

# BISHOP BURTON

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*College*



## **Skills Support for the Workforce Local Response Fund**

LRF- Sector Skills GAP Group  
Skills Gap Report

Sector: Food and Agriculture



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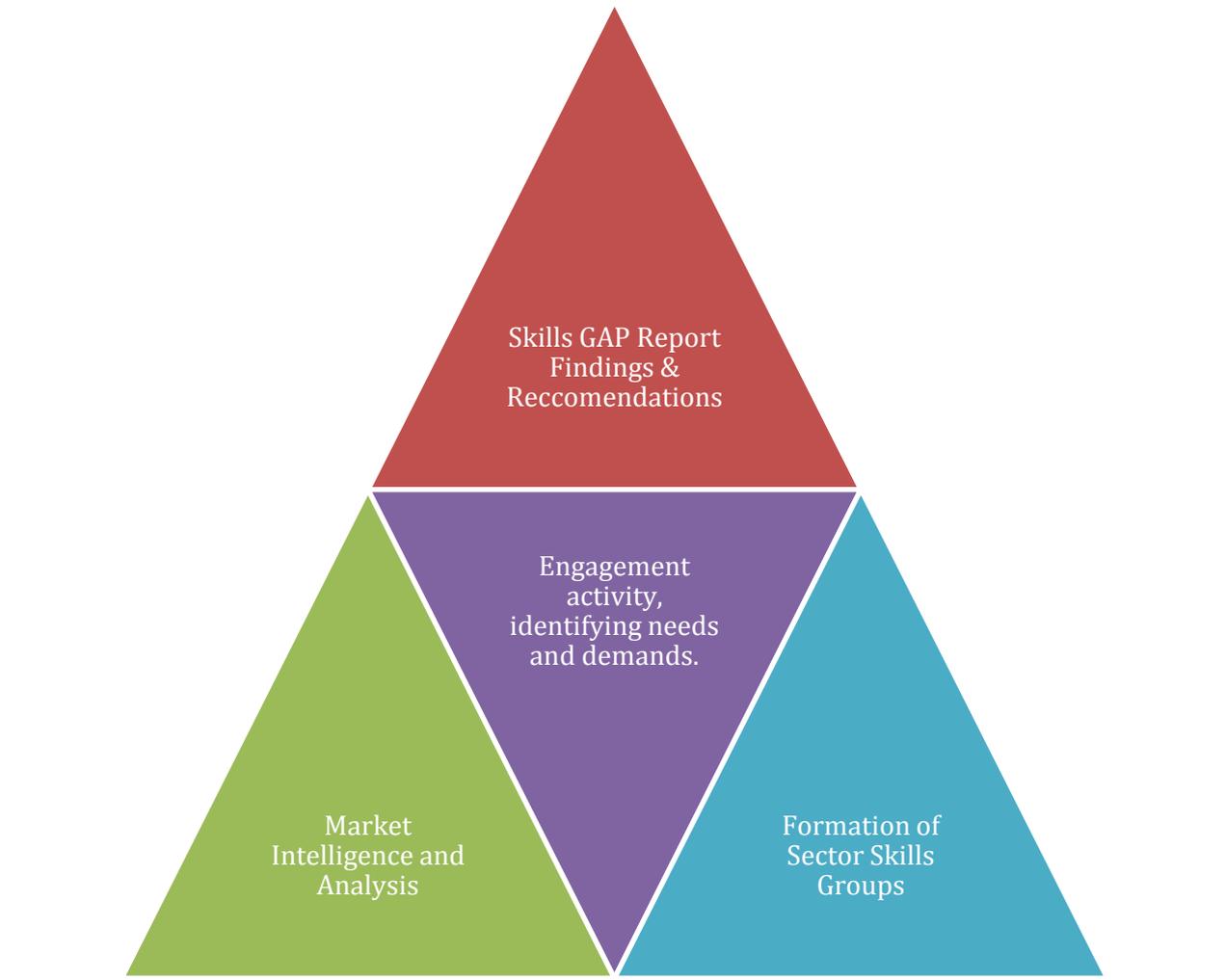
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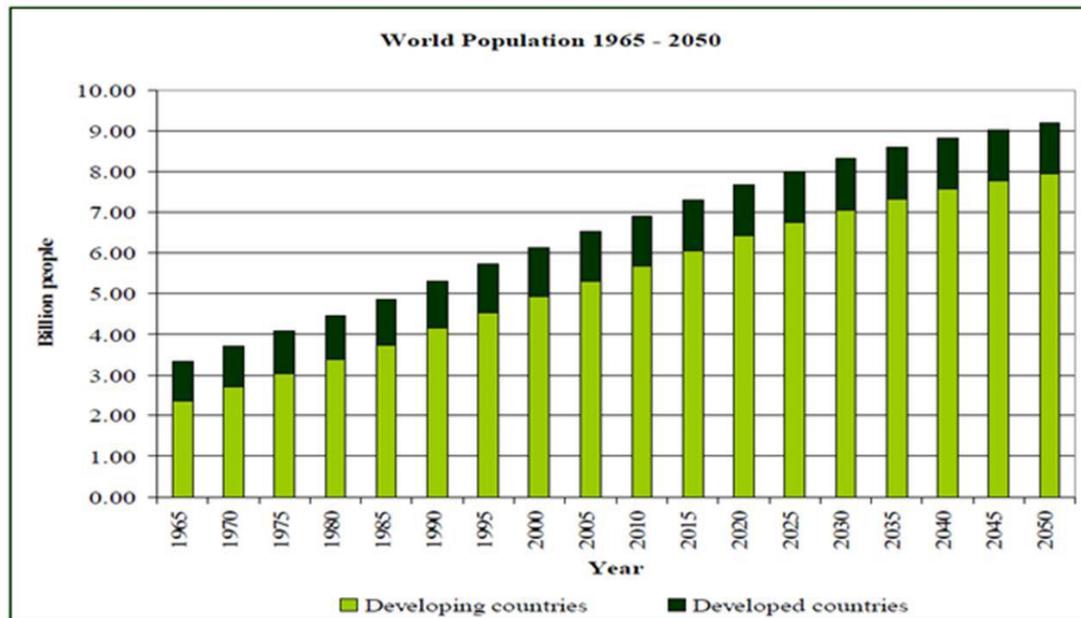
\*1 submission is required per sector if you represent multiple sectors.

## **The Sector Skills GAP Report Model**



## Background

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.

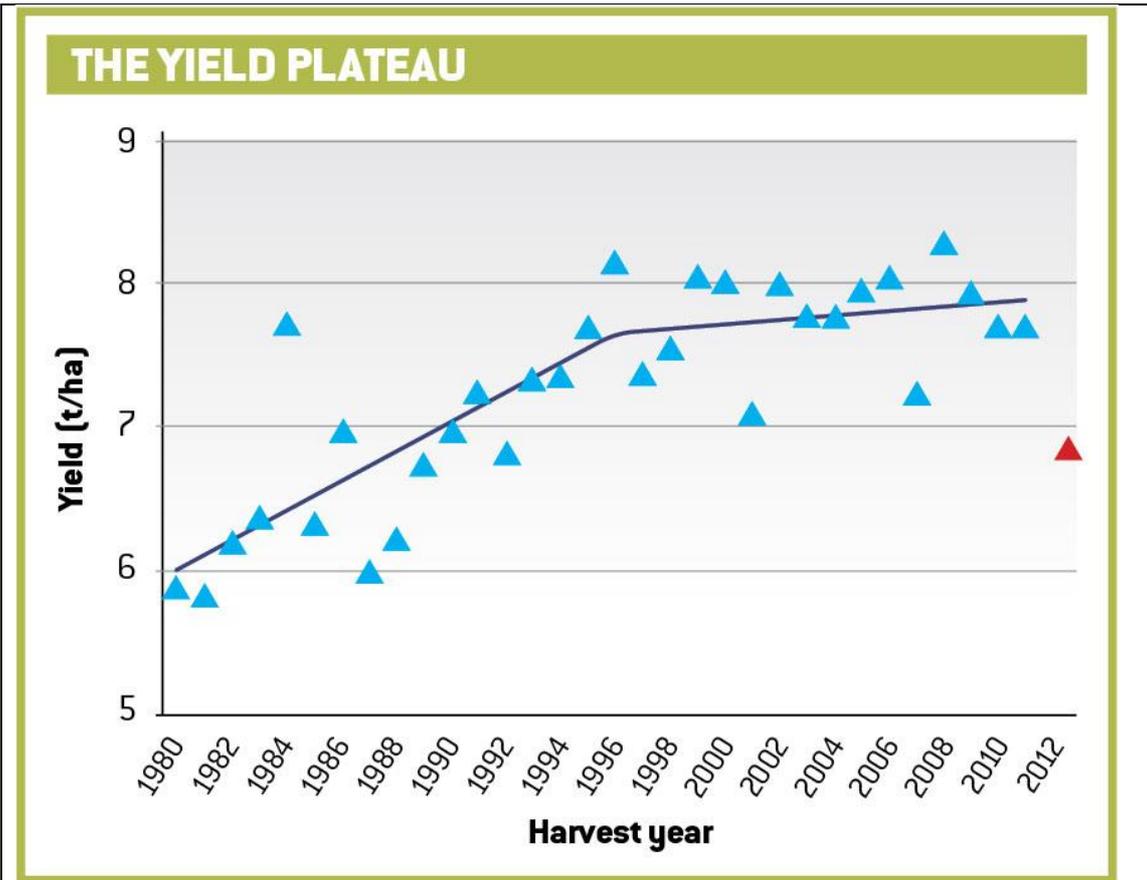
Agriculture has undergone three major episodes of evolution during its history, namely:

**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.

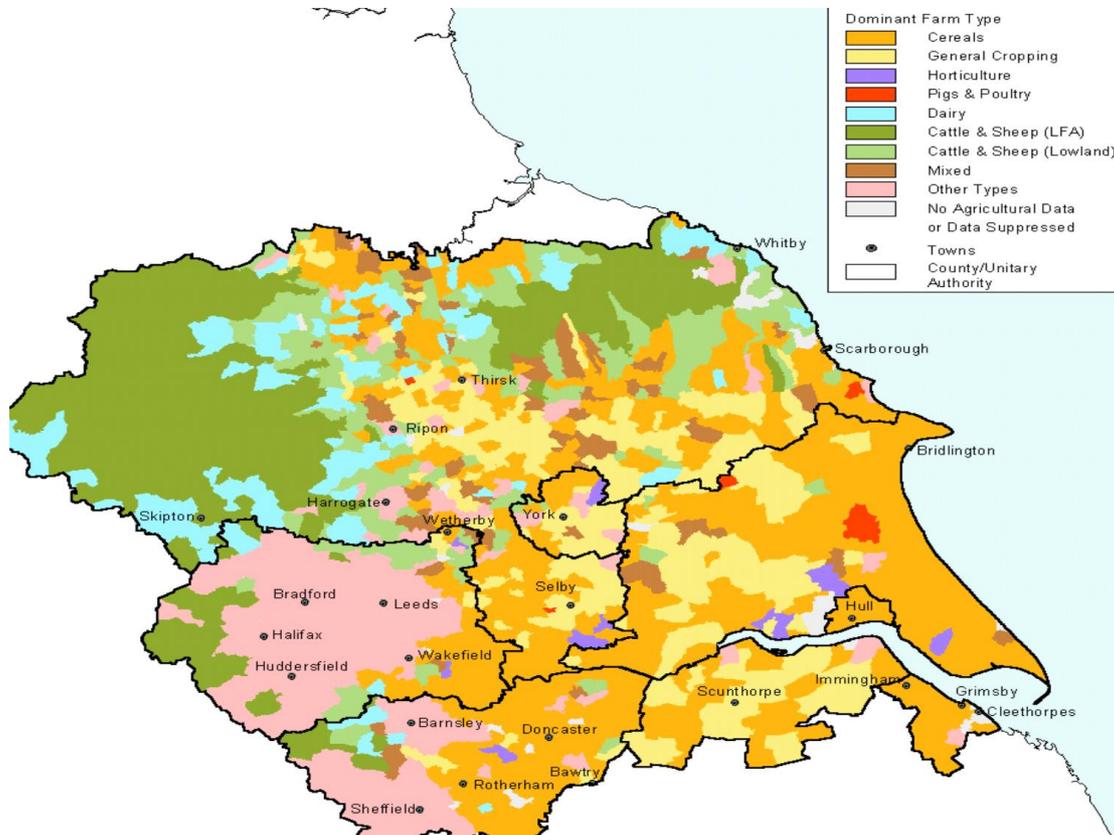
The average wheat yield for UK crops is about 8 tonnes per hectare against a world average yield is just over 3 tonnes per hectare (FAO 2013). The record UK wheat yield approaches 15 tonnes per hectare and the estimated theoretical maximum yield is about 20 tonnes per hectare.

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 starting the **Fourth Agricultural Revolution** where the above issues have to be addressed. In a competitive global economy, the food supply chain needs to be more productive, more profitable and more attractive as a career choice so that it can build on its success and take full advantage of the potential for growth. A better skills base is fundamental to ensuring the food supply system remains secure, commercially competitive, innovative, healthy and sustainable. The Humber area is a major agricultural region in the UK. The farming industry in

the North East contributes 17% of the cereal area, 36% of the pig herd, 18% of the cattle herd and 27% of the sheep flock (NFU). This can be seen in the diagram below, cereals, pigs and horticulture are very important, as well as dairy, beef, sheep and general cropping.



The Local Response Fund (LRF) supports the development of the Humber Skills GAP (Growth Action Panel) Groups. This has established 7 sector employer groups in priority sectors as defined by the Humber LEP, one of which is Food and Agriculture.

## Market Intelligence

The 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).

## **SME Skills GAP Groups**

Bishop Burton Centre for Agricultural Innovation which has 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 Humber LEP 'Agri – Food Skills GAP Group and Network' to inform on Sector specific skills shortages and guide SSW delivery.

Statistics showing perceived skills shortages do not tell the true picture of the needs of the industry as 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 Humber LEP 'Agri – Food Skills GAP Group and Network' is informing on Sector specific skills shortages and guide SSW delivery by consulting with the industry on precisely what their needs are to drive their businesses forward and become more competitive and sustainable.

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

On 3 March 2014 we had already held an event at the College 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 have planned a conference for small food producers and farm shops through the East Yorkshire Local Food Network (EYRFN) which will be held at the College.

## **Members of the Skills Group**

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.
David Farnsworth	Rural Partnership Officer (ERYCC), North Bank Partnership.
Graham Ward	East Yorkshire Local Food Network.
Hilary Hamer	Food4Hull.
James Sweeting	Lincoln and York Ltd.
David Robinson	Humber Seafood Group.
John Moore	Agrii Ltd.
Paul Rhodes	Food Chain specialist.
Stephen Noblett	Food and Drink Sector Specialist (UKTI).
Simon Herring	Piper Crisp Company.
Matthew Thompson	Grimsby Institute of Further and Higher Education.
Mark Farnsworth	Williams Farm Kitchen.
Simon Featherstone	Scarborough Council.
Lucinda Douglas	National Farmers Union (NFU).
Mark Flint	Cawkeld Farming Ltd.
Ivan Jaines-White	Grimsby Seafood Village.
Lizzie Jennings	Yorkshire Farmers.
Anthony Kitching	Birdseye Group.
Brian Wheatley	Birdseye Group.
Alastair Benson	Benson Park.
Martin Riggall	British Growers Association.
Jo Satariano	Deliciously Yorkshire.

## **Wider Group of advisers (inc. Humber Food Forum)**

Mike Parker	Marine Harvest ASA.
Helen Wright	Rural Partnership Manager (ERYCC).
Chris Howell	Hull City Council.
Andy Black	Bishop Burton College.
Grant Burton	Pig Farmer and meat processor.
Mike Risby	Federation of Small Businesses.
Andrew Hayes	Abbeydale Foods.
Joe Horsley	Three Crowns Confectionary.
Andrew Johnson	Living Salads.
Jennifer Kerfoot	Kerfoot.
Dave Park	Benson Park.
Norman Soutar	William Jackson Group.
Lindsay West	Garthwest.
James Brown	Pollybell Organic.
Martin Craven	AAK UK Ltd.
Stephen Greenfield	Sledmere Estate.

**Employers consulted through Training Needs Analysis (TNA) up to 20 March 2015.**

Morley Hackford	Morleys Butchers.
Tom Wallis	Lowna Dairy.
Caroline Sellars	Side Oven Bakery.
Patrick Crabtree	Feast Rising Bakery.
C M & W E Potter	Baldersby.
J P Coverdale	Strensall.
N Blacker & Son	Newton on Ouse.
A E Jones & Son	Baldersby.
Limebar Farm	Boroughbridge.
M Houseman & Son	Arkendale
T A Chester & Son	Ripon.
J Wilkinson & Son	Boroughbridge.
T E Wells & Son	Driffield.
R Pexton & Son	Driffield.
A N Grace	Driffield.
H S Temple & Son	Driffield.
Bossomworth & Sons	Thirsk.
Collinson Bros.	Topcliffe.
United Potato Farmers	Hutton Wandesley
J I Broadwith	Bedale.
R W Walmsley	Thirsk.
P M Rhodes	Holme on Spalding Moor.
Hutton Wandesley Farms	Long Marston.
Holme Farmed Venison Ltd	Sherburn in Elmet.
G W Parkin & Son	Bilton in Ainsty.
G D E Pick & Son	Bilton in Ainsty.
D E Byass & Son	Driffield.
Yorkwold Pigpro	Driffield.
E Bradshaw & Son	Driffield.
Eastburn Farms Ltd	Driffield.
Chippindale Goods Ltd	Flaxby.

## Findings

As initially reported in 2014 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 and 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 training that must 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 vital. 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 about engaging with 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.
- Butchery and Bakery Skills.
- Milling Technology.
- New Product Development.
- Social Media and IT Skills.

- Marketing, Buying and Pricing.
- 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 way of improving crop production and getting more from existing resources with less 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 and put the correct amount of fertilizer in 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 is 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 culmination of these techniques will enable students to gain the knowledge, understanding and experience to assist them significantly in their future career in the agricultural industry. The overall outcome being to create a system of farming that maximizes efficiency and reduces waste

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 under development 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 4/5 Foundation Degree in Precision Farming (Crop and Livestock routes).

The above are currently undergoing consultation with industry.

## Skills GAP Report Findings/ Recommendations

The skills needs requirements as identified by this project are very clear, as are the potential benefits. Using wheat as an example as 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. This must also be done through precision farming to reduce, or at least not increase inputs. As well as an increase in efficiency, there are environmental benefits through reducing environmental contamination, through for example, nitrate leaching in to watercourses.

Through the Training Needs Analyses, this project will only capture a small number of the agri-food businesses in the region but they have been selected to be representational of the whole sector in the region. Analysis of business types through the food chain, not including catering are shown as below:

Agriculture	Food Processing
<ul style="list-style-type: none"><li>• Beef</li><li>• Sheep</li><li>• Poultry</li><li>• Dairy</li><li>• Pigs</li><li>• Fish</li><li>• Cereals</li><li>• Root Crops</li><li>• Horticulture</li></ul>	<ul style="list-style-type: none"><li>• Meat and Poultry</li><li>• Dairy</li><li>• Fish and shellfish</li><li>• Milling</li><li>• Malting</li><li>• Fresh Produce</li></ul>
Food Manufacturing	Food Distribution
<ul style="list-style-type: none"><li>• Baking</li><li>• Butchery</li><li>• Brewing</li><li>• Dairy</li><li>• Drink</li><li>• Ready meals</li></ul>	<ul style="list-style-type: none"><li>• Warehousing</li><li>• Logistics</li><li>• Packaging</li><li>• Food distribution and service</li></ul>

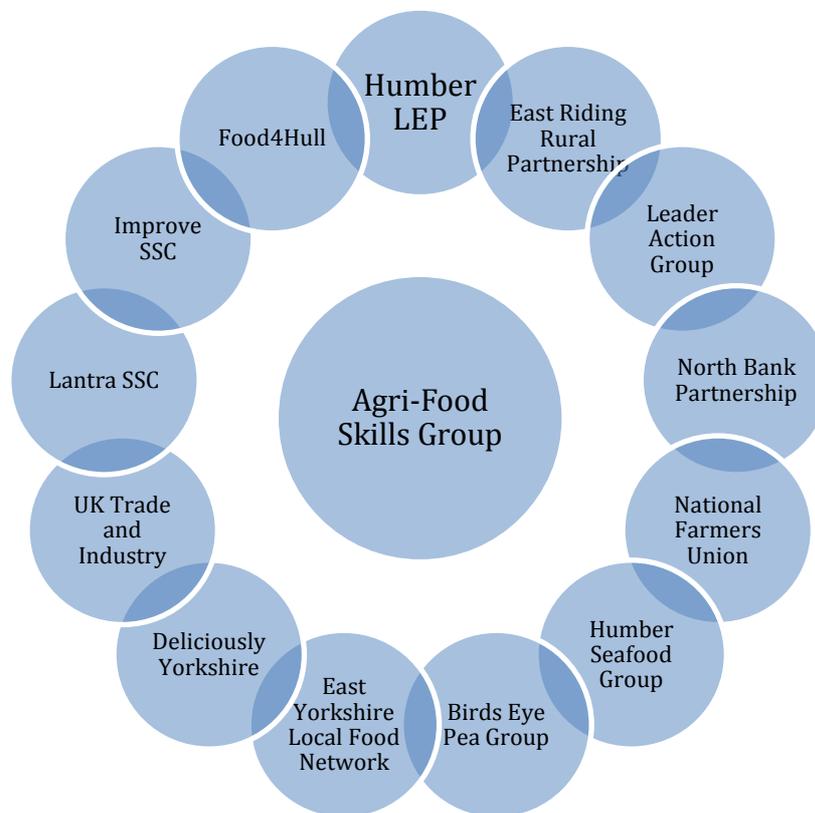
Four consultants, who are specialists in particular areas have been employed to

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 150 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 larger significant impact on business productivity, efficiency and sustainability in the region.

### Legacy

The project facilitated the setting up of a wider more formal skills group as represented by the diagram below:



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.

Additional funding would enable these significant successes to continue.

## **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:

Agriculture, Forestry and Fishing: Sector Skills Assessment 2012. UK Commission for Employment and Skills.

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

Wholesale and Retail: Sector Skills Assessment 2012. UK Commission for Employment and Skills.

The Humber Employment and Skills Strategy 2014-2020  
Towards a New Professionalism The Skills Strategy for agriculture and horticulture. Agri-Skills Strategy Group 2010.

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

UK Skills Assessment. Lantra 2010

Agri-Tech Skills Forum 2014

HGCA (Home Grown Cereals Authority).

FAO (Food and Agriculture Organisation).

Sector Lead signature

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Name

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Position

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Date

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Hull College Acceptance Signature

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