enterprise Performance

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Crop quality was very poor due to exceptionally low specific weight and, in the case of milling wheat, low Hagberg despite high protein concentration in the grain. The consequences were that bakers and feed processors were forced to accept inferior product giving poor loaf volume and structure as well as high wastage<sup>1</sup>. Millers achieved low flour extraction rates from pinched grains<sup>2</sup>. Poultry farmers tried using grain of 64 to 65 kilograms per hectolitre and found that birds reached two kilograms in 41 days instead of 35 days<sup>3</sup>. The specific weights were variable with some crops achieving specific weights as low as 50 kilograms per hectare. Deductions were typically charged for samples of less than 60 kilograms per hectare.

The result was that few samples met the full specifications of buyers. Millers reduced their specific weight threshold from 72 kilograms per hectolitre to 70 kilograms per hectolitre<sup>4</sup>. Most users required the crop to have a specific weight of 65 kilograms per hectare. The Ensus plant accepted wheat as low as 60 kilograms per hectolitre<sup>5</sup>. Some exporters blended crop with higher specification wheat in order to meet their export contracts at 72 kilograms per hectolitre<sup>6</sup>.

In January 2013, Hovis abandoned its pledge to produce bread entirely from British wheat<sup>7</sup>. And in April 2013, Weetabix halted production of Minis cereals due to reduced availability of wheat of adequate quality<sup>8</sup>.

### Marketing

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As the 2012 UK harvest approached, continuing uncertainty about the yield and quality of the harvest made forward trading difficult for both farmers and traders<sup>9</sup>. A number of growers had made forward sales contracts that they were unable to meet. Anecdotal farm evidence suggests that some farmers may have slightly overestimated their crop yields based on volume calculations that did not fully take account of the low specific weight of the harvested crop.

The average price was £179 per tonne 34 per cent above the five year average. Farms growing no Group 1 varieties achieved an average price of £178 per tonne.

Openfield offered breakfast cereal wheat contracts, with a £25 per tonne premium, on two varieties of wheat Herald, a long strawed winter wheat and Zircon, a spring wheat suitable for late autumn drilling<sup>10</sup>.

The 2012/2013 world wheat harvest amounted to 662 million tonnes, 34 million tonnes less than the previous season's record<sup>11</sup>. World stocks reduced as did overall levels of trade but there was strong demand in some importing countries.

In January 2012, concerns of drought in South America and new or reduced exports from Russia and Argentina increased the November futures price to £150 per tonne<sup>12</sup>. At March

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<sup>1</sup> Openfield Newsletter, [www.openfield.co.uk](http://www.openfield.co.uk)

<sup>2</sup> Viewpoint, Gleadell Agriculture Ltd, Autumn 2012

<sup>3</sup> Farmers Weekly 16 November 2012

<sup>4</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 8 October 2012

<sup>5</sup> Farmers Weekly, 7 December 2012

<sup>6</sup> Farmers Weekly, 7 December 2012

<sup>7</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 10 January 2013

<sup>8</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 22 April 2013

<sup>9</sup> MI Prospects, 23 August 2012

<sup>10</sup> Farm Business, [farmbusiness.cc](http://farmbusiness.cc), 11 October 2011

<sup>11</sup> International Grains Council, [www.igc.int](http://www.igc.int)

<sup>12</sup> Farmers Weekly, 27 January 2012

## 4 Crop Enterprise Performance

this had fallen to £145 per tonne<sup>1</sup>. By August, concerns over declining soybean and maize prospects underpinned the market<sup>2</sup>. The yield and quality of the wheat harvest in continental Europe was above average<sup>3</sup>.

At harvest, the feed wheat price was around £190 per tonne<sup>4</sup>. With help from a strong euro, in September, the price reached £189 per tonne<sup>5</sup>. It became apparent that the Australian harvest was lower than forecast.

The consequence of the lower crop yield in the UK was the exportable surplus reached a historic low of 750,000 tonnes and imports reached a record high of 1.7 million tonnes<sup>6</sup>.

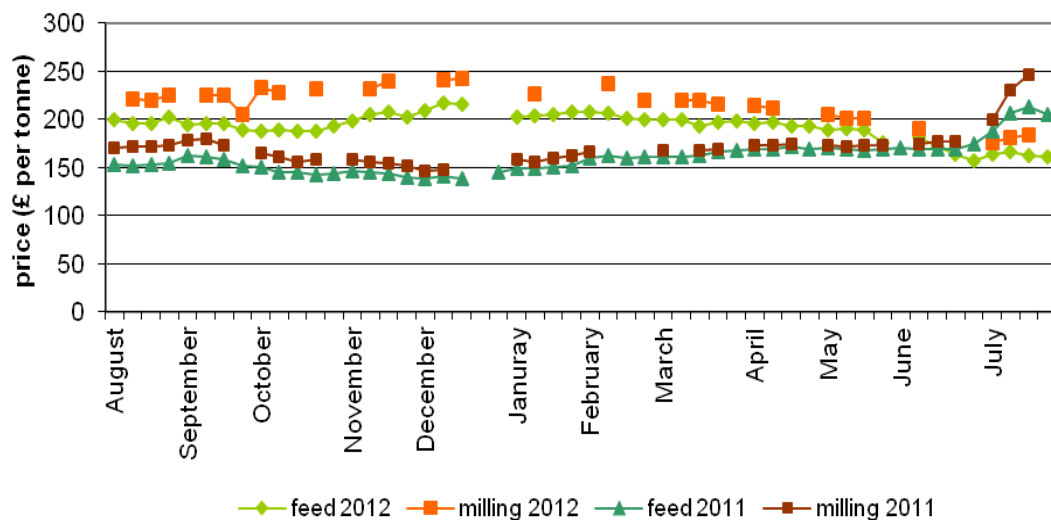
With news of reduced wheat supply in China Australia and the USA, prices increased in November 2012 to £226 per tonne<sup>7</sup>.

News of closure of the Ensus plant in April 2013 was a driver of a reduced wheat price in April 2013.

The average milling wheat price was £194 per hectare (£168 per hectare in 2011). The milling premium rose to around £40 per tonne in the autumn, falling to around £15 per tonne at the end of the cereal marketing year.

The figure below shows how feed and milling wheat prices developed through the marketing season, whilst the following figure shows the prices achieved by farmers in the FBS.

Wheat Price 2011/2012 and 2012/2013



Source: HGCA

<sup>1</sup> Crops, 10 March 2012

<sup>2</sup> Grain Market Report, International Grains Council, [www.igc.int](http://www.igc.int), 22 August 2012

<sup>3</sup> Viewpoint, Gleadell Agriculture Ltd, Autumn 2012

<sup>4</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 22 August 2012

<sup>5</sup> Farmers Weekly, 21 September 2012

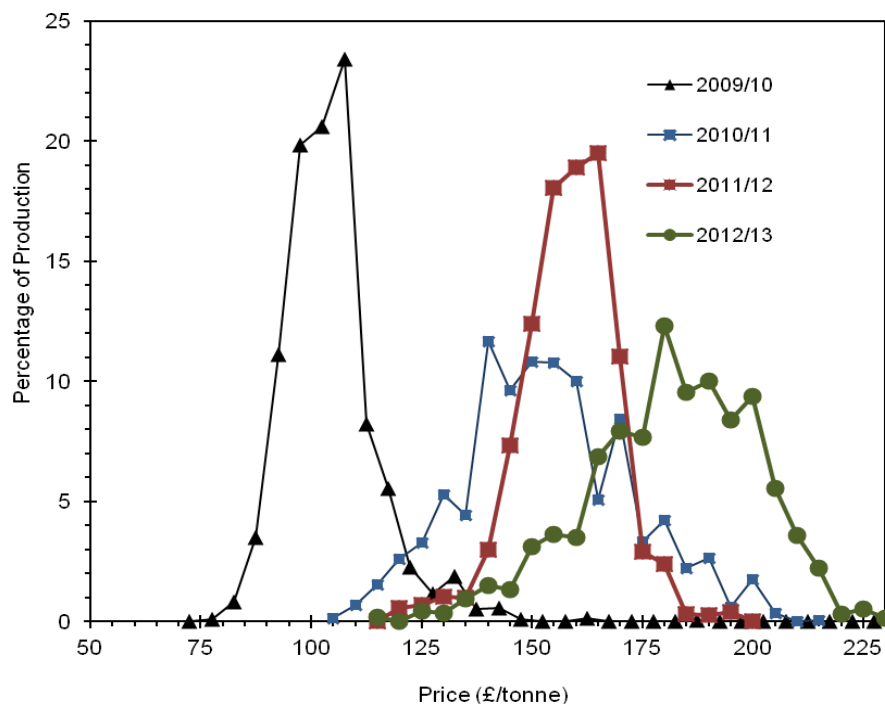
<sup>6</sup> Farmers Weekly, 19 October 2012

<sup>7</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 8 November 2012

## 4 Crop Enterprise Performance

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### Wheat Price Achieved - FBS



### Straw

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At £59 per hectare, straw production accounted for nearly five per cent of the value of the output of the 2012 wheat crop.

### Group 1 Milling Wheat Performance

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Based on a sample of 31 farms that grew only nabim Group 1 milling varieties of wheat, it appears that this crop performed relatively well in the year with a six per cent improvement in gross margin to £920 per hectare. Yielding an average of 7.4 tonnes per hectare (7.5 tonnes per hectare in 2011), these crops performed better than the farms that grew no group 1 milling wheat, whose yield averaged 6.7 tonnes per hectare. The favourable performance of milling varieties was reflected in comments from farmers in Kent and Berkshire as reported by Farmers Weekly during the 2012 harvest<sup>1</sup>. These farmers reported favourable yields of nabim Group 1 varieties Crusoe, Gallant and early drilled Solstice.

The milling premium over the price paid for non Group 1 wheat was £16 per hectare and only a little higher than the previous year's £14 per hectare.

The Group 1 crop was grown with an expected higher expenditure on fertiliser and crop protection so variable costs were £570 per hectare.

### Farm Performance

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In 2012, there was a wider range of gross margin performance as the top quartile (by gross margin performance) saw a reduction in gross margin of nine per cent to £1,135 per hectare whilst the bottom quartile experienced a 28 per cent reduction to only £420 per hectare. The top quartile group had an average yield of 8.2 tonnes per hectare and price of £192 per tonne.

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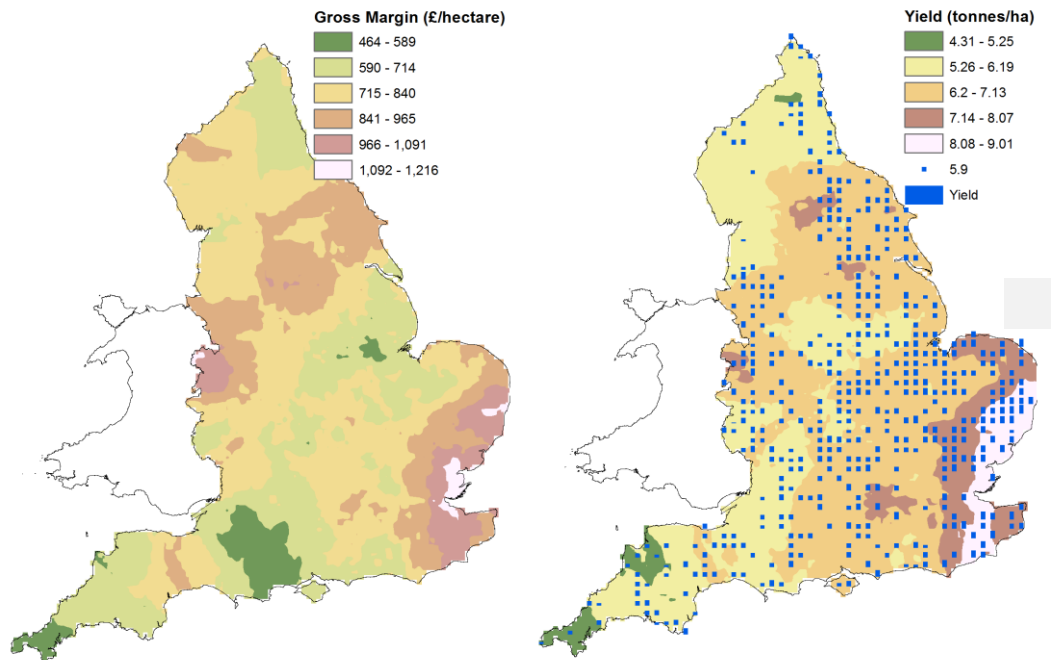
<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 29 August 2012 and 13 September 2012



## 4 Crop Enterprise Performance

The map below provides an indication of the likely distribution of yields based on known yield data for FBS farms.

### Winter Wheat Yield and Gross Margin in England 2012



### 4.3 Spring Wheat

The results for the spring wheat crop are taken from a reduced sample of 31 farms. It is likely that fewer farms grew spring wheat due to the favourable conditions for drilling winter wheat in the late autumn of 2011. The gross margin soared to an exceptional £780 per hectare. In common with spring barley and spring oats, spring wheat performed better in 2012 than in 2011.

The yield was 5.2 tonnes per hectare and the price was £219 per tonne. The combination of the high yield and favourable price resulted in an output that was only nine per cent lower than that of winter wheat, but the spring crop is grown at lower cost. In comparison with 2011, seed costs reduced to £93 per hectare whilst fertiliser and crop protection costs increased by 22 and 33 per cent respectively.

### 4.4 Winter Barley

The winter barley crop gross margin averaged £772 per hectare, representing a 15 per cent increase on the previous season's £672 per hectare. The yield of 6.5 tonnes per hectare was close to the five year average. The crop was sold at an average price of £172 per tonne, 14 per cent higher than the previous year.

The 2011 drought reduced the yield of seed barley crops reducing supply for autumn drilling and there were industry reports that nearly all of the available seed had been sold<sup>1</sup>. Seed prices increased by 20 per cent to an average of £71 per hectare.

<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 20 June 2011

## 4 Crop Enterprise Performance

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The winter barley harvest was particularly late and it was not until August that 50 per cent of the national crop had been harvested<sup>1</sup>. The winter barley quality averaged 1.69 per cent nitrogen and a specific weight of 64.5 kilograms per hectolitre<sup>2</sup>. Pearl, the classic malting variety averaged nitrogen of 1.64 per cent and 65.0 kilogram per hectare specific weight.

Barley saw a healthy trade balance with July and August exports of 187,000 tonnes, in comparison with 131,000 tonnes in 2011<sup>3</sup>.

Fertiliser and crop protection costs increased by 20 and 23 per cent respectively from 2011.

### Performance by Natural England Joint Character Area and County

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Eastern counties from North Yorkshire to Essex saw major improvements in yield in comparison to the previous year, but further West, yields were less strong than in 2011. Yielding 7.6 tonnes per hectare, the best performing winter barley crops were found in Lincolnshire, and their gross margin averaged £1,016 per hectare.

### 4.5 Spring Barley

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Spring barley achieved an average gross margin of £643 per hectare (£631 in 2011). The crop yield of 5.1 tonnes per hectare was seven per cent lower than the five year average but this was more than compensated by a ten per cent increase in the price to £181 per tonne.

Reduced production of spring barley in Scotland, and increased demand for whisky, ensured that there was a market for English barley by Scottish maltsters. The average nitrogen content in Great Britain was 1.6 per cent and the average specific weight was 64.1 kilograms per hectare<sup>4</sup>. Tipple averaged 1.62 per cent nitrogen and 62.2 hectolitres per kilogram. Crops in the Eastern part of England had better quality characteristics.

Dry spring conditions were ideal for the establishment of spring crops including spring barley.

Variable costs were 17 per cent higher than the previous year. Fertiliser and crop protection expenditure increased by 21 and 20 per cent respectively to £153 and £98 per hectare.

Carlsberg and Heineken announced its intention to switch production exclusively to null-lox barley varieties by 2013<sup>5</sup>. Null-Lox spring malting barleys were developed by Carlsberg and Heineken Research bred using traditional breeding techniques. These varieties have the staling enzyme LOX bred out to produce fresher-tasting beer for longer and with better head retention<sup>6</sup>.

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<sup>1</sup> ADAS Harvest Report 2012, 15-21 August 2012

<sup>2</sup> Cereal Quality Survey, AHDB

<sup>3</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 25 October 2012

<sup>4</sup> Cereal Quality Survey, AHDB

<sup>5</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 23 June 2011

<sup>6</sup> <http://www.null-lox.co.uk/>



## 4 Crop Enterprise Performance

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### 4.6 Winter Oats

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Winter oats generated a gross margin of £782 per hectare (£846 per hectare in 2011). The yield, of 6.0 tonnes per hectare was ten per cent lower than the 6.7 tonnes achieved in the previous year. This was mitigated by an increase in the average price to £177 per tonne. Variable costs increased by 15 per cent and were the main reason for the reduced gross margin.

Low specific weight was a problem for the oat crop; processors lowered their input specifications to around 47 to 51 kilograms per hectolitre<sup>1</sup>. However, these poor quality grains slowed the production and created demand for high quality UK grown or imported oats.

### 4.7 Spring Oats

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The spring oat gross margin averaged £765 per hectare (£698 in 2011).

In comparison with winter oats, the spring crop offered superior quality with higher specific weights. The spring oat price of £189 per tonne was £22 per tonne higher than for spring oats.

Variable costs increased by only nine per cent and seed costs were unchanged at £70 per hectare.

### 4.8 Triticale

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Results for triticale are presented from a small sample of only ten farms. The average triticale gross margin was £564 per hectare (£627 per hectare in 2011). The relatively low yield of 4.4 tonnes per hectare was mitigated by a price of £177 per tonne which was similar to the wheat price.

In trial conditions on good quality land, triticale has been found to out yield second wheat crops, according to ADAS<sup>2</sup>. However, the crop is currently less readily marketable than wheat.

Variable costs were higher than in 2011 at £384 per hectare.

### 4.9 Winter Oilseed Rape

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Although winter oilseed rape achieved the highest gross margin of all combinable crops for a second year, at £817 per hectare this was 24 per cent lower than in 2011. The 15 per cent reduction in yield to 3.4 tonnes per hectare was the main reason for the reduced performance although this was only four per cent lower than the five year average.

Following soybean prices, oilseed rape prices were volatile through 2012<sup>3</sup>. The average price achieved was £391 per tonne (£376 per tonne in 2011).

Variable costs increased by 18 per cent overall led by a 22 per cent increase in fertiliser costs.

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<sup>1</sup> Viewpoint, Gleadell Agriculture Ltd, Autumn 2012

<sup>2</sup> Crop Management News, ADAS, 22 August 2013

<sup>3</sup> Viewpoint, Gleadell Agriculture Ltd, Autumn 2012

## 4 Crop Enterprise Performance

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Oilseed rape crops established well in the dry autumn conditions of 2011. The crop was generally well advanced as it entered the spring and appeared to have the potential to yield well.

Light leaf spot incidence in the summer was the highest since records began, and there was also high incidence of *Phoma*, and *Sclerotinia*<sup>1</sup>. Crops received more fungicide and insecticide applications than in any previous year. Lodging was a problem in many crops. An aerial survey commissioned by BASF and carried out by ADAS revealed that 99 per cent of oilseed rape fields had some level of lodging and that 35 per cent of the national crop was lodged<sup>2</sup>. However, wet summer conditions, with accompanying low light intensity, resulted in poor pollination and pod fill. Oil content was lower than usual and often less than 40 per cent. The crop ripened suddenly giving rise to seed shedding<sup>3</sup>.

### Performance by Natural England Joint Character Area and County

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The highest yielding oilseed rape crops were grown in Suffolk and yielded 3.9 tonnes per hectare but favourable yields were also produced in Kent, Norfolk and Cambridgeshire. Hertfordshire was the only county to grow a higher yield in 2012 than in 2011. The lowest yield was 2.7 tonnes per hectare in Northumberland.

#### 4.10 Linseed

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At 1.2 tonnes per hectare, the low yielding 2012 linseed crop gave a gross margin of only £102 per hectare.

Linseed is typically grown on a contract. As there is no futures market for linseed, contract prices can be related to the price of oilseed rape or alternatively have fixed price and free market price elements<sup>4</sup>.

#### 4.11 Peas for Combining

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Pea yields are notoriously variable, but at only 2.4 tonnes per hectare, the 2012 crop was 35 per cent lower than the five year average. The low yield was the main reason for the reduced yield of only £467 per hectare (£828 per hectare in 2011). The average price was £328 per tonne (£256 per tonne in 2011).

Overall variable cost expenditure of £332 was unchanged on the previous year but seed prices increased whilst less was spent on crop protection.

Aphids were present in crops in June<sup>5</sup>. Later drilled peas suffered in cold wet conditions with resulting reductions in yield and quality<sup>6</sup>.

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<sup>1</sup> Crop Monitor, [www.cropmonitor.co.uk](http://www.cropmonitor.co.uk)

<sup>2</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 7 February 2013

<sup>3</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 10 August 2012

<sup>4</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 2 January 2013

<sup>5</sup> PGRO Pulse Crop Bulletin, [www.bepa.co.uk](http://www.bepa.co.uk), 22 June 2012

<sup>6</sup> PGRO/BEPA Pulse Market Update, [www.bepa.co.uk](http://www.bepa.co.uk), 3 August 2012

### 4.12 Beans Harvested Dry

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Yielding 4.0 tonnes per hectare for the second year running, beans generated an increased gross margin of £796 per hectare. An increased price of £279 per tonne raised output but the impact was mitigated as variable costs increased by 25 per cent.

Yields were expected to be poor in Northern England due to poor pollination and correspondingly reduced pod set<sup>1</sup>. But despite the late harvest, quality exceeded expectations<sup>2</sup>. In the south, low level of Bruchid beetle damage gave crops of above average quality. Spring beans grown south of the River Humber grew particularly well<sup>3</sup>.

Early planting, high rainfall, and in some cases high seed rates, contributed to strong vegetative growth but pod set was typically poor<sup>4</sup>. Chocolate spot (*Botrytis fabae*) and low light intensity further reduced crop yield.

For some, the crop matured slowly and harvesting was not feasible in October. Farmers in Worcestershire and Northumberland were reported to have harvested winter bean crops in frost conditions in December 2012<sup>5</sup>.

UK production dropped to around 400,000 tonnes in 2012. In November and December, feed bean prices were £260 rising to £290 per tonne in December in response to higher prices for wheat and soya beans<sup>6 7</sup>. By March, much of the crop had been sold and buyers were turning to substitute crops.

### 4.13 Sugar Beet

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The sugar beet crop achieved an average gross margin of £1,034 per hectare (£1,302 in 2011). The less favourable performance was due to a lower yield of 60.4 tonnes per hectare (70 tonnes per hectare in 2011) and a nine per cent increase in variable costs. The seed price increased by 29 per cent, to £171 per hectare. Fertiliser and crop protection costs were both 14 per cent higher at £234 and £201 per hectare respectively.

#### Contract and Price

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The British Beet Research Organization launched its 4x4 yield initiative described as a tough target to increase sugar beet yields by four per cent per year for four years from 2012<sup>8</sup>. The initiative was launched during a period of annual yield increases of 2.5 per cent per year.

Seeking to secure greater supplies of beet, British Sugar added an additional 2.5 per cent of Contract Tonnage Entitlement (CTE) for all growers<sup>9</sup>. At the same time, contracts were issued for the supply of 500,000 tonnes of Industrial Contract Entitlement (ICE).

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<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 3 August 2012

<sup>2</sup> Viewpoint, Gleadell Agriculture Ltd, Autumn 2012

<sup>3</sup> Pulse Market Update, PGRO, 3 November 2012

<sup>4</sup> PGRO Pulse Crop Bulletin, [www.bepa.co.uk](http://www.bepa.co.uk), 22 June 2012

<sup>5</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 4 December 2012

<sup>6</sup> PGRO Pulse Market Update, 3 November 2012

<sup>7</sup> PGRO British Pulse Update, 10 December 2012

<sup>8</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 31 January 2012

<sup>9</sup> NFU, [www.nfusugar.com](http://www.nfusugar.com), 16 June 2011

## 4 Crop Enterprise Performance

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The 2012 harvest contract sugar beet price was £27.53 per tonne of adjusted beet and the industrial beet price was £26.50 per tonne<sup>1</sup>. Surplus beet was sold at a price of £25 per tonne<sup>2</sup>. The average price achieved per tonne of clean beet (as measured in the Farm Business Survey) was £32 per tonne.

The NFU introduced an industry wide frost insurance scheme at a cost of 12.75 pence per contracted tonne<sup>3</sup>.

### Agronomy and Crop Development

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Uncharacteristically warm conditions in February allowed an early start to sugar beet cultivations which eventually gave rise to the earliest ever drilling progress<sup>4</sup>. Higher seed rates, of 1.12 units per hectare in the Bury St Edmunds factory area, were used and resulted in higher established plant populations<sup>5</sup>. Some 98 per cent of the national crop was sown with varieties with partial resistance to Rhizomania, but there were four confirmed cases of the more aggressive AYPR strain of the disease<sup>6</sup>.

Cold wet conditions led to reduced growth of sugar beet in combination with reduced opportunity for herbicide application<sup>7</sup>. Pigeon and skylark damage also caused for concern as the crop failed to grow in late spring. Reduced availability of metamitron, the active ingredient of Goltix, reduced opportunities for post emergence weed control<sup>8</sup>. Prices were later reported to have risen by 60 per cent.

A number of growers were making arrangements to irrigate sugar beet when the first rain arrived.

Cool conditions in April, May and June were the main reason for reduced sugar beet yield in 2012<sup>9</sup>. The extreme wet conditions increased the severity of fungal disease which included rust and powdery mildew<sup>10</sup>. Even at this stage of the season, fungicide application was made difficult in wet conditions.

Warm sunny weather in late summer allowed continued crop growth and apparent recovery of some of the lost crop potential<sup>11</sup>.

### Harvest, Yield, Quality and Gross Margin Performance

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British Sugar reported a very wide range of yields in the range of 11 to 90 tonnes per hectare<sup>12</sup>. The average yield of clean beet, from the FBS, was 60.4 tonnes per hectare, some three per cent lower than the five year average. Sugar content typically averaged a little over 17 per cent<sup>13</sup>. Wet harvesting conditions gave rise to high dirt tares, despite widespread uptake of cleaner loaders and harvest was slow.

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<sup>1</sup> British Sugar

<sup>2</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 11 January 2012

<sup>3</sup> Eastern Daily Press, [www.edp24.co.uk](http://www.edp24.co.uk), 15 September 2012

<sup>4</sup> British Sugar Beet Review, Summer 2012

<sup>5</sup> British Sugar Beet Review, Autumn 2012

<sup>6</sup> British Sugar Beet Review, Spring 2013

<sup>7</sup> Farmers Weekly, 18 May 2012

<sup>8</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 10 January 2012

<sup>9</sup> British Sugar Beet Review, Spring 2013

<sup>10</sup> Farmers Weekly, 13 July 2012

<sup>11</sup> Farmers Weekly, 14 September 2012

<sup>12</sup> British Sugar Beet Review, Winter 2012

<sup>13</sup> British Sugar Beet Review, Spring 2013

## 4 Crop Enterprise Performance

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Despite lower yields and gross margins, there was a similar wide range of gross margin performance. The top quartile group achieved a gross margin of £1,445 per hectare compared with only £531 per hectare for the bottom quartile group.

Some 83 per cent of producers used contractors to harvest their crop. Of these, a small proportion contracted with British Sugar to harvest and haul their standing sugar beet crop.

On the basis of county, the highest gross margin, of £1,304 per hectare, was achieved in Suffolk where crop yield averaged 66.6 clean tonnes per hectare. The lowest gross margin, £916 per hectare, was achieved in Norfolk where the yield averaged 58.1 clean tonnes per hectare.

Seed costs ranged from £166 per hectare in Norfolk to £186 per hectare in Suffolk. The lowest fertiliser spend occurred in Cambridgeshire, the county that had the highest expenditure on crop protection. This is expected due to the characteristics of the organic fen soils found in the county. The highest other costs were £395 per hectare in Lincolnshire and likely to be due to higher haulage costs.

### 4.14 Ware Potatoes

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The average gross margin for all ware potato production systems averaged £4,998 per hectare (£2,462 per hectare in 2011), despite a very low yield of 31.6 tonnes per hectare. At £224 per tonne, the average price was twice that received in 2011.

Variable costs increased by six per cent to £2,063 per hectare.

The greatest concern for potato growers at the start of 2012 was the likely repeat of the 2011 drought. However, this was also an apparent catalyst in the decision of whether to plant as growers chased the potential opportunity of increased prices.

The potato harvest was characterised by low yields, poor quality and difficult wet lifting conditions<sup>1</sup>. There were reports of growers failing to meet contractual commitments<sup>2</sup>. With 75 per cent of the national crop grown on fixed price contracts, the NFU articulated the discontent of growers facing reduced yields, unharvested crop and no price compensation<sup>3</sup>. Some growers reported their intention to postpone potato harvesting until drier conditions in the spring<sup>4</sup>. At early December, some 12,800 hectares of potatoes remained unharvested.

Reduced yields were a common problem across northern Europe with yield reductions also reported in Belgium, the Netherlands and France<sup>5</sup>.

From around £181 per tonne in mid August, the ex farm potato price increased to £246 per tonne by mid December 2012<sup>6</sup>. This had increased to £319 per tonne by March 2013<sup>7</sup>.

### 4.15 Vegetables: Vining Peas

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Vining pea producers reported greatly reduced yields at only 55 per cent of expected levels<sup>1</sup>. Some 80 per cent of the crop in East Anglia was of reasonable<sup>2</sup>.

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<sup>1</sup> Farmers Weekly, 21 September 2012

<sup>2</sup> Farmers Weekly, 14 September 2012

<sup>3</sup> The Vegetable Farmer, January 2013

<sup>4</sup> Farmers Weekly, 30 November 2012

<sup>5</sup> Farmers weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 2 January 2012

<sup>6</sup> Farmers Weekly, 28 December 2012

<sup>7</sup> Farmers weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 21 March 2012

## 4 Crop Enterprise Performance

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### 4.16 *Miscanthus*

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The small sample of farms (12 in 2012/2013) growing *Miscanthus* in the Farm Business Survey allows us to publish gross margins for commercial production of this crop. In 2011 and 2012, crop yields were 5.8 and 7.9 tonnes per hectare respectively. These gave outputs of £584 and £627 per hectare in 2011 and 2012.

After deducting seed, crop protection and other costs, *Miscanthus* achieved gross margins of £450 and £468 respectively in 2011 and 2012.

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<sup>1</sup> Farmers Weekly, 14 September 2012

<sup>2</sup> Eastern Daily Press, [www.edp24.co.uk](http://www.edp24.co.uk), 8 September 2012

## 5 Crop and Input Prices

### 5.1 Weather and the Exceptional Rainfall Leading to 2012 harvest

Monthly Sunshine and Rainfall Expressed as a Percentage of Average of 1981 to 2010



Source: Meteorological Office

The above figures show the unusual weather problems of 2011/2012. Despite dry conditions and the fear of drought through the first three months, 2012 was the wettest on record in England<sup>1</sup>.

The dry autumn of 2011 was generally welcomed by arable farmers establishing winter crops and the following dry winter caused little concern because crops have only limited demand for water at this time of year. However, groundwater levels at the end of October were lower than in any previous year since 1975<sup>2</sup>. Drought orders had been issued for a substantial part of the East of England and

<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 3 January 2013

<sup>2</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 20 December 2011



the East Midlands in June 2011<sup>1</sup>. The Environment Agency confirmed in January that irrigation restrictions were highly likely in 2012<sup>2</sup>. At the time, river flow rates in East Anglia were at only 20 per cent of usual levels. Anglian Water indicated that if current weather trends continued, East Anglia could be heading for its most severe shortages since 1921<sup>3</sup>. The winter proved to be the driest on record and the Environment Agency stated that prospects for water availability for irrigation in the summer were very poor<sup>4</sup>. Defra hosted a Drought Summit in February 2012<sup>5</sup>. The Environment Agency acted in March to allow some abstractors to fill winter storage reservoirs where river flows allowed<sup>6</sup>.

As rain fell in East Anglia and the South East in March, these areas remained in drought<sup>7</sup>. Anglia Water introduced a domestic hosepipe ban on 5 April and farmers started to make contingency drought management arrangements<sup>8</sup>. Drought status was declared across the arable areas of Yorkshire in late March as the county experienced its driest 12 months since 1910<sup>9</sup>.

Heavy rain fell through April leaving tramlines waterlogged and delaying applications of spring herbicides<sup>10</sup>. By late April, the persistent wet weather forced the Environment Agency to issue flood warnings in the South West, East Anglia, the Midlands and North East England<sup>11</sup>. The exceptionally wet weather continued into the summer and through harvest. Despite substantial rainfall, East Anglia remained in drought into May when the South West, the Midlands and Yorkshire were taken out of drought status<sup>12</sup>.

A number of summer shows were cancelled following heavy rainfall and waterlogging of showgrounds. Summer 2012 was one of the duller on record with only 399 hours of sunshine to 31 August<sup>13</sup>.

### 5.2 Economic Environment

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#### Bank Lending/Global Credit Crisis and Exchange Rates

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Sterling weakened slightly against the euro and US dollar over the year to March 2013. At the end of March 2013, one pound was worth 1.18 euros or 1.52 US dollars. Arable farmers enjoyed the benefits of stronger sterling in 2011 and 2012 at the time of input purchases and weaker sterling in 2012 and early 2013 when crops were sold.

According to the Bank of England, lending to agriculture reached £14 billion in March 2013<sup>14</sup>. Lending had increased by ten per cent of the year from £12.3 billion in March 2012. Farmers had access to

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<sup>1</sup> Drought Management Briefing, Environment Agency, 9 June 2011

<sup>2</sup> Eastern Daily Press, [www.edp24.co.uk](http://www.edp24.co.uk), 21 January 2012

<sup>3</sup> Eastern Daily Press, [www.edp24.co.uk](http://www.edp24.co.uk), 30 January 2012

<sup>4</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 10 February 2012

<sup>5</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 20 February 2012

<sup>6</sup> Eastern Daily Press, [www.edp24.co.uk](http://www.edp24.co.uk), 10 March 2012

<sup>7</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 12 March 2012

<sup>8</sup> Eastern Daily Press, [www.edp24.co.uk](http://www.edp24.co.uk), 17 March 2012

<sup>9</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 28 March 2012

<sup>10</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 24 April 2012

<sup>11</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 30 April 2012

<sup>12</sup> Environment Agency, [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk), 11 May 2012

<sup>13</sup> Farmers Weekly, 5 October 2012

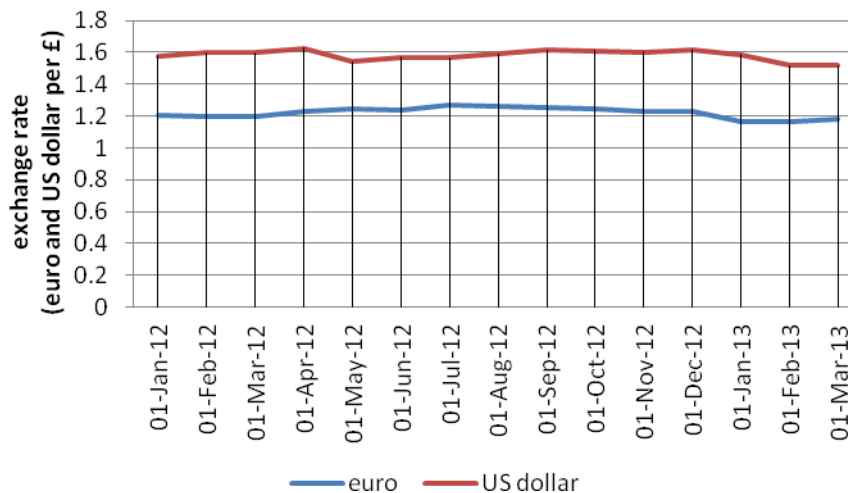
<sup>14</sup> Bank of England, [www.bankofengland.co.uk](http://www.bankofengland.co.uk)

## 5 Crop and Input Prices

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lending facilities totalling £16.2 billion (£15.2 billion in 2011) and had taken up 83 per cent of this sum<sup>1</sup>. Investment in renewable energy has been a major source of demand for borrowed money.

Euro/Sterling Exchange Rate 2008 to 2013



Crop Input Prices and Product Regulation

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In August 2011, the price of ammonium nitrate was £347 per tonne (£285 per tonne in summer 2012)<sup>2</sup>. Prices fell after Christmas, rose through January and dropped to £310 per tonne in February. February.

Distributors reported reduced sales of autumn herbicides due to reduced drilling and difficulties with applying products in wet conditions.

The Metaldehyde Stewardship Group urged farmers to ensure that their use of slug pellets was responsible<sup>3</sup>. This proved to be a dilemma in the very wet autumn conditions. The risk to growers was of unfavourable changes to legislation under the EU Drinking Water Directive or Water Framework Directive.

### 5.3 Business

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There was one notable change of ownership among UK purchasers of grain. Bright Food is a Chinese company that made its first large European brand acquisition by buying a sixty per cent stake in Northamptonshire based Weetabix from private equity group Lion Capital, in May 2012<sup>4</sup>.

Arable Crop Storage, which operates a 27,000 tonne grain store at Stratford upon Avon, merged with Camgrain which already has two sites in Cambridgeshire and one in Kettering, Northamptonshire<sup>5</sup>.

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<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 4 January 2013

<sup>2</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 23 August 2012

<sup>3</sup> Farmers weekly Interactive [www.fwi.co.uk](http://www.fwi.co.uk) 26 October 2012

<sup>4</sup> Financial Times, 3 May 2012

<sup>5</sup> Farm Business, [farmbusiness.cc](http://farmbusiness.cc), 23 May 2012

Consolidation among suppliers of arable inputs and machinery continued:

- Bayer Cropscience expanded its wheat breeding activities with the purchase of the 77 hectare RAGT breeding station near Paris<sup>1</sup>. Bayer intend to release their first wheat varieties by the end of the decade. The new varieties are intended to have improved tolerance to stresses like drought and heat as well as resistance to fungal diseases.
- The Cornwall Farmers cooperative transferred their arable supply business to Hutchinsons<sup>2</sup>.
- Harlow Agricultural Merchants, of Bishops Stortford, acquired Needham Chalks and Alliance Technical Laboratories Ltd, based at Needham Market in January 2013<sup>3</sup>.
- French machinery holding group Exel added the German sugar beet harvester manufacturer Holmer to its stable, alongside Agrifac, Matrot and Moreau in March 2013<sup>4</sup>. Homer products continue to be marketed by Standen-Reflex of Ely, Cambridgeshire.

There was also consolidation among suppliers of training, research and advice:

- Otley College, Suffolk, merged with Easton College near Norwich in August 2012<sup>5</sup>.
- Cambridge University Farms Potato Agronomy Unit transferred to NIAB in December 2012<sup>6</sup>. The particular strengths of the Unit are soil management, input use, varietal selection and new product development.
- The Farming and Wildlife Advisory Group (FWAG) Association succeeded the original FWAG which went into administration in 2011<sup>7</sup>. The new organisation brings together seven local FWAG groups which provide advice in many parts of England. The new organisation works in partnership with the Game and Wildlife Conservation Trust (GWCT) and Linking Environment and Farming (LEAF).

### Banking and Finance

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ING Lease UK ceased signing lease deals from November 2012 citing changes to banking regulations, internal assessment of risk and the depth and severity of the global recession as reasons<sup>8</sup>. The business had previously financed sale of equipment to the value of £100 million per year. The wider restructure included the sale of its ING Direct UK retail banking division.

New lender AgriBank emerged offering fixed term, fixed rate finance for agricultural machinery<sup>9</sup>.

AF Finance Limited is a confidential peer-to-peer finance scheme that was launched in 2012<sup>10</sup>. The scheme allows members of Anglia Farmers to invest surplus money which is then loaned to other members to support the purchase of inputs through Anglia Farmers.

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<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 10 September 2012

<sup>2</sup> Cornwall farmers, [www.cornwallfarmers.co.uk](http://www.cornwallfarmers.co.uk), 1 March 2012

<sup>3</sup> East Anglian Daily Times, [www.eadt.co.uk](http://www.eadt.co.uk), 1 January 2013

<sup>4</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 21 March 2013

<sup>5</sup> East Anglian Daily Times, [www.eadt.co.uk](http://www.eadt.co.uk), 17 August 2012

<sup>6</sup> NIAB, [www.niab.com](http://www.niab.com)

<sup>7</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 10 December 2012

<sup>8</sup> Farmers Weekly, 16 November 2012

<sup>9</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 19 February 2013

<sup>10</sup> Anglia Farmers, [www.angliafarmers.co.uk](http://www.angliafarmers.co.uk)

## 5 Crop and Input Prices

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During the year, it emerged that banks had mis-sold complex interest rate derivatives to businesses that thought that they were protecting their loans from upward movements in interest rates<sup>1</sup>. The proprietors of the businesses had little knowledge of the nature of products that they were buying.

### 5.4 Renewable Energy

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#### Bioethanol and Road Fuel

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The Road Transport Fuel Obligation (RTFO) 2012/2013 target was for inclusion of biofuel at a rate of 4.5 per cent. Fuel suppliers achieved a rate of three per cent<sup>2</sup>. Therefore, two thirds of the obligation was met through fuel blending, but the remaining third was achieved through certificates trading.

The Ensus plant at Wilton on Teesside had ceased production in mid May 2011 due to high wheat prices, cheap imports of bioethanol from the US, and low value of the brewers grains co product. The 15 month shutdown finally ended in August 2012<sup>3</sup>. In an attempt to improve production economics, Ensus started importing maize from continental Europe to mix with UK wheat in a bid to improve operating efficiency<sup>4</sup>. By April 2013, and facing adverse market conditions, the plant announced an indefinite closure<sup>5</sup>.

By mid May, the Vivergo plant, at Saltend, Hull, had reached the commissioning and testing stage<sup>6</sup>. The plant was finally commissioned in late 2012 but had not reached full capacity by April 2013<sup>7</sup>.

The long awaited opening of the Vireol plant in Grimsby plant moved a little closer with plans to start production in mid 2014<sup>8</sup>.

#### Anaerobic Digestion Plant

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By the end of March 2013, 10.38 MW of AD generation capacity had been installed in the UK. The installation of capacity above 9MW was expected to trigger a 20 per cent reduction in the payment rate for Feed in Tariffs (FITs) for new installations from April 2014.<sup>9</sup>

#### Willow, *Miscanthus* and Straw

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The first straw burning power station in the UK was the Elean plant in Ely. Construction of England's second straw generation plant started in May 2012. The Eco2 plant at Sleaford has generation capacity of 38 mega watts and is expected to use 200,000 tonnes per year of straw and 40,000 tonnes of chipped wood<sup>10</sup>

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<sup>1</sup> The Telegraph, [www.telegraph.co.uk](http://www.telegraph.co.uk), 10 March 2012

<sup>2</sup> Department for Transport

<sup>3</sup> Farmers Weekly, 17 August 2012

<sup>4</sup> Farmers Weekly, 5 April 2013

<sup>5</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 2 April 2013

<sup>6</sup> Crops, 19 May 2012

<sup>7</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 2 April 2013

<sup>8</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 7 June 2012

<sup>9</sup> Farmers Weekly, 5 July 2013

<sup>10</sup> Farmers Weekly, 18 May 2012

Planning permission was granted to Icen Energy for a 40 mega watt straw and woodchip power station at Snetterton, Norfolk in June 2012<sup>1</sup>. Anglian Farmers have been commissioned to source straw for the station.

Eco2 propose a further plant at the Mendlesham Industrial Site in Stowmarket<sup>2</sup>. This would require feedstock amounting to 250,000 tonnes per year.

International Energy Crops (IEC) introduced ten year contracts to supply *Miscanthus* to Drax power station<sup>3</sup>.

Terraviva, which operates a pelleting plant at Kimbolton, Cambridgeshire, sought to establish ten year growing agreements from September 2013 with *Miscanthus* growers participating in Natural England's Energy Crops Scheme<sup>4</sup>.

### 5.5 Policy

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#### Nitrate Vulnerable Zones

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New Nitrate Vulnerable Zone designations were introduced in January 2013<sup>5</sup>. Although 62 per cent of the land area of England is covered by NVZ designations, a greater proportion of lowland arable land is subject to this designation<sup>6</sup>.

#### Local Enterprise Partnerships

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Local Enterprise Partnerships had replaced Regional Development Agencies in 2011. From September 2012, they were provided with funds of £250,000 per LEP in each of 2013 and 2014<sup>7</sup>.

#### Rural Development Programme for England (RDPE)

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Round 2 of the Farming and Forestry Improvement Scheme (FFIS) received applications in summer 2012, closing in July. The scheme offered grants of between £2,500 to £25,000 per farm business for schemes that would improve animal health and welfare, reduce energy usage, improve management of manures/farm nutrients, improve water resource management or improve forestry resources<sup>8</sup>. Some 1,600 applications were made in this Round.

Some 1,130 applications were made for the Rural Economy Grant, for projects in the agri-food sector, farm competitiveness and tourism.

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<sup>1</sup> East Anglian Daily Times, [www.eadt.co.uk](http://www.eadt.co.uk), 12 June 2012

<sup>2</sup> Eastern Daily Press, [www.edp14.co.uk](http://www.edp14.co.uk), 28 April 2012

<sup>3</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 18 May 2012

<sup>4</sup> Farmers Weekly, 7 September 2012

<sup>5</sup> Farmers Weekly, 27 July 2012

<sup>6</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 14 June 2013

<sup>7</sup> Daily Telegraph, 17 September 2012

<sup>8</sup> British Farmer and Grower, June 2012

## 6 Oilseed Rape Rotations and Performance

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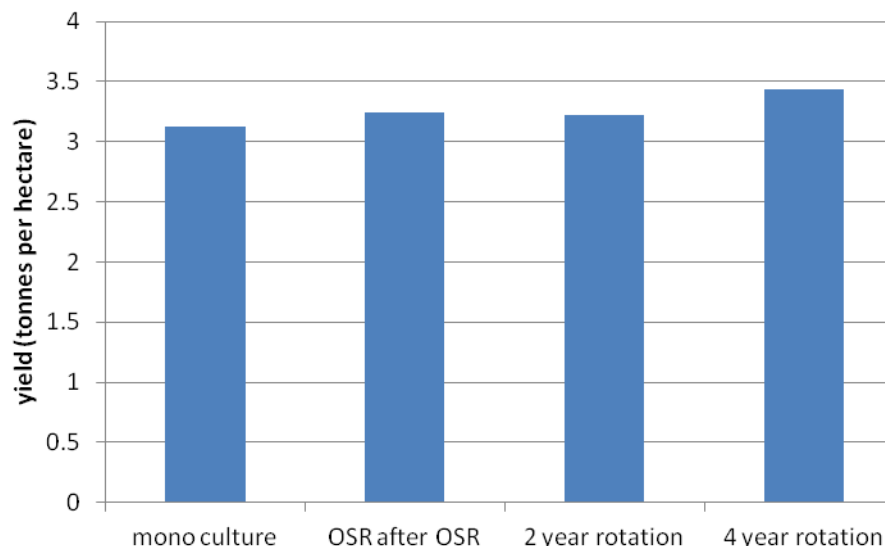
### 6.1 Background to the Study

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Experimental work on different crop rotations has provided evidence of possible yield reductions when oilseed rape is grown too frequently. In this chapter, we look at some of the trials evidence and compare this with observations from the Farm Business Survey (FBS).

The figure below shows results of an experiment in conducted in Germany during harvest years 1988 to 1993 in which oilseed rape was grown in a range of rotations.

Oilseed Rape Yield in Different Rotations



Source: Christen, O. and Sieling, K. (1995), Effect of Different Preceding Crops and Crop Rotations on Yield of Winter Oilseed Rape (*Brassica napus* L.), Journal of Agronomy and Crop Science, 174:265-271, 1995

In the experiment, a yield reduction of nine per cent was observed when oilseed rape was grown in a continuing monoculture and a six per cent yield reduction was seen when the crop was grown in alternate years in comparison with a four course rotation.

Recent HGCA funded work by NIAB-TAG also reveals the potential yield decline from a high rotational intensity of oilseed rape production. This research suggested that growers can expect an 18 per cent reduction in oilseed rape yield within a continuous oilseed rape rotation in comparison with a first oilseed rape crop<sup>1</sup>. Even with a single year cereal break, the yield reduction would be 12 per cent. The yield decline is attributed to the presence of volunteers, which compete with the crop and introduce disease.

Further work identified the presence of soil borne plant pathogens *Olpidium brassicae* and *Pyrenochaeta lycopersici* as likely causes of yield reduction in monoculture production of oilseed rape<sup>2</sup>.

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<sup>1</sup> Farmers Weekly Interactive, [www.fwi.co.uk](http://www.fwi.co.uk), 5 December 2012

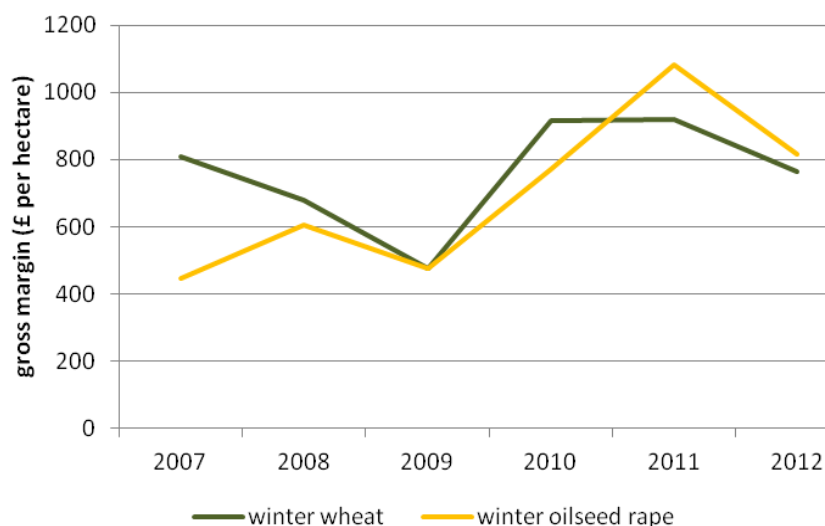
<sup>2</sup> Hilton S., Bennet A J., Keane g., Bending G. D., Chandler D., Stobart R., Mills P., (2013) Impact of shortened crop rotation of oilseed rape on soil and rhizosphere microbial diversity in relation to yield decline, PLoS One, Vol.8 (No4) ISSN 1932-6203

## 6 Oilseed Rape Rotations and Performance

### 6.2 Wheat and Oilseed Rape Gross Margin Performance

The figure below shows the relative gross margin performance of the wheat and oilseed rape crops

Winter Wheat and Winter Oilseed Rape Gross Margin, 2007 to 2012



The improved financial performance of these crops and the convenience of growing two crops which are drilled and harvested at different times are both strong incentives for growing high proportions of these crops within the rotation.

FBS data in the table below shows the proportion of growers that produced oilseed rape on more than 30 per cent and more than 40 per cent of their cropped area for two consecutive years. It should be noted that sample sizes are small and results should therefore be treated with caution.

Proportion of Crop Grown on More Than 30 and More Than 40 per cent of Farm Area for Two Consecutive Years

	2010 and 2011	2011 and 2012
	per cent of farms growing oilseed rape	
OSR > 30 per cent of cropping	6.8	6.0
OSR > 40 per cent of cropping	3.2	2.5

It shows that the practice of growing oilseed rape on a short rotation is restricted to a small proportion of all production. In 2012, six per cent of farms grew oilseed rape on 30 per cent or more of their cropped land and a smaller proportion of only 2.5 per cent of farms grew oilseed rape on more than 40 per cent of their cropped land for two consecutive years.



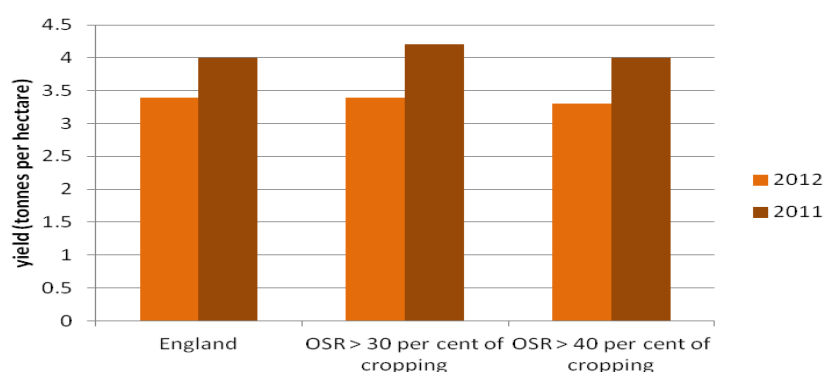
## 6 Oilseed Rape Rotations and Performance

The Greening arrangements for the reformed CAP will require most farmers to grow at least three crops from 2015. This is likely to further reduce the incidence of such tight wheat and oilseed rape rotations.

### 6.3 Financial Performance of Oilseed Rape and Rotational Practice

The figure below shows the average oilseed rape yield on farms in England in 2011 and 2012 for all farms, farms with oilseed rape on at least 30 per cent of their cropped land and farms with at least 40 per cent cropping with oilseed rape.

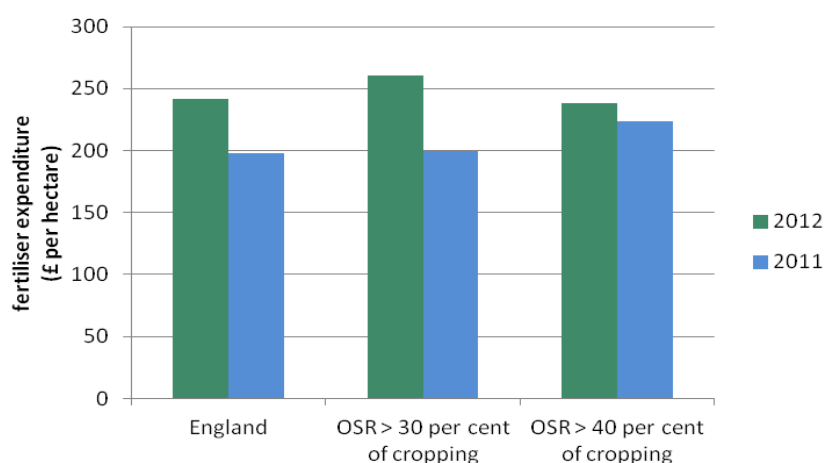
Oilseed Rape Yield at Different Rates of Inclusion Within Rotation, 2011 and 2012



The figure does not show a major yield penalty from the short rotation. However, this is not conclusive evidence that there was no yield decline. The sample size is small and we cannot be certain that the results for the whole of England relate to similar growing conditions to the farms with a tight rotation. In fact, farmers choosing to grow oilseed rape frequently may have a history of achieving high yields and on these farms; the achievement of a merely average yield could represent a yield reduction.

Our further analysis turns to expenditure on inputs, in the figure below fertiliser expenditure is plotted by rotation practice.

Oilseed Rape Fertiliser Expenditure at Different Rates of Inclusion Within Rotation, 2011 and 2012



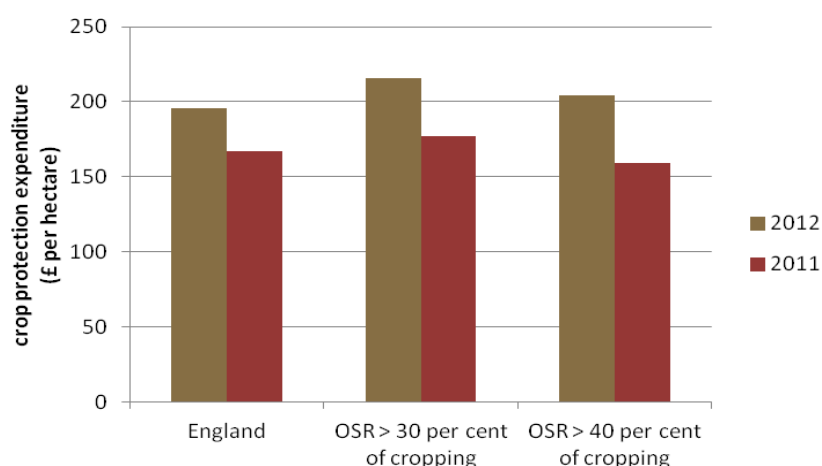
## 6 Oilseed Rape Rotations and Performance

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The figure shows similar or higher expenditure on farms with a high proportion of oilseed rape in their rotation.

The figure below further extends the analysis of variable cost expenditure to crop protection costs.

Oilseed Rape Crop Protection Expenditure at Different Rates of Inclusion Within Rotation, 2011 and 2012



Expenditure on crop protection is similar or slightly higher on farms with tight rotations than all farms in England.

### 6.4 Discussion

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The trials evidence for reduced oilseed rape in short rotations is clear, but our evaluation of commercial production provides no conclusive evidence of economic impact of short rotations.

The small and perhaps declining sample size must be considered. If there is a yield decline due to short rotations, then it is likely to be small when compared to the year to year differences in production between 2011 and 2012 when the national oilseed rape reduced by 15 per cent.

Growers may consider that yield penalties are acceptable in their farming system. Their justification may be a wish to operate a simplified farming system due to impending retirement or ahead of a planned sale of land. A yield penalty might be acceptable if an accepted reduction in gross margin is mitigated by savings in fixed costs. These might be achieved due to the different seasonal requirements of oilseed rape and because oilseed rape can be less costly to store due to its lower yield and therefore volume.

For farms with blackgrass, short rotations may not be a feasible option. Because both winter wheat and oilseed rape have a long growing season, the winter wheat winter oilseed rape rotation may harbour blackgrass populations allowing them to multiply.

We intend to continue to monitor farm practices relating to short rotations with oilseed rape.

**Reports in this series:**

Crop Production in England 2012/13  
Dairying Farming in England 2012/13  
Hill Farming in England 2012/13  
Horticulture Production in England 2012/13 (Horticultural Business Data)  
Lowland Grazing Livestock Production 2012/13  
Pig Production in England 2012/13  
Poultry Production in England 2012/13

Crop Production in England 2011/12  
Dairying Farming in England 2011/12  
Hill Farming in England 2011/12  
Horticulture Production in England 2011/12 (Horticultural Business Data)  
Lowland Grazing Livestock Production 2011/12  
Pig Production in England 2011/12  
Poultry Production in England 2011/12

Crop Production in England 2010/11  
Dairying Farming in England 2010/11  
Hill Farming in England 2010/11  
Horticulture Production in England 2010/11 (Horticultural Business Data)  
Lowland Grazing Livestock Production 2010/11  
Pig Production in England 2010/11  
Poultry Production in England 2010/11

Crop Production in England 2009/10  
Dairying Farming in England 2009/10  
Hill Farming in England 2009/10  
Horticulture Production in England 2009/10 (Horticultural Business Data)  
Lowland Grazing Livestock Production 2009/10  
Pig Production in England 2009/10  
Poultry Production in England 2009/10

Crop Production in England 2008/09  
Dairying Farming in England 2008/09  
Hill Farming in England 2008/09  
Horticulture Production in England 2008/09 (Horticultural Business Data)  
Lowland Grazing Livestock Production 2008/09  
Pig Production in England 2008/09  
Poultry Production in England 2008/09

Crop Production in England 2007/08  
Dairying Farming in England 2007/08  
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Details available at [www.ruralbusinessresearch.co.uk](http://www.ruralbusinessresearch.co.uk)

**Other Farm Business Survey publications of interest to arable farmers:**

Farm Accounts in England, Defra  
<http://statistics.defra.gov.uk/esg/publications/fab/default.asp>

Farm Business Survey Government Office Region Reports, University of Cambridge  
<http://www.farmbusinesssurvey.co.uk/regional/>

FBS farm business benchmarking  
<http://www.farmbusinesssurvey.co.uk/benchmarking/>

For arable performance for the East of England up to 2004/2005 see the annual publication:  
Report on Farming in the Eastern Counties of England, Rural Business, Unit, Department of  
Land Economy, 19 Silver Street, Cambridge, CB3 9EP.

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