BISHOP BURTON College

Skills Support for the Workforce
Local Response Fund

Agri – Tech

Skills Report

Sector: Food and Agriculture

Contents

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Report Introduction

This project is jointly supported by the York, North Yorkshire and East Riding Local Enterprise Partnership (LEP) and the Humber LEP and the aim of the project is to conduct a comprehensive skills gap analysis of the Agri-Food industry and to develop and deliver relevant curriculum and qualifications to meet the demand for Agri-Tech skills.

To do this, the College has consulted with industry to develop education and business partnerships to help inform, as well as contribute to the design of and delivery of new curriculum by creating or adapting new content under the ESF Innovation Code.

This report is produced to publish the findings of this research and development. The skills priorities reflect the requirements of the LEPs and respond to local workforce current and future needs. The development of new curriculum addresses the need for a technology focussed agricultural curriculum, based on the skills needs of the industry, and subsequently delivery of
flexible training programmes to up-skill the region's workforce to address technological change and competitiveness within Farming.

2. Key Points from the York, North Yorkshire and East Riding LEP

The vision of the York, North Riding and East Riding Local Enterprise Partnership is to make York, North Yorkshire and East Riding the place in England to grow a small business, combining a quality business location with a great quality of life.

The ambitions are for 20,000 new jobs, £3 Billion growth and for every student to be connected to a business. The key priorities are:

- Profitable and ambitious small and micro businesses.
- A global leader in food manufacturing, agri-tech and biorenewables - innovation.
- Inspired people – ambitious, skilled and right attitude.
- Successful and distinctive places.
- A well connected economy - strong connections to customers and markets.

Compared to the national average, 250% more businesses in the region are agriculture, forestry and fishing and 14% more people are self-employed. Also 90% of businesses have less than 10 employees, 99% of businesses are classed as either small or micro and 35% of manufacturing jobs are in food manufacturing.

The 7,945 agriculture, forestry and fishing businesses in the LEP area are the predominant business type, accounting for 17% of the total businesses. The location quotient of agriculture, forestry and fishing businesses is 3.4 indicating that this business type is 3.4 times more concentrated in this area than nationally.

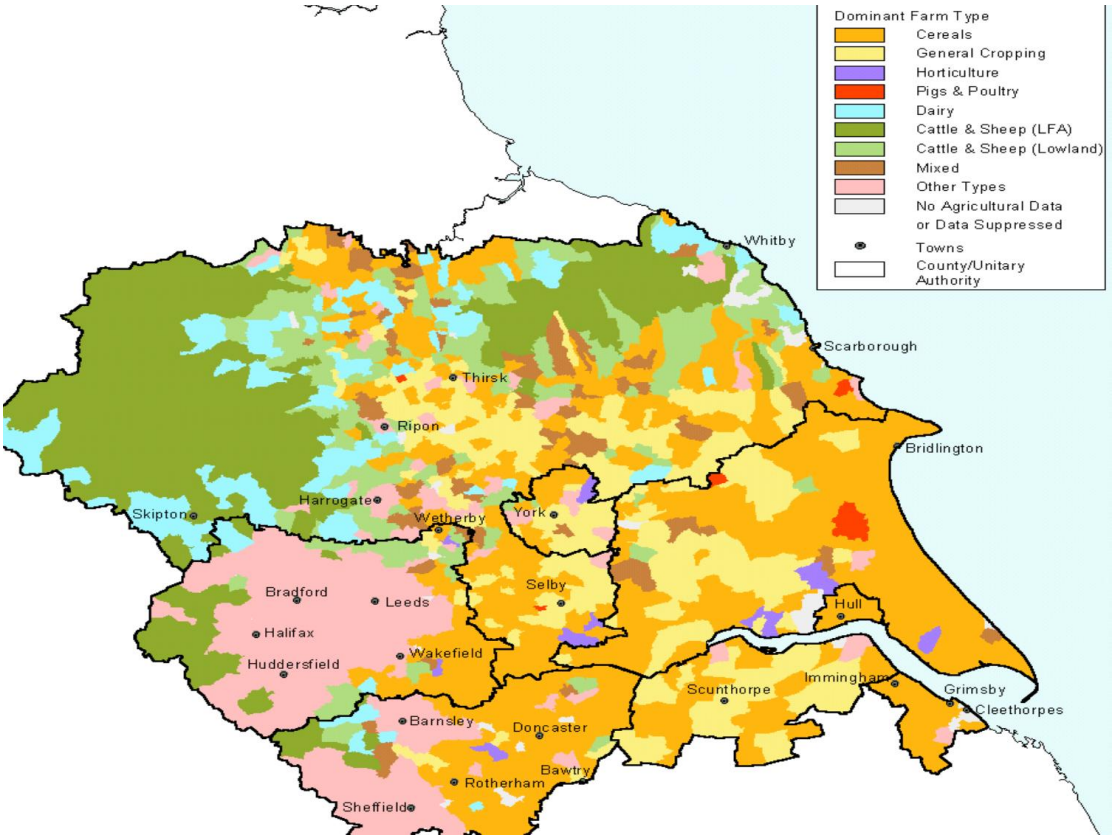
Skills are recognised as drivers of productivity and there is extensive evidence linking higher levels of skills to improved economic performance. Overall skills levels in the LEP area compare favourably with the national average at all levels, but there is a need to improve this further to harness new technologies and remain competitive. There are also some issues with remoteness from employment opportunities in some areas.

This makes skills training to support businesses in the agri-food sector a key priority for the LEP.

A key strength of the area is the large food and agriculture sector. There are significant opportunities for developing training and fulfilling skills needs in new agricultural technologies such as precision farming. Precision farming technologies have the potential to improve food production efficiently and to achieve better environmental outcomes.

3. Importance of Agriculture to the Region

The Yorkshire and Humber area is a major agricultural region in the UK. The farming industry in the North East contributes 17% of the cereal area, 35% of the pig herd, 10% of the cattle herd and 14% of the sheep flock (DEFRA).This can be seen in the diagram below; cereals, pigs and horticulture are very important, as well as dairy, beef, sheep and general cropping.



More detail on the importance of agriculture to the region is shown below (DEFRA 2015):

Farmed area (thousands hectares)	England		Yorkshire and the Humber		% contribu
wheat	1,505	17%	208	19%	14%
other cereals	988	11%	146	13%	15%
oilseed rape	676	7%	91	8%	13%
sugar beet	117	1%	8	1%	7%
potatoes	103	1%	17	2%	17%
horticulture	140	2%	16	1%	11%
permanent grass	3,273	36%	339	31%	10%
rough grazing	472	5%	107	10%	23%
total farmed area	9,086		1,091		12%
Livestock numbers (thousand head)					
cattle	5,364		544		10%
pigs	4,066		1,438		35%
sheep	14,922		2,115		14%

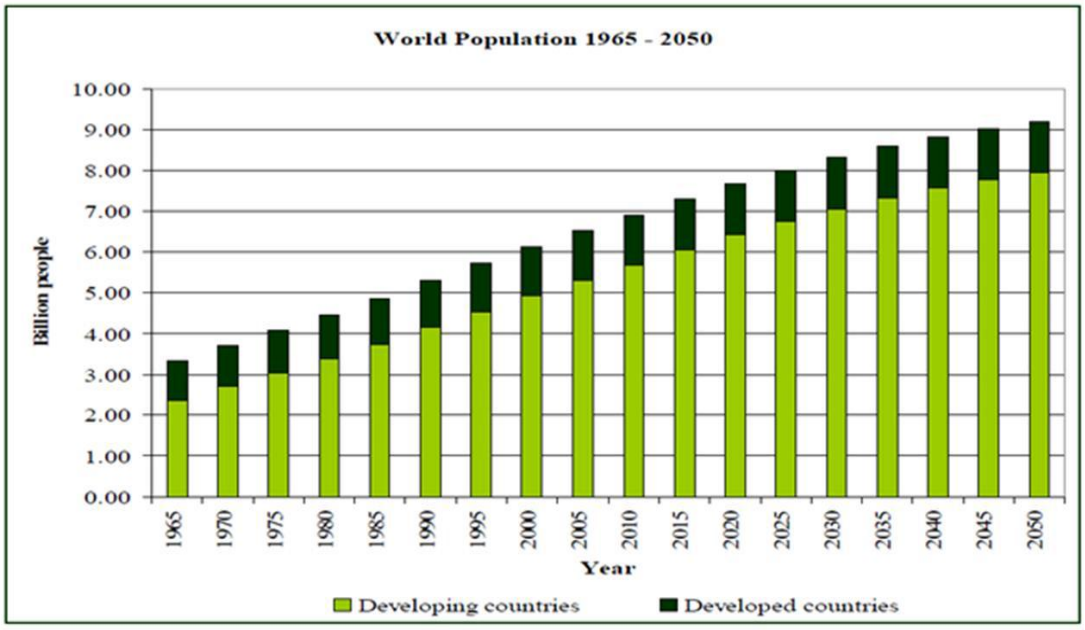
Arable crops, cattle, sheep and pigs are clearly very important to the area and it is worth noting that the UK is also the third largest exporter of sheepmeat in the world. However other sectors, including alternative livestock products are also important to the region and in many cases are growing in output.

In the past 10 years the poultry sector has grown significantly in Yorkshire and in particular East Yorkshire. In East Yorkshire alone there are estimated to be over 1,000,000 Free Range Laying hens and 600,000 colony birds. Recent years have seen a large growth in the number of ducks reared and finished in Yorkshire. The sector in the UK is dominated by Cherry Valley Ducks who account for 50% of UK duck production (of which more than two thirds is based in Yorkshire). Asia accounts for 82.5% of world output of duckmeat and China alone accounts for 66%. Europe has 12% of the global output and 54% of this comes from France. However the UK supplies genetic material for two thirds of the world total and the worldwide duck market is predicted to grow at a rate in excess of 3% per annum (www.thepoultrysite.com).

Seafish is also an important part of the economy of the region. Since 2008, regional distribution of all seafish has showed signs of further industry concentration in Humberside and Grampian which together account for 38% of units and 52% of jobs in the industry. Bridington is now recognised as a major shellfish port with a fleet of 40 inshore and offshore potters. Annual landings were valued at over £6.25 million in 2013. Of this, lobsters account for over £3 million, brown crab £2.5 million and whelks £0.4 million of catch value.

4. Agricultural Revolution

Agriculture and food production is vital for us all and we live on a planet with finite resources. The Foresight Report commissioned by the government in 2011 states that in the next 20 years the food industry must be able to feed 4 million more people. Lowest case population projections up to 2050 predicted by the UN are shown below:



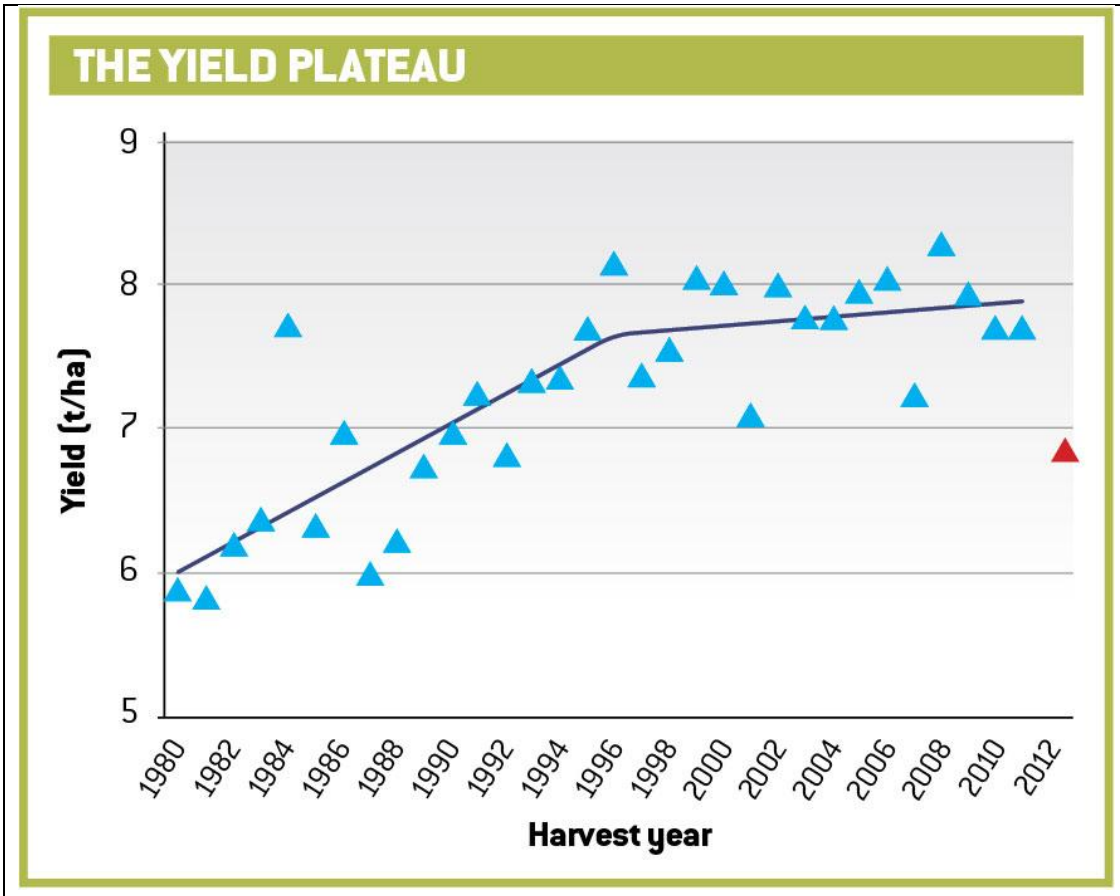
Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (2007)

This population needs to be fed against a background of limited resources, climate change and aspirations of improved diets for much of the world's population.

Agriculture has undergone three major episodes of evolution during its history, namely:

First Agricultural Revolution – shift from hunter gatherers to sedentary farming which allowed population growth.
Second Agricultural Revolution - occurred between 1700 and 1900 in most areas of the world and included the development of agricultural machinery and animal breeding techniques.
Third Agricultural Revolution (often called the Green Revolution) -occurred in the latter half of the twentieth century and enabled large yield increases due to the use of chemical fertilisers, sprays, plant breeding and increased mechanization.

In many cases, increases in yields have now slowed down and in some cases plateaued as can be seen below:



HGCA UK Wheat Yields 1980 – 2012.

The average wheat yield for UK crops is about 8 tonnes per hectare against a world average yield is just over 3 tonnes per hectare (FAO 2013). The record UK wheat yield approaches 15 tonnes per hectare and the estimated theoretical maximum yield is about 20 tonnes per hectare.

This example demonstrates that yield increases are possible but it depends on the following factors:

- Increasing the yield of crops and animals through improved genetic potential.
- The precise application of optimum resources such as fertilisers and crop protection chemicals (Precision Farming).
- Improving the **knowledge and skills** of people working in the agri-food industry to be able to take advantage of the new technology.

We are witnessing the dawn of a **Fourth Agricultural Revolution** where the above issues have to be addressed. In a competitive global economy, the food supply chain needs to be more efficient, more profitable and more attractive as a career choice so that it can build on its strengths and take full advantage of the potential for growth. An improved skills base is fundamental to ensuring the food supply system remains secure, commercially competitive, innovative, healthy and sustainable.

The cost benefits from precision technology can be potentially enormous. Without precision technology, arable fields are treated as homogenous units regardless of variation across the field. Seed, fertilizer and spray costs for winter wheat are often over £500 per hectare. More precise application using global positioning, field mapping and variable rate application could save at least 20%of these costs. In some cases where drones can be used to pinpoint diseases and spot spray, these savings could be in excess of 80%. The following table shows typical costings for a range of arable crops:

Arable Gross Margins (J Nix) – all costs are in £/ha.

		W. Wheat	W. Barley	O.S.R.	F. Peas	M. pots
Yield (t/ha)		8.4	6.9	3.4	3.75	45
£/tonne		135	125	265	260	123
Gross Output		1,134	863	901	975	5,535
Seed		58	60	51	99	787
Fertiliser		207	158	192	38	374
Sprays		233	178	196	124	703
Casual labour		0	0	0	0	878
Sundries		0	0	0	0	459
Total VCs		498	396	439	261	3201
Gross Margin (£/ha)		636	467	462	714	2,334

Additional overhead (fixed) costs are typically in the range of £800 - £1,000 per hectare for an arable farm which does not leave a margin at current prices on cereals. Prices of cereals are notoriously volatile, but even if they rise, the margins are often quite narrow which emphasizes the need for more careful control of inputs by precision technology in order to control costs.

5. Market Intelligence

The original labour market information detailed in this report is largely derived from Lantra (Sector Skills Council for landbased and environmental industries), Improve (Sector Skills Council for the food and drink industry) and the UK Commission for Employment and Skills.

Lantra estimates there are about 158,660 businesses in the landbased and environmental sector in England and the sector is dominated by micro-businesses, 97% of businesses in the sector have a workforce of ten staff or fewer, compared with 83% across all sectors in England. Lantra also estimates that there are 905,500 employees in the sector in England.

Lantra estimates that there are about 16,600 businesses in the sector in Yorkshire and the Humber and 97% of businesses have a workforce of 10 staff or fewer. There are 44,900 people employed in the sector in Yorkshire and Humber. 43% of the businesses are concerned with crop and livestock farming and 36% of the workforce are employed in these activities.

Overall the agriculture, forestry and fishing sector nationally is highly skilled but poorly qualified. There is a mis-match between the skills required to perform roles in the sector and the formal qualification requirements for entry into the sector. In the next ten years (2010 to 2020) the sector will need a minimum of 22,000 more people The largest need for people is expected to be for sales and customer service occupations (4,000) and managerial occupations (4,000) Over the period 2010-2020, the following number of people will be needed: 1,000 people at qualification Level 5 (postgraduate) 4,000 people at Level 4 (graduate) 5,000 people at Level 3 (A Level) 6,000 people at Level 2 (GCSE A-C) 4,000 people at Level 1 (GCSE D-G).

6. SME Skills Groups

Bishop Burton College's Centre for Agricultural Innovation – an established centre of excellence with existing client groups, partners, meeting facilities, research activity and a working farm - is the Agri-Food platform for this skills initiative. It has created a new 'Agri – Food Skills Group and Network' to inform on sector-specific skills shortages and guide SSW delivery.

Statistics showing perceived skills shortages do not necessarily tell the true picture of the needs of the industry. It is often assumed that, for example, if the statistics show a low number of people qualified at level 3, then increasing this figure is what the industry requires. The new 'Agri – Food Skills Group and Network' provides information on sector-specific skills shortages and guides delivery by consulting with the industry on precisely what their needs are to drive their businesses forward and become more competitive and sustainable.

The Agri–Food Skills Group and Network was launched at a Business Conference on 6 March 2014 and has continued to raise awareness with further conferences in 2014 and 2015.

An event had previously been held at the College on 3 March for careers advisers in conjunction with East Riding of Yorkshire Council. It was well attended by school careers advisers and included speakers from Birds Eye Ltd and McCains Ltd who spoke about career opportunities for young people.

Attendees at the March 2014 launch included representatives from across the food and agriculture sector and was a very successful first stage in raising awareness of the project and in the development of the group.

On 15 May 2014 we held a small group workshop with industry on skills needs. Representatives from arable, livestock and fish farming were invited although attendance was poor.

On 29 September 2014 we held an event in conjunction with Deliciously Yorkshire at the College to promote agri-food and the need for skills to improve efficiency.

On 20 November 2014 we held an Agri-Food Sector Event on Skills for New Technology. In addition to representation from the Humber LEP, the Greater Lincolnshire LEP and the North Yorkshire, York and East Riding LEP, we had technical speakers from industry and research. These included speakers from the NFU, Birds Eye Ltd, E B Bradshaw and Sons Ltd, Manterra Ltd and Cranfield University.

On 5 March 2015 we held a Sector Event on Agri-Tech: Breaking the Profit Barrier. High calibre speakers from Bayer Ltd, Agrii Ltd, Dunbia Ltd, Thompsons Feeds, ABP Ltd and EBLEX spoke to a large audience with very good representation from industry.

On 20 April 2015 we had a conference for small food producers and farm shops through the East Yorkshire Local Food Network (EYRFN) which was held at the College.

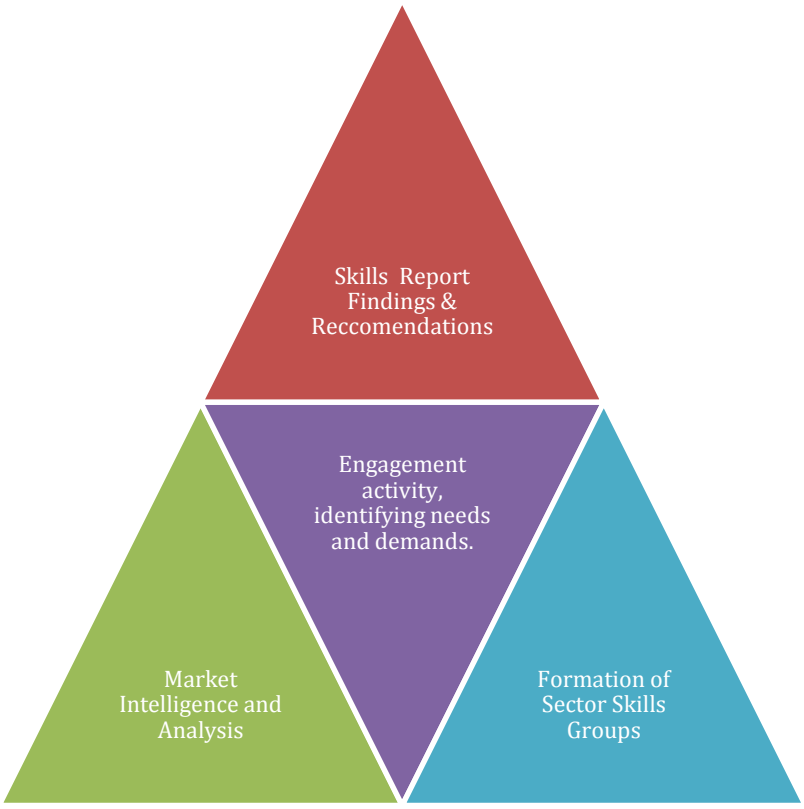
On 15 May 2015 the College was represented at the Spring Showcase Event at Fairfield Manor York where a presentation was given on developments in training and course development in precision farming.

On 3 June 2015 the College was represented at the Humber Business Week Celebration Event at the University of Hull and won an award for employer engagement and capacity building in the Agri-tech sector.

On 4 June 2015 an employer engagement event was held at the College as part of the Humber Business Week.

On 24 June 2015 the College was represented at the UKTI Agri-Tech Event at the Food and Environment Research Agency (FERA) where one of the main speakers was Clive Blacker who is on our skills group and is an employer who has been engaged with the precision farming project at the College.

7. The Sector Skills Employer Engagement Model



8. Members of the Skills Groups

This is the profile of the initial members of the Group which has evolved over the last year to increase its membership and influence:

Kevin Kendall	Food and agriculture, education and training advisor.
Andrew Black	Director of Services to Business, Bishop Burton College.
David Farnsworth	Rural Partnership Officer (ERYCC), North Bank Partnership.
Graham Ward	East Yorkshire Local Food Network.
Clive Blacker	Precision Decisions.
Andrew Manfield	Manterra Ltd.
Hilary Hamer	Food4Hull.
Paul Rhodes	Food Chain specialist.
Ian Snape	Agricultural Consultant.
Mike Morgan	Head of Food Science, The University of Leeds.
David Gardner	Royal Agricultural Society of England (RASE).
Charlotte Johnston	Royal Agricultural Society of England (RASE).
Lucinda Douglas	National Farmers Union (NFU).
Mark Flint	Cawkeld Farming Ltd.
Anthony Kitching	Birdseye Group.
Brian Wheatley	Birdseye Group.

Wider Group of advisers

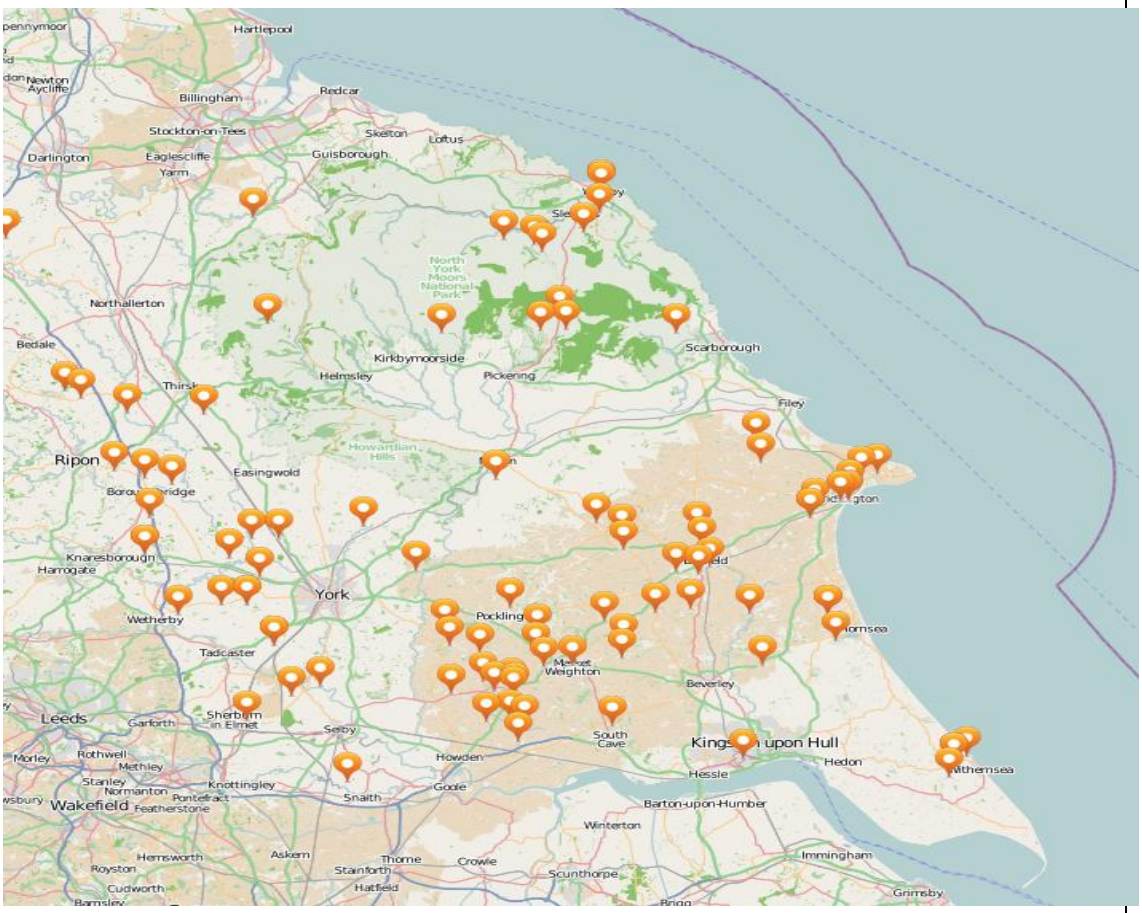
Matthew Thompson	Grimsby Institute of Further and Higher Education.
Jo Satariano	Deliciously Yorkshire.
Mark Farnsworth	Williams Farm Kitchen.
Lizzie Jennings	Yorkshire Farmers.
Stephen Noblett	Food and Drink Sector Specialist (UKTI).
John Moore	Agrii Ltd.
David Robinson	Humber Seafood Group.
Simon Herring	Piper Crisp Company.
Ivan Jaines-White	Grimsby Seafood Village.
Alastair Benson	Benson Park.
Martin Riggall	British Growers Association.
Mike Parker	Marine Harvest ASA.
Helen Wright	Rural Partnership Manager (ERYCC).
Andy Black	Bishop Burton College.
Mike Risby	Federation of Small Businesses.

Qualification Development Team

Andrew Manfield	Kevin Kendall
Ian Beecher Jones	Helen Martin
Charlotte Johnston	David Gardner
Andy Black	Stockbridge Technology
Bill Meredith	Ruth Wells
Mike Freeman	Kate Parker
Ricky Lawson	Christopher Dodsworth

9. Employers consulted through Training Needs Analysis (TNA) up to 7 July 2015.

Map showing distribution of Employers completing TNAs across the region



The project has directly engaged over 110 employers through formal recording of training needs. The TNA's were designed to create labour market intelligence into: - business positioning; skills needs; environmental sustainability; recruitment needs; barriers to training.
In addition to this approach we have also established further skills needs from both employers and learners who undertook training throughout the project.

See Appendix 1 – Training needs analysis matrix

10. Skills Findings.

There are two major skills needs for the food industry:

1. Pre-entry.

This is available both full time and part time at levels 1 to 8. Full time level 3 in agriculture is particularly important as this course provides the new entrant technicians for the industry who are most likely to be the operators of new technology such as GPS systems. The Agri-food industry is struggling to recruit new entrants so this is vital that training be maintained. One of the barriers to recruitment is the negative perception of the Agri-food industry by young people.

2. Upskilling the existing workforce.

Technology continues to move at an ever increasing pace and if the Agri-food industry is to keep abreast of this to maintain and improve efficiency, then upskilling of the existing workforce is essential. This is largely fulfilled by short courses, offered according to employer needs, at levels 2, 3 and 4. The Agri-food Network set up as part of this project is largely concerned with engaging industry to upskill the existing workforce. The sector has undergone many changes in recent years which has led to an increase in demand for highly skilled staff. The current skills that employers nationally feel are important to the sector in England are (Lantra 2010):

- Technical skills (e.g. animal handling and care; disease identification and control).
- Implementing new technology including genetic engineering and ICT skills.
- Leadership/management skills (e.g. succession planning; entrepreneurial skills)
- Essential skills (i.e. literacy, numeracy and communication).

Skills that have been identified through the training needs analysis carried out through this project include:

- Soil Science, Soil Structure and Cultivations.
- Precision Farming.
- Crop Husbandry and Nutrition.
- Fertiliser Application.
- Chemical Application.
- FACTS.
- Forage management.
- Horticulture.
- Pig husbandry and management.
- Poultry health and welfare
- Butchery and Bakery Skills.

- Milling Technology.
- Fish management and processing.
- Engineering technology.
- New Product Development.
- Social Media and IT Skills.
- Marketing, Buying and Pricing.
- Business management.
- Customer Requirements.
- Managing People.
- Food Hygiene and HACCP.
- Forklift Truck.
- Health and Safety and First Aid.
- Sustainability.
- Environmental Issues.
- Supply Chains.

To address the above, in addition to existing resources, Bishop Burton College has made significant investment in precision agriculture. This is a system of improving crop production and getting more from existing resources with fewer inputs. An example is the use of a computer guided tractor which uses signals from satellites in the GPS system. GPS technology enables the tractor to drive in straight lines, accurately matching each pass up and down the field and putting the correct amount of fertilizer in precisely the right place. This increases efficiency by reducing the amount of fertilizer needed, limiting the number of times a machine is in operation on the land and maximizing yield. The College equipment enables a 'total solution' where each arable activity has a computer controlled system in place and each system can communicate to increase efficiency.

Tractor technology systems are intrinsically linked and the technology enables students to measure the impact of the speed of operation, and change settings which effects fuel consumption. The equipment is also used for fault diagnoses and rectification techniques.

The study of these techniques will enable students to gain the knowledge, understanding and experience to assist them significantly in their future careers in the agricultural industry. The overall outcome being to create a system of farming that maximizes efficiency and reduces waste.

11. Precision Farming Qualifications.

Nationally in the UK there are no accredited units available on precision technology in agriculture. A suite of agricultural technology programmes is being developed by the College to address the skills needs of employers using precision technology with a view to accreditation by City and Guilds and the Royal Agricultural University. Units that have been developed are:

Level 2 Operate Precision Technologies to Improve Resource Efficiency.
Level 3 Evaluate Precision Technologies to Improve Resource Efficiency.
Level 2 Operate Fertiliser Application Equipment using Precision Technology.
Level 2 Operate Chemical Application Equipment using Precision Technology.
Level 2 Operate Seed Drilling Equipment using Precision Technology.
Level 2 Harvesting Crops using Precision Technology.

The following are under development as either free standing units or as part of a Foundation Degree and are due to be validated by the Royal Agricultural University:

Level 4 Precision Technology and Soil Management
Level 4 Precision Technology and Machinery Management
Level 5 The Management of Precision Technology in Crop Production
Level 5 Management of Precision Technology to promote efficiency and sustainability

Level4/5 Foundation Degree in Precision Livestock Farming.

The precision livestock farming qualifications are being developed in consultation with the Royal Agricultural Society of England (RASE).

The above are currently also undergoing consultation with industry. Two arable farmers (Andrew Manfield and Clive Blacker) in the region have helped considerably in the selection and purchase of precision farming equipment, the development of training programmes and the actual delivery of the pilot training programmes.

Appendix 2 Qualifications developed or being developed.

Appendix 3 Example of Training Materials.

Appendix 4 Case Study – Andrew Manfield.

Appendix 5 Case Study – Clive Blacker.

12. Structure of the Industry and Implications for Training.

The skills needs requirements as identified by this project are very clear, as are the potential benefits. Using wheat as an example - it is a major part of the food system globally - increasing yields in Yorkshire and the Humber from an average of 8 tonnes per hectare to 12 tonnes per hectare would have a dramatic effect on both farm profitability and production. Precision farming has an important part to play in the drive for greater productivity by reducing, or at least not increasing inputs. As well as an increase in efficiency, there are environmental benefits through reducing environmental contamination, for example, through nitrate leaching into watercourses.

Through the Training Needs Analyses, this project has only captured a relatively small number of the Agri-food businesses in the region, but they have been selected to be representative of the whole sector and are widely spread throughout the region. Analysis of business types through the food chain, not including catering are shown as below:

Agricuture	Food Processing
• Beef • Sheep • Poultry • Dairy • Pigs • Fish • Cereals • Root Crops • Horticulture	• Meat and Poultry • Dairy • Fish and shellfish • Milling • Malting • Fresh Produce
Food Manufacuring	**Food Distribution**
• Baking • Butchery • Brewing • Dairy • Drink • Ready meals	• Warehousing • Logistics • Packaging • Food distribution / service

Five consultants, who are specialists in particular areas have been employed to carry out the training needs analyses and ensure that all parts of the food chain are represented. This projects needs to carry on to enable it to contact the 'hard to reach' businesses and try to ensure that they have access to the skills to take advantage of the opportunities afforded by new technology.

So far the project has led to training referrals of approximately 250 people who have updated their skills in key areas required by the Agri-food industry but this needs to continue and enable more employers to participate so that the project can have a greater impact on business productivity, efficiency and sustainability in the region.

All those interviewed as part of the TNA research were aware of the benefits of training and the importance of up-skilling staff to improve efficiencies and improve profits, however they cited a number of reasons for not engaging in more training activities, these were:

- Shortage of available time for training, many farms had very few employees and found it difficult to free up time for them to leave the farm for training. Locally based, work-based or online training would help resolve this barrier.
- Lack of high quality training providers particularly for sector specific technical training. (e.g. poultry – health and welfare, or soil science)
- Available funds – margins in the food and farming sector continue to be tight and few businesses have funds available or have budgeted for training. LEP support will help resolve this issue.
- There is also evidence of employers struggling to recruit suitable young people. The jobs are there but potential staff are not. This is also linked to rural issues such as affordable housing and the transport infrastructure

The different sectors have different challenges:

- Horticulture – currently little training support for specific horticultural training requirements. The sector suffers from lack of new entrants and the current workforce is becoming very aged, leading to concerns over the future of an important sector to the region- need college courses and specific horticultural technical courses.

- Pig Sector – a third of the UK pigs are based in Yorkshire –some core technical pig skills are provided by BPEX but more general training not supplied. Specific management courses may be lacking.

- Poultry Sector – the region has seen a huge growth in poultry; Free Range egg production, egg production, duck and turkey rearing and broiler chicken production. Research found this sector is poorly supplied with technical knowledge and training. There is a real gap in skills supply which if not filled will restrict the sustainability, profitability and growth of this sector. The development of a centre of excellence to deliver structured high quality bespoke training to the sector would be advantageous.
- Sheep and Beef Sector – some training provided by EBLEX – but more

knowledge of pasture management, quality silage production and soil management was identified as gaps in peoples' knowledge.

- Arable – clear demand for further knowledge and practical training on precision farming technology and equipment. There was also a large amount of interest in improving knowledge of soil, soil management and cultivation.

- Seafish - Labour and especially skills shortages were commonly reported as an issue by the industry due to an insufficient number of young workers entering the industry. A variety of technical skill sets were reported to be in low supply including: skilled primary processing operators, food scientists, product developers, nutrition specialists, safety specialists, food technologists, and software designers. Interpersonal and administrative skills were also commonly cited as an issue, with reported difficulties in attracting administrative staff above supervisor level. A shortage of suitable sales and marketing professionals was also mentioned.

Other issues that can effect the uptake of training by agricultural businesses:

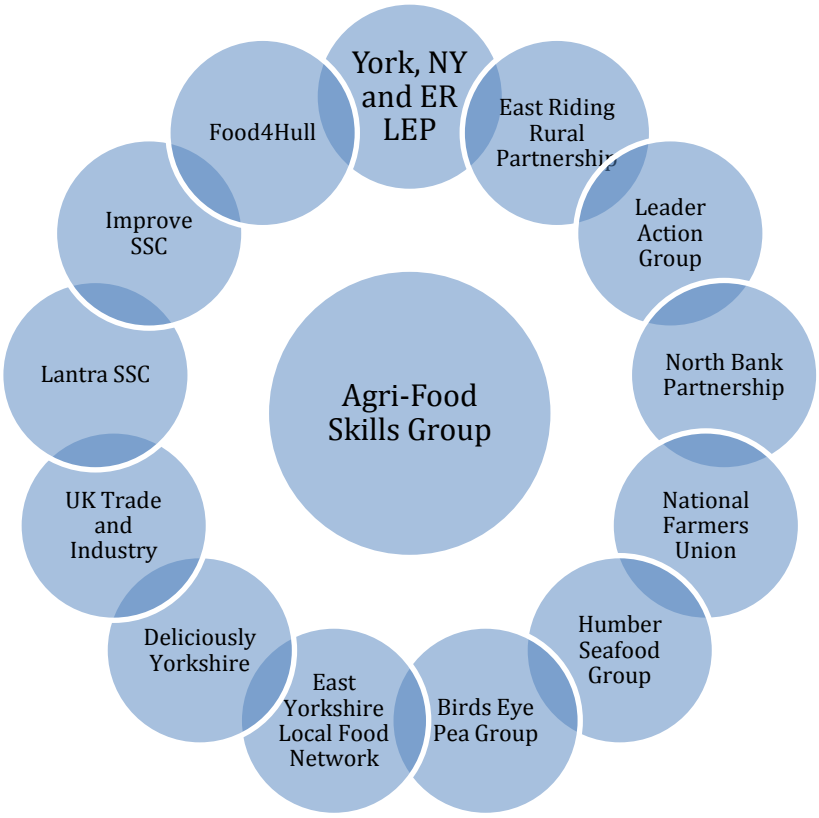
- Size of farm – small farmers often cannot release people for training and are also often not big enough to justify expenditure on new technology.
- Age of farmer – the average age of farmers in the region is approaching 60 years (DEFRA). This can often mean that 3 generations of farmers are competing for control of the business, each with different priorities.
- Technical ability – some farmers are unwilling or unable to embrace new technology.
- Availability of staff – the industry must attract technical young people in the future and it is vital that schools are made aware of the career opportunities in the food industry.

13. Outcomes from the Project

Target	Achieved
A report on the networks developed in order to develop LMI.	Networks developed are: Members of the Skills Group 16 Wider Group of Advisers 15 Employers consulted 300+
Evidence of partnership working and collaboration on labour and skills.	Groups in the network 13
Details of engagement with Further and Higher Education networks.	Engagement with: University of Leeds. Hull College. Grimsby Institute of Further and Higher Education. Royal Agricultural University. University of York (Biovale). Humber LEP Employability Passport. Association of Colleges. City and Guilds. Higher Education Funding Council for England (HEFCE).
Development of an employer engagement strategy for Agri-Tech.	Engaged with 110+ employers in the agri-food industry through training needs analyses and developed a new suite of training programmes in response to that need.
A suite of new skills programmes developed to meet the demand for technical skills.	New training programmes in precision farming developed at levels 2 and 3 with levels 4 and 5 under development.
100 SMEs engaged (TNAs) in research activities, leading towards the development of new programmes.	110+ TNAs completed.
The delivery of 220 training outcomes.	235 training outcomes achieved on GIFHE/LRF contract. A total of 700+ training outcomes achieved across SSW/LRF Humber and YNYER LEP combined.
60 participants on new programmes and 160 participants on components of existing programmes.	62 training outcomes using the innovation code: 16 Precision Farming. 16 Soil Management. 30 Specialist ICT.

14. **Legacy and Recommendations.**

The project facilitated the setting up of a wider more formal skills group as represented by the diagram below. This group will continue and will advise and consult on the skills needs of the sector in the future.



This group will continue to engage and inform the skills needs of the Agri-food industry in the future.

Therefore the top three successes of the project are:

- The formation of the above Agri-Food Skills Group.
- The training delivered as a result of the Training Needs Analyses.
- The development of new accredited training units in precision technology for arable farming.

Additional funding would enable the above outcomes to be further developed.

Further funding could be used to address the training needs for the following sectors and areas as identified through the Training Needs Analyses:

a. Continued development of precision technologies for crop production.
b. Precision Livestock Farming.
c. Horticulture.
d. Poultry Eggs, Broilers, Ducks, Turkeys.
e. New product development.
f. Some aspects of business management.
g. Engineering Technology.
h. Importance of good husbandry e.g. soil management, health and welfare of poultry.
i. Sustainability and environmental drivers imposed from the top of the food chain.
j. Seafood.

The other important factors are:

a. Train the Trainers – ensuring there enough trainers with the knowledge to deliver training.
b. Attract school leavers – ensuring that the food industry is seen as an attractive career option for people at all levels.
c. Attract school leavers to study STEM subjects as a vocational option.
d. Provide further technical qualifications that include innovative technologies.
e. Provide higher level skills in the management of innovative technologies.

15. References

The evidence used in this report is based on data provided by The Sector Skills Councils, the Office for National Statistics (ONS) and The UK Commission for Employment and Skills. The UK Commission for Employment and Skills is a social partnership, led by Commissioners from large and small employers, trade unions and the voluntary sector.

The Reports used are:

Strategic Economic Plan (2014): York, North Yorkshire and East Riding Enterprise Partnership.

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Manufacturing: Sector Skills Assessment 2012. UK Commission for Employment and Skills.

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Farm Management Pocketbook 2015. John Nix.

Feed Your Ambition: Skills Action Plan for the Food Supply Chain. Improve, Lantra, People 1st, DEFRA, Food and Drink Federation, IGD, skillssmart retail.

UK Skills Assessment. Lantra 2010.

Agri-Tech Skills Forum 2014.

HGCA (Home Grown Cereals Authority.

FAO (Food and Agriculture Organisation).

The Poultry Site (thepoultrysite.com).

16. Appendices

Appendix 1 Training needs analysis matrix

Appendix 2 Qualifications developed or being developed.

Appendix 3 Example of Training materials.

Appendix 4 Case Study – Andrew Manfield.

Appendix 5 Case Study – Clive Blacker.

17. <u>Signatures.</u>

Sector Lead signature

_____

Name _____

Position _____

Date _____