Greater Lincolnshire Agri-food Sector Plan 2014-2020

Spring 2014

Contents

1. Executive summary

The food and drink sector has grown faster than any other major industry in the UK in the last 6 years. It is the largest manufacturing industry in the country and the food chain employs over 3.6million people, generates sales of over £187billion and has a GVA of nearly £100billion.

With large future increases in global demand projected, driven both by population growth and changing diets as consumers become richer, the prospects for future sustained growth are very positive. In addition, global constraints on production, notably water, land, climate change and energy supplies will require the adoption of technology to deliver sustainable intensification: producing more whilst impacting less and using resources more efficiently.

Set against this backdrop, Greater Lincolnshire is fortunate to have the UK's largest and most progressive food sector based on clusters of dynamic businesses and well developed supply chains. The local agri-food sector is therefore truly a national leader in this growing sector.

The agricultural sector in Greater Lincolnshire is the market leader in many intensive crop and livestock product categories with 25% of vegetable production, 21% of ornamental crops, 19% of sugar beet, 17% of meat chickens, 18% of duck and 21% of turkey production. The result is that 10% of English agriculture is in the GLLEP area and GVA per employee is over £30,000 against only £18,000 nationally.

This strength in primary food production carries through into food processing with 5% of UK food processing jobs in the area, including plants belonging to many of the largest companies in the UK food sector. Built on local strengths the area is firmly established as the centre of the UK fish processing sector with 70% of the market and is at the heart of the UK fresh produce industry.

The impact of the sector on the economy is however, much wider than farming, fishing and food processing, with sectors as diverse as logistics, packaging materials, professional and businesses services all dependent on the food chain for much of their livelihood.

The food chain is estimated to generate a GVA of over £2.5bn and employs 56,000 people in the GLLEP area. If food retail and catering are included the figures rise to £3.4bn of GVA and over 100,000 jobs.

Despite these strengths the sector faces challenges including a relatively poorly developed local research infrastructure, poor road connections to priority national markets, long term challenges on water supply, an over-reliance on migrant workers and relatively low levels of investment in technology compared to some competitors. Globally, other areas which until recently did not see the agri-food sector as a priority have been increasing their investment in the sector strongly.

The Greater Lincolnshire food sector must therefore be ambitious and develop a clear strategic plan to sustain its market leading position.

The vision for the Greater Lincolnshire agri-food sector is:

The Greater Lincolnshire agri-food sector will double its contribution to the economy by 2030 through an ambitious programme of investment in productive capacity, skills and knowledge to drive an increase in high value added sales to UK and export markets

To deliver this vision the industry will, by 2020, work to:

- Reinforce its position as the national centre for commercial investment in high value agri-food production in sectors including fresh produce, fish and poultry;
- Adopt new technology and skills to deliver new product development, productivity and sustainability gains with a target to increase per employee GVA by 25% by 2020;
- Grow sector output by 30% through import substitution and export led growth.

By 2030 the sector will have:

- Doubled sector output and GVA by focusing on high value added food and drink products;
- Increased employment by over 10% and GVA per employee by over 75% by increasing the use of technology and higher level skills to service the needs of the 2030 food chain;
- Exploited direct motorway links to the Midlands, London and the South East to replace 10% of UK manufactured food imports with Lincolnshire produce;
- Trebled exports of food and drink from the GLLEP area by building on the area's ports to service priority markets in Northern Europe and emerging economies.

The delivery of the vision will be facilitated by focusing on 6 areas over the period 2014-2020:

- Developing an industry led Food Board which will strengthen industry representation, develop more detailed data on the industry and engage larger employers in the industry;
- Build on the existing clusters of companies in the GLLEP food chain and ensure that these clusters have the industrial space and support to facilitate growth;
- Developing a sector skills plan through the Lincolnshire and Rutland Employment and Skills Board and aligning skills investment with a programme to secure additional applied research projects for GLLEP agri-food companies;
- Developing and implementing a 25 year plan for water supply to support agri-food production and linking this to a GLLEP Centre of Excellence in Water Management;
- Building an economic case for investment in the strategic transport infrastructure to support agri-food sector growth, with a particular focus on road freight;
- Promoting exports and inward investment in the agri-food sector by building on the area's ports and World class food sector.

2. The Food & Drink Sector

a. Market trends

The food and drink sector has continued to grow through the recession supported by global demand growth, large rises in food prices driven by poor harvests and market concerns over food security. The view of most market commentators is that 2007/08 marked a turning point in the food and drink sector, with the long term trend to lower prices and global disinvestment in agriculture and the food sector ending and potentially starting to reverse.

Longer term trends look strong for continued growth in food and drink sector volumes and value, primarily driven by population growth, changes in the way food and drink is consumed, the products consumed[1] and the need to respond to resource constraints[2].

The food and drink sector is the UK's largest manufacturing sector, employs 3.6m people and in 2012 generated sales of £187bn and nearly £100bn of GVA[3].

Population

The UK is projected to have a growing population, unlike much of the EU, with the population projected to grow 15% over the period 2012-2037[4]. This will underpin continued volume growth in the UK food and drink sector, as statistics show that per capita food consumption is relatively stable. There was a small decline in UK average calorie consumption of -3% over the period 2002-'12, although recent years have seen this trend for a reduction in per capita consumption slowing[5]. A 15% increase in population by 2037 can thus be expected to grow the UK food and drink market by in excess of 10% (by volume).

It is more challenging to quantify the value of the future UK food and drink market given the instability in food prices since 2007/08 (after two decades of relative price stability). The big spikes in commodity prices since mid 2007 increased the value of the primary (agriculture and fishing) sector and in turn fed through into substantial retail food price inflation.

Price and global production data suggests that prices, whilst witnessing more volatility, have since 2009/10, settled at a significantly higher average level than in the previous decade. Higher prices have led to more investment in production and this has capped, at least in the short term, price rises. In the medium to long term however, the expectation is that food prices will increase given increases in global demand and increasing constraints on production.

[1] The Government Office for Science, London (2011), The Future of Food and Farming
[2] National Intelligence Council, US (2012), Global Trends 2030: Alternative World's
[3] DEFRA (2013), Agriculture in the UK 2012
[4] ONS (2013), National Population Projections, 2012-based Statistical Bulletin
[5] DEFRA (time series), Family Food Datasets

Global food and drink demand is expected to increase more than that in the UK and EU in both volume and value terms. Long term estimates of global demand suggest that by 2050 global demand will increase by at least 60% (FAO studies), with half of the growth being due to population growth and the other half due to changes in diet as wealth increases.

Eating In/Eating Out

One of the strongest long term trends in the UK food and drink market has been the gradual shift towards eating out of the home and the resultant growth in the economic importance of food service. Whilst in volume terms the majority of the food market is still focused on retail sales, the higher price per unit commanded by food service means that value has been shifting towards the sector. Immediately before the 2008 recession the GVA generated by food service briefly exceeded that generated by food retail, but then fell back sharply during the recession.

Since 2012 the food service sector has rebounded, has been growing faster than food retail and by the end of 2012 was worth £25.2bn to the UK economy, against £26.1bn for food retail[6]. Future projections show that the food service sector is predicted to continue to grow strongly as consumers eat out more formally (e.g. restaurants, pubs, hotels) and increasingly informally as they 'graze' and 'snack' as they travel around.

Key UK Food Trends

Table 1 - UK consumer consumption of key food products[7]

Product	Consumption grams/person /week 2011	% change in 3 years (2008-2011)	% change in 10 years (1997-07)
Milk & cream	1,904	-3	-5
Meat	998	0	+10
Fish	147	-9	+15
Eggs (number)	1.7	+6	-11
Fats and oils	170	-8	-11
Sugar/preserves	126	-1	-26
Vegetables	1,090	-3	+17
Fruit	1,199	+4	+20
Soft drinks (ml)	1,630	-3	+89

[6] DEFRA (2013), Agriculture in the UK 2012
[7] DEFRA (time series), Family Food datasets

This data shows that even over comparatively short timescales (a decade or less) per capita consumer demand for some products can change dramatically. The most recent data (post recession) shows some significant changes in consumption patterns with fish, vegetable and soft drinks, which had seen big increases in consumption over the decade to 2007, suffering falls in demand since the recession began. In contrast egg consumption has increased following over 30years of decline. Other work by the Institute for Fiscal Studies has concluded that the recession led to consumers seeking cheaper nutrition and increased demand for eating out and snacks[8]. Clearly the market can thus be expected to continue to change.

The main anticipated trends in UK food and drink consumption are expected to include both continued changes in the basic products consumed and how they are sourced. Whilst the trends for particular products are driven by lifestyle choices, fashion, changing messaging (e.g. on health) and campaigns, consumer research studies are suggesting that a number of key generic trends may be important in the food chain in the next decade and beyond:

- **Convenience** - with more consumers seeking to purchase added value products which are easy to consume, cook with, or prepare to help them cope with busy lives;
- **On the Move** - as consumers eat outside the home more as they travel, at work, or as part of leisure spending;
- **Innovation** - is expected to continue as consumers increasingly seek new products and experiences - the Food and Drink Federation have reported that NPD in the sector was the highest ever in 2012 with 8,500 new product launches;
- **Health/good for you food** - is projected to continue to grow in importance as the demand for functional food grows. The market will favour both naturally good for you foods (e.g. fruit, salad, vegetables or low sugar, fat, salt products) as well as fortified foods;
- **Food Provenance** - is a growing trend as consumers become increasingly interested in where and how their food is produced;
- **Sustainability and ethics** - with consumer interest in the impact their choices have on the environmental, working conditions and animals all increasing steadily. Research suggests consumers want to know more about how their food is produced and will use this information to make purchasing decisions.

An additional challenge to the food sector is the increasing fragmentation of markets. Consumers are interested in new products and experiences and demand constant innovation from their suppliers. The food industry has responded with new product development accelerating and product life cycles becoming shorter, but this puts additional strain on margins as development, reformulation and re-launch costs escalate.

[8] IFS (2013), Long term decline in calorie purchases despite increase in calories from eating out, snacks & soft drink

b. Food Trade

The UK has a thriving food and drink trade with the rest of the World. Data shows that over the period 2008-12[9]:

- **food imports** rose 5% from £35.8bn to £37.6bn and represented a consistent 9.2% of total UK imports;
- **food exports** rose by 21% from £15bn to £18.2bn and grew their share of total UK exports from 5.3% to 6.1%.

The food trade gap has thus begun to close in recent years although the weakness of the £ is believed to be a key factor which may not be sustained. To support this positive trend industry and government has jointly identified the potential to go further in closing the trade gap in food and drink and, in 2013, published an action plan to increase food and drink exports[10], with growing markets such as the demand for pig meat in China being identified as prime targets.

As well as increasing exports, statistics suggests that there is considerable scope for import substitution in crops in which Lincolnshire specializes, where UK self sufficiency has declined.

This focus on import substitution was reinforced at the 2014 Oxford Farming Conference by DEFRA Secretary of State Owen Paterson who stated that[11]:

> We have a top-class fruit and veg sector which produces everything from green beans to strawberries, yet we imported £8 billion of fruit and veg in 2012 ……. This is a huge opportunity, and it's up to all of us – farmers, food manufacturers and government – to take action. By buying seasonal fruit and veg we can improve the nation's health, help the environment and boost the economy.

The UK has one of the most sophisticated food chains in the World and has led the development of traceability. Given the growing interest in provenance globally, concerns over food safety (notably following food scares such as the EU horsemeat scandal in 2013) and consumer interest in knowing how food is produced, our well established quality and audit systems should help the UK to compete globally.

Across the World developing nations are adopting more westernized diets, with a growing focus on added value, processed, convenience, protein rich foods and premium food and drink products. With leading companies which already have suitable products to meet this growing demand the potential for further growth in UK exports looks good unless macro-economic factors, such as the exchange rate, makes UK exports less competitive.

[9] DERFA (2013), Agriculture in the UK 2012
[10] UKTI, DEFRA (2013), UK Food and Drink - International Action Plan
[11] Owen Paterson MP, Defra Secretary of State (2014), Speech to Oxford Farming Conference

c. Supply Chains

The agri-food supply chain is increasingly complex and most products are owned by several businesses between primary production on the farm and the final consumer. Whilst some of these post farmgate product 'owners' physically change the product through processing, others specialize in distribution, wholesaling and marketing.

The long term trend has been for more of the value in the food chain to be concentrated beyond the farmgate, with typically £4 of GVA generated by food processing, wholesaling and distribution and £5 by food retailing and catering for every £1 generated on farm (DEFRA 2013[12]). With value concentrated beyond the farm gate, supply chain relationships and efficiency are of growing importance. Noticeably, since the food price spike in 2007/08, countries (e.g. China) and major food companies (e.g. processors and supermarkets), have been seeking to forge closer supply chain partnerships to secure their future food supplies.

The large rise in agricultural prices since the food price spikes in 2007/08 has led to a big rise in agricultural GVA, which is up +65% over the period 2006-12 (DEFRA 2013). Food retailing also coped comparatively well with the recession and its GVA is up +25% over the period 2006-'11 as consumers began to cook more meals at home.

In contrast the food service (catering) sector was badly affected by the recession and saw its GVA fall during the recession by about 5%. However, data suggests it has now started to recover strongly (up +25% in just 2 years over 2009-'11) with its current growth rate suggesting it will exceed the GVA generated by food retailing by 2015.

Looking forward, economic growth can be expected to continue to lead to value creation beyond the farmgate and a tendency for consumers to increase their spending on eating out and convenience purchases at a faster rate than their spending on food for use in the home. Whilst in volume terms the retail market will remain important, the long term prognosis is for food service to grow strongly and it is therefore important to target this market as well as retail.

Logistics is an important part of the food supply chain, with nationally 28% of all road freight generated by the sector[13]. The growth of global supply chains and increases in online shopping are both, in different ways, creating significant changes to logistic demands.

d. Employment and Technology

The food chain is the largest industry in the UK and globally in terms of employment. In total the UK food chain employs 3.6m people and most jobs are beyond the farmgate.

[12] DEFRA (2013), Agriculture in the UK 2012
[13] DFT (2010), Transport Statistics Bulletin: Road Freight Statistics 2009

National data shows that different jobs in the food chain on average generate very different levels of GVA, with food processing, wholesaling and logistics generating more than double the GVA per job of agriculture, food retailing and catering across the UK food sector.

However, the national data on GVA in agricultural jobs needs to be treated with caution as this includes all types of agriculture from capital intensive glasshouse, intensive livestock production and arable to extensive grazing livestock in the hills. Automation, innovation and efficiency drivers are all leading to more efficient labour utilization and this is now being encouraged by new strategies[14] and funding directed at accelerating translational and applied research[15].

At £65,000 GVA per job[16] food processing creates high value jobs and most data suggests this will continue to grow as the sector adopts more automation and higher skilled work. Across both agriculture and the food sector the development of 'big data' will also create new demands for highly skilled analysts, but should create more precision and better management decisions.

The agricultural workforce had been in long term decline until 2007/08, but the recent increase in demand has arrested this decline, with small increases in the workforce being seen since 2009 (DEFRA Agriculture in the UK time series).

Food processing saw a large fall in employment until 2007 since when numbers have stabilized, with the most recent data (2012) showing a modest rise across the UK. However, as with agriculture the skill levels required are increasing rapidly and GVA per capita in modern food processing is now comparable to other high tech manufacturing. With increasing demand for convenience foods, added value products and innovation this will continue.

The food chain has become very reliant on migrant labour and, whereas in the 1980s migrants tended to be employed at peak times of the year only, many of them are now working in the industry long term and in supervisory roles. Whilst this has allowed the industry to secure employees, there is concern within the industry that the supply of highly skilled migrants cannot be guaranteed given changing political and economic conditions. A number of initiatives have therefore been launched to try to attract more UK residents to the industry.

e. Resource Use

Resource pressures in the food chain have been increasing and future projections show this continuing with the increased global demand for food (estimated at +50% by 2030) matched with increased demand for water, +30% by 2030, and energy, +45% by 2030[17].

[14] BIS, DEFRA, DfID (2013), A UK Strategy for Agricultural Technologies
[15] EU (2013), Horizon 2020: EIP Sustainable Agriculture (and other themes)
[16] DEFRA (2013), Agriculture in the UK 2012
[17] Beddington Professor Sir John, Government Office for Science

The UK food chain is amongst the most sustainable in the World on some measures with, for example, water use in primary agriculture much lower per tonne of marketable product than other countries. Globally current projections suggest that 47% of the world's population will be living in areas of high water stress by 2030[18]. If water supplies for food production are secured in the UK this will therefore deliver a long term competitive advantage to the UK agri-food sector.

In the UK protein supplies and nutrient costs have also risen strongly as global supplies are constrained and demand rises.

These pressures are leading to new programmes led by the industry focused on addressing these pressures such as:

- Pepsico's '50 in 5' programme, which aims to reduce the water footprint and carbon emissions of its food chain by 50% in 5 years[19];
- The Food and Drink Federation Federation House Commitment which covers 42 major food and drink companies achieved a 5.6% reduction in their water use in its first year (2010), despite production increasing by 4.2%[20];
- Agricultural and Horticultural Development Board (ADHB) environmental roadmaps[21].

f. Conclusions on the UK Food and Drink Sector

The UK food and drink sector is a dynamic fast moving industry, the largest manufacturing sector in the UK and one with excellent long term growth potential. The key factors which are driving change in the industry are the:

- major projected increases in global food demand by 2030 and beyond, allied to continuing changes in the food and drink products demanded by consumers;
- growth in global food trade with potential in the UK to deliver strong export led growth by targeting growing global affluence and rising food demand;
- growing focus on delivering efficiency along the whole supply chain through collaboration, waste reduction strategies and improved information flows;
- rapid adoption of technology which is creating demand for higher skill levels and the need to attract motivated, highly educated staff into the industry;
- need to embrace sustainability as resource costs increase and the demands from consumers and policy makers increase.

[18] Seimens (2011), Top 5 tips to reduce your manufacturing water footprint
[19] Pepsico (2014), http://www.pepsico.co.uk/purpose/environmental-sustainability/agriculture
[20] Waste and Resources Action Programme (WRAP) and Food and Drink Federation (FDF), (2010), The Federation House Commitment Progress Report 2010
[21] AHDB (2014), http://www.ahdb.org.uk/projects/GreenhouseGasActionPlan.aspx

3. Greater Lincolnshire

a. Industry

Greater Lincolnshire has high rates of employment, although GVA per job, at £15,600, lags the national average of £21,400[22]. Whilst GLLEP's GVA per employee has been growing so has the gap compared to the rest of the UK, thus creating a need to focus on high value job creation.

Qualification levels in the adult workforce are a constraint on growth despite above average school performance. 27% of the GLLEP workforce have no qualifications (national average 23%) and only 20% are qualified to Level 4 and above (national average 27%) (GLLEP 2013).

As a large rural county, logistics and infrastructure can be challenging, particularly in the less densely populated and peripheral areas. Whilst North Lincolnshire has good road access onto the national motorway system via the M180 and the far west of the county has access to the A1 (which just skirts the county), the Centre, South and East of the county suffers from a lack of dual carriageway access which means slow speeds and long journey times.

GLLEP has the UK's largest port by volume with 57.2million tonnes of cargo handled at Immingham and Grimsby in 2011 (GLLEP 2013). An estimated 360,000 HGV loads of food produce leave South Lincolnshire every year.

GLLEP has a higher concentration of manufacturing jobs than found in the national workforce with manufacturing representing 16% of the workforce including 7% in food processing. This is much higher than the national total of only 1.4% for food processing, demonstrating the very high location quotient for food processing in the area.

The emerging GLLEP Strategic Economic Plan (SEP) identifies five priorities (GLLEP 2013, abridged):

- to drive the growth of its three defining and strongest sectors in which it has comparative advantage: agri-food, manufacturing, visitor economy;
- to grow specific opportunities including: care sector, low carbon economy, ports and logistics, SMEs and foreign owned companies;
- supporting skills, new markets, digital access and infrastructure;
- connectivity to markets in the UK and overseas and to build on heritage, culture and strong communities;
- housing growth balanced with economic growth.

The GLLEP SEP also states that: our vision is that we will have a 'World class food production and manufacturing sector recognized for their contribution to the UK'

[22] GLLEP (2013), The Greater Lincolnshire Local Enterprise Partnership Strategic Economic Plan

b. The Greater Lincolnshire Food Sector

i. Physical attributes

The GLLEP area is one of the most productive agricultural areas in the UK with ¼ of the country's grade 1 land being located in the area - this land is suitable for many different crops including high value vegetables, salads, ornamentals and potatoes. The landscape is also flat or gently rolling which makes it ideally suited to high value crop production.

This concentration of high quality land and a benign climate has led to Lincolnshire having one of the largest concentrations of intensive crops and associated food processing in the country.

In the North of the area, Grimsby with its fishing heritage has developed into the UK's largest fish processing centre. Coupled to the UK's largest port at Immingham this coastal location within the Humber estuary has also led to the development of the UK's largest cold storage cluster. The West (A1) and North of the area (A180/M180) have excellent physical connections to the main markets in the UK and with ports at Immingham, Boston and Sutton Bridge linking the area to the continent and beyond to support a thriving trade in food and drink products.

ii. Industry Overview

The Greater Lincolnshire food sector is a national leader amongst LEP areas. The food sector in Greater Lincolnshire has strengths in all parts of the supply chain from input suppliers, via farmers and fisheries, to food processors, logistics and marketing. The GLLEP area contains sites operated by, or the headquarters of, many of the UK's largest agri-food companies (see annex for list). When combined with the large number of SMEs in the industry this gives the sector depth, breadth and a significant role in both the UK and international food sector.

The food chain is the largest industry in the GLLEP area, but in recent years it has become quite dependent on migrant labour to meet its labour and skill needs, particularly in the South of the area. This is a strategic weakness given the improving economic conditions in the countries from which most migrants have been drawn and the changing political position on migration.

The Lincolnshire food and farming sector is amongst the most progressive and automated in the UK with large modern businesses. However, in food processing the UK is lagging behind some other countries with a report by the International Federation of Robotics (IFR, 2011) finding that the UK only had 779 robot installations in the food industry compared to 5,708 in Germany[23].

In common with other areas most local agri-food companies have relatively poor connectivity with publicly funded R&D, despite the UK government investing £450m per annum[24]. As new product development, production efficiency and sustainability all increase in importance the lack of a major national research facility in the area is a weakness. Whilst the area has some centres of innovation none are recognized and funded as major national facilities.

[23] Food and Drink Federation (2014), Key Innovation Challenges for the Food and Drink Industry
[24] BIS, DEFRA, DfID (2013), A UK Strategy for Agricultural Technologies

iii. Agriculture

With the exception of dairy the GLLEP area is strong in all the main product categories with nationally significant production of vegetables (25% of the national crop), wheat (12% of the national crop), ornamentals (21% of the national crop), break crops (e.g. 19% of the sugar beet) and substantial poultry (17% of broilers, 18% of ducks, 21% turkeys) and meat production[25].

As shown in the table below Greater Lincolnshire is a very significant agricultural area for England with approximately 10% of the country's agricultural output by value. The agricultural sector is also more balanced than many believe and, whilst arable and horticulture are both very important with 11.6% and 15.4% respectively of national output in the area, over a third of agricultural output in the LEP area is generated by livestock enterprises given the strong presence of intensive poultry production locally.

Table 2 - Value of the Greater Lincolnshire Primary Agriculture Sector 2011/12

	£m of output average of 2011 & 2012 crop years		% of England total output
Arable, of which:		551	11.6%
Wheat	239		
OSR	107		
Potatoes	67		
Other crops	138		
Horticulture, of which:		409	15.4%
Vegetables and salad	218		
Ornamentals	125		
Other crops	66		
Livestock, of which:		506	6.8%
Pigs	55		
Poultry	398		
Other livestock	53		
Total Agricultural Output		£1,466m	9.9%

Estimated values based on: DEFRA (2013), Agriculture in the UK and county level datasets for agricultural enterprises

N.B. The data has been averaged for 2011 and 2012 due to the severe weather in 2012 which produced major variations in the output of some agricultural enterprises

[25] DEFRA (2013), Agriculture in the UK 2012

The sector employed 14,552 people in 2010[26] which showed a small rise on the figures in 2009. This small rise in employment has been seen across the UK since 2008 and represents a change to the long term decline since the 1960s.

Agriculture is relatively immobile as a land based enterprise and Lincolnshire with its good soils and climate is a key attraction and crops such as cereals will remain a mainstay of the local farming economy. However, even in agriculture, making the county attractive for investors is important particularly as supply chains become more complex, business scale increase and value is added beyond the growing process on farm. With an increasing number of large businesses in the sector, often with multiple sites across the UK or globally, Lincolnshire agriculture needs to compete with other areas of the World for investment.

One example would be in glasshouse production, where the last 10 years has seen the fortunes of the sector transformed as new sustainable heating systems have been incentivized (either using biomass or 'waste' heat from power plants, factories etc.). These new glasshouse units are much larger than traditional units, often backed by external finance and are being located strategically to access road infrastructure and sources of cost effective heating. The need to compete would be similar for poultry units and vegetable production.

Figures for GVA at the local spatial level lag behind output data, but based on 2010 data when the GLLEP area generated 7.1% of English agricultural GVA[27] and an estimated England GVA for farming of £6,282m in 2012[28], it is estimated that Lincolnshire agriculture generated GVA of £446m in 2012.

In GLLEP the focus on intensive crops, livestock and large modern arable generates a larger GVA per job than for agriculture nationally. Data from DEFRA suggests that Lincolnshire[29] creates a GVA per capita in agriculture of £30,600[30] against a UK figure of only £18,300[31].

iv. Food Processing

The food processing and wholesale sector in GLLEP is a large and progressive industry. The sector employs just under 20,000 in food processing (4.9% of the UK total) and 8,000 in food wholesale (4.1% of the UK total)[32]. Based on these figures the sector is estimated to be worth a GVA of £1,294m for food processing and £377m for food wholesale. GVA per capita is much higher in the food processing and wholesaling sector than for agriculture and based on the data above is estimated at £59,600 per employee.

[26] DEFRA (2011), Structure of the Agricultural Industry In England and the UK at June: other English results by geographic region: county/unitary authority 2010 (NB this is the most recent dataset yet published)
[27] DEFRA (2012), Summary measures for the aggregate agricultural accounts by NUTS3 region in England
[28] DEFRA (2013), Agriculture in the UK 2012
[29] DEFRA (2011), Structure of the Agricultural Industry In England and the UK at June: other English results by geographic region: county/unitary authority; 2010
[30] DEFRA (2012), Summary measures for the aggregate agricultural accounts by NUTS3 region in England
[31] DEFRA (2013), Agriculture in the UK 2012
[32] University of Lincoln, Rose Regeneration (2012), Learning from Our Place in the Global Economy - Final Report

v. Clusters

Greater Lincolnshire has a diverse and geographically dispersed agri-food industry with all districts having significant employment in the food chain and associated industries. However, there are two geographic larger clusters of national significance which provide depth and breadth of expertise in two contrasting sub-sectors:

- a seafood and food cluster centred on the Humber estuary (the Humber area has a broader food processing sector including bakery and other manufactured foods);
- a fresh produce and processed food cluster centred in South Holland and Boston.

Both clusters are long established and build on many decades of tradition, clusters of business activity and in more recent years emerging centres of skills, business and technical support. Despite the strength of both clusters, continual change in the food sector is creating new challenges which they need to respond to and recent years have seen substantial structural changes in the industry.

In addition to these geographic focused clusters two other clusters are significant in Lincolnshire although these are more dispersed across the GLLEP area:

- poultry production with the GLLEP area having approximately 15% of poultry production by value in the area;
- arable production with the GLLEP area having approximately just under 9% of UK production (10% of English production) in the LEP area.

Humber Seafood and Food Cluster

The Humberside cluster is a long established cluster stretching back over 150 years when the arrival of the railways made the Humber estuary much more accessible as a distribution site for fish to serve the major cities in the UK. In recent years the demand for fish had been increasing until 2007 with per capita consumption rising by 15% between 1997-'07, but much of this gain has been lost in the recession with consumption falling back by over 10% by 2012[33]. Ready meals, which account for about one third of purchases were in contrast up by 4.5% over 2009-'12. Purchases of salmon have been stable, whilst herring and other blue fish show a downward trend from 2009.

The Humber Seafood cluster won the national Cluster award in 2010 in recognition of its strong cluster of companies and support services. It is the largest seafood processing centre in the UK, although the data on the cluster is not comprehensive or consistent.

National data from Seafish suggests Grimsby's dominance is being challenged by Grampian (due partly to the increasing relative importance of Salmon processing)[34]. However the data in this report is disputed and local intelligence on the industry suggests it is still the largest in

[33] DEFRA (2013), Family Food 2012
[34] ADAS, University of Lincoln (2012), Opportunities for the Greater Lincolnshire Supply Chains - Final Report, GLLEP

Europe with 70% of UK fish processing located in the area. The sector in Humberside imports large quantities of fish, most of which are from outside the UK and Europe, including fish imports of £283m from Iceland in the latest full year[35]. Recent years have also seen an increase in exotic fish being imported from, for example, Indonesia to supply new niches in the market.

The UK sea food processing sector has struggled in recent years with national employment falling by 47% between 2000 and 2012 to just under 12,000 FTEs. This decline has continued since 2010 with a 17% fall in employment over the 2010-'12 period[36].

Nationally the decline in workforce has been particularly marked for primary processing (basic initial processing) where numbers declined by 29% over the 2010'-12 period compared with the 6% decline in those employed in secondary processing units (added value processing). Secondary processing sites also tend to be larger with an average size of 182 FTEs. In Humberside there has, however, been a trend for mixed units to move entirely over to secondary processing and this should help to protect the area from further consolidation, given the better market dynamics for more highly processed fish.

The Humberside seafood cluster is well supported by active trade bodies and local initiatives including:

- Seafish Industry Authority (Seafish) which has 2 main offices in Edinburgh and Grimsby. The Grimsby office houses the departments of Marine Services, Kingfisher, Regulation, Standards and Training, Information Services and Support, and Market Insight;
- The Grimsby Seafood Village which has created 20 modern serviced fish processing units for smaller companies;
- Grimsby Fish Market and Grimsby Fish Merchants Association which has 85 full members and 23 associates. Its members include both small local companies as well as some of the largest companies in the industry and its members collectively employ 2,500 people;
- Sea Food Training Academy which is approved by the National Skills Academy for Food and Drink Manufacturing as the national champion for the sea food industry. It is a partnership between Grimbsy Institute of Further and Higher Education, 4 other national fisheries training centres and Seafish;
- Humber Seafood Institute which provides serviced office space, meeting and seminar rooms, product development kitchens, laboratories and refrigeration services;
- Specialist consultancies such as Seafox Management Consultants.

The cluster does face challenges with recruiting new employees and needs to continue to diversify. Export potential is also thought to be important as the demand for specialist and added value products grows. It is also important to recognize that other countries are keen to develop their fish processing sector and this means that the industry needs to continue to

[35] Norton S (2014), Grimsby Fish Merchants Association Limited (pers. comm.)
[36] Curtis H, Barr R (2012), Seafish - 2012 Survey of the UK Seafood Processing Industry

invest. In 2015 the cluster will host the World Sea Food Congress and runs the annual UK Seafish Humber Seafood Summit.

The broader food sector in North Lincolnshire is also important and includes major manufacturers who are important in other processed foods including 2 Sisters, New Primebake (Bakkavor), Country Style Foods, Daniels Group and Golden Wonder.

Fresh Produce and Food Processing Cluster

The fresh produce and food processing cluster is in an area bounded by Grantham, Sleaford, Holbeach and Boston and centred on Spalding, although several companies lie outside this immediate area. The relatively dispersed nature of the cluster is the result of a strong historic production base across the whole of Southern Lincolnshire on the primarily grade 1 silt farmland found in this area - the largest area of such land in the UK.

The cluster contains a diversity of companies from small local businesses to major national and international companies including Bakkavor, Greencore, HMC and QV Foods, Kerry Group, Mc Cains Foods (GB) Ltd, Moy Park, Princes, Produce World, Staples Vegetables and Univeg UK Ltd (see annex for more details).

The cluster is also a centre for food logistics with one of the largest UK food logistics businesses, Fowler Welch, having its headquarters in Spalding, with reports suggesting that 360,000 lorry loads of food related freight leave the area every year for national and international markets.

As well as a food cluster, the South Lincolnshire area is also the leading area nationally for the production of ornamentals with a particularly strong cut flower and bulb sector, with over 1/5th of national production in the GLLEP area. This sector has seen strong market growth over the last 20 years, but is still primarily supplied by imports despite many of the main species being suitable for UK production. The Spalding area is also a major trading area for the UK ornamentals sector.

The cluster also contains a number of centres which support the industry:

- The Holbeach Campus of the University of Lincoln which incorporates the National Centre for Food Manufacturing (NCFM). This site hosts a number of other trade and industry bodies including the Processing and Packaging Machinery Association (PPMA) and has strong industry links. It offers a range of FD, BSc and post graduate programmes as well as a wide range of industry short courses, consultancy and research services;
- Sutton Bridge Crop Storage Research (SBCSR) is owned by AHDB and operated by the Potato Council to conduct research into potato storage;
- Spalding Auction - which runs auctions for fruit, vegetables, plants and flowers 3 days per week.

A further specialist facility, Kirton HRI, was closed in 2009 following problems in securing sufficient government and industry research to sustain the facility.

Over 1/3rd of UK fresh produce is grown in Lincolnshire and the neighbouring counties of Cambridgeshire, Norfolk and Suffolk making South Lincolnshire the centre of the UK Fresh Produce industry. With a farmgate value of £1.1bn this cluster is estimated to generate a further £3billion of added value through food processing, marketing and logistics.

Poultry Sector Cluster

The poultry sector is a significant sector in the GLLEP area with major national or international companies including Bernard Matthews, Cherry Valley and Moy Park having a major presence in the GLLEP and Cherry Valley being based there. The local poultry sector was worth an estimated 15% of UK poultry sector in 2012[37]. In total there are over 160 farms with poultry in the GLLEP area. The poultry cluster is also a significant part of food processing in Lincolnshire.

As well as poultry and processed poultry products, in Cherry Valley, the GLLEP area has a major international technology company which is the global leader in duck genetics.

The poultry sector is very strong in the adjacent New Anglia LEP area and a cluster developed across these two LEP areas would cover an estimated 63% of English turkey production, 62% of English duck production and 32% of English broiler production (DEFRA 2010).

The poultry sector though has a relatively weak support structure with no nationally significant research or skills provision in the GLLEP and only one, Poultec Training (in Norfolk) across the wider GLLEP and New Anglia areas. The poultry sector is more self reliant in investment in research than other sectors, but given the increase in industry responsive funding this makes the sector one which could readily begin to access more support. Developing a GLLEP poultry cluster programme should thus be considered in conjunction with the New Anglia LEP area.

Arable Sector

The arable sector is important to the GLLEP agri-food sector with over half of total crop value being in the arable sector. However, these crops are grown much more widely across the country and therefore the local arable sector is not as significant in national terms as the fish, poultry or fresh produce clusters. The arable sector also has less significance to the food processing sector locally, as many of the major food sector users of the arable sector's core products are based in other areas (e.g. mills, bakery and related food processors).

The poultry sector is a major buyer of feed grain and therefore the arable and poultry sectors are closely linked. Between 40 and 65% of poultry output value is accounted for by food costs depending on the type of poultry production [38] and, thus with an estimated £398m of poultry output on GLLEP farms, the feed bill is in excess of £200m, with wheat the largest component.

[37] DEFRA (2013), Agriculture in the UK 2012
[38] Nix J (2011), Farm Management Pocketbook - 41st Edition

Despite some major arable sector supply chain companies in the GLLEP area including Frontier, Gleadell, Limagrain, Openfield, Woldmarsh (see annex for details), the area needs to work with other areas to develop a nationally significant arable cluster. If the arable sector is considered across GLLEP and the Eastern England, Lincolnshire is part of the national centre for major arable crops including cereals, sugar beet, oilseed rape and other crops. A cluster developed across this wider geography and including major research centres such as NIAB and the John Innes Centre is viable and attractive as a driver of inward investment and applied research.

vi. Wider food sector

Logistics

The Agri-food supply chain is a major user of transport and logistics services, with national data suggesting that 28% by volume of all road freight relates to the food chain[39]. In the LEP area four clusters of logistics employment are particularly significant in Boston (610 employees), South Holland (1,930 employees), N Lincolnshire (3,277 employees) and NE Lincolnshire (4,015 employees)[40]. In the North of the area logistics strength is supported by one of the largest concentrations of food storage and freezing facilities in the World.

Whilst in Boston, N and NE Lincolnshire employment in logistics over the period 2008-'08 was stable, that in South Holland rose by nearly 500 employees (+34%) (CMI 2012). The Boston and South Holland logistics sector is closely linked to the agri-food sector and is a nationally significant location for food chain logistics for both UK and imported products. In the North, whilst other sectors such as chemicals also support the logistics sector, the concentration of food companies in the area is a major user of road haulage.

Local area data for GVA in logistics is unavailable, but based on estimates of the proportion of road freight locally in the two main clusters which relates to agri-food and employment in other parts of the GLLEP area the following estimates can be made:

- Boston and South Holland - 75% of road freight related to agri-food = 1,905 jobs
- North and North East Lincolnshire - 50% of road freight related to agri-food = 3,646 jobs
- Other GLLEP areas = 500 jobs
- Total estimated GLLEP area jobs in agri-food logistics = circa 6,000 jobs

Nationally the sector employs 280,000 and thus based on 2.1% of the sector workforce the estimated GVA of agri-food related logistics in the GLLEP area is £238m.

Input supplies

The inputs sector is a major part of the agri-food chain with products from fertilizers, sprays and seeds on farm to packaging and labels in the food sector. All businesses in the chain are

[39] DFT (2010), Transport Statistics Bulletin: Road Freight Statistics 2009
[40] CMI International, Rose Regeneration (2012), Opportunities for Investment within the Greater Lincolnshire Traditional Industries

also major users of oil, gas and energy supplies. Yara, one of the UK's largest fertilizer companies has its headquarters at Immingham.

Nationally (UK) DEFRA[41] estimates that input suppliers (agricultural supplies, agricultural wholesaling) generate £3.1bn of GVA and employ 52,000 people. With 9.9% of English agriculture (7.45% of UK) in the GLLEP area this suggests that locally this sector supported 3,860 employees and generates GVA of £230m.

Comparable data for the food processing sector is not available for inputs (over and above raw food). This sector is however, large as shown by the presence of large businesses such as Paragon Print and Packaging in Spalding in this sector. With over 4.5% of UK food processing in the county, input suppliers to the food industry are also a substantial business sector and have been estimated at 1,500 jobs although robust data is missing.

Engineering & Construction

Agriculture and food engineering is a dispersed and generally fragmented sector with many local small suppliers, maintenance and fabrication businesses and relatively few large employers. Household sprayers and Tong Peel are however both significant local businesses with a national and international client base (see annex). Local research suggests 700 jobs are dependent on this sector in Lincolnshire[42].

Nationally the Agricultural Engineers Association estimates the agricultural engineering sector to be worth £4bn, although much of this total relates to major national manufacturers such as JCB and Case New Holland and includes substantial exports. Locally major machinery suppliers such as the Doubleday Group and Chandlers are significant local employers.

The food sector is also embracing automation rapidly and this has led to increased demand for specialist food manufacturing equipment.

In addition to machinery the food sector is a major user of buildings at the farm, food processing and supply chain stages of the food chain. However, national or local data to quantify this sector is currently very poor.

Based on the limited evidence available it is believed that in excess of 2,000 jobs in engineering and construction are supported by the agri-food sector.

Business services

Business services has been the fastest growing business sector in recent years with reports suggesting future strong growth. The GLLEP agri-food sector is a major customer for services including legal, accountancy, finance, consultancy, HR and labour provider services.

One complexity which the growth of the business services sector has produced relates to the categorization of employees. Those employed in business services, even if they work full time

[41] DEFRA (2013), Agriculture in the UK 2012
[42] University of Lincoln, Rose Regeneration (2012), Learning from Our Place in the Global Economy - Final Report

in the food chain (e.g. contract labour or specialist consultants) are counted as part of business services and not the food processing sector. The GLLEP area has over 110 Gangmaster Licensing Agency (GLA)[43] registered companies who supply labour to the agricultural, food and fishing sector.

Given the challenges of classification it is not currently possible to directly estimate how many of the business services sector jobs are dependent on the food chain.

vii. Skills and Knowledge Base

The skills and knowledge base to support the agri-food sector is relatively under-developed given the scale of the food chain in the GLLEP area. The main centres of education, training and applied research are:

- Holbeach Campus of the University of Lincoln hosts the National Centre for Food Manufacturing (NCFM). This centre now also includes some physical facilities for FRPERC;
- FRPERC at the Grimsby Institute of Further Education which specializes in food refrigeration and storage;
- Sea Food Training Academy which is approved by the National Skills Academy for Food and Drink Manufacturing as the national champion for the sea food industry;
- Humber Seafood Institute which provides serviced office space, meeting and seminar rooms, product development kitchens, laboratories and refrigeration services;
- Riseholme Campus of University of Lincoln offers FD and BSc courses in agriculture and short courses, whilst Bishop Burton College offers a suite of FE agricultural courses on the same location (with a new campus due to be developed on the Lincolnshire showground).

The University of Lincoln also has other departments which are increasingly working in the agricultural or food sector as developments in engineering, chemistry, sensors, informatics and science all increase in importance. The School of Engineering, developed jointly with Siemens, provides significant potential to develop applied engineering courses and research relevant to the agri-food supply chain given the importance of this sector to the county's economy. The School of Chemistry is also very relevant to food chain research given the importance of traceability, food performance and analytical services.

There are no funded national centres of research in the area relevant to the food chain. However some progress is being made, with the NCFM at Holbeach on target to have an applied research income of over £700kper annum in 2014 having secured 5 Technology Strategy Board (TSB) projects, 2 Food Standards Agency (FSA) projects and 1 Framework Programme 7 project. All these projects have been developed with industry and many include partnerships with other Schools at the University of Lincoln or FRPERC.

There is no easily accessible figure for total employment in the skills and knowledge base but it is estimated to be circa 250 employees.

[43] Gangmasters Licensing Agency (2014), Online database

viii. Lincolnshire Agri-food Supply Chain Metrics

The data available on the Lincolnshire agri-food sector is limited. However, a reasonable estimate of the importance of the sector to the economy is set out below based on the best available estimates for each part of the supply chain (where available).

Table 3 - Estimated Employees and GVA for the GLLEP Agri-food Sector

NB The data in this table is based on the best available estimates for the last full year of official statistics currently available, which for most of the data is 2012.

Sub sector	Estimated employees	Estimated GVA (£m)
Agriculture	14,552	446
Food processing	20,000	1,294
Food wholesaling	8,000	377
Logistics	6,000	238
Input supply:		
• Engineering & construction	2,000+	N/A
• Agricultural input supply	3,860	230
• Food sector input supply	1,500+	N/A
Skills and R&D - public sector	250	N/A
Food chain to factory gate	**55,912**	**2,585**
Post factory gate based on 1.65% of UK population		
Food retail	20,550	431
Catering	24,990	416
Total post factory gate	45,540	847
Total food sector	**101,452**	**3,432**

The food chain is thus estimated to contribute over £2.5bn in GVA to the GLLEP economy and employs 56,000 staff up to the factory gate, and this rises to over 100,000 employees and £3.4bn if food retail and catering are included.

Food production and processing is a high value added sector with an estimated GVA of £44,600 per employee upto the factory gate in the GLLEP area (farming, food processing, input supply and wholesale). This is nearly 3 times the average GVA per capita in the GLLEP economy. Investment in growing employment in agriculture, food processing and wholesaling can thus be expected to lead to improved GVA for the area.

In addition as noted above the food chain is a major purchaser of services from the business services sector and this adds further food sector employment and GVA to the local economy.

ix. Overall SWOT for the Lincolnshire Agri-food Sector

Strengths	**Weaknesses**
• Scale and critical mass of the food chain across the GLLEP area • Strong local production base supported by soils (most grade 1 land in England), climate and established infrastructure • HQ of major agri-food companies & home to many multi-national companies in the food chain • Skills base in the major food clusters, specialist skills provision and nacent national centres for applied research • Relatively low business costs (premises) • UK's largest port and strong logistics sector, with links to the national road infrastructure in the West and North of the area • Strong local ancillary business sector including engineering, packaging, professional services	• Lack of an overall strategic plan for growth • Reliance on migrant labour supply and skills gaps • Logistics suffer from slow transport times, especially in the South and due to the area's peripheral location • Under developed research base and UK wide relatively low level of investment in automation compared to competitors • Water supply challenges and flooding risk in main food cluster areas • Commercial food grade 'white wall' industrial space is in limited supply in some areas to support company growth • The historic reasons for the Grimsby and South Lincolnshire clusters being located in the GLLEP are becoming weaker as international sourcing increases
Opportunities	**Threats**
• Food market growth in the UK and global market will drive volumes and value creation in the sector • Exports from the UK are supported by World leading QA systems, high value products and UKTI led export support • New product development including in fast growing markets such as health foods, convenience and provenance • Automation and efficiency gains from increased focus on applied research • Global market for agri tech and food tech growing strongly • Big increase in applied R&D funding by UK government and the EU and growing global investment by industry	• The agri-food sector is now seen as an attractive sector globally and investment (public and private) is increasing even in areas without GLLEP's strengths • Curbs on migrants (whether real or perceived) may make it harder to secure labour and skills in the future • There are challenges in attracting UK young people to an industry which has a poor public image • Investment decisions taken elsewhere by multinationals can lead to plant closures • Exchange rate movements could affect the industry's competitive position after 6 years of favourable exchange rates

4. 2020 sector plan

a. Industry Vision

The vision for the Greater Lincolnshire agri-food sector is:

> ***The Greater Lincolnshire agri-food sector will double its contribution to the economy by 2030 through an ambitious programme of investment in productive capacity, skills and knowledge to drive an increase in high value added sales to UK and export markets***

The Greater Lincolnshire agri-food sector is a World class cluster which is ambitious, dynamic and market focused. With depth and breadth across the food chain, the industry is central to Lincolnshire's economic future and will be supported to grow to meet increased global demand.

To help deliver this long term vision, by 2020 the sector will have:

- Reinforced its position as the national centre for commercial investment in high value agri-food production in sectors including fresh produce, fish and poultry;
- Adopted new technology and skills to deliver new product development, productivity and sustainability gains with a target to increase per employee GVA by 25% by 2020;
- Grown sector output by 30% through import substitution and export led growth.

These short term goals will facilitate the sector in working towards ambitious 2030 targets of:

- Doubling sector output and GVA by focusing on high value added food and drink products;
- Increasing employment by over 10% and GVA per employee by over 75% by increasing the use of technology and higher level skills to service the needs of the 2030 food chain;
- Exploiting direct motorway links to the Midlands, London and the South East to replace 10% of UK manufactured food imports with Lincolnshire produce;
- Trebling exports of food and drink from the GLLEP area by building on the area's ports to service priority markets in Northern Europe and emerging economies.

The delivery of the vision will be facilitated by focusing on 10 areas over the period 2014-2020:

- Strengthening industry representation;
- Understanding the scale and impact of the agri-food sector on the whole economy;
- Supporting the growth of larger agri-food companies;
- Building on existing clusters of companies in the agri-food sector;
- Ensuring that agri-food companies have access to land and premises to facilitate growth;
- Improving access to innovation and applied research services and funding;
- Developing and implementing a sector skills plan for the agri-food industry;
- Developing a national centre of water management excellence;
- Making the economic case for long term investment in transport infrastructure;
- Promoting exports and inward investment in the agri-food sector.

b. Industry Representation

The agri-food sector plan focuses on priority markets and projects which exploit local strengths, based on natural assets, established cluster expertise and a critical mass of businesses and aligns these strengths with market opportunities in the UK and/or export markets. The interventions proposed to deliver growth are focused on how to exploit identified commercial strengths and opportunities, but also need to be clear about how to address weaknesses (e.g. skills, infrastructure) and threats (e.g. investment by other competing areas).

The agri-food sector in Lincolnshire shares much in common with that found in neighbouring LEP areas to the North and South. The Eastern side of England, from Yorkshire to Suffolk can rightly be seen as a 'super-cluster' of national and international importance, with a strong food business base, productive soils, coastal access, a benign climate and a World class knowledge base. Building on these strengths will help Lincolnshire agri-food businesses compete globally.

The GLLEP agri-food industry has three main components with different dynamics:

- The agricultural and horticultural sector is composed of many mainly small businesses which are generally less geographically mobile. However, unless their growth and development is supported locally some will choose to invest elsewhere or reduce their growth ambitions;
- The food processing sector contains a number of large, often international companies, as well as many smaller local companies. Particularly for larger businesses, Lincolnshire has to compete with other areas for investment, and their contribution to the county is dependent therefore on them seeing Lincolnshire as a global or national investment location of choice;
- Ancillary businesses involved in input supply, machinery, services and logistics are a very broad group with both international and very locally focused businesses. Their continued presence in the GLLEP area will depend on both the strength of the local market and for the larger businesses the attractiveness of the GLLEP area as an investment location.

The sector plan focuses on how all three of these sub-sectors can be supported to increase the economic contribution of a thriving agri-food economy. Of particular importance is sustaining the area's role as a centre for food processing as this has significant economic benefits, not only in its own right, but also for both farmers and ancillary businesses.

Recommendation 1 - A Food Board should be established by GLLEP to represent the total food chain, building on the Lincolnshire Forum for Agriculture and Horticulture and other existing structures such as the industry panel for NCFM and business groups in Grimsby. This board should review industry priorities and identify projects which can be developed by GLLEP to secure additional resources for sector growth and development across the whole GLLEP area. The board should have 8-10 members who collectively represent all the main clusters and sectoral interests in the GLLEP area and must report directly into the LEP main board.

c. Promoting the Industry

The Greater Lincolnshire agri-food sector is a diverse and dynamic business sector. Whilst other reports have attempted to quantify the size of various sub-sectors there is currently only a limited overview of the scale of the food chain in the GLLEP area. Furthermore, whilst anecdotally other major sectors, such as logistics, are intimately linked to the food chain, how much of these ancillary sectors depend on the agri-food sector is poorly understood. A better understanding of the economic contribution of the sector would help to justify and focus investment across Lincolnshire to increase this growing sector's contribution to the economy.

As set out in the annex to this plan, the GLLEP area has a large number of major UK and international agri-food businesses and collectively these large businesses account for the majority of sector turnover, added value and employment. Supporting these large companies is important to the future success of the agri-food sector and it is important to recognize that each large company can have distinctive needs which need to be understood and addressed.

The majority of these larger companies have their corporate headquarters in other parts of the UK or overseas and their Lincolnshire operations have to compete for investment capital. Given a growing awareness of and investment in the agri-food sector globally, government agencies in other areas are working hard to support larger agri-food companies and GLLEP must do the same. Developing a clear working relationship with these large companies will help GLLEP to ensure that Lincolnshire is seen as a supportive investment location for their long term growth.

In addition to the large companies, there is a much higher number of agri-food SMEs. These SMEs are very important to the future vitality of the industry. Whilst in general they are less globally mobile than the large companies, meeting the support needs of these SMEs can help them to grow. The food sector in particular has a good track record of generating fast growing SMEs, where product development or securing a major contract can lead to rapid growth.

Fostering innovation and entrepreneurship, supporting skills supply and ensuring that rapidly growing companies have access to appropriate accommodation in Lincolnshire is important in helping local SMEs deliver their growth potential.

Recommendation 2 - GLLEP should develop improved metrics on the scale, value and potential of the agri-food sector locally. This should include the whole food chain from 'plough to plate' as well as ancillary industries such as engineering, genetics, advisory and logistics.

Recommendation 3 - GLLEP should map larger, national or international companies in the agri-food sector, engage these companies to understand their needs and ensure that Lincolnshire is seen as a strategic business location of choice for these larger agri-food companies in the medium to long term.

Clusters

The three main clusters in the GLLEP food sector: Grimsby seafood cluster; South Lincolnshire fresh produce and food processing; poultry cluster, are significant clusters locally and nationally. The Grimsby Cluster won the 1st national Cluster Mark award (2010) for best industrial cluster.

These clusters create opportunities to deliver growth, but in doing so it is important to recognize that an effective cluster has to be cohesive, have a clear offer to attract new investment and work on ensuring that local conditions continue to support existing companies in the cluster. Key areas to be addressed are (these are all picked up in the following recommendations):

- Skills and research infrastructure and support;
- Logistics and infrastructure including water resources, roads and workspace;
- Export and inward investment support.

Whilst the Grimsby seafood cluster is clearly successful, it faces ongoing challenges given the continual and rapid changes taking place in its core sectors related to fish and fish processing where there have been major changes in industry structure.

In contrast the South Lincolnshire fresh produce and food processing cluster has seen a slower change in its markets with fewer takeovers, closures and mergers, but it is arguably a much less clearly defined cluster. This is due to its more dispersed nature, the wider range of products it deals with and less well defined local business organizations and support structures.

Whilst there is currently no established poultry cluster in the GLLEP area in terms of business support, skills and applied research, the presence of a nationally significant cluster of commercial poultry production presents the opportunity to develop cluster initiatives. As set out earlier, when seen in conjunction with Norfolk and Suffolk (New Anglia LEP), the poultry cluster across this wider area can rightly claim to be the centre of English poultry production. Development of a poultry cluster should thus work with industry to consider whether to focus on the GLLEP area only or this wider area in the East of England.

The arable sector is also worth considering for a cluster initiative, although in this case given the smaller percentage of national arable out in the GLLEP area (than for fish, fresh produce or poultry), it is important to link up with other neighbouring LEP areas, particularly those to the South, to develop a nationally significant cluster of companies and support bodies.

Given the growing importance attached by government to industrial leadership in identifying priorities for investment, supporting projects and delivering growth it is important that both clusters are successful and dynamic. There is a clear role for the LEP to support the clusters, and where appropriate, to seek to bring them together. However, given the distances between the

clusters , the poor infrastructure between them (roads) and different histories, GLLEP should not seek to force them to work together unless there are clear benefits in doing so.

In some areas of potential support it maybe more appropriate to link support for the Grimsby seafood cluster to similar businesses on the North bank of the Humber, in South Lincolnshire to link with the strong food clusters in Cambridgeshire and North West Norfolk and in the poultry and arable clusters to Norfolk and Suffolk which have similar supply chains and product portfolios.

In supporting the development of clusters in the GLLEP agri-food sector a flexible approach should thus be adopted to cluster development, which allows clusters to be formed organically base on either communities of interest (e.g. arable farms) or specific locations (e.g. Grimsby). Clusters which cross LEP borders should also be supported if these attract industry support.

Given their socio-economic demographics both the Grimsby and South Lincolnshire clusters are eligible for Regional Growth Funding (RGF), although currently RGF funding has only been secured for the Grimsby cluster. Consideration should be given to developing an RGF bid for South Lincolnshire and, subject to industry support, linking this to the Grimsby cluster (a two centre RGF model is already operating between Cambridge and Norwich in the Agri-tech sector).

Work to support the clusters should include a focus on both 'hard' physical development e.g. workspace, as well as support for 'soft' capacity building to bring industry together.

Recommendation 4 - Develop the potential of the existing clusters by supporting their growth with both infrastructure development and soft support for business development, skills and research (see later recommendations). Cluster development should focus on bringing businesses and support agencies together to invest in pre-competitive projects and to develop collaborative bids for funding. Specifically in South Lincolnshire the potential to develop a multi-site RGF bid to support the food sector in Boston, Holbeach and Spalding should be explored.

Workspace and Hubs

The GLLEP area already has a range of workspace projects and hubs, most initiated or supported by Councils, to support the agri-food sector, although these vary in scale and nature, including:

- Humber Seafood Village which provides a range of smaller food processing units all of which are now occupied;
- Europarc provides development land suitable for food companies, including in the Humber Seafood Institute which has serviced offices and laboratories for frozen food research;
- Humber airport chilled perishables hub which has more capacity than is being utilized;
- The National Centre for Food Manufacturing (NCFM) in Holbeach which provides a range of units for office based as well small scale food production and new product development.

Other hubs are proposed for the future including:

- A road/rail freight hub in Spalding with the potential for associated development land to support development of the existing Spalding food cluster;
- King 31 Grantham cold store and warehousing adjacent to the A1.

The food sector has witnessed many mergers, acquisitions, closures and new business starts in recent years and there is nothing to suggest that this will not continue in the sector. Whilst this process does release workspace fairly regularly, feedback suggests that this is very rarely empty for very long, particularly if it has modern 'white wall' food grade workspace.

GLLEP should work with partners, councils and commercial property agents, to maintain a database of food grade industrial space to help support inward investors, growing companies or new business starts in the sector find the food production space needed. For many businesses in this sector speed is essential once the decision to invest has been made and finding land, obtaining planning permission and building sites can often take too long to meet commercial imperatives e.g. a new large order (particularly if other areas have suitable sites available).

In addition, a plan to facilitate the rapid deployment of additional food grade workspace in strategic locations, linked to the existing food clusters and with local authority support, should be considered. In most cases this will focus on ensuring that land availability, planning and infrastructure can accommodate food sector growth rather than building speculative units.

A responsive accommodation policy to support sector growth should focus on supporting a range of business needs including industrial space for new start ups, business expansion and inward investment. It is anticipated that the greatest potential lies in helping existing businesses to grow successfully within the GLLEP area.

GLLEP should consider the use of further Enterprise Zones or Local Development Orders (LDOs) to make investment in the clusters more attractive to local companies and inward investors (the main port area in Grimsby already has a permissive planning framework as a designated port).

Recommendation 5 - Develop a programme to support food processing, logistics and distribution workspace provision, including:

- developing a database of food grade and distribution workspace which is accessible to commercial companies, council EDOs and inward investment teams to help support both local companies and inward investors who are looking for additional space;
- reviewing the demand for new 'white wall' workspace or hub developments and working with local partners to deliver these facilities;
- reviewing the potential for an Enterprise Zone or LDO to support the growth of existing food clusters in North and South Lincolnshire.

d. Innovation & Research

The food chain from farm to fork is innovative and adopting technology rapidly. This is also leading to an increase in the demand for higher level skills to develop, deploy, maintain and advise on new technology. With currently limited local capacity in research and innovation compared to neighbouring areas, it is important for GLLEP to facilitate access to innovation by both facilitating the growth of its local research centres and by supporting them to work more closely with other national centres on collaborative programmes.

Applied Research and Innovation

At the local, national and EU level there is a growing focus on translating science and technology into commercial products and services. This focus is being supported by a range of new applied research funds which have substantial budgets e.g. Horizon 2020, UK Agri-Tech Catalyst Fund, TSB funding calls. In addition a technology and skills focus can support the delivery of the EU Investment Framework developed by GLLEP.

The majority of new funding streams focus on securing business leadership to design, execute and deploy the projects alongside the research and academic sector. National and European funds are competitive and it is thus potentially possible to secure a larger 'share' of the available resources by proactively developing projects involving GLLEP based companies. However, many companies remain unaware of this funding and effort needs to be focused on promoting the potential funds as well as building improved links between the commercial and research sectors.

GLLEP has three centres for agri-food research:

- National Centre for Food Manufacturing (NCFM) in Holbeach is part of the University of Lincoln and has specialist staff and facilities to support food industry research in processing, sensory, QA and new product development. It is now building a growing portfolio of applied research projects but has potential, with support, for this to be expanded substantially;
- Sutton Bridge Crop Storage Research run by AHDB and the Potato Council;
- Food Refrigeration and Process Engineering Research Centre (FRPERC) is based at the Grimsby Institute and focuses on food storage and food processing research.

However, all three of these centres are small and need to link with other research centres to deliver a comprehensive service to agri-food companies in the GLLEP area. The agri-food innovation strategy for GLLEP should thus both:

- Seek to develop the local capacity in applied research and innovation support;
- Develop strategic partnerships with agri-food innovation capability in other areas, with a particular focus on relevant institutions in neighbouring LEP areas.

There are a number of national centres of agri-food research capability in neighbouring LEP areas relevant to the sector, including:

- New Anglia LEP: Norwich Research Park (NRP) including three national BBSRC centres the John Innes Centre (JIC), Institute of Food Research (IFR), The Genome Analysis Centre and the privately funded Sainsbury Laboratory. NRP also includes the University of East Anglia and Norfolk and Norwich University Hospital. Collectively NRP employs over 2,700 scientists in disciplines related to the agri-food sector. IFR also runs the Food and Health Network which specifically seeks to communicate food science to companies in the food sector;
- Greater Cambridge Greater Peterborough LEP: NIAB, Cambridge University and Babraham Institute (BBSRC centre) in Cambridge, national headquarters of Agricultural Industries Confederation (AIC) and Agricultural Engineers Association (AEA) in Peterborough;
- Sheffield City Region LEP: Sheffield Hallam University is the location of a new National Centre of Excellence for Food Engineering launched in December 2013 with industry support from over 100 businesses;
- Yorkshire, North Yorkshire and East Riding LEP: Food and Environment Research Agency (FERA) in Sand Hutton and the National Non Food Crop Centre in York.

Utilizing the GLLEP centres' good industrial contacts allied to the larger research and innovation teams in neighbouring LEP areas would help to attract additional investment and expertise into the GLLEP area to support sector growth. GLLEP based research centres could develop a clear role as a gateway to this wider regional expertise.

Nationally other centres of research are also very relevant to the agri-food sector such as Leatherhead International and Camden and Chorleywood, and renewed efforts to link with these centres should be made.

In addition to locally driven projects, the UK and EU are encouraging large collaborative projects which include a range of companies and research centres either across the country or across the EU. An example of the former is the development of Centres for Agricultural Innovation supported by the UK Agri-Tech Strategy, and of the latter are Horizon 2020 projects. To access these larger projects it is essential for Lincolnshire to work with other LEPs, trade bodies and research centres outside the LEP area.

The opportunity presented by the development of the new Schools of Engineering and Chemistry at the University of Lincoln and the Lincoln Science Park should be grasped to ensure that these major developments service the needs of the agri-food sector as the largest industry in the GLLEP area. The University Computing School is also of growing interest as the development of 'big data' is used across the food chain to improve efficiency.

The Food Board proposed for the GLLEP area should seek to identify large agri-food companies who can partner with the University of Lincoln Schools of Engineering, Chemistry and Computing to form new industry led research clusters to benefit the agri-food economy. This will both benefit the agri-food industry and help these schools in the University to grow by linking them to the largest industry in Lincolnshire.

Recommendation 6 - Support the agri-food sector in accessing applied research and innovation support services by:

- Linking the Lincolnshire knowledge base to food research in other priority local LEP areas to provide a wider range of innovation and research expertise to support existing companies and inward investors;
- Developing links between the specialist agri-food knowledge base in the GLLEP area e.g. FRPERC, NCFM at Holbeach and the new Engineering, Chemistry and Computing Schools at the University of Lincoln, to provide a single access route for companies and to increase the critical mass of resources and expertise available to secure investment;
- Mapping R&D work being undertaken by agri-food sector and supply chain companies with a base in the GLLEP area to identify areas where industry co-investment could be focused;
- Supporting industry led collaborative research funding bids, e.g. to the UK Agritech Strategy, Technology Strategy Board (TSB) and Horizon 2020 funding streams, to secure increased resources for applied research in Lincolnshire.

Skills

The skills needed by the agri-food chain are changing, parts of the industry have an ageing workforce and the sector has been poorly promoted to many school and College leavers. The reliance on migrant workers, particularly in South Lincolnshire, to fill skill gaps in the last 15 years is also seen as a strategic risk. However, employers cite the availability of a highly skilled/qualified and flexible workforce as a key factor in investment decisions. Clearly this requires action to increase the flow of skilled employees available to the industry locally.

The GLLEP area is fortunate to have a number of specialist educational and training centres to support the agri-food sector including: The Humber Seafood Training Academy; The National Centre for Food Manufacturing (NCFM) at the Holbeach Campus of the University of Lincoln; Bishop Burton College; Riseholme College. However, whilst limited collaboration between these centres is taking place, the area lacks a clear skills offer to the commercial agri-food sector which unites the specialist provision across multiple centres. This makes it hard for employers and potential students to navigate the full range of courses available. Each centre is also comparatively small when compared to similar centres in other areas of the UK and especially when compared to centres in competitor countries such as the Netherlands.

National data suggests only just over 300 food science graduates are being trained per year who then enter the industry[44], of whom about 10% (30+) per year are trained at the NCFM.

With food processing employing 404,000 employees and 25% of these now needing a L4 qualification this suggests that 100,000 graduates are needed in the food chain, which with an average working life of 30 years suggests the number of graduates needs to be increased to in excess of 3,000 per year[45].

The development of a clear food chain skills plan needs to include a focus on:

- **Agricultural technology** - to support the growth of the agricultural and food sector technology suppliers whilst ensuring that local agri-food companies have access to the skills to utilise new technology as it becomes available;
- **Food production automation and engineering** - given the rapid development of automated production systems in food and farming consideration should be given to developing specific food production engineering undergraduate and postgraduate courses to support the adoption of new technology. This should build on expertise at the NCFM in Holbeach and the development of an Engineering School within the University. It must also build on computing and robotics as the food sector seeks to apply new automated production systems. This area is attracting new investment in applied research which would support research led Higher Education;
- **Food Science and Chemistry** - the demand for chemistry and analytical services is growing in the food chain but the sector lacks new graduates. Given the strength of the local food chain and School of Chemistry in the University this is an important area for investment;
- **Management and supervisory skills** - to ensure that the industry has access to a ready supply of highly skilled employees with the leadership and management expertise to drive growth of the industry. As automation increases these managers will need more technical expertise to compliment skills in business strategy, human resources and operations.

In addition to the technical areas above, supporting the growth of the agri-food sector with appropriate skills infrastructure is important. Key areas for action include:

- **Facilitating progression** - to meet the needs of industry, develop the role of Universities in the sector and to facilitate career progression it is important to help students progress as their careers develop through clear pathways to upgrade their skills and qualifications by linking FE, HE and industry qualifications to create progression routes. In North Lincolnshire progression from excellent local FE provision to HE at the University should be encouraged;

[44] The National Skills Academy for Food and Drink, Worcester Research (2013), An Analysis of Higher Education Graduate Provision and Relevant to the 'Food Scientists and Technologists' Occupation
[45] The National Skills Academy for Food and Drink, Worcester Research (2013), An Analysis of Higher Education Graduate Provision and Relevant to the 'Food Scientists and Technologists' Occupation

- **Physical skills infrastructure** - through building on existing teaching centres, increasing their capacity and developing their expertise platforms to bring in additional investment. To compete nationally and internationally the current centres in GLLEP need to increase their critical mass to attract new staff and larger projects. Priority projects are to support:
  - **A National Centre for Fresh Produce** - the Lincolnshire based British Growers Association (BGA) is working with industry and partners to develop a proposal for a virtual national centre for fresh produce to support a growing sector worth £3.5bn to the economy and which employs 100,000 people. The GLLEP area is the national leader in this sector and with the GCGP and New Anglia LEP areas accounts for over 35% of UK production;
  - **National Centre for Food Manufacturing (NCFM)** - now well established the (NCFM) needs to increase its capacity to extend its geographic impact, attract investment and new specialisms and develop the range of services it provides to industry. This growth should include establishing a focus on food engineering skills and related applied research through the creation of a Food Engineering and Innovation Centre;
  - **Grimsby Seafood Training Academy** - needs to link with University provision to support student progression and to help;
  - **Bishop Burton College** - is planning to develop a new agricultural campus on the Lincolnshire showground, North of Lincoln. It is important to ensure that this provision is integrated with other skills provision in the county to promote progression.

Collaboration - to provide a clear and comprehensive skills offer to the agri-food sector a sector plan for skills provision is needed to promote co-ordinated provision and marketing to help businesses and prospective students access the full range of skills support on offer.

Recommendation 7 - The Food Board should work with the Lincolnshire and Rutland Employment and Skills Board to develop a sector skills plan for the agri-food industry in Greater Lincolnshire. The skills plan should promote collaborative skills and knowledge investment to support employers across the breadth of the farming, food and fisheries sector.

This plan should guide the development and delivery of a range of interventions including:

- Exploring the potential to develop an Employer Ownership Fund bid to bring together a GLLEP food sector partnership to promote recruitment and skills development;
- Developing technology, engineering and management skills development provision to meet the future needs of the food chain;
- Developing a national Fresh Produce Centre (in conjunction with neighbouring LEPs) and aligning this with building the capacity of existing skills centres in the GLLEP area;
- Supporting applications for EU structural funds to develop the capacity of existing skills providers to increase the support they can offer to the agri-food sector.

e. Logistics and infrastructure

Water management

Water management is of growing and critical importance in giving the agri-food sector the confidence to invest in two ways:

- **Flooding risk** - as a coastal and low lying area much of Greater Lincolnshire is at risk from either fluvial or estuarine flooding. Critically the fish processing cluster in Grimsby, some of the most productive land in the country and the majority of food processing sites are at or below sea level. The threat of flooding discourages investment and has the potential to substantially reduce the scale of the food sector should large scale flooding occur.
- **Water supply** - the economic returns from securing water for food production are substantial. Global food demand is increasing rapidly (+50% by 2030), water supplies are limited globally[46] and per capita consumption of crops which depend on water e.g. fruit, ornamentals, is increasing in the UK.

  Securing water supply would encourage local investment in more intensive crop production to meet this growing demand, whilst also increasing the food available for processing locally, further enhancing the economic impact. Intensive crops have economic outputs per hectare which are 3-15 times that for cereals, thus creating substantial growth if the area of these crops is increased. However, without guaranteed water supply farmers and food processors will not invest in increased production of intensive crops as they can only obtain contracts with supermarkets and food service companies if they can guarantee supply.

With some of the most efficient water use in the World, UK crop production is well placed to increase its market share in a water constrained World. UK potato production only uses 29% of the typical water use of the crop globally per tonne[47], with many other crops also using half or less of the water used in other countries.

Climate change is expected to increase the frequency of flooding and water scarcity with the East of England projected to see higher summer temperatures, a projected increase in winter rainfall (circa +14% by 2050) and reduced summer rainfall (circa -17% by 2050)[48]. All of these factors will make improved flood defence and increased water storage capacity essential.

[46] Globally current projections suggest that 47% of the world's population will be living in areas of high water stress by 2030, Siemens (2011)
[47] Potato Council (2013), Potatoes - natural goodness
[48] UKCIP (2009), UK Climate Projections '09

National and local programmes are supporting small scale industry led investment in water harvesting and storage by farming businesses e.g. the RDPE supported FFIS grants[49], but given the scale of the challenge and opportunity larger more strategic schemes are also needed.

The delivery of the new RDPE programme should support farmers and food businesses to invest in water storage, water efficiency and water distribution systems (to encourage water sharing and larger collaborative water storage projects). Where appropriate larger schemes should be developed which integrate the need to manage flood risk with the desire to secure more water to support economic growth. The potential to transfer water between and within catchments should also be explored.

A recent review of flood risk in the GLLEP area[50] has begun to address these issues, but this work needs to be developed further to assess the economic cost of failure to prevent flooding on the food sector, as well as exploring how improved water supply can be used to deliver growth.

Given the importance of water supply and management to the whole LEP economy a strategic water plan should be developed to ensure that water is not a constraint on growth. This plan should be linked to a LEP wide development of a Centre of Excellence for Water Management to take the lead on water management to facilitate growth.

Recommendation 8 - Develop a 25 year strategic water investment plan to secure water for food production as part of a wider GLLEP water plan to support growth across the economy. This work should then inform a LEP Centre of Excellence for Water Management programme to facilitate growth.

In relation to the agri-food sector, the strategic water plan should consider:

- The potential increased demand for water to enable crop production in the GLLEP area to replace imports and meet growing demand for intensive crops;
- How climate change may affect the demand for agricultural and food water supply;
- Whether flood prevention and water supply projects can be integrated;
- The role of improved water efficiency and technology in demand management in agriculture and food production;
- The strategic options to secure the water needed, including increased water storage, water transfers within and between catchments, water scheduling and water efficiency;
- How a range of funding models between the public and private sectors to secure the water supplies needed can be deployed.

[49] DEFRA (2014), Farm and Forestry Improvement Scheme
[50] Ricardo-AEA (2014), Greater Lincolnshire Local Enterprise Partnership Growth Strategy: A business case for water management – Outputs to support the Growth Strategy (Full Report)

Roads

Roads are essential to the food sector. Whilst the proposed development of a road/rail hub In Spalding is significant, most freight in the food chain across the GLLEP area will remain on the road network. Fast and reliable access to the national strategic road network is important given the time pressures in the food chain and the requirement to meet supermarket Regional Distribution Centre (RDC) delivery slots.

In North Lincolnshire the major agri-food cluster is comparatively well served by roads with fast and reliable access to the national motorway network via the A180/M180 and to the north via the A15/Humber Bridge. In contrast the Southern cluster of food companies is mainly served by single carriageway roads with junctions and pinch points which cause frequent delays.

One of these roads, the A16, has had significant improvement (single carriageway). However, the other major road in the South of the area which carries substantial food sector traffic, the A17, has received very limited investment, has been downgraded from trunk road status and is both slow and unreliable. The A17 also links South Lincolnshire food companies to the food cluster in West Norfolk and the adjacent areas of crop production.

Longer term, the government has also recently raised the potential to extend the M11 northwards through the area to connect with the Humber Bridge. This potential new road would be very significant for the food sector across the GLLEP area, would make the London and South East market much more accessible for Lincolnshire food products and strengthen commercial links across the LEP area.

Without investment in roads the case to attract additional food sector investment to the area is weakened considerably. Local resources cannot support the levels of investment needed to deliver major road schemes. It is therefore vital to make the economic case for national investment by developing a clear investment package based on the economic growth which road improvements can deliver (growth, jobs and housing), to ensure that Lincolnshire road improvements are prioritized by government. This economic case needs the support of the LEP, business and political leaders (Councils and MPs). Given the importance of the food sector to local employment and growth, a plan for the growth of the food sector should be aligned with the case for road investment.

Recommendation 9 - The Food Board should work with partners to develop an economic case for improvements to strategic road arteries to support agri-food sector growth. An options analysis of which road improvements would facilitate agri-food sector growth in both the short and long term should be combined with mobilizing local MPs and members of the House of the Lords to work collectively with GLLEP, councils and the business community to make the case to DfT for investment in Lincolnshire's strategic road infrastructure.

f. Exports and Inward Investment

The food sector in Lincolnshire has seen investment by many large and progressive international food companies. Creating a supportive inward investment environment for these companies is important not only in attracting new investors, but also in ensuring that when existing food processing plants need to be upgraded that companies are supported to choose Lincolnshire for these investments.

UKTI statistics for 2012/13 shows that the food sector was a top 10 sector in attracting inward investment to the UK with 72 investments made during that year, broadly similar to other high tech manufacturing sectors including electronics (74 investments), biotechnology (74), engineering (78) and automotive (85)[51]. Given the strength of the food and drink sector in the GLLEP area, with nearly 5% of national food processing in the area, a target of 3-5 major inward investments per annum into the agri-food sector is feasible.

The UK has been successfully growing its food exports since 2004, since when they have risen by over 70%[52]. As the country seeks to rebalance the economy there has been a growing focus on export growth and the publication in 2013 of a UK Food and Drink International Action Plan by DEFRA and UKTI has a clear government commitment to help the food sector increase exports. In parallel with the action plan for food exports, the government published the UK Strategy for Agricultural Technology which also identified exports of food chain technology as a priority.

With the UK's largest port, other smaller ports and considerable trade links inside and outside the EU the GLLEP area is well placed to drive food and drink exports. Local feedback suggests that some cargo containers which bring imports into the Humber ports return empty, creating the opportunity to secure export transport at favourable rates.

GLLEP should use the UKTI opt in within its EU investment framework to focus additional resources from UKTI on both inward investment and export support for the food sector.

Recommendation 10 - Implement an export and inward investment plan for the GLLEP agri-food sector in conjunction with UKTI and local partners to support the growth of the food sector by building on the area's ports, commercial clusters and expertise base.

[51] UKTI (2013), Inward Investment Report 2012/13
[52] DEFRA (time series), Agriculture in the UK

5. Projects

Six priority project themes for the GLLEP area to develop the contribution of the agri-food sector to the economy are proposed.

Project area 1 - Industry Representation and Intelligence

This project would deliver on recommendations 1, 2 and 3:

- Recommendation 1 - Develop a Food Board for the agri-food sector;
- Recommendation 2 - Develop improved metrics on the scale of the agri-food supply chain;
- Recommendation 3 - Map and engage the larger agri-food companies in the GLLEP area.

Description: The Agri-food sector is a dynamic sector which needs broad based representation underpinned by detailed metrics on the sector and intelligence on the major companies operating in agri-food to help guide ongoing support and investment. This project area will develop a Food Board to build on existing representative structures including the Lincolnshire Forum for Agriculture and Horticulture, NCFM employer panels and Grimsby seafood cluster to project a single unified voice for the £2.5billion agri-food supply chain in Greater Lincolnshire. Once formed the Food Board should initially lead work in two areas:

- Undertake a detailed analysis of the food supply chain to develop better economic data on the sector from 'farm to fork' to help guide future investment in the industry. This data will also be used to position the LEP's food sector in relation to national and European bidding opportunities as well being used to showcase the sector with potential inward investors.
- Identify, engage, celebrate and understand the ambitions, constraints and potential of the GLLEP top 50 agri-food companies. This will facilitate the development of programmes to secure investment in the area, as well as identifying opportunities for these companies to support skills, applied research and development projects with GLLEP based partners.

The Food Board should also work to support the development of a sector skills plan, water plan and promote investment in applied research and infrastructure.

Timescale: Aim to have a Food Board in place by September 2014, detailed sector analysis completed by December 2014 and to have identified and engaged the 'top 50' agri-food companies by March 2015.

Potential partners include: Industry bodies, leading agri-food companies, councils, skills and business support providers, local media (to celebrate the importance of these companies)

Potential funding sources:

- GLLEP;
- Industry representatives' time and input.

Project area 2 - Clusters and Workspace

This project will deliver on recommendations 4 and 5:

- Recommendation 4 - Build on the existing clusters in North and South Lincolnshire;
- Recommendation 5 - Develop a workspace plan to support the growth of the clusters.

Description: The major agri-food clusters in the GLLEP area need to be built upon as key engines of growth for the agri-food economy. Key to facilitating their growth is to ensure that the clusters both support their companies by facilitating access to business support, skills and knowledge as well as working with local stakeholders (e.g. planners and developers) to provide access to commercial space to facilitate growth.

This project theme will:

- Ensure that the Grimsby seafood industry, Southern fresh produce and food processing cluster and the poultry sector have resources to develop collaborative projects and initiatives amongst the cluster businesses and support agencies, and explore the potential to link the two clusters in collaborative projects where appropriate;
- Work with commercial partners and councils to develop a database of food grade industrial units and development land to facilitate inward investment, business start up and business expansion needs. This database will be reviewed against projected demand for commercial space to identify where additional land or commercial space needs to be made available;
- Develop at least one Regional Growth Fund (RGF) bid to develop the potential in the agri-food clusters. The use of LDOs and/or Enterprise Zone status will also be considered to support the development of these food clusters;
- Promote supply chain projects to farmers and farmer co-operatives to help them embrace added value opportunities by linking to supply chain partners and utilizing RDPE funding where appropriate.

Timescale: A cluster development programme will be in place by December 2014 with the aim to submit the first cluster development bids during early 2015

Potential partners include: Councils, knowledge, skills and research providers, business groups (thematic and local Chambers of Commerce). Councils in the cluster area should help take the lead in delivering this thematic area

Potential funding sources:

- Regional Growth Fund;
- GLLEP EU SIF;
- DEFRA RDRE.

Project area 3 - Applied Research and Skills

This project will deliver on recommendations 6 and 7:

- Recommendation 6 - Support the agri-food sector in accessing applied research projects;
- Recommendation 7 - Develop a skills plan for the agri-food sector in the GLLEP area.

Description: The Food Board will work with Lincolnshire and Rutland Employment and Skills Board to develop a sector plan for skills. This plan will consider the potential to:

- Develop an ATA/GTA bid to the Employer Ownership Fund and/or GLLEP EU Investment framework to bring employers across the agri-food sector together to collaborate on skills provision with the aim to: double Lincolnshire food science graduate numbers in 5 years; increase FE agriculture and food apprenticeship student numbers; develop clear progression routes for students to encourage HE and postgraduate progression;

In parallel a programme to develop access to skills and applied research will be implemented to:

- Support the development of a National Fresh Produce Centre in conjunction with industry bodies(led by the BGA) and neighbouring LEP areas;
- Invest in the development of a Food Engineering and Chemistry Innovation Centre to complement existing NCFM provision and link this to the National Food Engineering Centre in Sheffield. The centre should focus on education and applied research and bid for funding from the UK Agri-tech Catalyst Fund, Horizon 2020, TSB and other applied research funds with clear targets for the number and scale of funding secured by industry led consortia;
- Support proposals for new industrial clusters focused on collaborative research and skills for the poultry (GLLEP or wider area) and arable sector (across more than one LEP area);
- Promote agri-food and related applied research through an EU SIF supported KT/KE and business development programme to help companies engage with research partners and prepare bids for larger applied research projects to develop new product and services.

Timescale: Develop a plan for agri-food skills and research investment by October 2014, with the aim of having the first projects funded and operational by Easter 2015

Potential partners include: Lincolnshire and Rutland ESB, Colleges and University, commercial companies, agricultural co-operatives, sector bodies including the NFU, CLA, BGA, Grimsby Fish Merchants Association, Agricultural and Horticultural Development Board (AHDB)

Potential funding sources:

- GLLEP EU SIF;
- Agri-tech Catalyst Fund, RCUK and TSB calls, Horizon 2020, Agri-food EIP, AHDB;
- Employers Ownership Fund, DEFRA RDPE skills funding, HEFCE and SFA funding.

Project area 4 - Water Management

This project will deliver on recommendation 8:

- Recommendation 8 - Develop a 25 year plan for water supplies for agri-food sector growth

Description: A 25 year plan for agri-food water use will allow the sector to ensure that its need for water to grow the industry can be met through a combination of making the case for water during the review of the abstraction management process, developing strategic water storage and focusing on water use efficiency. The plan for agri-food water supply will be integrated with a water plan for the whole LEP area and inform a programme to create a Centre of Excellence for Water Management.

This project will:

- Develop a 25 year plan for water demand for the agri-food sector recognizing potential increases in the demand for irrigated crops, the impact of climate change and other water users on water availability and how water use efficiency technology and best practice may moderate water demand;
- Use the 25 year plan to develop a strategic programme on public/private investment in water storage capacity, water distribution networks and collaboration. This should include both individual on farm or factory reservoirs as well as larger collaborative schemes (integrated where appropriate with flood alleviation programmes);
- Prioritise areas for applied research to promote water efficiency and work with knowledge base partners both inside and outside the GLLEP area to secure funding for industry responsive research and technology development on water use efficiency;
- Secure DEFRA RDPE skills funding for water efficiency courses for the agri-food industry.

Timescale: Develop a 25 year plan for agri-food water use by December 2014, make the case for water storage investment in the GLLEP SIF, Leader Group development and in representations to DEFRA for RDPE by autumn 2014. This should lead to a programme of investment, skills development and applied research commencing in early 2015.

Potential partners include: Internal Drainage Boards, NFU, CLA, FDF, Environment Agency, Anglian Water Group, agri-food companies

Potential funding sources:

- GLLEP EU SIF;
- RDPE investment in skills and water storage, efficiency and distribution systems NB FFIS, Leader and core RDPE grants have all been used previously to support this area;
- Industry investment in water storage capacity and efficiency.

Project area 5 - Roads

This project will deliver on recommendation 9:

- Recommendation 9 - Develop an economic case for strategic road improvements to support agri-food sector growth

Description: Road infrastructure is seen as particular constraint on the growth of the agri-food cluster in South Lincolnshire which is reducing investment. Whilst the road/rail hub may offer some benefits to Spalding based companies, the dispersed nature of the food industry in the Southern cluster (and in North Cambridgeshire and West Norfolk) means that roads will remain important to the sector. Given constraints on public funding all new road infrastructure needs a clearly argued case based on economic growth, jobs or housing potential.

The potential of new motorway links could bring major benefits to the agri-food sector across the LEP area and this project will explore the economic potential of developing these as well as alternatives such as improvements to main roads which link the GLLEP food sector to the national strategic road network.

GLLEP should work with councils, business groups and local political leaders to identify how investment in the road network could unlock investment and growth and identify priority projects to deliver sector investment in the short to medium (e.g. junction improvements on main roads) and long term (e.g. major schemes such new motorways).

Timescale: Develop an economic case for strategic road infrastructure to support agri-food sector growth by June 2015 and work with partners in other industries to present this to DfT to make the case for road investment to unlock the potential in the agri-food sector

Potential partners include: Councils, business groups, local politicians (Councillors, MPs, Lords), local business champions

Potential funding sources:

- GLLEP;
- DfT (for road improvements).

Project area 6 - Exports and Inward Investment

This project will deliver on recommendation 10:

- Recommendation 10 - Implement an inward investment and export plan for the GLLEP agri-food sector to drive growth

Description: The UK agri-food has been successful in delivering export led growth in the last decade and with strong global demand growth anticipated in the industry for the next 40 years or more the prospect to continue this growth is strong. The GLLEP area contains many international agri-food companies and the project will focus on both supporting more inward investment as well as driving exports from the LEP area. Existing international trading and transport links and ports offer the prospect to grow exports strongly by exploiting existing contacts and logistics routes to carry more trade.

This project will:

- Develop an export plan for the agri-food sector in the GLLEP area to build on existing links (e.g. Grimsby fish cluster links with Scandinavia), new food export opportunities (e.g. big growth in Chinese food imports) and growing demand for food and agricultural technology and technical services across the World (e.g. poultry genetics exports);
- Help GLLEP agri-food companies to exploit export opportunities by ensuring that UKTI services and UK and EU grants are utilized to help companies across the agri-food sector grow their exports;
- Promote inward investments in the GLLEP agri-food sector, with a target for 3-5 major investments per year. This will link to project theme 1, by understanding the motivations and needs of major global agri-food companies and ensuring that GLLEP can offer an attractive investment location of choice for multi-national companies;
- Promote trade delegation opportunities to international commercial fairs to groups of GLLEP agri-food companies and use UKTI training and advisory services to help companies prepare to enter new export markets.

Timescale: The project will commence in summer 2014 and be developed further using EU SIF opt in funds when they become available.

Potential partners include: UKTI, councils and industry groups supported by the Food Board

Potential funding/input sources:

- UKTI - both directly and as an 'opt in' in the GLLEP EU SIF;
- Council economic development units.

6. Appendix - Major agri-food chain companies in Lincolnshire

Company	Location(s)	Turnover (£m) latest available	Staff
2 Sisters Food Group - prepared foods and poultry	GLLEP units in: • Scunthorpe (1,200 staff) • Grimsby • Five Star Fish, Grimsby • Thorne	£3bn (2013) 49 sites in the UK, Ireland, Netherlands and Poland	24,000 staff globally
ACST Logistics	Is part of Carmellia Plc, with ACST Logistics HQ in Grimsby, one of 4 UK depots	Carmellia Plc £261m	73,000 globally in 15 countries in Carmellia Plc
Bakkavor - prepared foods	UK HQ in London and Spalding. Lincolnshire production units include: • Bakkavor Grp Regional Office, Spaliding • Bakkavor Spalding 2,000 staff • Bakkavor Meals Sutton Bridge • Bakkavor Pizza, Spalding 1,350 staff (inc. Middlesex site) • Bourne Prepared Products 1,000 staff • Cucina Sano Ltd, Boston 300 staff • Freshcook, Spalding 500 staff • New Primebake, Barton on Humber 500 staff (inc sites in Crewe and Nantwich) • Wingland Foods, Sutton Bridge 400 staff	Global £1.72bn (2012) of which £1.46bn is in the UK 32 UK production sites and 20 sites overseas	19,000 globally >5,000 in GLLEP
Bernard Matthews	56 farms across Norfolk, Suffolk and Lincolnshire (including Lincs Turkeys since 2010)	£340m (2012)	2,500 staff in total
Branston - potatoes & potato products	HQ in Lincolnshire, with other sites in Scotland and the South West	430,000 tonnes of potatoes per annum - 7% of the UK crop	700 staff
Chandlers Farm Equipment Ltd. - machinery dealers	HQ in Grantham, with other sites at: Horncastle Spilsby Holbeach Stamford Cosby (Leicestershire)	Main dealer for AGCO, MF, Fendt, Caterpillar and Challenger plus other equipment	
Cherry Valley	HQ at Market Rasen, UK and global market leader in duck rearing. Duck genetics division is the major suppliers to markets including China (1 billion cherry valley ducks), Russia and US		600 staff in Market Rasen

Co-Op Farms	Largest UK farming company farms 50,000acres and has farms at: • Normanby • Louth NB - In late February 2014 the Co-op group announced that its farms division would be sold although no firm details are yet available		200 employees
Country Style Foods	6 sites nationally of which one is in Grimsby		
Dalehead Foods	Dalehead is part of Tulip Ltd which has 17 sites across the UK. The Spalding plant which employs 300 people is am abattoir. Tulip Ltd is in turn a subsidiary of the Danish Crown Group, a 8,550 member co-operative which operates globally from headquarters in Denmark	Danish Crown Group parent company is a 7.8billion euro company which operates globally	300 in Spalding 8,000 in Tulip Ltd (UK) and 22,700 in Danish Crown parent company
Daniels Group	Owned by Singapore Airport Terminal Services, Daniels Group invested £8.5m in Grimsby in 2013 to expand production of soup and ready meals	£160m whole group	350 in Grimsby
Doubleday	John Deere main dealer with a range of other machinery lines. HQ in Holbeach, with other sites in Bourne and Kings Lynn, with a new depot being built at Swineshead		
Fastnet Fish Ltd	Grimsby is one of 6 sites across the UK		
Fowler Welch - food and fresh product logistics	HQ Spalding 10 sites in UK and a hub in the Netherlands	£151m (2011/12)	1,300 staff of whom 500 in Spalding
Freshlinc - logistics	HQ Warden Tree Lane, Spalding, other sites in Evesham (Worcs) and Normanton (West Yorkshire)	£44m (2012)	267
Freshtime - prepared vegetables	Boston HQ		350 staff
Frontier	HQ at Witham St Hughs, Lincoln Joint venture between ABF and Cargill plc 6 GLLEP sites at: • Boston docks • Bourne • Holbeach (2 facilities) • Witham St Hughs • Wragby	£1.61bn They trade 4.5mt of grain per annum (22% of the UK crop)	800 staff

George Bateman and Son Limited	HQ Wainfleet with a brewery and 70 pubs (mainly across Lincolnshire, Norfolk and Derbyshire)		
Gleadell Agriculture Ltd	A leading grain, oilseeds and pulses exporter jointly owned by Toepfer International, a major international trader of agricultural products around the world, and InVivo, the leading provider of agricultural goods and services in the EU. Head office in Gainsborough	£515m turnover	140 staff
Greencore - convenience food manufacture	28 sites in the UK, US and Ireland Greencore Food to Go dressed salads facility in Spalding	£1.2bn (2013)	11,000 staff globally
HMC	Holbeach Hurn based Pea co-operative growing 10-20,000 tonnes of fresh peas per annum from 30 member farms		30 member businesses
Household Sprayers	HQ Leadenham, Lincoln and sales office at Woodhall Spa		
HSH Coldstores	Based in Grimsby with 30 vehicles and large coldstores for contract storage		
Icelandic Group UK	Icelandic SeaChill, Grimsby is one of 3 main sites for Icelandic Group in Europe which also has operations in Iceland and Asia. Icelandic Seachill includes the former Seachill, Coldwater and Icelandic UK trading names	Icelandic group is a £500m company	1,500 staff in Grimsby
Kerry Group Plc	Incorporates the former Geo Adams bakery section in Spalding	Global £4.8bn	Globally 24,000 people
Limagrain UK	6 UK sites of which 3 are in GLLEP at: • UK HQ Rothwell, Market Rasen • Arable and vining peas, Grimsby • Forage and amenity seeds, Witham St Hughs	Parent Company Group Limagrain is the EU's largest plant breeding company and had sales of £1.6bn in 2012. It operates in 39 countries	8,200 staff globally
Lincolnshire Co-Operative	Food retail is the largest part of the business, but it also includes pharmacies, funeral care, post office, property and travel divisions	£288m across all divisions	2,700 staff
Lincolnshire Field Products	Grower and distributer comprising of 6,500ha of cereals, sugar beet, potatoes and brassicas	£90m turnover from farm and £45m from distribution	140 staff

M& W Mack	M& W Mack has 2 local businesses: a 50% stake in Manor Fresh in Holbeach Hurn and DGM growers in Spalding. Rebranded at Fresca Group, M& W Mack is mainly based in the SE and London where it has divisions focused on fresh produce trading as well as stake in Thanet Earth in Kent	Fresca Group £400m turnover	Fresca Group 1,000 staff
McCain Foods (GB) Ltd	Globally McCain Foods has 50 production facilities spanning six continents. It sells one-third of the world's frozen French fries products in more than 160 countries and is the world's largest producer of French fries (1/3rd of the global market) and oven-ready frozen food products. In the UK McCain processes over 750,000tonnes of potatoes per year in 5 production facilities including one in Grantham (McCain PAS)	30th largest company in Canada Global sales circa £4billion (private company so results not published)	Globally 19,000 staff
Morrisons	Morrison supermarkets invested in a new dedicated fish processing site in Grimsby in 2012 creating 200 jobs. They also operate a site in Boston to ripen bananas		200 in Grimsby fish site, 80 at Boston.
Moy Park	Irish HQ and part of the global Marfrig Group. Moy Park has 11 processing sites in Northern Ireland, England and France with 2 in GLLEP: • Grantham - further processing • Anwick, Sleaford - primary processing	Moy Park £1.1bn (2012) and the parent company, Marfrig Group £6bn	Moy Park Europe 10,900 people Grantham 850 staff (following recent £20m expansion) Anwick 1,500 staff (expanded in 2013)
Norbert Dentressangle	3 depots in GLLEP at: • Spalding; • Grantham; • Grimsby	Group €4bn, 195 sites and 1,800 vehicles	12,800 staff globally
Openfield - grain trading	8 offices nationally of which 2 are in GLLEP: • Colsterworth, Grantham (HQ) • Boston Export facilities at: • New Holland, Barton upon Humber • Boston	£710m (2013)	

Paragon Print and Packaging	Spalding based, and since May 2013 part of the global Coveris Group (a merger of five companies) to create the World's 6th largest plastic packaging company	Paragon £175m, with its parent company Coveris $2.5bn turnover	Paragon has 1,200 staff in 11 sites, Coveris operates in 20 countries
Pecks	JCB agricultural dealer with 5 sites, 2 of which are in the GLLEP area: • Mareham Le Fen • Spalding		
Pipers Crisps	Based at Brigg		
Princes - prepared foods	14 sites globally including one at Princes Sutton Bridge	£1.74bn (2013) including £350m exports	6,000 staff globally
Produce World Group	HQ near Peterborough, with 2 facilities in the GLLEP area: • Marshalls, Boston • Sutton Bridge (potatoes - the former Solanum site)	£210m (2011)	
QV Foods, potatoes and other fresh and processed products	HQ in Fleet, Spalding, with divisions as follows: • QV foods sites in Cambs, Scotland, Norfolk • Worth Farms, Holbeach Hurn • Fresh Approach, Boston (veg, brassicas, leafy salads and orange juice) • Pseed Co, Scotland (potato seed) • Europa Produce Ltd, Holbeach Hurn (potato imports and exports) • Greyfriars UK Ltd, Yorkshire (sweetcorn, garlic, mushrooms)		
Sleaford Quality Food	Part of the Indian Jain group. Sleaford Quality Foods manufactures 1,200 dry products and ingredients for food service and manufacturing	£27m (2010)	SQF 90 staff in Sleaford Jain group 6,000 staff globally
Staples Vegetables	HQ near Boston	10,000acres of vegetables and brassicas	600 staff
Tayto Group	Golden Wonder in Scunthorpe is part of the Tayto Group	£150m across the group	1,500 staff on 6 sites across the UK and Ireland
TH Clements and Sons Ltd	Market 3,000ha of produce from Lincolnshire, Norfolk and Cornwall		

Tong Peal Engineering	HQ in Splisby	£10m turnover and exports to 20 countries	
Total Produce Plc	Global company with UK division: Total Produce UK, with a site in Spalding (specialist divisions Total Cherry and Total Exotics as well as main company) Operates in Europe, North America, South Africa and Asia	Global €2.8bn (2012) company 100 facilities, 2,000 supply partnerships 200 vehicles to give UK wide distribution	Globally 4,200 staff in 24 countries
TSC Foods	Scunthorpe		
Ultimate Packaging	Based in Grimsby	£40m	280 staff
Univeg UK Ltd	HQ in Pinchbeck, Spalding Univeg UK Ltd acquired Empire World Trade in early 2014. The group focuses on fruit and processed fruit. Univeg also includes Winchester Flower Growers, the largest UK producer of cut flowers which empoloys over 500 staff with operations in Spalding and Cornwall	Univeg UK £80m Univeg Group £2.6bn globally and handling 1.9million tonnes of fruit and veg	215 staff Spalding 4,500 globally in Univeg Group
Woldmarsh	HQ in Louth. Woldmarsh members farm 300,000 hectares of land primarily in Lincolnshire, Yorkshire and the Midlands, and the company provides inputs to these businesses.		800 member businesses
Yara	UK Head office at Immingham Also has 50% stake in GrowHow	International group with sales in 150 countries, 2011 turnover £8.3bn	8,000 staff in 50 countries
Yearsley Group	Major national food and logistics company with 13 sites of which 2 are in GLLEP: • Grimsby • Scunthorpe	Private company	
Young's Seafood Ltd	Part of the Findus Group, Young's is based in Grimsby but has other sites across the UK. It has a 40% market share in the UK		1,700 staff in Grimsby 3,000 in UK