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A Review of the Agri-food Economy of Staffordshire

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Contents

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f3 is a co-operative Community Interest Company, established in 1999, with a track record of over 300 projects for government agencies, local authorities, private sector businesses and community groups. We help to develop and support sustainable local food initiatives, through research, strategic action plans, business planning, enterprise support, and programme evaluation.

1 Summary

Staffordshire has an unusually wide range of landscapes and soil types, and as a result, a wide range of farm types. Although the county only has about 1% of England's farmland, it has over 8% of the country's dairy production, 6% of the soft fruit production, 2.5% of beef cattle, and 2.1% of laying and breeding hens. The most valuable farming sectors are dairy (estimated at £122 million), cereals (£38 million), beef (£36 million), soft fruit (£26 million) and pigs (£13 million). Poultry and potatoes are also significant, and the county has a surprisingly large proportion of England's goats. As the county has excellent transport infrastructure and is close to large centres of population there is good access to existing and potentially new markets.

There are 3,132 agricultural holdings in Staffordshire, covering 191,328 hectares. Over recent years there has been a reduction in the number of holdings with small farms being consolidated in to larger units. Just under 10,000 people are employed in the county's agricultural sector but it is estimated that over 51,000 people work in the agri-food economy as a whole, contributing over £1.1 billion to the county's Gross Value Added.

The main issue for Staffordshire's farmers is vulnerability to reduced incomes through fluctuations in commodity prices, combined with increased input costs. Currently this is particularly acutely felt by dairy farmers with individual farm businesses having little power in national and global markets, and often forced to be 'price takers' for their produce.

Some Staffordshire farmers are enjoying great success in marketing their produce direct to local consumers through farm shops and local independent retailers, and by processing their own produce through on-farm bakeries, butcheries etc. These tend to be smaller farm businesses and whilst only accounting for a small proportion of overall production, they have a disproportionately large effect on local employment and economic activity. Larger farms tend to sell their produce directly to processors and manufacturers. Although there are some large food manufacturing and processing businesses in Staffordshire, it is clear that they source their raw materials in national markets and that most produce leaves the county for processing. These parts of the value chain are therefore lost to the local economy.

The great majority of all the food and drink consumed in the county is supplied through national retailers and food service companies who source their produce through regional and national supply chains. Multiple retailers are interested in stocking local lines but this still usually involves the produce being taken away to regional depots before returning to the county. Caterers would often prefer to use local ingredients but difficulties in ordering, pricing and distribution, make it more convenient to source generic lines from regional and national wholesalers. Public sector caterers such as school meal providers, hospitals, universities and colleges are increasingly cooking from fresh on-site and sourcing ingredients locally. This is a great opportunity to develop local processing and distribution infrastructure with its associated employment and value added.

Food is wasted throughout the production and consumption cycle, and is estimated to amount to £100 million a year in Staffordshire. Waste food from manufacturing, catering outlets and large retailers, mainly goes to anerobic digestors (AD) for electricity generation. Some food from retailers is donated to food banks and community groups. Domestic food waste is dealt with differently by the county's district councils. Some is incinerated, some composted and some goes to AD, but none goes to landfill. The district councils have a continuing campaign to encourage householders to reduce food waste.

The whole food supply chain has significant environmental impacts, including habitat and biodiversity loss, watercourse pollution, soil erosion and depletion, greenhouse gas emissions, and food waste disposal. These impacts represent losses to the whole local economy and can be avoided by appropriate management. Negative social impacts include, low wages and poor working conditions in the supply chain, ill-health through poor diets, and a lack of access to healthy foods, especially for disadvantaged groups. However, there are sustainable and fulfilling livelihoods in all sectors of the food economy.

There are some serious problems with the food system including growing ill-health, particularly increasing obesity and type 2 diabetes, associated with poor diets and malnutrition among disadvantaged groups. Community groups are trying to address these issues and are increasingly being supported by public health agencies. Eight food banks were identified in Staffordshire, supplying donated food as emergency help for people in difficulty but there will undoubtedly be more. Community gardens are being established throughout the county, providing access to fresh fruit and vegetables as well as physical and social activity. These are also not well documented so cannot be easily listed or quantified. Other community initiatives in the county include shared meals projects and food co-operatives.

Global trends such as increasing population and climate change are likely to have some impact on Staffordshire. There are calls to massively increase global food production to feed the growing numbers of people. Staffordshire farmers who produce commodity crops for global markets may see opportunities there but there are resource limits on production and better food distribution is likely to be more helpful. Climate change is predicted to bring more extreme weather events and the likeliest impact on Staffordshire farmers is loss or damage to crops through flooding although heat stress to crops and livestock, and droughts, could also be significant threats. Water shortage is already a severe problem in some parts of the world and, although Staffordshire generally has enough water there are already restrictions on new abstraction licenses in parts of the county. The predicted droughts and drier summers could, for example, cause difficulties for irrigation of soft fruit.

Consumers are increasingly interested in the provenance of the food they buy. The survey of Staffordshire consumers shows that, although convenience and price are important factors, most people would like to buy more local produce and support local food businesses but feel that local food can be more expensive and hard to find. In general, consumers said that they wanted better access to fresh, healthy food, more farmers' markets and similar events, and better information about where to get local food and how it is produced.

We have identified opportunities for Staffordshire's agri-food economy in ten main areas:

1. The development and adoption of 'agri-tech', such as precision farming and dairy robotics, could help to increase production but will be most effective in improving efficiency and reducing costs by optimising the use of inputs.
2. Collaboration between farmers through marketing groups, buying groups and machinery rings, as well as more formal co-operatives, will give farmers a stronger position in the markets and help to reduce costs.
3. Tourism is an important showcase for Staffordshire's exceptional range of food and drink. Visitors want to experience authentic local produce and support for schemes such as 'Taste of Staffordshire' will help to develop this market.
4. Farming and growing only account for about a fifth of the value of the whole food supply chain. Support for direct marketing to consumers, local marketing and added-value processing, can significantly boost employment and local turnover. Where opportunities can

be found for bringing more of the processing, manufacturing and distribution infrastructure into Staffordshire and integrating them with primary production, retailing and catering locally, they can significantly add to the county's economy.

5. Better information for producers, trade buyers and consumers about what is available and what is needed will increase business opportunities in the county.
6. Better skills, particularly in middle management and higher level technical areas will remove barriers to business development.
7. Closer links between producers and consumers will increase trust and understanding as well as open opportunities for value-added business.
8. Closer working between public health agencies and community food initiatives can help to improve health and wellbeing by promoting healthier diets and improving access to affordable healthy food.
9. Joining the Sustainable Food Cities Network will bring support and shared experience and resources in developing food strategies, policies and action plans as well as in practical implementation.
10. Working with the sector in Stoke-on-Trent will reflect the shared markets and supply chains, avoid duplication of effort and bring the benefits of shared experiences and resources.

Staffordshire County Council has an important role to play in all ten of the above opportunities, together with county's district councils and strategic partnerships (such as the Stoke-on-Trent and Staffordshire Local Enterprise Partnership, the Staffordshire Health and Wellbeing Board, and the Stoke-on-Trent and Staffordshire Local Nature Partnership). Whilst they may not be able to directly fund or implement them all, they will have the power and influence to ensure the right direction of travel is being set.

2 Methodology

To fully describe Staffordshire's food web and all its threads is well beyond the scope of this study. However, we have produced the most useful picture we can of the production, processing, distribution and consumption of food and drink in the county within the constraints of time and resources.

Published data, mainly from DEFRA and the County Council, formed the basis of our desk research. There is less detailed published data on the agri-food economy of Staffordshire than for some other counties, for example Lincolnshire, but we have been able to estimate the volume and value of different sectors of primary production, overall employment and Gross Value Added (GVA). There are insufficient data available to fully quantify other sectors of the supply chain. Further research would be needed to provide more robust evidence but we can reach some general conclusions based on interviews with selected stakeholders, a range of survey questionnaires and our experience of detailed research into supply chains in many other locations.

We selected stakeholders in different sectors of the supply chain for interview based on contacts provided by the County Council and National Farmers' Union, extensive online searches and referrals from other interviewees. We conducted more than 50 face-to-face and telephone interviews. Although we have not been able to include all the stakeholders we are confident that we have enough information to understand the important issues for each sector. A larger programme of more detailed research would be needed to produce statistically significant data for every sector.

We produced a range of online questionnaires targeted at:

- Primary producers (farmers and growers)
- Processors and manufacturers (including breweries, cheesemakers, bakers etc.)
- Distributors and wholesalers
- Trade buyers (including supermarkets, retailers and caterers)
- Public sector buyers (including school caterers, hospitals and universities)
- Community initiatives (including community gardens and food banks)
- Consumers
- Food waste operators

We distributed online links to the surveys through all networks available and also promoted them in the local general and agricultural press, and through County Council publications. As the take-up of online questionnaires is typically small we sought to encourage participation by offering hampers of Staffordshire produce allocated by a draw from participants in each survey. Where appropriate we recorded responses from interviews through these surveys to ensure consistency and ease of analysis. In total we received over 100 responses.

The Staffordshire County Show on 28th May 2015 gave us an opportunity to gather valuable information and insights through informal conversations with farmers and other businesses.

We have reported our findings by viewing the agri-food system from a number of different perspectives:

- We describe the different sectors including primary producers, processors, distributors etc. We outline the issues facing each sector in the county including data from our surveys and giving more detailed case studies where appropriate.
- We look at how the elements work together to form the 'Food Web'. We discuss supply chains, employment, value added, environmental impact and social impact.
- We identify trends likely to influence food and farming including increasing population and changing diets, increasing consumer interest in the provenance of food, water scarcity and climate change.
- We suggest opportunities for growth across the industry including agri-tech, collaboration, tourism, localising the value chain, and developing information and skills.
- We provide a SWOT analysis, summarising the strengths, weaknesses, opportunities and threats relating to the agri-food economy of Staffordshire.
- We suggest a 'Road Map' for the way forward to maximise opportunities and mitigate the threats and we have included case studies from relevant initiatives elsewhere.

As there is so little robust data we have had to make certain assumptions to estimate sizes, volumes and values for various parts of the county's food economy. For example, in order to estimate gross output figures we have used Defra UK average values for outputs combined with the England or Staffordshire figures for cropping areas and stock numbers. It is likely that this is not completely accurate but we feel that our estimates give a good overall picture. . We also made an assumption about the proportion of wholesale, retail and accommodation business that was associated with food and drink in order to make estimates of overall employment and Gross Value Added (GVA) in the sector.

More research would be needed to provide fully robust figures but our assumptions and estimates, although not definitively accurate, are useful in arriving at an understanding of the food economy as a basis for developing a food strategy, policy and action plans.

3 Overview of Agriculture in Staffordshire

Farming is diverse in the county, ranging from grassland dominated by dairy, beef and sheep, through to arable and then intensive vegetable and soft fruit growing. The land in the northeast of the county rises to over 500m above sea level and comprises rugged upland dominated by livestock production. In the south-east, farming is mainly arable, including potatoes and large-scale field vegetables such as parsnips. Towards the Shropshire border, arable farming co-exists with dairy and some large soft fruit producers.

There were 3,132 holdings in the county in 2013 of which 1,112 (36%) were in Staffordshire Moorlands. The total farmed area was 191,328 hectares of which 43,725 hectares (23%) was in Staffordshire Moorlands, demonstrating the relatively smaller mean size of upland farming. The total number of holdings in the county has declined slightly since 2009 with a tendency towards fewer smaller holdings and more larger holdings[1] as seen in table 1.

Number of holdings in Staffordshire				
	2009	**2010**	**2013**	**Trend**
< 5 ha	495	254	300	↓
5<20 ha	1092	993	931	↓
20<50 ha	880	792	726	↓
50<100 ha	641	627	601	↓
> 100 ha	519	530	574	↑
Total number of holdings	3,627	3,196	3,132	↓
Area (ha)		186,196	191,328	

Table 1 Commercial Holdings in Staffordshire CC 2009 to 2013 (extracted from Defra June survey data) (NB. percentage increases or decreases cannot be given as the basis for collection of the data was changed between collection dates)

The types of farming in Staffordshire reflect the soil types as can be seen from Figure 1, which shows Agricultural Land Classifications[2]. The grades range from 1 (the highest quality and most versatile land) to 5 (restricted to permanent pasture or rough grazing, except for occasional pioneer forage crops).

There is very little Grade 1 land in Staffordshire but a significant area of Grade 2 in the south of the county, which supports horticulture and soft fruit production. Grade 3 land is found across much of the centre of the county and supports arable farming including grains, oil seed rape and potatoes, and

[1] DEFRA (2015) Structure of the agricultural industry in England and the UK at June

[2] MAFF (1988) Agricultural Land Classification of England and Wales (revised guidelines and criteria for grading the quality of agricultural land) Alnwick.

a significant dairy sector. The north of the county has a lot of Grade 4 and 5 land only suitable for extensive grazing, mainly sheep.

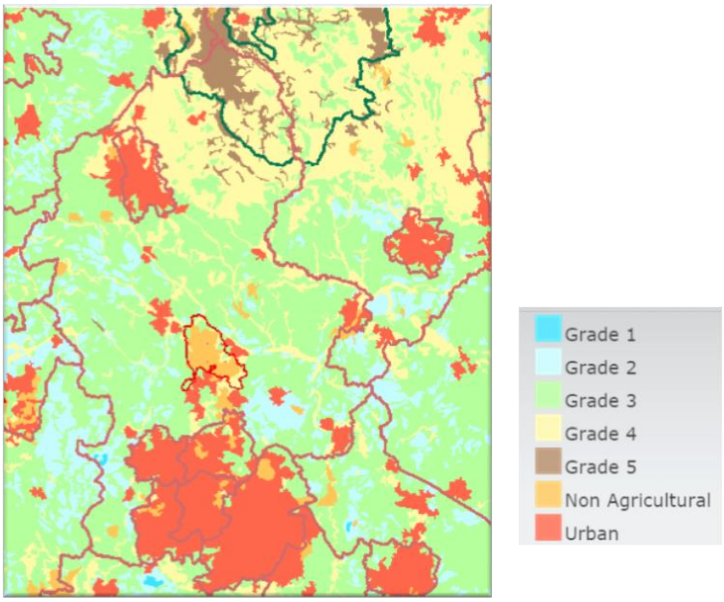

Figure 1 Agricultural Land Classification (England, provisional) Crown Copyright and database rights 2015

Staffordshire's farmed area represents around 1% of the England total (Defra statistics 2013) as shown in Table 2. Of particular note are potato (1.6%) maize (3.6%), and soft fruit (6.0%) production. 'Other crops' are not defined but is likely to include peas and field beans. The maize is grown both for livestock feed and for energy production by anaerobic digestion.

AREAS, 000ha	Staffordshire	England	% of England
Total Area	185.1	18,449	1.0%
Rough grazing	2.9	1,198	0.2%
Croppable	79.99	6,309	1.3%
Permanent grass	99.6	9,742	1.0%
Cereals	35.4	3,005	1.2%
Temporary grass	19.6	1,390	1.4%
OSR	9.9	715	1.4%
Maize	6.9	194	3.6%
Other crops	4.5	124	3.6%
Potatoes	2.2	139	1.6%
Soft fruit	0.6	10	6.0%
Beet	0.4	117	0.3%
Horticulture	0.4	116	0.3%
Ornamental	0.06	12	0.5%
Orchards	0.02	23	0.1%
Glasshouse	0.01	3	0.3%
	35.4	3,005	1.18
Total	**262.18**	**23,558**	**1.1%**

Table 2 Land areas (000s ha), England and Staffordshire as a percent of England calculated from DEFRA 2013 statistics.

The data in Table 3 demonstrates the relative importance of the county for the dairy industry, but also for the beef, goat and laying/breeding hen industries.

Livestock, 000s	Staffordshire	England	% of England
Dairy Cows	68.4	1,782	3.8%
Total Dairy	121.4	1,479	8.2%
Breeding Beef	18.3	1,611	1.1%
Total Beef	55.1	2,211	2.5%
Male cattle 2 years +	6.3	384	1.6%
Male cattle < 2 yrs.	42.4	2,376	1.8%
Breeding Pigs	8.0	522	1.5%
Fattening Pigs	61.3	4,363	1.4%
Ewes and rams etc.	128.7	15,993	0.8%
Lambs <1yr.	141.5	16,863	0.8%
Goats	5.7	98	5.8%
Horses	5.2	293	1.8%
Laying & breeding hens	999.0	47,024	2.1%
Broilers	545.4	104,576	0.5%
Ducks, geese & turkeys	70.7	6,553	1.1%

Table 3 Livestock numbers, England and Staffordshire as a percent of England 2013, calculated from DEFRA 2013 statistics

Indicative gross output data, relating to cropping and livestock in Staffordshire is found in Tables 4 and 5 respectively. The figures have been estimated using data from Defra's Farming in the UK 2013 and area/numbers from Defra's England county census data (attempting to allow for the non-England parts of the UK data). See Table 4

Gross Output – cropping, £million	Staffordshire	England (if 74% of UK)
Wheat	20.8	1551
Barley	7.9	837
Oats	1.5	118
OSR	7.6	551
Potatoes	11.1	699
Beet	0.7	198
Other crops	15.6	430
Horticulture	3.4	977
Soft fruit	26.6	443
Ornamental	4.1	816
Temporary grass	2.3	161
Total	**101.5**	

Table 4 Gross Output, Crops estimated from Defra's Farming in the UK 2013 and England county census data

Gross Output – Livestock, £million	Staffordshire	England (if 74% of UK)
Dairy Cows	122.0	3,176.7
Breeding Beef	7.4	653
Male Cattle 2 years +	35.2	2,148.8
Breeding Pigs	0.1	4.4
Fattening Pigs	13.4	952.8
Ewes etc.	2.0	250.6
Rams	6.7	770.5
Goats	9.4	162.8
Laying & breeding hens	11.3	534.0
Broilers	9.0	1,729.3
Ducks	0.2	62.4
Total	**216.8**	

Table 5 Gross Output, Livestock, estimated from Defra's Farming in the UK 2013 and England county census data

Gross output from arable and horticultural cropping in Staffordshire is estimated to be £101.5M, excluding subsidies, with a further £216.8M from livestock, equating to £318.3M gross output.

In terms of gross output, dairy farming is the most valuable sector in the county at £122.0M, followed by beef cattle (£42.6M), soft fruit (£26.6M) and wheat (£20.8M). Poultry (£20.5M) is also significant and Staffordshire has a large proportion of England's goats (£9.4M). One Staffordshire farmer quoted in 2012 was said to have the largest goat dairy herd in Britain at over 3,000 animals[3].

Staffordshire is fortunate in that, unlike many other counties, it has retained its county farms estate. The County Council owns 106 farms ranging from 24 hectares in size to over 40 hectares, and totalling 3,480 hectares. Most of the farms are best suited for dairy. Tenants are encouraged and supported to develop their businesses from the smaller starter farms, progressing to larger farms within the estate until they have a strong enough enterprise to set up on their own.

[3] http://www.fstoppress.com/articles/dairy-goats/

4 Sectors

4.1 Primary producers

4.1.1 Dairy

The Trent Valley is largely livestock producing with dairy farming being the dominant enterprise. An indication of distribution is shown in Figure 3.

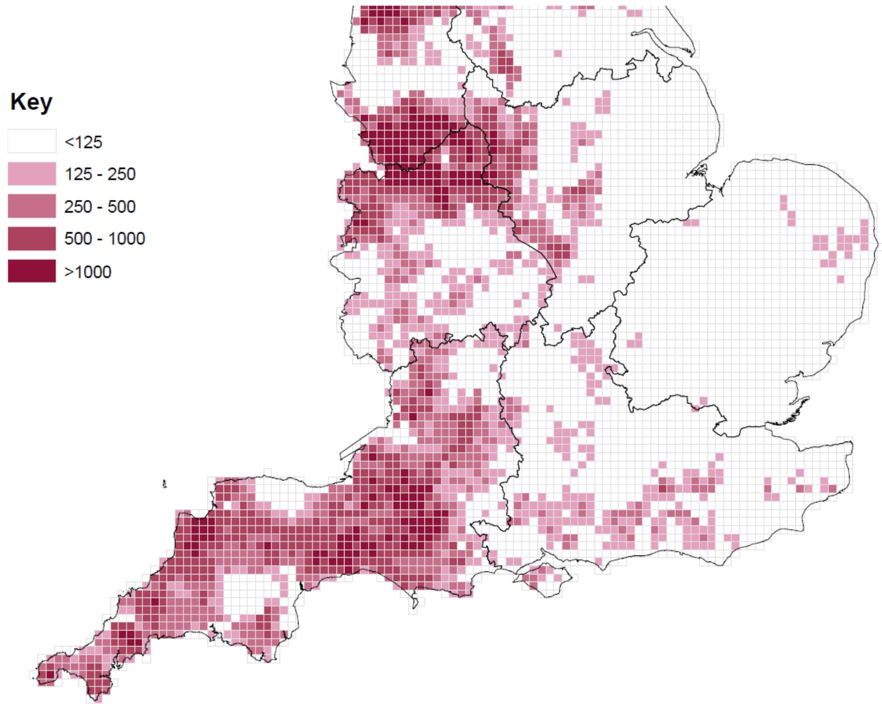

Figure 2 Number of dairy cattle by 5km² grid square: England 2010. Defra Cattle Tracking System and June Survey of Agriculture

In 2013 there were 500 dairy farms in Staffordshire, representing 16% of all holdings. UK dairy farming is undergoing a sustained process of restructuring. The number of dairy farms in the UK has been declining at an average rate of 4% over the past ten years and Staffordshire is no exception (565 dairy farms in 2010)[4]. Although total cow numbers have declined, yield per cow and farm size have increased. Average UK herd size was 125 cows in 2012[5]. Yield per cow had been increasing and was an average of 7,535 litres/cow in 2013[6]. Recent low prices for some supplier contracts are challenging for many dairy farmers. Many have seen their milk price drop since spring 2014 in the wake of a worldwide slump in the commodity price, trade sanctions in Russia and less demand than expected from China. The NFU estimate that 450 farmers have left the dairy industry since summer 2014 in England and Wales. Nevertheless there is sense of optimism that the UK is well placed to be internationally competitive with good growing conditions and a strong focus on improving efficiency whatever the farm size and Staffordshire dairy farmers can benefit.

[4] DEFRA (2013)
[5] Dairy UK (2013) The White Paper 2013. A guide to the UK Dairy Industry
[6] House of Commons (2015) Dairy industry in the UK: statistics, January 2015

There is little milk processing in Staffordshire. The main exception is Wells Farm Dairy in Stafford, which processes milk from 40 farms across Staffordshire and Cheshire, and markets dairy products (many branded with the Stafford knot) across the West Midlands. Their customers include local authorities, hospitals, government bodies, wholesalers, restaurants, nursing homes bottle milk buyers, bakeries, food processors and doorstep services[7]. There are also some small cheese producers such as Staffordshire Cheese Company at Leek.

Most dairy farmers in the county have various contracts through the main buyers, outside the county, Arla, Muller, Dairy Crest, First Milk and Freshways, some of which are part farmer owned. Dairy Crest, for example, have one of the closest dairies at Foston in Derbyshire, which has a processing capacity of 250 million litres of liquid milk per year. Some purchasing is via intermediaries. The milk market is becoming increasingly integrated with segregated supplies to supermarkets, resulting in farmers dedicating their production to known retailers who may have their own standards for environment, performance and welfare. Output for the county has been estimated as £122 million as shown in Table 5.

Dairy farmers tend to be early adopters of technology such as benchmarking as a tool to monitor performance and where economically viable, more obvious 'agri-tech' such as robotics. Research would suggest that it is possible for dairy farms to be efficient in a range of different management systems from largely housed 'intensive' units to less intensive mainly grass fed systems. The key to success is often excellence in management whatever the system.

Bovine TB continues to be a significant issue in Staffordshire, being in the 'high risk' area and farms are subject to annual testing. Staffordshire was the second most seriously affected county in 2014 with 3,011 reactors slaughtered[8].

4.1.2 Cereals and Oil Seed Rape

In 2013 around 35,400 hectares of cereals (wheat, barley and oats) and 9,900 hectares of oilseed rape were grown in Staffordshire, with a total gross output estimated to be in the region of £37.8 million.

Generally, cereals are a global and widely traded commodity. As in the majority of England, most wheat is grown for the livestock feed industry with a small proportion grown for milling for human consumption. Most Staffordshire growers sell to companies based outside the county such as Frontier and Agrii, although a proportion goes to the SC Feeds (part of NWF Agriculture) mill in Stone. Oats are grown to feed farmers' own livestock but otherwise mainly on contract for Mornflake at Crewe in Cheshire.

Similarly oilseed rape, whether for vegetable oil production or industrial use is traded outside the county. The notable exception is Just Oil Ltd near Rugeley who process rape seed from their own farm into a range of culinary oils, salad dressings etc.

[7] www.wellsfarmdairy.co.uk
[8] DEFRA (2015) Bovine TB Statistics: Great Britain

4.1.3 Sheep and Beef

Sheep and beef cattle are distributed through the county as shown in Table 6[9].

District	Sheep numbers	Cattle numbers
East Staffordshire	54,543	41,048
Lichfield & Tamworth & Cannock Chase	15,403	11,309
Newcastle-under-Lyme	14,736	24,425
South Staffordshire	26,799	18,774
Stafford	60,282	66,984
Staffordshire Moorlands	101,866	62,647

Table 6 Sheep and Cattle numbers by district, (DEFRA)

High numbers of sheep are located in the Peak District uplands. These grassland based enterprises are crucial for uplands farmers since other options are not open to them and the grassland farmers are crucial for maintaining the landscape from which considerable tourism income is derived. Anecdotally, hill farming incomes for beef and sheep farmers have been modest with businesses relying on family labour, subsidies and environmental payment to be viable.

Main livestock auction markets for beef and sheep are located at Leek, Chelford (Cheshire), Market Drayton (Shropshire) and Derby. The Livestock Auctioneers Association estimated that two thirds of lambs going to slaughter go through the auction market system[10].

Farmers may have marketing arrangements directly with multiple retailer producer groups such as Sainsbury's and Tesco, which dictate where animals are slaughtered, and many leave the county (detailed figures are not available). Morrisons remain the only fully vertically integrated multiple retailer to own its own abattoir and meat processing operation, called Woodheads, with facilities in Lancashire and Lincolnshire. Local slaughterhouses include Greens at Kidsgrove (which can take 2-3,000 sheep/week) and further afield, Farmers Fresh in Kenilworth (capacity up to 3,500 lambs per day). There remain several local butchers with slaughtering facilities such as T Sargeant and Sons, based in Bramshall, with retails outlets both in Bramshall and Uttoxeter. Another example is Peter and Anthony Coates with a small slaughtering facility at their shop in Alrewas and 3 further shops in Staffordshire, Nottinghamshire and Derbyshire.

A number of Staffordshire livestock farmers also produce crops, often feeding their stock with home grown cereals. One such mixed farming interviewee suggested that there could be a market opportunity for branding Staffordshire fed beef, lamb (and milk) as 'Staffordshire Bred, Staffordshire Fed', assuming that the additional costs were economically viable. Traceability standards are such that individual carcases can be tracked to ensure authenticity.

4.1.4 Soft Fruit

Suitable soils, proximity to large centres of population and excellent transport infrastructure have made soft fruit Staffordshire's most valuable crop with an output of £26.6 million representing more than a quarter of the county's cropping value[11,12]. The 600 hectare planting is 6% of the total soft fruit planting in England. Anecdotal reports suggest that more strawberries are now grown in Staffordshire than in Kent. Most of the county's production goes into the national supply chain through wholesalers and supermarkets.

[9] DEFRA (2014) Statistics 2013 by county and unitary authority
[10] http://www.laa.co.uk/news-detail.php?RecordID=153
[11] DEFRA (2013) Farming in the UK,
[12] DEFRA (2013) County Census Data,

Manor Farm Fruits of Hints near Tamworth is one of Staffordshire's longest established fruit growers. They produce about 450 tonnes of strawberries, 90 tonnes of raspberries and smaller amounts of gooseberries, redcurrants, blackcurrants, blackberries and blueberries on 32 hectares. They employ up to 100 staff but these are mainly seasonal workers, many coming each year from Romania and Bulgaria. 75% of their produce goes to supermarkets with the remainder being sold to local restaurants, market traders, local wholesalers and at up to 25 farmers' markets each month during the season. They also have a Pick Your Own operation. Although supermarkets can take large volumes their demand can be volatile. If the weather turns colder or rainier, orders can be cancelled at short notice leaving, significant amounts of produce unsold. For this reason, the farm wants to develop more reliable local markets and are planning a major expansion of their farm shop and tea room.

TW Busby and Son produce 2,000 tonnes of strawberries near Stafford, employ 350 seasonal and 10 permanent staff, and have now started growing raspberries. New Farm Produce Ltd near Lichfield started growing strawberries and raspberries in the 1970s and have added asparagus, cherries and melons to the range, all mainly sold to multiple retailer Sainsbury's from a 100 hectare site. Strawberries, raspberries and cherries are also grown on 100 hectares at Littywood Farm in Bradley.

It is argued that the widespread use of protection tunnels for the soft fruit production has had a significant effect on local landscape.

4.1.5 Pigs

Pig farming is the 5th most valuable sector in the county after dairy, beef, cereals and soft fruit (see tables 4 and 5). Pig production systems vary, ranging from fully outdoor units including the finishing stage, through outdoor-bred indoor-finished to fully indoor systems. Similarly, some farms control the entire breeding to finishing cycle, others concentrate on breeding before passing the piglets on to 'bed and breakfast' rearing units. Farmers with lighter land are able to use outdoor production systems and some have built on this to make a reputation for high welfare and high value.

District	Pig numbers
East Staffordshire	6,808
Lichfield & Tamworth & Cannock Chase	17,283
Newcastle-under-Lyme	9,681
South Staffordshire	7,426
Stafford	13,755
Staffordshire Moorlands	14,382

Table 7 Pig numbers by district (DEFRA)

One example of a large scale specialist farm is Packington Free Range of Barton-under-Needwood. Their pigs spend all their lives outdoors, having access to mud wallows and plenty of space. The pork has won 'Great Taste' awards and is sold mainly to local independent retailers although some goes to Marks and Spencer under M&S branding. The farm has about 50 employees and also a free range poultry enterprise.

Trinity Farm, near Kinver Edge is an unusual example of a small-scale specialist livestock farm. They produce 'suckling' pigs finished in woodland which along with woodland pigs from other local suppliers are sold locally through a Worcestershire farm shop.

4.1.6 Potatoes

There were 2,164 hectares of potatoes grown in the county in 2013 compared to 2,473 hectares in 2009[13]. Potato growing is confined to the lighter land towards the south of the county and the sands on the Shropshire/Staffordshire border.

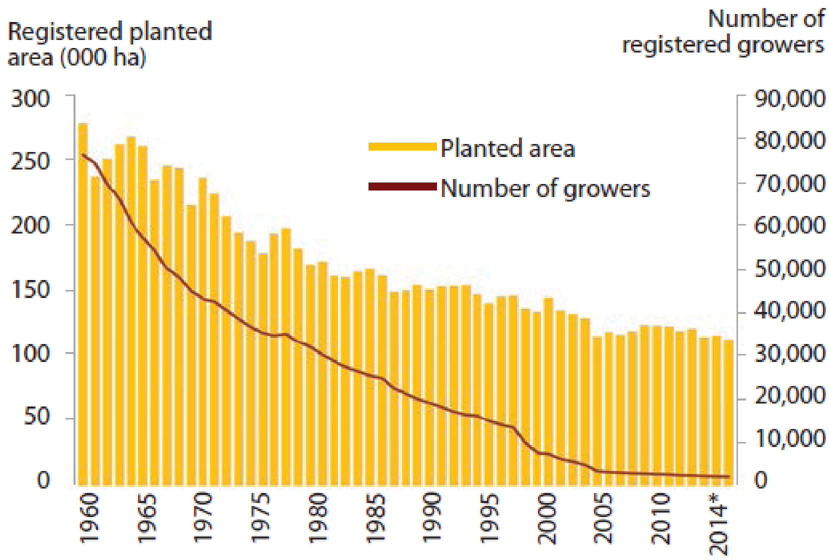

Figure 3 Planted area of potatoes and numbers of growers in GB 1960-2014. (source GB Potatoes Market Intelligence 2014-2015, AHDB)

The potato industry in Great Britain has been contracting for many years (as shown in Figure 3), particularly the pre-pack fresh supply, and Staffordshire is not immune to this trend.

In 2014, Great Britain planted area fell to 121,100 hectares, the lowest level since records began. Growing is dominated by fewer growers producing higher tonnages. In 2014 the average area of potatoes planted per grower was 53.2 hectares. In Staffordshire, historically there was a thriving wholesale market supplying Birmingham and this has virtually disappeared. Most Staffordshire potato growers produce processing potatoes for crisps and chips (french fries), supplying major processing factories out of the county such as Pepsico's Walkers crisp factory in Leicester and McCains chip processing in Peterborough. There are examples of local growers adding value such as a small local crisp producer, Just Crisps Ltd at Rugeley. There is some local packing of pre-pack potatoes for the fresh market supply such as John Watts in Sutton Coldfield and the Co-operative owned potato packing facility, Langley Brook, in Tamworth.

Environmental sustainability in the production chain is being encouraged by retailer and processor interest. For example, McCains and Pepsico encourage growers to calculate carbon footprints of production. Potato growers are also interested in technologies such as the use of biopesticides and plant machinery in order to improve efficiencies.

[13] DEFRA (2014) County/unitary authority data sets, 2013 June census

4.1.7 Poultry

There are two main sectors in the poultry industry: broiler meat and egg production. Large broiler units supplying major retailers tend to be around the Tamworth and Cannock area. Whilst the sector appears to be growing, planning permission and high capital cost are seen to be barriers to entry.

The free range egg sector has been growing for some years and although there was a dip in 2010 it still seems to be growing. Laying units tend to be physically larger but fewer in number. Sales are usually made through arrangements with companies such as John Bowler's Eggs (based in Derbyshire) and Noble Foods (Hertfordshire) for onward marketing to major retailers.

District	Poultry numbers 2010	Poultry numbers 2013	% difference 2013/2010
East Staffordshire	350,562	289,448	- 17%
Lichfield & Tamworth & Cannock Chase	1,996	3,906	+96%
Newcastle-under-Lyme	3,028	23,014	+660%
South Staffordshire	615,099	878,420	+43%
Stafford	103,097	321,687	+212%
Staffordshire Moorlands	113,204	125,984	+11%

Table 8 Poultry numbers by district (DEFRA)

4.2 Processors/Manufacturers

Supply chains and distribution systems are long, complex and fragmented. There is insufficient data to fully identify where all of the produce goes but it is safe to say that although Staffordshire has a wide range of primary production, most of the produce leaves the county to be processed. Similarly, although there are some major manufacturers and processors in the county employing significant numbers, there is inadequate information on where they source all their raw materials. We have repeatedly attempted to interview representatives of the larger companies but, in the main, they have been unwilling or unable to let us have any details of their commercial operations. Combining published data with information from company websites, press cuttings and more anecdotal information from other interviewees, we can build up a picture of how the supply chains work. It is apparent that most raw materials are traded nationally and, even if they originated in Staffordshire and were later consumed in the county, they will have been transported and processed elsewhere before returning.

Burton-on –Trent is world famous for its breweries, and Molson Coors and Marstons still have large production facilities there. Smaller operators in the county include Burtonbridge at Burton, the Leek Brewery, Titanic Brewery in Stoke-on-Trent, and Slater's Ales in Stafford. However, there are no local maltsters or hop growers so the major ingredients are imported into the county. There is a local supply chain for some minor ingredients such as finings, and the Marmite plant at Burton makes 50 million jars a year from the leftover yeast from the breweries.

Adams Foods in Leek is owned by the Irish Dairy Board through their Kerry Foods subsidiary and is the largest packer of cheese and butter in the UK. However, none of the cheese is locally produced. As well as 50,000 tonnes per year from First Milk creameries in Haverfordwest and the Lake District, they process cheese from Parkham Farms in Devon, South Caernarfon Creameries and creameries in Ireland

The Co-operative Group has a potato packing facility at Langley Brook near Tamworth. Their packs go to Co-op stores throughout the country and the potatoes are grown on Co-op farms at Goole in East Yorkshire, Coldham in Cambridgeshire and Whitsome Hill in the Scottish Borders.

Although most grains leave the county for processing, NWF Agriculture's feed mill in Stone produces 80,000 tonnes per year of compound feeds, mainly for ruminants. The mill also provides an outlet for some Staffordshire farmers.

Wells Farm Dairy in Stafford processes milk from 40 farms across Staffordshire and Cheshire, and markets dairy products (many branded with the Stafford knot) across the West Midlands. Their customers include local authorities, hospitals, government bodies, wholesalers, restaurants, nursing homes bottle milk buyers, bakeries, food processors and doorstep services in Staffordshire and adjoining counties.

Many other processors and manufacturers in Staffordshire work on a relatively small scale. Halfpenny Green Vineyards, for example, produce 250,000 bottles of wine a year but this is for 29 other vineyards as well as from their own 30 acre site. The Staffordshire Cheese Company at Leek makes about 300kg of cheese a week including Staffordshire, Dovedale and Buxton Blue, which have all achieved European Union Protected Designation of Origin status but this only uses about 3000 litres of milk a week, about a third of the production of the local farm which supplies them.

4.3 Distributors/Wholesalers

Almostall food sold by retailers and food service outlets in Staffordshire is supplied to them through some form of distribution or wholesale. This happens at a number of different levels and scales.

Supermarkets have their own centralised distribution systems. Tesco, Sainsbury's and Marks and Spencer have distribution hubs in Staffordshire but Asda supplies all its Staffordshire stores from their depot at Magna Park near Lutterworth. Similarly, although Central England Co-operative has its administrative headquarters at Lichfield, it supplies all its Staffordshire stores from a depot in Leicester.

The major chains are increasingly interested in stocking food from producers local to each store but the efficiency of their operation depends on centrally controlled lists and ordering. For example, one Staffordshire dairy farmer who was invited to supply ice cream for his local Asda store found that he would have to drive past the store to deliver the ice cream to Leeds before it could be redistributed back to Stafford so he decided to decline the opportunity. The system is currently under review and it is hoped that it will soon be possible for selected local suppliers to deliver direct to Asda stores. Central England Co-operative are already introducing their 'Pick of the Crop' scheme which allows selected produce from within 30 miles to be delivered directly to each store.

Wholesalers and specialist distribution companies supply other retailers and food service outlets. Brakes, for example, are a national food service supplier. They have a large depot at Tamworth, which stocks about 3,000 of their 25,000 listed lines. All the other lines are replenished overnight from their national depots at Grantham (chilled products), Newark (frozen and ambient lines) and Corby (fresh produce). A 'pick list' system is used to load their 80+ vehicles which then distribute the food to schools, colleges, canteens, restaurants and pubs throughout the West Midlands. The company would like to develop its business with small and artisan Staffordshire producers and local buyers but this currently involves delivery to national hubs before return to the county and any change to allow direct local deliveries would involve significant change to their very efficient logistics model.

A. F. Blakemore is a family owned wholesale and distribution group with over £1 billion annual turnover based at Willenhall. It owns 330 SPAR stores across the West Midlands and Wales, and supplies 750 more. Another division supplies independent retailers through a cash and carry operation. There is also a food service supply division which reports that it has "recently completed a £2 million frozen goods contract with Staffordshire County Council".

These distributors and wholesalers source their supplies in national markets so it is very difficult, if not impossible, to quantify how much of the food originates from Staffordshire. A unique innovation is Blakemore Fine Foods which was originally set up (as Heart Distribution) in collaboration with the Heart of England Fine Food regional food group to provide a service to smaller local producers. This division consolidates orders onto a 'One order, one invoice, one delivery' list across more than 3,100 chilled, ambient and frozen product lines from more than 200 producers. Produce can be collected without a minimum load and producers are supported with marketing and promotion. Customers include local Co-op and Waitrose stores.

Freshview Foods is a regional wholesaler based in Newcastle-under-Lyme selling fresh and prepared produce, bread, dairy, dry and frozen goods. They have their own bakery making pies, quiches and other baked goods. They have 9 regular delivery runs covering Staffordshire as well as Oxford, Manchester, Birmingham and Wales. They supply independent retailers, such as butchers, farm shops and greengrocers, and caterers such as restaurants. They have recently been working with Entrust to source local produce for school meals and other public sector catering contracts. As they do not have a highly centralised national hub system, they are able to engage more easily with local farmers and other suppliers. Working with farms, which already buy from other local farmers for their own farm shops, allows orders to be consolidated without having to collect from each individual producer. Milk, for example, comes from Wells Farm Dairy near the Cheshire border who, as well as supplying their own milk, buy in from 30 to 40 local dairy farmers and sell through doorstep deliveries and to food service, manufacturing and trade customers across the Midlands. Potatoes and roots are supplied through R & RW Bartlett who farm more than 1,000 acres near Lichfield but also buy in and distribute nationally.

County Fruit Stores of Stafford is an example of a wholesaler operating at a more local level. They deliver daily to independent retailers and restaurants throughout the county and sell direct to consumers through their own retail shop. Fruit and vegetables come from local farms and Birmingham wholesale market. Local processed lines include apple juice from Shugborough Hall and ice cream from Red Lion Farm. They have also introduced Asian and Caribbean lines and stock some organic produce.

4.4 Trade buyers (caterers/retailers)

Commercial food buyers are a very diverse group, ranging from multiple retailers to small cafes, and their supply chains are very different.

The supermarket chains have very highly developed distribution systems which use centralised ordering and regional hubs to supply their stores. Decisions on listing of products are usually taken centrally although some chains allow local managers to nominate local lines into their listing process. Most of the chains are interested in stocking local produce in their stores with Asda, Waitrose and the

Co-op developing schemes to allow for this but they can be very difficult for small and local suppliers to engage with.

Independent retailers have a range of options to supply their needs but are under tremendous price pressure from the multiples and often have to seek generic lines rather than local.

A Staffordshire greengrocer, for example, reported that they go about three times a week to Birmingham wholesale market when they need to restock and also sell a small amount of produce brought in by their own customers. They used to buy from a local wholesaler but found that too expensive. They always note the origin of the produce as customers often ask where it is from.

A few butchers in the county still have their own slaughtering facilities although this has become relatively rare due to the higher costs of the modern regulatory regime. One of these has four shops and buys stock from neighbouring farmers and from Bridgnorth livestock market. Their pigs come from Packington in Barton-under-Needwood and they have also set up a bakehouse to produce pies for their shops.

Other shopowners can buy from national, regional or local wholesalers and often rely on a mixture of these as well as ad hoc sourcing directly from local farmers. As an example, one outlet we corresponded with, Amerton Farm and Craft Centre, is able to offer an impressive list of local produce[14].

Several farmers have made a success of their own farm shops, which include butchering, bakeries, cafes and restaurants. They are able to maximise and add to the value of their own produce and supplement the range on offer by buying in from neighbouring farmers. Although logistics can often depend on ad hoc arrangements using their own transport, they find specialised services like Blakemore Fine Food very helpful.

The situation is similarly diverse for caterers and other food service businesses. High end restaurants and country house hotels are able to develop long-term relationships with high quality local suppliers in Staffordshire and have the flexibility to adapt their menus to feature the best produce available each day. For example, one Staffordshire head chef gets free range eggs from the next door farm, free range pork from Tamworth and other meats from Little Aston, and his fruit and vegetables via a local wholesaler. He finds some lines difficult to source locally and for particular specialities he will order from the Paris wholesale market at Rungis (there could be opportunities for local producers who are willing to work towards the required quality and specifications).

Many other caterers find it easiest to rely on specialist food service wholesalers. Brakes, for example, a national wholesaler, can supply around 25,000 lines from their Tamworth depot every day. A chef or restaurant owner can depend on consistent availability of ingredients to match printed menus and regular customers' expectations, and can choose from a wide variety of prepared vegetables and chilled or frozen ready meals. They also avoid the complexity of dealing with a number of different suppliers.

[14] http://www.amertonfarm.co.uk/Leaflets/food%20audit%20front%20and%20back.pdf

4.5 Public Sector Buyers

The UK public sector spends about £2.4bn per annum procuring food and catering services, which represents approximately 5.5% of UK food service sector sales. This money is spent feeding people in schools, hospitals, armed forces, central and local government, government agencies, prisons and courts, and significantly affects their health, wellbeing, and habits[15]. Although there has been a tendency to seek cost savings and 'efficiency' by sourcing generic commodity produce through global markets there are great opportunities for local economies through harnessing some of this expenditure for local businesses. In 2003 the government launched the Public Sector Food Procurement Initiative (PSFPI) aiming to increase the consumption of healthy and nutritious food, improve the sustainability of production, processing and distribution, increase tenders from small and local producers and offer fair treatment for suppliers, increase co-operation among buyers and producers, promote organic food, animal welfare and better working conditions for catering staff. There is also support for this approach through the European Green Procurement Policies.

The PSFPI has had modest success but has been hindered by a lack of understanding of its objectives among the 30,000 or so public procurement bodies, the erroneous belief that local sourcing is contrary to European procurement law, a perception that local and sustainable sourcing is more expensive than generic commodity produce and inadequate skills among procurement officers.[16] These factors can be overcome as demonstrated by the notable successes of the Royal Brompton Hospital, Nottingham University Hospitals, Bradford Education Services, the North East Improvement and Efficiency Project and Shropshire County Council's School Meal Service. Case studies and guidance have helped others to engage in this process[17]. There have been a number of national campaigns for improved school and hospital food including School Food Matters, the Children's Food Trust, Jamie Oliver Food Foundation, the Healthy Schools Campaign, the Better Hospital Food Initiative, Nutrition Now! and numerous campaigns by celebrity chefs. Many of these initiatives have focused on improving food culture, cooking from fresh and improving the quality and traceability of ingredients but results have often been disappointing.

The Food for Life Partnership (FFLP), led by the Soil Association in partnership with the Health Education Trust, Garden Organic, Focus on Food and since 2013, the Royal Society for Public Health, was established in 2007 aiming to improve the food culture in schools and support local supply chains. It works with schools to improve meals, introduce food growing, link with farms and take a 'whole school approach' to food in the curriculum. Bronze, silver and gold awards record each school's achievements against a range of indicators including use of local and organic food. Evaluation has shown that school meal uptake increased, eating habits were better (even among parents), academic attainment improved and local businesses benefited through increased local sourcing.[18] 45 schools in Staffordshire are now listed as participating in the FFLP Award scheme.

Building on the success in schools, the FFLP introduced a Catering Mark for other caterers. Entrust (a joint venture of Staffordshire County Council and Capita) cooks 10 million school meals a year in the

[15] Bonfield DEFRA (2014) A Plan for Public Procurement

[16] Deloitte/DEFRA 2009 The Public Sector Food Procurement Initiative – an Evaluation
[17] f3 (2006) Best practice in sustainable public-sector food procurement
[18] Orme et al, UWE/University of Cardiff (2011) Food for Life Partnership Evaluation

county. It is currently working towards the Silver standard and aims to reach the Gold standard by September 2015. The University of Keele is also working towards FFLP awards. They buy most of their food through The University Catering Organisation (TUCO) frameworks but these are currently being updated to recognise the benefits of local and sustainable sourcing. The University Hospital Trust of the North Midlands, based at County Hospital in Stafford, aims to reach Gold standard by August 2015.

The experience of these public sector caterers has been that changing to more local suppliers is generally cost-neutral, and quality and uptake of meals has improved substantially. These factors are expected to help in improving educational attainment and clinical outcomes. Closer relationships with local suppliers also mean that there can be much more flexibility in accommodating unexpected changes.

The FFLP initiatives provide a significant opportunity for Staffordshire suppliers. Although we have not been able to accurately quantify current and potential future spending it is apparent that several million pounds are already going into the local economy which otherwise would have been spent with national and international contractors.

4.6 Community Initiatives

Community initiatives are those which engage with people in their local area and whose objectives are not primarily economic. They include Food Banks (emergency food for people facing hardship) and Community Gardens (space and support for local people to participate in growing their own food). Other types of initiative include food co-operatives, community cafes, lunch clubs and shared meals. It is difficult to fully quantify the level of activity in this sector as many initiatives develop from local communities without formal co-ordination or documentation.

4.6.1 Food Banks

The Trussell Trust is a national charity whose vision is 'to end hunger and poverty in the UK'. In 2014-15 the trust helped more than 1 million people with emergency food for 3 days. They operate food banks in Cannock, Rugeley, Cheadle, Lichfield, Newcastle, Leek and Tamworth

The food bank at Rugeley, for example, receives food from private donations, collections at churches and donation bins in local Tesco and Co-op supermarkets

The House of Bread in Stafford is an independently funded Christian charity. It has operated a Service Level Agreement with the County Council to provide food for crisis support. They receive donations of food through bins in Asda and Tesco, surplus bread from Greggs and donations from the community. Hot meals are produced for shared meals as well as 80-100 food bags per week. People in need can be referred by neighbours or family members as well as through the usual agencies. The group work with other organisations including the Black Country Food Bank, Open Door in Stoke-on-Trent and HIS Church in Lincolnshire. They are starting discussions with local farmers about how they might be able to work together and have started a Community Garden project on a one hectare plot in the town. As well as fresh fruit and vegetables, soup ingredients for their shared meals, the garden will provide valuable pre-employment experience for their volunteers.

4.6.2 Community Gardens

There is no central co-ordination or documentation of community growing initiatives in Staffordshire so it is difficult to know how many community gardens there are in Staffordshire. Many projects are associated with schools and local authority programmes while others arise from churches and other groups.

There is increasing evidence of the benefits of community food growing activity[19]. These are mainly defined in terms of health, wellbeing and social cohesion, but there will undoubtedly be economic benefits including savings in health care costs through improved diet and increased physical activity. Volunteering in community food growing projects can also provide valuable pre-employment experience for young people, long-term unemployed, ex-offenders and community payback participants.

Examples of community growing initiatives in the county include:-

- The House of Bread, Stafford
- Church Road, Biddulph
- Queen Elizabeth Park, Newcastle-under-Lyme
- Richmond Street, Burton-on-Trent
- Church of our Lady of Lourdes, Uxbridge Street, Hednesford
- St. James Road, Barton –under-Needwood
- Thomas Alleyne's School, Uttoxeter

4.6.3 Other Community Initiatives

The Casserole Club matches socially isolated individuals with cooks who can spare additional portions of their home-cooked food. Cooks are non-professional members of the public, preparing meals on a voluntary basis, with the County Council acting as 'matchmaker'. The programme helps to tackle social isolation and helps older people who no longer find it easy to cook, enjoy a freshly prepared home-cooked meal. It also helps to decrease malnutrition, improve health, strengthen connections between the generations and within communities and provides a flexible way for people to volunteer their time and skills locally. Volunteers can sign up through the club's website and are given a food hygiene test and a DBS check. There have so far been over 200 offers to cook, of which 57 have been through the checking process, and 65 diners have been identified. Many of the links established through the Club have become firmly established and cooks continue to share meals beyond the scope of the scheme.

Status Grow was formed in 2012 aiming to grow fruit and vegetables for donation to people in food poverty in North Staffordshire. Although they continue to do this they have found their role changing from one of purely donations to one of education. Whilst their aim is still 'to support people in food poverty' they have found this support to be more focused on showing groups and individuals how to grow fresh produce for themselves. They are interested in forming links with other producers and growers of any scale to help ensure as many families and individuals in food poverty can be supported as possible.

The North Staffordshire Community Food Network aims to link allotment groups, urban food growers and community groups to improve availability and use of fresh produce.

The Leek North Food Co-operative is being set up to improve the provision of fresh fruit and vegetables to communities at a local level, providing good value, low-cost access to quality produce, sourced locally where possible.

[19] Schmutz , Garden Organic/and Sustain (2014) The benefits of gardening and food growing for health and wellbeing

4.7 Consumers

Consumers consistently indicate in national surveys that they would like to buy more local food and this attitude is reinforced when food industry scandals are reported such as the 2013 horsemeat scandal.

This is reflected in the responses to our consumer survey. 56% of respondents would like to buy more local produce, 34% said that they often buy local food and 20% often buy directly from producers at farmers' markets, farm shops etc. as shown in Figure 4.

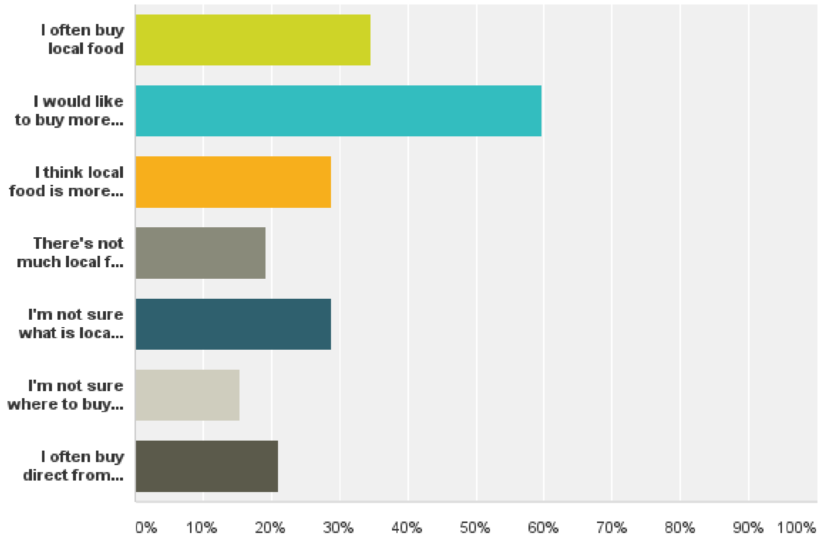

Figure 4 Consumers views on local food

Barriers to buying local food, which included a feeling that it is more expensive (30%) and not knowing where to find it (16%). A major motivation in food buying is a desire for 'easy access to fresh, healthy food (76%). Other issues include 'value for money' (62%), 'safeguarding independent shops and markets' (38%), 'supporting local businesses and small producers' (38%) and 'growing my own food, however little' (20%).

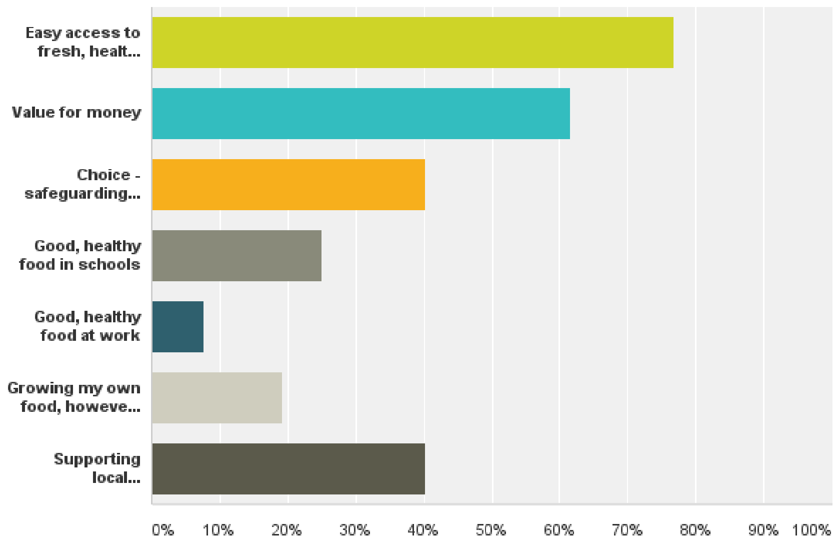

Figure 5 Consumers - 'What matters most about food...?'

Comments include ***'reduction of air miles', 'fair trade principles - fair price to producers'*** and ***'would like to give milk producers a living price'***

Only a minority of respondents felt that there was any lack of choice for different types of food but several stated that they had not got a good choice of fish. Comments included ***'Only fast food outlets in Stafford, no healthy options available'*** and ***'Not really knowing where it is from or how it has been produced'.***

In general, consumers said that they wanted better access to fresh healthy food, more farmers' markets and other events and better information about where to get local food and how it is produced. A few felt that farmers' markets are too expensive. Many would like to see more independent and specialist food shops. One respondent suggested a directory of local producers and outlets.

4.8 Food waste

About 15 million tonnes (Mt) of food is thrown away in the UK each year[20] with about 7 Mt coming from homes, 3.9 Mt from manufacturing, 0.25 Mt from retail and wholesale, 0.9 Mt from hospitality and 3 Mt from other sources including farms and litter. The value of household food waste is estimated at nearly £7 billion per year.[21] Staffordshire has about 1.4% of UK population so we could estimate the corresponding figure for the county as £100 million. As well as the waste of valuable land, water, energy and other resources in production of the food, there is the risk of disease, vermin, greenhouse gas emissions and contamination of land and water when it is discarded.

Food waste management in Staffordshire is managed differently in the individual districts. For example, in Newcastle-under-Lyme food waste is segregated at source and goes to anaerobic digestion, whilst in East Staffordshire, Lichfield and Tamworth it is mixed with green waste for in-vessel composting at Etwall. In Stafford the green waste is composted in open windrows so food waste cannot be safely included. In other areas food waste is included in residual waste and goes to energy-

[20] WRAP/Love Food Hate Waste http://england.lovefoodhatewaste.com/node/2163
[21] WRAP (2012) Household Food and Drink Waste in the UK

from-waste incineration at either the Hanford plant at Stoke or the Veolia plant at Four Ashes. Home composting is promoted through leaflets and events, and home composting kits are available economically through an arrangement with a private company. No domestic food waste goes to landfill and work continues within the local authorities to reduce food waste at all levels of the 'waste hierarchy' with the aim of eliminating food waste entirely.

Supermarkets, caterers and other food businesses have to dispose of their food waste through private contracts with waste management companies who operate anaerobic digester (AD) units producing gas which is then used to power electricity generation. Tesco stores in Staffordshire, for example send all surplus and waste food back to their central distribution depot at Lutterworth where it is then passed to waste contractors.

Biffa Waste operate the largest AD facility in Europe at Cannock and this is able to take retail, manufacturing, and catering waste as well as municipal, source-segregated food waste. The digestion process produces 3000m^3 of gas per hour which is used to generate electricity and results in 250m^3/day of liquid and 100m^3/week of solid digestate, both of which are valuable nitrogenous fertilisers and are spread on farms within 20-30 miles from the plant. Sainsbury's Cannock store sends its waste food directly to the AD plant and a cable is being installed to supply the store's power. Biffa have invested £30 million in the plant but do not expect to expand operations significantly in the future.

East Staffordshire Borough Council is leading work on food waste reduction within Staffordshire. A significant part of its work is on education and awareness in partnership with schools, and adult and family learning programmes. For example, food waste reduction is incorporated into nutrition advice with the aim of integrating waste reduction practices into shopping, cooking and household management habits. Workbooks covering food waste issues have been produced for primary age children and for secondary students and adults.

Surplus food from manufacturers, retailers and food service companies that is still fit for human consumption can be redistributed for use in food banks, lunch clubs and other community initiatives. This can be through ad hoc local arrangements, for example where Greggs in Stafford offers its surplus bread to the House of Bread food bank.

Another example is FareShare West Midlands. It redistributes surplus food to over 50 organisations in Birmingham and Coventry that work with people in need, from families on low income and older people at risk of isolation to those affected by homelessness and mental health issues. The charities FareShare works with provide crucial support services alongside freshly cooked nutritious meals. They take surplus food from manufacturers, retailers and food service companies which is still within its date code but cannot be used due to over-ordering, labelling errors or other operational reasons. This is a valuable service as it saves the companies the expense of disposal through waste contractors. Although they have not yet been working in Staffordshire they plan to expand their work into the county during 2015. All the surplus food they handle is distributed via their central warehouse in Birmingham but they are moving towards a 'hub and spoke' model of distribution and will need to establish local facilities.

4.9 Infrastructure

Staffordshire has excellent national transport links, providing good access to large centres of population in Stoke-on-Trent, Birmingham, Wolverhampton and beyond.

- The West Coast Mainline runs north-south, providing frequent passenger services to London, Birmingham, Manchester and Liverpool.
- The M6 Motorway runs through the area and is one of the major arterial roads running along the backbone of the UK.
- Four international airports are within a 1-hour road journey.
- Many of the country's major sea ports are within a 4-hour road journey and are increasingly becoming more connected by the rail network.

The second phase of the proposed High Speed 2 rail link cuts right through the county. No stations are proposed but a planned link to the West Coast Main Line near Lichfield will allow access from Stafford and Stoke. The planned route will have some negative effects; one Staffordshire farmer who had been granted planning permission to convert redundant buildings for holiday lets will now have to abandon the scheme as the new line will be immediately next to the buildings.

Fast and reliable digital connectivity will play an important role in food business growth. The Superfast Staffordshire project aims for 97% of premises and homes to have access to superfast broadband (25 Mbps or faster) by 2016. For businesses to remain competitive they will probably need faster connections in line with the EU target of 50% of subscribers to have internet connections above 100Mbps by 2020[22]. It will also be important to address the remaining 'not-spots', without good internet access, mainly in rural areas.

5 The Food Web

5.1 Supply Chains

The great majority of the food produced and consumed in Staffordshire passes through the major multiple retailers and large food service companies. (The combined UK market share of food and non-alcoholic drinks of the largest four food and drink retailers was 62% in 2012[23].)

Food produced on farms in the county is often treated as a bulk commodity and is transported to centralised processing facilities (pack house, manufacturer, abattoir, dairy etc.) with the processed product taken via central and regional distribution depots to the local stores and outlets. Supermarket chains are interested in stocking local lines but centralised listing, ordering and distribution systems, which often results in decisions being made centrally and produce travelling to distant depots before returning to the county. For example, the Central England Co-operative stores in Staffordshire are supplied from a central hub in Leicester and listings for local suppliers have to be processed in Manchester. Asda stores are supplied from Lutterworth while decisions on local lines are made by the local sourcing team in Leeds.

Some initiatives are bringing more of the value chain back into the county. The Food For Life Partnership (FFLP) working in schools and, more recently with other public sector caterers, has stimulated demand for more local produce and this is helping to develop the connections and infrastructure need for a more localised supply chain.

On a smaller scale, local independent retailers have continued to develop their own supply chains. A number of local wholesalers and distributors offer a good range of produce and are able to engage

[22] http://ec.europa.eu/digital-agenda/en/fast-and-ultra-fast-internet-access-analysis-and-data

[23] DEFRA (2014) Food Statistics Pocketbook

with smaller local farmers and producers. One example is Freshview Foods Ltd. of Wolstanton, Newcastle. Through their long-standing connections with local farmers they have been able to work with Entrust to source local produce for their school meals and other contracts. Butchers who have been able to retain their own slaughtering and cutting facilities can buy stock from local farmers and at local markets but many have been unable to meet increased costs and regulatory burdens associated with slaughtering and now have to buy in meats, often from national suppliers. Greengrocers will often find it more economic to buy fruit and vegetables from the Birmingham wholesale market, some of which may have come from Staffordshire originally and can supplement this with small amounts of seasonal produce directly from local growers.

High end restaurants and country house hotels have enough flexibility in their menus to accommodate seasonal fluctuations in the availability of local produce. They often have long-standing relationships with their local suppliers and highlight local provenance to their customers. Many smaller caterers work to tighter budgets and find it difficult and sometimes expensive to work with local producers. They want to have consistency in their menus and, even if they want to emphasise quality and local produce they are in competition on price with other establishments using generic frozen ready meals. They can buy from local distributors but often find it easier to use national suppliers.

A number of small and medium sized farms have had great success by bringing more of the value chain onto the farm by setting up their own butchering, bakeries, farm shops and restaurants. Notable examples include Essington Fruit Farms, Halfpenny Green Vineyards, Canalside Farm Shop at Great Heywood, Denstone Hall Farm, and Packington Moor Farm. These primary producers are able to achieve retail prices for their produce far higher than the commodity trade levels they would have to accept from a middleman. They can also add significant value by processing their meats, fruit, vegetables, grains etc. This type of integration demands large investment in infrastructure and skills but, as well as increasing margins, can greatly enhance the resilience and sustainability of the business. Taking the example of Halfpenny Green Vineyards – they started by planting half an acre of vines and now has 30 acres. Their winery produces 250,000 bottles of wine a year including wine made for 38 other vineyards. 75% of the wine is sold directly to the public at their own shop and at farmers' markets and trade customers include Marks and Spencer. They have a bakery, a delicatessen and a restaurant. The vineyard and winery employ up to 8 people while the bakery, delicatessen and restaurant employ 20. Bought in produce for the shop and restaurant comes from local farms. The volumes traded through this network of local producers are relatively small but in terms of employment and value added, they far outperform the larger, more extensive holdings. These businesses are very well placed to meet the increasing demand from commercial buyers for more local produce. Larger buyers find it difficult to deal with a large number of small primary producers but these vertically integrated businesses are developing the capacity to supply the volume, continuity and quality assurance of both fresh and processed food that buyers need and, in supplying their own shops with local produce, they are building chain capacity to consolidate orders.

Direct selling through farmers' markets has been helpful to many of the smaller farm businesses. Setting-up costs are minimal and a business can expand to selling at 20 or more markets a month across the region. Farmers' market rules insist on 'producers only' – a day at market is a day away from production so must be made to pay but a successful market will give the producer a good retail price, good cash flow and an opportunity to test new products and promote their produce . Established farmers' markets in Staffordshire include Stone, Stafford, Leek, Cheadle, Lichfield and Cannock. Producers report that footfall and sales are robust and steady but lower than 10 or 15 years ago. Some producers build up their businesses at farmers' markets and then move on to other marketing models.

5.2 Employment

The latest figures available from DEFRA[24] show that in 2013 there were 3,132 holdings in Staffordshire totalling 191,328 hectares, employing d 9,609 people of whom 3,175 worked part time and 2,207 were casual workers. Data for employment by industry compiled by the County Council [25] gives total employment in agriculture, forestry and fisheries as 9,963 in 2014.). It is often said anecdotally that for every job in farming there are four more in the rest of the food and drink industry. The figures broadly bear this out. If we add to the above figure for farming, forestry and fisheries the figures given for food, drink and tobacco (7,217), food and beverage services (20,528) and make an assumption that 25% of employment in wholesale trade (16,307), retail trade (37,285) and accommodation (2,388) relates to food and drink, we arrive at an estimate of 51,703 for total employment in the sector. On current trends the Insight data lead to a corresponding figure of around 54,000 for 2025. The only relevant figure listed under 'Employment by occupation' is for Skilled Agricultural Trades at 6,269 for 2014

The Council also has data compiled from IDBR/ONS and NOMIS, listing the largest employers in the county and districts. The largest employer in the county as a whole is Entrust Support Services Ltd. who among other things, provide school meals and other public sector catering services. We do not have data to say what proportion of their employees are involved in food related work. Other top ten employers include hospitals, universities and colleges which have catering as a proportion of their activities. Sainsbury's supermarkets are among Cannock's top five employers; East Staffordshire has Kerry Foods and Northern Foods Grocery Group; Lichfield has the Catering Academy; Staffordshire Moorlands has Adams Foods; and Tamworth has Brake Bros.

5.3 Value Added

By adding Gross Value Added (GVA) for agriculture, forestry and fisheries (£161,200,800), to the figures given for food, drink and tobacco (£363,705,400), food and beverage services (£257,548,500), and making an assumption that 25% of GVA in wholesale trade (£119,860,000), retail trade (£205,717,000) and accommodation (£16,471,900) relates to food and drink, we arrive at an estimate of £1,124,508,000 for total GVA in the sector in 2014.Their projections suggest that this will rise to £1,375,051,000 by 2025. This is roughly in line with the observation that 'For Every £1 of GVA in agriculture there is a further £4 in food processing and logistics and a further £5 in food retail & catering'[26].

[24] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/353381/structure-june-eng-county-12sep14.xls
[25] Insight Team, Staffordshire County Council, DATA - Rural Economy Research,
[26] Defra (2013) Agriculture in the UK 2012

5.4 Environmental Impact

The production, processing, distribution and consumption of food and drinks have environmental impacts at every stage of the food chain, including:

- Inappropriate cultivation of soils can reduce soil organic matter (SOM) releasing CO^2 into the atmosphere, reducing water holding capacity and increasing the risk of soil erosion
- Water abstraction for irrigation, livestock and processing can deplete aquifers and runoff of nutrients and pesticides can pollute watercourses
- Excessive transportation of food and drinks exacerbates pollution and road congestion
- Food wastes from all stages of the cycle can cause pollution and greenhouse gas emissions, particularly when sent to landfill.

Farmers and other food businesses are not always adequately supported in working for environmental sustainability. Support schemes and regulatory regimes can have perverse incentives and mitigation measures, together with initiatives such as the Campaign for the Farmed Environment.

Positive environmental impacts include:

- Sensitive land management can enhance habitats and biodiversity
- Appropriate farming systems create and preserve the landscapes that are valuable for recreation and tourism

5.5 Social Impact

Social effects of the food system can be adverse including:

- Social isolation of some land workers
- Low paid and insecure jobs in harvesting, processing and food service
- Ill health including obesity and type 2 diabetes associated with poor diets
- Hunger and 'food poverty' among disadvantaged groups

However there are positive effects including:

- Sustainable and rewarding livelihoods in all sectors of the food system
- Social interaction through markets, shared meals etc.
- Preservation and celebration of cultural traditions

6 Trends

A wide perspective and analysis of the global food industry was provided in the important Foresight report 'The Future of Food and Farming: challenges and choices for Global Sustainability, in 2011[27]. It described the coming together of a number of drivers of change requiring a strategic reappraisal of how the world is fed:

- Global population projected increase (7 billion in 2011, 8 billion by 2039 and probably 9 billion by 2050).
- Wealthier population creating demand for a more varied, high quality diet requiring additional resources to produce.
- Competition for land, water and energy.
- The effects of climate change will become apparent and the need to reduce greenhouse gas emissions and adapt to a changing climate will be imperative.
- Continuing globalisation exposing the food system to novel economic and political pressures.

Staffordshire's stakeholders, across the public, private and voluntary sectors, need to work together to respond to these global challenges and position the county's agri-food economy so that it is resilient, forward-looking and flexible.

6.1 Increasing population and changing diets

Global population is projected to reach £9billion by 2050[28] and many authorities report a 'nutrition transition' to foods with higher energy density, mostly of animal origin.[29] These factors are sometimes interpreted to imply that global food production must double by 2050 to avoid widespread starvation.[30] However not all commentators agree with this analysis as it is based on the assumption that developing nations will adopt the 'western diet' as they increase in prosperity and that this will depend on a rapid increase of feed production. Growing acknowledgement of the costs of the 'western diet' is leading to calls to reduce consumption of animal products. For example a Cabinet office paper of 2008 concludes that

> *'Consumption of food has external costs:–To the UK and global environment from unsustainable resource use, pollution and greenhouse gas emissions associated with food production;–To health services and society in managing the consequences of poor diet And looking forward, we face twin threats:–That existing patterns of food production are not fit for a low-carbon, more resource-constrained future;–That existing patterns of food consumption will result in our society being loaded with a heavy burden of obesity and diet-related ill health'*[31].

So it is not sustainably possible for the entire global population to take up the current model of the 'western diet' and it is likely that developed countries will have to modify their diets. Another factor

[27] The Government Office for Science (2011) Foresight. The Future of Food and Farming - Final Project Report.
[28] United Nations, World Population Prospects
[29] FAO (2003) Global and regional food consumption patterns and trends
[30] Alexandratos, Bruinsma FAO (2012) World Agriculture Towards 2030/50
[31] Cabinet Office (2008) Food: An analysis of the issues

to consider is that roughly one third of all food currently produced is wasted[32] and that political and economic factors affecting food distribution are more likely to reduce hunger than simply increasing production. It would probably, therefore, be unwise for UK farmers to base all their plans on the likelihood of continuing demand for commodity crops and ever rising prices.

6.2 Interest in provenance, organic and artisan food

The market for generic commodity food and drink products is likely to be increasingly competitive due to global trading. However, sales in 'ethical' food consumption, whilst a small proportion have been rising at a faster rate to £7.7 billion in 2012[33] and represent an important market opportunity.

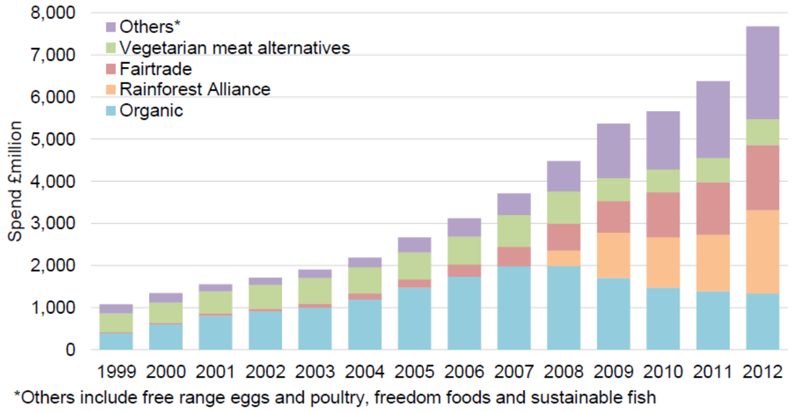

Figure 6 UK trend in sales of ethical produce, Ethical Consumer Market Report, Ethical Consumer Research Association 2013

Following a string of crises, including BSE, Foot and Mouth Disease and the horsemeat scandal, consumers have become increasingly interested in the provenance of their food[34] and many report that they want to buy more from local producers. In our survey of Staffordshire consumers, 56% said they would like to buy more local food although many said that they found it hard to know what is local or where to find it.

Nationally, sales of organic products increased by 4% in 2014[35]. Dairy products and fresh fruit and vegetables were the most popular organic purchases. Overall, the strongest market growth was through online shopping and box schemes (11.7%) and independent retailers (5.7%) who offer the choice and convenience of extensive organic ranges in one place. More than a quarter of spending on organic products (27.9%) is on dairy products. Over 83% of UK households purchased organic products in 2014[36]. Feedback from retailers indicates that shoppers are becoming more health conscious and organic products offer answers to questions about food quality and provenance..

Nationally, nearly one third (29%) of shoppers seek out ethically sourced and environmentally friendly products and over two thirds (68%) make the choice to support local farmers and businesses[37]. There

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[32] FAO. (2011) Global food losses and food waste – Extent, causes and prevention
[33] Ethical Consumer Research Association (2013) Ethical Consumer Market report
[34] Mintel (2013) Provenance in Food and Drink - UK
[35] Soil Association (2015) 2015 Organic Market Report

[37] eDigital (2014) Research for Waitrose

has been no specific research on this topic with Staffordshire consumers but it is likely that their attitudes are in line with the rest of the UK.

6.3 Water scarcity

Most of Staffordshire is in the Trent Valley catchment including the river's source on Biddulph Moor, north of Stoke-on-Trent, and its confluence with the Tame. Its main tributaries are the River Blithe (which has the Blithfield Reservoir, a SSSI) and the River Sow. Other tributaries include the River Penk, Scotch Brook and River Swarbourn, together with a number of canals

The county's geology includes a band of Sherwood Sandstone running east to west to the south of South of Stoke-on-Trent and this is a principal aquifer, providing large volumes of water for abstraction, particularly for drinking water.

The main abstractions of water from both the surface water and groundwater are by water companies and significant volumes are used in agriculture (and industry and power). Rainfall in the Upper Trent catchment is close to the annual average for Britain (800-900mm/year) and is slightly less in the lower lying areas to the south.

The Environment Agency is responsible for managing abstractions to ensure adequate flow for ecology, navigation etc. and to ensure that groundwater resources can be recharged. Their plan is contained in the 'Staffordshire Trent Valley Abstraction Licensing Strategy, February 2013'. There are areas of surface waters in the catchment that can be considered for new abstraction licences and others where recent actual flows are below the Environmental Flow Indicator and new licences are restricted or not available to help support Good Ecological Status (as required by the Water Framework Directive). Similarly, new licences from groundwater are not available in all areas of the county.

Part of the Staffordshire uplands are in the Peak District Dales Catchment Sensitive Farming (CSF) area. The CSF project is run by Natural England in partnership with the Environment Agency and Defra and it raises awareness of diffuse water pollution from agriculture (DWPA). It gives free training and advice to farmers and in some cases grants to help improve environmental performance of farms such as slurry store improvements.

Water will become an increasingly important issue.

- Demand for water per person in the UK has been increasing for many years by around 1%/annum, which combined with a growing population will place additional demand and potential conflict for use on water.
- Climate change (see later) is forecast to result in increasingly possibility of wetter winters and drier summers, with more extreme weather events such as flooding. Warmer drier summers would result in increased water demand by crops and grassland at that time.
- Demand for water for irrigation is already increasing with greater focus on crop production reliability, e.g. for soft fruit which is so important in Staffordshire.
- Water quality issues such as sediment, bacteria and environmental impact are important for both agriculture and the greater food chain. Heavy rain and flood events increase the risk.

Agriculture needs to plan for changing water availability to ensure there are opportunities for growth. Some opportunities include collaborative integrated working to share irrigation capacity, entrepreneurial thinking to solve challenges in a mutually beneficial cross-sector way, for example agricultural irrigation reservoir development to collect surplus water: new building sustainable drainage schemes delivering irrigation water and exploring integrated surface/groundwater abstraction.

Farmers with irrigation from surface waters run the risk of restricted use in dry seasons when 'Hands Off Flow' restrictions are implemented, and this risk could be reduced by the use of winter–fill reservoirs. Improving the efficiency of irrigation application such as though improved scheduling and application methods such as from rain gun to boom irrigators are opportunities alongside roof water capture and re-use for a range of arable and livestock uses. Increasing the organic matter content of soil could improve its water holding capacity, although increased organic matter would be beneficial. There are, however, cost implications for these opportunities.

6.4 Climate change

The UK Climate Prediction 2009[38] gives a number of predictions for future climate including:

- ***Hotter drier Summers***
- ***Milder wetter Winters***
- ***Increased frequency of extreme weather events such as surface water flooding***
- ***Increased frequency and severity of snow, ice and extreme cold and strong winds.***

The UKCP09 projections show that in the 2080s, and under a medium emissions scenario, all areas of the UK warm on average relative to the 1961-90 baseline. Summers warm more than winters, particularly in southern England. Mean daily maximum and minimum temperatures increase across the UK in both summer and winter. Average annual precipitation changes little across the UK, but winter precipitation increases in western regions while summer precipitation decreases in many, but not all, parts of the UK. The average amount of summer cloud cover decreases in parts of southern UK. Currently it is not possible to predict climate change impacts on a local county scale but models have been produced on a regional scale.

Staffordshire County Council's Corporate Climate Change Strategy[39] summarises the expected trends for the county:

- Annual mean temperatures are expected to rise by between 2.7°C and 4.3°C.
- Average temperatures across the region are expected to rise by around 1°C every thirty years between 2020 and 2080.
- The most extreme rise will occur in the daytime in summer, where a 6.6°C average rise by 2080 could occur.
- Winter precipitation is expected to increase by between 14% and 24%.
- Summer rainfall is expected to decrease by between 13% and 25%.
- Severe weather event frequency and intensity is also likely to increase

[38] UK Climate Projections Website (2010) Emissions Scenarios (http://ukclimateprojections.defra.gov.uk/content/view/551/690/)
[39] Staffordshire County Council (2013) Corporate Climate Change Strategy, 3rd edition

DEFRA's Climate Change Risk Assessment[40] suggests that, although yield for major crops could increase there will be an increased risk of crop failure through floods, droughts and other extreme weather events. Pigs, poultry and dairy production can be adversely affected by heat stress. Milder winters may reduce the need for bedding but summer droughts may lead to shortages of forage. Demand for irrigation water may begin to exceed the available supply. Evidence of increased threat from pests and diseases is inconclusive.

Another County Council paper of 2012[41] dealing with ecosystems, habitats and species concludes that:

- ***The effects for Staffordshire are broadly similar to those of other areas although the ecological consequences of these are difficult to predict due to the variable nature of the habitats, landscape and climate itself.***
- ***Almost all habitats are predicted to feel the effects to varying degrees but areas such as the uplands in the north, rivers and streams and wet grassland may be affected the most.***

Although this paper is concerned with wildlife and habitats many of the conclusions can equally be applied to agricultural production. For example the outbreak of *Phytophthora pseudosyringae,* a fungal disease, on Bilberry at Cannock Chase could suggest the risk from new pests and diseases. Increased flooding and reduced crop growth and the risk of fire during drought have obvious economic impacts while increased mean temperatures and extreme weather events will have unpredictable consequences for farming businesses.

The County Council's Climate Change Risk Register[42] gives a very high risk of loss of profitability of farms due to water scarcity, reduced output from livestock and crops due to heat stress, a medium risk of storm damage to farm buildings, pollution due overflowing drains and increased potential of livestock diseases such as bluetongue by 2070.

The Trent Valley is predicted to be particularly vulnerable to increased flooding risk due to increased rainfall. This could result in damage to, or complete loss of autumn sown crops in this large part of the county with significant arable cropping. Increased frequency of extreme weather events could lead to summer flooding with similar consequences. The increased drainage of flood plains to improve agricultural output can result in exacerbated flooding downstream so there may be opportunities for farmers in Staffordshire to work with environmental authorities to develop mitigation schemes.

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[40] DEFRA (2012) Climate Change Risk Assessment

[41] Staffordshire County Council (2012) Climate Change in Staffordshire: The Impacts on Ecosystems, Habitats and Species

[42] http://www.staffordshire.gov.uk/environment/climatechange/Adapting-to-Climate-Change/SCC-climate-change-risk-register-%28edited%29.pdf

7 Opportunities for Staffordshire's Agri-Food Economy

7.1 Agri-tech

The UK government's strategy for Agricultural Technology[43] proposes:

> ***'That the UK becomes a world leader in agricultural technology, innovation and sustainability; exploits opportunities to develop and adopt new and existing technologies, products and services to increase productivity; and thereby contributes to global food security and international development.'***

The Stoke–on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) has identified 'Agri-tech' as a key sector for business growth in its Strategic Economic Plan[44]; noting that it draws ***"..on our agricultural back-drop and Harper Adams University on our border to capitalise on an increased global focus on food security and the agri-plant capacity at JCB".***

It is also the focus of one of the government's 11 key industrial strategies.

The term 'agri-tech' is not clearly defined but can be taken to include:

- crop and livestock genomics
- agri-engineering (sensors, autonomous vehicles, robotics, precision agriculture)
- genetics
- nutrition
- food science
- health in crops and livestock
- plant breeding
- environmental sciences
- human nutrition
- functional foods
- nutraceuticals
- clean technology and energy generation from waste
- industrial and synthetic biology
- dairy robotics

The Greater Cambridge Greater Peterborough Local Economic Partnership has invested over £2.1million in 24 projects over the past year through its Eastern Agri-tech Growth Initiative. The initiative aims to drive economic growth in the region by supporting high-value manufacturing, food and drink production, farming and innovative IT systems.

A £50,000 award to a large coffee roasting and packing company based at Peterborough has helped them buy and install a bespoke coffee bag packing line. The improved automation and productivity will help their expansion in the airline and travel sector. It also provided for a new specialist Nespresso compatible capsule packing line which will enable them to launch the world's first fully compostable coffee capsule.

Another grant allowed a family farm near Woodbridge in Suffolk to move to new premises for improved productivity and efficiency in their business producing Freedom Food pork and salami products. As well as safeguarding nine full time jobs they expect the move to create eight new jobs and the positive publicity generated from the scheme has helped to increase their sales and turnover

Improved crop varieties and livestock lines can help to increase production and efficiency but can also develop traits which may be useful in tackling global challenges around food security and climate change. These may be achieved through genetic modification by inserting genes from other species or by using genetic marker technology to dramatically reduce the time needed for traditional breeding

[43] HM Government (2013) A UK Strategy for Agricultural Technologies,

[44] Stoke on Trent and Staffordshire Enterprise Partnership (2014) Strategic Economic Plan – Part 1-Strategy

methods. New information technology could also help traditional methods by improving monitoring and screening, identifying promising new lines more quickly.

Greater precision in farming with GPS technology for detailed mapping of crop and soil parameters may help increase production but will be most valuable in reducing costs through better targeting of inputs and interventions. Data from aerial monitoring, increasingly using of unmanned aerial vehicles (UAVs) for monitoring crops, combines with GPS control of tractors and implements to ensure that input levels are optimised for each area.

In 2012 Harper Adams University launched the National Centre for Precision Farming. The aim of the Centre is to work with the farming and food sectors to help develop new technology-based applications in agriculture to improve productivity and better protect the environment. In 2014 it bid to the Leadership Council for funding to create a Centre for Agricultural Innovation.

South Staffordshire College, specialising in land-based training at its Rodbaston campus, currently has a proposal with the SSLEP for an Agri-STEM Academy, which will include a simulator for advanced agricultural machinery. This would allow trainee operators to explore the full range of capabilities of large and complex machinery without the risk of damage and loss to a major item of investment.

Keele University is also interested in agri-tech and related research themes, including the linkages between food production and consumption.

A recent report from the National Council for Universities and Business on the potential for innovation in the food economy[45] makes a number of suggestions including:

- A UK wide plan for the education, skills and innovation needs of the food economy.
- Collaboration between food economy businesses and universities.
- Better communication of research needs and results
- Better sharing of innovation including effective management of intellectual property.
- Use of 'Landscape Signals' – collaboration to ensure sustainable land use at landscape level (for example water management over a whole catchment).

7.2 Collaboration

Collaboration and co-operation between farmers has a long history in continental Europe but has had less impact in the UK. At its best, co-operation can give individual farmers a much stronger voice in the market place where the buying power of large wholesalers and supermarkets can leave them as 'price-takers'. The traditional independent-mindedness of UK farmers has often made them suspicious of co-operation and the well-publicised failures of large co-operatives such as Amelca (dairy) and Viking (cereals) have increased reluctance. There are, however, some good examples of collaborative working in Staffordshire and there is potential for much more through machinery rings, buying groups, marketing groups and many other possible forms of working together.

[45] NCUB (2015) Leading Food 4.0 – Growing University-Business Collaboration for the UK's Food Economy

FarmConnect is run by a group of farmers with over 10,000 hectares in Staffordshire producing potatoes, sugar beet and combinable crops. The total membership across the Midlands is 35 farmers covering 36,000 hectares. They use their combined buying power to ensure the best terms and prices for inputs including:

- Agro chemicals
- Fertilisers
- Tractors and loaders
- Combines
- Cultivation equipment
- Spare parts
- Seed and seed cleaning
- Fuel

Calon Wen is a cooperative organic dairy business in West Wales that works with around 25 farms suppliers. In 2011 the company were assisted under the Sustainable Supply Chains project to review new product opportunities. This was in part based on a carbon foot-printing exercise carried out by Cardiff University. The issue was the seasonal variability of levels of milk production, leading to a lower price in times of plenty. The co-operative therefore wanted to assess the options for processing. Whilst they already produce cheese, butter and other chilled products, they were also keen to explore the production of long shelf life products. One of the key values and promotional focus for the company is to be as environmentally responsible as possible. By taking a view of the carbon impact of these product options, the company was able to make informed choices.

Mease Valley Potatoes and Tame Valley Potatoes are grower groups supplying potatoes to the processing industry. Many Staffordshire farmers are members of national co-operatives such as First Milk, Organic Milk Suppliers Company (OMSCO) and Openfield (grain suppliers to Coors, Whitworth and Warburton).

7.3 Tourism

The total tourist spend in Staffordshire in 2010 was £985.5 million and of that £343 million (34%) was spent on catering, which supported 4,898 full-time equivalent jobs[46]. The county has significant visitor attractions including Alton Towers, Drayton Manor Park, Cannock Chase AONB, the National Memorial Arboretum, and Shugborough Hall. Research consistently puts authentic local food and drink as a high priority for visitors with one national study showing that 60% of visitors deliberately choose to consume foods or drinks that they consider local - they want to get *"… a taste of the place"*[47]. This offers a great opportunity for business growth by featuring the range of food and drink produced in the county.

'Taste of Staffordshire' is a quality marque operated by Enjoy Staffordshire promoting retailers, producers, restaurants, tearooms, coffee shops, pubs and inns, which have been inspected and assessed by qualified inspectors. Accredited businesses are promoted on the Taste of Staffordshire website and there is an annual Taste of Staffordshire Good Food Award. This is a valuable resource for promoting Staffordshire produce and supporting local businesses.

Approaches which could further raise the profile of Staffordshire's food and drink include local branding and labelling (Wells Farm Dairy are already using the 'Stafford Knot' on some of their labelling), local hampers for self-catering lets and local food fairs and events (such as Stone Food & Drink Festival).

7.4 Localised value chains

As most of Staffordshire's agricultural produce leaves the county for processing and most of what is consumed is brought into the county, it follows that a good proportion of the value chain (the

[46] The Research Solution (2011) Staffordshire Tourism Economic Impact Assessment
[47] Rebecca Sims (2009) Food, place and authenticity: local food and the sustainable tourism experience, Journal of Sustainable Tourism, 17:3, 321-336

succession of stages which add value within the food supply chain) is located outside the county. Some processing and manufacturing does take place within Staffordshire but much of this brings in the ingredients, and supplies the end products into national and global markets. It has been observed that 'For Every £1 of GVA in agriculture there is a further £4 in food processing and logistics and a further £5 in food retail & catering'[48] and that each job in food processing creates £65,000 in GVA. Therefore, it is obvious that any opportunity to bring more of this part of the value chain back into the county should be seized.

Several farm shops in Staffordshire have set up bakeries and meat cutting rooms to add value to their own produce. Many report that their markets are growing and they need to expand production but they face obstacles in the planning system, and in finance and funding. If stakeholders can work together, there will be many more opportunities to add value to primary produce but there will need to be skilful facilitation and support from departments and agencies to realise the potential.

A suggestion has been floated that a Food Enterprise Zone should be established for the cluster of soft fruit growers in the south of the county. This is a new government designation that can allow easier planning regimes for the development of infrastructure supporting economic growth. A processing and freezing facility, for example, could use unsold soft fruit, when supermarkets suddenly cancel orders due to a change in the weather, to produce jams, preserves and pies making good use of a perishable commodity and producing high value lines which can be sold throughout the year.

There may be potential for other clusters such as dairy farmers, potato growers and upland farmers to benefit through working together.

The Herdwick Sheep Breeders Association, a co-operative of fell farmers and guardians of the Herdwick breed, are organising an event this autumn called Herdwick At Its Best. The event is for chefs and those in the local hospitality industry, and aims to get more Herdwick meat onto menus in Cumbrian pubs, restaurants and hotels during its peak season, and see less sold as generic 'lamb'. Herdwick hogget* and lamb is distinctive produce with a unique flavour. The animals are reared slowly on the Lake District fells, eating a natural diet of heather and grasses. The resulting meat is lean with a rich gamey flavour and contains beneficial Omega 3 fatty acid. The 'Herdwick At Its Best' event takes place on a farm in the heart of Borrowdale on 21 October and aims to improve links between farmers, catering suppliers and the hospitality industry. It will offer an insight into the farming methods that result in lean, succulent Herdwick meat, explain the effect that grazing has on the landscape of the Lake District and Cumbria, and improve understanding of its peak season according to the fell farming year.

Based on detailed surveys[49] in 19 communities across England, the Council for the Protection of Rural England estimate that:

- Local food sales in some 750 towns across England through independent outlets (including social enterprises and co-operatives) could currently be £2.7 billion a year
- These outlets are supporting over 103,000 jobs (full-time and part-time), of which over 61,000 can be attributed directly to local food sales.
- Money spent in local food networks will be re-circulated within the local economy for longer: it could be contributing £6.75 billion of total value to local economies
- Pound for pound, spending in smaller independent local food outlets supports three times the number of jobs than at national grocery chains

[48] Defra (2013) Agriculture in the UK 2012
[49] CPRE (2012) From field to fork: The value of England's local food webs

- Outlets selling significant to high percentages of local food support on average one job for every £46,000 of annual turnover; by comparison at three national chains one job is supported per £138,000 to £144,000 of annual turnover

Much of this activity takes place in small enterprises and can tend to pass 'under the radar' of official surveys but, taken cumulatively, the effects of the local food supply chain are significant and produce valuable jobs and economic activity. Support for food businesses should not be focused only on the largest operations as there is probably at least as much to be gained from the total activity of smaller enterprises.

Co-operativa Agrisviluppo Cuneo is an agricultural co-op in Italy, which was founded in 2010 by the local branch of the Italian farmers' union Coldiretti. It was primarily established to develop local markets for local producers and provide consumers with 100% guaranteed local and regional products. To support its marketing activity it has developed the 'ØKM', or zero kilometre, brand, which reflects a drive to source produce from as close as possible to the marketplace. The standards associated with Co-operativa Agrisviluppo Cuneo are set by the co-op and applied to members' production; farm products have to be 100% regional in origin and demonstrate a regional supply chain.

A diverse set of outlets have taken up the opportunity to stock 'ØKM' products, including multiple retailers, such as Auchan and LeClerc, and the regional supermarket MaxiSconto, owned by Dimar. MaxiSconto regards the promotion of local products and support for local producers as part of its commercial strategy to distinguish itself from its competitors. Agrisviluppo also supplies contract caterers such as Sodexho, which serves schools, hospitals, fire stations and care homes. The majority of these contracts are very small, but they enable the contract caterer to meet tender requirements, which can include specific reference to local and 'ØKM' products.

Credit: originally prepared by f3 under the Making Local Food Work programme

One Staffordshire farmer suggested that beef producers who finish their cattle using home-grown oats rather than imported concentrate feeds, could differentiate themselves in the market with labelling such as ***'Staffordshire Bred, Staffordshire Fed'*** to attract customers interested in provenance.

7.5 Information and skills

30% of consumers and a number of trade buyers responding to our surveys, found it difficult to find local produce. Similarly, several producers reported that they find it difficult to find local buyers for their produce. If this type of information was more easily available, it would remove a significant barrier to local trading. Simple directories can help consumers to know more about local produce and there are an increasing number of online tools including Big Barn, Food Assembly and the Open Food Network aimed at domestic customers.

It can be more difficult to facilitate local commercial trading. Trade buyers such as shopkeepers, cooks and pub managers find it difficult to know what local produce is available, who has it and how to order and get it delivered. It is much more straightforward to order everything from a conventional wholesaler and have it delivered the next morning. Similarly, farmers and other producers often have little awareness of the requirements of caterers and may not even be producing the things that people want to buy. Market information is the key factor in bridging this gap although there is also a need for some pro-active brokerage to start the process and bring stakeholders together. This could be a role for a revived Rural Hub which operated in Staffordshire until two years ago when funding cuts forced its closure.

In each of our surveys of Staffordshire businesses, we asked if they felt they needed additional skills in their workforce. In general most respondents felt that their own training, and that from local providers, was adequate but there were some notable points. Farmers were happy with the teaching of basic agricultural skills but were finding it difficult to recruit workers with the higher levels of skills needed to work with the more advanced machinery now coming into use. There is particular need of higher level managerial and record keeping skills needed for efficient dairy operation and precision farming. Butchers and chefs have reported that butchery skills are only taught to a level suitable for large processing plants and it is difficult to find young butchers who can cut the meat to the standard and specification needed for a high quality independent retailer or restaurant. One farmer with a number of added value enterprises on his farm has complained of the difficulty of finding candidates at middle management level to take over executive roles from family members who are retiring. More research will be needed to identify all the gaps in availability of skills.

Manchester Metropolitan University are starting a degree course in Food Entrepreneurship in September 2015. This unique course aims to give students an in-depth understanding of a newly developing, diverse food scene and helping them develop into creative, innovative and responsible entrepreneurs. Topics covered include:

- Sustainable food
- Food culture from field to fork
- Sustainable diets
- Innovation in a competitive food market
- Responsible food

A 'sandwich' year can be taken as an industry placement to gain practical experience. Organised study trips to organisations including organic farms, food producers and top restaurants will help understanding of how food gets from field to plate. The team of specialist staff have first-hand experience in subject areas such as gastronomy, nutrition, hospitality, food science, business, marketing, communications and branding.

7.6 Closer Links between Producers and Consumers

As consumers become more interested in the provenance of their food, there is an opportunity for farmers and other businesses in all sectors of the food economy, to make closer links to their customers and promote their products and encourage greater understanding of the issues and challenges they face. The FFLP encourages schools to link with local farmers and to ensure that every child has an opportunity to visit a farm. Farm shops bring customers onto the farms and often have farm trails and special events such as 'lambing days' and 'Open Farm Sunday'. However, just nine Staffordshire farmers registered with LEAF to host Open Farm Sunday on Sunday 9th June 2015.

Curborough Hall Farm	Watery Lane, Lichfield,	WS13 8ES
Hardiwick Farm	Sandon, Stafford,	ST1S OED
Highlands Park Farm	Tower House, Rangemore, Burton on Trent	DE13 9RU
Lower Castle Hayes	Needwood, Burton on Trent	DE13 9PH
Lower Drayton Farm	Penkridge	ST19 5RE
Packington Pork	Tamworth Road, Lichfield	WS14 9PN
Shenstone Park	Little Hay, Lichfield	WS14 0PZ
Spond Farm	Alton, Stoke on Trent	ST10 4BN
Stanton House Farm	Bridle Lane, Stanton, Burton on Trent	DE15 9TQ

Farmers' markets bring consumers and producers face-to-face. Shoppers can learn the story of where their food comes from and how it is produced, farmers can understand their customers' needs and develop their products accordingly. Although only a small fraction of the overall value of the county's food economy, and only a viable business opportunity for a certain number of farmers, these markets provide a very visible link between town and country, increasing understanding of rural issues and providing valuable cash flow for producers.

Regionalwert AG is a limited company in Germany with a two-thirds majority of local shareholders. Community financing allows a land trust to ensure that farmland is managed sustainably and to create farm business opportunities for tenant farmers. The land trust is an investment vehicle that makes farmland available to rent and manage sustainably, creating new business opportunities for the tenant farmers. The result enables a local food economy that matches the community investor's objectives – a wide range of high- quality local produce is delivered back to the communities that support them, while simultaneously providing local employment and ensuring good environmental management. There are now six farms supported in this way, supplying local communities, school and hospital meals, a fruit-processing business and five organic retail outlets in local towns.

Credit: originally prepared by f3 under the Making Local Food Work programme

Community Supported Agriculture (CSA) is a system where customers subscribe, usually for some time in advance, to pay the farmer for a share of the crop. There are many different models ranging from farmers wanting to diversify their marketing options to community groups who rent land and pay the growers. Most CSA schemes are committed to involving the members in the work of the farm so that consumers who would otherwise have no contact with the land are able to participate in planting, weeding, harvesting and celebration events on the farm. We have not been able to identify any of these initiatives in Staffordshire.

Stroudco Food Hub, based in Stroud, Gloucestershire, is a co-operative of 78 food and drink producers who collectively own and manage a food distribution business which currently turns over £40,000 per year (average weekly turnover is increasing steadily. The average for Jan-Mar 2015 was £1,203 per week although the pre-Christmas food drop was £3,312 in one week. The Community Interest Company has set up an online ordering system which allows households (currently 680 Stroud households have opened a shopping account) to place orders with multiple suppliers who all deliver on Saturday morning to a school hall where the produce is sorted into boxes (and insulated bags for chilled and frozen produce) for home delivery or collection from the school by local shoppers. Average shopper order size is currently £39.67. The size of orders to individual producers can be as high as £300 per week. Producers include meat (beef, pork, lamp, kid and poultry) and dairy (raw and pasteurised cow and goat milk) farms and small holdings, four vegetable growers, three bakeries, a brewery, two vineyards, five confectioners, soap makers, soup producers and several allotment holders who sell surpluses. Stroudco makes a 12% mark up on sales from producers to shoppers which compares very favourably with the usual 70-100% retail mark-ups usual in the supermarket model. By allowing the producer to retain a much higher proportion of the final selling price, Stroudco has encouraged the initiation of many new local food and drink businesses both in primary production and processed foods; creating new employment opportunities and retaining income in the local economy. Many of the Stroudco producers are too small to afford the cost of organic certification, but new producers joining the co-op have to meet animal welfare standards that are based on organic standards and then agree to host regular farm visits so that shoppers can not only provide valuable help on the farm but see how their food is being produced and start to build a relationship with the farmers and growers, thus providing an alternative to organic certification.

For more details [download the Stroudco Review]

The Food Assembly is a novel initiative linking online ordering to local collection. The system operates at over 500 venues in France and over 700 worldwide. 28 UK groups are listed on the Food Assembly website although the number is increasing rapidly. There are reported to be over 10,000 UK members. A local organiser signs up farmers and consumers in his area. Farmers list their offers for the week for online ordering by members who have 6 days to commit to buy. If there are enough orders to make it worthwhile for the farmer to deliver to the collection point the order and payment are processed and the farmer takes the produce to the assembly venue for the weekly collection. Farmers receive over 80% of the retail price (comparing very favourably with the typical 10-20% from conventional supply chains) with the remainder being divided between the local organiser and the central administration.The group won the 'Best British Food Initiative' award in the BBC Food and Farming Awards for 2015.

7.7 Public Health and Community Initiatives

In April 2013 local authorities in England took responsibility for Public Health, addressing challenges including rising incidences of obesity, type 2 diabetes and malnutrition. As well as the conventional awareness and prevention campaigns, there has been increasing interest in the role of diet and access to food among causes of ill-health and as a means of improving health. Support for food growing in households, schools and communities, and initiatives to improve skills and confidence in cooking, are being seen as cost-effective measures to promote long-term health and wellbeing. Leicestershire County Council, for example, is among a number of authorities which have commissioned the Master Gardener programme to support households, schools and community groups to grow their own food. Leicestershire is also one of the councils, including Stoke-on-Trent, which have commissioned the Food for Life Partnership to support nutritious meals, food growing and a healthy food culture in schools. Independent evaluation of both of these programmes has shown them to be cost effective in delivering a range of benefits[50,51,52].

Leicestershire Master Gardeners is a support programme supporting households, schools and community groups in growing their own food. It has been commissioned from Garden Organic by the Public Health team at Leicestershire County Council and in its first year it has recruited and trained 50 volunteers with a target to recruit 50 more in the second year. The volunteers mentor and support the gardeners and groups for up to a year advising on locations, cropping plans and techniques as well as signposting a range of information on the programme's website. Independent evaluation of the first four years of the programme nationally has shown significant benefits in healthy diet, activity and wellbeing for the volunteers as well as the gardeners they work with. Using an analysis of Social Return on Investment (SROI) it shows that, for each £1 invested in the programme, there are wider social, environmental and economic benefits valued at £10.70.

Many community groups are looking to move 'beyond food banks' with initiatives such as the Real Junk Food Café in Leeds which cooks meals from surplus food recovered from various parts of the supply chain and then serves them to diners who can 'pay as they feel'. This model is now being replicated in other cities.

Superkitchen is a group operating a network of 12 'social eating spaces'in Nottingham and is hoping to expand its operations to Leicester and other areas. Working in partnership with Fare Share East Midlands it is able to source surplus food which can then be made in to meals serving up to 100 people at a time in churches, cafes, community centres and at 'pop-up' events. Super Kitchens are social spaces where surplus food is shared and eaten 'like a family'. There is a huge cascade of positive effects for customers; ranging from increased feelings of inclusion and well-being, the development of informal support networks, modelling good table manner to children, to the delivery of a high-quality, hot meal to those that may be struggling to nourish themselves through lack of education or ability. Children can get easy access to a second meal after-school or during holiday times and neighbours can take a freshly-made meal home to an elder or relative.

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[50] Bos, Kneafsey (2014) Evaluation of the Master Gardener Programme, Coventry University
[51] Orme et al. (2011) Food For Life Evaluation, University of the West of England http://eprints.uwe.ac.uk/14456/
[52] Schmutz et al. (2014) SROI of the Master Gardener Programme, Coventry University, CCRI

8 SWOT Analysis of Staffordshire's Agri-Food Economy

8.1 Strengths

- Very diverse county, producing a wide range of food
- Good horticultural land for soft fruit growing in south of the county
- Good arable land for cereals and potatoes in south and centre of county
- Good pastures for dairy and livestock in centre of county
- Close to large centres of population, including Stoke-on-Trent, Wolverhampton and Birmingham, offering markets for produce
- Consumers want more local produce
- Excellent transport infrastructure
- Some large manufacturing and processing businesses
- Excellent resources for research and skills development with universities and colleges including Keele and Staffordshire universities, Stafford, South Staffordshire, Burton and South Derbyshire, Tamworth and Lichfield and Buxton and Leek colleges and strong links with Harper Adams University, Shropshire
- Growing interest and support for local food and drink festivals
- Number of successful micro breweries

8.2 Weaknesses

- Little integration between production and processing within the county, meaning long, complex and fragmented supply chains
- Lack of staff with suitable skills across a range of sectors including arable, vegetable, dairying and marketing.
- No strong identity for Staffordshire food
- No overall plan or strategy for developing the sector
- Lack of local market information for buyers and producers
- Lack of local distribution infrastructure
- Too many people suffering from poor diets and food poverty

8.3 Opportunities

- Bring more of the value chain into the county by linking production with processing and manufacture
- Willingness in many sectors to integrate the food chain and to educate and inform consumers
- More collaboration between businesses in different levels and sectors of the food economy
- Public sector procurers working together to develop local sourcing
- Improved local distribution infrastructure
- Training providers are willing to address skills gaps
- More labelling, branding and promotion of Staffordshire food and drink
- Better access to healthy diets for disadvantaged groups

- One-stop shop (virtual or real), bringing primary and wholesale producers, food buyers, processors, distributors and industry suppliers, into one marketplace.

8.4 Threats

- Producers concentrating on commodity production remain as price-takers in global markets
- Climate change may have a negative effect on yields and costs
- Lack of access to funding e.g. farmers only likely to invest in new technology if economically viable on short to medium term
- Planning controls and property costs restricting business expansion
- Cost of training when some commodity prices are low
- Production limited by constraints on water supplies and soil quality
- National and global businesses take more of the value chain outside the county
- Declining health and wellbeing through poor diets and lack of access to fresh healthy food

9 Road Map

Staffordshire County Council's Vision and Values statement includes the aspirations that:

'The people of Staffordshire will:

1. ***Be able to access more good jobs and feel the benefit of economic growth.***
2. ***Be healthier and more independent…. '***

The agri-food economy can play a significant role in meeting these goals by providing sustainable jobs and added value, by ensuring access to healthy diets as well as playing its part in protecting and enhancing the local environment.

A number of approaches can be followed:

- Increasing agricultural production – not without risks, including damage to soils, water resources and biodiversity, and exposure to volatile global markets for commodity products.
- Increasing efficiency of production – reducing cost of inputs, although unlikely to lead to more employment.
- More collaboration – improving producers' position in the markets and building local capacity and resilience.
- More local processing and added value – not easy as existing supply chains are very competitive but any opportunities that arise should be pursued.
- Supporting local supply chains through public procurement policies – a lot already happening and potential for much more.
- Developing and strengthening connections between producers and consumers – building trust and awareness.

- Creating a stronger identity and greater awareness of Staffordshire produce – shoppers and food service customers want to know where their food comes from and want to support local businesses.
- Community initiatives in food growing and distribution – particularly effective for improving diets and helping to improve access for disadvantaged groups
- Developing food strategy and partnership – working together across all sectors to identify beneficial linkages and remove barriers to effective collaboration.

These approaches, their priority and assignment, should form the basis of a Staffordshire food event. Farmers, food businesses of all kinds, health professionals, educators, policy officers, community groups and consumers should all be invited.

As part of all our surveys we asked participants if they would like to be involved in developing food strategy for the county and we have compiled a list of volunteers as well as a list of stakeholders who wish to be kept informed.

Without pre-empting the discussions at the event, the following actions are suggested:

- Consider joining the Sustainable Food Cities Network. This will bring support and shared information from other communities who are developing food policies, strategies and action plans and access to training, seminars and events.
- Consider working in partnership with Stoke-on-Trent as Staffordshire shares the same food economy although divided by administrative boundaries. Stoke is already engaged in developing its food economy and culture, and there is much to be gained through working together.
- Survey all agri-food sector businesses to identify skills gaps and work with colleges and other providers to develop the necessary training.
- Explore the appetite for a Food Enterprise Zone to remove barriers to the production of soft fruit in the south of the county.
- Support Staffordshire's farmers in working together through marketing groups, buying groups, machinery rings and other initiatives to strengthen their businesses.
- Canvass opinion on the potential for cluster initiatives for other sectors e.g. dairy farmers (could include collaboration with Cheshire and Shropshire farmers) and upland farmers (could include collaboration with farmers in High Peak, Derbyshire).
- Support research and investment in agricultural and manufacturing technology such as robotics in dairy production and precision technology to optimise farming inputs.
- Promote Staffordshire food and drink and compile a directory for consumers. This can build on the work of Taste of Staffordshire. Study the feasibility of labelling schemes such as '*Staffordshire bred, Staffordshire Fed*' and the Stafford Knot.
- Establish business-to-business brokerage so that manufacturers, retailers and caterers can source produce from local businesses and producers can find out what trade buyers need. This will require skilful facilitation and 'matchmaking' but should result in increased local trade and consequent added value.

- Support farms and other food businesses in developing direct and local marketing, added-value processing and distribution. This may involve feasibility studies, market research, business planning and planning issues related to buildings.

- Commission further research to identify opportunities for bringing more of the value chain into the county. These opportunities may be few and limited but could be valuable.

- Convene a forum for public sector caterers to share information on local suppliers and work together on new supply chain infrastructure. Entrust, the University Hospitals of the North Midlands and Keele University are already developing their local supply chains with others including The Burton Hospital Trust following. If they can work together they can bring economies of scale to the local infrastructure.

- Consider commissioning the Food for Life Partnership to support improved meals, food growing and a healthy food culture in schools.

- Consider commissioning the Master Gardener programme to support households, schools and community groups in growing their own food by establishing a network of volunteer mentors.

- Convene a forum of community groups involved in food initiatives so they can share information, experiences and resources and find opportunities for working together to improve access to healthy food for all.

- Support Fare Share West Midlands in expanding their operations into Staffordshire, taking surplus food from supply chain businesses and supplying it to charities helping those in need.