

# Who feeds Bristol?

## Towards a resilient food plan

Production • Processing • Distribution • Communities • Retail • Catering • Waste



Research report written by Joy Carey

A baseline study of the food system that serves Bristol and the Bristol city region  
March 2011





# Foreword

For over a thousand years, the supply and trade of food has been integral to the economic, social and cultural life of Bristol. During my career in public health I have always been aware not just of the paramount importance of food, but also of the contrasts and paradoxes it brings; from desperate shortage in refugee camps and conflict zones, to the plenty and variety in wealthy capital cities, the intense visibility of food in parts of the world like Africa and India, and of course its curious invisibility in the UK now that highly mechanised production, distribution, processing and retail operate beyond our everyday view.

Bristol is regaining its awareness of food – for the health of our local economy, for the health of our people, and for the health of the ecosystems upon which our future food production will depend. We read dire predictions of potential global food shortages, and conflicting reports as to whether these problems are real or imagined, and whether the solution lies with more biotechnology or with less. Yet we cannot begin to assess whether our own food system is healthy and robust unless we know more about it.

The task of tracking down and making sense of what information is available has not been easy. We are indebted to Joy Carey, who in a short time and with a very modest amount of funding, has pulled together information from numerous sources and pieced it all together into this important research report.

At the same time, work has been progressing behind the scenes to establish Bristol's new Food Policy Council. This will be a small group of committed individuals with expertise and local experience relating to food production, preparation, distribution and retail. Under the chairmanship of Professor Kevin Morgan from Cardiff University, the Food Policy Council will drive forward the changes needed to make Bristol a city where eating and celebrating good food becomes something that everyone is proud to be part of.

We already know this is what people in Bristol want. In a survey conducted in late 2010, our own Citizen's Panel tells us that the majority of ordinary people in Bristol care about the quality and the ingredients in the food they eat, and a very significant proportion are concerned about production methods, local farming, and animal welfare. Over a third of respondents said they are involved in food growing in gardens or allotments, and half had switched to healthier ways of eating in the previous year.

The Bristol city region has not yet lost its diversity of independent local producers, wholesalers, processors, caterers and shopkeepers. With the right mechanisms and with the growing public interest in the future of food, we can start to rebuild a food culture for Bristol that has the health of people and planet at its heart.



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Appendices and full case studies

(see separate ‘Who Feeds Bristol?: appendices and case studies’ at [www.bristol.gov.uk/whofeedsbristol](http://www.bristol.gov.uk/whofeedsbristol))

**The full report and appendices are available at [www.bristol.gov.uk/whofeedsbristol](http://www.bristol.gov.uk/whofeedsbristol)**

We are happy for the information in this report to be shared provided that appropriate acknowledgements are made. Please contact the author Joy Carey to discuss permissions [joy@joycarey.co.uk](mailto:joy@joycarey.co.uk)

# Executive summary

## How did the report come about and what is its scope?

The need to look at the food system for Bristol was identified as a priority by Bristol's 'Green Capital Momentum Group' in late 2009 following the production of Bristol's Peak Oil Report<sup>(1)</sup>. The 'Who Feeds Bristol?' research was designed to take the issues raised in the Peak Oil report and to explore the characteristics of the current food system in more depth.

The work of researching and preparing the 'Who Feeds Bristol?' report was commissioned and funded by NHS Bristol, and designed and conducted by Joy Carey. A multidisciplinary Advisory Group provided advice and guidance, and met on seven occasions.

The report is primarily a descriptive analysis of the food system serving Bristol. In addition, the report gives some global context, and in later chapters there is a discussion of resilience in relation to inputs, outputs and threats. It includes an analysis of the positive powers that Cities have in shaping their food system, and it makes suggestions for action.

Much of the information used in this report came from national, regional and local data designed for purposes other than for understanding food supplies. It included marketing information, regulatory information on food standards and food businesses, and data held by Defra. Some information was from surveys and interviews conducted exclusively for this report.

The lack of specific information about food supplies inevitably means that some conclusions were derived as best estimates drawing on data from a number of different sources. Explanations of sources, the basis of essential assumptions, and of the limitations of the data are contained throughout the report, and in the appendices.

Bristol's food system is inextricably linked, now and in the future, with that of the wider region and the rest of the nation. This report looks at the national picture, the South West region and in detail at the area known as the West of England, comprising the four Local Authorities of Bath & North East Somerset, Bristol, North Somerset, and South Gloucestershire. In food planning terms this can be described as a 'city bioregion'.

The report confined its analysis to staple food items namely meat, dairy, eggs, fruit, vegetables, cereals, grains and bread. The report did not look at luxury items (confectionary and chocolate), or alcohol, and nor did it look at fish.

## What are the main findings in relation to the food system serving Bristol?

### Production



The UK imports 40% of its annual food requirements. The percentage of imports varies widely between food types, with 90% of fruit, and 60% of vegetables being imported. Alongside the fruit and vegetables we import poultry, beef, cereals, and animal feed.

The South West of England is a major producer of livestock, accounting for 23% of England's cattle and sheep, with 90% being sold to the supermarket trade. The suitability of the land for pasture combined with

Source:

1. Osborn S. Building a Positive Future for Bristol after Peak Oil. Bristol Partnership. October 2009

<http://www.bristol.gov.uk/ccm/content/Environment-Planning/sustainability/file-storage-items/peak-oil-report.en> Accessed 26 May 2010



the presence of numerous large and small abattoirs, means that it is still possible for smaller-scale livestock farmers to survive economically despite the increasing market difficulties associated with the major consolidation that has occurred in the food business sector. Lack of infrastructure for local distribution is a barrier to increasing direct sales to independent local retailers, to households, and to local restaurants and caterers.

There are some 5,500 dairy farms in the South West that produce 37% of England's milk, channelled through three large national dairy processors – Milk Link, Dairy Crest, and Wisemans. The region is home to Yeo Valley, which is the national retail market leader for organic yoghurt.

The South West has the greatest concentration of organic producers of anywhere in the UK, and contains 38% of England's organic producers. In the UK as a whole 17.5 million hectares is farmed organically equivalent to 4.2% of UK farmland. Over 10% of this land (1.9 million hectares) is in the South West.

Vegetable production in the South West makes up around 6% of Great Britain's production. The main crops produced in the region are potatoes, cauliflower, swedes, brassicas, carrots, parsnips and celeriac. There is some production of cider apples and soft fruit, but less than there was fifty years ago. Cereal production in the South West is mainly used for livestock feed because the climate is too damp and cool for producing wheat of the quality required for bread flour.

The area of land needed to supply the City of Bristol with food extends well across the sub region and into Wales. Variations in topography and climate mean some areas are better for pasture, others for arable, so it is essential to look at national as well as regional patterns of production. Meat and dairy are two staples where the production within a fifty-mile radius of Bristol is sufficient to meet the needs of the City.

Estimates by Simon Fairlie<sup>(2)</sup>, and by Geofutures<sup>(3)</sup>, suggest that the UK could be self-sufficient in basic foodstuffs whilst still maintaining soil health and biodiversity. Estimates of the agricultural land area needed vary according to assumptions made about the model of production, for example meat or vegan, organic, chemical or permaculture, with or without crops for fuel and textiles. The estimates vary from between 0.2 hectares to 0.5 hectares per person.

## Food growing in the City



Garden food growing and allotments are a centuries-old tradition, both in Bristol and in England as a whole. They fell from fashion in recent decades but are now returning to favour. Food growing within the City can be educational, health enhancing and recreational.

An estimated 2,000 hectares of land in Bristol could potentially be used for food growing. This includes existing farmland and smallholdings, allotments, a proportion of council-owned empty land, a proportion of land within school grounds and private gardens and 20% of parks and green spaces if this could be made available. It excludes other privately owned land, although there is potential here also.

Potentially these 2,000 hectares if used for food growing in the City could produce several thousands tonnes of produce, with a cash value of several million pounds, in addition to the educational and recreational benefits.

Sources:

2. Fairlie S. Can Britain Feed Itself? The Land 4 Winter 2007-8 p18-26 <http://transitionculture.org/wp-content/uploads/2007/CanBritain.pdf> (accessed Feb 2011).
3. Geofutures GIS tools. Food footprints: re-localising UK food supply July 2009 <http://www.geofutures.com/2009/07/food-footprints-re-localising-uk-food-supply/> (Accessed Feb 2011)

## Processing



The food processors and manufacturers are an essential part of the food system. They are the sector that often has the least transparent food sourcing and often uses cheap imports. These businesses supply to most of the 'eat-out' kinds of caterers, including pubs and restaurants along with smaller retailers selling cheaper products. Meat manufacturers are the largest single category of food manufacturers in the city region. In the meat sector they ensure that meat is not wasted by using all parts of an animal carcass (eg to make pies, sausages etc). Bristol city region has good access to a network of processing facilities

including a number of smaller scale abattoirs that provide a crucial link in the supply of locally produced meat. Retaining an infrastructure of skilled food processing professionals including local bakers and butchers who can provide high quality services will form an important part of a resilient food system.

## Wholesale and distribution



The Wholesale Fruit Centre in St Philips Bristol operates a wholesale fruit and vegetable market serving an area stretching from Fishguard to Portsmouth, and from Penzance to beyond Oxford. It serves virtually the entire independent greengrocery sector across the South West and South Wales and employs some 500 people locally.

The scale of the operation at St Philips is declining year by year due primarily to knock-on impacts arising from 'in-house' distribution networks controlled by a small number of multiple chain supermarkets. These include reduced market diversity, and distortion of competition <sup>(4)</sup>.

If the St Philips wholesale market were to collapse, this would cause significant loss of local jobs and would cause a domino effect for thousands of producers throughout the South West and further afield, and for hundreds of caterers and independent retailers. Without Bristol, the next closest markets are Western International Market just outside London near Heathrow, or Birmingham.

Several factors could ensure the future of the wholesale centre. These include a stronger link with Bristol's public sector catering establishments, establishment of a consolidated and co-operative transport infrastructure, stronger links with catering training establishments, and stronger links with the expanding network of local farmers markets and with forward-looking food businesses.

## Retail



The pattern of food shops in Bristol has changed significantly in the past few decades. It used to consist of independent high street grocers, butchers, bakeries, greengrocers, and off-licenses, together with local corner shops. Most shopping was done on foot, or with home deliveries. Prices were consistent from store to store, and no premium was charged for buying smaller quantities. This pattern has largely been replaced by large multiple chain stores selling food and non-food goods, and accessed by motorised vehicles.

There are some 70 supermarket outlets in Bristol. These make up 1.5% of Bristol's food businesses, yet they account for the vast majority of food shopping by Bristol residents. Nationally, 75% of food

Source:

4. Competition Commission October 2000. Supermarkets: A report on the supply of groceries from multiple stores in the United Kingdom. [http://www.competition-commission.org.uk/rep\\_pub/reports/2000/446super.htm](http://www.competition-commission.org.uk/rep_pub/reports/2000/446super.htm) (accessed Feb 2011)



retail is controlled by four companies, collectively known as 'the Big Four'<sup>(5)</sup>. In the early 1990s the market share for these four companies was 50%. The four are Tesco, Morrisons, Asda, and Sainsbury's, and in Bristol they own approximately 32 of the supermarket stores. Tesco has shown considerable expansion nationally and it is now estimated that one in every three pounds spend on groceries is spent in a Tesco store. There is evidence that the greater Bristol area has a higher concentration of Tesco stores than other comparable English Cities and their surrounding areas.

Traditional independent greengrocers have disappeared from many of Bristol's local shopping centres. Westbury on Trym still has four registered greengrocers, whilst some parts of the City such as Brislington, Filwood and Lockleaze have none. In general it is the more deprived parts of the city that have the least choice of food shops.

It is commonplace for supermarkets to offer low prices on 'Known Value Items' such as milk and bread. Prices for other goods, particularly fresh vegetables, smaller packs, and items sold in small local supermarkets, can be more expensive than in independent shops. This has an impact particularly for elderly and vulnerable members of the community, who may live alone and need small quantities, and who may not have access to a car or may be too frail to drive. The impact is compounded in bad weather.

Supermarket sales data show that within their sales, purchase of 'cooking from scratch' fresh ingredients is declining, and that there is a relationship with customer age. Older customers buy more fresh ingredients, whereas younger customers buy more ready meals.

Bristol, in common with the rest of the UK, is seeing a consistent and serious rise in the percentage of people, including children, who are overweight and obese. This is related to the food system both through car-dependant shopping habits, and through the shift in cultural patterns of eating with heavy promotion and availability of calorie-dense foods<sup>(6)</sup>.

## Catering



There are over 2,000 food catering businesses dealing with staple foods registered in Bristol. Many of these are small and medium sized enterprises offering home catering, or running small cafes or takeaways.

Around 25% of the catering businesses are institutional caterers for the health and education sectors. These businesses will be preparing and serving a significant number of meals in hospitals, care homes, schools, and colleges. A further 24% are serving businesses and work canteens. Many of these catering companies depend on the St Philips wholesale market for their fruit and vegetable supply.

The other major section of catering companies comprises the many hundreds of restaurants, pubs and other businesses in Bristol's diverse 'eating out' sector.

## Waste



The current system of food production, distribution and retail results in some 40% of food being wasted, either before being sold, or within households, restaurants and caterers.

At the St Philips Wholesale market, significant quantities of fit-to-eat produce have to be sent to landfill, partly because of Defra standards on size, shape and appearance.

Sources:

5. Welch D. Endless choice or limitless damage? We name the greenest supermarkets. *Ethical Consumer* 128 Jan/Feb 2011

6. Kessler D. A, *The end of overeating: taking control of our insatiable appetite*. Penguin Books 2009. ISBN 978-0-141-04781-2

The collection of household food waste introduced by Bristol City Council means that 9,000 tonnes of household food waste is collected and composted each year out of an estimated total of 20-25,000 tonnes produced. This has been accompanied by an overall decrease in total household waste collected (from 186,000 down to 162,000 tonnes a year) which may be a knock-on impact due to people becoming more aware of waste. Several examples of good practice in relation to food waste, including the work done by FareShare South West, is included in the report.

## What are the strengths and weaknesses associated with our current food system?

Analysis of inputs, outputs and threats suggests that there are potential problems with the current characteristics of our food system and with the direction of travel. The problems relate to inefficiency of the system in terms of energy use and carbon emissions, irreversible depletion of soil, water aquifers, biodiversity, mature rainforests, fossil fuels and essential minerals such as phosphates, and adverse impacts for health from poor quality food, and for the health and welfare of workers and animals. Fisheries are also at risk, although this has not been covered in the report. The data in the report and the case studies show that the surviving local producers, the wholesale market and the independent food businesses located across the Bristol city region are a significant strength for sustainability and for market diversity. These food businesses provide a wide range of basic staple food items, although in terms of volume it represents only a small proportion of the total food supply.

Supermarkets have brought variety, choice, convenience and affordability, and now dominate the entire food system. Potentially they need to be part of the solution, but criticisms regarding anti-competitive practices<sup>(7)</sup> and 'greenwashing'<sup>(8)</sup> do not give great hope. Only the Co-operative, which scored highest overall in the report from Ethical Consumer, was prepared to assist with the research for this report.

The challenges posed by environmental, energy and economic constraints<sup>(9)</sup> will necessitate significant changes throughout the UK food system. This will include less meat, a switch to grass-fed livestock in place of imported soya and grain (because of rainforest destruction)<sup>(10)</sup>, less intensive UK farm production so as to help store carbon in the soil and boost wildlife, growth of protein crops that can fix nitrogen and reduce the need for chemical fertilizer, integration of trees to capture carbon, and use of organic farming practices to maintain soil quality and biodiversity.

To achieve necessary changes there needs to be a greater use of the approach known as 'food systems planning'<sup>(11)</sup>. This refers to the strategic integration of agriculture and food into the way that cities are designed, planned and managed. It can address issues relating to the environment, employment, local economy; education, training; health, climate change, social justice and inclusion. At a community level there is a need to increase knowledge and skills in food production, preparation and cooking and to build understanding of the impacts that food choices have. Cities generate heat, energy and waste resources that provide potentially valuable inputs for food production. Food production, distribution, preparation and retail provide important employment, and good food is essential to health. Bristol needs to influence the current and future resilience of its food system through use of policy, strategy, advocacy and planning processes. All four Local Authorities, the local businesses and the public sector agencies all need to play a part.

### Sources:

7. Competition Commission October 2000. Supermarkets: A report on the supply of groceries from multiple stores in the United Kingdom. [http://www.competition-commission.org.uk/rep\\_pub/reports/2000/446super.htm](http://www.competition-commission.org.uk/rep_pub/reports/2000/446super.htm) (accessed Feb 2011)
8. Welch D. Endless choice or limitless damage? We name the greenest supermarkets. Ethical Consumer 128 Jan/Feb 2011
9. Osborn S. Building a Positive Future for Bristol after Peak Oil. Bristol Partnership. October 2009 <http://www.bristol.gov.uk/ccm/content/Environment-Planning/sustainability/file-storage-items/peak-oil-report.en> Accessed 26 May 2010
10. 'Pastures New: A sustainable future for meat and dairy farming: FOE, 2010
11. Harper A, Shattuck A, Holt-Giminez E, et al. Food Policy Councils: Lessons Learned Development Report No 21. Institute for Food and Development Policy. December 2009 <http://www.foodfirst.org/en/foodpolicycouncils-lessons> (accessed Feb 2011)



# 1. Introduction

*'Resilience is ... the ability of a system or organisation to withstand and recover from adversity'*

(Sir Michael Pitt, UK Cabinet Office, 2007).

Across the globe, cities need a secure and adequate supply and distribution of staple foods that can withstand rapidly changing events including fuel stoppages, drought, crop failures, price spikes, extreme weather, or other economic and social disruptions. In addition it is essential that methods of food production do not further degrade the resources on which continued production depends, namely fertile soil, thriving biodiversity both on land and in the sea, and water supply. These issues are discussed in several recent reports on global food security, a number of which are referenced in this report.

Amidst the debate about the strengths and weaknesses of global food supply, and concerns about UK food security, there is a need for urban areas across our regions to engage with food supply issues here in the UK and to understand better the role that both decision-makers and the public play in shaping these food supply systems. Cities are places where most of the world's food is now bought and consumed. The food choices of city populations therefore have the potential to be highly influential in addressing these critical issues.

Bristol's food system cannot be viewed in isolation. It is interlinked now and in the future with that of the wider region and the rest of the nation. The aim of this report is to gain a better understanding of Bristol's current food system, the positive powers of influence we have within the City region and how these can help to increase food system resilience and sustainability.

Bristol can help to strengthen the future resilience of the food system using policy, strategy, advocacy and planning processes, particularly if this is done in partnership with key stakeholders including the three neighbouring Unitary Authorities. A strategic re-integration of agriculture and the food system within city plans through 'food systems planning' would contribute towards sustainable local and regional development. Cities generate potentially valuable resources for food production including heat, energy and organic waste in significant amounts. Integrated 'food systems planning' addresses a wide range of issues: climate change and environmental impacts; employment and the local economy; education and training; health and wellbeing; social justice and inclusion. This approach could bring exciting new economic, environmental and social benefits to the city region as well as develop a more resilient food system. It would also enable Bristol to become a truly 'Green Capital'.

Since the ending of food rationing after World War II food has been plentiful and varied. Its production and distribution has become primarily a commercial activity. Concerns about shortages or price are a distant memory. Consequently, central and local government does not maintain an overview of the food businesses that produce and supply food for the Bristol city region, nor of how they operate together as a system. Neither is there a responsible 'body' within the region that has a remit to consider and ensure the maintenance of a sustainable and resilient food system.

'Who Feeds Bristol?' is a 'rapid appraisal' style research report based on publicly available data and some original research, which gives a snapshot of the food supply system that serves the Bristol city region in the South West of England. It provides baseline information and evidence to inform plans and actions that will improve the resilience of our food system.

## 2. Context - why does Bristol need this report?

### 2.1 Potential problems ahead

Bristol has a thriving local economy of shops, cafes, restaurants and markets selling a diverse range of affordable food from around the world and from local producers. Therefore it might seem strange to be concerned about food. However, behind this rosy picture are some clues that point to problems ahead unless City leaders become more actively concerned with what we eat, where our food comes from and how it is produced and distributed. Critical issues that relate to food include energy supply, environmental impacts, health and the local economy.

#### 2.1.1 'Peak oil' and future energy supplies.

The UK Energy Research Centre is warning that oil supply problems are likely before 2020<sup>(1)</sup>. The report 'Building a positive future for Bristol after peak oil' was commissioned by the Bristol Partnership in 2009. This report identified that 'any interruption in food supply or increase in cost risks devastating consequences'. Our current dependence on cheap oil for the production and distribution of food is far greater, and far more vulnerable, than many people realize. In the US, the food system has been estimated to require 10 calories of fossil fuel for every 1 calorie that ends up on our plates<sup>(2)</sup>. In order for Bristol to avoid potential food crises, shortages, panic-buying and consequent social unrest, we need a food production and distribution system that can provide adequate healthy, affordable, food equitably to every member of Bristol's population even in the face of fossil fuel depletion and economic shocks.

#### 2.1.2 Environmentally sustainable production

The food we eat in the UK – growing, producing and importing it – accounts for 30% of the UK's carbon footprint. If the UK is to meet its own legally binding target to reduce greenhouse gas emissions by 80% by 2050 then food-related emissions need to be cut by 70% by 2050<sup>(3)</sup>. There is a strong grassroots movement in Bristol concerned with ethical, sustainable, and environmentally friendly methods of food production. The voluntary sector's Bristol Food Network produced a 'Sustainable Food Strategy for Bristol' in 2009. This makes recommendations for building a sustainable food system including mapping land for potential food production and protecting land in and around the city; providing a supportive policy and planning framework to enable producers to make a shift towards less reliance on fossil fuels; 'local food sourcing' targets for caterers; research; training, education and awareness raising; improving local infrastructure to support more local food processing and trade<sup>(4)</sup>.

In 2010 Bristol City Council adopted a Climate Change and Energy Security Framework<sup>(5)</sup>; and a Food Charter and Food Standards<sup>(6)</sup>. These initiatives make commitments to environmentally friendly approaches to food production.

#### 2.1.3 Health

Concerns have been growing since the 1970s about the adverse health impacts caused by increasing availability and promotion of highly processed foods consisting mainly of fat, sugar and salt, and of high calorie snacks and fizzy drinks. Traditional skills in 'cooking from scratch' using fresh ingredients are on the decline, sales of fresh ingredients have reduced significantly and small independent fresh food retailers which used to exist in all localities are now found only in local centres.

Sources:

1. [www.ukerc.ac.uk](http://www.ukerc.ac.uk)
2. Giampietro and Pimentel 1994
3. 'How Low Can We Go?': An assessment of greenhouse gas emissions from the UK food system and the scope for reduction by 2050. WWF-UK & FCN, 2009
4. <http://www.bristollocalfood.co.uk/wp-content/uploads/bristols-local-food-update-july-aug1.pdf>
5. <http://www.bristol.gov.uk/ccm/content/Environment-Planning/sustainability/climate-change.en?page=2>
6. <http://www.bristol.gov.uk/ccm/content/Health-Social-Care/health-policy/food-for-bristol.en>



Obesity levels have increased dramatically, significantly among children. Obesity is primarily a consequence of poor food or lack of physical activity or both. The associated health problems include diabetes, high blood pressure and heart disease. Portion sizes of biscuits, confectionary, fizzy drinks and ready meals have increased 20 to 100 percent in the UK in the last ten years<sup>(7)</sup>. One in four people in Britain are now obese compared with fewer than one in ten three decades ago. Obesity in men has increased 75% in the last decade. If current trends continue, then by 2025 over 40% of Britons will be obese<sup>(8)</sup>.

### 2.1.4 Business sector diversity and the local economy

The opening of self-service supermarkets in the 1950s heralded a transformation in the way British people did their food shopping. However, fifty years on there are growing concerns about anti-competitive practices and the global monopoly of a handful of giant corporations. Tesco is now the world's third largest retailer, measured by revenues and the second largest (after Wal-Mart) measured by profits.

Bristol, like any other city in the UK, is dependent on 5 large food supply companies who collectively control 84% of the UK grocery market share. The monopoly of the major chains applies not just to retail, but extends back through the supply chain. Whilst economies of scale bring greater profitability, the consequences for the local economy are not all beneficial.

## 2.2 Vulnerabilities in the global agriculture and food supply system

The UK is inevitably affected by any changes in the global food system, whether through rising food and oil prices, phosphorus depletion (a key mineral fertilizer vital to plant growth)<sup>(9)</sup>, marketing techniques of multinational corporations or moves to introduce intensive animal husbandry into the UK (rearing pigs or cattle indoors under intensive conditions in a similar way to battery chickens as a way of improving economies of scale). The following sections provide a brief overview of some of the key global food system vulnerabilities that have an impact on the UK and therefore also impact on Bristol's food supply system.

### 2.2.1 Feeding the world

Vulnerabilities in the global food system are increasingly being recognized including:

- 🍌 Impacts of climate change - higher temperatures, drought, increased flooding, extreme events, rise in sea levels
- 🍌 Resource depletion - oil, gas, coal, phosphorus, soil, water
- 🍌 Food-related ill health - 1 billion malnourished, 1 billion obese<sup>(10)</sup>
- 🍌 Pressures on food supply due to population growth – projected 9 billion by 2050<sup>(10)</sup>

In 2008 a major international joint assessment of the global agriculture and food supply system was carried out by over 400 scientists. The report concluded that current intensive models based on high inputs derived from fossil fuels (oil and gas) are neither sustainable nor resilient and that new models for food production and distribution based on agro-ecological approaches are needed. IAASTD Director Professor Robert Watson (now the Chief Scientific Advisor for the UK Department of Environment, Food and Rural Affairs) emphasized the need for governments to take a proactive lead in addressing food security concerns.

*'If we persist with business as usual, the world's people will not be fed adequately over the next 50 years.'* <sup>(11)</sup>

Sources:

7. Kessler D. A, The end of overeating: taking control of our insatiable appetite. Penguin Books 2009. ISBN 978-0-141-04781-2

8. UK Department of Health foresight analysis

9. 'A rock and a hard place: Peak Phosphorus and the threat to our food security': Soil Association, 2010

10. Food and Agriculture Organisation of the United Nations 2009

11. 'Agriculture at a crossroads'; IAASTD report 2009 <http://www.agassessment.org>

## 2.2.2 Impacts of global food production

National and international statistics indicate some of the underlying problems with the global food system<sup>(11)</sup> featuring:

- 🌱 **Energy** – conventional agriculture is highly inefficient in terms of energy use and contributes around 18-20% of greenhouse gas emissions through a combination of fertilizers made from gas, pesticides made from oil, high fuel usage, deforestation and loss of soil carbon<sup>(12)</sup>.
- 🌱 **Intensive livestock production and animal feed** - the need for greenhouse gas reductions conflicts directly with current global trends towards increased western-style high meat and dairy diets. These diets rely on intensive agricultural production systems using animal feeds of soya and grains. Tropical rainforests are being cleared to grow these feeds and fossil fuel inputs are high<sup>(13)</sup>. A significant proportion of soya is produced from GM seed<sup>(14)</sup>.
- 🌱 **Waste** - the global food system wastes a high proportion of the food produced, and generates considerable waste packaging. Every year in the UK 5.2 million tonnes of food-related packaging goes to waste, 40% of which cannot be recycled. UK homes waste around 30% of food contributing towards 6.7 million tonnes of food waste annually<sup>(15)</sup>.
- 🌱 **Water resources** - there is inefficient use of water for food production, and most of the water used has been treated to drinking water standard which is resource intensive:
  - UK agriculture uses 742 million m3 of water
  - Food & drink industry 155 million m3 used<sup>(16)</sup>

Concerns about the earth's finite supplies of freshwater and international 'water security' are growing especially as it is inextricably linked with food production. By 2030 water supplies will only satisfy 60 per cent of global demand. This will be compounded by the fact that by 2011 over 60 per cent of the world's population will live in urban areas. The realities of water scarcity in the sprawling megacities that have sprung up across the developing world accelerate the need for sustainable water management in emerging urban areas<sup>(17)</sup>.

- 🌱 **Soil erosion** - every year worldwide an estimated 24 billion tons of topsoil are lost, 100 million acres of farmland are lost and 15 million acres of desert created, largely due to unsustainable agricultural practices<sup>(18)</sup>.
- 🌱 **Health** - in the USA obesity and diabetes caused by food have increased dramatically since the 1960s, and similar trends are being recorded in Europe. According to David Kessler, former Commissioner of the USA Food and Drug Administration, the primary reason is the business model of the multinational food corporations<sup>(19)</sup>. The food production system can also damage human health directly, for example from the use of harmful pesticides.

*'Between 1 and 5 million cases of pesticide poisoning are reported each year around the world. 99% of pesticide deaths, which average 20,000 a year are in developing countries'*  
(FAO)

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### Sources:

11. 'Sustainable Diet: Implications for public health and environment'; Tim Lang 2010; Centre for Food Policy, City University London
12. LUCCG / WAG et al; 2010
13. Food Futures: strategies for resilient food and farming; Soil Association, 2009
14. 'Genetically modified animal feed briefing'; FOE, 2006; Food Standards Agency, 2010
15. WRAP: 2007
16. 'Water use in the supply chain'; Defra, 2007
17. Water Scarcity And Its Impact Of Foreign Policy; Dr David Tickner, WWF-UK; Josephine Osikena, the Foreign Policy Centre; Dec 2010
18. The Meaning of the 21st Century; Martin J; 2006 Eden Project Books
19. Kessler D. A, The end of overeating: taking control of our insatiable appetite. Penguin Books 2009. ISBN 978-0-141-04781-2

### 2.2.3 Prices and climate change

*The 2008 food price crisis and global warming have brought food security and climate change to the top of the international agenda. Agriculture plays a significant role in both and these two challenges must be addressed together, rather than in isolation from each other' (FAO, 2009)<sup>(20)</sup>.*

Two years ago food prices rose suddenly, triggering food riots in several countries. In 2010 there were more global food price spikes. Wheat prices reached a two-year high with an increase of 70% in the latter half of 2010. Reasons for this included drought and fires in Russia, wet weather rotting stocks of grain in India, concern about crop failure in Australia and June floods in Canada. Rising prices of sugar, grain and oilseed drove world food prices to a record high in December 2010, prompting warnings of food prices being in "danger territory"<sup>(21)</sup>.

A United Nations report in June 2010 warned that food prices could rise as much as 40% over the coming decade. Growing demand from emerging markets and competition from land use for biofuel production both play a part<sup>(22)</sup>. The press has reported warnings from economists that households in Britain and around the world should prepare for more price rises in staples such as bread. Research by the World Development Movement has highlighted the role of financial speculators in driving spikes in prices of global commodities<sup>(23)</sup>.

### 2.2.4 Control of seed supply

Significant changes have taken place in recent years with regard to control of the supply of seeds within the agricultural business sector. Major consolidation of companies that produce seeds has led to increasing concerns about unfair competitive practices and high prices of seed controlled by a small number of large corporations<sup>(24)</sup>. Currently, ten seed companies control over two-thirds of the global commercial seed sales<sup>(25)</sup>.

'Non-renewable seeds' are guarded by the intellectual property rights of international monopolies. According to Context Network, the proprietary seed market (that is, brand-name seed that is subject to exclusive monopoly – i.e. intellectual property), now accounts for 82% of the commercial seed market worldwide<sup>(26)</sup>. It is illegal for farmers to save patented seed and there are now numerous cases of farmers in developing countries caught in lawsuits over seed they have saved that has been unknowingly cross-contaminated with patented seed. The result is farmers getting caught in a downward spiral of dependency and debt<sup>(27)</sup>.

### 2.2.5 Land-grabs and changes in land use

In addition to these global food system vulnerabilities, a phenomenon known as 'land grabbing' is adding extra vulnerabilities and potential inequalities. Millions of hectares of farmland in developing countries are being acquired by other countries seeking to ensure their food supplies. For example, China has invested US\$800 million in Mozambique to expand rice production for supply to China, and both Sweden and the UK have secured land in Mozambique for biofuel production<sup>(28)</sup>. These new arrangements for land use, production and supply will have a significant impact on food available within 'host' countries and on global food availability and trade.

Sources:

20. 'Food Security and Agricultural Mitigation in Developing Countries: Options for Capturing Synergies'; FAO Oct 2009

21. Abdolreza Abbassian, Senior Economist, the Food and Agricultural Organisation; The Guardian, 6 January 2011

22. OECD-FAO Agricultural Outlook 2010-2019

23. 'Commodity prices soar as spectre of food inflation is back'; Philip Inman and Simon Bowers; the Guardian, 6 August 2010

24. 'Rising food prices may start with seeds': P.J. Huffstutter, Los Angeles Times, USA, 11.03.2010

25. Levitt T. October 2010 The Ecologist. Revealed: how seed market is controlled by Monsanto, Syngenta, Bayer, Dow and DuPont.

[http://www.theecologist.org/News/news\\_round\\_up/625294/revealed\\_how\\_seed\\_market\\_is\\_controlled\\_by\\_monsanto\\_syngenta\\_bayer\\_dow\\_dupont.html](http://www.theecologist.org/News/news_round_up/625294/revealed_how_seed_market_is_controlled_by_monsanto_syngenta_bayer_dow_dupont.html)

26. [www.contextnet.com](http://www.contextnet.com)

27. 'Soil not oil'; Vandana Shiva; 2007

28. <http://www.ifpri.org/publication/land-grabbing-foreign-investors-developing-countries>



## 2.3 New policies to meet new priorities

A third contextual angle to this research is the need for new policies and planning processes that build resilience in the food system.

*'Feeding over 6 billion people – and over 9 billion by 2050 – will require a wide range of creative, sustainable agricultural systems which not only provide food, but also factor in the economic value of nature-based services such as forests, wetlands and soil organisms that underpin agriculture. Simply applying the 'industrial' agricultural models of the twentieth century into the twenty-first as a single, global solution will not serve us well.'* (UNEP/UNCTAD 2008 <sup>(29)</sup>).

### 2.3.1 Building local resilience and ecological sustainability of the food system

The United Nations, FAO and other international agencies all warn of severe disruptions to global food supply in the near future. It is their view that different policies are now needed. Whilst some would argue that biotechnology and genetic engineering will solve all these problems, this is probably over optimistic. Faced with the combined challenges of energy and resource depletion, environmental degradation, and a highly vulnerable debt-based global economic system, it seems wise to address these risks and impacts by planning for locally resilient and ecologically sustainable models of food production and supply rather than waiting for some as yet undisclosed technical fix. <sup>(30)</sup>

### 2.3.2 Interconnected policy-making

A new UK government Foresight report published in January 2011 adds to the global food security debate. A major conclusion of the Foresight report is 'the critical importance of interconnected policy-making'. Included in its summary are the following points:

*'The food system must become sustainable, whilst adapting to climate change and substantially contributing to climate change mitigation... (There is) a strong case for governments, the private sector and civil society to continue to prioritise global food security, sustainable agricultural production and fisheries, reform of trade and subsidy, waste reduction and sustainable consumption. Addressing the many challenges facing global farming and food will require decision-making that is fully integrated across a diverse range of policy areas which are all too often considered in isolation, and for action to be based on sound evidence... The solution is not just to produce more food, or change diets, or eliminate waste. The potential threats are so great that they cannot be met by making changes piecemeal to parts of the food system. It is essential that policy-makers address all areas at the same time.'* <sup>(31)</sup> ('The Future of Food and Farming: Challenges and choices for global sustainability': Foresight 2011)

### 2.3.3 City food policy & planning

At a city level, there is a growing movement of 'food policy councils' or multidisciplinary stakeholder groups which are being established to help integrate food into wider strategic and policy planning in order to increase food security. In North America some of the largest cities are driving this change – New York, Seattle, San Francisco<sup>(32)</sup>.

A similar baseline study to 'Who Feeds Bristol?' was carried out in Oakland, California with the aim of initiating discussion among City policymakers, staff, and community members to consider the

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#### Sources:

29. 'Organic Agriculture and Food Security in Africa'; UNEP-UNCTAD 2008

30. 'The Right to Food and the Political Economy of Hunger'; Olivier De Schutter Nov 2009; UN Special Rapporteur on the right to food

31. 'The Future of Food and Farming: Challenges and choices for global sustainability': Foresight, The Future of Food and Farming 2011; The Government Office for Science, London

32. 'Feeding the City: The Challenge of Urban Food Planning': Kevin Morgan, Department of City and Regional Planning, Cardiff University; International Planning Studies Vol. 14, No. 4, 429–436, November 2009

impact that the City's food system might have on different areas of public concern. The study included an exploration of how systems of production, distribution, processing, consumption, and waste, as well as city planning and policymaking could support the objective of having at least 30 percent of the City's food needs sourced from within the City and immediate region<sup>(33)</sup>.

## 3. Research approach

### 3.1 Main areas of investigation

The 'Who Feeds Bristol' report looks at the six key components of the food system: production; processing; distribution; retail; catering and waste. It investigates the provision of basic staple food items; land use for current and potential food production; and the current food supply capacity from the surrounding region in relation to the food needs of Bristol and the city region. It also investigates which businesses are involved in preparing, distributing, selling, recycling or disposing of food across the city region and within the city itself. Information has been gathered from existing reports, databases, websites, surveys and business interviews.

The research for this report has been shaped around the following questions:

- 🍏 Who feeds Bristol and where does the food come from?
- 🍏 How does Bristol city's food supply system fit into the wider region's food supply system?
- 🍏 What are the strengths and vulnerabilities?
- 🍏 To what extent is the current food supply system that serves Bristol city region resilient to shocks and projected circumstances in the longer-term?
- 🍏 Which areas of the city and which groups of Bristol residents would be most adversely affected by vulnerabilities in the food supply system?
- 🍏 What role and powers do the city's decision-makers and key stakeholders have in shaping the food system that serves the city and the city region?
- 🍏 What are the priority areas that need to be addressed in order to develop a more resilient food supply system for the future?

### 3.2 'Rapid appraisal' research approach

This study is concerned with the long term resilience of the food supply system for Bristol, rather than with short-term emergencies. It is a 'rapid appraisal' carried out in a limited time by a very small team of people and gives an indication of trends and issues.

It is based on available information and includes a number of specially designed 'snapshot' surveys and interviews. An important finding is that there is a lack of comprehensive information and data in the public domain. Our conclusions are therefore inevitably based on estimates and approximations.

Evidence of 'resilience' in the food system could be seen as the availability & affordability of UK produced staple 'cook from scratch' food items (ie food items from which a healthy well balanced meal can be made). The report therefore concentrates on 'staple' food items, and explores the extent to which they are currently being produced in the South West and the West of England regions, namely:

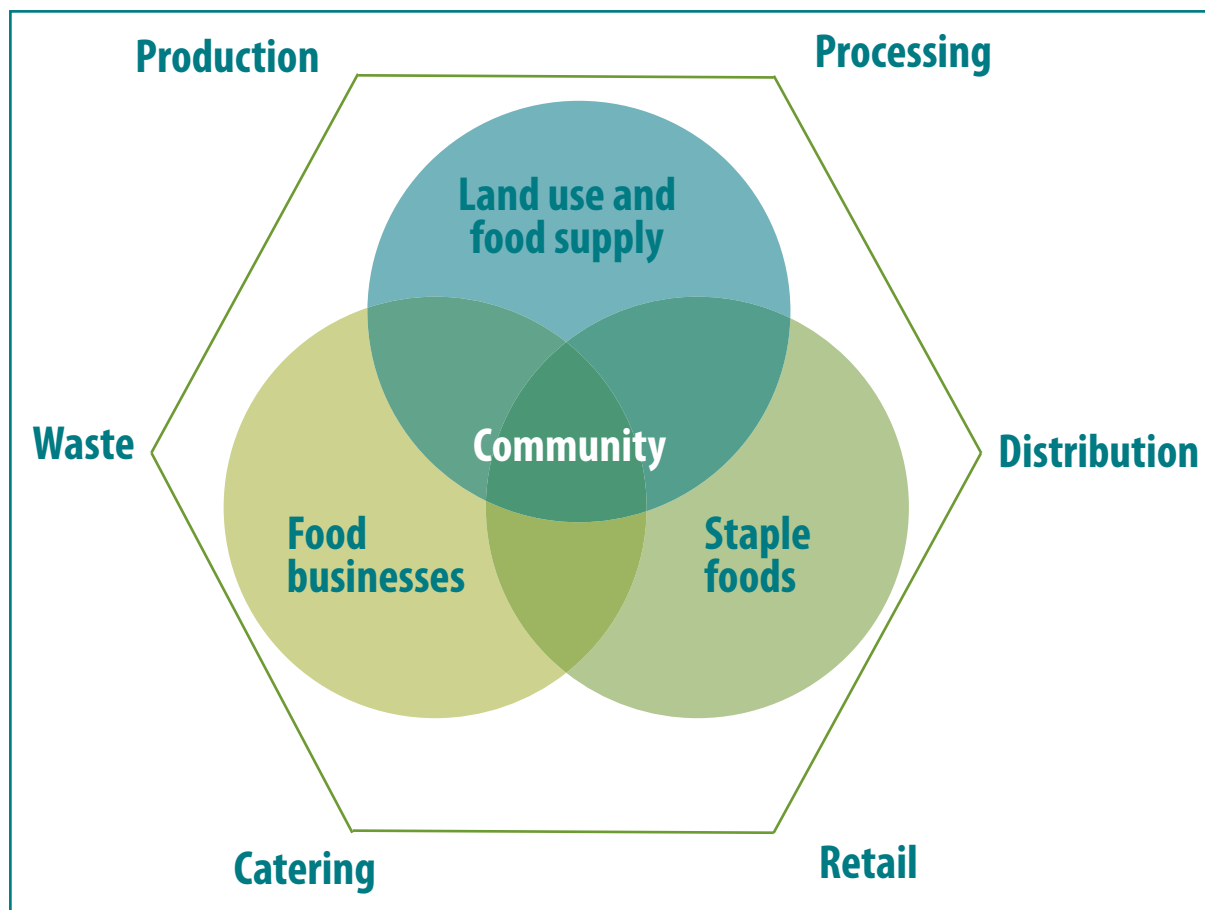
- 🍏 Meat
- 🍏 Dairy
- 🍏 Eggs
- 🍏 Fruit and vegetables
- 🍏 Cereals, grains and bread.

Source:

33. A Food Systems Assessment for Oakland, CA; Unger and Wooten, 2006

Businesses that deal with 'luxury' food and drink products (alcohol, confectionary, cakes etc) have not been included. We were unable in the time available to look at the fishing industry, although it is of course a very important staple food item and is the subject of much debate concerning long-term sustainability of supply. Beer could arguably be viewed as a staple food item in England but we have not included it in the research. The report has not considered issues of food quality and should not be interpreted as having done so. This report should be seen as a baseline study which has aimed to collate available facts and figures upon which further work can be based.

Figure 1: Research focus - the food system



*Joy Carey, 'Who Feeds Bristol' research design*

### 3.3 Bristol city 'bioregion'

The South West is the largest region in England and includes Bristol, Gloucestershire, Somerset, Dorset, Wiltshire, Devon, Cornwall and the Isles of Scilly. It has a population of five million. Bristol is the largest city in the South West region, located 105 miles west of London, and 24 miles east of Cardiff. It is the UK's 8th most populous city. The unitary authority of Bristol had an estimated population of 433,100 in 2009.

The City of Bath is 11 miles to the East of Bristol. The total population of Bristol, Bath and the surrounding rural/urban area is approximately one million and covers four unitary authority areas in total (Bath & North East Somerset, Bristol, North Somerset, and South Gloucestershire).

This area is usually known as the West of England but will be referred to in this report as the 'Bristol city region' with the purpose of viewing the area as a 'bioregion'. The concept of a bioregion is relevant when discussing food systems. It denotes a political, cultural, and environmental system, defined through physical and environmental features and through culture, local populations, knowledge, and solutions.

In some sections of this report data for the whole of the Bristol city region have been used and in other sections the focus is just on Bristol city. Bristol's food system, as already stated, cannot be viewed in isolation but an in-depth analysis of the entire city region is beyond the scope of this report.



# 4. The food businesses





## 4. Who feeds Bristol and the city region?

This report investigates the businesses involved in supplying food to the Bristol city region. There is no single source of information about the food system serving the Bristol city region. The starting point for finding out about non-farming food businesses has been Local Authority public food registers (as of July-August 2010). All food premises are required to be registered with Local Authority Environmental Services for food safety purposes. Responsibility for registration lies with the food business and there are gaps. For example some farmers' market traders are registered but not all. Not all supermarkets were registered at the time of this research.

In investigating food production (ie farmers and growers) we have used specially commissioned agricultural information for the South West region provided by the English Food and Farming Partnership (see section 7) and information for the West of England region provided by the Royal Agricultural College, Cirencester (see appendix 8). We have also carried out surveys via the National Farmers Union's South West office and with a number of Bristol farmers' market traders (see section 8).

### 4.1 The city region's food businesses – an overview

Data from the Bristol, South Gloucestershire, Bath & North East Somerset and North Somerset public food registers (Table 1) suggest that there are approximately 6,600 registered businesses in the city region that deal with staple food items including meat, dairy, eggs, fruit and vegetables, bread, flour, pasta and rice. While these figures are approximate, they give an indication of types and spread of businesses within the city region.

These figures suggest that across the Bristol city region around 75% of the registered food businesses are involved with catering; 20% are involved with retail; and around 4% are involved with processing, manufacturing and distribution.

Table 1: Registered food businesses in Bristol city region dealing with staple foods

Category	Bristol	South Glos	B&NES	North Somerset	Total	% of Total
Food distributor/distribution centres/cold stores/ wholesalers	90	26	24	20	160	2.5
Food manufacturers	27	29	13	5	74	1
Farms/city farms	6	13	4	13	36	0.5
Abattoir and cutting facilities	9	3	5	3	20	0.3
Caterers (catering companies)	543	135	124	196	998	15
Hospitality/eat out (hotels, restaurants, takeaways etc)	1058	399	447	486	2390	36
Public, educational and care premises (catering)	653	330	256	380	1619	24
Specialist retail (including bakers, butchers, fishmongers, delis, health food shops, greengrocers)	183	46	52	58	339	5.2
Other retail (including supermarkets)	520	150	208	157	1035	15.5
<b>Total</b>	<b>3089</b>	<b>1131</b>	<b>1133</b>	<b>1318</b>	<b>6671</b>	<b>100</b>

(Data source: Food registers for Bristol, South Gloucestershire, B&NES, North Somerset)

Note: Excludes all other categories listed under registered food businesses and excludes registered businesses trading in alcohol, confectionery and non-food.

## 4.2 Bristol city food businesses – an overview

Within Bristol city the total number of food premises on the public register (including the categories excluded in Table 1) is over 4,500 featuring: 74% caterers, 21% retailers, 3% processors and food manufacturers, 2% wholesalers and distributors. As with the figures for the city region above, the scale of each operation cannot be discerned from the numbers on the register. For example, many of the 74% of caterers are small-scale home caterers or take-aways and cafes while some 2% of the distributors are multinational companies.

Table 2: Food businesses in Bristol

Type of business	% of total Bristol food businesses
Catering	74%
Retail	21%
Processor/manufacturer	3%
Wholesale/distribution	2%

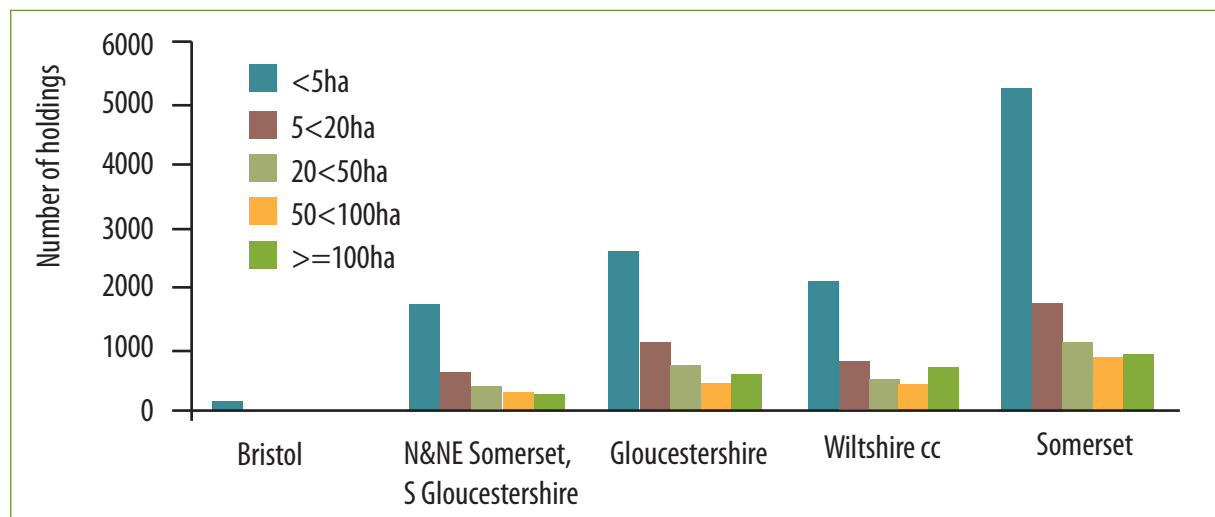
(Data source: Bristol public food register; July 2010)

Note: Includes all registered business categories

## 4.3 The farmers and growers in and around Bristol city region

Within the whole of Bristol, Somerset, Gloucestershire and Wiltshire, there are some 23,000 individual farm holdings, over half of which are less than 5 hectares. The total farmland area is 860,928 hectares, including 1438 hectares within the Bristol administrative area. The total farm area can be further divided into land in production and land not used for crops and livestock. Only 822,663ha is used for food production. (See appendix 8 for further details)

Figure 2: Farm holdings by size 2009 (source Defra 2010)



### Agricultural production land:

- 🌿 297,544 hectares are under crops and bare fallow,
- 🌿 86,075 hectares are under temporary grass (in rotation with some of the cropped land),
- 🌿 389,047 hectares are permanent pasture (always used grazing, planted & maintained)
- 🌿 38,959 is rough grazing.

### Non productive land:

- 🌿 35,424 hectares of woodland
- 🌿 2,841 hectares of 'other land' including tracks, buildings and curtilages



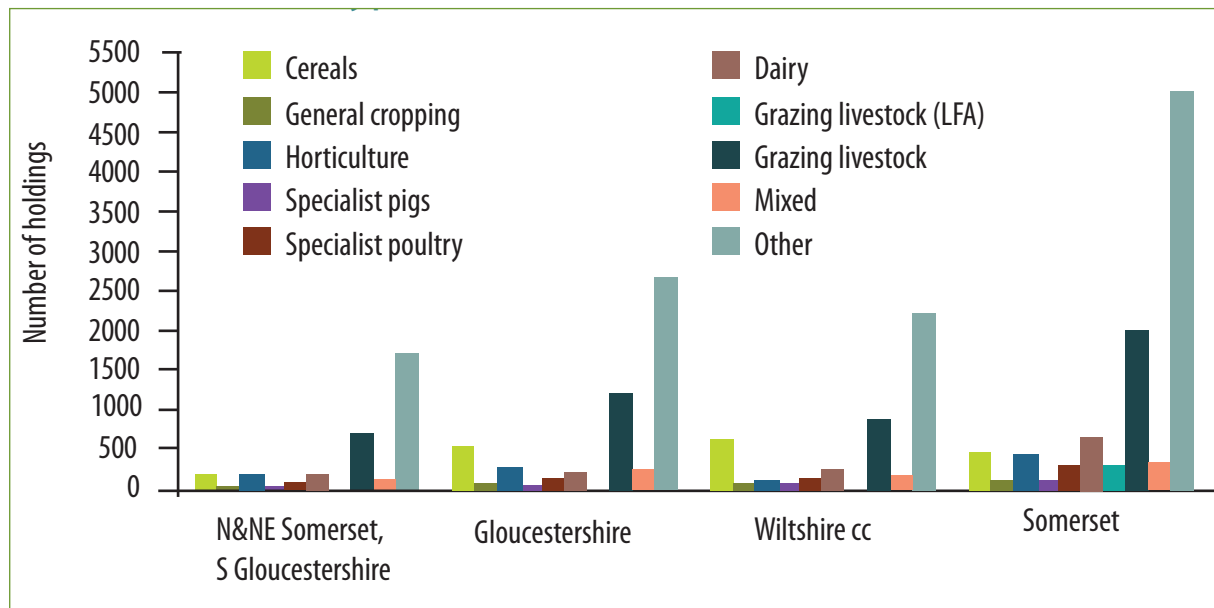
**Farm type:**

The types of farms in Somerset, Gloucestershire and Wiltshire include:

- 🌾 Cereal farms (46%) [mostly for animal feed]
- 🌾 Grazing livestock farms (13%)
- 🌾 Dairy farmers, (3%)
- 🌾 Horticulture holdings (2.6%)
- 🌾 Mixed farms (2%)
- 🌾 Specialist poultry producers (1.8%)
- 🌾 General cropping (0.8%)
- 🌾 Specialist pig producers (0.8%)
- 🌾 Other including hobby farms, horse keeping and land not in production (30%)

(Percentages approximate; based on Defra data in Figure 3)

Figure 3: Farm type by major enterprise 2009



(Data source: Defra 2010, prepared by Royal Agricultural College, Cirencester. Note: Bristol figures were not available from Defra)

**4.4 Who works in the food and drink sector?**

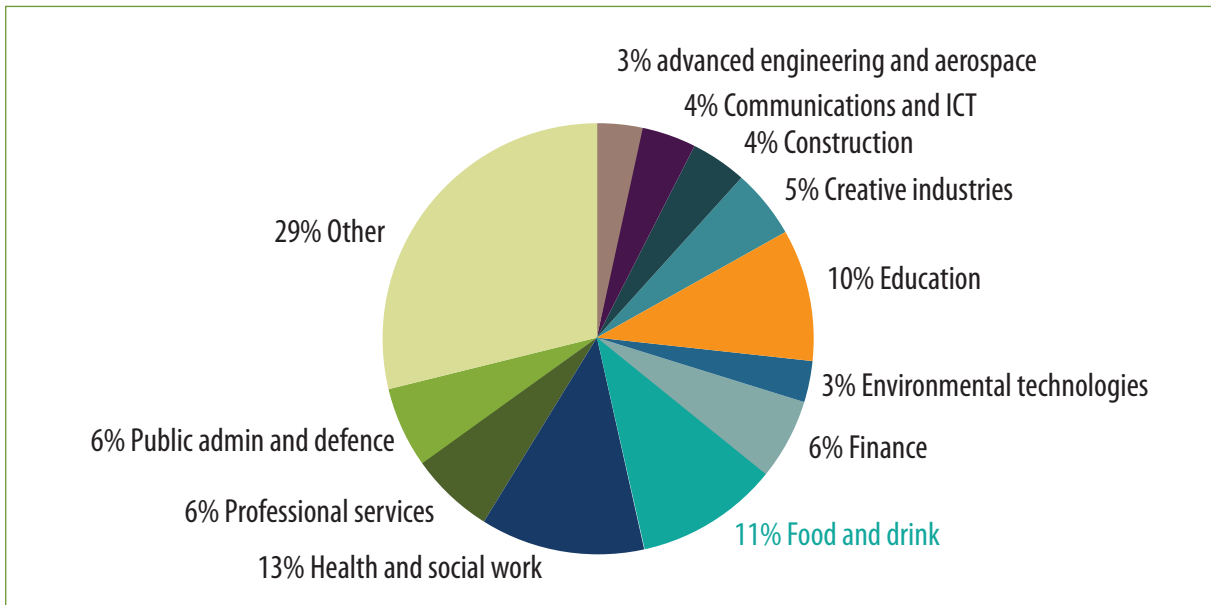
Around one in every ten jobs in the West of England is related to food and drink. Overall the Food and Drinks sectors of Bristol and the West of England is slightly smaller than the sector for the whole of Great Britain. In Bristol city itself 0.3% of jobs in the Food and Drink sector are in 'Farming Hunting and Fishing'; 5.7% in 'Production' (which here actually means processing/manufacturing); 40.6% in 'Retail'; 44.7% in 'Services' (includes catering) and 8.8% in 'Wholesale'.

Table 3: Percentage of all employee jobs in Food and Drink and the Food and Drink sub-sectors (summary 2008 data)

Industrial Sector	Great Britain	City of Bristol	West of England
All Food and Drink	12.7	9.4	10.7
Farming Hunting and Fishing	0.7	LT 0.05	0.2
Food & Drink Production	1.4	0.5	0.8
Food & Drink Retail	4.4	3.8	4.4
Food & Drink Wholesale	0.8	0.8	0.7
Food & Drink Services	5.4	4.2	4.5

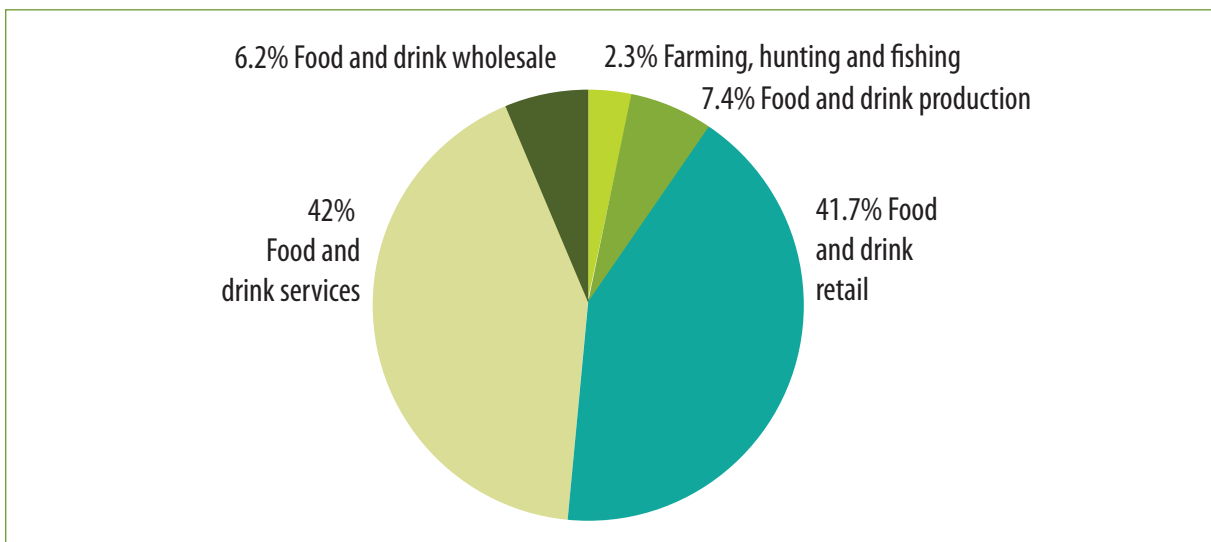
(Data source: Annual Business Inquiry, 2010, Nomis, O.N.S., Crown Copyright)

Figure 4: West of England Food and Drink sector employment in relation to other sectors



(Data source: Dr. Stephen Usmar, Economic Development, Bristol City Council)

Figure 5: Food and Drink sector jobs in the West of England



(Data source: Dr. Stephen Usmar, Economic Development, Bristol City Council)

Bristol City Council data are remarkably consistent with the Annual Business Inquiry figures and show that around eleven percent of jobs in the West of England relate to food and drink.





# 5. Retail



**Freezer Clearout!!**  
Chickens - Buy One, get one free!  
Chicken Livers - Buy one get one free  
Turkey Breast Rolls - 1/2 price  
£36.95/kg £18.47/kg  
Diced Mixed Game  
£3.25 per 500g bag  
Black Puddings - buy one, get one free  
All above offers apply to frozen items only

In our Freezer we have  
BBQ - Beef Burgers - £12.99  
Lamb Burgers  
Spicy Lamb Burgers  
Chicken Burgers  
Pork Burgers  
Lamb Kebab  
Lamb Kebab  
Or these items can be  
WILD GAME -  
Sorry!

CHICKEN  
Both

**This Month**  
Whole Organic  
20% off  
It's wake-up & week - organised and our cost  
Breakfast  
£7.99  
Organic Beef  
20% off £13  
We are now  
SUN  
10am ->

THANK GLOBAL  
ACT LOCAL

Organic Pork  
CHIPOLATAS  
7.99

Organic Pork  
TRADITIONAL  
BREAKFAST SAUSAGE  
7.99

Organic  
LAMB & PORK  
SAUSAGE  
£9.50



## 5. Where do residents in Bristol and the city region buy food?

### 5.1 Context – the national food retail picture

Since the opening of the UK's first supermarket in 1951, the food retail picture in the UK has been transformed from one of diversity and balanced competition to one of consolidation and monopoly. There has been phenomenal growth in the past few years of the four largest supermarket chains, Tesco, Sainsbury's, Asda and Morrisons (the 'big four').

At the end of 2009, the 'big four' of Tesco, Asda, Sainsbury's and Morrisons had a combined share of 75.6% of the UK grocery market<sup>(1)</sup>. Tesco led with 30.7% of market share (it is now estimated that one in every three pounds spend on groceries is spent in a Tesco store) ; Asda were second with 17.3%; Sainsbury's had 15.9% and Morrisons had 11.7%. The Co-operative, having bought Somerfield, is now the fifth largest food retailer in the UK, operating mainly smaller supermarkets and convenience stores and has 8% share of the UK grocery market, followed by Waitrose in sixth place with 4% market share<sup>(2)</sup>. The arrival of the Co-operative has now created a new 'big five' which together have around 84% of the UK grocery market share.

In 2009 the UK Competition Commission urged the UK government to introduce tighter planning rules to stop the large supermarkets squeezing out rivals. All the 'big four' continue to plan for strategic expansion. Sainsbury's were on track to open over 60 new convenience stores in 2010 while Tesco planned to open 125 Tesco Express and One Stop stores<sup>(3)</sup>. Recent BBC research found that Planning Authorities gave Tesco, Sainsbury's, Asda and Morrisons permission for at least 480 stores in England in the past two years<sup>(4)</sup>.

Supermarket expansion plans also extend beyond food retail. Retail-led regeneration plans for town centres are on the increase. For many Local Authorities, particularly in deprived areas, the involvement of the big supermarkets is seen as a vital part of regeneration. For example Tesco is building a £200m complex in West Bromwich, West Midlands, which includes a retail park, new school and a police station. Leeds City Council is currently negotiating an agreement with Asda to give just over £1m towards public transport and the relocating of a medical technology company to its proposed new site in Middleton<sup>(5)</sup>. Tesco's regeneration arm, Spenhill has recently submitted a proposal for Kirby Town Centre, Merseyside<sup>(6)</sup>.

Within the UK, views are divided over the merits of supermarkets and about the desirability of 'buying' planning consent through finance for local facilities. Some point out the negative consequence of their growth and domination while others argue that supermarkets have made good quality food widely available and affordable to everyone and that their dominance means the potential for these large players to have a huge impact through their development of sustainability initiatives. These issues and rankings for the most 'green' supermarket are all discussed in detail in the first 2011 edition of 'Ethical Consumer'<sup>(7)</sup>.

### 5.2 Supermarkets across the city region

Again, there is no single up to date list of supermarkets in the city region. For this research we have had to use various sources of information. Analysis of the food registers suggests that Bath & NE

Sources:

1. TNS Global
2. Wikipedia
3. The Times, Business Section, 11 Nov, 2010
4. BBC1 Panorama, Dec 2010
5. [www.bbc.co.uk/news/uk-england-11936734](http://www.bbc.co.uk/news/uk-england-11936734)
6. [www.planningresource.co.uk](http://www.planningresource.co.uk)
7. 'Endless Choice or Limitless Damage?'; Ethical Consumer Jan/Feb 2011; [www.ethicalconsumer.org](http://www.ethicalconsumer.org)

Somerset and North Somerset each have around 17 supermarket stores owned by the 'big five': Tesco, Asda, Morrison, Sainsbury and the Co-operative. South Gloucestershire has a higher number, with approximately 30. In Bristol 40-50 are owned by the big five' (see table 4 below). A number of these are 'superstores' (ie the large supermarket stores that provide the broadest range of products, for example Tesco Extra which typically occupy over 2000 sq metres of floor space).

These data combined with national figures suggests that the Bristol city region is supplied with around 84% of its food & grocery retail sales by approximately 100 stores/shops owned by 5 supermarket companies.

Recent BBC research found that in 2004, Greater Bristol had 19 stores owned by the 'big four' and by 2010 this number had increased to 76 <sup>(8)</sup>. In Greater Bristol at least 21 new supermarkets from the 'big four' chains were given planning approval in the last two years<sup>(9)</sup>.

### 5.3 Bristol's food retail sector

The food retail category (21% of all Bristol's food businesses) combines a wide range of types of shops, not all of which sell much food although they are still required to be registered as food businesses. If businesses like petrol stations, chemists, off licenses, ice cream vans and milk delivery vans, newsagents, sweetshops and other shops selling snacks are excluded then the percentage of food businesses that are classified as retail drops from 21% to 5%.

Therefore, around 5% of Bristol's food businesses are retailers that actually sell fresh staple food items (this figure includes all large and small supermarkets, convenience stores, cash and carry stores and some post offices and newsagents). The 70 registered supermarket businesses account for around 1.5% of all Bristol's food businesses.

Of the overall 21% retail figure, the retail business breakdown is approximately as follows:

- 🟢 7% of Bristol food retailers are supermarkets.
- 🟢 Specialist food retailers including butchers, bakers, fishmongers, greengrocers, and delicatessens account for 17%.
- 🟢 The remaining 76% of retailers are cash & carry stores, corner shops, small scale convenience stores (franchise operations like Costcutter, Spar, Best One, Martin McColl), petrol stations, newsagents etc.

#### 5.3.1 Supermarkets in Bristol

At the start of our study, Bristol's Director of Public Health wrote to the Chief Executives of all the major supermarkets explaining the 'Who Feeds Bristol' project and seeking their cooperation (see appendix 13). Only the Co-operative was prepared to share any information with us. It has therefore been difficult to find out exactly how many people buy supermarket food, and what types of food they buy. However we can investigate the range, number and size of supermarket branches around the city. This report refers to both numbers of stores owned by the 'big four' and the 'big five' because the reality is that there are now 5 main supermarket companies, but most national reports and statistics still refer to the 'big four'. It is also not clear exactly how many Co-operative stores there now are in Bristol.

Of the 70 supermarket outlets listed in the Bristol public food register in August 2010, 23 are owned by the 'big four' ie Tesco, Morrisons, Asda, Sainsbury's (Table 4). Reflecting national figures, this suggests that 4 companies, with at least 23 stores, supply 75% of food & grocery retail sales in Bristol. If the Co-operative stores are added, the total number of stores in Bristol owned by the 'big five' could be 43, collectively accounting for 84% of Bristol's grocery market share.

Sources:

8. [www.bbc.co.uk/news/uk-12007835](http://www.bbc.co.uk/news/uk-12007835)

9. BBC1 Panorama, Dec 2010



Table 4: Main supermarkets within Bristol City boundary - the 'big four' in red

Supermarket	Number of large stores (2,000 sq m and above)	Number of smaller stores	Total on register (store locator data in brackets)
Tesco	4	7	11 (*20)
J Sainsbury	4	4	8
Asda	2		2 (*3)
Aldi	3		3
Lidl	6		6
Morrisons	2		2
Somerfield	6	1	7
The Co-operative	4	15	19 (*10)
Waitrose	1	1	2
Marks & Spencer	1		1
Iceland frozen foods		8	8
TOTAL			69 (70)

(Data source: Bristol public food register 2010; Company's own store locator websites)

**\*Note:** There is a discrepancy between data on the public food register and on the company store locator websites. In the interests of consistency the report uses data from the public food register as of July/August 2010. It is the company's responsibility to register and not all do so immediately. Tesco's own on-line store locator lists around 20 stores within the Bristol city boundary. This would increase the total number of stores owned by the 'big four' to 32. As well as the 70 stores across the city, there are stores on the edges of the Bristol city boundary eg Cribbs Causeway. Tesco's on-line store locator lists a total of 31 stores across the Greater Bristol region ie Bristol and extending over the city boundary a short way to the north and east. The Co-operative, now owner of Somerfield, lists 10 Bristol city stores on their store finder, but there are over 25 Co-operative stores on the Bristol food register.

In terms of number of supermarkets to population, the Greater Bristol urban area, comprising the city and the built up area around the city boundary, has a relatively high density of Tesco stores per number of residents compared to other similar size cities like Leeds, Sheffield, Manchester, and Liverpool, for comparison:

- 🍏 Greater Bristol – population of 587,400, has 31 Tesco stores
- 🍏 Greater Manchester – population of over 2 million, has 37 Tesco stores
- 🍏 Sheffield city region – population of 640,720, has 16 Tesco stores
- 🍏 Leeds city region – population of 761,200, has 20 Tesco stores<sup>(10)</sup>

Based on these figures, and given that Bristol has all five of the big superstore chains present within the city, it may be that Bristol overall has a relatively high density of stores owned by the 'big four' compared with other cities.

### 5.3.2 Specialist independent food retailers

This group of independent businesses providing fresh food on a daily basis accounts for 17% of the city's food retailers and totals around 180 shops owned by 140 businesses:

- 🍏 Bakery shops: 70 (run by approximately 30 different making bread businesses)
- 🍏 Fishmonger shops: 10
- 🍏 Butcher shops selling fresh meat: 40
- 🍏 Greengrocer shops: 35
- 🍏 Delicatessens: 25<sup>(11)</sup>

Sources:

10. Tesco store locator

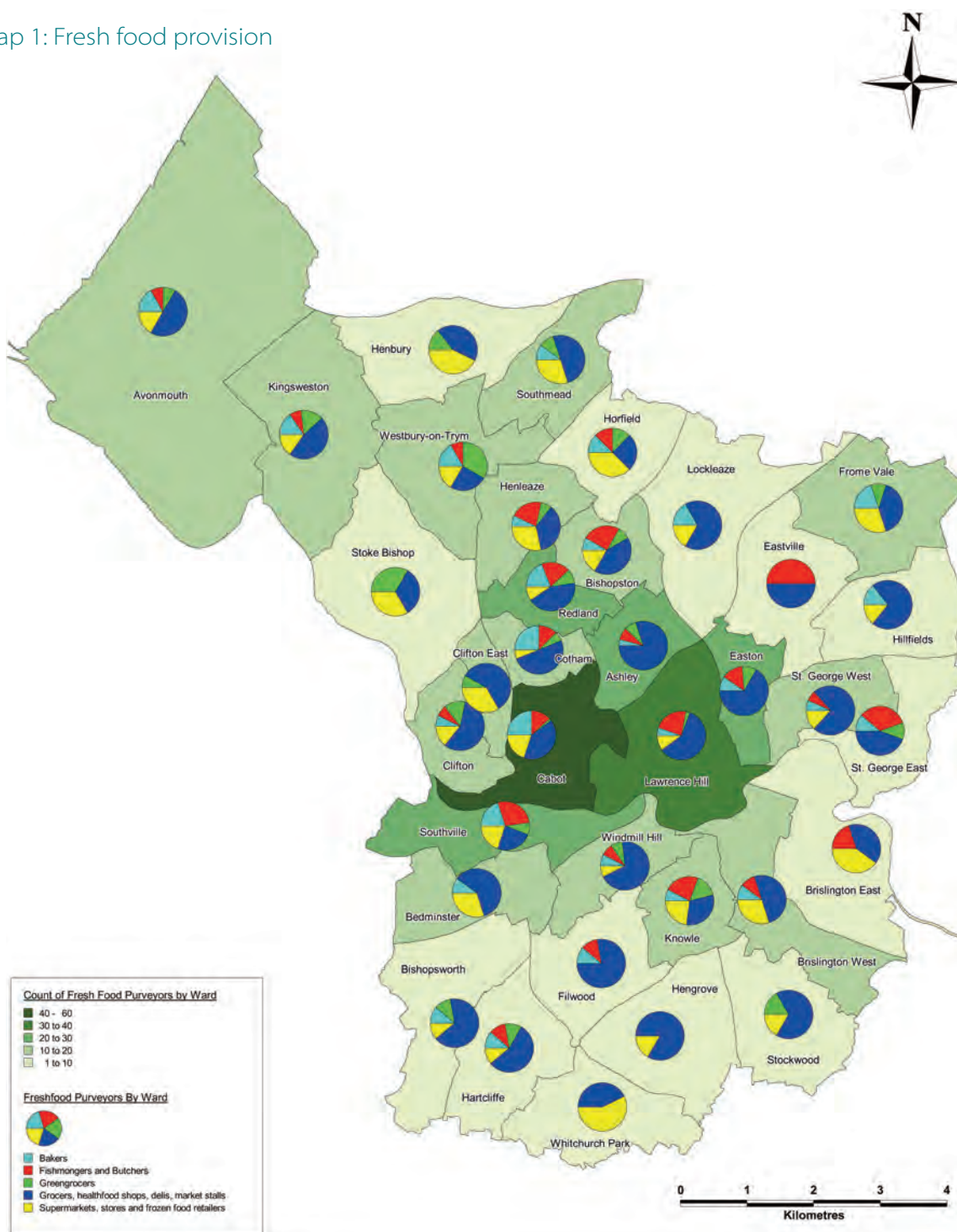
11. Bristol public food register

## 5.4 Provision of fresh staple foods in Bristol shops

### 5.4.1 Analysis by electoral ward

This uses the data from the food register. A 'fresh food' mapping exercise shows the number and location of fishmongers, bakers, butchers, grocers, greengrocers, health food shops, delicatessens, market stalls, frozen food retailers and supermarkets across the city. It provides a baseline indication of the likely provision of staple food items in shops across the city including meat, fruit and vegetables, eggs, dairy, bread, flour, pasta and rice. The results are presented on the fresh food map and in an accompanying ward comparison table (see Table 5). Milk rounds were not included but there are approximately 60 registered local milk delivery rounds operating from 3 depots in Ashton, Stoke Bishop and Henleaze.

Map 1: Fresh food provision



Bristol PCT - Fresh Food Mapping

Fresh Food Purveyors By Ward

Avon IM&T Consortium **NHS**  
 Matthew Lawler - 04 October 2010  
 Contains Ordnance Survey data © Crown copyright and database right 2010. Contains Royal Mail data © Royal Mail copyright and database right 2010.  
 X:\PUBLIC HEALTH\Fresh Food Mapping\GIS\_FreshFood\_A3.wm




The shading of the wards indicates the density of fresh food retailers per ward. The pie charts provide a breakdown of the proportion of each type of food outlet in the ward.

Map 5 shows the rankings of Bristol wards in terms of deprivation scores and is useful to compare with the other two food retail maps.

**Note:** Not all farmers' market stalls, temporary and mobile units have been included. Branches of the same company have been counted separately, and some shops may have been included that shouldn't have been eg sandwich shops which sell pies and are registered as bakers or post offices and newsagents which are registered as grocers but do not actually stock a range of staple food items. It is also possible that some stores that are on the food register could have ceased trading but have not yet been removed from the register.

Table 5: Fresh food purveyors by ward

Bristol PCT - Fresh Food Mapping  
Fresh Food Purveyors By Ward

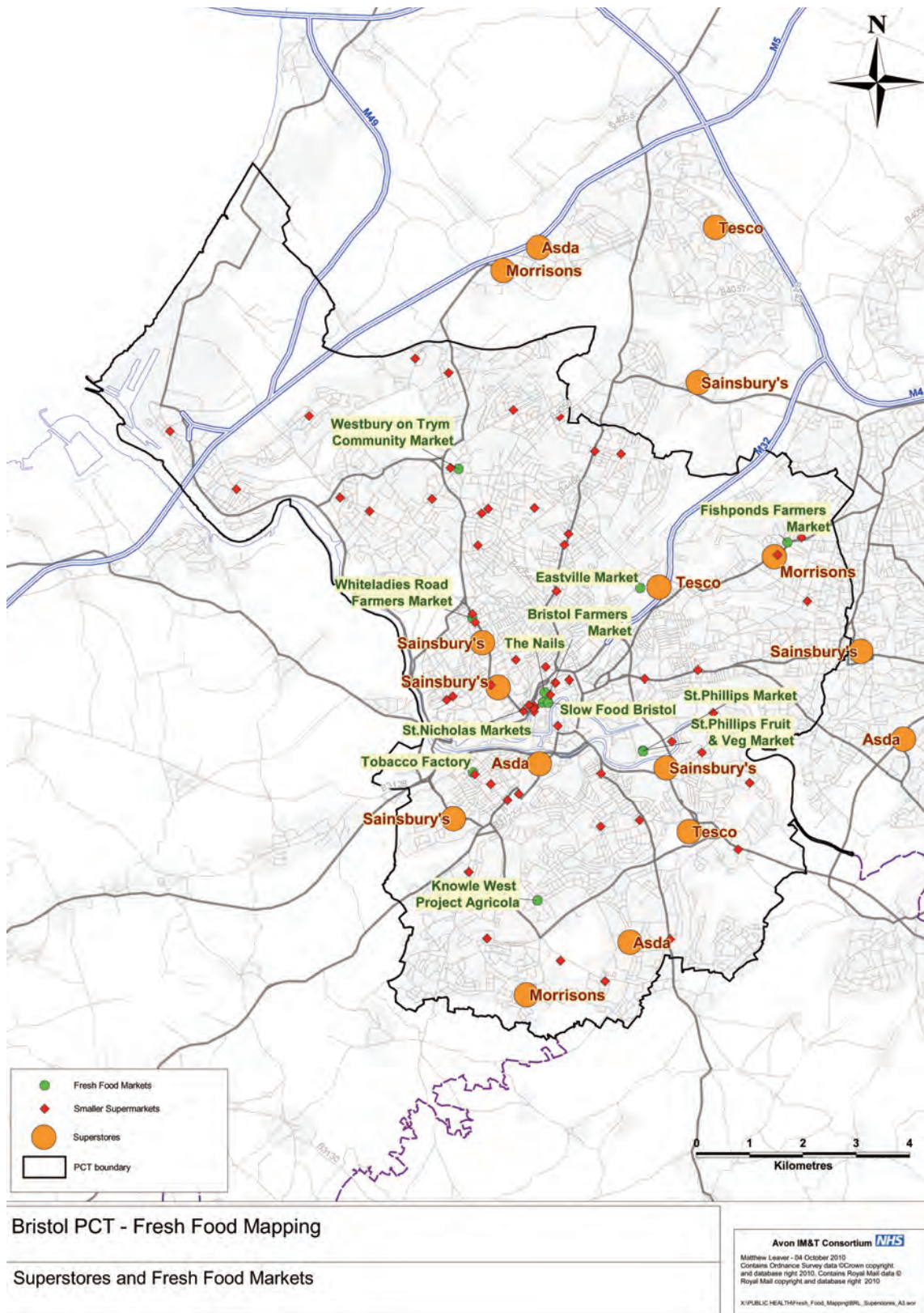
  
Avon IM&T Consortium

Ward	Bakers	Fishmongers and butchers	Greengrocers	Grocers, healthfood shops, delis, market stalls	Supermarkets, stores and frozen food retailers	Total
Ashley	1	2	2	20	0	25
Avonmouth	2	1	1	6	2	12
Bedminster	1	0	0	6	3	10
Bishopston	1	3	1	5	2	12
Bishopsworth	1	0	1	6	1	9
Brislington East	0	1	0	2	2	5
Brislington West	1	1	0	5	3	10
Cabot	15	8	1	24	12	60
Clifton	1	1	2	8	2	14
Clifton East	0	0	1	7	4	12
Cotham	4	2	1	8	1	16
Easton	2	3	2	14	0	21
Eastville	0	3	0	3	0	6
Filwood	1	1	0	7	0	9
Frome Vale	2	0	1	4	3	10
Hartcliffe	1	1	1	5	1	9
Henbury	0	0	1	3	3	7
Hengrove	0	0	0	5	1	6
Henleaze	1	3	1	5	4	14
Hillfields	1	0	0	5	1	7
Horfield	1	1	1	2	3	8
Kingsweston	2	1	2	6	2	13
Knowle	1	3	2	4	3	13
Lawrence Hill	2	9	1	23	4	39
Lockleaze	1	0	0	4	1	6
Redland	4	4	2	9	2	21
Southmead	1	0	1	5	3	10
Southville	5	7	2	6	5	25
St. George East	1	3	1	4	0	9
St. George West	1	1	0	11	2	15
Stockwood	0	0	1	4	1	6
Stoke Bishop	0	0	1	1	1	3
Westbury-on-Trym	2	1	4	3	2	12
Whitchurch Park	0	0	0	3	4	7
Windmill Hill	1	1	1	9	1	13
<b>Total</b>	<b>57</b>	<b>61</b>	<b>35</b>	<b>242</b>	<b>79</b>	<b>474</b>

Produced by Matthew Leaver 04/10/2010

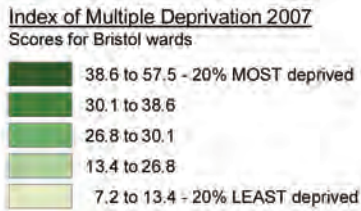
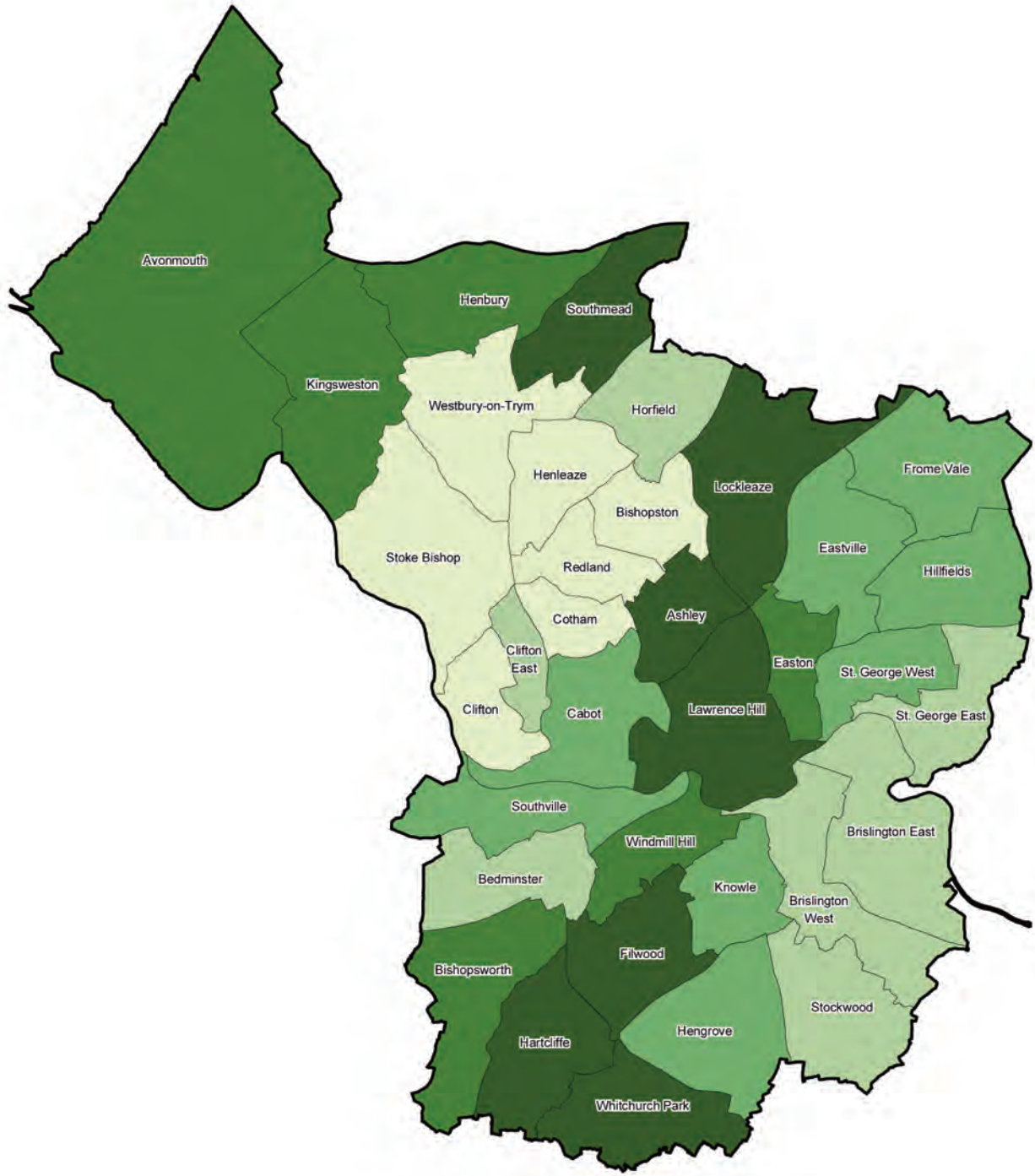
The purpose of this table is to show the provision of staple food items from independent retailers across the city in a way that enables comparison between Bristol's 35 wards. Further research is needed to gather more accurate figures and to identify the shops that provide an adequate range of staple 'cook from scratch' food items. It is the basis for the fresh food provision map and the data is from the Bristol food register 2010.





Map 2 locates the large supermarket superstores and smaller supermarkets in and around Bristol city. There are 9 of the 'big four' superstores within the city and 8 close to the city. It also shows the locations of the 4 Council-operated fresh produce markets and a further 8 fresh produce markets of various kinds.

Map 3: Map showing index of multiple deprivation by ward



Source: Office of the Deputy Prime Minister, Indices of Deprivation 2007

**Avon IM&T Consortium**

Trevor Foster - 10 October 2008  
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#### 5.4.2 Food mapping analysis - key points

Whilst large supermarkets offer a good range of 'cook from scratch' ingredients, this is not necessarily the case in smaller stores and prices can also vary (see section 12.2).

Independent retailers selling fresh produce can be found all over the city but do seem to be located in geographical clusters. The maps and table of figures in Table 5 can only give an indication of provision of fresh 'cook from scratch' food items. Identifying all the independent retailers who are either grocers or provide a limited range of basic food items is difficult due to the limited data held on the food register. Mapped food businesses include bakers, greengrocers, butchers, fishmongers, organic and health food shops, delicatessens, convenience shops and some newsagents and post offices.

Analysis of the provision of fresh food data reveals strong contrasts in fresh food provision between Bristol's communities:

- 🍏 Ten wards have no independent greengrocers on the food register. These include 4 out of the 7 most highly ranked wards in terms of deprivation (see map 3). All of these wards have large supermarkets or are close to wards with supermarkets (see map 2). Nine of these wards have a total of 10 or less food retailers. We do not have access to information about numbers of food retailers that used to exist. It nevertheless seems likely that independent retailers have disappeared in these areas because of the establishment of large supermarkets.
- 🍏 Half of the wards in Bristol have 10 or less fresh independent food retailers.
- 🍏 At one extreme - Hengrove and Whitchurch Park have no independent butcher, fishmonger, baker or greengrocer - but each community has a large superstore.
- 🍏 At the other extreme - Filwood (Bristol's most deprived ward) with less than 10 food retailers, has a butcher and baker but no greengrocer and has no supermarket.
- 🍏 Five wards have no supermarket: Filwood, Ashley, Easton, Eastville and St Georges East.
- 🍏 Lockleaze has only 6 food shops two of which are actually Tesco in Eastville, but officially Tesco falls just inside Lockleaze ward; the one bakery is also located in Tesco.
- 🍏 After the 5 wards with no supermarket, the least deprived wards (Clifton, Cotham, Bishopston, Redland, Westbury-on-Trym, Stoke Bishop, Henleaze) have the lowest density of supermarkets and over 10 independent food retailers each (with the exception of Stoke Bishop which has only 3 independent retailers and also has the highest car ownership in the city).
- 🍏 Lawrence Hill has the second highest number of food shops and is also the ward with the highest population. Most of the grocers in Lawrence Hill ward are located on Stapleton Rd.
- 🍏 Cabot ward in the city centre has by far the highest number of food shops (and around 16% of the city's total food businesses, the majority of which are cafes, restaurants and pubs). Eight butcher/fishmonger businesses are listed but some of these are weekly farmers market stalls in Corn Street. Its 15 bakers include 6 branches of Greggs (a national chain) and 2 branches of Parsons (an independent Bristol bakery with 22 shops in the city region) and 3 bread stalls at the weekly farmers market. <sup>(12)</sup>

Source:

12. Bristol public food register; Deprivation IMD 2007 Rank of Electoral Wards within Bristol (Department of Community and Local Government



### 5.4.3 Local shopping areas and multi-cultural food provision

There are a number of locations around the city where independent food retailers are clustered. Ashley ward for example has 25 independent food retailers, most of which are clustered in Mina Road, Ashley Road and Stokes Croft. In wards like Easton, Ashley, Lawrence Hill and Eastville, independent retailers provide a wide range of foods used by culturally diverse groups and these food items may not be found in supermarkets. St Mark's Rd in Easton is a well known example of a local shopping area and is home to the thriving independent food retail enterprise, Bristol Sweet Mart.

#### CASE STUDY 1:

### Bristol Sweet Mart – innovative food retail in a diverse community



Bristol Sweet Mart was established in 1978 by Mr Kassam Majothi, a Ugandan refugee who migrated to the UK. It is now managed by Mr Majothi's four sons and employs over 50 staff. This well known food retail business began as a simple one-shop family business selling Indian home-made foods in Easton. Located in the heart of a vibrant local community, the business has expanded along St. Marks Road now offering a local food shop, a wholesale service and a new delicatessen. Its product range has grown to include specialist Indian and exotic foods, fresh fruit and vegetables as well as a wide selection of herbs and spices. The family has developed and diversified Sweet Mart's food retail business in response to the rich variety of cultures and communities within Bristol.

Bristol Sweet Mart stocks 11,000 different products in store and sells on-line via its website. They try to source their products locally and from the UK, Europe and Asia. Around 30% of their range of fresh produce and dairy products are sourced locally and from the SW region. They buy in bulk from Essential Trading based in Bristol and from Queenswood based in Somerset. The business promotes local sourcing and has experienced an increase in demand for local and organic foods from their regular customers.

The business is very much part of the local community and has built a loyal customer base. In total around 80% of its sales are to local customers, Bristol restaurants and cafes. It supplies over 100 Indian restaurants, take-aways and specialist food outlets in the Bristol area. The rest of its sales are to customers and businesses across the South West region. It also sells a wide range of cooked Indian delicatessen foods that are prepared on the premises in their own kitchens. The business is planning to develop sales to local schools, colleges and hospitals, and to develop new trade with buying groups across the city and South West region.

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

(See full case study, appendix 11)

#### 5.4.4 Comparison of fresh food map data with Bristol's 'Quality of Life' survey

Each year Bristol City Council conducts a postal questionnaire with a sample of residents across the city. In 2008 analysis of responses to a question about easy access to a shop selling fresh fruit and vegetables identified a wide variation in reported access. The following list is of the wards that fell into the top, middle and bottom 'access' categories.

- 🟡 **Poor access** – Filwood; Lawrence Hill; Lockleaze; Bishopsworth; St George West; Hillfields; Cabot; Brislington East
- 🟠 **Limited access** – Southmead; Kingsweston; Avonmouth; Hengrove; St George East; Brislington West; Clifton.
- 🟢 **Good access** – Henleaze; Westbury on Trym; Bishopston; Clifton East; Southville

The wards in red are those for which the food register shows no independent greengrocers. Half of these wards have less than 10 independent fresh food retailers. Based on information from Map 2: (Supermarkets and fresh food markets), a number of these wards are located in areas 'in between' the superstores, although there are some smaller supermarkets. Despite Lawrence Hill having the second highest number of fresh food retailers, fruit and vegetables are reported not easily accessible. This could be because survey respondents are less mobile and cannot access the shops, or because the perceived quality/range/price is poor. The wards with best access correlate with wards where there are greengrocers, for example Westbury-on-Trym has 4, the most in the city. Further research is needed to properly understand access and availability issues, looking at both retailers and fresh produce markets.<sup>(13)</sup>

#### 5.5 Direct delivery to households

Direct deliveries to households are growing, with several supermarkets doing home deliveries including Tesco, Sainsbury's, Waitrose, Asda and Morrisons. There are also milk rounds that deliver other products alongside dairy products including bread, fruit and vegetables. In addition there are mobile greengrocers, fishmonger vans, local food distribution businesses and independent box schemes (see section 8 on local produce supply), food cooperatives and buying groups which buy in bulk and distribute amongst their members. Good examples include Essential Trading Cooperative's buying groups and Hartcliffe Health and Environment Action Group food coop (see case studies).

#### 5.6 Summary & key points

Reflecting the national situation, Bristol city region is supplied with over 80% of its food retail sales by a total of around 100 stores/shops owned by the five largest supermarket chains.

In Bristol city itself, around 32 food retail outlets are owned by the 'big four' ie Tesco, Morrisons, Asda, Sainsbury's. Reflecting national figures, this suggests 4 companies are responsible for supply of 75% of food retail sales in Bristol through 32 stores. The 70 registered supermarket businesses account for around 1.5% of all Bristol's food businesses i.e. including caterers etc.

It is clear that the number of supermarket outlets is increasing rapidly and that independent shops are declining.

Supermarkets account for around 7% of the food retailers in Bristol; specialist independent food retailers (butchers, bakers, fishmongers, greengrocers, delicatessens) account for 17% of the sector. The remaining 76% is made up of a wide range of shops and businesses including corner shops and small scale convenience stores.

Source:

13. Bristol City Council Quality of Life survey; 'Factsheet 4 - Create and develop healthy and sustainable places and communities', NHS Bristol 2010



Analysis of the public food register suggests that around 5% of Bristol's food businesses supply fresh staple 'cook from scratch' food items, of which volume, range and quality varies. These fresh food retailers include a mix of types and sizes of outlets ranging from supermarkets to greengrocers, bakers and butchers, to corner shops.

Bristol city has approximately 180 specialist independent food retail outlets run by around 140 independent retail businesses including 35 independent greengrocers, 40 butchers, 10 fishmongers, 25 delicatessens and 70 bakery shops run by 30 bakery companies. To put this in context, if the 35 greengrocers were all evenly spread around the city, each would provide for an average population size of 1,100 people.

Under a third of Bristol wards do not have an independent greengrocer and half of Bristol wards have 10 or less fresh staple food retailers. The fresh food mapping data suggests that there is a correlation between the presence of large supermarkets and lower numbers of independent retailers. Further research is needed to understand better the local access to fresh staple food items across the city and the viability of the independent food retail sector.



# 6. Wholesale and distribution





## 6. Who supplies food to the businesses which sell to us?

### 6.1 Food distribution/ wholesale facilities in the Bristol city region

The 2.5 % of the city region's food businesses that are food distributors, distribution centres, cold stores and wholesalers (see section 4, Table 1) are a largely unseen aspect of the food supply system, except for the large haulage vehicles and delivery vans that travel up and down the motorways and into our towns and cities. The distributors and wholesalers supply a large network of retailers and caterers.

There are a total of 160 distribution/wholesale facilities registered in the city region with 56% of these facilities registered in Bristol and the rest evenly spread across the other three unitary authorities. Bristol's geographical location and proximity to the M4 and M5 motorways has resulted in Tesco, Sainsbury, Asda, the Co-operative, and Morrisons supermarkets all locating their South West and Wales distribution centres at Avonmouth, Portbury, Patchway and Cribbs Causeway. Within Bristol, distribution and wholesale facilities are clustered in two main areas: St Philips and Avonmouth/Royal Portbury. Figure 7 explains in more detail what kinds of companies are involved in wholesale and distribution.

Figure 6: Food distribution and wholesale facilities in the Bristol city region – breakdown by Local Authority area

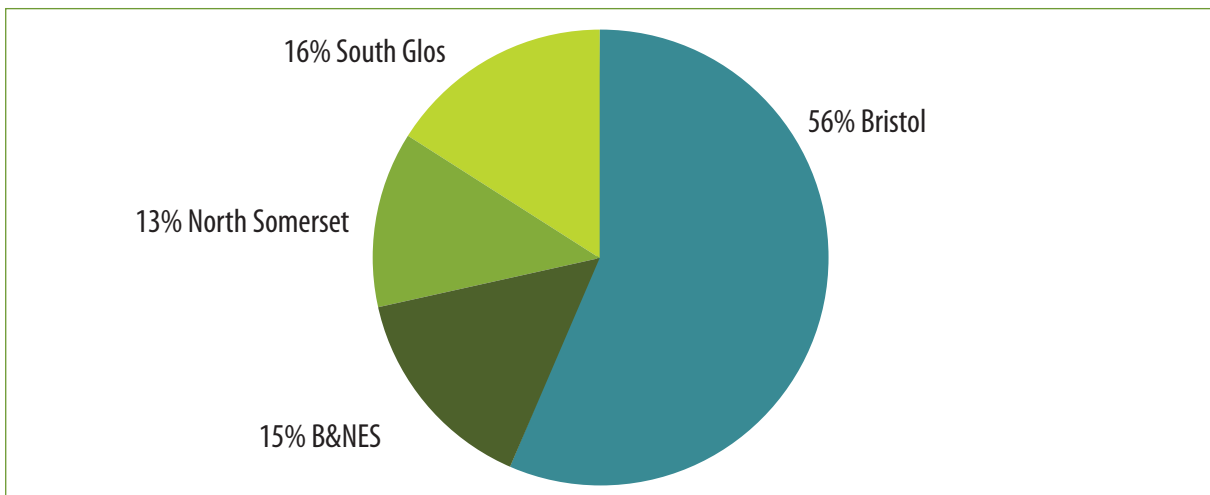
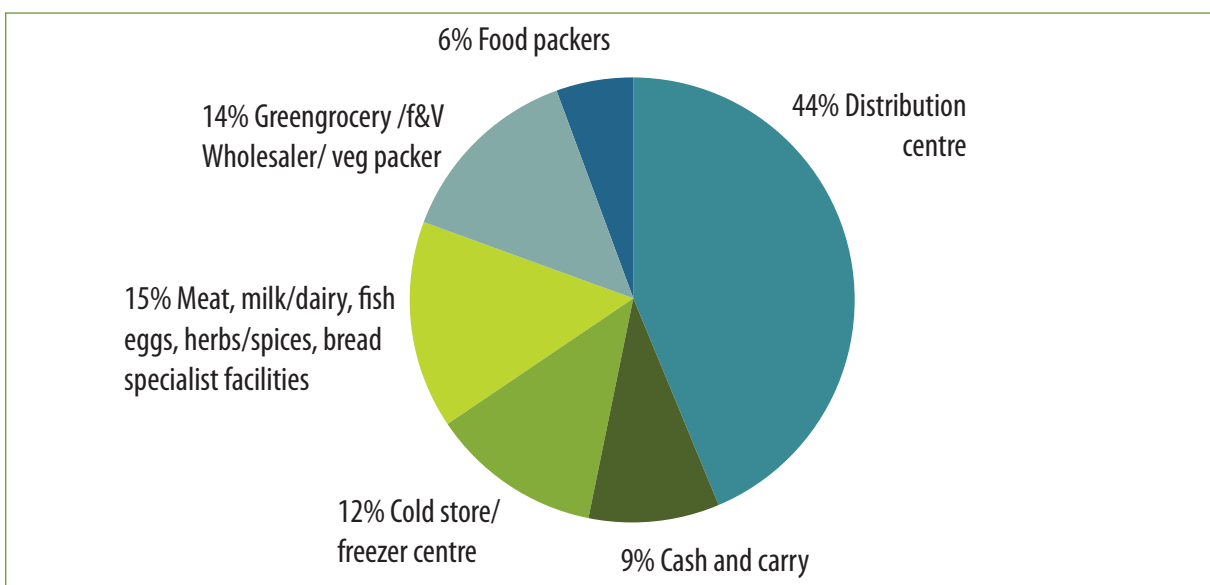


Figure 7: Food distribution and wholesale facilities in the Bristol city region – breakdown by nature of facilities



(Data source: Food registers for Bristol, B&NES, South Gloucestershire, North Somerset)

### 6.1.1 Bristol Port Health Authority

Bristol Port Health Authority covers Bristol Port Company's Royal Portbury and Avonmouth Docks. Although Royal Portbury is located in North Somerset, it is mainly the responsibility of Bristol Port Health Authority which is run by Bristol City Council under a Port Health Order approved by the Secretary of State. In 1991, First Corporate Shipping Limited, a private company, purchased a 150 year lease for the Avonmouth and Royal Portbury Dock Estate from Bristol City Council. It is one of the smaller UK ports but there has been significant expansion since 1991 and it is recognised as among the most productive and technically advanced ports in Europe.

Relative to the ports of Southampton and Felixstowe, the amount of food currently coming into the Bristol port is small. This is largely because of the size of ship that the port can accommodate. Imported food items at present are all 'low risk' (ie dried, preserved or non-perishable) and include wine from South Africa; sultanas and raisins, apricots, pears and chickpeas from Turkey; tomato pastes and sauces from the European Union; gum Arabic from Africa; apple juice from Spain. In 2009-10 a total of 229k tonnes of food came through the docks, a 20% reduction on the previous year. Figures from 2008-9 suggest that over 4000 containers brought in 281k tonnes of imported food items.

Bristol Port Company has registered cold stores on site which are used by the distribution companies. There are terminals for fresh produce, grain and animal feeds. The port has capacity for bulk liquids and deals with molasses and orange juice concentrate. The fresh produce terminal has a capacity of 14,500 pallet spaces with temperature controlled chambers, receiving and delivery halls and dispatch bays. The computer system tracks the location and status of each pallet until it is redelivered to road transport. At present the terminal handles fresh produce from a number of exporting countries. During the Northern Hemisphere's off season imports are handled from Chile, Argentina & South Africa. During the Northern Hemisphere season products are imported from the Eastern Mediterranean. Products handled include grapes, apples, pears and citrus. However at the moment all fresh fruit imports are stopped. We were not able to find out why this has happened but it is most likely to be related to economic issues.

The next major phase in Port development is to build the new Deep Sea Container Terminal. This expansion into a deep water terminal could make Bristol into one of the biggest ports in the UK and the only deep water port with direct motorway and rail access. Bristol would be able to deliver containers to key UK markets more quickly than ports in the South and East as this development would make it 40 miles closer to the supermarket regional distribution centres than any other port terminal. Bristol Port also has its own dedicated motorway junctions giving quick access to the large consumer markets in the Midlands, South West and West London. Increased food imports would transform it into the major import hub for this side of the country with potentially 1.5 million containers arriving each year, many of which could be food products. <sup>(1)</sup>

### 6.1.2 Avonmouth

Distribution/wholesale companies account for approximately 30% of registered food businesses in Avonmouth, the majority of which are involved with regional and national supply chains. Half of these companies are concerned with warehousing and food storage. <sup>(2)</sup>

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#### Sources:

1. Bristol Port Company; <http://dsct.bristolport.co.uk>
2. Public Health Services; food safety records, Bristol City Council;



## 6.2 The role of wholesale

The role of wholesaling is to supply goods to trade and business customers for whom dealing directly with suppliers is not feasible and/or practical. By buying in bulk and selling on by case loads, the wholesalers enable small traders to purchase as much or as little as their businesses require.

In addition many wholesalers also provide a range of business support services for customers, such as logistics and distribution/delivery services. The broad categories of wholesale businesses defined by the Institute of Grocery Distribution are:

### 1. General Grocery Wholesalers

Supply a wide range of food and grocery categories. Their primary customers are independent retailers and caterers.

### 2. Specialist Wholesalers

These focus on a narrow range of often specialist categories. For example, fresh fish, fruit and vegetables, meat and poultry.

### 3. Catering/Foodservice Wholesalers

These tend to deliver to a diverse range of businesses including cafes, restaurants, fast food establishments and schools and hospitals.

The wholesale market function has changed since the 1970's, because of the expansion of the supermarket sector to encompass its own in-house suppliers, logistics and distribution. Previously the wholesale trade served most of the retail sector. Now that the supermarket sector deals directly with its own suppliers and has its own consolidation and distribution facilities, this has fundamentally changed the way that market forces operate in the food system. The current function of wholesale in the UK is now to service the surviving independent retailers, the catering industry, local authority outlets including schools, colleges, and hospitals, and processors and manufacturers. Whilst these elements combine to create a significant independent sector, the wholesale market suffers from fluctuations in supply and demand. Frequent oversupply can result in poor financial returns for the grower.

The major supermarket chains use distribution and 'just in time' ordering and delivery techniques which mean that producers carry more of the risk from oversupply. Because of their size the supermarket chains can call on diverse global production sources to meet fluctuating demand – for example for ice cream, salad and barbecue items in hot weather. The fact that food may cross the country several times on its journey from producer to customer does not matter in economic terms, because fuel prices are low and road charging is not part of the UK transport policy. This has in turn influenced consumer expectations for year round availability. One consequence of this is that many people are no longer familiar with what products are and are not in season in the UK in any given month, and may therefore view the offer from independent greengrocers as less attractive if these greengrocers focus predominantly on seasonal goods.

The wholesale market can act as a safety valve for importers and producers whose primary function is to service the supermarket sector and who may have produce for sale that is surplus because of fluctuating requirements or because it falls outside supermarket specifications. For example, many growers who have been supplying supermarkets are now seeking to reconnect with the independent sector because of the difficulties they face in servicing the narrow specifications, low prices and unpredictable demands of the supermarket trade. However, the wholesale trade cannot always cope with the fluctuating volumes that producers need to input into the independent sector. For a fuller description, see 'Hungry City'<sup>(3)</sup>.

Source:

3. Hungry City: How food shapes our lives'; Carolyn Steel, 2006

## 6.3 Fruit & vegetable wholesale markets in the UK

Imported fruit and vegetables currently constitute 90% of the UK's fresh produce wholesale trade. The remaining 10% of fresh produce is sourced from the UK and represents around 25- 30% of the UK production of fruit and vegetables, which for various reasons has not been placed directly into retail or foodservice supply chains.

In terms of future resilience, fruit and vegetable wholesale is key if local production (to conserve transport fuel), sustainable farming methods (to maintain soil health and biodiversity) and human health (food prepared from good quality fresh ingredients) are our priorities. The commercial viability of UK fruit and vegetable production depends on a network of wholesale, retail and consumption that takes account of what is efficient to produce within the context of the landscape and weather pattern for UK farming.

There are 24 primary wholesale fruit and vegetable markets in the UK including: Belfast, Birmingham; Borough (London); Bradford; Brighton; Bristol; Cardiff; Derby; Dublin; Gateshead; Glasgow; Hull; Leeds; Leicester; Liverpool; Manchester; New Covent Garden (London); New Spitalfields (London); Nottingham; Preston; Sheffield, Southampton; Western International (London); Wolverhampton. Most are owned by their city councils<sup>(4)</sup>.

The Bristol Wholesale Fruit Centre at St Philips specializes in fruit and vegetables and is one of just two wholesale markets in the country that are owned and run independently of the local authority.

## 6.4 Bristol Wholesale Fruit Centre

Bristol Wholesale Fruit Centre in St Philips was established as a co-operative with a not for profit ethos in 1968. It is run by a board of 8 Directors elected by the shareholders who are also the leaseholders of the units in the market (ie the companies that trade out of the market). Bristol Wholesale Fruit Centre runs the market site, deals with security, maintenance, waste, health and safety and legal issues. It is a wholesale market that exists to provide services and facilities to wholesale companies dealing with fresh fruit, vegetables, salad and flowers. Each morning, customers shop around and compare prices between the different shareholder companies.

### 6.4.1 Scale of operation

The market supplies an area that stretches from Fishguard, to Portsmouth, and from northeast of Oxford to Penzance. Main customers are independent retailers, catering suppliers and caterers, Local Authorities and the NHS. Individual companies tender for supply contracts, which in turn help to keep the wholesale market buoyant.

The market serves virtually the entire independent greengrocery sector across South Wales and the Southwest of England. Supply within the Bristol city region accounts for some 20% of the market's trade. It has managed to remain viable despite the severe pressures that have led to the loss of much of the wholesale infrastructure throughout the country, including Wales and the South West. Bristol is now the nearest wholesale market to Penzance, which is just about reachable in a days return journey. If the St Philips wholesale market were to collapse, this would cause significant loss of local jobs and would cause a domino effect for thousands of producers throughout the South West and further afield, and for hundreds of caterers and independent retailers. Without Bristol, the next closest markets are Western International Market just outside London near Heathrow, or Birmingham.

Source:  
4. The re:fresh directory 2010

In the 1960s the Wholesale Fruit Centre moved from its central site in St Nicholas market where it operated alongside the meat and fish markets, to the site at St Philips because of improved transport links and greater space. The site at St Philips was located beside railway sidings and the original plan was to make use of rail links to serve the market. However, the railway goods depot was closed in 1967.

Today the market is entirely reliant on road transport and has changed considerably since it was established. Road haulage is the fastest way to get perishable short shelf-life goods to market. Large 40 ton haulage trucks have transformed the market into a regional hub for fresh produce distribution involving several different businesses based at the St Philips site.

It has shifted from solely supplying retailers to also supplying the bulk of the catering sector. This change is largely due to the rise of supermarkets who now dominate the retail sector for fresh produce. The wholesale businesses have been sustained by the growth of the catering market and supply contracts to schools and the NHS. One of the companies has set up a subsidiary to process vegetables for school and NHS contracts. It is estimated that some 5 million people receive some part of their 'five a day' requirement by means of fresh fruit and vegetables that have come through the Bristol Wholesale Fruit Centre.

#### 6.4.2 Business operation

There are eight parent fruit and vegetables businesses based at the Wholesale Fruit Centre site in St Philips, a number of which own subsidiaries. All leases are 99 years from 1968. Annual turnover ranges from £4 billion for Fyffes, the largest parent business which leases 45% of the property on site, to £1-2 million by the smallest company. Mack is another large wholesaler, owned by a privately owned international company the Fresca Group Ltd, 'the biggest produce company in the UK'. Fresca Group Ltd have established the 91 hectare 'Thanet Earth' site in Kent, the UK's largest and most high-tech hydroponic greenhouse complex supplying cucumbers, peppers and tomatoes to all the major supermarkets.

All the companies operate independently of each other. Most are wholesalers that either sell direct to retail and catering customers who either come to the market or receive deliveries ordered via telesales operations. There are 3 retail companies that rent storage space on the site. The smallest companies are M&D Kidner, Jenkins and Bath Wholesale, all independently owned. A number of secondary wholesalers also operate on the site, operating as buyers from the large wholesalers then selling on to retailers and caterers in smaller quantities.

#### 6.4.3 Sources of fresh produce

Fresh produce comes into the market daily, mainly from the UK and Europe, predominantly from Holland and Spain but also further afield. The individual businesses have their own direct trading relationships with growers or with brokers who sell on behalf of growers. Much of the UK produce comes from the Midlands and East Anglia or the Northeast and Northwest of England and is distributed around South Wales and Southwest England. Some growers within 100 miles of Bristol deliver their own produce to the market. Currently the volume of fruit and vegetables sourced from the South West and the Bristol city region is minimal. M&D Kidner is one company that tries to source as much seasonally available and organically grown produce as possible from within the region. (See case study)



## CASE STUDY 2:

### M & D Kidner – wholesale local and organic fruit & vegetables



#### Ownership & scale of operation

M & D Kidner is a small independent wholesale company that operates out of the Bristol Wholesale Fruit Centre in St Philips. Delivery represents 70% of its business activity with 30% of activity being on-site sales. Mark Kidner set up the business 20 years ago and it has been at the St Philips site for 9 years. The company is one of the smallest in the market, employing 25 people and has an annual turnover of £12 million. It also has a small organic enterprise.

#### Local and organic supply

When seasonal and local produce is available 75-80% sold by Kidners is English. Annually the percentage is less with the rest being imported from abroad. The company buys from approximately 50 suppliers. Supporting local growers by buying high quality produce and locally distinctive varieties is part of Mark Kidner's personal conviction. The proportion of locally sourced produce varies according to season. As part of Kidners local produce sourcing approach, the company buys surplus seasonal produce from the farms that run the farm shops it supplies, and it also work with small scale local growers including organic businesses, but finds there is not enough produce grown in the local area. Kidners have developed an organic box scheme for retailers. The shops collect and pre-sell orders for boxes. The company also works closely with Somerset Organic Link.

#### Customers

Of Kidner's 100 customers, about 70% are farm shops, and the rest are mainly secondary wholesalers who supply caterers, fruit and vegetable shops and small restaurants, mainly in the Bristol city region. Most of these customers want local and UK produce. In Bristol city, customers are mainly Asian shopkeepers who come to the market in person to buy onions and potatoes. Organic produce customers in Bristol include Penny Brohn Cancer Care and the Watershed.

#### Public sector supply

Kidners are interested in developing contracts for fruit and vegetable supply for school meals in Bristol.

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

(See full case study, appendix 11)

#### 6.4.4 Significance for Bristol

The wholesale market provides employment for well over 500 people, excluding the Sunday Market. It supplies most of the city's greengrocers, several mobile greengrocers and a number of grocers that stock fresh produce. The site is rented out each Sunday to an outside market company that organizes markets for the public from all over the country. The Sunday Market fresh produce stall holders are in effect secondary wholesalers who buy from the companies at Bristol Wholesale Fruit Centre and sell on to the public. It attracts a wide cultural mix of regular customers who tend to come from within a 10 mile radius. An estimated 10,000 people shop there each Sunday according to an audit in 2004. Those numbers may have fallen slightly but the market still draws a big clientele with over 1,000 customer vehicles and significant sales of fruit and vegetables. For example, in one day a stallholder sold over 75 tons of potatoes, equivalent to 50 pallets or two and a half articulated lorry-loads.

#### 6.4.5 Food Waste

The market generates a significant amount of waste each day including spoiled fresh produce, excess pallets and waste packaging. Approximately 2-3% of the market's total daily fresh produce is wasted each day, largely due to non-compliance with Defra inspector grading standards. If samples of produce do not meet the required standards then the whole pallet can be rejected. This means the produce is not allowed to be sold, and officially not even allowed to be given away so it is compressed on site and sent to landfill. Market traders estimate that at least 10% of this waste is perfectly edible.

The market has its own compressor for dealing with waste and Biffa has the disposal contract. This is expensive and costs the market £120 per ton to send to landfill. Individual companies can make their own waste disposal arrangements or pay for use of the facilities available on site. Some companies supply fresh produce waste to farmers who come to collect, or take it to a biodigester composting facility in Cannington near Bridgwater.

### 6.5 Bristol Wholesale Fruit Centre vulnerabilities

The Wholesale Fruit Centre is vulnerable to a range of issues and impacts including:

- 🍏 **Supply** – finding sufficient steady supply of local or regional produce is becoming more difficult as growers go out of business.
- 🍏 **Transport** – interruptions to road transport like blockages on motorways, port blockades (as with recent industrial action in France) or closure of the channel tunnel would cause serious disruption.
- 🍏 **Haulage** – companies don't share transport capacity with competitors. This means there is less than optimal use of transportation space in the wholesale distribution system. This could be addressed if there was an independent haulage contractor servicing the market.
- 🍏 **Retail Links** – the close interdependency between the wholesale sector and the independent retail sector and the catering sector means that stress or failure in any one area impacts on the others.
- 🍏 **Contamination** – the St Philips area has become a favoured location for waste companies with 10 now located close to the wholesale market. There have been increased incidents of rotting waste and rats. The market organizers are seriously concerned about potential contamination of fresh produce.



## 6.6 Future opportunities for St Philips wholesale market

One aspect of a resilient food system is the need for easy access to diverse markets for producers, caterers, retail businesses and the public. St Philips wholesale market enables growers to sell their products flexibly in large volumes on a daily basis and plays a very significant role in supporting the existence of the independent retailers including farm shops across South West England and South Wales.

The supermarket chains achieve financial efficiencies through the scale of their operations but this has led to loss of market diversity. Supermarket practices have been the subject of high-profile criticism, and investigations, in relation to anti-competitive practices. If the Bristol Wholesale Centre were to collapse, this would further erode the diversity of the market, and would signal the end of numerous small businesses throughout the region, with the loss of many jobs.

The wholesale market represents a significant business resource for the city and the region. At present it has only a small connection with actually feeding Bristol city except through the small number of greengrocers and through some NHS and school meal catering. NHS and Local authority fruit and vegetable supply contracts currently play a significant role in keeping the Bristol wholesale market buoyant.

Some businesses involved in the Wholesale Fruit Centre believe there is scope for the co-location and development of a composite farmers' wholesale market serving the public and operating as a local producer distribution hub, linked with training opportunities, mentoring and a food college. Ideally this would be on new site, given the limitations of the buildings at St Philips.

A huge amount of fresh fruit and vegetable waste is generated at the wholesale market, a significant amount of which is being compressed and land filled. More of the produce that doesn't conform to DEFRA grading standards could be redistributed, for example by working in partnership with organizations like FareShare (see case study.) There is a significant opportunity for recycling fresh produce and wood waste generated at the St Philips market.<sup>(5)</sup>

*'For a resilient food system we need easy access to markets for both growers and the public. Bristol could have a new composite market selling fresh fish, meat and other food products, creating a growers hub - like a wholesale farmers market. It could provide easier access for people who want to get involved in the trade. The City of Bristol College could re-locate its catering department alongside a fresh produce market. Additionally a training facility could be developed delivering nutritional training to schools and colleges. There's no reason why that couldn't work here. Bristol is a place that is trying to do new things.'*

(Tim Down, MD of Percy J Down)

Source:

5. Information taken from interviews with Richard Laurence, Secretary/Market Manager, Wholesale Fruit Centre (Bristol) Ltd, and with Tim Down, MD of Percy J Down, September 2010.



## 6.7 Other wholesale operators

This study has focused on fruit and vegetables but there are specialist wholesalers for other products too, for example eggs, meat and bakery ingredients. Essential Trading Co-operative is a successful Bristol business – a worker-owned cooperative that supplies a wide range of ethical and organic grocery products. In Bristol, 60% of its trade is with retailers and 40% with restaurants and consumer buying groups and it is a significant player in the city's food system.

### CASE STUDY 3:

Essential Trading Co-operative  
– ethical products, ethical  
wholesale business



Essential's 2,000 active accounts include buying groups across the UK. Within Bristol 40% of their trade is with restaurants, caterers and buying groups. Essential offers a catalogue of 6,000 products including a complete range of natural, vegetarian and Fairtrade foods, 80% of which are organic, including dried, tinned and preserved foods, and bulk commodities including flour and rice.

Sourcing local and natural foods is very important to Essential which buys a wide range of food products from local producers and processors. The co-operative shapes its catalogue to match customers' needs, for example stocking local and organic, Fairtrade and raw foods, GM and gluten free products. Essential promotes 'healthy eating' and the business has expanded with the growth of buying groups and shoppers returning to independent retailers to buy higher quality local foods with personal service. Ethical trading is helping Essential to withstand both the recession and competition from the supermarkets.

[www.essential-trading.co.uk](http://www.essential-trading.co.uk)

(See full case study, appendix 11)

## 6.8 Summary and key points

One of the biggest barriers to increasing the supply of locally produced food is the limitations of the current infrastructure for distribution. This factor was frequently mentioned in the 'Who Feeds Bristol?' producer survey. Bristol has some very successful wholesale and distribution businesses, including well established companies that specialise in local and ethical products which already supply the independent retail and catering sectors. Any future planning to develop food system resilience needs to include such highly skilled food supply professionals who are experienced in the logistics of shifting large volumes of food on a daily basis.

In addition there is the opportunity to address carbon emissions within the food transport system, for example through the use of biogas made from landfilled waste to run distribution vehicles, as piloted by Sainsbury's 'Running on Rubbish' initiative. The company has converted a number of heavy goods vehicles to use a combination of diesel and biomethane, thus reducing CO<sub>2</sub> emissions<sup>(6)</sup>.

Source:

6. [www.biogasmax.co.uk/360-new-development-in-uk-bio-methane-for-dual-fuel-vehicle.html](http://www.biogasmax.co.uk/360-new-development-in-uk-bio-methane-for-dual-fuel-vehicle.html)



# 7. Production



## 7. Which staple foods are produced in the South West region?

One factor in food system resilience is the availability & affordability of staple 'cook from scratch' food items produced as close to the Bristol city region as possible. Section 7 therefore explores the nature of food production in the South West and looks at where this food is sold.

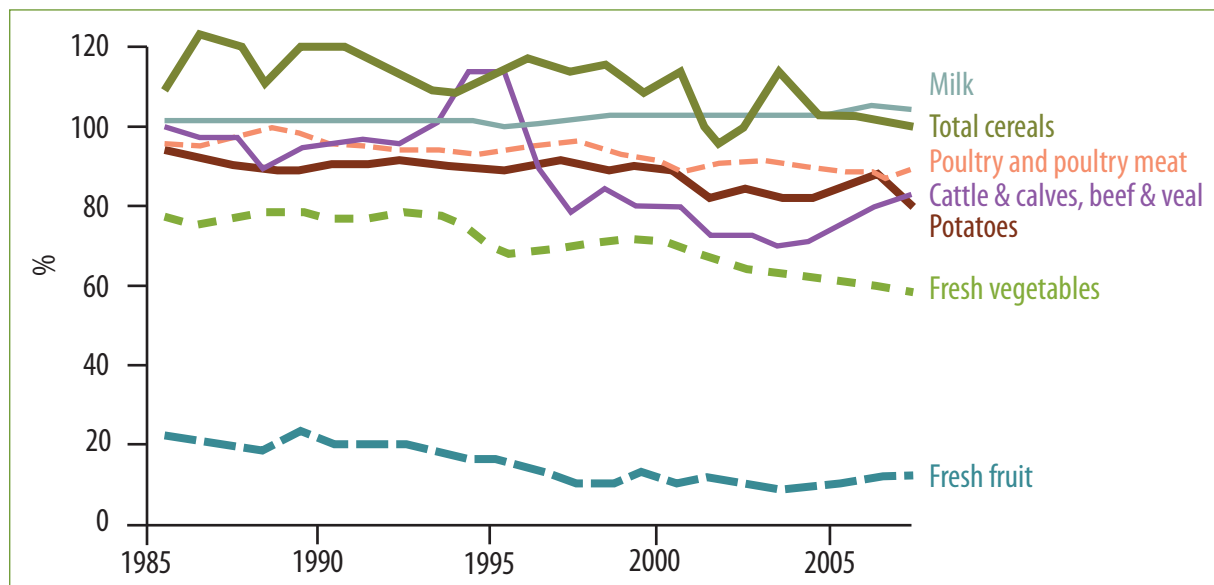
### 7.1 UK self-sufficiency - national picture

As a nation we are dependent on other countries to feed us. Less than 2% of the UK's population is involved in actual food production. The UK currently imports 40% of all its food which includes 90% of its fruit and 60% of its vegetables, mainly by sea and road transport routes. 70% of animal feed used across the EU is imported.

Presented another way, the UK is around 60% self-sufficient in food overall, and around 74% self-sufficient in the types of food that can be grown in this country. This means that although our food supply is fairly secure at present, that situation could change in response to global economic or environmental changes. <sup>(1)</sup>

As shown in the graph below, the UK needs to import poultry, fresh fruit, fresh vegetables, potatoes, beef and some cereals for human consumption. In addition (not shown in Figure 8) animal feed is also an important import, see 7.2.

Figure 8: UK self-sufficiency varies greatly from commodity to commodity



(Data source: Food Matters; UK Cabinet Office, 2008)

Over the last 10 years the supply of fruit and vegetables into the UK market place has increased significantly, through greater volumes of imports rather than through domestic production. During this period we have seen a significant decline in domestic vegetable production. This means although we are consuming more fruit and vegetables, the rise in demand is not helping to support increased domestic vegetable production. Whether we are in fact both purchasing as well as wasting more, in effect eating the same amount is not known.

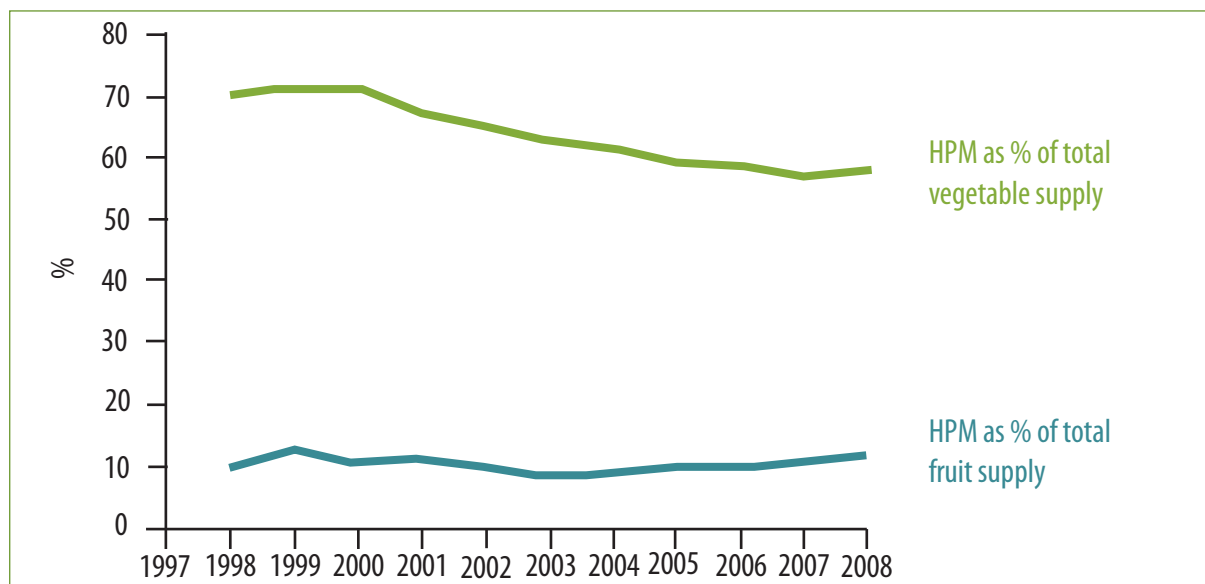
Source:

1. Food and Drink Federation ; [http://www.fdf.org.uk/imports\\_exports.aspx](http://www.fdf.org.uk/imports_exports.aspx)



The domestic production of fruit has increased slightly during the last decade but as a percentage of total supply, the volume of UK production remains low (Figure 9). We are increasingly reliant on imported fruit and vegetables to meet domestic requirements. Whilst a substantial part of these imports are to supply produce that we are physically unable to produce or are out of season in the UK, we are seeing a fall in home production at the expense of imports, in particular for vegetables<sup>(2)</sup>.

Figure 9: Home (fruit and vegetable) production marketed (HMP) as a percent of total supply



(Data source: DEFRA basic horticulture statistics 2009; 'Driving Change in the Fresh Produce Sector', EFPF, April 2010)

## 7.2 Animal feed imports and the link to unsustainable diets

Another significant import to the EU and also to the UK is animal feed which accounts for a significant proportion of the world's harvest – estimates range from one third to nearly half. A range of crops can be used in animal feeds; the most common are soya, maize, oilseed rape and cotton seeds. 90% of the world's soya is used to feed animals and vast quantities are exported around the world. A number of recent reports have raised serious concerns about the negative impacts of animal feed production. These issues are included here as contextual, given that the South West region of England is a significant livestock producer.

*'Global per capita consumption of meat has increased 87 per cent between 1961 and 2002 (World Resources Institute: Earth trends). A trend towards intensive factory farming systems over the past 60 years has meant that cows, chickens and pigs are now eating less grass and food waste and more grains and imported proteins like soya. These practices have added to the vulnerability and the unsustainability of our food chain. We are using more land and resources to feed farm animals – destroying rainforests and grasslands and contributing towards climate change in the process. Dependence on animal feed like grain and soya, imported from across the globe, makes our food systems much less resilient.'*

(Feeding the animals that feed us: The Soil Association, 2010).

The two crops used in European animal feed that are most likely to be genetically modified are soya and maize, and almost all is imported. Imported soya and maize by-products account for about 20% of raw materials used by UK feed manufacturers and farmers<sup>(3)</sup>.

Sources:

2. 'Driving Change in the Fresh Produce Sector', EFPF, April 2010

3. 'Genetically modified animal feed briefing'; FOE, 2006

### 7.3 South West food supply in a national context

Within UK food production, the South West region is most significant for red meat, dairy products and certain vegetables. It is an important meat supplier to the rest of the country and produces more than 23% of England's cattle and sheep. In total, 90% of livestock slaughtered in the South West is sold through processors, wholesalers and supermarkets, while around 10% is sold through independent retailers or direct to consumers. The region provides 37% of England's milk supply, through three large national dairy processors. 70% of the cereals grown in the South West are destined for animal feed for the livestock industry in the region.

The South West region produces only 6% of the nation's vegetables. Its main crops are brassicas and root crops; it dominates in national supply of potatoes and cauliflowers and it supplies 18% of the country's swedes. The land is suitable for vegetable production but the farms tend to be too small to meet the requirements for supplying the large scale multiple retailer supply chains. The result is that vegetable production in the region has declined in favour of cattle, sheep and dairy. The South West has only two large scale growers and packers. These two companies account for half the region's production of cauliflowers and they supply mainly to supermarkets.

The South West is also home to the highest concentration of organic\* producers and processor businesses in the UK. In national terms, the region has 26% of the UK's organic producers and 38% of England's organic producers. Organic farming in the UK covers 4.2% of total agricultural area which signifies 17.5 million hectares. The South West has the greatest proportion of organic land of all of the English regions, representing 1.9 million hectares. Two of England's largest organic businesses are based in the South West: Yeo Valley Organic dairy and Riverford Organic fruit & vegetables box home delivery.

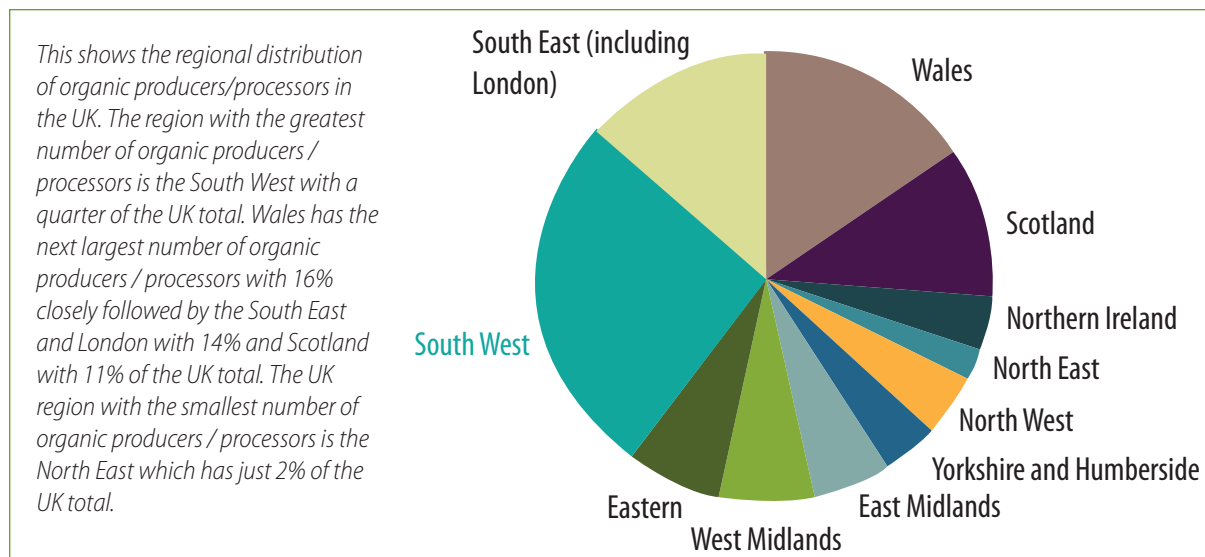
Table 6: Numbers of organic producers and processors by UK region 2009 (also illustrated in the graph below)

Region/country	Number of producers only	Number of producer / processors	Number of processors only	Total
UK	4946	201	2411	7558
England	3089	173	2016	5278
Wales	1,009	27	140	1,176
Scotland	610	10	200	820
<b>South West England</b>	<b>1,466</b>	<b>76</b>	<b>446</b>	<b>1,988</b>

(Data source: Defra Organic Sector UK statistics, 2009)

Note:\*Only food that has been produced in accordance with organic standards by farmers/producers registered with an approved inspection body may be legally sold as 'organic' within the EU. The inputs and practices used in organic farming are strictly regulated in accordance with EU Regulation. (See appendix 1)

Figure 10: Number of organic producers/processors by UK region



(Data source: Defra Organic Sector UK statistics, 2009)

## 7.4 What food is produced in the South West region and where is it sold?

### 7.4.1 Meat production in the South West

The South West is a key region for grazing animal rearing, and produces more than 23% of England's cattle and sheep, mainly in Cornwall, Devon and Somerset. Sheep production has declined over the last three years in line with a national trend but the region still produces over 2 million lambs a year, sufficient to meet around 30% of England's lamb requirements. Pork production is 11.5% of all English production. Chicken production is 13.5% of all English production, concentrated in Devon, Somerset and Wiltshire.

#### Land required for livestock

In total, 60% of agricultural land in the South West is used for livestock production. Rough calculations suggest that the South West livestock population requires around 1.14 million hectares of grassland pasture and arable area for growing animal feeds. It is likely that in addition to pasture, South West livestock use around 23,000 hectares of total UK protein crop production and could be responsible for the import of up to 350,000 tonnes of proteins such as soya bean meal. There is adequate land to feed livestock within the region without undue reliance on feed imports. If the region was to become self-sufficient in animal feeds this would require around another 100,000 hectares of land to produce proteins which would need to be of similar nutritional quality to soya. Clearly this would have to replace other current farmland use. In addition, the quality of grassland for grazing would need to be improved, mainly through management of weeds and increase in grass species<sup>(4)</sup>.

#### Meat 'processing': slaughter, cutting & packing, cooking

There are 6 large abattoirs/processors in the region slaughtering, cutting and packing meat for supermarkets. These large abattoirs have their own cutting facilities to enable them to supply their customers with retail packs. In addition some have or are developing cooking facilities to enable them to process low value cuts into ready meals rather than selling these cuts to secondary wholesalers.

The South West has 48 abattoirs in total as well as a number of other very small licensed slaughterhouses or cutting plants, making it better supplied than most other English regions with slaughter and cutting facilities, reflecting the fact that livestock farming dominates regional production. On average livestock travel no more than 40 miles to an abattoir. Many of the smaller

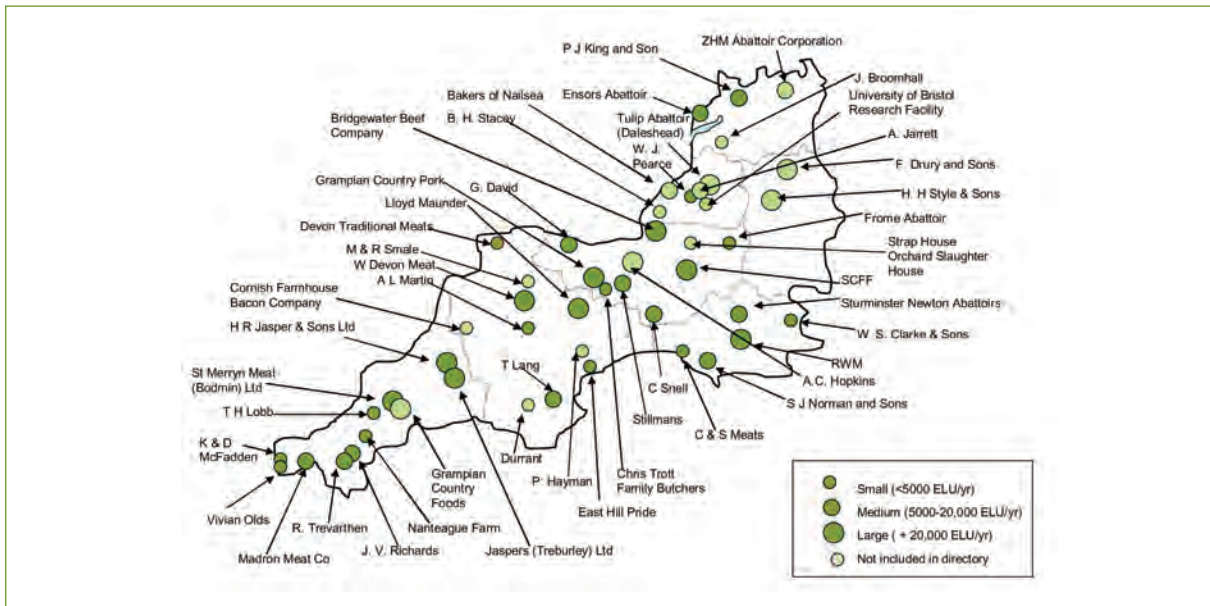
Source:

4. Calculations done by EFPF for the 'Who Feeds Bristol?' report



plants provide a contract slaughter and processing service for farmers wishing to market their own animals. Most pigs and chickens raised in the South West are also slaughtered in the region. The vast majority of the region's table birds are processed in Devon by one large processing company.

Figure 11: Distribution of abattoirs in the South West



(Data source: Livestock producer guide, South West England, 2005; Meat South West & EFPF)

Note: Reference to 'directory' in this map relates to the Livestock producer guide publication

### Where is the meat sold?

A survey was conducted of all South West abattoirs in 2004, which identified that meat from 90% of South West-slaughtered livestock is sold through processors, wholesalers and supermarkets. Supermarkets tend to buy the best cuts while the carcass extremities including legs, belly, shank, shins and flank tend to be bought by meat processors based near to large centres of populations outside the South West region. They may sell it on or cook it for selling to the food service industry as vacuum packed pre-cooked microwaveable meat for caterers, pubs and restaurants.

There is some movement of live animals in and out of the South West region. Cattle leave to be fattened in the Midlands or slaughtered in South West Wales, while other animals come to the region to be fattened and then slaughtered. Some lambs are brought into the region to be raised on good South West pasture. In recent years an increasing number of South West lambs are being taken to South Wales to be slaughtered and sold to one supermarket chain. The South West's one large chicken processor also supplies to one supermarket chain.

### 7.4.2 Dairy production in the South West

The South West region provides 37% of England's milk supply, through 3 large national dairy processors who in turn supply supermarkets and independent retailers. There are around 5,500 dairy farms in the region so the scale of milk production results in a significant proportion of the milk produced being exported to other parts of the UK.

#### Main processors – dairies

The key processors for South West producers are Milk Link, Dairy Crest and Wisemans.

- 🍏 **Milk Link** – is a farmer owned co-op with significant processing capacity for cheese manufacture. The Company also owns liquid milk plants and brands such as 'Moo' milk and smoothies and 'Tickler' cheese. Milk Link is a supermarket supplier as well as supplying milk as an ingredient to other food manufacturers.

- 🍌 **Dairy Crest** – has liquid milk plants close to Bristol at Severnside and a cheese factory in Cornwall. The Company has a producer group and buys milk from all over the country but directs South West milk into supplying the South West processing plants to minimise on transport costs.
- 🍌 **Wisemans** – opened a milk plant near Bridgwater in the last five years and now has an agreement with Milk Link over milk procurement. Wisemans is a main supplier to Tesco, marketing local milk from Devon and Cornwall into retail stores.

The South West is also a key organic milk production area with many producers supplying companies such as Yeo Valley through OMSCo (Farmer Co operative). Yeo Valley is the national retail market leader for organic yoghurt. The company buys milk from many different organic dairy farmers across the region.

### Other dairy businesses

It is easier for dairy than meat producers to develop independent processing facilities and their own branded products. This is because the scale of investment required is lower than for the meat industry and retailers are receptive to a range of interesting dairy products. Within the region there is a diverse range of dairy businesses that buy milk from local dairy farmers and produce a wide range of high quality dairy products for consumers, both via the supermarkets and independent retailers.

#### 7.4.3 Cereal production in the South West

Overall 70% of cereals grown in the South West are supplied to the livestock industry in the region. This equates to around 2 million tonnes of cereals.

The region is not renowned for producing bread-making wheat because the weather is too damp and cool, but the volume of wheat attaining biscuit making quality is increasing. The most common use for the majority of cereals produced in the region is for animal feeds including oilseed rape, beans, oats, wheat, spring and winter barley.

The flour milling industry has experienced significant consolidation in recent years with the two main millers in the UK now being ADM and Premier Foods, both based outside the South West. Some South West food processors have pursued the opportunity to use South West cereals in their products but have found it difficult to find millers and maltsters prepared to keep South West produce separate from their other supplies.

#### 7.4.4 Fruit & vegetable production in the South West

The South West produces around 6% of the vegetables grown in Great Britain but it dominates in specific crops including potatoes and cauliflowers, and it supplies 18% of swedes. Good climatic conditions allow crops to be harvested earlier than in other parts of the country. Its main crops are brassicas and root crops - potatoes, carrots, parsnips, celeriac, swedes. For all other vegetable crops the South West cultivates less than 300 hectares per crop (*Defra Statistics*). The region has around 2,000 hectares of orchards including cider apple orchards in Devon and Somerset, and around 13,000 hectares of soft fruit.

The small amount of fruit and vegetables currently produced in the South West is a consequence of the predominant large scale supply chain business models. In the late 1970's, prior to the advent of supermarkets, the region was a more significant fresh produce grower. South West growers used to supply individual greengrocer businesses, but were unable to scale up to supply the supermarkets due to the relatively small field and holding size.

Within the South West, suitable land is available and could be used to increase fruit and vegetable production, and the farmers who know how to grow vegetables are still farming, but at the



moment it is not a viable option for local producers because of lack of consolidation and because of competition from cheap imports.

The competitive advantage of imports is partly because of better climatic conditions, cheaper labour costs abroad (fruit & vegetables require manual labour in specific seasons), economies of scale, low fuel cost for transportation and the take-up of EU subsidies that have not been utilised in the UK. In addition, the current retail expectation is for absolute consistency and year-round availability of produce. If seasonal fruit and vegetables were to again become a cultural norm then UK home-produced fruit and vegetables could become more valued products.

#### **Where is it sold?**

The South West has two large scale growers and packers and they control half the region's production of cauliflowers and supply mainly supermarkets. Half the crop is sent to be packed in Lincolnshire for the supermarkets, and some goes to dicing and slicing processors in the East of England.

The region lacks food storage and processing infrastructure, so currently most of the produce that doesn't meet supermarket specification ('out-of-spec': too light/heavy; mis-shapen; slightly blemished) is sent to the North of England to be processed.

Overall 75-80% of fresh produce is supplied to supermarkets and the rest to wholesalers. Mainstream producers of brassicas in the South West will aim to sell around 90% or more into supermarket outlets because they get better prices. The 'out-of-spec' produce is aimed at wholesale markets. The situation for swedes is somewhat different with a higher proportion being sold to processing businesses in the East of the country.

Generally South West growers prefer not to sell their produce through wholesalers as the prices are lower and change regularly with strong competition from cheap imports.

It is impossible to know how much South West fresh produce is supplied into Bristol, as the final destination of produce sold into retail will depend on the depots served at any particular moment in time. During the winter months the South West supplies a significant proportion of both Bristol's and the UK's demand for potatoes, cauliflowers and swedes.

There are fruit and vegetable producers who sell direct to consumers through box schemes, farmers markets, and farm shops, a proportion of these are organic. These sales represent a very small proportion of total fruit and vegetables sales. The box schemes supplement their range of produce by sourcing imports from outside the South West and UK. Riverford Farm is the largest UK organic box scheme operator, based in Devon and has four regional sister farms elsewhere in England in order to reduce food miles.<sup>(5)</sup>

### **7.5 Summary points**

Around 90% of South West meat is sold through 6 large abattoirs/processors into the national supermarket supply chains. Perhaps 10% of South West meat is likely to be sold through the local butchers and independent stores who get their meat from the smaller abattoirs and cutting plant businesses. Bristol is currently in the fortunate position of having 6 smaller abattoirs close by which supply the independent retail sector with traceable meat products. This processing capacity supporting smaller scale livestock farmers is a key asset in terms of future food resilience.

If the South West region was to become self-sufficient in animal feeds this would require around another 100,000 hectares of land to produce proteins which would need to be of similar nutritional

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Source:

5. Liz Bowles, English Food and Farming Partnership

quality to soya. The impact on current land use and food production of finding another 100,000 hectares to produce animal feeds of suitable nutritional quality would need further investigation.

Most of the milk from the region is sold through 3 large national dairy processors who in turn supply supermarkets and independent retailers. There are many small scale dairy and cheese businesses along with Yeo Valley, a significant organic milk processor, based within the Bristol city region. Together they represent additional local supply capacity of dairy products alongside the 3 national dairies.

The region produces a good range of cereals including oilseed rape, beans, oats, wheat, spring barley, winter barley, at least 70% of which is used for animal feeds. The region therefore relies for its cereals and wheat for human consumption on other areas of the UK and on foreign imports. Cereals supply is an area of potential vulnerability for the region.

Fruit and vegetable production on a significant scale across the region is limited. However, the land is suitable for vegetable production, which before the advent of the supermarkets used to be more widespread. Somerset and Devon have areas suitable for orchards, which were once widespread across these counties. Lack of consolidation to allow efficiencies of scale that are required by the supermarket supply chain business models, labour costs and a lack of viable alternative markets have led to these significant reductions in fruit and vegetable production. Vegetable and especially fruit supply is an area of vulnerability for the region







# 8. Local food supply





## 8. How much food comes from within a 50 mile radius?

*'The real mileage is not simply in buying local, but in making the best of local. The best local supply chains can out-perform supermarkets on all these counts by a mile (supplier relationships, environmental impacts, risks/vulnerabilities and the extractive shareholder ownership business model) – the challenge is to create the circumstances in which buying local does so as a rule.'* (Tom MacMillan, Food Ethics Council)

### 8.1 Importance of local food supply and local food economies

There has been much debate recently over the merits of re-localised food supply systems. There are concerns about the impact of long supply chains<sup>(1)</sup>. The case for re-localised supply of food staples which can be produced in the UK and for production of highly perishable and bulk foods nearer to the point of sale, has been strengthened by a better appreciation of food security issues, and of greenhouse gas emissions generated by global food production and distribution. A recent report on local food and climate change sums up the current understanding.

*'Food accounts for at least a fifth of UK greenhouse gas emissions and the sector faces the daunting challenge of reducing emissions by more than two thirds within the next forty years. Until recently, the focus of public and political debate around the contribution food makes to climate change was on transport. This saw local food become closely associated with tackling climate change and other environmental problems. A succession of life cycle assessments and scientific reviews over the past decade have highlighted that other factors besides transport, such as the use of energy intensive farm inputs or even cooking in the home, make a bigger overall difference to climate change.'* (Local food and climate change: the role of community food enterprise'; Making Local Food Work, 2010)

Local economic factors are also important. The opening section of the Food Ethics Council's 'Food Distribution' report tells a story about a farmer in Lincolnshire who supplies 'beef boxes' to local customers. It works out about as profitable for him to take a single animal to an abattoir in a trailer than to send a load to the supermarket: the economies of scale on the latter are huge, but the price he gets from the supermarket is so poor that it justifies him slaughtering and selling animals one by one via a local meat box scheme.

The report concludes by setting out a vision of ethical and more localized distribution based on a future scenario in 2022 in which:

*'The biggest reduction in greenhouse gas emissions from food and farming comes from changes to our diets and to production systems rather than from cutting food miles. We eat less meat and dairy and more fruit and vegetables, which benefits public health.'*

*'Food is still traded internationally but there is a shift away from highly perishable produce and bulk commodities towards products that acquire added value and durability through primary processing near the point of production, as happens today with some fair trade chocolate. Both importers and local food initiatives are expected to demonstrate that their work contributes to sustainable development globally.'*

*'Short-distance distribution networks flourish, as efficient shared infrastructure gives towns and cities access to the social and cultural benefits of a thriving local food economy. The weekly car trip to the supermarket is replaced by thriving community convenience shops, diverse town-centre shopping and direct delivery for 'drudge' items. Urban food production is commonplace.'* ('Food Distribution: an ethical agenda'; Food Ethics Council 2008.)

Source:

1. 'Food Distribution: an ethical agenda'; Food Ethics Council 2008; 'Cooking up a storm'; Food & Climate Research Network 2008



It is important to state at this point that the focus on local food supply in this report is in the context of increasing the supply of available staple foods from as close as possible and of strengthening the local food economy. As Vandana Shiva says in her book 'Soil not Oil':

*"Most local food supporters agree that a transition to greater food localization doesn't mean imposing trade barriers and building walls of parochialism. Rather, it is about strengthening local food networks and shifting our focus back to home turf. That way, we can source most of our food from our immediate locality, while the food that is brought in beyond community, regional, and national lines is done as sustainably as the extended food miles will allow (i.e. with the same respect for producers, adherence to organic standards, and with as minimal a dependence on fossil fuels as possible. As the import-hungry developed world relocalises its tastes and purchases, this will also allow producers and farmers overseas to concentrate on feeding their own communities and nourishing their own soil, instead of working to satisfy the whims of fluctuating international food markets and the profit-chasing aims of multinational food businesses."<sup>(2)</sup>*

Over the last decade the UK local food sector has developed significantly with much of the work led by environmental organisations in the voluntary sector. There has been much discussion on definitions of 'local food', for example from Sustain, the Soil Association, the Farmers' Markets movement, Food Links UK, regional food groups and supermarkets. From the work on developing more sustainable localised food systems the following guiding principles have been central:

- 🍏 **Proximity** – food is produced and sourced as locally as possible minimising energy usage.
- 🍏 **Provenance** – the origin of all food ingredients are clearly traceable and labelled.
- 🍏 **Local control** – local ownership enables greater local financial re-investment and re-connection with local communities.
- 🍏 **Social Justice** – food that is produced, processed and traded in a way that respects and enhances environmental, animal and human health and welfare.

In considering the importance of local food supply, the key is to look at the whole food supply system including the kind of farm production system as well as the processing, packaging and transportation. It is not just about food miles - it is about building a stronger local economy and healthy communities. This can be achieved using resources more efficiently, improving soil and biodiversity so as to maintain productivity in the long term and reaping the additional benefits of better physical and mental health and stronger communities.

#### Lamb curry carbon footprint

The University of Manchester has developed a new carbon calculator (CCaLC) and demonstrated that the carbon footprint of supermarket lamb curries is the equivalent of 140 million car miles. They considered all life cycle stages in estimating the carbon emissions – including long-distance transportation for imported food and short distances related to food shopping. They found that **food production and processing are responsible for up to three quarters of the total carbon footprint for most food products, including:**

- 🍏 Ingredients: 65% of the carbon footprint (lamb = half of the total)
- 🍏 Meal manufacture: 12-14%
- 🍏 Packaging: 4%
- 🍏 Transport: 2%
- 🍏 Storage at the retailer: 16%

*"The same lamb curry prepared at home has a 20% lower carbon footprint, mainly because of the elimination of the refrigeration stage at retailer needed for the ready-made meals,"*

(Professor Azapagic, CCaLC, Manchester University)

[www.ccalc.org.uk](http://www.ccalc.org.uk)

Source:

2. 'Soil not oil'; Vandana Shiva; 2007

## 8.2 Assessing local food supply

This report focuses on staple food items. 'Local food' is taken to mean food that has been grown, reared and processed within a radius of 50 miles around Bristol city. No routine data exists about the level of supply of locally produced food in the Bristol city region. Within the limited resource and time available, a specific inquiry was conducted on local food supply for 'Who Feeds Bristol?'. Although all the main supermarket chains have some level of regional food sourcing, supermarkets were not included in this investigation of local supply.

### 8.2.1 What food is produced within or close to the Bristol city region?

The area that falls within a 50 mile radius of Bristol includes all of Somerset, Gloucestershire and Wiltshire. This West of England agricultural region is similar to the rest of the South West and supplies a wide range of staple foods: potatoes, milk, cream and dairy products, beef, lamb, poultry and eggs. 30% of wheat grown is for human consumption. Other crops serve both people and livestock, for example oil seed rape where most extracted oil goes for human use and the pressed meal for animal feed.

### 8.2.2 Assessment of the current and potential local food provision for Bristol

We can consider the extent to which Bristol city itself could currently be supplied with food staples from farms within a 50 mile radius, by relating population numbers and average adult food requirements to annual food production figures.

Analysis of Defra figures suggest that for Bristol city there is:

- 🍌 Adequate production of potatoes; milk, cream and dairy products; beef, lamb, poultry and eggs.
- 🍌 Insufficient supply of high quality wheat suitable for bread-making
- 🍌 Insufficient supply of fruit, vegetables, pork and bacon. <sup>(3)</sup>

However, this does not take account of similar demands from other areas of population in the West of England like Gloucester, Swindon, Bath and Taunton; nor the larger urban areas of Birmingham and London, for which the 'foodshed' area extends right across England (See Geofutures map, section 12).

## 8.3 Available information on local food supply in the Bristol city region

There has been significant work to promote and support smaller scale food businesses has in South Gloucestershire and in North Somerset. Both areas have local food directories. South Gloucestershire council organizes an annual 'Taste Festival' for local foods and drinks to encourage more direct links between producers and consumers<sup>(4)</sup>. North Somerset has also worked to support local food producers<sup>(5)</sup>.

The 'Eat Somerset' project (2006-9) produced a directory to help connect producers to retail outlets<sup>(6)</sup>. Bristol has an on-line food directory for where you can buy local food and various food festival events<sup>(7)</sup>. Bath and North East Somerset has a farmers' market website with contact details for all the producers<sup>(8)</sup>.

Bristol city and the three other authority areas have a number of groups and individuals organizing urban food growing, links with local producers, cooking classes and other food-related community events. (See also section 12). To date, work in the region on local food supply has mainly focused on

Sources:

3. Defra agricultural statistics and land use figures for 2009 & 2010; Royal Agricultural College, Cirencester. See appendix 8

4. [www.southgloslocalfood.org](http://www.southgloslocalfood.org)

5. [http://consult.nsomerset.gov.uk/consult.ti/food\\_producers\\_survey/consultationHome](http://consult.nsomerset.gov.uk/consult.ti/food_producers_survey/consultationHome); [www.n-somerset.gov.uk/Business/Food/Local+Food+Directory/](http://www.n-somerset.gov.uk/Business/Food/Local+Food+Directory/)

6. [www.sustainweb.org/eatsomerset/eat\\_somerset\\_directory](http://www.sustainweb.org/eatsomerset/eat_somerset_directory)

7. [www.bristollocalfood.co.uk](http://www.bristollocalfood.co.uk)

8. [www.bathfarmersmarket.co.uk](http://www.bathfarmersmarket.co.uk)



developing markets for local producers, on healthy eating, or on improving public food procurement of food from the region.

#### 8.4 Overview of local food supply in the city region

Analysis of available data on local food supply in the 4 public food registers, local food directories and local food websites, and information collected in the 'Who Feeds Bristol' snapshot surveys with food businesses and farmers markets suggests that across the city region:

- 🍏 3% of registered food businesses are specifically known to supply food from the local region.
- 🍏 39 fresh produce and farmers' markets across the city region provide regular trade for around \*700 local food businesses, assuming an average of 20 traders per market.
- 🍏 At least 40% of the independent bakers (non-supermarket, non-franchise/chain), 30% of the independent butchers and 7% of fishmongers are known to source locally.

*(Note: \*There are no exact figures available. If on average each trader attends 2 markets then perhaps the more realistic number may be 350 businesses.)*

#### 8.5 Who Feeds Bristol survey on local food supply

In order to gain a better picture of the supply of food produced within the Bristol city region, we analysed data from four different sources:

- a) publicly available information and data to identify local food retail outlets;
- b) a snapshot survey of independent food retailers to find out who supplies them and how much is sourced locally;
- c) a snapshot producer survey to find out to what extent local producers are selling direct into the city region;
- d) a snapshot survey of the fresh produce and farmers markets to find out numbers of traders and range of food products sold.

##### 8.5.1 Bristol city region specialist retail premises: butchers, bakers and fishmongers

As a first step towards finding out more about local food sourcing by independent specialist food retailers, we used available data from the four food registers, to find out the total number of butcher, baker and fishmonger premises across the city region. These kinds of food retail businesses often have links with local suppliers and play an important role in local food supply.

Numbers are as follows:

- 🍏 116 butchers (includes 11 butcher sections within supermarkets)
- 🍏 15 fishmongers
- 🍏 120 bakers (includes 9 bakery sections within supermarkets; and at least 49 premises which are part of chains: 26 Greggs, 18 Parsons, 5 Pullins). This leaves approximately 62 independent bakeries.

(For more detail see appendix 4)

##### 8.5.2 Businesses specifically known to sell food produced locally

As a second step, we reviewed available information on businesses known to work with local suppliers. Collectively the farmers' and country markets, farm shops, farm gate sales and the independent shops listed as selling local food in the Bristol city region account for around 3% of all registered food businesses dealing with staple food items in the city region. (Section 4, Table 1) In addition there are 39 farmers markets which between them may provide regular trade for approximately 350-700 local food and drink businesses.

At least 30% of the independent butchers and 40% of the independent bakers (non-supermarket, non-chain) are known to source food produced locally, and 40% of fishmongers are known to source fish from Devon and Cornwall.

## 8.6 Snapshot surveys of independent retailers

Having identified the specialist independent retailers, a sample of butcher, fishery, bakery and fruit & vegetable businesses were surveyed. Samples for butcher and bakery businesses were from across the city region. Samples of fishery and fruit & vegetables were from Bristol. The surveys investigated types of products, suppliers, the importance of local sourcing and retailers' perceptions around their role in feeding Bristol.

### 8.6.1 Key butcher findings - 10% sample of Bristol city region independent butcher shops

- Independent butchers sell a wide range of products including local meat products, provide a unique meat cutting service to the public and also prepare meat products from the cheaper cuts eg sausages, burgers.
- Definition of 'local produce' as used by some butchers varies.
- A wide variety of meat suppliers are used by the butchers surveyed, over half of which could be termed 'local'.
- Sourcing locally produced halal meat is not possible – it comes from Wales or Birmingham suppliers.
- Customers seem to want to buy local meat products.
- Local companies like Bakers of Nailsea (abattoir) and Freemans in Newent are key suppliers to butchers shops.
- People want to know where meat is from and how it's been looked after – they do ask their butchers about the provenance of their purchase.

### 8.6.2 Key fish business findings - 20% sample of Bristol fishery businesses

Both the city regions fish wholesalers and distributors are based in Bristol and are key suppliers to the retailers.

- Fish is harder to define as local but there is interest from both consumers and the retailers to source as much fish as possible from the South West if the price is right.
- For the most part, fish products come from all over the world.
- The personal touch is an important part of sales. Fishmongers know their customers personally and can supply them with the fresh produce they want.

### 8.6.3 Key bakery findings - 10% sample of Bristol city region bakery businesses

- Most of the small bakeries sell a similar range of baked goods and most usually bake most of their products on the premises with the exception of pies and pastries.
- Bako in Cullompton is a popular supplier for all bakery ingredients. Two reasons given for this are its keen prices and as they are a co-operative their members get dividends.
- A number of 'artisan' bakeries source their flour from Shipton Mill in Gloucestershire (which supplies both local and organic flours). Locally grown wheat is also milled at Wessex Mill, Oxfordshire, another popular supplier.
- Having a local bakery is very important to customers but in general there is little interest in where the flour is sourced.



## CASE STUDY 4:

### Mark's Bread – a successful 'real' bread business

Mark's Bread was established in 2009. It bakes and sells a wide range of breads including sourdough, rye and spelt loaves, wholemeal, baguette and ciabatta, cakes, croissants and buns. The bakery's customers are local residents and businesses including the Tobacco Factory Theatre, Riverside Garden Centre, Hen & Chicken Pub.



The bakery employs 6 staff and sells between 200 and 500 loaves per week (in addition to cakes and croissants) to around 300 customers per day, alongside 5 wholesale customers. Mark has been marketing his baked goods via his bakery shop and website, and through positive media coverage and word of mouth. Currently all sales are generated within the Bristol area, but Mark is considering repeating his bakery model elsewhere in the region.

Local sourcing and sustainability are very important to both Mark and his customers. Mark sources local organic flour from Shipton Mill in Gloucestershire. For specialist breads the nuts, seeds and spices are sourced from Essential Trading in Bristol, olives from the Real Olive Co, olive oil from Kassare, local free range eggs for cakes are from a local producer and catering dry goods from Burtons Go Bananas at Avonmouth. Recently he invested in a Dutch delivery bicycle and trailer so the shop can deliver larger orders of baked goods to its customers in south and central Bristol in a sustainable way while beating the traffic.

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

(See full case study, appendix 11)

#### 8.6.4 Key fruit & vegetable findings - 10% sample of Bristol greengrocers

- All the retailers sell a wide range of local and seasonal fresh fruit and vegetables.
- Retailers are also sourcing complementary products from other suppliers like eggs, honey, herbs, nuts & seeds, olives.
- 90% of fresh produce sold by small retailers across Bristol is sourced from the St Philips Market.
- Both retailers and their customers prefer to buy local, seasonal and British.
- Retailers would buy more produce from producers in the West of England and South West region if it was available. However, currently small local and organic producers are not well represented at St Philips Market.
- All report they feel threatened by supermarkets like Tesco and Sainsbury opening 'express' and 'local' stores on high streets.
- Often fresh produce is 'more expensive' in supermarkets than from local fruit and vegetable shops despite perceptions that supermarkets are cheaper (for example the supermarket 'two for one' offers).
- Local retailers feel they are offering a personal service versus 'automated or self service' with time to talk to older people and families. Some of them offer a 'home delivery' service or vegetable box scheme to increase and diversify trade.



## 8.7 Organic businesses, direct sales and local farms

### 8.7.1 Companies licensed by the Soil Association as 'organic'

A further group of businesses, a number of which are involved in local supply are the certified organic producers, processors and distributors. In the Bristol city region there are 25 organic farmers and growers and 26 companies that process or sell organic food and are registered with the Soil Association. Soil Association Certification Ltd, based in Bristol, is the largest of the UK organic certification bodies but there are more organic businesses in the region which are registered with other organic certification companies. Defra holds this data and it was not available for this report.

Nine of the Soil Association-licensed businesses are involved with distribution and provide boxes of organically grown fruit and vegetables for individual households. Six of these also supply meat boxes and other products. Most of these companies reported that they provide 70-80% of produce from their own farm or a local growers group, and the rest is imported due to the UK shorter growing season. Six of these companies deliver a combined total of 5,000 boxes of fruit and vegetables every week in the city region (data from snapshot survey). Data from the other companies was not available. Riverford Organics, based in Devon, is the largest organic box scheme in the UK and probably delivers the highest number of boxes within the region, through their franchise distribution model.

#### CASE STUDY 5:

#### Leigh Court Farm



Leigh Court Farm is the closest organic farm to the city of Bristol and delivers organic fruit and vegetables to over 300 households as well as selling direct at two of Bristol's farmers' markets - Whiteladies Road and Corn Street. The farm grows organic fruit, vegetables and herbs on 26 acres, at Leigh Court itself and in Failand, and buys in additional produce from 2 suppliers in Hereford. The business sells through an on-site shop once a week for 6 months of the year, at 5 different farmers markets and also runs a box scheme which delivers vegetable boxes and fruit bags to Bristol households. It has also started supplying wholesale to 'Canteen West' in Stokes Croft, Bristol. In 2010 the weekly deliveries were on average 250 vegetable boxes and 80 fruit bags, so providing food for approximately 630 people, assuming at least two customers per box. Wholesale and market sales work out on average to be the equivalent of another 200 boxes, perhaps feeding a further 400 people. The plan is to increase customers and start a new pick up point in Horfield/ Bishopston, ideally increasing sales eventually to 400 weekly vegetables box deliveries. Southville Centre is the biggest pick up point, closely followed by Easton.

([www.leighcourtfarm.org.uk](http://www.leighcourtfarm.org.uk))

Notably, the Community Farm at Chew Magna (see case study) and Somerset Organic Link (a producer marketing co-op) both reported that they have capacity to supply more fruit and vegetables.



## CASE STUDY 6:

### The Story Group – organic meat producers selling direct



Luke Hasell and Jim Twine took over their neighbouring family farms in the Chew Valley in 2004 and now farm in partnership as an organic beef enterprise which covers 415 acres and supports a strong suckler herd of 60 cattle. They do not buy in any animal feed since the animals are all grass-fed and the farm grows their own cereals for winter feed. Jim and Luke established the Story Group Ltd to develop direct sales, a buying group and promotion of their organic meat box scheme. The Story Group markets their meat direct to pubs, restaurants, schools and box scheme customers. On average the Group sells one animal per month directly which has the advantages of adding abattoir and haulage costs into the retail price of the meat. This means Jim and Luke can cover all their costs within the price they charge their customers.

In 2010 Bill and Emma Yeats joined forces with Story Group Ltd. They manage an organic poultry farm in Wrington producing 200 chickens a week and a small amount of pork and lamb. The benefits of working together include a wider range of branded products, and the opportunity to develop a farm shop and collective meat processing area. The company now has 4 directors, 1 full time employee on the farm and 1 part time employee working for the Group. Bill and Emma now breed some of their stock of chickens on Luke and Jim's farms.

The Story Group uses 3 local abattoir and meat cutting businesses, Langfords of Bristol University, Bakers of Nailsea and Will Simmons of Priddy. At the moment the Group delivers on a monthly basis to customer collection points. Its main customers in Bristol are the Better Food Company, St Christopher's School, Pony and Trap pub and Stoke Inn in Chew Valley, and several box scheme customers. Currently, 40% of total sales are generated in the Bristol area and the aim is to expand direct sales to increase income. A major challenge for the Group is that they do not turnover enough product to enable the business to offer customers the same discounts and deals as the supermarkets.

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

(See full case study, appendix 11)

#### 8.7.2 Direct sales

There are a few companies that specialize in locally sourced food products or foods with a clear provenance (ie place of origin). They may use internet marketing and mail order or sell at food markets. Somerset Local Food Direct provide a delivery service of meats, fish, bakery, fruit & vegetables, delicatessen products, 90% of which originates from Somerset. They have reported capacity to supply more.

#### 8.7.3 Farms located within Bristol

Within its administrative boundary Bristol has four city farms, in the north, south and central areas of the city, all of which are involved in some level of food production and education. There are also council owned smallholdings and tenant farms which are leased out. There are at least two other farms within Bristol city that produce food. Elm Tree farm has a small number of livestock (cows, pigs, poultry), keeps bees and grows fruit and vegetables on 27 acres (11 hectares) which is sold at



the weekly Corn Street farmers market. Cherry Orchards in North Bristol has around 30 acres of land close to the residential area of Coombe Dingle and is keen to supply local households with fruit and vegetables.

## 8.8 Snapshot producer survey

An on-line survey of producers in the South West and Bristol City region was undertaken to gain a better understanding about: a) the extent to which local producers are selling direct into the Bristol city region, b) the barriers to increasing local supply through direct sales and c) the type of support that is needed in order to increase direct sales. 'Direct' was defined as selling directly to a retail outlet, at a farmers market or supplying a restaurant, as opposed to selling to regional or national wholesalers or processors. The survey also investigated the level of producer interest in developing new supply into the Bristol area. This was a rapid 'snapshot' survey, but the results provide an indication of the current range of local supply and practical ways to support growth in local food supply in Bristol.

### 8.8.1 Respondents

The survey was circulated to unknown producers via the regional NFU newsletter, to known direct sellers via farmers' market co-ordinators and to a number of producers identified in the course of this research whose markets were unknown. In total 63 producers responded to the survey. Of these, 60% are primary producers ie farmers and growers who raise livestock and or grow crops. 51 respondents are direct sellers (not all exclusively Bristol area) and 5 additional producers who are interested in selling direct.

### 8.8.2 Current local supply and direct sales - summary of responses

The headings below relate to the questions in the on-line survey.

#### Types of respondents

- Of the primary producers who responded, 71% farm grassland (reflecting the pattern of South West livestock production).
- 34% are horticultural growers (which is much higher than the regional average - see section 5).

#### Type of products

- The direct sellers reported that most commonly they sell beef, lamb, dairy products and eggs.
- There are a high number of pig producers selling direct. Pig producers in the UK struggle to remain economically viable due to low prices so have to find interesting ways to sell their products at better prices. The high number of pig producers selling direct therefore reflects a) the need to 'add value' to processed pork products, for example sausages, bacon and pies and b) the need to find alternative markets.
- A number of large scale meat producers reported that they are already selling direct, or are interested to sell direct. Given that large scale meat producers in the South West region generally already have good market opportunities for selling large volumes into the mainstream supply chains (see section 7), this is an interesting finding and seems to indicate that there is potential for growth in direct meat sales.

#### Potential for increased sales

- Around two thirds of the producers surveyed would like to sell more produce directly to consumers in the Bristol area.
- There is potential for growth in direct sales particularly in meat, poultry and dairy products
- The strongest desire to sell more of a product direct and the strongest interest from producers who are not yet selling that product direct was with dairy products.

### Potential for increased sales cont.

- Producers of bread, preserves and game already rely heavily on direct sales, in contrast to producers of beef, dairy and eggs who sell a proportion of their produce to wholesalers and food processors.
- Half of the producers surveyed are interested in increasing direct sales by a minimum of 50%. This indicates that current direct sales are restricted by access to customers rather than the availability of local produce.
- 50% of producers who currently don't but are interested in starting to sell direct into the Bristol area would like to sell around 25% of their produce into this market, while a third of this group would be interested to start selling up to 75% of their produce direct to consumers. This suggests there is a significant level of interest from producers in more local supply.

### Types of markets used

- Local food products which are regularly sold through wholesalers and processors include South West branded cheeses, dairy products, fish and non-alcoholic drinks.
- Most of the producers surveyed sell their products into several markets.
- The primary market for 67% of producers surveyed is direct sales to consumers in the Bristol area through farmers markets, farm gate sales and box schemes.
- 56% sell to national and regional wholesalers and processors.
- 29% sell to independent food retailers, compared to only 14% who sell to caterers, restaurants and pubs. 7% reported mail order sales.
- Direct sales to consumers as well as sales to wholesalers and processors are preferred over other markets as they offer a higher return for a lower investment in terms of staff, marketing and distribution.
- Sales to South West wholesalers and processors are very low other than for dairy producers (this relates to high levels of regional dairy production, large processor dairies and the production of South West branded cheeses – see section 7).

### Scale of operation

- 72% of producers surveyed employ none or less than 5 staff, partly as many are family managed farm-based businesses and the majority of respondents can be characterised as small to medium size businesses.

### Relative importance of different markets (based on % turnover from different sales)

- Only a minority of producers can sell all their produce through direct sales.
- 54% of businesses who sell direct have between 10 and 25% of their turnover from those sales
- A small majority (57%) of businesses who sell to national wholesale markets or processors (e.g. livestock market or abattoir) have over 50% of their turnover from those sales
- Some businesses who are not selling direct currently sell all their produce through national wholesale markets or processors
- There are a number of other outlets which are significant for some respondents: direct sales outside Bristol area, retail outlets and markets in London, Gloucester, Stroud, food festivals and shows, caterers.

### Estimated economic impacts

The survey asked producers about annual turnover, and about percentage of turnover generated by various markets.

- **Direct sales** – Using data provided by 46 respondents, their combined estimated total annual direct sales turnover value is around £3million. If it was possible to find out how many businesses actually sell direct into the Bristol city region, it might be possible to extrapolate an estimated overall turnover figure for direct sales.



- **Farmers markets** – There are 39 markets in the Bristol city region. The snapshot market survey suggests that on average each market has 20 stall holders – which suggests up to a total of around 700 businesses. Taking into account that on average each business may attend two markets, the number may be closer to 350 businesses. If 92 of these businesses (just over 25%) fall into the 25-50k turnover category, using the previous figure for 46 producers, we can make a very rough estimate that the farmers markets alone may support total annual sales turnover in the region of £6 million. In the context of national farmers' market average turnover this figure may be too high but these findings suggest that further support and research into the role that food markets in the region play in the local food economy would be very valuable.
- **Cash flow** – Regular farmer and country markets provide traders with a regular cash flow which in the world of farming where credit is very difficult to get is a business lifeline. This is particularly vital for livestock producers whose income from sales are often seasonal. Selling weekly at a market provides weekly income.

### 8.8.3 Barriers to selling direct into the Bristol city region – summary of responses

The headings below emerged from analysis of the responses.

#### Promotion

- Producers selling direct through farmers markets, food festivals and farm shops have experienced a reduction in sales since the start of the recession as customers have less disposable income. Consequently, the majority of producers would welcome support to find and target new customers interested in local food, and additional marketing and promotion of their products' quality and value to win increased sales.

#### Transport and distribution

- Producers reported that the costs of transport and distribution prevented many of them selling their products to retailers, caterers, hotels, restaurants and pubs in the Bristol area. Some producers had tried selling into these markets but found it was expensive to do lots of small deliveries, also since the recession the demand from local shops and cafes has fallen. Some producers reported they would like to sell to these markets but a key barrier relates to collection and distribution of their produce. It is not efficient or financially viable for every producer to individually undertake small deliveries, and an effective distribution network is lacking.

#### Staff capacity limitations

- Many producers reported that the lack of capacity in terms of time and staff to produce, process, transport and sell their products was a barrier. Some producers have had to reduce staff during the recession and have difficulty staffing farmers markets. Some farming family businesses are hoping that younger family members will want to take over and develop the business in new ways. A real issue for small farm businesses is product pricing and profitability.

#### High costs of meat infrastructure for local marketing

- Meat traders reported a range of issues that were barriers to growth including: need to develop on-farm butchery facilities in order to develop new markets; slaughtering and delivery for direct sales of meat is difficult and expensive; costs for developing cold storage, labelling, refrigerated transport and staffing can be prohibitive for an independent trader.

#### Limited supply capacity

- Some producers of local foods including meat, eggs and vegetables reported they only had sufficient volumes of produce to meet current demand from their existing outlets and for seasonal sales. In order to invest in increased production they would need to be confident of increased and sustained demand.

### 8.8.4 Support needed to expand supply of local foods into Bristol and the city region – summary of responses

Again, the headings below have emerged from analysis of the survey responses.

#### Market research & information

- Producers suggested a range of market support initiatives to help them sell increased variety and volumes of local foods into new markets in Bristol including schools and hospitals, retailers and restaurants. Producers requested market research to identify new customer groups interested in buying local food. In particular, market intelligence on bulk buyers of staple products like eggs, dairy, meat and vegetables. It is more profitable for producers to sell large quantities to wholesalers or regular orders to networks of retailers and restaurants.

#### A local food distribution hub

- Producers identified the need for development of a local food hub for the Bristol area to co-ordinate collection from farmers and growers, wholesale orders, and refrigerated transport and distribution services. A local food hub could deliver new opportunities for local producers with higher volumes of sales, wider distribution networks and cheaper delivery costs. A food hub could collaborate with market organisers to deliver advertising and promotion campaigns on the value and benefits of buying local food to new customer groups. A local food hub website could offer collective marketing and internet sales. In addition, it could offer access to linked business advice and training for local producers and processors on how to brand and market their products, and on new product and niche market development. This service could be supported with access to 'local food business development grants'.
- Fruit and vegetable producers in the Severn Vale and Vale of Evesham already organize fresh produce auctions three mornings a week between themselves. The auction is run by one person as his business and it enables those businesses that sell direct, for example farm shops and market traders, to buy in other locally grown items from farms known to them and thus extend their range of produce. The auction is aimed at farms within a 50 mile radius.

*(Information from snapshot producer interview)*

#### Producer co-operation

- Some meat producers identified the need to develop collective slaughtering and butchery facilities in the Bristol area and suggested this could be designed as a co-operative scheme. (Given that there are good abattoir services in the city region, this area needs more investigation but it may relate to the economics of dealing with small volumes).

#### Consumer awareness

- Many producers believe that consumers would benefit from guidance on how to store, prepare and cook fresh local foods with access to cooking demonstrations and classes, recipes and tasting sessions. These opportunities could be promoted through campaigns and events initiated by the food hub and through a local food website with leaflets distributed at farmers markets and via retailers.

#### Potential for future growth

- Local producers suggested there was scope to attract other farmers, growers and processors of local foods to help expand supply into Bristol. With the support from a food hub that delivered co-ordinated promotion, public awareness, cookery demonstrations, price comparisons and awareness raising there is potential to establish additional farmers markets in districts of Bristol that are not well supplied with fresh produce. The producers identified opportunities to diversify and develop new ranges of value added local food products to expand the offer to customers and increase sales. Good examples of successful products include sausages, pies, cakes and preserves.

(For more detail on the Who Feeds Bristol producer survey, see appendix 3)



## 8.9 Farmers/fresh produce & country markets snapshot survey

The purpose of the markets snapshot survey was to find out about the numbers and types of markets, the numbers and types of traders and the range of produce sold. Currently, there are 39 farmers' and fresh produce markets in the Bristol city region. 17 of these were surveyed ie 40%.

*(Note: These are specifically food markets and do not include secondary wholesaler market traders like the St Philips Sunday market or the Eastville Fri-Sun market in Bristol.)*

### 8.9.1 Number of traders

The number of traders at the different markets varies substantially. Of the 17 surveyed markets there were a total of 470 producers. The Love Food festival has 150 traders at its market events while Fishponds has a very small market of just 5 stalls. Excluding these two extremes, the average number of traders is 20 with (the highest is 47 at Bath farmers market and 11 at both University of West of England and Willsbridge markets). The average number of stalls per market in the city region is 20.

### 8.9.2 Range of market produce

Not all markets provided full lists of numbers and types of traders. The categories we found included meat, poultry and game; dairy; bread; eggs; fish, fruit & vegetables; drinks; delicatessen/ prepared savouries/ preserves etc; cakes & chocolates; other edibles.

Analysis of the main product categories for a sample of 5 markets identified the following range of products and proportion of traders:

- Delicatessen products, prepared savories and preserves overall account for the highest number of stalls, ranging from 18% to 46% of all market trade within the sample surveyed.
- Meat stalls account for 20% of trade at each market.
- Number of fresh fruit and vegetable stalls range from 4% (Slow food market) to 18% (Bristol farmers market).
- All markets feature higher numbers of cakes and sweets stalls than dairy, bread, eggs or fish stalls.

*(Note: Markets included in the sample: Bristol Corn St farmers market; Bristol Slow Food market; Keynsham farmers market; Midsomer Norton farmers market; Nailsea farmers market)*

### 8.9.3 Regularity of markets

We reviewed the regularity of all 39 markets with the following results

- Weekly – 13 (33% ie a third of all markets)
- Monthly – 21 (53% ie over half of all markets)
- Twice monthly – 4 (10% of all markets)
- Quarterly - 1

The regularity of markets in the sample of 17 was as follows:

- Weekly – 4 (2 in Bristol, Bath, Willsbridge)
- Monthly – 10
- Twice monthly – 2
- Quarterly – 1 (Love Food festival in Bristol)

### 8.9.4 Market principles & farmers market certification

The markets and stallholders surveyed are specifically fresh produce 'country' and 'farmers' markets, almost entirely focused on food from the local area.

- Of the 40% of markets surveyed Clevedon, Portishead and Nailsea are the only markets listed on the farmersmarket.net website (ie members of FARMA), although Nailsea is not certified with them.
- Bath is the only market surveyed which defines their 'local' produce: sourced from within a 40-mile radius of the city, although that is a flexible rule in order to allow a varied and interesting range of sellers.
- The majority of markets are not certified with FARMA because they include popular stallholders who sell products they do not produce themselves which does not comply with the criteria, so the market organisers have chosen to forgo certification. For example, Nailsea market stated they are not certified with FARMA as by public demand they have a fish stall which doesn't meet the strict certification criteria.
- Local food markets specialise in promoting producers selling products that are 'local', 'traditional', 'fair trade', 'high quality' and 'eco-friendly'.
- The Love Food Festival states the aim of their festival is "to get children and adults learning about how and where our food comes from, how to grow and cook food".
- The Slow Food market has a list of criteria for its produce on [www.slowfoodbristol.org](http://www.slowfoodbristol.org). The organisers commented "*The criteria will develop and evolve with the market*".

### 8.9.5 Contributors to market success

There are a range of reasons that influence the success of local food markets the most important of which are location and timing, range of products, promotional activities like sampling and cooking demonstrations and complementary social activities around the market. The face to face human factor of committed stallholders interested in their customers is an important factor. For example, Bath Farmers' Market stated "*we make friends with our customers*".

### 8.9.6 Barriers to market success:

These reflect views from the producer survey and include the following key points:

- **Perception that farmers' market produce is expensive.** Some markets reporting lower attendance since the 'credit crunch'.
- **Location** – eg too far from a central busy area; no parking or easy public transport access
- **Lack of cooking skills** – people less likely to buy fresh raw ingredients (the markets surveyed have a high percentage of deli/'ready to eat' food stalls).
- **Weather/seasons** – bad weather keeps customers (and sometimes producers) away. Holiday seasons can be quiet.
- **Competing traders nearby** – eg supermarkets opening up on High Streets.
- **Consumers' lack of understanding of seasonality** – customers may expect the complete range of worldwide foods as in supermarkets.
- **Lack of publicity** – and the time required to increase publicity.
- **Lack of producers** – difficult to get hold of; many are already busy at other markets.
- **Lack of resources** – funding, staff/volunteers etc.



## 8.10 Summary - Key Points

There is a rich resource of local producers, food and drink businesses located around the Bristol city region which represents a significant strength in terms of longer term food resilience. The 'Who Feeds Bristol' research findings suggest that the main barriers to increased direct supply of locally produced food are practical distribution logistics and consumer support rather than a lack of supply. In terms of volume, the direct sale of locally produced food currently represents a very small proportion of the total food supply but there is a wide range of basic staple food types available.

Some producers reported additional capacity to supply but a lack of market opportunities. There are some larger scale producers who are looking for more local and direct markets. More support is needed to strengthen and develop market opportunities and build on those that are already a success.

Regular farmer and country markets provide traders with a regular cash flow which in the world of farming where credit is very difficult to get is a business lifeline.

There are some significant barriers to expansion of local supply, but the producers themselves suggested a range of practical solutions and support. In short, much of the local supply infrastructure is currently in place but without focused support it is difficult to achieve further growth. In addition, without far sighted policy and planning in place the current infrastructure of local supply remains vulnerable.

In the long term it is likely that the UK will need to rely more heavily on food produced with less fossil fuel and with less external inputs of chemicals. Therefore there is a need to preserve and enhance the infrastructure that supports local production in preparation for changes relating to energy, economy and environment.



# 9. Catering





## 9. Which companies prepare and cook our food for us?

### 9.1 The city region's caterers, food processors/manufacturers

Companies that prepare and cook food for us include caterers, food processors and manufacturers. Across the city region, caterers account for some 75% of registered food businesses while processors and manufacturers account for around just 1.5 % (section 4, table 1). These figures suggest that catering must therefore be a much larger sector than processing and manufacturing. However many of the caterers are small-scale home caterers, take-aways and cafes while some of the manufacturers are large-scale and owned by national and multinational companies. It is beyond the scope of this report to precisely quantify the scale of each sector. Sections 9 & 10 look at both sectors and at the potential for these businesses to help drive positive change and contribute towards the development of a more resilient food system. The focus in section 9 & 10 is on businesses within Bristol city. In both these sectors information on where the food originates from ie. food provenance, is often unavailable to the end customer.

### 9.2 Bristol's catering sector

Table 7: Food businesses in Bristol city

Type of business	% of total Bristol food businesses
Catering	74%
Retail	21%
Processor/manufacturer	3%
Wholesale/distribution	2%

(Data source: Bristol public food register; July 2010)

Within Bristol itself around 74% of registered food businesses are caterers. This totals some 3400 businesses. The Bristol public food register catering category covers a wide range of businesses including alcohol licensed clubs, pubs serving snacks, sports centres and community halls. Even excluding these businesses, there is still a wide range of types of caterers with varying scales of operations as shown in Table 8.

### 9.3 Caterers serving meals

On closer analysis, the proportion of Bristol businesses that actually serve meals made from staple ingredients is around 62% of all Bristol's food businesses equivalent to some 2,254 businesses. These catering businesses can be subdivided into six main types (see Table 2) but getting accurate figures is problematic.

We estimate that:

- 🍷 Takeaways and cafes account for 30% of catering businesses
- 🍷 Restaurants account for 13%
- 🍷 Pubs account for around 8%.
- 🍷 Health, social and education catering establishments account for approximately 25%
- 🍷 Catering companies (of different types and scales) account for the remaining 24%.

Table 8: Breakdown of Bristol caterers by type

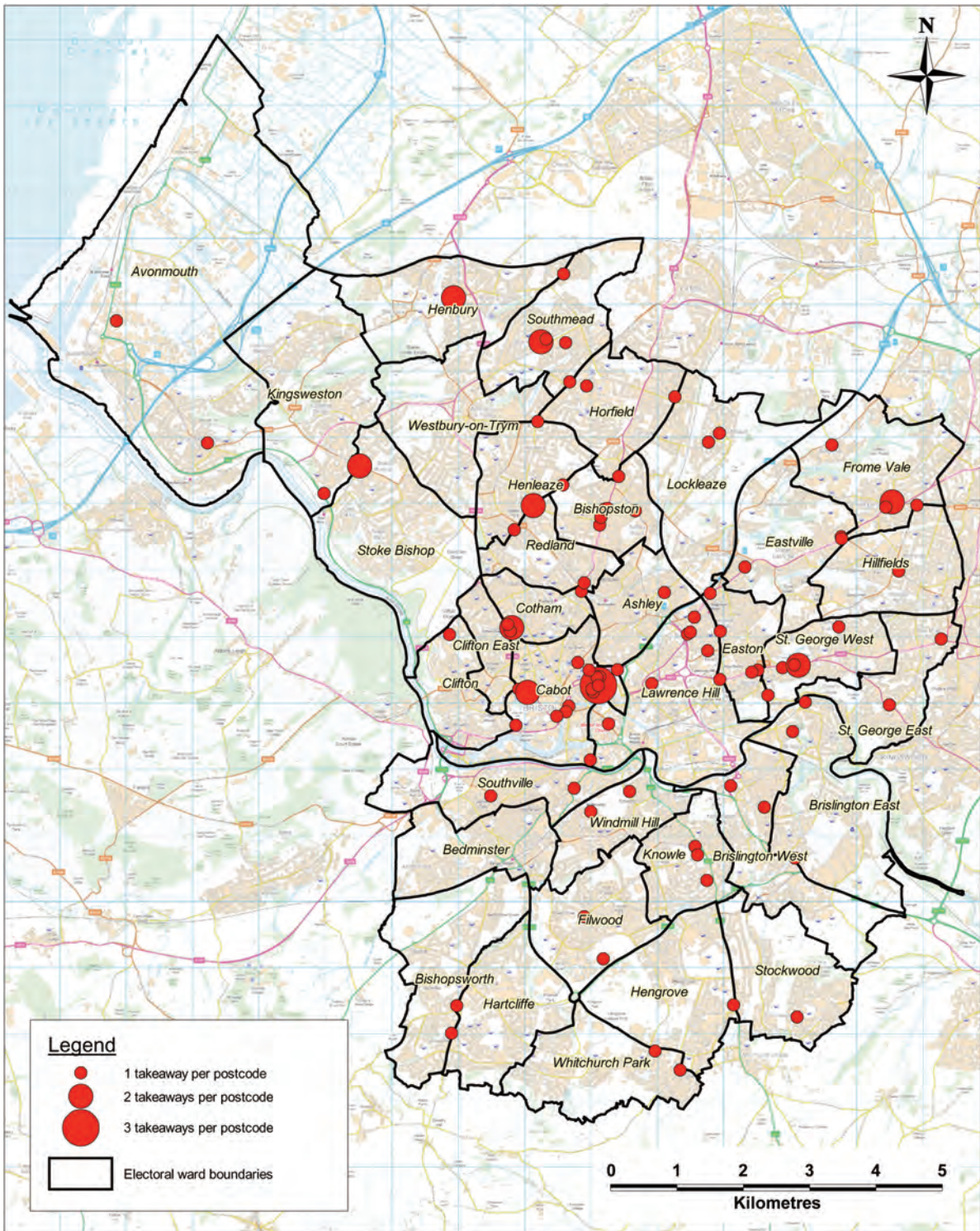
<b>Health and social care institutions:</b>
<ul style="list-style-type: none"><li>• Hospital kitchens, cafes &amp; canteens</li><li>• Care homes, nursing homes, residential homes, day centres, social service kitchens, meals on wheels, lunch clubs.</li></ul>
<b>Educational institutions:</b>
<ul style="list-style-type: none"><li>• School &amp; college kitchens, cafes and canteens</li><li>• Breakfast and after school clubs.</li></ul>
<b>Business institutions:</b>
<ul style="list-style-type: none"><li>• Staff and work canteens,</li><li>• Sports and leisure centres.</li></ul>
<b>Dining out:</b>
<ul style="list-style-type: none"><li>• Cafes, restaurants, pubs</li><li>• B&amp;B's, hotels, cafes and restaurants (ie hospitality sector).</li></ul>
<b>Takeaway &amp; convenience food:</b>
<ul style="list-style-type: none"><li>• Takeaways (inc: chinese, pizza, burgers, fish and chips, sandwich shops)</li><li>• Mobile caterers.</li></ul>
<b>Commercial catering businesses:</b>
<ul style="list-style-type: none"><li>• Contract caterers</li><li>• Home caterers.</li></ul>



### 9.4 Convenience food caterers

Takeaways and cafes account for 30% of catering businesses; restaurants for 13% and pubs around 8%. The map below shows the distribution of takeaways around the city.

Map 4: Bristol takeaways



Bristol PCT

Takeaway food vendor locations by postcode

Avon IM&T Consortium **NHS**

Matthew Leaver - 29 June 2010  
 Contains Ordnance Survey data ©Crown copyright and database right 2010. Contains Royal Mail data © Royal Mail copyright and database right 2010.  
 Take away locations provided by Bristol City Council

X:\PCT\Bristol\WalkingTimes\_GreenSpaces\BRISTOL\_TakeAway\_ward\_labelled.wor

It is interesting to note the higher density of takeaways in a swathe from east to west across the city. Notably, these are the same communities in which FareShare distributes 'free food' (see case study and appendix 11).

## 9.5 Key players in the catering sector

The health, social and education catering establishments account for approximately 25% of all catering companies in Bristol and collectively are likely to provide a much greater volume of catered food than the other caterers. Typically the health, social and education establishments are involved in public sector catering and public procurement processes.

Within Bristol there are several major hospital sites, 2 main universities with multiple sites, 4 further education colleges and over 180 schools, all of which provide meals for their staff, patients and students. In addition, the City Council has its own contracted catering company. Most of the schools in the city are catered for by one of four companies: Eden Food Service; ISS Caterhouse; BAM FM; and Early Years Catering.

Bristol is home to several large companies and agencies which will either have their own caterers or will contract-in commercial catering companies. For example, Milburns, part of Compass Group, has the catering contract for Bristol Zoo Gardens.

Further research is needed to understand this group of public and private sector caterers, their catering arrangements, procurement and food purchasing policies and the collective value that their food purchasing power represents. It will be a very high proportion of the total catering in the city.

## 9.6 Caterers can drive change towards a more resilient food system

*'Aberystwyth University's canteen now sources 80% of its beef, pork and lamb and 20% of its fruit and vegetables from university-owned farms, with the remainder coming from small local producers.'* (The Guardian, October 2010)

There are now a number of best practice examples around the UK where public sector caterers in schools, universities, hospitals and company canteens are helping to drive positive changes towards sustainable food using fresh seasonal ingredients and by increasing the amount of food that is bought from local food producers. Aberystwyth University Canteen and Early Years Catering in Bristol (see below) are two examples. (Full case study details in appendix 11).

There have also been recent national legislative changes to public sector catering in response to campaigning work about improving school meals. In 2006 national 'nutritional standards' were introduced. All food provided by local authorities must now meet the following standards:

- 🍏 High quality meat, poultry or oily fish regularly available
- 🍏 At least two portions of fruit and vegetables with every meal
- 🍏 Bread, other cereals and potatoes regularly available

Existing tools like the Soil Association's Food for Life catering mark link in with these standards (the Soil Association was one of the organizations that actively campaigned for such standards) and offer public and private sector caterers a clear structure and targets. It is a valuable tool for catering companies and one that enables them to contribute to creating a more resilient food system in the longer term through making step changes in food purchasing practices.



## CASE STUDY 7:

Food for Life  
catering mark

This is a Soil Association accreditation scheme to help caterers give information to their customers about the standards they achieve. The three tiers of Bronze, Silver and Gold allow caterers to make step-wise progress towards greater use of fresh, seasonal, local and organic ingredients, high welfare meat and sustainable fish. The catering mark is now available to applicants from across the UK. Caterers in all sectors can apply including local authority and private school meal providers, hospitals, nurseries, sports stadia, workplace canteens and restaurants. Food for Life catering mark logos are awarded for use on approved menus, and on any related marketing materials. More than 71,000 children in 711 schools across London now get healthier and planet-friendly school dinners everyday. The improvement is due to nine caterers who have been awarded the Soil Association's Food for Life Catering Mark in 2010.

**The experience of Nottinghamshire County Council illustrates what can be achieved when the changes are applied across a wide number of schools.**

*'Local purchasing saves public money and delivers nutritious school meals'*

Nottinghamshire County Council was the first local authority caterer in the country to provide all its schools – primary and secondary – with Food for Life 'silver' standard food. This means that every day 30,000 children in Nottinghamshire eat school meals that are at least 75% freshly prepared with a range of local and organic ingredients. All chicken, eggs and pork are Freedom Food-certified or free-range and no fish from unsustainable sources is served. The catering manager explained:

*"By contacting local producers directly and setting up direct links we have actually been able to cut out the middleman and save money. This has enabled us to spend more on other quality products such as local game from Sherwood Forest... As we have applied the standards across all of our schools we have seen a positive increase in meal uptake."*

(*'Ahead Only: A fair future for school food policy'*, Food for Life Partnership, 2010)

### 9.7 Food for Life catering mark in Bristol

Bristol has the most varied group of caterers who have signed up to the Soil Association's Food for Life Catering Mark compared to the rest of the UK (see Table 7). While this represents a relatively small number of meals in the city, it demonstrates that a number of different kinds of catering companies are concerned about where their food comes from and how it has been produced, reared or fished.

Early Years Catering is one example, a small but rapidly growing Bristol business which won the contract with Bristol City Council to supply meals for 15 nursery schools in the city. The company also supplies a further 28 privately run nurseries. The company has now gained the Silver Level 'Food for Life Catering Mark' award. Since setting up in 2006, they have seen an increase in staff members from 3 to 13 and the number of meals they serve each day has risen by over 1,500, to 2,100. (For further details see appendix 11)

Table 9: Food for Life caterers in the Bristol city region

Gold
<ul style="list-style-type: none"> <li>• Abbeywood Tots Nurseries, Bristol: 3 sites; 120 meals per day</li> <li>• Bordeaux Quay, Bristol: For both their menu in the brasserie and restaurant.</li> <li>• The Folk House Cafe, Bristol: Serves students attending courses, private functions and in the public cafe. Can cater for up to 150.</li> <li>• Lettuce &amp; Lovage: Events caterer based in the outskirts of Bristol catering for all manner of events large and small, corporate or private.</li> <li>• Lakewood Conference Centre, Blagdon, near Bristol: Conference facility serving 50 meals per day.</li> <li>• Tall Trees Kindergarten, Frome, Somerset: For children aged 4 months to pre-school the Kindergarten serves meals containing high proportions of local and organic food to 50 children a day.</li> </ul>
Silver
<ul style="list-style-type: none"> <li>• Early Years Catering, Bristol: 43 nursery sites; 2100 meals per day</li> <li>• The Thali Cafe, Bristol: Small chain of award winning restaurants, serving authentic Indian street food.</li> </ul>
Bronze
<ul style="list-style-type: none"> <li>• North Bristol NHS Trust, Bristol: Covering the catering requirements for Southmead and Frenchay hospitals, providing approximately 1,300 and 1,400 covers respectively per day.</li> <li>• Bath and North East Somerset Council: Primary school menu; 66 sites; 2,600 meals per day.</li> </ul>

(Data source: Food for Life catering mark, The Soil Association;

<http://www.sacert.org/Gettingcertified/Whatwedo/Restaurantscatering/tabid/1056/language/en-GB/Default.aspx>)

The Soil Association has recently published a report on the state of hospital food in the UK with several examples of positive change which are keeping costs down; improving food for patients, staff and visitors; and benefiting UK farmers and the local economy. The North Bristol NHS Trust is cited as one of the pioneers.

*The North Bristol NHS Trust has found that they can make significant changes to where they buy their food, increasing local sourcing substantially, while staying within a budget - around £2.20 per day - which is below the national average. The Trust achieved the Soil Association's Food for Life Bronze Catering Mark, after the Trust Chief Executive attended a seminar addressed by HRH The Prince of Wales. The Trust buys local milk. Ice-cream comes from a farm near Bath, and is better quality and better tasting, with no chemical colours or flavours, but sold at the same price as the ice-cream the Trust used to buy, which came to them from Belgium via Bolton. The Trust has also introduced winter and summer menus to make the best use of seasonal, local produce.'*

(‘First Aid for Hospital Food’; Soil Association, January 2011).

## 9.8 Bristol school meals

Most of the schools in Bristol are provided with school meals by one of the following four companies: Eden Food Service; ISS Caterhouse; BAM FM; and Early Years Catering. Eden, ISS and BAM are all national companies. Early Years Catering is a local company. Each of these companies will have their own approved food suppliers. With large scale companies and contracts it is most likely that the supply companies are themselves food service wholesalers or processors (see sections 6 and 10).



### 9.8.1 Number of schools:

- 🍌 21 Secondary Schools of which 13 are BCC maintained and 8 are academies
- 🍌 104 Primary Schools.
- 🍌 9 Special Schools.
- 🍌 2 Pupil Referral Unit Schools.
- 🍌 31 established Children Centres 30 of these are BCC maintained with the other one being in the voluntary sector. There are also 3 BCC maintained nursery schools.
- 🍌 22 Independent schools

The total number of private nurseries is unclear but Bristol City Council can advise that the number of grant-registered early years settings in the private sector is in the region of 55. There are currently a little over 400 registered childminders.<sup>(1)</sup>

### 9.8.2 School caterers progress on sustainable food procurement

- 🍌 Early Years Catering has just been awarded the Silver Food for Life award (see above).
- 🍌 Five schools catered for by BAM FM have achieved the Bronze Food for Life award.
- 🍌 Eden have said they aim to achieve the Bronze Food for Life status by April 2011 which will cover all the 135 schools they supply. They have already achieved provision of 100% Fairtrade bananas and also using free range eggs.
- 🍌 ISS Caterhouse has been exploring introducing two meat free days a week in the secondary schools they supply.

(Both ISS Caterhouse and Eden Food Service are working to the food for life catering mark standards with some schools in London. ISS Caterhouse supply over 4000 Bronze level meals a day to schools in Merton. Eden Food Service supplies over 10,000 Silver level meals a day to schools in Croydon.)

### 9.8.3 Total spend on Bristol school meals

Without asking all the food providers for figures it is difficult to say what the total school meals food purchasing budget is for Bristol schools. However based on recent school meal contract work done by Bristol City Council, the average expenditure on food is £20,000 p.a. Across 171 schools this would total around £3.5 to £4 million per year.<sup>(2)</sup>

## 9.9 Catering summary & key points

Around 25% of catering businesses in Bristol are institutional caterers for the health and education sectors and 24% are business and commercial catering operations.

It is not possible without further investigation to accurately reflect the nature of or quantify the scale of these businesses, but it would be reasonable to assume that the main volume of meals are served in schools, hospitals, residential homes and staff canteens.

The large catering businesses providing commercial catering operations are likely to be influential in public sector food procurement. They will tender for publicly advertised contracts to supply meals to other organisations and businesses.

The majority of health and educational institutions procure meals from a range of catering companies. Therefore the group of institutional caterers serving the health and education sectors are also likely to be separate to the institutions themselves. Only a minority of schools and hospitals have in-house catering functions.

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Source:

1. Jackie Brown, Children and Young People's Services, Bristol City Council)

2. Sharon Sexton, Transforming School Meals Co-ordinator, Bristol City Council; Matthew Roberts, Client Contract Officer, CYPS, Bristol City Council

Given their large scale of operations, the large catering companies supplying the public sector could make a significant difference to shaping a more resilient food system through their food purchasing choices. Public sector procurement of sustainably produced, low carbon footprint healthy food produced from fresh and seasonal ingredients would have a strong positive effect on the supply chain.

The remaining 50% of catering companies are 'eating out for leisure' meal providers including takeaways, cafes, restaurants and pubs. They also represents a potential force for driving change in reshaping the city's eating out food culture, through their food sourcing policies by selecting and promoting seasonal UK food, and food produced within the region from sustainable methods of production wherever possible. There are several excellent examples of privately owned restaurants in Bristol that are serving meals using locally sourced seasonal ingredients.





# 10. Processing





## 10. Which companies prepare and cook the food we buy from shops or when we eat out?

Many of the city region's food manufacturers and processing companies supply the catering sector, or are in fact catering providers themselves, for example preparing frozen ready meals.

The term processor or manufacturer is often used interchangeably but technically refer to different stages in what is often one continuous process. Food processing is the methods and techniques used to transform raw ingredients into food for human consumption. It takes clean, harvested or slaughtered and butchered components and uses them to produce marketable food products. Food manufacturing is the commercial production and packaging of foods that have been fabricated by processing or combining various ingredients.

Put simply food processors chop and mix while food manufacturers bake or cook. The public food registers do not clearly differentiate between the two, for example a company cutting and packing meat may be called a manufacturer/packer.

Until now the Food Standards Agency has been responsible for meat inspection duties in fresh meat premises including slaughterhouses, cutting plants, farmed and wild game facilities and co-located minced meat and meat products premises across England, Scotland and Wales. It is the role of the Agency to help ensure that the meat industry safeguards the health of the public, and the health and welfare of animals at slaughter. This means that some of the processing and manufacturing companies may not be on the public food register but will be listed on the Food Standards Agency meat hygiene website.

### 10.1 Types of companies in the Bristol city region

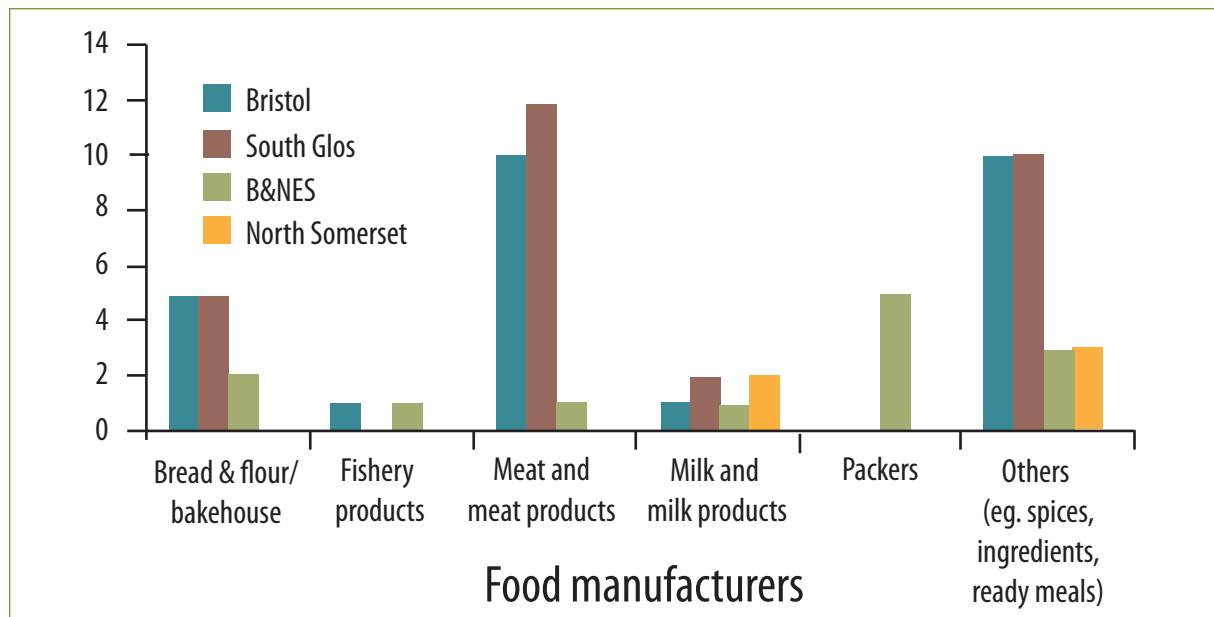
Around 1.5% of registered food businesses in the Bristol city region are categorised as processors and food manufacturers. Within Bristol city the percentage is slightly higher at 3%. (See table 1, section 4 and table 7, section 9).

Using available data from the public food registers and the Food Standards Agency website, analysis of the food manufacturers suggests the following picture. South Gloucestershire has the highest number of manufacturing companies though these are likely to be mainly small businesses. It also seems to have the highest number of food packers, the majority of which are egg packers. Meat manufacturers are the largest single category, with companies based mainly in Bristol and in South Gloucestershire.

Table 10: Food manufacturers by food type (data also illustrated in Figure 12)

	Bristol	South Glos.	B&NES	North Somerset	Total	% type of business
food manufacturers – bread & flour/ bakehouse	5	5	2		12	16%
food manufacturers – fishery products	1		1		2	3%
food manufacturers – meat and meat products	10	12	1		23	31%
food manufacturers – milk and milk products	1	2	1	2	6	8%
food manufacturers / packers			5		5	7%
food manufacturers – other (e.g. spices, ingredients, ready meals)	10	10	3	3	26	35%
<b>Total businesses</b>	<b>27</b>	<b>29</b>	<b>13</b>	<b>5</b>	<b>74</b>	
% within Local Authority area	36%	39%	18%	7%		

Figure 12: Food manufacturers in the Bristol city region by number and nature of facilities per Local Authority area



### 10.2 Meat businesses in the Bristol city region

In addition to the 116 retail butchers (who cut as well as sell meat), analysis of the food registers identified:

- 🍏 20 abattoirs, slaughterhouses and cutting plants in the Bristol area: 7 of those are on-farm poultry slaughter facilities or seasonal poultry slaughter facilities
- 🍏 23 food manufacturers for meat or meat products
- 🍏 9 distribution/wholesale/cold store facilities

Of the 23 manufacturers, most of the Bristol companies deal with cooked and cold cut meats and with meat pies for supply to caterers and independent retail outlets. The South Gloucestershire companies are largely small scale butcher and meat manufacturer companies linked to local farm shops selling cuts of meat and sausages. With the exception of Weddel Swift Distribution, a nationwide chilled and frozen meat distributor serving butchers shops, the remaining 6 companies listed as meat distribution/wholesalers are all small scale. The cold stores are a national TGC Temperature Controlled Services depot in Avonmouth and a farm cold store in South Gloucestershire.

Table 11: Meat businesses in the Bristol city region

	Bristol	South Glos.	B&NES	North Somerset	Total
Abattoirs (often include co-located cutting plant)	3		1	3	7
Slaughterhouse - Poultry (include seasonal and on-farm)		3	4		7
Cutting plants	6				6
Food manufacturers - meat and meat products	10	12	1		23
Distribution/wholesale facilities - meat	4	1	2		7
Cold store meat	1	1			2

(Data source: Food Standards Agency website and public food registers)

### 10.3 Snapshot survey of Bristol meat manufacturers/processors: products, suppliers and markets

Within Bristol itself the main large scale food manufacturing companies dealing with meat are registered as approved premises. Table 12 provides an indication of where these companies purchase their own supplies and the markets that they in turn supply. All of them supply retailers



and caterers (including restaurants and pubs) within the Bristol city region and all of them buy some of their ingredients from other companies within the city region. Pieminister specifies that they use only UK-sourced free range meat and that their carrots and beef come from farms close to Bristol. It has not been possible to find out to what extent any other of these companies specifically purchases ingredients from the South West or the West of England. It is likely that companies dealing with cold cut and wrapped meats are using meat originating from outside the UK.

Table 12: Bristol's main meat manufacturers and processors

Company	Products	Suppliers	Market outlets
<b>Choice foods,</b> Bedminster, Bristol  Small business 5-10 staff	Sandwiches & fillings. Wrapped meats (ham, pork, beef, corned beef, turkey).  Coleslaw, pasta meals, frozen pizza.	<b>National</b> – 6 companies supply cold meats, bread, chilled and frozen foods <b>Regional/Local</b> – 2 bakeries supply bread; one Bristol company supplies cooked meats and 1 supplies fresh produce.	Wholesale and small retail outlets in the city region, the SW and S Wales
<b>Exclusive foods,</b> Bedminster, Bristol  Small business 5-10 staff	Sandwich fillings. Quiches & pies. Rice & pasta salads. Re-packed cooked sliced meats.	<b>National</b> – 3 companies supply chilled foods & cold meats. <b>Regional/Local</b> – 5 companies supply bakery, cold meats, pies, vegetables, frozen and chilled and dried foods.	Mostly small sandwich shops & bakers, restaurants & takeaways in the city region
<b>Brittan's,</b> St Pauls, Bristol  Small business 5-10 staff	Cooked wrapped meats. Make and cook faggots. Cooked meat (beef, turkey). Make raw sausages, burgers and kebabs on sticks. Chitterling, bath chaps, hocks. Cooked hams. Roast pork.	<b>Regional/Local</b> – 8 companies supply meat products	Wholesale, own retail shop, market traders & butchers shops around Bristol.
<b>Clarks Pies,</b> Bedminster  Medium business 30-40 staff	Meat pies, sausage rolls, vegetable & cheese tarts	<b>National</b> – 5 companies supply bakery, meat and vegetable products. <b>Regional/Local</b> – 5 companies supply meat, dairy, and vegetable products.	Own shop & mobile event catering Other shops, and caterer companies
<b>Pieminister,</b> Brentry	Meat, vegetable & cheese pies	<b>National</b> – 1 company supplies herbs <b>Regional/Local</b> – 5 companies supply meat, vegetables, dairy and pastry	Own shops, events, wholesale, mail order, supermarkets and caterers
<b>Ferrantes,</b> Fishponds	Cooked hams. Sliced and rewrapped turkey, beef, port, lamb, salami, ham.  Cheeses, raw bacon & sausage.  40 varieties sandwich fillings.  Frozen sausages, burgers, cooked chicken.	20-30 suppliers	Caterers, pubs, sandwich bars across the city region

(Data source: Bristol food register - approved premises; Bristol City Council)

## 10.4 Dairy businesses in the Bristol city region

Analysis of the food registers suggests that there are:

- 🍌 **6 dairy food manufacturers** – including Yeo Valley organic and Alvis Brothers in North Somerset and smaller cream, cheese and milk product manufacturers
- 🍌 **9 dairy distributors, depots or warehouses** – 5 of which are Dairy Crest depots, 1 Robert Wiseman depot, the rest are independent milk and cheese distributors.

No further research was done on supplies to the dairy businesses.

Table 13: Dairy businesses in the Bristol city region

	Bristol	South Glos.	B&NES	North Somerset	Total
Food manufacturer – dairy	1	2	1	2	6
Distributor/food warehousing/wholesaling/ dairy depot	3	2	3	1	9

(Data source: Public food registers)

## 10.5 Food labelling

Food labelling is strictly governed by law. For example a food can't claim to be 'reduced calorie' unless it is much lower in calories than the usual version. However health and nutrition claims on food labels can mean different things on different products as not all these kinds of claims are yet defined in law. For example 'low-fat' has been defined in law and means the product should contain no more than 3g fat per 100g but a claim like 'helps maintain a healthy heart' as yet has no legal definition.

The Food Standards Agency (FSA) has responsibility for overseeing food safety and is also concerned with what is sold and how it is labelled. It works closely with Local Authority food law enforcement officers to make sure that food law is complied with throughout the food chain. Food labelling is governed by regulations and exists primarily to inform and protect consumers. Some aspects of food labelling are now being taken over by the Department of Environment, Food and Rural Affairs (Defra). The Food Labelling Regulations 1996 means that food has to be marked or labelled with certain requirements such as:

- 🍌 the name of the food
- 🍌 a list of ingredients (including food allergens)
- 🍌 the amount of an ingredient which is named or associated with the food
- 🍌 an appropriate durability indication (e.g. 'best before' or 'use by')
- 🍌 any special storage conditions or instructions for use
- 🍌 the name and address of the manufacturer, packer or retailer
- 🍌 the place of origin (where failure to do so might mislead)

The FSA had advocated a consistent approach to front of pack nutritional labelling using 'traffic light colours' based on evidence that consumers find this easiest to understand. The traffic lights show if a food item has high, medium or low amounts of fat, saturated fat, sugars and salt. Some manufacturers and retailers prefer a rival scheme based on Guideline Daily Amounts. The current labelling rules are a compromise and are voluntary. Some supermarkets and food manufacturers voluntarily use traffic lights.

The UK's main supermarkets recently also signed up to a new voluntary code on country of origin labelling of meat, processed meat and dairy products. This labelling will be done by the companies that process these products for the supermarkets<sup>(1), (2)</sup>

Sources:

1. Ethical Consumer; Jan/Feb 2011
2. Food Standards Agency website and webarchive



## 10.6 Food manufacturers & processors summary & key points

The food processors and manufacturers are an essential part of the food system. In the meat sector they play a key role by using the parts of the carcass that shoppers prefer not to buy and cook themselves. They therefore close a gap in the supply loop and ensure that meat is not wasted. Bristol city region has access to a well established processing infrastructure. However, they are the sector that often has the least transparent food sourcing and often uses cheap imports. They also supply to most of the 'eat-out' kinds of caterers, including pubs and restaurants along with smaller retailers with cheaper products.

The potential to drive change towards a more resilient food system and more healthy and sustainable diets through caterers choosing to source more seasonal fresh sustainably and locally produced ingredients is interlinked with the decision making of the range of companies from which they source their ingredients. The food manufacturing sector is less likely to source seasonal local produce unless it makes economic sense. Therefore the food manufacturing sector could prove to be the most difficult part of the food system to influence, unless it is achieved through large scale catering contracts that have specific food sourcing requirements to which the food manufacturers are required to comply. Food labelling legislation is a potentially useful tool for influencing changes to food quality across the entire food processing sector.

# 11. Waste





## 11. What happens to food waste in Bristol?

*"Food waste is so widespread that experts believe if it could be eliminated there is already enough to feed the expected world population of 9 billion in 2050." (Jane Bird, Financial Times, 26 January 2010)*

### 11.1 Household food waste facts – national context

In the UK, we throw away around one third of the food we buy. This is in addition to the food that gets wasted before it even arrives for sale in the shops. Most of this is avoidable and could have been eaten if only we had planned, stored and managed it better. Less than a fifth is truly unavoidable – things like bones, cores and peelings.

As households for example:

- 🍏 Of the bought food that is wasted, most could actually have been eaten – 61% or 4.1 million tonnes of food waste a year is avoidable.
- 🍏 The most common reason for food being wasted is that it's left unused – 2.5 million tonnes of food waste is avoidable.
- 🍏 Of this, 40% – almost one million tonnes isn't even touched and at least a tenth or 340,000 tonnes is still in date.
- 🍏 We also cook and prepare too much, resulting in an additional 1.6 million tonnes of food waste a year.<sup>(1)</sup>

### 11.2 How much household food waste does Bristol produce?

The total amount of food waste generated per household will be higher than the amount that is collected, as some food waste is put down the drain, home composted, or fed to animals. This will more than make up for the proportion of collected home waste that is inedible including vegetable peelings, meat bones etc.

Bristol City Council collects food waste, together with cardboard, from households on a weekly basis. All food, cardboard and garden waste is collected and co-mingled by the Council's collection contractor, SITA. It is then transported via Avonmouth to an in-vessel composting facility in Sharpness in Gloucestershire, operated by New Earth Solutions. The final product is used on farmland as soil improver.

Because the food collected is then mixed with garden waste and cardboard (collected by the same vehicle), data is not available on the total tonnages of food waste collected through the scheme. Resource Futures estimate that food waste generated by households in Bristol annually is likely to be in the region of 20-25,000 tonnes, of which around 9,000 tonnes is currently collected, and when all purpose built blocks of flats have the collection rolled out this could increase by a further 1,000 tonnes. (See appendix 5.)

Since the introduction of the food waste collection service, Bristol City Council has seen total household waste reduce from 186,000 tonnes in 2004/ 05 to 162,000 tonnes in 2009/ 10. This pattern has been repeated in other areas that have food waste collections. Most of this reduction in the amount of waste is assumed to be as a result of behaviour change by householders partly triggered by them seeing exactly how much food they are throwing away which prompts them to change their habits and reduce the amount of waste food. The service has also made recycling visible as something that "everyone does".

Source:

1. 'The Food We Waste'; WRAP, 2009



Food recycling leaflet for  
blocks of flats



### 11.3 School food waste

As with household waste, all school food waste is collected and co-mingled with cardboard and with other household food waste, along with some garden waste, as part of the Council's Organic Waste Collection Service and composted in an in-vessel composting facility.

### 11.4 Bristol University composting scheme

In June 2010 a new composting scheme to reduce Bristol's food waste going to landfill sites was launched at the University's halls of residence and selected accommodation sites. The project, which is in partnership with Bristol City Council and SITA involves around 2,000 students at six of the halls of residence participating in food waste composting collections. Each hall kitchen has been supplied with internal and external food waste caddies. On collection of the caddies, the food is turned into soil-enriching compost.

Based on tonnages from a pilot scheme, it is estimated that 60 tonnes of food waste per year are collected from Halls of Residence that have access to a food waste service, servicing approximately 3,400 students. This scheme has now been rolled out to all but 3 University of Bristol sites. It is hoped the scheme will be extended to Unite and University of the West of England (UWE) sites in the future. It is estimated that schools and university halls will produce approximately 1,500 tonnes of food and cardboard waste for recycling annually.

## From Cardboard to Caviar



## THE ABLE PROJECT

The ABLE Project was set up to deal with cardboard recycling while at the same time providing employment opportunities for young people. Trials into the shredding of cardboard for animal bedding proved successful, and mixed with manure the cardboard bedding proved ideal for composting. A composting operation at Huddersfield Community Farm combined recycled livestock bedding and composting in a specially constructed wormery. Vocational Enterprises, an organisation providing sheltered employment opportunities for disadvantaged groups agreed to house and staff a shredding machine and supplied the Community Farm with bedding.

The benefits of the scheme have included reducing the volumes of waste going to landfill and saving money for both local businesses and Huddersfield Community Farm. The revenue generated from the sale of waste derived products (compost, plant-food, and worms to local anglers) was an added benefit. This recycling venture took the next step by developing an innovative fish tank system to produce Siberian Sturgeon fed on the excess worms from the composting beds. When the Sturgeon reaches an appropriate size it is harvested and sold for human consumption. Some are also raised to produce caviar. The compost is also used in the horticultural area to grow food.

[www.theableproject.org.uk/produce/sustainable-fish](http://www.theableproject.org.uk/produce/sustainable-fish)

### 11.5 Food waste generated in the commercial sectors

This report was unable to undertake further investigation in the time available. It is presumed that most shops, cafes, restaurants and large scale kitchens are unlikely to separate out food waste and that it is therefore taken to landfill with all other waste through private contractors.

### 11.6 Food waste generated by the wholesale sector

Bristol Wholesale Fruit Centre in St Philips generates a significant amount of waste each day comprising pallets, packaging and wasted produce. Potentially this is an untapped resource which requires further investigation. Pallets are the most difficult item to dispose of and a long-term solution is yet to be found. Approximately 2-3% of the market's total daily fresh produce is wasted each day, largely due to non-compliance with Defra inspector grading standards. The market runs its own waste disposal service for leaseholders. Waste fresh produce including pallets of rejected fruit and vegetables are compressed on site and transported for landfill by Biffa. Some compostable waste is collected by local farmers while some is taken to a biodigester in Cannington.

*'We've institutionalized waste of perfectly good produce into our system through the horticulture marketing standards which define class 1,2 & 3 produce. These standards are mainly about appearance – minor blemishes, shape or weight. There is a vast amount of waste at a farm level too if produce doesn't quite meet the standards, for example if lettuces are too light they will get ploughed back in.'*

(Tim Down, MD, Percy J Down, Wholesalers, Bristol Wholesale Fruit Centre)



## 11.7 Food waste generated by the manufacturing and retail sectors

Much has been written about this, most notably by Tristram Stuart in his recent book *'Waste: uncovering the global food scandal'* which identifies that 1.6 million tonnes of food waste is thrown away each year by UK retailers. He explains how retailers off-load their waste on to others in the chain, for example meat carcass waste, contracts and orders that are dropped at the last minute leaving the suppliers to find alternative markets or dispose of produce, or through the out-grading system. In Bristol, the national charity FareShare has a depot near St Philips and is involved in food redistribution. They deal with food which is not waste and is perfectly fit for human consumption, but will become waste if it is not redistributed.

### CASE STUDY 8:

#### FareShare South West – food redistribution to vulnerable groups



FareShare is a nationwide network of community based partnerships comprised of regional organisations and charities working to address food poverty and food waste. Launched in 2004 it is now operating in 13 locations around the UK. FareShare South West has two staff and 25 volunteers, with over half of these volunteers coming from beneficiary projects. FareShare covers the whole of Bristol city with some food collected from the West of England area. It accepts most foods apart from, alcohol, shell fish or out of date food.

#### **FareShare South West**

In 2009/10 FareShare South West, based in Bristol, redistributed 274 tonnes of food that would have gone to landfill, contributing towards around 652,000 meals benefiting 5,000 people in 32 projects around the city. It receives around 30 tonnes per month from their main suppliers, NFT Distribution, which sorts waste food from Sainsbury, Pullins bakers, Brakes brothers, Bristol Fruit and Vegetable Market and Gerber Juice. Food is delivered or collected on a weekly basis, sorted by weight and repacked for deliveries to local projects that cook it or distribute it as food parcels. Projects with kitchens take meat and vegetables to cook hot meals, supported housing projects prefer ready meals as many people have limited cooking skills. If there is too much food to redistribute FareShare gives it to the city farms.

FareShare South West would like to see all the supermarkets, wholesalers and distributors working with their local charities to redistribute their surplus and damaged goods. The main barriers to developing these initiatives are time and investment as FareShare would require more staff and resources and extra transport to expand supply to additional projects. Further support from the distributors in terms of deliveries of a wider range of foods to FareShare would help to increase supplies to local projects. FareShare plays an important role in feeding vulnerable groups with good quality nutritious food that they would not be able to afford themselves.

[www.faresharesouthwest.org.uk](http://www.faresharesouthwest.org.uk)

(See full case study, appendix 11)

## 11.8 Summary and key points:

- 🍌 **Bristol's household waste** – since the introduction of the food waste collection service, Bristol City Council has seen a reduction in household waste from 186,000 tonnes in 2004/ 05 to 162,000 tonnes in 2009/ 10. Most of this reduction is assumed to be as a result of behaviour change by householders.
- 🍌 **Bristol's food waste** – Resource Futures think that food waste generated by households in Bristol annually is likely to be in the region of 20-25,000 tonnes, of which around 9,000 tonnes is currently collected, and when all purpose-built blocks of flats have the collection rolled out this could increase by a further 1,000 tonnes.
- 🍌 **Education establishments** – it is estimated that schools and university halls will produce approximately 1,500 tonnes of food and cardboard waste for recycling annually.
- 🍌 **Wholesale market** – the wholesale market at St Philips generates a significant amount of wood and fresh produce waste which is compostable and recyclable but currently this potential is not realized. Smarter solutions for recycling food waste would enable this part of the loop to be closed and significantly reduce the loss of potential heat energy and soil nutrients as well as waste of perfectly edible food.
- 🍌 **Food redistribution** – FareShare provides a valuable service in redistributing good quality food perfectly fit for human consumption and within sell by dates, but which would otherwise be thrown away. They deal with over 200 tonnes of food per year but this is just a small proportion of the total that is still being landfilled. This waste of good quality food represents a serious loss of nutritional value and is an issue that urgently needs more attention, especially if the city has vulnerable groups of people whose lack of income makes eating healthy food a daily challenge.
- 🍌 **Defra grading standards and the specifications within catering procurement contracts** are condemning significant quantities of produce inappropriately on the basis of size, shape, appearance. The rationale for this needs to be reconsidered.
- 🍌 **Further opportunities** – more research is needed to establish the volume of food waste generated by the city, including commercial food waste, and to explore collaborative solutions that can serve the city as a whole.



# 12. Community food-related activity





## 12. Does Bristol have the skills to cook and to grow food?

### 12.1 Community food resilience

Any city, Bristol included, has to be supplied with food from beyond the city boundary. However, city residents do have opportunities to get involved in food growing, especially salads, vegetables and fruit in their gardens, allotments and local parks. Gardening and food growing has been an English tradition at least since Tudor times, and the expectation that each dwelling should have garden space has influenced the historical layout of villages, towns and cities<sup>(1)</sup>. Some residents may have space for small scale eggs and livestock production on smallholdings. Every resident has a crucial part to play in helping to build resilience in the food system through their own daily eating choices. As a community we have the potential to develop a thriving healthy food culture in the city with strong links to the city region's food producers.

### 12.2 Vulnerable groups

*'While many people in Bristol eat well, a large number do not, especially disadvantaged and vulnerable groups in our community. Lack of access to local food shopping outlets, limited or no transport and support services, lack of skills and facilities for cooking, physical disabilities, and lower income and isolation all combine to create a potential for poor nutrition, especially among our growing population of older people.'*

(Liz Fox, Senior Health Promotion Specialist, Food & Health, NHS Bristol).

Those on lower incomes have the least access to a range of affordable and healthy food in their local shops. The small supermarkets in deprived areas often have higher prices on certain items than the large stores. A snapshot price comparison of Tesco Extra at Eastville and two Tesco Express stores, one in the city centre and one on the Gloucester Rd, identified that exactly the same staple food items cost more in the 'Express' stores when compared with the 'Extra' store including bread, vegetables, salad, fruit, meat, dairy, rice, pasta and flour. (See table 14.)

Table 14: Price comparisons of staple food items in Tesco Extra and Express stores

Food item	Tesco Extra price	Tesco Express price
Tesco basmati rice	£1.50 per 1kg	£1.74 per 1kg
Tesco mature cheddar	£1.95 per 250g	£2.03 per 250g
Beef mince (12% fat)	£4.79 per 1kg	£3.00 per 500g (no larger pack available)
Tesco penne pasta	£1.10 per 1kg	£0.78 per 500g (no larger pack available)
Tesco value medium sliced white bread large	£0.30 per loaf	£0.74 per loaf

(Data source: *Who Feeds Bristol* snapshot price comparison August 2010)

Customers often believe supermarkets are cheaper because of below-cost sales of 'Known Value Items'. These are products or brands with prices that are known to customers because they buy them frequently and that may influence where they choose to shop.

Independent greengrocers, bakers and butchers are disappearing from some of Bristol's more deprived areas. These types of retailers generally offer competitive prices, for example a butcher can offer a wide range of cuts and different kinds of meat; a greengrocer will offer reduced prices on produce that needs to be sold quickly. They are more flexible and more able to respond to customer requests and will sell any quantity without charging a premium for small volumes. Those

Source:

1. Thomas K. Man and the Natural World. Penguin books 1983

on lower incomes, many of whom have less access to specialist independent food shops will also be hardest hit by increased staple food prices such as bread (due to a rise in wheat prices).

Major cultural change has occurred since the 1950s with a switch away from cooking from fresh ingredients. The food industry has successfully promoted tasty, convenient and affordable products to replace the need to cook from fresh. Unfortunately many of these products are high in fat, sugar and salt, heavily flavoured and processed to make them palatable and skillfully promoted, often in ways that appeal to children. The extent of the health damage caused by this trend is only just being fully recognized with increased rates of obesity, diabetes, hypertension, heart disease and cancer (Kessler 2009). Healthy living campaigns to 'persuade' people to ignore the advertising and cultural cues are only a partial solution. Food culture needs to change if healthy food is to become something that all sections of society can enjoy.

*'The current food system is based on 'false' accounting, where the food supply system is not held to account for the impacts that the system has on the environment or human or social health. These are often called the hidden or external effects (externalities). With respect to other externalities the World Health Organization has challenged the global food industry over its role in promoting certain types of fats and processed foods and the impact on human health as well as damage to the environment.'*

(Dr Martin Caraher, Professor of Food and Health Policy, City University London)

## 12.3 Cooking from scratch

One of the major concerns as illustrated in the quote above is that damaging health consequences are arising from the growing trend towards eating pre-prepared, highly processed convenience foods instead of cooking from scratch with fresh ingredients. A second and related concern is the loss of cooking skills.

### 12.3.1 What is Bristol eating?

It would be a major challenge to find out exactly what Bristol residents are eating and to what extent city residents are preparing their own meals using fresh ingredients. Most food is bought from supermarkets so to help answer this question we looked at available data from dunnhumby (market research company) whose database comprises purchasing data from a sample of 1.7million supermarket shoppers, representative of 40% of UK households.

The Centre for Value Chain Research at Kent Business School have provided an analysis of dunnhumby data for this report on a selection of product categories to show performance (ie purchases) for fresh 'cook from scratch' (CFS) ingredients compared to pre-processed and convenience foods in the 'Wales & the West region' (which includes Bristol) over the last 12 months for large hypermarket and small convenience stores.

The analysis also looks at 'store level data' showing:

- a) 'customer penetration' – percentage of shoppers who have made at least one purchase in the last year giving an indication of scope for attracting new buyers
- b) 'spend per customer' – the average spend per customer per year and which products/categories shoppers spend most on, for selected product groups

A 'store level' data analysis was carried out in the following large hypermarket stores in Bristol:

- 🍏 Bristol Eastville
- 🍏 Brislington
- 🍏 Bradley Stoke

(For more details on this analysis see appendix 9)



### 12.3.2 Definition of 'cooking from scratch' (CFS) categories

The following products categories were used for the analysis and are based on existing supermarket food categories. While bread and breakfast cereals are technically not 'cook from scratch' items, they have been included in the data provided by Kent Business School. This is because they are not classified as pre-prepared or convenience foods within the supermarket system. Similarly, pre-prepared fresh fruit which we might not think of as a processed product is nevertheless classified as pre-prepared/convenience within the supermarket categories because it is provided to the customer in sealed ready to eat packs.

#### CFS' food categories

- 🍏 Flour
- 🍏 Fruit
- 🍏 Grains/Rice/Pasta
- 🍏 Vegetables/Salad
- 🍏 Meat & Poultry
- 🍏 Dairy
- 🍏 Eggs
- 🍏 Bread
- 🍏 Cereals
- 🍏 Fish

#### Pre-prepared and convenience food categories

- 🍏 Prepared Ambient Rice, Pasta, Snack Meals
- 🍏 Prepared Fresh Fruit
- 🍏 Prepared Meat & Poultry
- 🍏 Prepared Chilled Ready Meals
- 🍏 Prepared Frozen Ready Meals
- 🍏 Prepared Fresh Vegetables Salad

### 12.3.3 Analysis of data from the Wales & West stores

In terms of share of sales, the figures for CFS are encouraging (meat & poultry at 27.4%, vegetables & salad at 25.1%; fruit at 21.2% compared with prepared chilled ready meals at 9.7%, prepared meat & poultry at 3.3%). The year on year sales growth figures in both sale and volume terms indicate that sales of CFS items are falling while prepared food sales are increasing, with the one exception of sales of prepared frozen ready meals which are decreasing. This suggests that the overall trend is away from cooking from scratch. The decrease in frozen meals could be due to the increase in smaller stores selling more convenience foods and a pattern of more frequent shopping by younger adults.

Data from dunnhumby is based on customer lifestage' categories ('older adults, young adults, young families, older families, pensioners, mixed' - see appendix 9). Customer lifestage profile information suggests that pensioners are 60% more likely than the rest of the lifestage categories to buy CFS products, while older adults are 15% more likely to buy CFS. In contrast, families and young adults are almost 20% less likely to buy CFS. Customer lifestyle profile information suggest that households who live a convenience lifestyle are 45% less likely to buy CFS and families whose shopping choices are heavily influenced by childrens' demands will be 25% less likely to buy CFS. The 'traditional' and 'prices sensitive' households are respectively 40% and 20% more likely to buy CFS than the other 'lifestage' customer categories.

The data for Wales & West stores suggest that the categories of customer that buys the most fresh 'cook from scratch' items (ie fruit and vegetables, fresh meat, eggs, dairy products) are the older customers. The categories of customers that buy the least 'cook from scratch' and are increasingly buying pre-prepared and convenience food such as frozen and ready meals are families and young adults.

### 12.3.4 Data from the three Bristol stores

Analysis of the data for each of the selected three Bristol stores on 'customer penetration' and 'spend per customer' was limited in what it could add to the findings above, but suggests that:

- 🍏 There is lowest spend at Eastville and highest spend at Bradley Stoke. This is likely to reflect the income level of customers.
- 🍏 Of all the food categories, CFS fruit and vegetables have the highest 'spend' and 'customer penetration'. That means there is scope to attract new buyers and that customers spend the most money over the year on this category of products.
- 🍏 Second highest 'spend' is on CFS meat and then on dairy products, though the customer penetration figures suggest that there is more scope to attract new buyers for dairy than for CFS meat.

These data suggest that cooking from scratch ingredients are widely purchased at these three selected large Bristol stores, although the trend is downwards.<sup>(2)</sup>

### 12.4 Cooking classes around Bristol

It was not possible to identify all the cooking activity going on across the city but the community food growing and cooking map 5 compiled from available data, gives an indication of the level of activity. (See also list of initiatives in appendix 6) This does not include college courses or adult education classes. Most of the cooking classes are short-term and dependent on funding. NHS Bristol supports a number of cooking classes in the north, south and inner city areas. A number of community projects and voluntary sector organisations provide cooking classes, for example HHEAG (see case study 9).

#### CASE STUDY 9:

#### Hartcliffe Health and Environment Action Group (HHEAG) tackling food issues in the community



Hartcliffe is a relatively deprived area on the southern edge of Bristol. Its health and environmental action group is another hidden treasure in Bristol and offers a 'plot to plate' holistic approach to working on food issues in the community. Cooking classes began 14 years ago followed by the establishment of market gardening and increased use of existing local allotments. Around 1,500 people have attended their cooking and nutrition courses. Greens Community Market Garden produces a range of fresh vegetables, herbs, fruit and flowers for the local community on sites in Hartcliffe and Withywood. Around 150 people have been involved with growing activities over the last ten years. Greens provides a range of fruit and vegetables for HHEAGs courses on nutrition and cooking and for the "Food for All" food co-op at the Gatehouse Centre which is run by members and buys good quality food in bulk at wholesale prices.

[www.hheag.org.uk](http://www.hheag.org.uk)

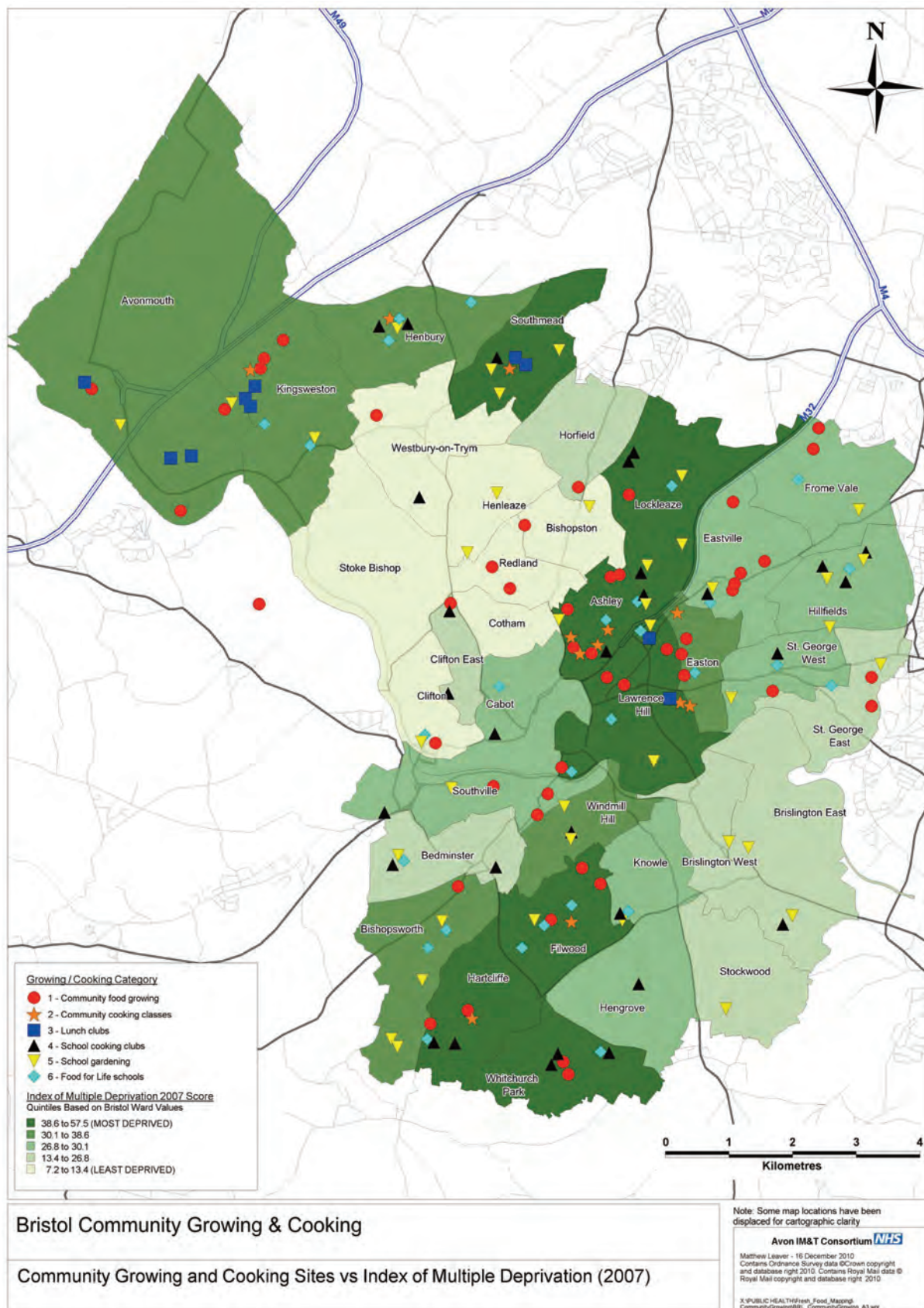
(See full case study, appendix 11)

Source:

2. Centre for Value Chain Research, Kent Business School, University of Kent analysis of dunnhumby data for 'Who feeds Bristol?'



Map 5: map of community food activity



### 12.5 Land in the city & food production

The Bristol Peak Oil<sup>(3)</sup> report recommended that an assessment should be undertaken on what land is available within the city for food growing, including land which could be reclaimed. It also recommended that research should be done to identify the area of gardens, allotments and community garden space needed per capita to produce at least 50% of required fruit and vegetables.

Source:

3. Osborn S. Building a Positive Future for Bristol after Peak Oil. Bristol Partnership. October 2009

<http://www.bristol.gov.uk/ccm/content/Environment-Planning/sustainability/file-storage-items/peak-oil-report.en> Accessed 26 May 2010

Definitive data on the amount of land available for food production within the Bristol city boundary has proved difficult to gather. This study reviewed Defra's data from the 2009 agricultural census and also gathered data from various Bristol City Council departments on the different kinds of land owned by the council.

### 12.5.1 Defra data on Bristol's agricultural land

Defra's 2009 records of registered agricultural holdings in Bristol show a total of 1438 hectares of agricultural land, of which 126 hectares is rented and 1305 is owned. It is not clear how this figure relates to other figures from Bristol City Council, or whether it includes council-owned farms and small holdings. It is assumed that the owned land is farms on the outskirts of the city in Avonmouth, Frome Vale and in the south of the city. Further investigation is needed.<sup>(4)</sup>

### 12.5.2 Land in the city with potential for food production

According to our estimates other land available in the city that is currently used or potentially available for food production totals approximately 930 hectares. This figure includes council owned agricultural land, a notional 20% of parks & green spaces, 'empty land' sites most of which are owned by private landlords, a proportion of private gardens and school land. It excludes commercial, institutional and privately owned land. The way that we have derived this estimate is shown below:



#### **Bristol City Council-owned agricultural land**

This totals 485 hectares, including:

- 🍏 199 hectares total allotment within and close to Bristol city boundary
- 🍏 239 hectares farm/agricultural land
- 🍏 47 hectares grazing land.

#### **Council-owned parks and green spaces**

This totals 1814 hectares and we estimate that 363 hectares of this 'parks and green space' land could potentially be used for producing food. This total figure includes all of the major estates with the exception of Stoke Park. Some of this area is already used, for example grazing land supporting venison in Ashton Court. It is not clear at this stage how much of the parks and green space area could realistically be used for food production, but if 20% of all parks and green spaces were used for food including for example fruit and nut shrubs and trees, that could bring an additional 363 hectares into 'productive' landscape.

#### **'Empty land'**

Land available for food production on empty land and derelict sites around the city could be up to 45 hectares (estimate based on BCC Empty Land Officer's work in 2009/10). At this stage it is difficult to assess the total area of 'empty land' available as Bristol City Council's site allocation consultation is not yet complete. In the interim for the purpose of this study a conservative estimate of 20 hectares of empty land may be available for (temporary) food production.

#### **Private gardens**

According to 2001 census data there were 120,270 houses, and 45,450 flats in Bristol<sup>(5)</sup>. At a conservative estimate, assuming that flats have no gardens and houses have an average garden size of 10 square metres - this totals some 120 hectares of land in private gardens. If we assume 50% of private gardens are available for growing food, that is a total of 60 hectares in private gardens.

Sources:

4. Assessment of local food provision for 'Who Feeds Bristol?' by Royal Agricultural College, Cirencester; Source Defra 2010. See appendix 8

5. Office for National Statistics



**School land:**

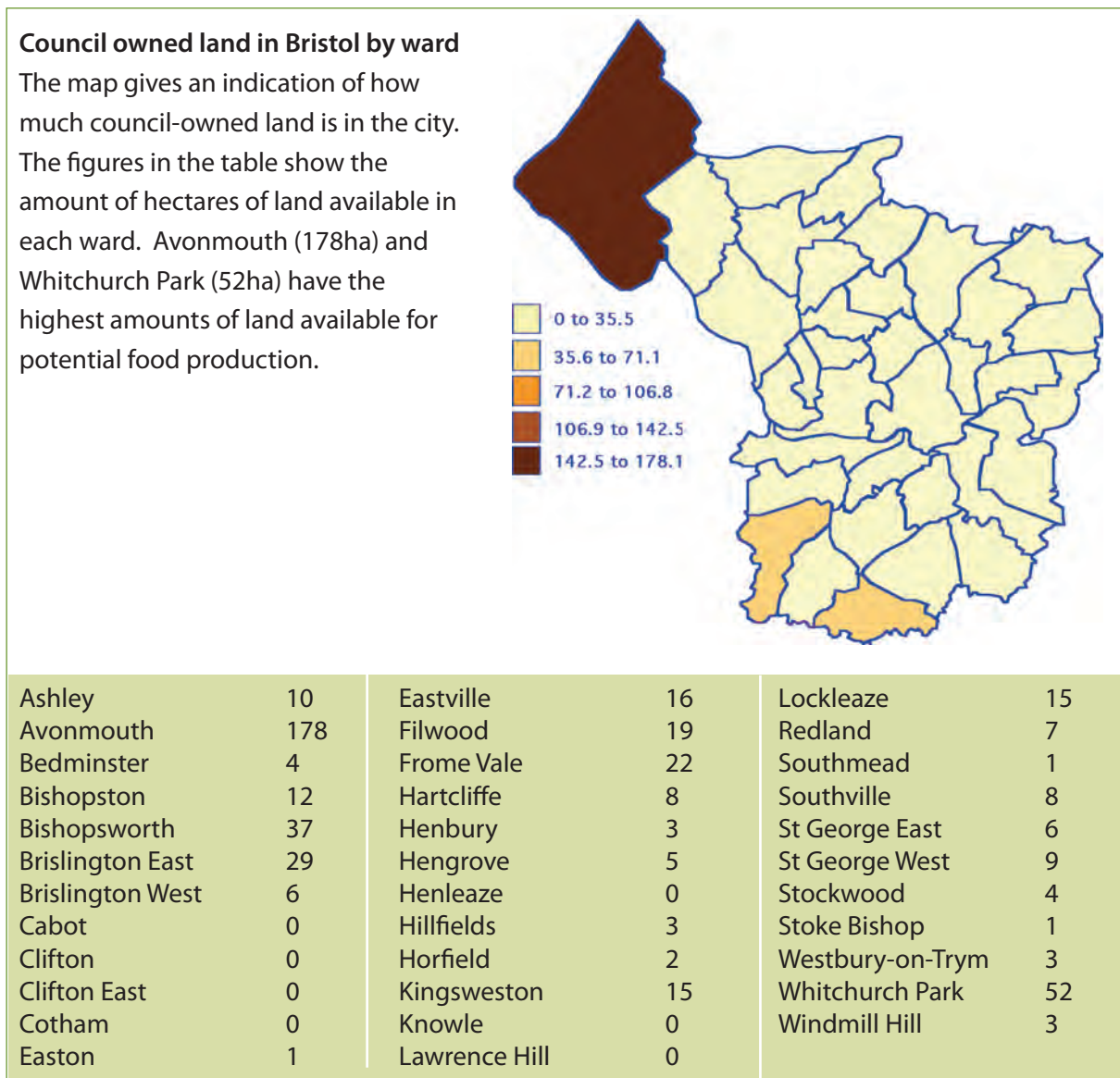
The amount of school-owned land is currently unknown. If Bristol’s 190 schools each grew food on an average area of 20 square meters that would total just over 3.8 hectares of school grounds. <sup>(6)</sup>

**Private property:**

Land available within properties owned by commercial companies, institutions and private landlords is unknown. For example, residential homes for the elderly often have significant grounds that could be used for market gardening.

**Conclusion:** If we add the Defra figure (1438 hectares) and city areas (930 hectares) of land together but exclude the 239 hectares of council owned farm/agricultural land and 47 hectares grazing land (assuming they are already counted as registered agricultural holdings in the DEFRA figure of 1438 hectares), then there may be a total of 2082 hectares of land available for food production in Bristol. This includes existing farmland and smallholdings, allotments, a proportion of council-owned empty land, a proportion of land within school grounds and private gardens and 20% of parks and green spaces if this could be made available. It excludes other privately owned land, although there is potential here also.

Figure 13: Council owned land in Bristol by ward



Source:  
6. BCC website & staff

## 12.6 How much food could be produced in Bristol?

In terms of the amount of productive land available it is possible to estimate the quantity of food that could be produced in Bristol. This will of course require more than just land, as knowledge, skills, experience and time are all essential.

### 12.6.1 Vegetable production on farm land in Bristol

If Bristol has around 2,000 hectares of land potentially available for food production, this might be enough land to produce around 10,000 tonnes of vegetables. Based on available figures, Bristol's total annual vegetable requirements may be around 60,000 tonnes per year. 10,000 tonnes therefore represents around 16% of its annual vegetable requirements.

The Peak Oil report <sup>(7)</sup> raised the question about whether Bristol could be 50% self sufficient in fruit & vegetables. 50% of vegetable requirements for 400,000 people would be in the region of 30,000 tonnes per year. Therefore our estimates suggest that 50% is not achievable but nevertheless a significant quantity could be produced within the city. (See appendix 7 for source of figures)

### 12.6.2 Vegetable production on allotment land in Bristol

*'The average gardener grew on their 300 square yard plot 745 kg of fruit and vegetables, the highest value items being things like raspberries and currants.'*

(*'What is your plot worth?'* survey 2008-2009: National Society of Allotment and Leisure Gardeners)

Based on figures from a year-long Bristol allotment trial there is the potential for 3,800 allotment plots in Bristol to collectively produce £2,660,000 worth of fruit and vegetables <sup>(8)</sup>.

In terms of weight, Bristol's 3,800 allotment plots could collectively produce 2,831,000kg of fruit and vegetables (or 2,831 tonnes) which would contribute around 4%-5% of the city's requirements.

### 12.6.3 Roof Space

This study has not looked at available food space in Bristol but evidence from around the world suggests that it is another potential resource for food production in urban areas. There are numerous innovative examples of roof growing food projects in urban settings, using flat roofs on apartment blocks or offices <sup>(9)</sup>.

Thorntons Budgens supermarket 'Food from the Sky' initiative in Crouch End, London is a small franchised supermarket which is using its flat roof to grow a selection of organic fruit, vegetables and salads in containers. It is a collaboration between the store, a local social enterprise and the local community. The roof garden produce is sold in the store once a week in the growing season at a special stand run by garden volunteers <sup>(10)</sup>.

Food can also be grown in streets (for example the Totnes nut tree project); in window boxes, on balconies and by the sides of buildings. In 2010 the London 'Capital Growth' project, which aims to establish 2012 new food growing spaces around the city by the year 2012, ran an 'Edible Estates' competition to encourage the use of small areas of land for food in and around London housing estates <sup>(11)</sup>.

#### Sources:

7. Osborn S. Building a Positive Future for Bristol after Peak Oil. Bristol Partnership. October 2009

<http://www.bristol.gov.uk/ccm/content/Environment-Planning/sustainability/file-storage-items/peak-oil-report.en> Accessed 26 May 2010

8. Steve Clampin, Allotments Manager, Bristol City Council

9. <http://www.cityfarmer.info/2010/10/12/> for international examples

10. [www.thorntonsbudgens.com/social-environment/food-from-the-sky](http://www.thorntonsbudgens.com/social-environment/food-from-the-sky)

11. [www.capitalgrowth.org/edibleestates/](http://www.capitalgrowth.org/edibleestates/)



## 12.7 How much food growing is going on around the city?

The city has a very active allotment community of 66 active sites alongside a number of groups and organisations that are involved in urban food production and in food education activities including food co-ops and buying groups. The Bristol Food Network (a network of individuals and groups concerned about sustainable food) has been gathering data on community food growing activity around the city. Map 5 summarises information about schools, cooking clubs, gardening, adult cooking classes and lunch clubs. It shows a high level of food-related activity within some of the more deprived areas of the city. While it cannot show all the community growing and cooking activities taking place in the city, it gives an indication of the current scale of activity. It also shows the level of interest and potential to engage new audiences in community food activity thereby helping to build community engagement in developing a more resilient food system.

With some planning and organization, it would be possible to increase Bristol's 'urban agriculture' and connect up the various 'patchwork' food producing areas around the city through a centrally co-ordinated 'city food hub'. Some of the parkland could be included, for example Stoke Park farm land <sup>(12)</sup>. Links could be made to supply local greengrocers, community markets, community kitchens and cooking classes. Avon Organic Group which is open to everyone who is interested in promoting organic gardening and organic foods, already has ideas along these lines and is talking with other groups in the city including the Bristol Food Hub, a not for profit organization that runs food related workshops and practical activities in the community, and the Bristol Food Network. If the city food growers collaborated on working towards a specific food production target, supported by communications with Bristol residents and by organization of distribution and sales, this could become a valuable element of food knowledge and resilience for the city. If this could also be connected with food supply from producers around the city region, then this would constitute a significant step towards developing a more resilient food system. Growing Communities, a social enterprise in London has pioneered a combined food production and distribution model that could be applied in Bristol, based on sourcing food from concentric circles or 'food zones' around the city. (See appendix 2)



Growing Communities, Hackney – 'community-led trade' supporting local producers.

Growing Communities supplies food into Hackney from over 40 farms around London, many of whom also attend a weekly farmers market (London's only 100% organic farmers market).

The enterprise distributes fruit & vegetable bags to various drop-off points, from which customers collect, and it also runs a shop. High value perishable items are grown in and around Hackney on small 'patchwork market gardens' by growers who are part of the Growing Communities apprenticeship scheme, and supply into the central food distribution. The Growing Communities food production and distribution model is based on a carefully considered set of principles that all relate to developing a more resilient food system. The model is available for other community groups to use.

[www.growingcommunities.org](http://www.growingcommunities.org)

Case study 10, Growing Power, is from the USA and gives an idea of how an urban agriculture social enterprise can make a significant contribution to a city on several fronts.

Source:

12. Feasibility Study for the Stoke Park Project, Bristol City Council in partnership with South Gloucestershire Council, Natural England and Local Residents

## CASE STUDY 10:

## Growing Power – urban agriculture social enterprise



Growing Power is an active urban farm in Milwaukee, USA. It produces large quantities of vegetables and fruit in its greenhouses, raises goats, ducks, bees, turkeys and freshwater fish – in total 159 varieties of food based on the only land within the city limits zoned as farmland. The farm has 14 greenhouses on two acres of land in the midst of a northern suburb of the city. It operates as a food distribution hub and training centre. It also has a 40-acre rural farm outside Milwaukee, with five acres devoted to vegetable growing, hays, grasses, and legumes which provide food for the urban farm's livestock.

The project uses worms to composts 6 million pounds of food waste a year, including the farm's own waste, material from local food distributors, spent grain from a local brewery and coffee grounds from a local café. Growing Power's farm shop is a vital community meeting place and provides 35 jobs in an area of high unemployment. The farm shop is the only place for miles around that sells fresh produce, free-range eggs, grass-fed beef, and homegrown honey.

[www.growingpower.org](http://www.growingpower.org)

(See full case study, appendix 11)

## 12.8 How much land would be needed for Bristol to be self sufficient in food?

Although this appears to be a hypothetical question, it is useful when linked to the bigger question of 'what is the best use of agricultural land in the UK in the future in order to increase self-sufficiency?'

### 12.8.1 Bristol's 'food footprint'

Geofutures<sup>(13)</sup> have developed a 'food footprint' mapping system which uses Simon Fairlie's<sup>(14)</sup> 'Livestock Permaculture' agricultural model in which 1 hectare of combined agricultural and forestry land for food, fibre and fuel production supplies 4.4 people. That is 0.2 hectares per person. Fairlie's conclusion is that Britain can feed itself if a transformation occurs in agricultural practices, land use and food supply systems. The map below gives an indication of the amount of land that would be required for the population of Bristol, and also shows how this land requirement starts to overlap with other communities. (See more details in appendix 2)

Bristol city's population is around 400,000 people, so the city would need just under 100,000 hectares of land. However the population of the wider city region is more like 1 million (covering N Somerset, B&NES, S Glos), so that would require over 200,000 hectares. According to the Defra figures (see section 4.3) there is over 800,000 hectares of agricultural land available in Bristol, Somerset, Gloucester and Wiltshire. Therefore a quarter of the land currently used for food production in the West of England would be needed for the Bristol city region. However relatively large towns like Swindon and Gloucester not far away have their own food footprints which overlap with Bristol's food footprint.

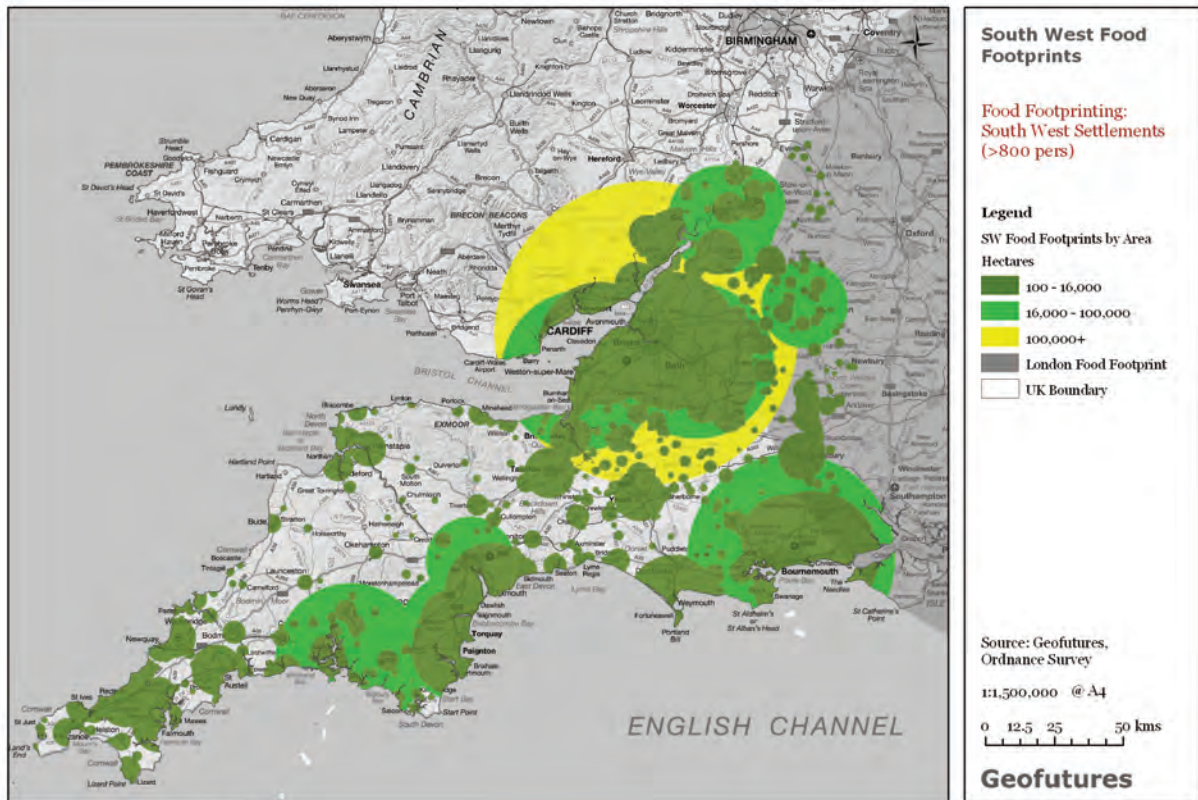
Sources:

13. Geofutures GIS tools. Food footprints: re-localising UK food supply July 2009 <http://www.geofutures.com/2009/07/food-footprints-re-localising-uk-food-supply/> (Accessed Feb 2011)

14. Fairlie S. Can Britain Feed Itself? The Land 4 Winter 2007-8 p18-26 <http://transitionculture.org/wp-content/uploads/2007/CanBritain.pdf> (accessed Feb 2011).



Map 6: South West food footprints



### 12.8.2 Feeding the Bristol city region population from a network of organic farms based on a sustainable diet

The Soil Association has calculated figures for feeding populations from a sustainable low carbon organic farming system that uses rotations, based on typical yields from a mixed organic farm ie animals and crops (see appendix 1B). The Soil Association has also looked at organic farming figures based on a changed diet and changed land use in the future, accepting that there may be a forthcoming shift in diet towards less meat and more vegetables due to energy and climate change issues and associated cost. Given that an average organic farm size is approximately 100 hectares, they propose as a new approach, networks of organic farms working together to supply a range of products though a 'central hub'.

*'The food hub would form different relationships with different farms and there would be no one route for food to the community.'*

(Romsey Enquiry by Design – food and farming within the proposed new development: Phil Stocker, Soil Association, 2009)

Based on the Soil Association's future sustainable diet figures, it would require a network of 5,000 organic farms to feed the city region's 1,006,600 residents with basic staple food items of dairy products, beef, lamb, chicken, eggs, cereals, vegetables<sup>(15)</sup>. It is well within the limits of the land currently available in the West of England and is a lower amount of land than the Simon Fairlie model, largely because unlike Fairlie's calculation it does not take account of land needed for fuel, textiles (or beer). (For more details on these calculations see appendix 1B). For recent figures on organic systems production see the Reading University report 'England and Wales under organic agriculture: how much food could be produced?' by Philip Jones and Richard Crane<sup>(16)</sup>.

### 12.8.3 Food storage

In the context of increasing food system resilience within the community through increased urban food production and cooking with fresh ingredients, the inevitable issue of food storage needs to

Sources:

15. 'Romsey Enquiry by Design – food and farming within the proposed new development': Phil Stocker, Soil Association, 2009)

16. <http://www.apd.reading.ac.uk/AgriStrat/projects/org-exec.html>

be considered. Food storage is both a traditional domestic skill and important within the food industry. The storage of food is important for several reasons, including preparation for periods of scarcity, using surplus at times of harvest and enabling a balanced diet throughout the year. At a domestic level, managing a household food store or pantry based around cooking from scratch using fresh produce with minimal waste and within careful budgets is a vanishing skill. This report has not looked at this issue in any more detail but it is an important element of building resilience in the food system.

## 12.9 Summary of key points

### Vulnerable groups

- 🍏 Those with lower incomes will be harder hit by increased staple food prices and several authoritative international reports suggesting that global food prices increases will be inevitable.
- 🍏 The dunnhumby supermarket purchase data suggests that families and young adults are increasingly buying pre-prepared and convenience ready meals rather than cooking from scratch. This suggests a loss of cooking activity, and most likely the absence of cooking skills within these groups in particular, thus making them vulnerable to any disturbances that might affect the availability or price of such foods such as increased fuel prices impacting on the processing and refrigeration costs required for pre-prepared and convenience foods.
- 🍏 Older people are more likely to buy more cook from scratch food items but access to shops is vital and those who experience the greatest difficulties in food shopping are more likely to be at the greatest nutritional risk.

### Food production potential within Bristol

- 🍏 An estimated 2,000 hectares of land is potentially available in and on the outskirts of the city. This could be used to grow high value perishable crops like salads and greens and soft fruit as well as more tree crops for fruit and nuts in public spaces. (See appendix 2)
- 🍏 Using the Soil Association figures, Bristol city's requirements (for 400,000 people) of 60,000 tonnes of vegetables per year would require 12,000 hectares of land. If Bristol has around 2,000 hectares land (this figure includes allotment land) potentially available for vegetable production, this might be enough land to produce around 10,000 tonnes of vegetables which could meet 16% of the city's requirements.
- 🍏 Based on data from a year's food production assessment on a typical Bristol allotment, Bristol's 3,800 allotment plots alone could potentially produce some 2,831,000kg of fruit and vegetables (or 2,831 tonnes) which would contribute 4 - 5% of the city's requirements. This amount of fresh produce could collectively be worth over £2.5million which would represent a significant saving to household food bills as well as supplement diets nutritionally through the provision of a wide range of vitamin and mineral requirements

### Land required for producing Bristol city region's staple food requirements

- 🍏 The city region area has approximately 1,006,600 residents and, based on the Soil Association's figures, would need 500,000 hectares of land to produce an adequate range of staple food items in a low-carbon production system. The Soil Association suggests that in the future this could be possible and would require a network of around 5,000 organic farms working together in collaborative hubs.
- 🍏 There are as yet no blueprints for the best way to re-allocate land use for increasing food self-sufficiency in the UK the future. The Geofutures model and the Soil Association calculations suggest that Bristol city region would require up to a quarter of land currently available within the West of England, possibly less, to produce a good amount of staple food items.



A vertical strip on the left side of the page shows a close-up of green corn cobs. The kernels are vibrant green and tightly packed. The background is a soft, out-of-focus green, suggesting a field of corn.

13. How can we assess the resilience of Bristol's current food system?

## 13. How can we assess the resilience of Bristol's current food system?

Each day we eat food with hardly a thought as to how it arrived on our plate. Yet as we have seen in the preceding chapters, the range of inputs that combine to put it there is breathtaking in its scale and complexity. In Section 2 (Context) some key concerns were described. These formed the basis for why the 'Who Feeds Bristol?' report was commissioned. In this section we summarise how we might approach the task of moving our food system towards a more resilient position.

### 13.1 Inputs, outputs and threats

When thinking of the resilience of our food system we need to be aware of all the inputs, which currently we take for granted, and we need to consider how confident we can be as to their continued availability.

We also need to consider the outputs of the current system, and whether some may have negative impacts now and in the future.

Thirdly we need to be mindful of threats and impacts we will face in coming decades. Resource depletion, population growth, environmental degradation and economic instability are not just probable, they are certain.

Below is a summary of key inputs, outputs and impacts for our food system. Relating these to the information about our food system reveals that all are relevant for Bristol given our current and increasing dependence on imports, complex supply chains, industrialised agriculture, long distance transport, refrigerated warehousing, and the progression away from diversity of independent businesses and local wholesale markets.

#### 13.1.1 Key Inputs

- 🌱 Fertile agricultural land
- 🌱 Seeds, some under monopoly control
- 🌱 Water, including infrastructure for storage and distribution
- 🌱 Sunlight
- 🌱 Chemical fertilisers and chemical pest control agents
- 🌱 Capital intensive and specialised plants for industrial scale farming, processing, packaging, manufacturing, warehousing, refrigeration, including maintenance and/or replacement services
- 🌱 Cheap flexible labour, 24 hour, and migrant to cope with seasonal working
- 🌱 Animal feeds
- 🌱 Materials for packaging
- 🌱 Finance and insurance
- 🌱 Legal and contracting services
- 🌱 Logistics and distribution
- 🌱 Routes to market and retail infrastructure
- 🌱 Fuel



### 13.1.2 Key Outputs

- 🍌 Variety of fresh and manufactured foods, and range of quality and affordability
- 🍌 Employment and economic exchange in broad range of sectors including equipment supply and infrastructure, advertising, logistics, IT systems etc
- 🍌 Degradation of soil, loss of biodiversity, pollution of water courses, greenhouse gas emissions, noise and air pollution from transport, rainforest clearance for growing animal feed
- 🍌 Progressive reduction in workforce on the land, and in local distribution, local wholesale, independent retail and small scale food businesses
- 🍌 Adverse impacts for illegal workers in UK, knock-on impacts on welfare and health services, and labour issues in other countries
- 🍌 Poor productivity in calories of fossil fuel per calorie of food energy produced (likely 5 calories or more of fuel to produce one calorie of food, contrast with other models eg mixed, low-input, agro-ecological approaches to farming with much wider diversity of crops that use 1 calorie fuel to produce 5 calories of food)
- 🍌 Many households and individuals reliant on shops beyond walking distance, and without skills or facilities for cooking in the home
- 🍌 Waste products going to landfill including packaging and food waste
- 🍌 Obesity, diabetes, heart disease related to excess calorie consumption and high fat, salt, sugar processed foods

### 13.1.3 Key threats

- 🍌 Fossil fuel depletion with consequent volatile price, shortages and knock-on impacts for economic growth
- 🍌 Water shortages due to loss of aquifers, droughts, and growing population demand
- 🍌 Scarcity of other natural resources including for example phosphates
- 🍌 Biodiversity loss leading to crop failures
- 🍌 Shortage of land for food due to soil degradation, loss of agricultural land to building development, competition from land use for biofuel
- 🍌 Extreme weather events including floods, storms, heat, drought, and severe cold, affecting crops and impacting on transportation and other elements of the supply chain
- 🍌 Economic shocks leading to collapse within key sectors including the banking sector, and failure in other infrastructure sectors
- 🍌 Price volatility and speculation causing loss of food access for vulnerable sections of society and triggering social unrest
- 🍌 Continued loss of plurality and diversity in food markets due to increasing monopoly of giant food businesses, consequent continued loss of local capacity and skills in food production
- 🍌 Increasing likelihood of short term failures in transport system and refrigeration infrastructure due to extreme weather, fuel stoppage, grid failure, industrial action, conflict etc means that 'just-in -time' long distance distribution networks could become a vulnerability rather than a strength

## 13.2 How concerned is the UK Government about food resilience?

In Britain, until the early 1990s, secret food stocks of easily stored basics were held officially. Now the Government depends on retailers like Tesco to keep 'buffer' reserves which means that food security is currently in the hands of multi-national businesses. Whilst government has clear duties and accountabilities to the entire population the same does not apply to a multinational business whose legal duty is to produce profits for shareholders. The nature and consequences of this relationship has not yet been tested in anything other than short term localized incidents <sup>(1)</sup>.

Source:

1. Hungry City: How food shapes our lives'; Carolyn Steel, 2006

The recent Labour Government acknowledged the need to ensure that the UK can grow enough food to feed itself sustainably in the years to come. 'Food 2030' set out their vision for a sustainable and secure food system for 2030, and the steps needed to get there <sup>(2)</sup>. Their priorities were:

1. Enabling and encouraging people to eat a healthy, sustainable diet
2. Ensuring a resilient, profitable and competitive food system
3. Increasing food production sustainably
4. Reducing the food system's greenhouse gas emissions
5. Reducing, reusing and reprocessing waste
6. Increasing the impact of skills, knowledge, research and technology

The UK government published its 'UK Food Security Assessment: Detailed Analysis in August 2009', and this was updated in January 2010<sup>(3)</sup>.

A weakness of the Food Security Assessment report is that it explicitly supports the contemporary official government position which is that peak oil is not an issue. This is despite a thorough assessment by the UK Energy Research Centre<sup>(4)</sup> concluding that the peak in conventional oil production is likely before 2020, and despite acknowledgment by the International Energy Agency<sup>(5)</sup> that world crude oil production has plateaued and has not regained its 2006 peak. In recent months the Energy Secretary Chris Huhne has indicated in media interviews (*September and December 2010*) that oil price shocks will hit the economy very seriously, and that although we do not know when oil production will start to decline the UK needs to ensure that it is not dependant on volatile oil markets. This is the first concrete evidence that the UK government may be starting officially to recognise the significance of peak oil.

The UK Food Security Assessment uses a system of green, amber and red lights to rate a range of risks to UK food supply and distribution, both for the current situation and for the future (5-10 years ahead). Food chain resilience is scored amber for areas like diversity of oil supply, business continuity planning and average retailer grocery stocks. At global level the ratings are red or amber for global land use, fertiliser usage, and water withdrawal by agriculture. The report notes that 'diversity within the domestic supply chain promotes resilience as well as competition' which is perhaps a recognition of concerns about adverse market impacts of the dominance of the major chains in food retail. <sup>(6)</sup>

### 13.3 How concerned should we be?

The lists of inputs, outputs and impacts suggest there is cause for concern. Our current direction of travel is only wise if;

- 🍏 We are confident of cheap oil for ever,
- 🍏 We have a never ending supply of new fertile land, aquifers, and mature rainforests to replace those that have been lost,
- 🍏 We ignore the health damage, particularly for children, due to the shift to highly processed and heavily promoted poor quality food, and
- 🍏 We ignore the damage caused by labour markets using exploited workers.

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#### Sources:

2. 'Food 2030' and 'Food 2030: How we get there'; DEFRA; Jan 2010
3. <http://www.defra.gov.uk/foodfarm/food/pdf/food-assess100105.pdf>
4. Sorrell S, Speirs J, Bentley R, Brandt A, Miller R. Global Oil Depletion. An assessment of the evidence for a near-term peak in global oil production. UK Energy Research Centre. August 2009. ISBN 1-903144-0-35 <http://www.ukerc.ac.uk/support/Global%20Oil%20Depletion>
5. World Energy Outlook 2010
6. UK Food Security Assessment: Summary; DEFRA Food & Farming Analysis Group, Jan 2010



## 13.4 What would a more resilient food system look like?

The question of what constitutes a resilient and sustainable food system is exercising the minds of policy-makers the world over.

### 13.4.1 Bristol Food Charter

In 2010 Bristol City Council adopted a Food Charter committing them to ten key ambitions, and is now working with key partners to establish a 'Food Policy Council' with the aim of ensuring that all residents and visitors in Bristol have access to:

- 🍏 Healthy food
- 🍏 Produced in such a way that non-renewable resources, soil integrity, and biodiversity are maintained rather than depleted
- 🍏 That is affordable and fairly available to all
- 🍏 Where workers involved in the food system are fairly treated, and
- 🍏 With production, distribution, retail and supply systems that are resilient to the impacts of projected climate change and fossil fuel depletion.

### 13.4.2 Principles of a Healthy, Sustainable Food System

For a more thorough and detailed expansion of what some of these aspirations could entail, it is helpful to look at recent work lead by the American Planning Association, together with health related associations in the USA. The APA statement on 'Principles of a Healthy, Sustainable Food System' (June 2010) is reproduced below:

#### APA Statement 'Principles of a Healthy, Sustainable Food System' (June 2010)

We support socially, economically, and ecologically sustainable food systems that promote health – the current and future health of individuals, communities, and the natural environment.

A healthy, sustainable food system is:

#### Health-Promoting

- 🍏 Supports the physical and mental health of all farmers, workers, and eaters
- 🍏 Accounts for the public health impacts across the entire lifecycle of how food is produced, processed, packaged, labelled, distributed, marketed, consumed, and disposed

#### Sustainable

- 🍏 Conserves, protects, and regenerates natural resources, landscapes, and biodiversity
- 🍏 Meets our current food and nutrition needs without compromising the ability of the system to meet the needs of future generations

#### Resilient

- 🍏 Thrives in the face of challenges, such as unpredictable climate, increased pest resistance, and declining, increasingly expensive water and energy supplies

#### Diverse in

- 🍏 Size and scale – includes a diverse range of food production, transformation, distribution, marketing, consumption, and disposal practices, occurring at diverse scales, from local and regional to national and global
- 🍏 Geography – considers geographic differences in natural resources, climate, customs, and heritage
- 🍏 Culture – appreciates and supports a diversity of cultures, socio-demographics, and lifestyles
- 🍏 Choice – provides a variety of health-promoting food choices for all

(cont.)

**Fair**

- 🍏 Supports fair and just communities and conditions for all farmers, workers, and eaters
- 🍏 Provides equitable physical access to affordable food that is health promoting and culturally appropriate

**Economically Balanced**

- 🍏 Provides economic opportunities that are balanced across geographic regions of the country and at different scales of activity, from local to global, for a diverse range of food system stakeholders
- 🍏 Affords farmers and workers in all sectors of the system a living wage

**Transparent**

- 🍏 Provides opportunities for farmers, workers, and eaters to gain the knowledge necessary to understand how food is produced, transformed, distributed, marketed, consumed, and disposed
- 🍏 Empowers farmers, workers and eaters to actively participate in decision making in all sectors of the system

A healthy, sustainable food system emphasizes, strengthens, and makes visible the interdependent and inseparable relationships between individual sectors (from production to waste disposal) and characteristics (health-promoting, sustainable, resilient, diverse, fair, economically balanced, and transparent) of the system.

### 13.5 Summary

Our current food system for Bristol relies on a range of complex inputs many of which are highly vulnerable to disruption from resource depletion, population growth, environmental degradation and economic instability. Some of the consequences of the current system are actually detrimental, now and/or in the future. System redesign is therefore desirable in order to minimise these negative impacts.

The UK Government recommends that food for the UK needs to be produced more sustainably, with less greenhouse gas emissions, with less reliance on imports, better health, more competition within the marketplace, and less waste. The UK Government does not yet officially acknowledge peak oil as an issue.

Bristol can play a major role in reshaping the way that food is produced and procured for residents and visitors to the City. The information contained in chapters 1 to 12 of this report provides the starting point for planning how to make changes. The June 2010 statement prepared by the American Planning Association is a helpful description of a sustainable, resilient and healthy food system.



A vertical strip on the left side of the page features a close-up photograph of green corn cobs. The kernels are vibrant green and arranged in neat rows. A semi-transparent green bar is overlaid on the top portion of this image, containing the text.

14. What are the city's positive food planning powers?

## 14. What are the city's positive food planning powers?

*'Both food and cities are so fundamental to our everyday lives that they are almost too big to see.'* (Carolyn Steel, *Hungry City*, 2006)

### 14.1 'Food systems planning'

Over half the world's population now live in towns and cities and the United Nations predict that this will increase to 80% by 2050. Alongside this increase, there is evidence that as people move from rural to urban areas, their diets change too, with an increased demand for the water and energy-intensive western meat-based diet. Cities already consume around 75% of the world's food and energy resources, indicating the need to review the relationship between the food supply system and urbanization.

*'There is a very real question over the sustainability of the current global and UK food systems. Cities as major consumers of food have a part to play in reducing their environmental impact, they can do this by ensuring use of local and seasonal food, using procurement to ensure this and other important issues such as fair trade are addressed. This should involve a role for local decision makers including politicians, planners, food activists and citizens.'* (Dr Martin Caraher, Professor of Food and Health Policy, City University, London)

There is a growing 'food systems planning' movement in North American cities which is now making its way towards Europe and the UK via the academic community who are drawing attention to the role of planners in shaping city food systems. The 'food planners' are mixed stakeholder groups of professionals, food businesses and campaigners who share the same vision of a sustainable food system. A strategic integration of agriculture and the food system into city plans, ie 'food systems planning', contributes to sustainable regional development plans and addresses a wide range of issues including: climate change and environmental concerns; employment and the local economy; education and training; health and wellbeing; social justice and inclusion.

Professor Kevin Morgan has identified that the 'urban foodscape' has many facets and that there are therefore several different angles from which cities can begin to improve resilience in the food supply system:

- 🍏 Public plates where low cost masquerades as best value
- 🍏 Food service where transparency is absent
- 🍏 Supermarkets where localisation should be a planning requirement
- 🍏 Public spaces for farmers' markets and healthy food zones around schools.<sup>(1)</sup>

Cities actually generate potentially valuable resources for food production in significant amounts including heat, energy and organic waste. Therefore, rather than being a part of the problem, with careful planning cities can provide food system solutions that recognize the multi-functionality of agriculture and integrate food into urban planning and design practices. The food system interconnects with many activities that are central to urban planning.

*'The planning process needs to focus on the concept of 'ecological public health' and take into consideration a number of challenges or 'new fundamentals: climate change; fuel / oil / energy; water; land use; biodiversity; labour; population; urbanisation; affluence and inequality; nutrition transition; healthcare costs; waste.'*

(Professor Tim Lang, Centre for Food Policy, City University, London).

Source:

1. Feeding Bristol in the future conference; March 2010; Professor Kevin Morgan, School of City and Regional planning, Cardiff University

'Food systems planning' provides cities with the opportunity to build a green economy with food at its heart in a way that builds a mutually supportive relationship between the city and its hinterland. It enables the development of a 'productive green infrastructure' embedded within the city, where green spaces have multiple benefits and can function as 'green corridors' linking the city with its rural surroundings, for example: cycle and walking routes; food production; leisure space; carbon sequestration; nature conservation; improved recycling of nutrients and energy. This approach can facilitate the design of smart 'closed loop' systems that make efficient use of both organic waste and renewable energy resources for agriculture that are generated by the city, and the application of green building technology and adaptive re-use of sites and buildings.

### 14.2 Integrating food into new-build housing plans

An innovative planning and design process for a new-build area of housing in the South of England addressed ways to integrate sources of home grown, local and regionally produced foods supplied by regional farms and food related businesses into the development proposals. The designers stated that the proposals resulted in both new and existing communities having better access to supplies of healthy fresh ingredients and food helping to provide:

- Increased food security in the face of uncertain economic stability and energy supplies
- Healthy ingredients leading to improved diets
- Business and employment opportunities for local residents
- Improved environments, wildlife and landscapes
- Opportunities to be involved in food production and reconnect with the land
- A chance for community activities around food combined with new economic models to improve access to healthy food across all income brackets <sup>(2)</sup>

### 14.3 Some ideas for positive planning powers for supporting the development of a resilient food system for Bristol

The town planning system helps to ensure that development takes place in the public interest, in economically, socially and environmentally sustainable ways. The core elements of the planning system are development plan-making, for example the Bristol Development Framework, and development management including the determination of planning applications, planning enforcement and pre-application advice.

Although planning can influence different elements of the 'food system' from growing, processing, manufacturing and distribution to retail, consumption and waste, traditionally food has not been considered as an explicit aspect of development planning or looked at in a holistic way. A recent report by Sustain reviews the range of national planning policies that could support more sustainable food systems, and the reasons they are not routinely being put into practice<sup>(3)</sup>. There are ways in which the planning system could start to support the development of a resilient food system and these are listed below.

#### 14.3.1. Food growing:

- A strong presumption against the development of any of the best and most versatile agricultural land (grades 1, 2 and 3a) and general protection of all other agricultural land (grades 3b and 4) except the very poorest (grade 5). Increasing building densities in urban areas will reduce the pressure to develop agricultural land.

Sources:

2. 'Romsey Enquiry by Design – food and farming within the proposed new development': Phil Stocker, Soil Association, 2009)
3. 'Good planning for good food: How the planning system in England can support healthy and sustainable food': Sustain, January 2011; [http://www.sustainweb.org/pdf/Good\\_planning\\_for\\_good\\_food.pdf](http://www.sustainweb.org/pdf/Good_planning_for_good_food.pdf)



- 🍃 A specific use class or land use designation in plans for 'food growing' that includes agricultural land, allotments and community growing areas. There may already be protection in terms of green belt or green open space and although this protects against built development, it does not prevent loss to other open space uses such as golf courses and sports facilities.
- 🍃 New housing developments to encompass allotments as part of the redevelopment, or mitigation through off-site provision. Bristol's Allotment Strategy has a standard of 7 allotments per 1,000 people that is reflected in Bristol's draft Development Management policy DM6.
- 🍃 Private amenity space such as gardens to be designed and located to facilitate opportunities for growing food. Policy DM6 aims to do this.
- 🍃 Policies to encourage green roofs or greenhouse roofs on large buildings that could be used for food production.
- 🍃 Policies to encourage temporary or interim uses such as food growing, pending development of some sites.

#### 14.3.2 Food processing and manufacture:

- 🍃 Promoting food business parks where business clusters and networks could develop supported by access to sustainable transport services, where higher air quality and other environmental standards would apply, in contrast to general industrial and warehousing areas. Examples of good models and practice include: Cross Hands Food Park, Carmathenshire; Southglade Food Park, Nottingham; European Halal Food Park, Norfolk; Malmo Park, Hull and Fleetwood Fish and Food Business Park, Lancashire.

#### 14.3.3 Food distribution and retail:

- 🍃 Policies regulating town, district and local centres to protect and restrict the loss of independent food retailers and address the issue of access to food. It is a common practice to have policies restricting the loss of premises to non-retail uses such as for estate agents, banks, pubs and take-aways (eg Bristol's draft Development Management policy DM2), but not the loss of food shops to other retail uses such as fashion stores. To achieve this would require a change in the Use Classes Order or the use of Article 4 directions.
- 🍃 Policies covering the sub-division or amalgamation of retail units. This would mean that proposals to merge a number of small shops (200 – 250 sq metres) together to create one large store or supermarket would need planning permission, or vice versa.
- 🍃 Allocate sites for markets in all urban community centres. Bristol's draft Development Management policy DM6 encourages new street markets.
- 🍃 Restrict the development of hot-food takeaways near schools, youth clubs and parks as part of a strategy to support healthy eating, particularly by children and young people.

#### 14.3.4 Food consumption:

- 🍃 Housing developments, including flat conversions, to include specification of a minimum size for kitchens offering sufficient space to store and cook fresh foods.

#### 14.3.5 Food waste:

- 🍃 All residential developments including flat conversions, hotels, care homes, prisons, and student accommodation to incorporate space for separate food waste storage. This is included in Bristol's draft Development Management policy DM21 on recycling and refuse provision for new developments.
- 🍃 All food retailers and catering establishments to have separate food waste storage to facilitate food recycling and composting.
- 🍃 Providing facilities for both organic waste composting and food waste recycling. Policy 3 of the draft West of England Joint Waste Core Strategy covers 'open windrow composting'.

#### 14.3.6 Community benefits:

- Section 106 on payments and community infrastructure levy/tariff to support healthy eating and local food initiatives, for example via allotment provision.

#### 14.3.7 Changes to national planning policy to support resilient food systems:

In December 2010, the Government introduced the Localism Bill, which reforms the planning system, and launched a consultation on its plans to consolidate existing policy statements, circulars and guidance documents into a single national planning policy framework. These provide opportunities to better integrate food into national planning policy. Ideas to do this include:

- Strengthen the advice in paras 28 & 29 of PPS7 (Sustainable Development in Rural Areas (2004)) so that the protection of best and most versatile agricultural land for food growing, defined as land in grades 1, 2 and 3a of the Agricultural Land Classification, is given the highest priority, rather than just taken into account alongside other considerations.
- There should be a general protection of all other agricultural land, in particular grades 3b and 4, except the very poorest grade 5 land. This is in contrast to the current national policy that little weight in agricultural terms should be given to the loss of agricultural land in grades 3b, 4 and 5 except in areas such as uplands where particular agricultural practices may themselves contribute in some special way to the quality and character of the environment or the local economy.
- Create a new use class for food growing that would cover agricultural land, market gardens, small holdings, allotments and community growing areas.
- Amend national planning policy statement (PPS4) and the advice in Circular 11/95 (para 106) so that the impact on the resilience of the food system would be a material consideration in planning decisions, including the use of conditions, as well as issues such as the impact on the character, diversity, vitality and viability of a centre.
- Planning policy can currently manage the loss of shops to other non-retail uses such as estate agents, banks, pubs and take-aways. However it does not address the issue of access (or lack of it) to food. To protect food shops, the current Use Class A1 (retail) should be split into two separate use classes - food retailing and non-food retailing. This would mean that proposals to change from a food store to another type of shop (eg clothes, books or electrical goods) would need planning permission, or vice versa.
- Amend the General Development Order so that amalgamation and sub-division of retail units would not be considered permitted development and thus be subject to planning permission. This would mean that proposals to merge a number of small shops (200 - 250 sq m) together to create a larger store or supermarket would need planning permission, or vice versa.
- To stop big retail developments dominating a centre, undermining small local shops or creating local monopolies there should be national upper size limit or floor space cap on all retail development. Local authorities would be free to set a lower cap if that is more appropriate to their local circumstances. The Republic of Ireland has a cap of 3,000 sq metres net retail floorspace outside Dublin (3,500 sq metres in Dublin), which can be reduced down to 2,000 sq metres locally.
- To stop the growth of "Clone Town Britain", planning authorities need to be able to limit the number or proportion of retail and restaurant multiples or chains within a centre, neighbourhood or local authority area<sup>(4)</sup>. This will need changes in national planning legislation

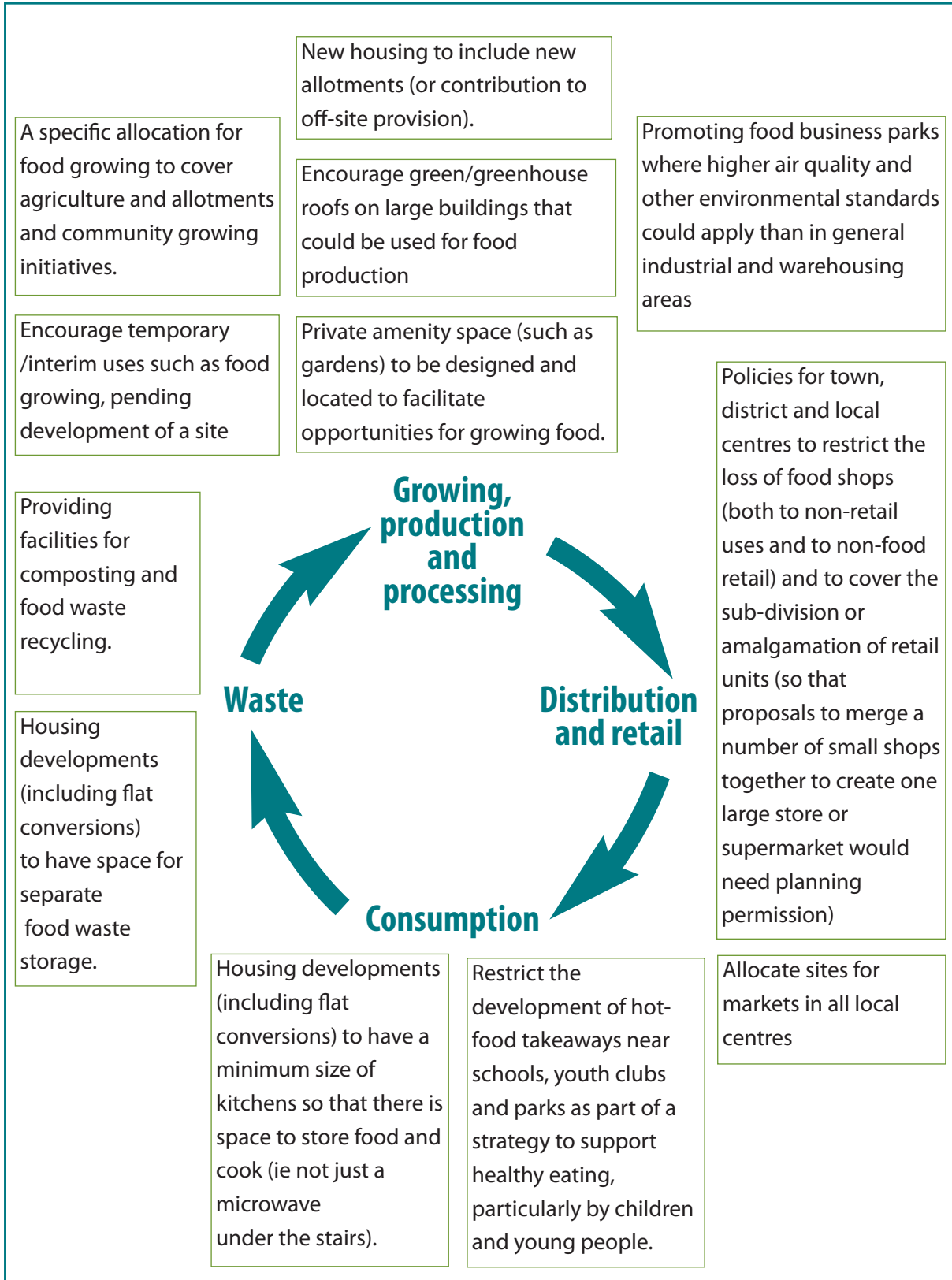
Source:

4. Re-imagining the high street: Escape from Clone Town Britain: the new economics foundation, 2010

and planning policy and an agreed definition of a chain. Chains are a range of retail outlets with some or all of the following elements: under the same ownership (but can include franchise operations); share a brand and central management, usually with standardised business methods and practices; dealing in the same merchandise. New Economics Foundation defines a multiple as having ten or more branches. Chains can also be defined by their geographic spread ie they may operate within a local area, or within a region or across the country.

**Footnote:** *Agricultural Land Classification: Grade 1 – excellent; Grade 2 - very good; Grade 3a - good; Grade 3b – moderate; Grade 4 – poor; Grade 5 - very poor (See appendix 10 for more detail)*

Figure 14: planning powers for food



(Data source: Stephen Hewitt, Bristol City Council)



## 14.4 Summary & key points – development of a resilient food system for Bristol

'Food systems planning' provides cities with the opportunity to build a green economy with food at its heart in a way that builds a mutually supportive relationship between the city and its hinterland.

There are a number of ways that the planning system can have an impact on all of the six main components of the food system (from production through to waste) and could therefore start to support the development of a resilient food system as well as improve new housing and green space developments. This may become easier with the recent introduction of the Localism Bill.

For Bristol this approach could provide exciting new economic, environmental and social benefits as well as supporting development of a more resilient food system. It would also enable Bristol to become a truly 'Green Capital'.

## 15. What are the specific strengths and vulnerabilities in Bristol?

The Bristol Peak Oil <sup>(1)</sup> report concluded that if we want to build a positive future for Bristol without oil, with regard to food supply, we need to prioritise the following:

- 🍏 support for farming methods which build soil fertility and don't rely on pesticides and artificial fertiliser
- 🍏 protection of productive farmland on the outskirts of the city
- 🍏 promotion of more seasonal food from local producers
- 🍏 a switch to a reduced meat-based diet (selecting meat reared in grass and forage fed, over meat from intensive production systems)
- 🍏 encouraging people to grow their own food in private gardens, community gardens and allotments
- 🍏 utilising public space to produce food.

So how well is Bristol doing? Although the 'Who Feeds Bristol?' report can only be a snapshot of what is going on, it provides a baseline study of current activity and an initial indication of food system strengths and vulnerabilities that relate to the recommendations in the Peak Oil report.

### 15.1 Assessment of strengths

The research looked at strengths in the food system that serves Bristol and the city region and we have much cause to celebrate. The summary below has been drawn from the analysis in the previous sections of this report. Case studies have been selected to illustrate some of the innovation that is already making a contribution to strengthening the resilience of Bristol's food system

#### 15.1.1 Production & processing

The city region still has a basic supply infrastructure in place in the form of local food producers and processors. The smaller scale abattoirs are a crucial link in the supply of locally produced meat in the region. The meat processing and manufacturing companies provide an infrastructure for using all parts of an animal carcass (pies, sausages etc), which is an important link in the supply chain for using the cheaper cuts of meat and preventing waste. Butchers provide a unique and highly skilled meat cutting service for the public which is a crucial link in the chain regarding 'full carcass utilisation' ie they take in whole carcasses and cut it up, minimizing waste. They also often cook the cuts of meat that are less popular and turn them into sausages and burgers, providing a range of prices to customers.

Bakers also provide a specialist food processing service which delivers a fundamental staple food item to the public in the form of bread and baked goods. There has been much debate about the quality of mass-produced cheap white bread and possible links to food-related health issues. The real bread campaign has drawn attention to the issue of additives in bread and promoted 'real' bread as a healthy option that is made with the simple ingredients of flour, water, salt and yeast.

*The making of Real Bread doesn't involve the use of any processing aids, artificial additives, flour 'improvers', dough conditioners, preservatives, chemical leavening or, well, artificial anything.'* (The Real Bread Campaign, [www.realbreadcampaign.org](http://www.realbreadcampaign.org))

Retaining an infrastructure of skilled food professionals like bakers and butchers who can provide high quality services will form an important part of a resilient food system.

Source:

1. Osborn S. Building a Positive Future for Bristol after Peak Oil. Bristol Partnership. October 2009

<http://www.bristol.gov.uk/ccm/content/Environment-Planning/sustainability/file-storage-items/peak-oil-report.en> Accessed 26 May 2010

The producer survey indicated that there is capacity to supply more staple food items into the city region. Although in reality local supply is very small scale, there is a wide range of staple food items still being produced in the South West and in the area surrounding Bristol city region. This offers market opportunities to increase local production and provision of cereals, dairy, fruit and vegetables.

In particular, although a number of farmers in the South West have stopped growing vegetables, they are still farming and therefore, for the time being, their skills are still potentially available. Currently there are some twelve different organic box schemes operating around Bristol providing households with fresh seasonal organic fruit and vegetables. There is 'Best and Most Versatile' land well suited to fruit and vegetable production close to Bristol and within the city region. For example, in the last year two new community supported farms are being established that link in with Bristol: Sims Hill Shared Harvest Community in the north of Bristol <sup>(2)</sup> and the Community Farm in Chew Valley (see case study below). Both these community farms offer the public an opportunity to become members and get more involved in their own food supply.

### CASE STUDY 11:

#### The Community Farm, Chew Valley – local ownership and community involvement



The Community Farm is 8 miles from the centre of Bristol in the Chew Valley. It intends to be a community-owned farm enterprise based on environmental sustainability and community engagement that will supply local and organic seasonal produce. The enterprise has been established on 22 acres of land which are currently in production growing organic vegetables. If successful this will be extended to 50 acres in the next few years. The Farm is being developed in partnership between the landowner, the growers, and the 'eaters'.

Established as a Community Benefit Society it launched a public share offer in November 2010 giving local people the opportunity to own a share in the farm. If sufficient investment is raised, this will enable the newly formed not-for-profit Community Farm to buy the existing assets and take on the horticultural growing operation. It is about creating a prototype for a different kind of farming.

People living in Bristol, Bath and the Chew Valley area will be able to take out annual membership. Benefits to members will include a discount on vegetable boxes, involvement in growing, community farmer days, horticulture courses and the satisfaction of supporting a social enterprise that is helping to build the local food economy. The farm runs volunteer days and work days for staff groups from organisations based in Bristol and Bath.

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

(See full case study, appendix 11)

#### 15.1.2 Market support for local food and drink producers

Support to local food and drink businesses has been a significant area of work for both South Gloucestershire and North Somerset Councils, both have produced local food directories and run local food events. Bristol is home to the Love Food Festival which showcases over 150 producers four times a year and the annual Organic Food Festival and Bristol Wine & Food Fair.

Source:

2. <http://simshillsharedharvest.wordpress.com>



Bath was the first city in the UK to establish a farmers market in 1997, which now hosts 47 producers, while Bristol swiftly followed now hosting 34 producers. Both markets run weekly and remain successful. In total there are now 39 markets being run across the city region providing business opportunities for around 350-700 businesses, demonstrating there is significant consumer demand for local food and drink products.

### 15.1.3 Independent and specialist food retail and wholesale

There are still independent butchers, fishmongers, bakers, delicatessens and specialist shops selling locally produced foods, whole foods and organic produce. These businesses provide evidence of consumer commitment to a more personal shopping experience, for local products from local retailers.

Bristol still has a varied wholesale sector which supplies the network of independent retailers. It includes a large fruit and vegetable wholesale market which sells fresh produce in bulk to independent retailers and caterers. It also has meat and seafood wholesalers, and wholesalers of cooked, frozen and fresh foods.

## CASE STUDY 12:

### The Better Food Company, St Werburghs – organic and local retail



The Better Food Company was established in 1992 by the owner Phil Haughton and has 6 shareholders. The motivation for setting it up was a passion for sustainable food and farming. The company has 65 employees and £2.2 million turnover. The business activities cover Bristol and its surrounding area combining retail, a fruit and vegetable box delivery scheme and a wholesale operation. In total, the business sells local foods to around 7,000 people per week.

The company sources local food products from 150 suppliers of various sizes and from two large distributors, Essential Trading based in Bristol and Queenswood Natural Foods Ltd based in Somerset. Local supply is a top priority for the business after organic, so it sources fresh vegetables, fruit, meat, milk, cheese, eggs and some cereals direct from farms within a 50 mile radius of Bristol.

In contrast to the model for most supermarkets of non-involved company shareholders, the Better Food Company is looking at a community/business partnership approach without expectation of big returns. Based on the company's commitment to local involvement the Better Food Company is helping to establish the Community Farm as a community owned food enterprise. If successful the Community Farm will run organic vegetable growing on a not-for-profit basis and with community involvement.

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

(See full case study, appendix 11)

### 15.1.4 Catering

The city has a lively 'eating out' culture. There are some inspirational examples of excellent catering at affordable prices. For example, St Werburghs Farm Café attracts many young families and offers locally sourced tasty meals made from fresh ingredients, including meat from the city farm and fruit and vegetables supplied by local allotment holders. The Canteen on Stokes Croft, part of the

Coexist Community Enterprise Company, is serving two course meals made from fresh locally sourced ingredients, often for just £6-7 (see case study 5 on Leigh Court farm, page number 59).

Bristol city has a significant number of catering companies and amongst them are catering entrepreneurs who are providing more sustainable diet options to local communities. Section 9 of this report referred to the Soil Association's 'Food for Life' catering mark as a tool for driving change towards a more resilient food system. There are already a number of Bristol caterers working towards this catering mark.

### 15.1.5 Community food activity

The city already has a surprisingly high level of community food growing and cooking activity, though much of it is unseen. This includes community allotments and gardens, community orchards, food buying groups, community kitchens, small organizations running food growing courses and supporting residents to grow food in their gardens and neighbourhoods or as members of specialist gardening groups. For example:

- HHEAG (see case study page 94 and appendix 11) offers a successful model based on many years experience of tackling food issues and disadvantage in a community context.
- Transition Bristol network is instigating food activity and discussion around the city related to community resilience in a wider sense (finance, energy, food, transport, housing).
- Bristol permaculture network has over 400 members
- Bristol Food Network has made recommendations for building a sustainable food system<sup>(3)</sup> and has developed a project proposal 'Dig Bristol' supporting existing local food groups in the network to engage more people in growing food and work towards transforming Bristol into a 'food-garden city'. Local Food Lottery funding has been applied for but unfortunately has not been successful.

## 15.2 Assessment of vulnerabilities

Alongside the celebration of strengths, there are some potentially significant threats to agricultural land and food supply in the South West and in the Bristol city region.

### 15.2.1 Climate change impacts in the South West

Higher temperatures, drier summers and wetter winters are expected across much of England. There is risk of more frequent extremes of drought and flooding and agricultural crops in Britain may need to be moved to new areas as the threat of both drought and flooding rises in the coming decades. Crops that need irrigation, such as sugar beet and vegetables, may be forced to shift from the drier east of England to the wetter west of the country where water will be more available.<sup>(4)</sup>

The main changes that the South West region is likely to see will have a significant impact on farming and food production including warmer drier summers with heat stress and droughts, wetter milder winters and flooding, and rising sea levels<sup>(5)</sup>.

Impacts could include crop damage and loss, soil erosion, drainage and building maintenance costs, disruption to transport, stress to livestock and increased fire risk. The South West region is already vulnerable to existing climate events. Impacts of the flooding in Gloucestershire in the summer of 2007 included lost water and power supplies, disrupted transport routes, 1177 hectares of arable land and 2185 hectares of grassland were flooded over an area of 33 square kms. Farmers lost an average £1,150 per flooded hectare and the cost to UK agriculture was an estimated £50 million<sup>(6)</sup>. (See appendix 10)

Sources:

3. A sustainable food strategy for Bristol, 2009

4. 'Water for Agriculture: Implications for future policy and practice'; Royal Agricultural Society of England; Oct 2010

5. UK Climate Projections 09, UKCP09

6. Climate South West. <http://www.oursouthwest.com/climate/>



### 15.2.2 Safeguarding land for food production

*'Protecting highly productive soils which could be used for agriculture and food production if required, and valuing the other benefits, for example aquifer recharge and flood control, whilst allowing for other required land use changes such as the creation of new habitats, coastal change and the development of the rural economy, will also allow us to respond positively to the challenges of food security in the future. This high quality resource is also that which is likely to be most flexible, productive and efficient in response to inputs and can therefore make a positive contribution to sustainable agriculture.'*

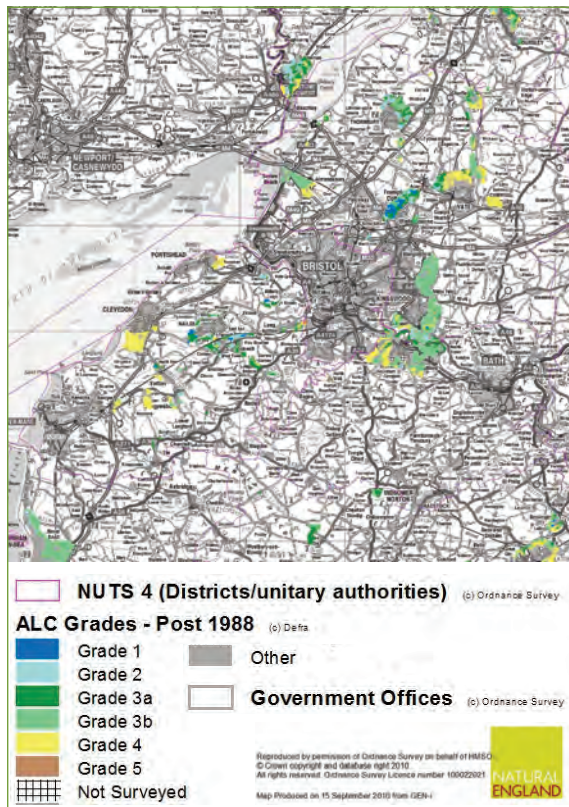
(Gill Shaw, Natural England, 2010)

If Bristol city region is going to be more food resilient in the future it will need to both value the multiple benefits that arise from sustainable agriculture and land management and ensure that productive land in the city region remains available for food production.

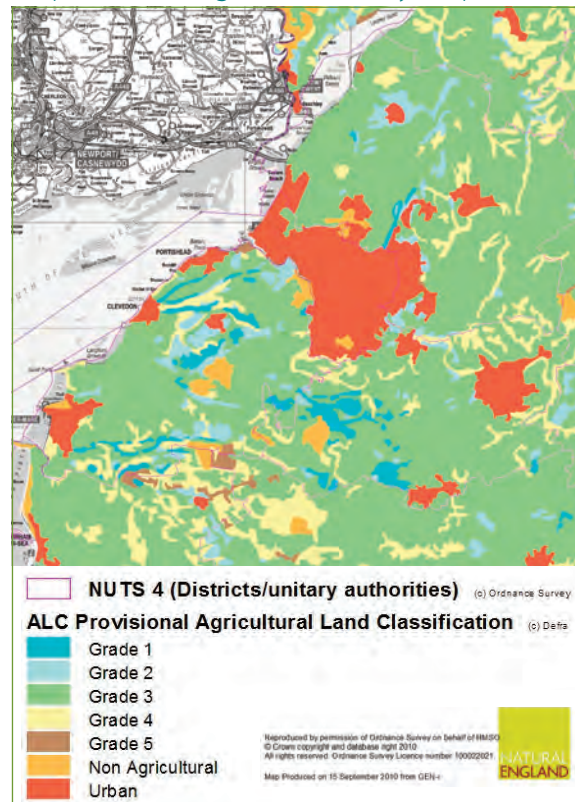
Within the city region the two potential threats to agricultural production are loss of agricultural land to new urban development or loss of land due to flooding. It is important to have a clear understanding of where the best agricultural land is located and the risks to these areas. As yet there has not been any detailed assessment by any of the four unitary authorities of the risk from flooding in the region to agricultural land and the impact this might have on food production and supply in the future. Nor is there a cross-authority approach to decisions about change of land use in the context of building the region's food security and resilience.

There are maps that show the status of soils in the region and where the most valuable agricultural land is located. There are separate maps that show flood risks. Ideally these two sets of maps need to be overlaid and further investigation carried out into the potential impacts of flooding on food production and supply in the region.

Map 7: Bristol region land classification map



Map 8: Bristol region soil survey map

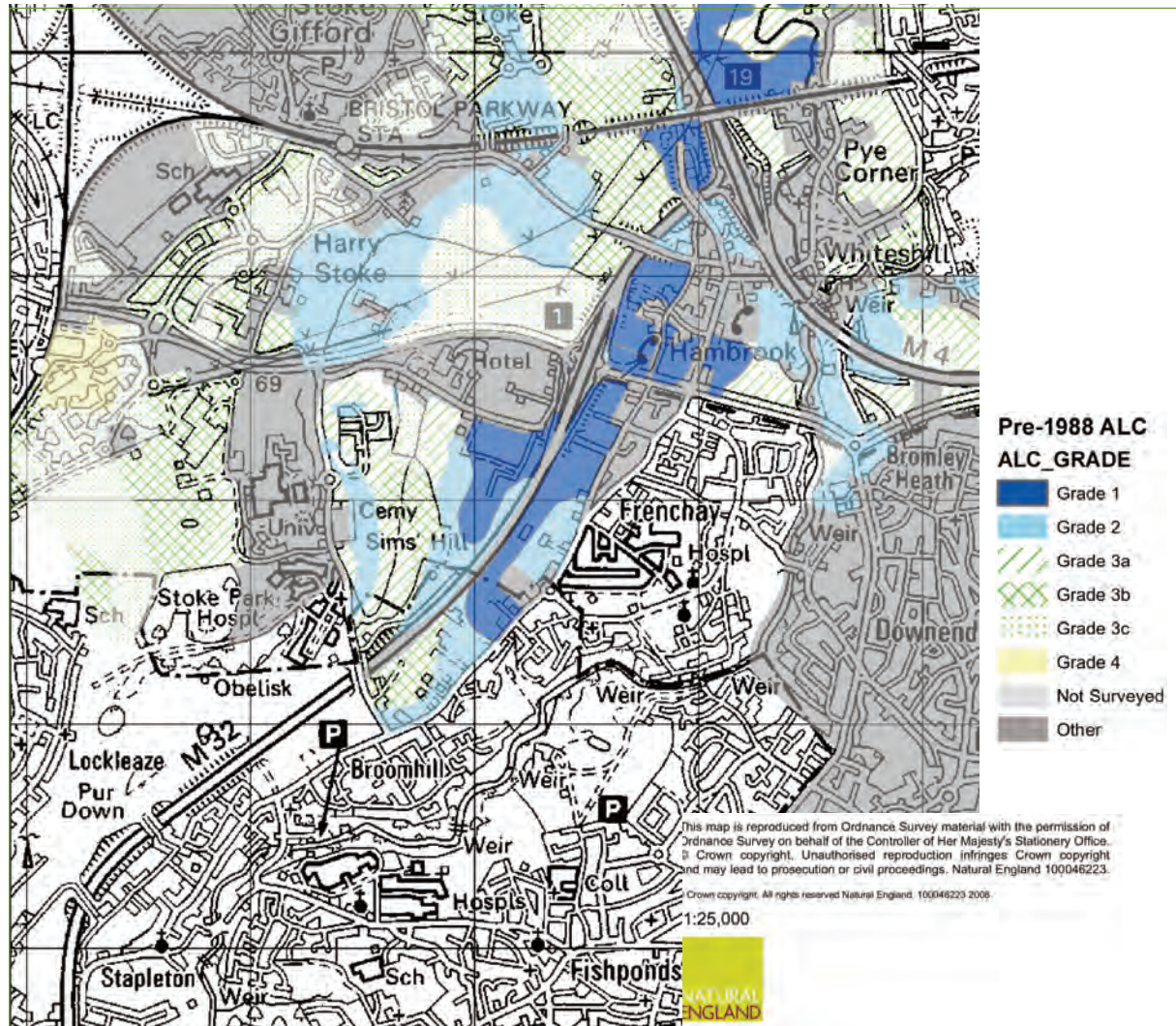


Maps 7 and 8 give an overview of land quality across the Bristol city region. Grading is used to describe the different types of land and suitable usage. Grades 1, 2 and 3a are considered the best land for agricultural use and producing food, in planning policy this is referred to as 'Best and Most Versatile Land'. Non-agricultural land is predominantly large areas of woodland and areas used for the military.

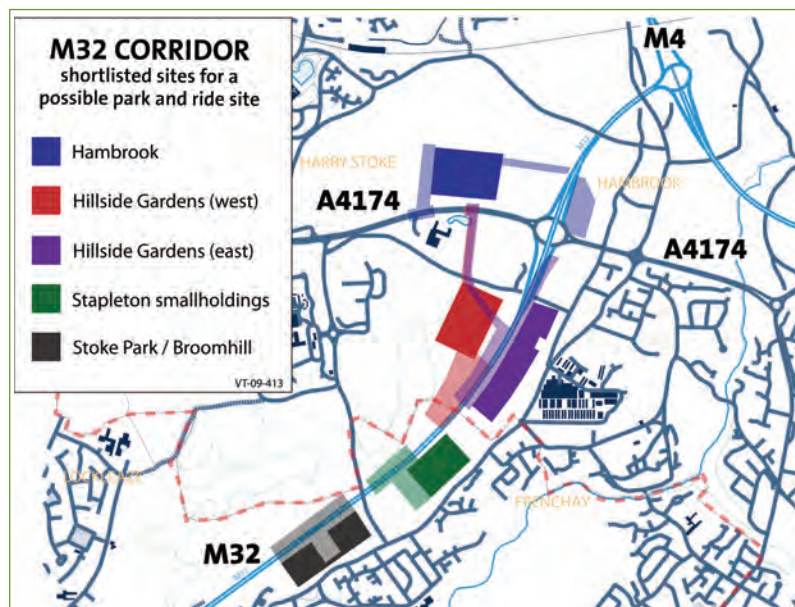


There has been strong debate about the use of 'Best and Most Versatile land' (the top three classifications of best quality agricultural land) for the new 'park and ride' alongside the M32. Map 9 below shows areas of grades 1, 2 and 3a: good quality agricultural land on the very perimeter of the city is currently under threat of development and map 10 shows the shortlist of sites for a new park and ride. A key element of a resilient food plan would be to protect the best quality agricultural land for future food production within the Bristol city region.

Map 9: Agricultural land classification – Bristol



Map 10: M32 corridor, shortlisted sites for a possible park and ride





### 15.2.3 Threats to food distribution

The depletion of fossil fuel reserves and subsequent increase in fuel prices will have a significant impact on food distribution. But flooding is also a threat to the current food distribution system. Bristol City Council flood risk maps indicate that there is a risk of Avonmouth flooding, which would affect the largest area of agricultural land within the city boundary and also would affect the food warehousing, distribution centres and the M5 itself. A risk of flooding on sections of the M32 has also been identified<sup>(7)</sup>.

### 15.2.4 Loss of farms and farmers

This report has not carried out an assessment of loss of farms and farmers in the city region or the South West, but this is a key issue in terms of future food system resilience for the whole of the UK. Today less than 2% of the UK population works in farming. Defra agricultural census data suggests that between 1951 and 2003 there was a 79% decline in the number of farm workers. In his book 'Sow Shall We Reap' author Colin Tudge suggests that the UK would need 20% of its population to work in farming in order to produce the required amount of home-grown food needed under the coming constraints of climate change and peak oil.

### 15.2.5 Loss of diversity in both retail and production

The importance of diversity in nature is to spread risk and increase resilience. The growth of supermarkets which supply the bulk of our food here in the UK has had the effect of reducing diversity in retail and also in the range of foods produced on farms due to the economies of scale that are required. So far this business model has significantly increased the efficient supply of food but we do not know how it will fare if fossil fuel resources become depleted.

### 15.2.6 Vulnerabilities elsewhere in the food system

As identified in Section 13 our food system is also dependant on numerous inputs from other sectors of the economy including for example transport, finance, and specialised equipment.

## 15.3 Summary

For Bristol and the city region, increasing food system resilience could include increasing food supply from the local area and the surrounding regions with as much production of staple items as possible including fruit and vegetables, dairy, meat, fish, eggs, bread, cereals and grains. It might also mean producing a small proportion of fresh fruit and vegetables in the city where possible. These staple items could be produced in low carbon production systems using renewable energy and working with soil nutrients that are carefully recycled and built up without dependence on costly imported inputs. To be able to feed themselves on these staple food items, residents of Bristol would need to know how to prepare and cook meals from fresh raw seasonal ingredients. We would also need to reduce our consumption of meat and dairy while eating more fruit and vegetables.

Who are the most effective players to affect such changes is an ongoing discussion? Bristol has strong foundations on which to build a resilient food system for the future, with many of the key building blocks already in place including land, skills, entrepreneurs and community interest. However, the city is not making the most of the potential for local food supply and currently risks losing some of these building blocks due to economic pressures and the impact of large scale supply chain business models. Building a resilient food system is about ensuring diversity, flexibility and mitigating potential risks.

Source:

7. Stephen Sodek, Flood Risk Manager, Bristol City Council

The main challenges are to:

- Increase the amount of fresh seasonal staple food items available through a wide range of markets, making the most of the available potential for local supply, thereby ensuring its viability in the longer term by strengthening market opportunities.
- Ensure that more staple food items are produced closer to urban areas. It may be that we are at a tipping point on the high street and that if attention is not given to maintaining and in some cases re-establishing a more diverse mosaic of food retailers with strong links to local producers and processors, these opportunities could be lost.



## 16. Suggestions for action

If we are to make progress towards a more sustainable and resilient food system then key players with influence will need to work together to make this happen.

To make this possible it is recommended that a Food Policy Council should be established for Bristol. This will be a small group of committed individuals with expertise and local involvement in food production, preparation, distribution and retail. Their task will be to drive necessary changes with the common objective of achieving a healthier, more sustainable and resilient food system.

Food Policy Councils have been used to good effect in North America. Experience to date shows that the following characteristics are associated with success<sup>(1)</sup>:

- 🍏 A formal relationship with and the support of the local authority is essential.
- 🍏 In order to achieve their potential, FPCs need a strategic vision, access to decision making, clear objectives and evaluation mechanisms, and a strong understanding of the local food system.
- 🍏 Successful FPCs act as a strategic umbrella to coordinate all aspects of system change.
- 🍏 Those which focus on a single issue tend to falter; those which succeed are properly grounded in the local area and include high profile, rapid impact projects which demonstrate how principles can be put into action.
- 🍏 FPCs are most successful when they build on local groups and campaigns and tackle issues that have already been identified as needing to change; they bring authority to grassroots movements.
- 🍏 Successful FPCs often start by researching and mapping the local food system and by campaigning for a local food charter or strategy.

The key strands of work identified in this report as priorities for the Food Policy Council are as follows:

- 🍏 Establish a food systems planning process with key stakeholders.
- 🍏 Safeguard the diversity of food retail.
- 🍏 Safeguard land for food production in and around the built up area.
- 🍏 Support urban community food production and processing.
- 🍏 Redistribute, recycle and compost food waste to support production of more food.
- 🍏 Protect key infrastructure, transport and distribution networks for supply of food from the surrounding area.
- 🍏 Increase the opportunities for local food producers to sell into the city.
- 🍏 Support community food enterprise models.
- 🍏 Engage Bristol's community in transforming the city's food culture.

Source:

1. Harper A, Shattuck A, Holt-Giminez E, et al. Food Policy Councils: Lessons Learned Development Report No 21. Institute for Food and Development Policy. December 2009 <http://www.foodfirst.org/en/foodpolicycouncils-lessons> (accessed Feb 2011)

Figure 15: Developing a resilient food plan: summary of priorities



The remainder of this section considers each of these work themes in turn.

### 16.1 Establish a food systems planning process with key stakeholders:

'Food systems planning' refers to the strategic integration of agriculture and food into the way that cities are designed, planned and managed. It can address issues relating to the environment, employment, local economy; education, training; health, climate change social justice and inclusion.

### 16.2 Safeguard the diversity of food retail:

A healthy, sustainable and resilient food system needs diversity of production and supply, and requires market and regulatory mechanisms that recognise the importance of health, environment, and local prosperity. Potential measures for strengthening the wholesale, distribution and retail mechanisms for sustainable food are contained throughout this report. The Food Policy Council will need to implement these measures using business support mechanisms, transformation of procurement practices particularly in the public sector, and planning powers.

### 16.3 Safeguard land for food production in and around the built up area:

The following suggested actions could contribute to this

- 🍌 **Mapping and audit of productive land in Bristol and in the city region** – including identification of best agricultural land, and of risks and threats from impacts such as change of land use and flooding.

- 🍏 **Establishment of mechanisms for initiating urban agriculture** – including consultation with current leaseholders and government officers, review of local authority policies on agricultural land lettings and usage, further work on ‘Empty Land’ plots in Bristol, food-mapping in conjunction with Connecting Bristol and Geofutures. By way of an example, positive work has been undertaken by Devon and Gloucestershire County Councils to consolidate their landholdings and transfer selected farms to community enterprise.

### 16.4 Support urban community food production and processing:

Informed by the mapping and audit work, potential initiatives to expand local food production could include:

- 🍏 Development of glass horticulture units, linked sustainable fish farming and integrated composting enterprises using eco-technologies of recycled waste, water and heat system at Avonmouth (see also Growing Power and Cardboard to Caviar case studies).
- 🍏 Establishment of ‘forage’ areas of fruit and nut trees and shrubs in municipal parks and green spaces, planting of community orchards.
- 🍏 Expanding allotments and community gardens for community growing, developing community kitchens for processing surplus food, for example preserves and jams, soups and juices.

These work strands need to build on and support the considerable grassroots activity that already exists in Bristol. Funding to enable the ‘Dig Bristol’ project proposal developed by Forum for the Future could significantly enhance existing and new community food growing in the City.

### 16.5 Redistribute, recycle and compost food waste to produce more food:

The findings of this report show there is considerable scope for making better use of food waste, and for involving supermarkets, wholesalers, distributors, caterers and householders in this work.

### 16.6 Protecting key infrastructure, transport and distribution networks for supply of food from the surrounding area:

The key infrastructure for food production and distribution needs to be the subject of a risk assessment and resilience plan.

### 16.7 Increase opportunities for local food producers to sell into the city:

The findings in this report suggest considerable scope for supporting the numerous small businesses involved in local and sustainable food. Mechanisms that enable collaboration and co-operation could bring about an overall expansion of the market share for local and sustainable food. Areas of work that need to be considered include;

- 🍏 **Customer awareness:** The majority of producers would welcome support to find and target new customers interested in local food, together with additional marketing and promotion of their products’ quality and value. Producers requested market research to identify new customer groups interested in buying local food. In particular, market intelligence on bulk buyers of staple products like eggs, dairy, meat and vegetables (eg schools, hospitals, care homes etc).
- 🍏 **Transport & distribution:** Costs of transport and distribution prevent many of the producers from selling their products to retailers, caterers, hotels, restaurants and pubs in the Bristol area. Producers identified the need for development of a local food hub for the Bristol area to



co-ordinate collection from farmers and growers, wholesale orders, and refrigerated transport and distribution services. A local food hub could be established possibly as a collective community enterprise or mutual interest company – offering membership and shares to local producers. It could be established in St Philips or on the edge of Bristol possibly at the M5/M4 junction or Avonmouth. Potential models, and the options and impacts need to be explored.

- 🍏 **Producer collaboration:** Lack of capacity in terms of time and staff to produce, process, transport and sell their products is a barrier to increasing local supply into Bristol. For meat producers costs for developing on-farm butchery, cold storage, labeling, refrigerated transport and staffing can be prohibitive for an independent trader. Collaboration between businesses might help with this. Some producers of local foods including meat, eggs and vegetables reported they only had sufficient volumes of produce to meet current demand from their existing outlets and for seasonal sales and would need further investment in order to expand.
- 🍏 **Increased market support, including public sector food supply:** Producers suggested a range of market support initiatives to help them sell increased variety and volumes of local foods into new markets in Bristol including schools and hospitals, retailers and restaurants. Local producers suggested there was scope to attract other farmers, growers and processors of local foods to help expand supply into Bristol. There is potential to establish additional farmers markets in districts of Bristol that are not well supplied with fresh produce.

### 16.8 Support community food enterprise models:

There is considerable scope for enabling local people to develop new means of buying their food in a way that supports local and sustainable produce. Potential suggestions include;

- 🍏 Provide support for community food enterprise models including buying groups, community farms, box schemes and food co-ops, especially in the more disadvantaged areas of Bristol.
- 🍏 Consider transferring selected Bristol City Council owned farmlands into 'local food community enterprises' - farms close to the city could be supported by the people in Bristol.
- 🍏 Explore suitable community market options for surplus food grown by tenant food producers in the city, allotment growers and gardeners.
- 🍏 Establish a local food hub and linked web-sales that reaches out to new audiences. This could be based for example, on the USA model develop 'Farm to City Market Basket' of affordably priced meat, vegetables, cheese, and fruit.
- 🍏 Work in partnership with business support agencies, for example Bristol SpaceWorks and BRAVE, to offer local food businesses access to 'enterprise development grants' with affordable finance from co-operatives; credit unions; Government schemes; community finance and re-investment models.

### 16.9 Engage Bristol's community in transforming the city's food culture:

The issue of transforming food culture is a nationwide challenge. Evidence from the past ten years within the UK local food sector suggests that even very localised and small scale activity can achieve a positive impact for the local community. The information in this report highlights many innovative projects locally and further afield. These projects need to be supported, publicised, and copied.

**Acre** an area comprising 4,840 square yards. Roughly the amount of land an ox could plough in a day.

**Allotment** dating from the sixteenth century meaning a plot of land for food growing. Allotments originated to compensate tenant farmers for loss of common land from enclosures. A full size allotment plot in England and Wales is a '10 pole plot', equivalent to 300 square yards, 250 square metres, or one sixteenth of an acre. In 1943 there were 1.4 million UK allotments, by 1996 there were 297,000. Each Bristol city allotment plot is 250sq metres,

**Anti-competitive practices** are business or government practices that prevent or reduce competition in a market, for example selling below cost, exclusive dealing, barriers to entry, and price fixing.

**Artisan** a skilled manual worker. Artisan food means products that are crafted rather than mass produced.

**Avon Organic Group** set up in 1984 to promote organic growing and organic foods in Bristol, the group is affiliated to the Soil Association and Garden Organic, meets regularly and produces an annual newsletter <http://www.avonorganicgroup.org.uk/>

**Biodigester** a means of managing waste using anaerobic micro-organisms to naturally decompose biodegradable material. The resultant gas can be used as a fuel (biogas) and the nutrient rich digested material as a fertilizer.

**Biodiversity** describes the vast range of life on earth, everything from bacteria to oak trees, blue fin tuna to human beings. Human life depends on 'natural services' (e.g. food, clean air, water, fertile soils) maintained by our biodiverse ecosystem. For example recent loss of wild bees in some locations has led to fruit trees needing pollination by hand to maintain fruit supplies.

**Biofuel** energy-rich materials (solid, liquid and gas) derived from renewable biological sources. Optimism that biofuels can substitute fully for fossil fuels must be viewed with caution, because production on such a scale would lead to deforestation, loss of biodiversity, and conflict over land needed for food production.

**Biogas** a gaseous form of biofuel.

**Biotechnology** is defined as "Any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use." Modern biotechnology includes genetic engineering (also known as genetic modification) where genes from different organisms are directly manipulated in a way that would not occur under natural conditions, with the intention of producing a range of benefits such as increased shelf life, pest, disease and herbicide resistance.

**Box schemes** are a means of linking customers directly with food producers, to their mutual benefit. Boxes with a variety of fruit & vegetables are delivered regularly usually weekly to drop off points in the city or in some schemes directly to individual homes.

**Bristol City Council Food Charter** contains 10 ambitions for Bristol and can be found on [www.bristol.gov.uk/food](http://www.bristol.gov.uk/food). These ambitions provide food policy guidance for the City Council in all aspects of its involvement with food from sustainable procurement to community supported agriculture.

**Bristol City Council Food Standards** provide guidance for minimum acceptable food standards and are put in place when City Council catering contracts are renewed. The standards are a combination of Soil Association bronze level Catering standard and the Department of Health's Healthier Food Mark standards

**Bristol City Council Climate Change & Energy Security Framework** adopted in February 2010. It sets out 25 commitments for how the City Council will work with partners to achieve the opportunities presented by the transition to a low carbon, resilient city. The overarching targets are to cut Bristol's CO<sub>2</sub> emissions by 40% by 2020 and 80% by 2050, from a 2005 baseline. [www.bristol.gov.uk/climatechange](http://www.bristol.gov.uk/climatechange)

**Bristol Food Links** was an umbrella organisation working to promote healthy, sustainable and affordable food across the City. Founded in the mid-90's, as part of Voscur, Bristol Food Links brought together a variety of sectors to support community food initiatives in their work across the City.

**Bristol Food Network** a growing network of interested individuals, groups and organizations in Bristol. They subscribe (and contribute) to the bimonthly food newsletter 'Local Food Update', and a core group meets regularly and arranges hosting of briefings, discussions etc.

**Bristol Partnership** is the Local Strategic Partnership for the city. It is a group of agencies and organizations from business, the public sector, voluntary sector, higher and further education, working together to make Bristol a successful city.

**Carbon footprint** is a measure of the carbon dioxide (or equivalent) greenhouse gas emissions associated with the production, distribution, processing, and storage for goods or services. For example, the carbon footprint of a pound of tomatoes will vary according to whether it is grown in fossil fuel heated greenhouses, how it is irrigated, and how it is preserved and transported.

**Climate Change** has always happened but current concern relates to the 0.6 degrees centigrade rise in global average temperature from 1961 to 1990, the major and continuing rise in atmospheric greenhouse gases which is certainly linked to the burning of fossil fuels and to deforestation, and the fact that human activity is the major influence although natural factors also play a part. Projected effects include rising sea levels and flooding, droughts and water scarcity, extreme weather events including storms and heatwaves, and migration and human conflict relating to shortages of food, water and productive or habitable land. Action now to mitigate and to adapt, will lessen or prevent the adverse effects.

**Community Supported Agriculture (CSA)** is a food producing system where the customers invest in production along with the growers. This gives the growers have a reliable market, while the customer can visit and be involved with the farm, and can secure fresh, fairly-priced, good quality local produce.

**Co-operative** a group of people acting together to meet their mutual needs. Worker owned co-operatives are a business model where the workforce own the business, make decisions collectively and shares the profits. The nature and function of co-operatives varies considerably.

**Consolidation** in business terms refers to the combining of separate smaller companies into larger ones, through mergers and acquisitions.

**Debt-based economics** refers to the current global economic system of 'fiat paper money' and fractional reserve banking, which means that money is essentially created from debt irrespective of any linkage to genuine assets.



**De-forestation** refers to the removal of forests, and in particular rain forests, and conversion of land to non-forest uses. The factors driving deforestation include the need for soya beans for animal feed and for palm oil for food products, cosmetics and biofuel. Rain forests are one of the earth's major carbon sinks and deforestation leads to more carbon being released into the atmosphere.

**Defra** is the UK government Department for Environment, Food and Rural Affairs.

**Diabetes** is a disorder of glucose regulation. The commoner type 2 diabetes is strongly associated with obesity and the number of people affected is increasingly sharply. There are around 1.5 million people in the UK diagnosed with type 2 diabetes and probably many more who have the condition but are not yet diagnosed.

**Foot-printing** is a way of measuring the impact of humans on natural systems. An ecological footprint is a measure of the total land area needed to produce the resources and process the waste for human society. This is the basis for the estimate that modern lifestyles are requiring the equivalent of three planet earths in order for them to be sustainable.

**Enclosures** refers to land use changes in the late 1500's under Elizabeth 1st, so that common land used for growing food and keeping animals began to be enclosed, dispossessing the poor.

**Factory Farming** refers to the practise of rearing livestock indoors at high density. The aim is to achieve highest output at lowest cost. Antibiotics and growth enhancers are needed to reduce the spread of disease amongst the animals. Chickens have been intensively reared for decades, and the practice is now being adopted for pigs and cattle. Opinions are fiercely divided regarding the benefits and harms. Concerns include issues of ethics, human health, animal welfare, environmental impacts, water pollution, economics and local employment.

**Fairtrade** the Fairtrade mark is an independent consumer label which appears on UK products as a guarantee that they have been certified against internationally agreed standards relating to working conditions, local sustainability and fair terms of trade.

'**Five a day**' is a simple health message reminding everyone that fruit and vegetables are essential for good health. The message is that everyone needs at least five portions a day of fruit and vegetables. A portion is 80g, potatoes do not count, and the message covers fresh, dried, tinned, and frozen.

**Food for Life** is a network of schools and communities across England committed to transforming food culture. The aim of the Partnership is to reach out through schools to give communities access to seasonal local and organic food, and to the skills needed to cook and grow fresh food.

**Food miles** refer to the distance that food is transported from production to consumption. The concept was introduced in the 1990s. Food miles are one element of the environmental impact of food. Many other factors in the supply chain play a part. Transport miles matter not just because of carbon emissions, but also because of the adverse impacts of road haulage on traffic congestion, noise and air pollution, road injuries and deaths, highway maintenance costs etc.

**Food Policy Council** pioneered in America with the first being established in 1982, an FPC is an officially sanctioned body comprising stakeholders from various segments of the food system, that exists to improve the way food is produced and supplied with the aims of good health, strong local economy, strong communities and environmental sustainability.

**Food provenance** much of our food at present is relatively untraceable, and may be made up of ingredients from a wide range of countries some of which have little or no welfare standards for their workforce or animals, or sustainability standards to safeguard natural resources. Produce from the UK may depend on lowly paid migrants working long hours in poor conditions that may fail to meet UK minimum standards. Organisations that are committed to sustainability will ensure they know the provenance, and the standards adhered to, for all food and food ingredients they procure.

**Foodshed** the concept of a foodshed was used in the early 20th century to describe the global flow of foods. It has recently been readopted for discussion of local food systems as a way of conceptualising the area from which it would be possible to source the food needed for a population, analogous to a watershed.

**Food Standards Agency** a UK government body responsible for food safety and food hygiene throughout the food chain, working with food producers through to local authority enforcement officers.

**Fossil fuel** energy originates from fossilised remains of ancient living organisms. Millions of years of life on earth have provided the coal, gas and oil currently being used for 95% of the world's energy needs. Since the first oil wells were drilled in the 1850s our use of fossil fuel energy has increased dramatically as has the size of the human population. Fossil fuels are a non-renewable resource, and are nearing the point of peak global production, after which the energy return on energy invested (EROI) will become less favourable, with consequences for the economy as well as for energy supply.

**Genetic Modification (GM) (also termed Genetic Engineering)** is a biotechnology technique where genes from different organisms are mixed with the intention of producing a range of benefits such as increased shelf life, pest, disease and herbicide resistance. Scientists and campaign groups are seeking to exempt seeds and farm animals from patent protection, because GM seed patents are being bought by a small number of giant biotechnology companies, which has profound consequences for food systems.

**Global food price spikes** have occurred in recent years stimulating much debate as to underlying causes. Poor harvests due to unseasonable weather, displacement of food crops by bio-fuel crops, and trends towards meat-based diets have all been implicated. The World Development Movement (WDM) has linked the spikes to international speculation on food commodities by financial institutions and is calling for market regulation to safeguard the lives and livelihoods of some of the world's most vulnerable people.

**Green Capital Momentum Group** for Bristol is a network of professionals across business, public sector, voluntary sector and environmental organisations working together to support Bristol's progress towards being a sustainable city.

**Greengrocer** shop selling fresh fruit and vegetables.

**Greenhouse gas emissions** include carbon dioxide (CO<sub>2</sub>), methane, water vapour and nitrous oxides. They are emitted when fossil fuel is burned and their presence in the earth's atmosphere leads to more of the sun's heat being retained in a way that is analogous to a greenhouse. Whilst the greenhouse effect is a natural phenomenon, the amount of warming in recent decades is projected to cause significant problems for humans.

**Hectare** an area comprising 10,000 square metres. There are 2.7 acres in a hectare, and 4,047 square metres or 4,840 square yards in an acre.

**Hydroponic** a method of growing plants in mineral solutions in water, without soil.

**IAASTD** International Assessment of Agricultural Knowledge, Science and Technology for Development. An international project aimed at making information accessible and available.

**IGD** Institute of Grocery Distribution, an industry association concerned with international food and grocery retailing and supply chain.

**Intensive animal husbandry** see factory farming.

**'Just in time'** stock management and distribution is the means by which modern supermarkets operate with only 3 days supply available at any point in time. Sophisticated information technology means that each purchase triggers procurement in the supply chain, and factors such as weather forecasts, sporting events etc (will it be ice-cream, beer or hot chocolate?) are also factored in.

**Land grabbing** is hitting the headlines as wealthy nations are buying millions of hectares overseas for food production. Concerns are being raised in relation to social justice issues, and in relation to diversion of scarce water supplies and the impacts for indigenous populations.

**Life cycle assessment** takes into account all aspects of manufacture, distribution, use and disposal to estimate the lifetime resource use for a product. This provides a more complete picture of the full costs than just the energy used in running it.

**Local economy** locally owned businesses are more likely to keep employment and wealth circulating in the local economy whereas chain businesses, especially multinationals are likely to divert wealth and jobs out of the local economy, often to another country. This loss of wealth can be compounded by failure of some large companies to pay the appropriate amount of tax.

**Meadow** grassland that is cut, as opposed to being grazed (see pasture).

**Multinational corporations** are corporations or enterprises that manage production or deliver services in more than one country. Some have budgets that exceed the gross domestic product of whole nations. They exert considerable power and influence over national and global affairs, to the extent that they have attracted criticism for lack of democratic accountability.

**NFU** founded in 1908 as the National Farmers Union, the NFU exists to champion British farming.

**Obesity** means excess body weight, caused by an imbalance between calorie intake and calorie output. Overeating and physical inactivity are the major contributors. The adverse effects for health are significant, and the role of cultural factors in affecting eating and physical activity are increasingly being recognised. The availability and marketing of processed food that is 'hyper-palatable' is contributing to development of addictive behavioural habits known as 'conditioned overeating'. 'Car-centric' built environments have designed physical activity out of everyday life. The health impacts include diabetes, high blood pressure (hypertension), heart disease, arthritis, mobility problems and depression. NHS statistics show that 24% of men and 25% of women in England are obese. If overweight is included as well as obesity, then the percentages are 66% for men and 57% for women. In children, 31% of boys are overweight or obese and 29% of girls. The prevalence of obesity has risen very steeply in recent years, and is following the pattern being seen in the USA. The definitions of overweight and obesity are based on Body Mass Index, computed from height and weight measurements. For a calculator see <http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx>



**Organic certification** involves a set of legally recognised standards for farming and growing that ensures maintenance of natural soil fertility, encourages natural predators to control pests, ensures animal welfare, limits the use of chemical inputs and prohibits use of genetically modified produce. Standards vary between different countries. There are a number of certification agencies, of which the Soil Association is amongst the best known in England.

**Pasture** grass or other vegetation used for grazing of animals.

**Peak Oil** the point at which maximum output of oil has been achieved from a well, field, or nation, after which the output will decline and the energy needed for extraction rises.

**Pesticides** any substance or mixture of substances intended for preventing or destroying pests. Organic certification sets limits on what can be used for pest control. Pesticides can be harmful to people, wildlife, soil and watercourses. Modern pesticides are designed to be short lived with reduced long-term harmful impacts but older versions may be present for many decades and can accumulate in natural systems.

**Permaculture** a word created by Australian ecologists Bill Mollison and David Holmgren, as a contraction of 'permanent' and 'agriculture'. It describes a system of design for agriculture and human settlements that mimic the relationships found in natural ecology. The aim is to achieve sustainable growing systems that are efficient and low maintenance.

**Phosphates** one of many resources thought to be reaching a downturn in supply in the near future. An inorganic chemical obtained by mining from rock, they are commonly used in fertilizers for crops.

**Procurement** the process of obtaining goods and services, starting from initial planning of what is required through to the final purchase and payment.

**Public Food Register** a register held by the local authority Public Health Services Food Safety division, of all businesses that handle food, for the purposes of enabling inspections and maintenance of food safety standards for the benefit of the public.

**Rapid appraisal:** A research approach using a team comprised of members drawn from a variety of appropriate disciplines. Rapid appraisals take only a short time to complete, tend to be relatively cheap to carry out and make use of more 'informal' data collection procedures. The techniques rely primarily on expert observation coupled with semi-structured interviewing of key stakeholders. Similar to a social anthropologist's case study approach but executed over a period of weeks, or at most months, rather than extending over several years. To date mainly been used in the field of rural development as a short cut method to be employed at the feasibility stage of project planning.

**Resilience** is the capacity to cope with and recover from adversity.

**Resource depletion** the exhaustion of natural resources, including non-renewable resources such as oil, coal, phosphates, and also renewable resources such as fish, fertile soil, and water, which come under threat if the balance of use and replacement is upset.

**Seasonal food** eating seasonally is one component of sustainable food systems. It means that highly perishable foods can be produced at the times of year that are most efficient, rather than requiring heated greenhouses, refrigerated storage, air freight etc.

**Seed saving** for thousands of years farmers the world over have saved some of the harvest for seeds to plant the following year. This practise is in effect a form of biotechnology as the seeds are saved from the strongest plants, which therefore best suit the local conditions. There are concerns that traditional seed saving is under threat due to patenting, and aggressive marketing of GM (see genetic modification) seeds by large biotech companies, together with legal action against farmers who do not buy GM and are accused of growing wind-blown patented seeds on their land illegally.

**Small holding** a piece of land under 50 acres but larger than an allotment, used for food growing and animal husbandry.

**Soil carbon sequestration** organic matter in soil contains considerable amounts of carbon. Modern intensive farming reduces the carbon storage capacity of soil, whereas organic growing increases it, therefore helping to reduce greenhouse gases.

**Social justice** based on the principles of equality, solidarity and human rights.

**Staple** the most common or regularly eaten food items in a country or society, forming the mainstay of the diet. Typically they are inexpensive, readily available and easily stored.

**Stoke Park** an area of some 350 acres of historic parkland to the north of the M32 in Bristol, in front of The Dower House.

**Sustainability** is the capacity to endure.

**Sustainable development** has been defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

**Tendering** the process of pitching or offering in order to seek a contract for goods or services.

**Tonne** a thousand kilograms, or a metric tonne

**Voscur** is a Bristol based Council for Voluntary Service working to support voluntary and community service in the City.





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