Adapting to climate change in the food industry

Actionable insights into attitudes and behaviours of food production, distribution and retail businesses in relation to managing climate risks.

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A report prepared for Defra by Social Change UK
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Collectively, the food production, distribution and retail industries are vital to the nation’s economy and for the provision of our basic subsistence. These industries contribute to greenhouse gas emissions and are vulnerable to its effects; with growers particularly at risk. Therefore, adaptation to climate change is necessary to protect the food chain and the nation’s food security today and in the future.

This report provides evidence of the current attitudes, beliefs and behaviours of over 40 small, medium and large food and drink businesses. The insight gathered during many qualitative interviews has helped to form various recommendations.

Understanding and awareness

The terminology of mitigation and adaptation was understood by almost half of interviewees, but the majority said that they were more likely to use language and phrases such as ‘protecting the environment’, ‘reducing carbon footprint’, ‘saving energy’, and ‘sustainability’.

A large majority had heard of the Climate Change Act, however, in contrast, there was an extremely low awareness of the UK Climate Impacts Programme (UKCIP), with no business utilising the tools UKCIP have made available. Most businesses were made aware of climate change mitigation and adaptation by their competitors or customers.

When asked questions about how their particular business was adapting to climate change, respondents would answer using examples which were mitigation focused. However, when we altered our language and spoke to our interviewees about adapting to extreme weather, the response altered to focus on the impact of weather, on business operations and how they were coping or adapting in response.

Attitudes and beliefs

Growers and farmers placed weather – alongside disease – at the top of their operating risks, whilst the distribution, manufacturing and retail businesses did not consider weather as a high risk, despite nearly all businesses believing extreme weather to be more frequent than it has been historically, and now impacting on their ability to source raw materials at a competitive price. The majority of all those who participated believed the food chain is at risk of extreme weather but most felt that it was not an immediate risk – with the exception of Lincolnshire’s farmers who considered the current (2012) drought to be a serious and an immediate concern.

The majority believed there to be a high commitment within their business in adapting to climate change; and it is clear that this is the case for those initiatives where potential worthwhile cost savings could be made.

“Most businesses were aware of climate change adaptation (and mitigation) from their competitors and customers”

Farmers and growers were somewhat aware of their competitors’ efforts to tackle climate change, but retailers were much more aware and driven by the actions of their competitors. When comparing their strategy to others most businesses with a large turnover believed themselves to be ‘on par’ with their competitors, with a few proclaiming themselves to be leaders.

Impact

All businesses said that either they or their suppliers had been affected by one or more incidents of
Adapting to climate change in the food industry

extreme weather. Farmers and growers appear to be doing more to respond to the impact of extreme weather, whilst manufacturers, processors, distributors and retailers were more concerned with reducing their impact on the environment.

Very large manufacturers who relied on a select few raw materials seemed more aware of the difficulties their suppliers faced than those who sourced from a diverse range of supply bases; and as a consequence, it was these companies that tended to support their suppliers to overcome the effects of extreme weather. And similarly, UK farmers and growers were more aware of the effects climate change has globally than food manufacturers and retailers, who felt confident that when their main supplier was suffering from extreme weather conditions, it would suffice to spread the risk and source elsewhere instead of adapting to these circumstances in the future.

Those who were concerned about the international impact of extreme weather appeared to be more concerned about the costs which supply and demand would add to any scarce resource than availability; and in a similar vein, some farmers described how they were now constantly at the mercy of volatile global markets.

Taking action

Apart from switching to new sources or suppliers, we did find some good examples of businesses adapting to climate change including protecting assets, collecting weather information, calculating the costs of weather events and taking a strategic decision to change location to grow certain types of crops. However, many adaptations were ‘temporary or reactionary measures’ such as investing in grit for roads, cleaning drains and buying sandbags in case of flood.

In accordance with most businesses’ belief that tackling climate change merely involves reducing the impact of their activities on the environment, most examples of taking action were mitigating, such as reducing their carbon footprint, saving energy and reducing waste.

When asked for examples of how their business has responded to cases of extreme weather, interviewees provided answers which more closely related to adaptation, but, as with the discussion on impact, the most likely course of action was for companies to switch supplier. But diversification in production is becoming more common, with crops such as maize, and even grapes, being grown in England now because of the change of climate. And in preparation for snow, instigated by the cold winter of 2010, businesses have invested in snow ploughs and grit due to a lack of confidence in local councils.

It was common for weather to be monitored now not just by farmers and growers as you would expect, but also by manufacturers and retailers but no business believed it would relocate because of extreme weather risks, including flooding.

Most businesses did not have a plan to adapt to climate change specifically but believed it would be incorporated within the company’s Corporate Social Responsibility agenda. Over half of all the businesses we interviewed said that climate change was considered in its investment decisions, especially when constructing new buildings and renewing and replacing existing assets such as machinery; the aim of this was to limit energy usage and therefore reduce costs.

“Businesses feel the issue will be more about cost (of raw products) rather than complete unavailability”
Barriers

The following barriers were identified from our research:

**Cost payback periods**
Businesses were reluctant to invest in climate change adaptation and new technologies without a relatively short-term financial payback period.

**Tenant/landlord relationship**
There is very little incentive for tenant farmers to invest in fixed assets if they do not own the land.

**Retail supermarkets**
It is claimed by many farmers and growers that the contracts offered by the UK’s major supermarkets are short-term and only provide tight profit margins for the supplier. This means that there is limited confidence or surplus capital to invest in medium/long-term climate change mitigation and adaptation technologies and strategies.

**Too little/too much information, a lack of trusted and industry specific information**
There is a confusing picture whereby some businesses feel overwhelmed by climate change information whilst others feel as though there is not enough. There is also a strong desire for trusted sources of information, all of which suggests that the Government (and other organisations) message is not getting through to business.

**Isolation**
Businesses not supplying into the major supermarkets or working in co-operation with their customer[s] on environmental outcomes are left working in isolation.

**The Government**
Many businesses feel frustrated by recent policy changes (feed in tariffs was mentioned frequently) and a lack of cross party commitment to specific and long term climate change policies. This leads to instability for businesses and hinders any possible investment by those wishing to tackle climate change within their company.

Enablers

The following enablers were identified in our research:

**Incentives**
Many businesses believed that Government ought to provide fixed and long-term incentives which reward the adoption of sustainable and responsible modes of production, environmentally friendly technologies and the efforts of early leaders. This may be in the form of public recognition as well as in financial terms, through tax breaks, grants and low interest loans for example.

**Partnerships**
Partnerships with other organisations, including other food businesses, were cited as being helpful in achieving more on climate change. Facilitating partnerships and encouraging alliances is a powerful enabler.

**Cost reduction**
Reducing water and energy costs were a priority for almost all businesses we engaged with.

**Customers/ supermarkets as customers**
As well as being a barrier, by ‘pressurising’ their supplier to conform to certain environmental guidelines and policies, the major retail supermarkets have operated as enablers and ‘change agents’. If the retailers had not ‘pushed’ many companies would not be ahead in addressing climate change issues.

**Reputation**
An ethical and sustainable environmental policy was seen by business as a positive public relations exercise, and a good reputation in these matters was a key motivator to take action.

**Long term government commitment**
Long term government commitment and cross part support with no u-turns on climate change matters would give businesses more confidence to invest.
Recommendations

Assuming that a ‘helping hand’ rather than a ‘hard instrument’ such as legislation and regulation is the preferred approach to moving businesses to adapt to climate change a number of possible interventions using nine of the most robust (and non-coercive) influences on behaviour captured in the simple mnemonic - MINDSPACE - have been put forward to provoke further debate and discussion including adaptation based on the evidence of cost benefit, building partnerships, regulatory enforcement and utilising ‘change agents’ such as customers and consumers in change programmes.

Our recommendations include:

1. A summit inviting the food and drinks industry to debate whether the weather of today is a symptom of tomorrow and opening up a much needed conversation and debate on food security, a changing climate and how businesses can and should adapt.
2. Financial incentives that help businesses to see a faster return on their investment - ideally less than five years. Some adaptation clearly have benefits but are not communicated clearly in business language.
3. Recognising businesses through a dedicated recognition and award scheme led by industry supporting organisations and supported by the Government. This will allow businesses of all sizes to showcase their efforts and promote widely their achievements that other businesses can learn from.
4. A cross party agreement on climate change support for businesses in the food industry. The issue of food security should warrant a cross party agreement.
5. A ‘public pledge’ and commitment by businesses to help ‘future proof’ their industry.
6. Capacity building in small/medium sized food businesses, to include technical assistance.
7. A commitment by retailers to a longer contract period would give producers in the UK the confidence and security to invest and innovate and provide longer term stability for the UK food chain.
8. A well researched case study database that businesses could access, written in ‘business language’ and promoted through existing business channels.
9. A series of ‘visionary pilot sites’ across the UK in the food and drinks sector (one for bakery, one for food distribution, one for farming etc) that bring together all partners in a food chain (and including stakeholders such as universities) with a key aim of future proofing a sector and capturing the learning and transformation will inspire other businesses within the industry to follow suit.
10. Regular networking events.
11. A flood levy for businesses in high flood risk areas who fail to have robust adaptation strategies in place.
12. A responsibility deal between businesses and agencies and increased partnership working to address input shortage issues.
13. Industry challenges to raise the profile of businesses and encourage innovation in the sector.
14. Tools and resources specific to the sector/industry and backed up with case studies and examples of practice delivered by peers, competitors, industry supporting organisations and communicated using channels known and used by businesses.
15. A clear benchmark that sets out ‘good adaptation’ practices for food businesses.
16. A robust five year marketing and communications plan with measurable outputs and outcomes that promotes the support, tools and resources available to businesses.
17. League tables or honour systems (Linked to awards) and monitored by industry supporting organisations to encourage competitiveness and recognise businesses who are pushing ahead and meeting the benchmark.
Climate change is not something that will happen in the future – it is happening now and it affects us all. In February 2012, Social Change UK was commissioned by the Department for Environment, Food and Rural Affairs (Defra) to investigate the extent to which established producers, distributors and retailers in the food supply industry have considered and acted on the risks and opportunities posed by a changing climate.

This report provides evidence of the current attitudes, beliefs and behaviours of over 40 small, medium and large food businesses. Qualitative interviews were conducted in March 2012 with senior representatives from well known companies including Tesco, The Co-op, Weetabix, Aldi, Greggs, Nisa and Warburtons.

Other companies less well known to the general public, but include large-scale growers and dairy farmers who supply a substantial market share of meat, dairy, fruit and vegetables into retailers including Asda, Tesco, Sainsbury’s, Marks & Spencer and Waitrose, were also interviewed.

This report brings together a number of perspectives on climate change adaptation and stimulates debate on the most effective methods to engage food businesses and how to encourage and move the food industry towards climate change adaptation.

The insight gathered during a series of qualitative interviews has helped design actionable recommendations that build a case for change in the industry and provide guidance and further actions for organisations supporting food businesses.
Most of the businesses that took part in our research are medium and large food businesses at risk from weather extremes.
Methodology

A total of 106 food businesses with operations in (or serving) the North East, Yorkshire and Humber and Lincolnshire were contacted by Social Change UK in February and March 2012 and asked to take part in face to face qualitative research.

41 businesses from this group agreed to take part (see appendix 1 for a full list of participating businesses) and interviews were conducted face to face with 36 businesses and by telephone with five businesses.

Face to face interviews were conducted with at least one senior representative of the business at the business premises. Each interview lasted between 55 minutes and 3.5 hours.

A further eight businesses engaged with the research (and its purpose) giving some information to aid our investigation, but declined to take part in a formal interview for reasons such as timing and conflict with other reports. For example, a major retailer was willing to engage with this research but only after their internal review of climate change adaptation had completed, which is currently underway.

A discussion guide was prepared in advance of the interviews and tested with representatives within the industry (appendix 4). Where possible, evidence of adaptation was collected or recorded by the researcher (such as documents and photographs) and submitted with a transcription of the interview and analysed. Follow up telephone calls were conducted with some businesses following analysis to clarify points made during the interview.

The key findings and insights from the research and analysis have been compiled for this report. Quotes found in this report are attributed to businesses within four categories:

- Farmer/ Grower (including dairy producers)
- Distributor
- Food Manufacturer/ Food Processor
- Retailer

Whilst some companies were happy to be quoted in the final report, some felt that they could not be entirely open if they were quoted in a public report. A decision was therefore made to attribute quotes only to the business sector.

At the time of the interviews

At the time of the interviews (March and April 2012), weather and climate was a topical issue. March was the third warmest March on record - outshone only by 1938 and 1957. Drought was a topical issue as water companies announced that many parts of the UK were subject to a hose pipe ban starting in April. When April arrived, so did the rain and the Met Office announced that temperatures across the UK in April were the lowest in 23 years. Monthly rainfall passed the record 120.3mm set in 2000, making it the wettest April since records began.
107 BUSINESSES CONTACTED

36 INTERVIEWS CONDUCTED FACE TO FACE

5 TELEPHONE INTERVIEWS

77 HOURS OF RECORDED INTERVIEWS

£116 BILLION THE COLLECTIVE TURNOVER OF ALL THE BUSINESSES WE INTERVIEWED
Climate change has emerged as one of the biggest challenges for society to address. There is significant evidence to support the claim that the climate is changing in the UK and in other countries around the world. Changes to the long term and seasonal averages will mean warmer, drier summers, milder, wetter winters and rising sea levels. We are also likely to see weather extremes including more very hot days, more intense downpours of rain and fewer days with frost.

The food production, distribution and retail industry collectively contribute to greenhouse gas emission but they are also vulnerable to its effects. The food and drinks industry is not sheltered from the effects of extreme weather and for some, changes in climate present new threats and new growth opportunities.

As this report will highlight, farmers and growers are particularly at risk from extreme weather and a changing climate. As a nation we rely on businesses within this industry to supply our food. It is recognised that supporting and encouraging food businesses to adapt to climate change will protect the food chain today and in the future.

“Businesses that have global markets or suppliers could be affected by climate change in other countries” (UKCIP)
The food production, distribution and retail industry collectively contribute to greenhouse gas emission but they are also vulnerable to its effects.
What is good adaptation?

Before embarking on primary research, we reviewed many documents and resources from leading organisations to find evidence of what might be classified as good adaptation.

A compilation of evidence of what could be described as good adaptation practices, as defined by leading organisations such as the UK Climate Impacts Programme (UKCIP), The Environment Agency, DEFRA, UK Trade and Investment and regional climate change organisations such as Climate Change North East and Climate Change South East is provided at appendix 2.

Our review also allowed us to classify actions as beginner, intermediate and advanced. We used these measures to help design the discussion guide for research with the businesses and to help us identify the level (advanced, intermediate and beginner) businesses were at following interview.

Please note: Throughout this report we use both terms as most businesses referred to examples or talked about issues that were mitigation focused, despite our research questions focusing on climate change adaptation. We have attempted to focus much of this report on responses related to adaptation. However, we have included some responses that refer to mitigation to help illustrate the misunderstanding between the two terms.

**What is climate change adaptation in business?**

Adaptation means altering business processes and infrastructure to respond to climate change. This not only includes addressing the threats it poses such as increased risks from flooding, sea level rise and drought, but also exploiting any opportunities - such as developing new products and services or reducing costs.

Adaptation often includes building up the capacity to adapt as well as minimising, adjusting to and taking advantage of the consequences of climate change.

**What is climate change mitigation in business?**

To avoid the dangerous extremes of climate change, global greenhouse gas emissions will need to be reduced to prevent more climate change. This is known as mitigation and can be achieved through greater energy efficiency and more use of low-carbon and renewable energy technologies, such as wind power.

In business, climate change mitigation involves changes to business processes, infrastructure and behaviours to reduce the impact the business has on the wider environment, with an end goal of becoming a business that has minimal, or no impact.
Building resilience to extreme weather will help protect businesses and jobs, reduce the cost of disruption and maximise any opportunities arising from weather and climate (UKCIP)
Main findings

Understanding and awareness

Terminology
We asked all interviewees if they knew the difference between climate change adaptation and climate change mitigation (see definitions, page 14). Almost half of the interviewees could describe adequately the difference between the two terms when asked.

Companies who employed an ‘Environment Manager’ or ‘Corporate Social Responsibility Manager’, who sat in on the interview or was the interviewee, were able to explain the difference more coherently. Farmers and growers were also able to define the two terms with some confidence.

Around a quarter of interviewees did not know the difference between the two terms and a few companies had never heard the terms before our interview.

“It’s not something I’ve come across, even when we have been talking about the environmental stuff” (Food Processor)

The remaining companies attempting to describe the two terms were more confident defining mitigation than adaptation.

Some interviewees commented that the terms were ‘jargon’

“I have heard of adaptation but I think mitigation is a legal term. It’s jargon to me” (Grower)

Language
We asked interviewees if they heard these terms being used by colleagues or others within the company and what situations or context had the terms been used. Of the companies who confidently knew the difference between the two terms, the majority said that they were more likely to talk internally and with their customers about ‘protecting the environment’, ‘reducing the carbon footprint’, ‘saving energy’ or ‘sustainability’. Terms such as ‘climate change mitigation’ and ‘climate change adaptation’ were not widely used within in the industry.

“Sustainability is a word we use quite a lot” (Grower)

“These are grouped under corporate social responsibility” (Retailer)

“We do not use that language” (Grower)

“Everyone understands that we have a target to reduce carbon by 2020” (Food Manufacturer)

“We hear the terms being used by the customer – usually the supermarket customer” (Grower)

“I like to talk about sustainability as you can see some people’s eyes roll when you say climate change again” (Food Manufacturer)

“We don’t talk about climate change. Yes we have global warming but we had the ice age and 200 years ago the Thames froze over but they weren’t talking about climate change then… as there were no cars back then. If we talked about managing with limited resources people will get it” (Food Manufacturer)
A lot of interviewees talked about reading articles in trade magazines or being informed by industry bodies/councils and memberships about climate change. However, they said that it was unlikely these terms would be used to discuss weather.

“We are members of the Horticultural Development Council and they inform us when there are new technologies, new sprays etc. There is a lot of environmental discussion”. (Grower)

“We hear a lot about climate change from the NFU” (Farmer)

Some interviewees talked about Tsunamis and hurricanes in other parts of the world that could affect their supply chain. However in the UK, very high and very low temperatures, snow, floods and lack of rain was cited as extreme for the UK climate:

“Last winter we had long periods of minus 15 – that was extreme” (Food Manufacturer)

“For us, extreme weather is extreme heat because we have a lot of staff working in the factory who have to wear protective clothing and the extreme heat effects our staff and our products” (Food Manufacturer)

“The extreme drought we had last year is a good example. We didn’t have rain from 14th February to the 19th July” (Grower)

“The minus 17 temperature was extreme and it didn’t get above freezing for 2 days” (Grower)

“I haven’t seen minus 10 (until recently) in Lincolnshire in my lifetime” (Grower/Distributor)

Understanding of extreme weather conditions
We asked interviewees what they considered to be extreme weather conditions. The majority of interviewees gave 2-3 responses which included:

- Very low temperature (minus 15)
- Very high temperature (over 30 degrees for long periods)
- Rain leading to floods (including flash floods)
- Snow and ice (2010 snow was mentioned frequently)
- Drought leading to a lack of water

Key Insight
Interestingly, when we asked questions about ‘adapting to climate change’ respondents would answer using examples that were mitigation focused, such as reducing energy usage or reducing the carbon footprint of the organisation. If the interviewer asked about ‘adapting to extreme weather’ the interviewee would talk about ‘coping’ with weather and adapting to weather.
Awareness of legislation and supporting organisations and tools

We asked each interviewee if they had heard of the Climate Change Act. Most had heard of the Act, but around a quarter of interviewees said no. We asked those businesses who had heard of the Act, how it impacts on their business. Only a handful could talk specifically about its impact.

Not surprising, the bigger companies we interviewed were impacted by the Climate Change Act. Some businesses discussed the climate change levy and other ‘financial penalties’.

We also asked if they had heard of the UK Climate Impacts Programme (UKCIP). Very few had heard of the organisation indicating a very low awareness.

We asked interviewees if they had read any documents on adapting to climate change written by UKCIP – or any documents written by any other organisation or body. Only one organisation was able to recall a specific document (the UK Trade and Investment publication) and this was printed on the morning of the interview in preparation for our visit.

We showed interviewees a card with five key documents related to climate change adaption for business (see appendix 2). We asked if they had seen or read any of these documents or consulted with any of these organisations. Only one business, as mentioned, had read or seen any of the documents on the card. Nobody had used any of the UKCIP tools.

“Never heard of these (UKCIP tools). I have used the environment agency and we do a lot of work with them on water and I use the met office for a daily weather check which can be good but you might as well flip a coin to find out if its going to rain or not. I don’t think the Met Office do enough on climate change” (Grower)

Just under half of all businesses we spoke to had engaged with external organisations on the climate change agenda. The most widely used and mentioned was: The Environment Agency, The Met Office and The Carbon Trust. Business Link was mentioned by one business as a source for information on climate change. Two organisations mentioned farming futures. The Met Office was only used by businesses for weather forecasting. The larger companies (with high turnover) talked about hiring external consultants to help them address climate change.

Very few people had seen the climate change projections (UKCP09) and those who had seen them generally thought they were exaggerated.

“The leader of the city council did a 30 year sort of projection, which did show most of our county underwater in the future”. (Retailer)

Many felt confident that scenarios they had seen or heard about would unlikely occur, and if they did, they would be protected - for example, flood barriers would be erected and sea defences put in place.

Most businesses were aware of climate change issues from their competitors and customers.

Retailer involvement

Supermarket support has grown over recent years and has increased knowledge, awareness and activity in businesses supplying to major retailers. The larger retailers such as Tesco and Asda have created networks for their top tier suppliers to drive efficiency, share information, reduce carbon emissions and increase recycling and reduce waste.

The businesses we interviewed who were not supplying into the major supermarkets - or who were supplying into retailers via wholesalers or others were less aware and less active on climate change.

Understanding potential risks to the business

We asked the interviewee if they thought their business was at risk from extreme weather, focusing on conditions known to have an impact on the food
industry starting with flood. We asked if they knew if the business or any operations were in a classified flood risk area. Under half said yes and over half said no or they were not sure.

“We have never been flooded – well I am not sure actually. I think we are in a low risk flood area but a lady from the environment agency recently told us that we are not registered (for flood warning) and we should be so I signed up and registered” (Food Manufacturer)

Only a handful of businesses talked about their suppliers being susceptible to flood and this being a risk to their supply chain. One food manufacturer said that the floods in Spain in 2010 had a big impact on their UK based business and a Lincolnshire grower said that whilst they were not operating in a flood risk area they were aware that many of their farmers are.

“We are in a flood risk area and so are our suppliers. The Spanish floods in 2010 cost us a fortune. We lost a lot of parsnips to flood at this time. Our site is in a flood risk area but I think it is one in a thousand year probability that we will get flooded so we are not too worried. I have signed up to the flood service just in case” (Food Manufacturer)

“Some of the agricultural land where the farmers grow is at risk and this has a knock on effect if they flood” (Grower)

We asked the businesses who are in a flood risk area if they had signed up to the flood warning service. Only two businesses could say for certain that they had signed up. Some of the interviewees were very senior and said that they assumed that a member of the team had ‘taken care of this’.

We asked the interviewees who were not aware of their flood risk if they had checked the environment agency maps. Only a few businesses said they had done this. Two businesses referred to flood related issues rising when they were in the planning stages of a new development.

Supermarket Support

The Icelandic Group has signed up to 2degrees – a network that brings together businesses looking to drive growth, efficiency and profit through sustainability. Tesco – one of the group’s biggest customers has set up supplier chain engagement projects on the 2degrees platform to help them improve efficiency and reduce risk in their supply chains. The Icelandic Group is using this platform to see how they can cut cost, risk and waste to help Tesco meet their ambitious goal of reducing carbon emissions by 30% by 2020.

Other suppliers to Tesco that we interviewed also talked about the 2degrees network and portal.

Key Insight

Most businesses were getting information about climate change adaptation and mitigation (and support to adapt) from their customers and competitors.
Sea level rise

We asked each interviewee if they knew if their business or operations was at risk from sea level rise. Most businesses did not know if they were at risk and had never considered its impact.

“We are close to the sea but we have not considered its impact” (Food Processor)

Those who were aware and said they were affected by sea level rise had operations close to the coast and are currently, or have been, engaged in activities led by the Environment Agency. Awareness of risk was raised, and taken seriously when government agencies, such as The Environment Agency were involved or leading a programme.

Businesses generally felt confident that it will not impact on them in the future and are assured by sea defences and other adaptations such as a tidal barrier:

“We’ve got a tidal river not so far away so I think we might be. It’s never happened and we’ve got a tidal barrier anyway”. (Food Manufacturer)

A number of businesses felt that because their operations were in land they would not be affected by sea level rise.

Sea level rise was also regarded as something that will happen in future years and affecting only businesses and communities close to the coast.

“It’s not going to happen in my lifetime” (Distributor).

Drought

We asked each business if they felt they were at risk if there is a drought. The majority of businesses we spoke to were concerned about drought – especially farmers and growers in Lincolnshire, who were very concerned. Water shortages was by far the biggest concern for this group.

“The whole potato supply chain depends on water” (Grower)

“Drought is the biggest issue in farming today. We need to seriously consider what to do about this this going forward” (Farmer)

Equally, food manufacturers who source from farmers and growers were a little concerned about drought but felt assured by their contingency plans which included sourcing products from other suppliers – often in other countries - or having a number of suppliers rather than relying on one or two (see page 36).

Key Insight

Sea level rise (and its effects) was seen by many businesses as low risk and something that happens to businesses near the coast. It was also seen as an event that happens a long time in the future.
“Sea level rise will not happen in my lifetime”
(Manufacturer)
Fenton Farm, Northumberland
Deli and restaurant
Fenton Farm

Simon Henderson is an arable crop tenant farmer based in West Fenton, near Wooler in Northumberland. One of the main impacts affecting Fenton Farm is the erosion of soil, caused through wind combined with long dry periods and drought, and increased rainfall intensity, leading to flooding. This is a problem projected to worsen due to climate change. This has already had significant impacts on the farm. The loss of the soil through water and wind erosion has exacerbated the loss of valuable and necessary nutrients, which significantly has impacted the productivity of the arable crops. Dust storms not only damaged the crops but also affected local water sources, damaging the aquatic environment and blocked nearby drainage systems.

These impacts mean that the farm is under increasing financial pressure mainly due to reduction in yield, cleaning up blocked drainage systems and other ancillary damages. Other costs included expenses associated with addressing soil structure and nutrient losses as well as irrigation. This is particularly difficult as using conventional agricultural fertilisers is not only expensive but is becoming a limited commodity.

Simon has also extensively engaged with a local climate change project, Cheviot Futures, which commissioned a comprehensive study of the likely impact of climate change on North Northumberland; the outcomes were intended to be used to identify potential impacts and practical steps that can be undertaken by land-based businesses.

At an early stage in this process, Simon recognised that to continue in business he would need to address these climatic issues. A wide range of soil conservation measures and management, including crop rotation, wind breakers and so on, were put in place.

The nature of the West Fenton farm meant that it would cease to remain viable if these impacts were left unchecked. Simon completely changed the management of the farm and converted to organic production; this included increasing soil organic matter components to retain moisture and improve structures. Other adaptation measures include planting hedgerows and trees to form windbreaks to reduce wind erosion, and installing a network of ditches with margins, sediment traps, reedbed filters and sluices to control water levels. Excess water containment areas, also known as leaky ponds, have been installed as a low-cost and environmentally supportive response to hold runoff water after heavy rainfall and release it slowly over a period of about a week reducing the likelihood of soil erosion and downstream flooding.

In September 2008 the farm was flooded to a metre high. The land and buildings were devastated by its impact. A river floodplain has been reinstated by the removal of flood banks in partnership with the Environment Agency. At the same time the main stream from the farm to the river was meandered, which added approximately 1.5km in length; sluices to control water flow were also installed. This allows more time for sediment removal from the water and encourages more water to permeate through the soil rather than rush headlong into the river where it is of no benefit to the farm.

Source: Climate North East and Interview with Kelly Evans, March 2012
Attitudes and beliefs

We asked interviewees how the risk of extreme weather compares to other known risks (such as fire and theft). Businesses dealing in the raw product, such as growers and farmers placed weather risk at the top, alongside disease. Other businesses in distribution, manufacturing and retail did not consider weather as high a risk. Many do not have weather on the company risk register. Around a quarter of all businesses were confident that weather was on the company risk register.

“It’s not top of the risk list” (Food processor)

“I am not sure to be honest – I assume it is” (Food manufacturer)

“The weather is only going to affect us if we can’t get the raw material which is unlikely as we source from across the world or if our staff cannot get into work” (Food Manufacturer)

“It is not top of the risk list. If you are business planning for 3-5 years it is not an issue” (Food Processor)

“Yes it is on there and it is monitored” (Food Manufacturer)

“Yes, it is on out risk register and we are looking at this on a weekly – sometimes daily basis” (Grower)

Some farmers and growers didn’t consider weather as a risk as such, but as ‘part of farming life’ and it was ‘quite normal’ to be dealing with all types of weather as a farmer/grower.

“I don’t consider it a risk anymore – just part of the day job” (Grower)

Others did feel weather was a high risk to their specific business

“The weather is a high risk because we are a fresh fish business and we have orders coming in on a daily basis and they have to go out that evening or the following morning” (Food Processor)

We asked each interviewee if they believed the food chain is at risk from extreme weather conditions and why. The majority said yes – but felt it was at risk long term. Farmers and growers in Lincolnshire however, feel that the current drought situation is a serious issue and poses an immediate risk to the food chain.

“In the long term it is (at risk) if we don’t do something about it. However, we need to be efficient in what we do now” (Food distributor)

“In the long term it could be – but in the long term” (Retailer)

“In the long term it is (at risk) if we don’t do something about it. However, we need to be efficient in what we do now” (Grower)
"It is at risk because if we can’t get it in and then out, then you (public) can’t buy it and the world would starve" (Food Processor)

"It is severely at risk. The amount of wastage there is. Food prices will go up. We will get the blame but if it’s not there, it’s not there" (Grower)

We asked if there are any parts of the food chain they considered to be most at risk. Interviewees identified crops and fresh food and produce. Meat was also mentioned to a lesser extent.

“Fresh chilled” (Food Processor)

“Anything grown in a crop” (Food Manufacturer)

“Anything reliant on the climate to grow” (Grower)

“Meat” (Food Manufacturer)

“Wheat” (Food Manufacturer)

**Commitment**

We asked each interviewee if there was a high, medium or low level of commitment to adapting to climate change within the organisation. Overall, the majority said there was a high commitment.

However, when explored further, commitment was high for sustainability and cost reduction programmes.

“I would say for climate change no, sustainability yes. Fish stocks – a bit of a cross over” (Food Processor)

“Historically it has not been the highest priority on the companies list, but we are looking at it now” (Food Manufacturer)

“Yes, a high commitment for programmes that reduce our energy bill” (Food Manufacturer)

We asked at what level climate change mitigation and adaptation is championed and whether climate change adaptation is discussed at a senior/board level. Most of the interviews we conducted were with senior representatives of the company and included the Managing Director/ CEO in some instances. Those who were not senior management had access to the board or a senior manager within the organisation and could therefore confidently answer. Most interviewees confirmed that there was a high level of commitment at board/senior level.

Many businesses said that this commitment was stronger for initiatives and programmes that generated cost savings to the business, pleased customers or reflected well on the organisation.

“It is discussed at board level – it has to start at the top. There is a high level of commitment if the customers want it”. (Food Manufacturer)

**Key Insight**

Commitment to climate change adaptation (and mitigation) is secured only when there are commercial and financial benefits attached.
MINDSPACE - Commitment

We seek to be consistent with our promises, and reciprocate acts.

It has been shown that commitments usually become more effective as the costs for failure increase. Many of the businesses we interviewed had made ‘environmental’ and ‘social responsibility’ commitments, sometimes more than one. These included signing up to carbon reduction programmes, waste reduction schemes, the Federation House Commitment (FHC) on reducing water in the food and drinks industry, the responsibility deal led by the Department of Health and so on. Many have made their commitments public and businesses are monitoring their commitments and publishing their progress. Businesses realise that breaking their commitment will lead to significant reputational damage.
“We just know that from an environmental perspective and a cost perspective we have to reduce energy usage” (Retailer)

“We do pride ourselves on our values and principles and one of those is to be as environmentally friendly as we can be, but I think if I am honest then the real driver is cost reduction” (Retailer)

**Competition**

We asked respondents if they were aware of anyone else making changes in the food industry – including their competitors. Most businesses said that they were aware of other people doing ‘things’ to save energy and reduce their carbon footprint.

Most referred to others ‘putting up a wind turbine’ or solar panels – examples of mitigation. Farmers and growers talked about other farmers investing in biomass boilers.

“Some are, some are not” (Grower)

“I think they want to become self sufficient. It is really driving some farmers who are worried about where the energy is going to come from in the future” (Farmer)

“Bigger companies are making changes – I think one of the big crisp companies have had three wind turbines put in and of course there is Tesco and all their suppliers who are doing various bits and pieces” (Food Processor)

A few businesses said that they were not always aware of what their competitors were doing with regards to climate change.

“As competitors get bigger you can read their reports but you are not really clear about what is going on” (Food manufacturer)

The retailers were much more aware of what their competitors were doing to mitigate and adapt to climate change and quoted examples.

“We know Spar are actually doing something we don’t – they actually bring back food waste and then reprocess it”. (Retailer)

“I am aware of what other retailers are doing – I keep a close eye” (Retailer)

Most were aware of their competitor’s environmental commitments and talked about carbon reduction strategies or plans. When we asked how their competitors are adapting to extreme weather there was a couple of examples given. One retailer talked about preparations this year for potential snow.
“When we had the snow in 2010 we (the retailers) were scrabbling for snow clearers and salt for car parks (so we could) get our vehicles out. This year we all stockpiled salt, including us, and we retained clearing companies on standby should the snow strike. We were all prepared for it this winter and it just didn’t happen”. (Retailer)

Three businesses talked about Tesco working with suppliers on climate change but were unsure whether this involvement focused on adaptation, mitigation or both. A number of businesses that supply into the major supermarkets said that their retail customers were ‘forcing them’ to consider climate change adaptation and mitigation (see drivers, page 60).

We asked the interviewee(s) how their company’s approach or strategy to climate change compared to that of key competitors. Most businesses felt that they were ‘on par’ with other similar sized businesses in their industry. A few companies felt that they were leading or ‘doing a bit more’.

“We are quietly confident that we are probably as good, if not better, than most of them” (Food manufacturer)

Tenant farmers were aware that farmers or growers who were not tenants, and effectively owned the land, were doing much more to mitigate and adapt and they felt left behind (see barriers page 54).

We asked businesses if they would do more or less climate change adaptation if they were aware that their competitors were making changes. Most businesses said yes but it was the customer that was ‘forcing the agenda’.

“It wouldn’t drive us on completely but it does make you more aware” (Food Manufacturer)

“It is our customers that are really pushing this agenda. It’s to make them look good too... They say it will be a saving for us. I am not aware of any suppliers doing massive things. Ok, there are a few wind turbines out there but I don’t believe they are food manufacturers like us” (Food Manufacturer)

“Key Insight

Businesses tend to be reactionary rather than proactive when it comes to managing climate change risk.

For many a wait and see strategy is the best tactic when it comes to dealing with the unpredictable nature of weather.

“If Tesco require it… (The ISO) It’s all driven by what Tesco wants – quality, technical manuals or procedure manuals and that’s really what we go by” (Food Processor)
Beliefs around climate change

We asked the interviewees if they felt extreme weather events are becoming more or less frequent. Almost all businesses said it was becoming more frequent. Farmers and growers generally felt that climate was always changing – and had been for several hundred years.

“The climate changes backwards and forwards every year. I am not sure it is linked to some of the things they are blaming” (Farmer)

We asked respondents if they believed climate change was real and happening. Most believed that it was real and was happening. However some interviewees felt that there was still some debate on the issue – especially about the causes of climate change.

“There is controversy over the data, and it has been fudged. Will people buy into it?”(Food Manufacturer)

“The jury is out with climate change” (Food Manufacturer)

“It is debatable if the affects we are currently having with the weather is attributed to climate change. Our suppliers will certainly be affected by extreme weather conditions and the scientific consensus seems to be telling us that there is an element of climate change there” (Retailer)

“There is controversy over the data, and it has been fudged. Will people buy into it?” (Food Manufacturer)

“Sustainability is an easy sell for us. It is more immediate especially when you are talking about survival of the business. I think people think climate change is far off and disengage” (Diary farmer)

We asked interviewees if there was a temptation for their organisation to ‘wait and see’ when it comes to climate change. We received a mixed response. Around half said yes and half said no. Most of the businesses that said yes said that they didn’t have a choice but to wait and see as they didn’t have the finances to make changes (see barriers page 54).

Other businesses, who had the resources to adapt did not see climate change as a priority for their business.

“The bottom line is we haven’t got a [climate change] policy because we don’t see it as a major problem… …whilst we’re aware of climate change I don’t think it’s going to have that significant an effect on our business other than it might put the cost of some of our raw materials up” (Food Manufacturer)

Those that said they were not waiting recognised the importance of adapting to a changing climate.

“Definitely not. We know that certain areas of China are now not producing some products because the land is drier or the land is wetter, or they are not farming in a particular area anymore, so we are constantly monitoring what is happening internationally”. (Food Manufacturer)
General attitudes to climate change

Some businesses see addressing climate change as a PR opportunity - to make the company look good with customers and consumers.

“You do it because you want to be seen to be doing the right thing” (Food Manufacturer)

Some businesses said that after delaying the move to ‘be green’ they have come to realise that it could be beneficial for the business to adapt - especially if it helps their business to survive in the long term.

“The issue is that it is not going to go away – it’s like health and safety. We are going to have to do it…” (Food Manufacturer)

“I think you just can’t ignore it anymore” (Retailer)

“The public have a perception of business - to be environmentally responsible so the public pressure is very high for anyone in retail and wholesale” (Retailer)

“The public has a perception of business - to be environmentally responsible so the public pressure is very high for anyone in retail and wholesale” (Retailer)
MINDSPACE - Ego

We act in ways that make us feel better about ourselves

Our research showed that in addition to financial reward, many businesses believe that it is better for business to be seen to act responsibly and as well as environmental programmes, many businesses also engage in social change programmes such as community development programmes and fundraising. All contributions, if executed well help to enhance image, credibility and worthiness with customers and consumers. For many it is part of their brand values.
Impact

We asked each interviewee if the business had been affected by any of the following weather conditions in the last 5 years:

- Rain/flooding
- Winds
- Drought/ water restrictions
- High temperatures
- Low temperatures
- Snowfall
- Other conditions (asked to describe)

All of the businesses we interviewed said that one or more of these weather conditions had affected them (or their suppliers).

“Are we affected by the weather? We are affected by all weather. Rain, wind and drought damage to crops…” (Food Manufacturer)

“Our product is heavily dependant on farming and agriculture and in turn, they are both dependent heavily on the weather. We either get too much rain – floods or not enough of it – drought which is an issue for potato crops not irrigated.” (Grower)

“Our yields on our heath land was down three and half tonne to one and half tonne per acre because of the dry weather” (Farmer)

Most interviewees cited flood and snow as weather conditions that have had the biggest impact on the business.

Snow

Just over half of all interviewees mentioned the snow of 2010 and described several impacts including not being able to get products to their customers, staff shortages and costs to the business in extra man hours.

“The snow (2010) was a big issue for logistics and transporting to retail distribution centres. We had to bring all the magic out of the hat to make sure we delivered” (Grower)

“The snow affected us – both for receiving and distributing” (Food Processor)

Local retailers experienced issues with transportation, but they also saw increases in their sales as consumers opted to shop locally.

Flood

Floods in both the UK and in other parts of the world have impacted on food businesses and interviewees gave examples:

“Two years ago we saw a lot of flooding which affected the potato crop significantly” (Grower)

“The Spanish floods affected our business – we lost a lot of money that year” (Food Manufacturer)

Temperature

High and low temperatures were a concern for most of the businesses we spoke to. Distributors were most concerned about high temperatures and talked about past experiences.

“In high temperatures, our fridges would have to
work a lot harder” (Food Processor)

“On very hot days some of our vehicles, particularly on multi drops are affected as we have to open the doors a lot and we do find this challenging” (Retailer)

Manufacturers said that their refrigeration units have to work harder in hotter temperatures and cold store inefficiencies lead to a reduced shelf life, which is not good for business.

Farmers and growers gave a number of examples where both high and low temperatures impacted on their crops. One business talked about using heating in greenhouses in February because the temperature was very low. Another grower talked about the devastating impact of frost for prolonged periods.

“We have learnt that when the frost gets in and stays for long periods of time it is worse and more devastating than short, sharp bursts of frost”. (Grower)

We asked businesses if they had considered the impact of temperature increases both now and in the future. The majority of businesses felt that they had already addressed temperature within their own workplace and those who had not were thinking about it.

“High temperatures affect our staff – we have to give more breaks. We are rehydrating fruit and roasting nuts and this involves heat. We are looking at adaptation now – seeing how we can circulate the air more frequently”. (Food Manufacturer)

“If we were guaranteed to see high temperatures here (in northern England) of above 30degrees for 3-4 months in the summer then we would have to look at putting in air conditioning. At the moment we experience a couple of weeks of warm weather so we allow more staff breaks and that is fine. We also might put in more water coolers”. (Food Manufacturer)

Businesses operating in the north were less concerned about temperature than businesses that had some operations in the south.

“Temperatures affect the quality of our product - we have experienced very high and low temperatures” (Grower)

Humdinger

Floods in Hull in 2007/08 came close to causing problems for Humdinger. The water came up to the door of the factory but fortunately the factory didn’t flood. The main impact of the flood was distribution issues. The business was unable to get anything on or off site that day.

Humdinger were not in a flood risk area so were surprised when the water arrived. Assessing the situation after, Humdinger concluded that there was so much rain (Flash floods) and the drains in the local area couldn’t cope. As a precautionary measure they have now make sure that the drains on their site are clear and clean.
“We don’t get high temperatures for very long up here” (Food Manufacturer)

**High winds**

In Northumberland and in coastal areas wind has caused some problems for businesses.

“Yes – we need to get supplies in and products out so it is about logistics. A lot of our salmon comes from Norway, by road first and then across the sea and strong winds and storms can knock us out for days” (Food Manufacturer)

“We get horrendous wind blowing here... The sand blows through the yard... it blows just like snow and this is really a big problem for us” (Farmer)

**Rain/hail**

Some Lincolnshire based farmers and growers talked about an unexpected and very severe hailstone storm in May last year that affected their crops:

“That storm really hammered certain parts of Lincolnshire. It striped off all the leaves off a lot of sugar beet seedlings. We had to re-drill. Some farmers lost all their crop because of one weather event” (Farmer)

“Hailstone is dreaded – it can do a massive amount of damage – especially to cereal crops. If you have a hailstorm in June/July which is out of season it can be devastating but what can we do about that – it is totally out of character” ( Farmer)

**Water**

Water availability was most feared by crop farmers and growers. We asked respondents if the water company imposed restrictions on water, whether this would affect their business and operations. Almost all businesses said yes, representing a large number of companies. However, many were quick to point out that water restrictions would not be placed on them because they are food businesses and seen as ‘essential’.

“They wouldn’t restrict us because we are seen as essential” (Food Manufacturer)

“They couldn’t do that to us” (Farmer)

“We purchase a lot of water for our bread – we are metered – and we have made a pledge to reduce by 20% from our bakeries but we need water and flour to make bread so a water restriction or shortage would be an issue for us” (Food Manufacturer)

“There is nothing to say we are going to run out of water – a part of the world will but Britain will probably be alright as we have the water infrastructure in place”. (Food Manufacturer)

“I would have to say yes (it will impact) as we still need water for processing” (Food Processor)

(On the hose pipe ban)“I don’t think a hose pipe ban will affect us… well actually it might as we are all mains supply so yes” (Food Manufacturer)

“We would be at risk if we were rationed on so many cubic metres of water we could use a week. It is quite high – about 850-900 a week but most of the use is due to hygiene factors. We have to operate organic standards which involves greater water

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**Key Insight**

Businesses were confident that the government and water companies could not, and would not put restrictions on their water use. The cost of metred water was the main reason for engaging in water saving activities.
usage”. (Food Manufacturer)

“If government imposed water restrictions – we would have to change the way we plan and how we hygiene and adjust – put a different system in place” (Food Manufacturer)

“I think we would have to tailor our operations accordingly. We have now got a handle on our water usage – we know how much we use – so if the government said we can only have x, y, z we would have to tell Tesco that we can only supply you with x, y, z” (Food Processor)

**Business disruption**

Overall, the majority of businesses, mainly food manufacturers and producers, said that the weather did not stop them from running their business; it was just inconvenient (because they have to find other suppliers) and costly (because prices for a raw product go up when demand is high or operational costs start to increase).

The majority of interviewees talked about the financial impacts being absorbed into the business as it cannot be passed onto the retailer. This makes it difficult for them to invest especially when they are making up shortfalls and trying to increase margins (see barriers page 54).

“Extreme weather affects the volatility of the wheat market – the prices, availability, food security, the price in the shop. I think that will get even more volatile and managing that is going to be an issue” (Food Manufacturer)

Farmers and growers naturally felt that they were at the mercy of the weather and appeared to be doing more than any other business to adapt to weather changes.

Manufacturers, processors, distributors and retailers were more ‘mitigation focused’ and were engaged in programmes to reduce their carbon footprint, energy costs, water bills and any programme that led to efficiencies within the business.

Very large manufacturers who rely on just a few raw materials (such as wheat) were aware of the impact of weather on their suppliers, much more than those who source hundreds of products and they appear to be helping their suppliers to adapt or cope through information sharing, investing in research and communicating regularly.

Branston, for example, share research with their growers and have set up events to share knowledge and experience. Weetabix do something similar with their grower group.

“The thing that worries us the most is drought in our raw material supply...We have regular meetings with our grower group to talk about issues – including the impact of weather” (Food Manufacturer)

**The future**

We asked what climate change issues are likely to reasonably impact on the company’s business and operations in the foreseeable future.

“The issues are also raw material availability and cost which is why we buy and pack such a big range – not reliant on one raw material” (Food Manufacturer)

Water shortages and the cost of raw materials were seen by many businesses as the most likely impact on their business in the future.

“Anything to do with water [is a concern] whether it is too much, or too little” (Food Manufacturer)
Financial Impact

Interviewees were asked if they believe climate change will impact on the company’s financial performance and were asked if they had experienced any loss due to extreme weather. The majority of businesses said that the weather had in the past had a financial impact on the company – either on income or because of costs.

“We have seen some dips in sales because of stock availability and that can be attributed to the weather – either growing seasons or just being able to get the product here” (Food Manufacturer)

“We lost half a million last year in lost revenue and costs, all related to weather” (Grower)
“Impact on financial performance – yes – commodity price” (Food Manufacturer)

Some felt that they had gained financially from the changes in the climate.

“It has impacted in a positive way. Not aware of any loss to date” (Food Processor)

International Impact

We asked each interviewee if they were affected by extreme weather conditions in other parts of the world. A number of businesses gave examples of how they had been affected by weather in other countries.

“Our strategy is to source crops from the UK but in the winter we get our crops from mainly Spain and some from Italy. But the snow in Italy and the frost in Spain have affected us this winter. The watercress was killed off in Spain this year. It is unusual but not uncommon”. (Food Manufacturer)

“We now use coir to grow our strawberries which is sourced from Sri Lanka so if they have problems over there – like a hurricane – we can’t grow strawberries”. (Grower)

Most of the businesses we interviewed import food, in particular, fruit and vegetables that cannot be grown in the UK 365 days a year, and consumers demand these products all year round.

“When our crops are being affected, we use other sources for imports...we split supplier, so we would never go with a single supplier for 100% of our needs. Deliberately you hedge your bets and you source from different suppliers on the whole” (Retailer)

“...we split supplier, so we would never go with a single supplier for 100% of our needs. Deliberately you hedge your bets and you source from different suppliers on the whole” (Retailer)

“Our neighbour lost £800K in income from Sugar beet in winter 2010 because of the cold and snow. They had to plough it all back in – cost them a fortune” (Grower)

“We lost about 80 grand income... The yields were down and that was because of the snow” (Farmer)

Some felt that they had gained financially from the changes in the climate.

“It has impacted in a positive way. Not aware of any loss to date” (Food Processor)

Overall, the majority of businesses were not concerned about climate change in other countries. Farmers and growers had a greater understanding of the long term potential impacts of food shortages but the majority of food manufacturers and retailers felt confident that if they could not source their raw ingredient or product from a particular country, including the UK, because availability was low (due to weather or something else) they would simply go elsewhere. There was a belief by many that they could find it. A number of companies had contingency plans and strategies in place, which
MINDSPACE - Norms

We tend to do what those around us are already doing.

We often take our understanding of social norms from the behaviour of others, which means they can develop and spread rapidly. Our research shows that some behaviours relating to mitigation, such as reducing energy consumption, cutting waste etc is becoming a norm in the industry. If you are not doing it, you are regarded as outside the norm. Responses such as “of course we are doing that” and “that is standard” were used by many of the people we interviewed. However, for some businesses, striving for the ‘norm’ is not an easy task (see barriers, page 54). The challenge is therefore to make adaptation practices the norm within the industry.
MINDSPACE - Default

We go with the flow of ‘pre set options’

The biggest default we discovered in our research is the default option of switching supplier(s) should a product become unavailable.

We also found in our research a negative default that would need to be addressed. This default is one of passing responsibility to others – such as The Environment Agency, local councils and government to address climate change impacts such as sea level rises and defences and gritting of roads for snow.

often included ‘spreading the risk’ by having a number of suppliers in the UK and abroad.

“As long as we can get supply, it really doesn’t matter to us” (Food Manufacturer)

“The two big growers of raisins are Turkey and America. So we can switch” (Food Manufacturer)

There were a few companies that did recognise the potential impacts of extreme weather in other parts of the world and were moderately concerned. However this concern was more about cost than availability.

“The effect to the business is just one of cost rather than complete unavailability” (Food Manufacturer)

Additional or unexpected costs to the business were a concern to some – especially those who claim to work on low margins. Low availability of a product in one country leads to higher prices and lower margins for the business.

“We are paying more than twice what we paid three years ago for wheat” (Food manufacturer)

“Everyone is scrambling for a particular product if frost kills a crop. The price of the product goes up and it ends up costing us even more if we are flying in a product from America to meet customer demands”. (Grower)

Farmers have talked in the interviews about their job moving from being on the tractor to being in the office at the computer and on the phone. One described his job as being a ‘stockbroker’:

“World markets have a big effect on us. They are so volatile. We are now selling in a world market. That is the way it is. Supposing one country has massive

Key Insight

Very few businesses were concerned about the future availability of raw products and felt that the issue affecting them short and long term was more cost rather than availability.
Worldwide Fruit recognizes the international impact of extreme weather on their business. Like other suppliers their plan is to source fruit from different suppliers or countries if fruit growing is affected by bad weather. However, last year the company was impacted by a very dry spring in New Zealand that produced smaller than average apples.

The company tried to source them from elsewhere but found that they had limited contingency, as New Zealand is one of the biggest growers. One particular variety called Jazz is only available in New Zealand and so it was difficult to source that variety or a similar product from anywhere else. The company are now exploring a number of options to future proof their business.
Sheep on farming land in Northumberland
floods or a drought – prices go up. I could benefit because I can sell at a higher rate. However, if a certain country dumps a load of wheat and barley for hard cash then prices can plummet and that affects me. I am constantly looking at grain prices and the weather and I often have the broker on the phone…”

(Farmer)

“The impact of climate change… well…It’s very much like sell, sell, sell” (Farmer)

Our procurement manager is more of a weatherman these days - looking for the best places to source due to weather changes on a daily basis” (Food manufacturer).

“I don’t think some of them (buyers) get it. It’s ok to get it (vegetable) from somewhere else in the short term but what about 10-15 years time when that product is extinct because we stop growing it because it is just too risky? And if we are having problems here it isn’t going to be plain sailing anywhere else” (Farmer/ grower)

Key Insight

Farmers and growers have told us that they have stopped growing a particular crop (or are considering this) because it is too risky to produce (because there is no compensation for a failed crop). At the same time, retailers are looking for more locally grown produce to reduce their carbon footprint.
Taking action

Climate change strategy

We asked interviewees if the business had a climate change plan or strategy and asked if it addressed mitigation, adaptation or both. The larger businesses we spoke to (with higher turnover) told us that they didn’t have a climate change plan but a corporate social responsibility programme. Many talked about climate change being embedded in their operational plans. Some businesses said they had carbon reduction plans and water guidelines and other documents that would fall under a ‘climate change definition’. Interviewees reiterated the point that ‘climate change’ was not the language they used within the business.

“We are looking at energy inefficiency. A couple of years ago we wouldn’t have bothered to be honest but the prices have gone up so much you can’t not look at it. We have a plan that will reduce our electricity usage. We have costed it and we think we can get a return within two years” (Food Manufacturer)

We asked what strategies, if any, the management of the company have developed to address input shortages or disruptions to the supply chain due to adverse weather events or climate change affecting suppliers. Most talked about ‘switching’ (as discussed earlier in this report) or working with their suppliers to address issues like drought.

“Switching supply

Humdinger monitor the weather in different parts of the world – including monitoring cameras that look over the blossom around the apricot fields in Malatya. Weather can affect crop prices and they are looking to buy at a good price. The buying team at Humdinger are forecasting 12 months in advance and monitoring every month.

When Turkish apricot prices went up, they went to China. When China prices started to rise they switched back to Turkish apricots.

Humdinger believe that the climate tends to shift throughout the world so if the crop is struggling in one country it is likely to be ok in another part of the world and they will look somewhere else to get a good crop. They have built enough flexibility into their planning that this becomes possible.
Adapting to climate change

We asked businesses to give us examples of how they have adapted to climate change. Most provided examples that were mitigating against climate change, rather than adapting. For example, reducing the carbon footprint, saving energy, reducing waste (such as packaging waste). This reinforces the earlier findings that most understand climate change programmes to be about mitigation – reducing the impact of business activities on the environment.

When we asked for examples of adapting to extreme weather, the respondents were able to provide some examples that could be more closely linked, or described, as adaptation practices. However, the most mentioned ‘adaptation’ was to switch to other sources and suppliers and increasing the number of raw material suppliers, as mentioned earlier when discussing risk and impact.

“We are always adapting to the weather. If we have a sustained period of rain for example, or there is a drought, or an issue with the crop cycle we adapt, which is usually to buy elsewhere” (Food Manufacturer)

“Wheat is sourced within a 50 mile radius but that might have to change if availability becomes an issue” (Food Manufacturer)

The form of ‘switching’ farmers and growers are doing is switching from one crop to another crop and becoming less dependent on producing just one or two products. Fulbeck, who supply wheat

Key Insight

Farmers and growers are diversifying in response to extreme weather, with some ‘giving up’ on growing certain types of crops which could lead to a demand problem in the future. Many feel growing certain crops have become too risky as there is no compensation for loss when damage strikes.

MINDSPACE - Salience

We are drawn to what is novel and seems relevant to us.

Businesses are always looking for competitive advantage and innovative ways to reduce costs and grow their businesses. Some businesses are looking at new technologies and exploring opportunities such as wine making in the north of England or new crops that can be grown in warmer temperatures or are resistant to colder conditions.

“Going green” is seen as novel and attractive and many businesses are pursuing green agendas and exploring new technologies.
to Warburtons and rapeseed oil to McDonalds are also starting to introduce new crops and have even swapped to a different variety of wheat because of the weather (see opportunities on page 64). Diversification is becoming a preferred strategy for farmers and growers.

“We have to diversify because if we lose a crop no one compensates you for that” (Farmer)

“We are farming for drier weather because that’s the future I think”. (Farmer)

Like many other farmers, they are adjusting the way they work due to changes in the weather.

“With the spring barley we’re trying to drill a little bit earlier in the springtime to be able to get the roots established before the dry weather kicks in” (Farmer)

Apart from switching to new sources or suppliers, we were looking for other examples of taking action as defined in appendix 2.

Produce World are one of only a few companies we spoke to who have ‘moved locations’ as a direct result of weather. They have moved their winter growing of cauliflower to Spain because they cannot afford to lose money growing it here in the UK and they have spread themselves across the country, including growing in Shropshire, Scotland and Suffolk.

“One thing we have definitely done is we have spread ourselves more across the country... we are growing in Shropshire; we never used to because they get more rainfall than we do. We have crops in Scotland and right down to the Suffolk coast. We have definitely spread to enable us to manage risk”. (Grower)

Many businesses were affected by the snow and low temperatures of 2010. This weather event led many businesses to take action in preparation for more

The biggest ‘affect’ that moved businesses to think about mitigating their risk was financial loss. Weather events (such as the floods in Spain, prolonged frost in Lincolnshire) had a terrible negative impact on the business and company finances. The impact of these events hit bottom lines and forced businesses to act.

Key Insight

Most businesses were choosing to be reactive rather than proactive in response to extreme weather - investing only in adaptation after they were ‘caught off guard’ and affected in some way by a particular event.
Coping with snow

Branston have invested in snowploughs following the heavy snow in 2010. The company want to make sure that disruption to their business because of heavy snow is kept to a minimum.

The low temperatures that are now occasionally being recorded in Lincolnshire in winter (up to minus 17) have led the business to look more closely at how their assets – from machinery to buildings - can cope in cold weather.

“...We have begun to hold stocks of grit. Last year we purchased a huge amount of excess salt which I imagine was a reaction to the previous Christmas when the snow was an issue. We specifically target our warehouses and vehicle fleets and we make sure they have sets of snow tyres and things like that...” (Retailer)

Some businesses said that they were doing all they could to adapt but said they didn’t feel confident their local councils were adapting.

“One of my main gripes is that you talk to those people at the council and they’ve got no comprehension of the effect on us if they don’t grit the roads” (Dairy Producer)

“If we know that we’re going to have Scandinavian winters a conversation needs to be had with the local authorities. And it’s about gritting the roads” (Retailer).

If snow is forecast, retailers work hard to prepare. They told us that it was very likely that they would increase drivers hours - within regulations, and bring more staff into the stores to ensure the product is in the shop.

Keeping a close eye on the weather

Weather affects farming so at Warburton’s they are monitoring the weather – including temperatures at harvest time each year. Warburton’s are also looking at the long term trends affecting their supply chain. They have set up a ‘Farmers Forum’ to listen to farmers and explore potential issues and opportunities.

The aim of the forum is to take their suppliers on a climate change journey exploring how it will affect both businesses and make necessary change to protect both parties.
Following the snow of 2010, which caught many businesses ‘off guard’ the majority now have plans in place to cope with snow. Over half of the businesses we talked to had ‘adapted’ and invested to minimise disruption. Of those who had adapted, around half said that this was as a direct result of this snow.

Gathering information
Interviewees were asked if they monitored the weather and if they collected reliable and timely information about weather patterns/changes in climate. Farmers and growers were constantly monitoring the weather (and world market reports). Retailers were also ‘weather watching’ to predict demand for particular products. However, only a small number of businesses routinely monitor the weather and very few companies keep records. A number of businesses, mainly growers, said that they had their own weather stations and a few businesses (mainly growers) told us that they had started to record rainfall. Very few businesses collected written information on how past weather events have affected the business. Farmers could recall by memory bad weeks or seasons with some farmers quoting in detail events that happened up to 20 years ago. Some had dedicated staff within their business who had a role to monitor weather.

“Not something we do routinely unless linked to crop cycles when we would look retrospectively at the weather for the last year… and last three years” (Food Manufacturer)
“We do not do day to day monitoring but it is very important when looking at crop cycles” (Food Manufacturer).

“We are governed by the crop and the weather so we can harvest when it is ready. We have a weather station that collects all the data that we use” (Grower)

“The whole agronomy department is looking at weather on a weekly basis and predicting what might happen as the sales of the product is related to the outside temperature. On hot days, people eat more salad potatoes so demand rises and we have to keep up with that demand” (Grower)

Others were monitoring the weather using the met office as the preferred source and some left ‘weather watching’ to the merchants.

“Our merchants will forecast for us” (Food Manufacturer)

Insurance
Interviewees were also asked about insurance. They were asked if they had enough cover, if they had claimed on their insurance because of weather and also if they had experienced any difficulty with insurance companies with regards to weather. Almost all companies said that they had insurance. Very few had claimed because of weather events and those who had said that they had not experienced any problems. Almost all felt confident that they had the right level of protection and that weather is covered in the policy.

“As far as I’m aware, it’s just business continuity,
disruption insurance” (Food Manufacturer)
“We are probably covered for flood, but not sure about drought. We have business interruption insurance but I am not sure if this would be included. That is a good point…(will check)”. (Food Manufacturer)

Around a quarter of businesses said that weather was in their existing ‘disaster management plans’. A few companies said they didn’t have such a plan in place (these were the smaller companies and farmer/growers – who see weather as an everyday impact).

None of the businesses felt it necessary to modify insurance cover. Some businesses felt they were too big to even have insurance and were probably self insured.

New developments and existing assets
We asked if they had any new developments in the pipeline or expansion plans that included new buildings and asked whether climate change is considered and factored into plans. Most businesses said that climate change would be considered in new developments – especially new buildings. Almost all businesses said that they had - or would - address energy usage (and costs) in the design of new buildings, for example, energy efficient lighting and water recycling (such as rain water to flush toilets).

We asked the interviewees if they had made any changes to existing buildings to reduce risk, such as rain water run off, green roofs and cooling and insulating buildings. The majority of businesses we spoke to said that these things would more likely be considered in new builds as it was more difficult

Icelandic Foods
Icelandic Foods have spent £1.5million to expand its wet fish factory and in the development stage they looked at how to reduce water and electricity usage. The building has LED lights and they have moved to a water meter to uncover high usage areas within the factory.

MINDSPACE - Priming
Our acts are often influenced by sub conscious cues
The current weather activity (over the last two years) has primed business behaviour. Past weather events such as freezing temperatures and snow in 2010, high temperatures in February/ March 2012 and the current drought have stimulated adaptation plans. The current ‘unpredictably of the weather is the subject of much debate internally within the businesses we spoke to and externally in the media.
to adapt existing buildings – especially if they were dated or in a flood risk area.

“Adapting an existing building to get them to behave in an environmental fashion is extremely difficult and costly. Building it in from day one is the best thing to do. We looked at catching rain water on a big factory unit but it was amazingly expensive to do and it didn’t give us the pay back” (Food Manufacturer)

Farmers and growers had made some changes to make sure they continued to be in a position to sell their products to the major supermarkets, such as one grower who has moved strawberry growing from the ground to grow bags on tables. Drought was becoming a problem for the business so they adapted.

There were some businesses who had made changes to their existing buildings to try and reduce energy and water bills such as LED lighting, installing biomass boilers, putting solar panels on the roof, and catching and re-using rain water. Most of the examples given and shown to us whilst on tour of their facilities were changes to buildings and business processes with an aim of cutting cost.

Interviewees were asked if they considered climate change when renewing or maintaining their assets. Most agreed that they considered energy efficiency when renewing or maintaining assets - such as new machinery and equipment.

“We started out looking at how we could be more efficient and how we could cut our costs and found that we were becoming green in the process” (Food Manufacturer)

“We have new boilers which are state of the art eco boilers and cooling systems but we didn’t buy them because they were eco” (Food Manufacturer)

**Making further changes**

We asked interviewees if the business was planning to do any of the following in response to severe weather:

- Consider relocating
- Making extreme weather part of continuity and disaster planning
- Treating extreme weather similarly to other more traditional risks such as fire and theft
- Making changes to assets and services
- Modifying insurance cover
- Preparing a flood plan

Most businesses said they were considering making adaptation changes in relation to assets, but again the changes they have in mind are mitigation focused - reducing energy, for example. The Icelandic Group have been looking at ways to save water and said they are coming up with ideas for storage, using drain water to flush toilets and composting.

None of the large businesses we engaged with said that they would relocate their business or operations as a result of weather – including flood.

Three businesses said that they were looking at flood risk currently.

“We are looking at a flood plan and we are in the process of trying to engage someone to help us with our general disaster planning” (Food Processor)

### Saving Water

Branston have been working with The Environment Agency on water conservation and have invested in a water recycling plant at their Lincolnshire base. The plant has reduced their fresh water reliance by 60%. It has proved so successful, a similar plant has now been built in the South West.
Identifying risk

Worldwide fruit carried out a study on water availability, usage and water footprints in the supply chain last year with the objective of involving the company’s producers and suppliers across the globe in identifying their water availability, consumption and water management practices to establish the overall risk in countries of production where Worldwide Fruit sources fruit.

A questionnaire was sent to apple, pear and avocado suppliers and producers asking for information regarding locations, trees per hectare, soil type, water sources, irrigation techniques and water usage. Based on the responses and a robust desktop research followed by analysis, it was found that some countries Worldwide Fruit procures from are estimated to be already water scarce or approaching water scarcity. Countries such as Israel, Kenya, Peru, South Africa and Tunisia are at high risk. The company are now reviewing their strategy.
Investing in climate change adaptation

We asked if climate change was addressed in investment decisions. Most businesses agreed that climate change was considered in investment decisions but like all investment decisions, return on investment for the business was the number one priority.

“I think the company would have been prepared to put a wind turbine up if the pay back period was not as long” (Food Manufacturer)

“Indirectly, yes it is but it is all about the return on investment” (Food Processor)

E. Oldroyd & Sons

E Oldroyd and Sons are using drip water technology to use less water and they have become mindful of energy loss in the rhubarb sheds so have insulated some of the roofs. They are currently looking at investing in winter veins and solar panels and have recently invested in a new more energy efficient fridge network and have installed roller shutter doors so as soon as a vehicle or person leaves they come straight down.

Concerned about water shortages and drought, they are looking at the best ways to collect rain water such as using the rhubarb sheds and directing it to a big sub so they have some water. Taps in the pack house are all censored to switch off when hands are not under the tap.

Climate change is embedded in our strategy full stop. The reason is because much of it is tied into our financial plans. There is a high level of commitment to addressing climate change that the motivation is more financial than environmental” (Retailer)

Distribution

We asked distributors if they had adapted to climate change. Again, most of the examples given were mitigation focused, including moving towards reducing idle time - scheduling deliveries on non-peak hours, filling lorries to 90-100% capacity, and teaming up with other businesses to share loads. Other initiatives included moving fleet to hybrid technology or electric fleet.

There were some very good examples of climate change mitigation in almost all of the businesses
we interviewed, for example the Nisa delivery fleet is “fitted with telematics to reduce consumption by 3.3 %”, allowing the group to replay routes to ensure that the most efficient journey times are undertaken. They are also reducing wasted miles through partnerships and collaboration such with BP and J D Weatherspoons by doing joint deliveries “We are one of the first to market dual fuel” (Retailer)

“We started collecting rainwater because we thought that what falls out of the sky is free” (Food Manufacturer)

“The government have said no to GM crops, but one day it will wake up and we will have a food crisis and because it hasn’t invested in research... they will let loose (GM) on the general public, just like the flu vaccinations. They should say yes now, so we can spend the years testing it first to make sure it is safe”. (Grower)

The fleet run on bio-diesel and have Euro 4 engines, currently the most efficient and cleanest engines on the market. 27 have been running for a year now and are showing good returns.

“We have a lot of perishables in the temperature controlled vehicles. Traditionally we had diesel fridges at the front but we are now just putting the first two in which are liquid nitrogen fridges which don’t emit any co2 and they are totally silent which is better for the environment”. (Retailer)

**Genetically Modified Crops (GM)**

A few businesses (mainly growers/farmers) also felt that GM crops could be a possible solution to long term food security and felt disappointed that the UK Government will not at least investigate or start research on this issue - especially when other countries outside of the EU were forging ahead.

**Key Insight**

A return on investment, in a reasonable timeframe is essential to moving businesses to act.
United Biscuits have reduced water consumption across their sites by 15% on the 2009 level; led by reductions at Teesside, their largest water using site, following a £2 million investment in a water recycling plant there in 2009.

United Biscuits told us that seven out of its eleven manufacturing sites in the UK achieved water reductions in 2010, and that its Northern European sites followed suit, with a 7% reduction in Vertou, western France.

An innovative way United Biscuits reduce water use at their sites is to use ‘grey water’ from the roofs and gutters of their factories in toilet cisterns where it is practical.

United Biscuits claims to have achieved a 33% reduction in water use since 2007 and target a 45% reduction by 2020 compared to 2007; a target which increased in 2010 from the original aim of 25%.
Dairy Crest

Water is cited as a key environmental issue at Dairy Crest. Over the course of 2010/11 Dairy Crest have focused on levels of water efficiency at their manufacturing sites and have successfully reduced the amount of water it uses by 3%.

This reduction means that against their Federation House Commitment target of 20% savings by 2020, Dairy Crest has now achieved a 14% reduction since 2007/08. This apparently amounts to 354 million litres or 140 Olympic swimming pools.

With an increasing focus on water as a limited resource, Dairy Crest recognises supporting farmers to identify efficiency measures as a priority for their milk procurement team.

Dairy Crest is about to launch ‘WaterWell’, an innovative water auditing programme for dairy farms. This enables farmers to request a practical assessment of water usage for all aspects of their dairy enterprise; a tool which provides the farmer with a detailed report benchmarking their results against industry data and providing recommendations for greater efficiency.
Bars

We asked the businesses what is stopping them from implementing, or investing more in climate change adaptation. The following barriers were identified.

Cost/ Payback period/ Return on investment

Cost was mentioned by almost all of these businesses – even those who said they had the financial resources to adapt. Carrying out feasibility work was a cost and there was no guarantee that the feasibility work would support investing in adaptation (and mitigation). All of the businesses we engaged with were commercially focused. Anything that requires investment or change a business case that showed a return on investment was required.

The businesses that we spoke to said that the biggest barrier to investing in climate change adaptation and mitigation was payback periods. Businesses wanted to see a quicker return. Anything with payback periods running into decades was unlikely to get past the first post. Interviewees talked about their businesses not even considering proposals that failed to return something for the business within three years.

“We look at it from a cost view. If it is worth doing then we will do it” (Food Manufacturer)

“We have looked at renewable(s) – wind and solar but you are looking at a payback of anything between 7 and 12 years” (Food Processor)

“One of the things that strikes me is the long term return on investment because it always seems a great idea and then you go away and look at it and it isn’t as attractive as it looks” (Food Manufacturer)

“Anything with a payback longer than 2 years will not be looked at. For example, if a case was put together for a new product and it cost 1 million and I put a case together for green roofs, solar etc, then they will go for the new product” (Food Manufacturer)

“A lack of profit prevents dairy farms from investing generally; so any expenditure on environmental grounds is very unlikely without immediate financial benefit” (Manufacturer)

The tenant-landlord relationship

We found that there is no incentive for tenant farmers to improve their holdings if they do not own the property or land.

“You know you’ve only got to look around at the farms... in the main they are dilapidated because these big estates can’t afford to invest in their small farms, in the various tenanted farms... Because
the tenant farmers have no incentive other than their own stock…they are not going to put capital into barns and equipment and buildings….why should a tenant farmer put up a wind turbine? Because the likelihood is…his landlord is going to want a feed-in-tariff…the Northumberland farming stock needs private investment” (Farmer and Food Manufacturer).

“A big restriction for tenant farmers is that even to…diversify a farming business out of agriculture it needs the landlord’s consent…[a]nd if it’s going to make you lots of money the landlord wants part of it…[a]s soon as you…buy a bit of kit [and] nail it to the ground he owns it…so with our cheese rooms they’re not actually nailed to the ground they’re stuck. So we can actually take it away…we have a retained ownership of it but once it’s got the foundation then it belongs to the landlord.” (Dairy Farmer)

“We rent the building which is one of the issues. We have a massive flat roof which lends itself to solar power and we could invest but we have to spend at least £250,000 and also ask the landlord and it depends on the lease and how much return we will see as a business”. (Food Manufacturer)

“If you are a tenant farmer then there is not much incentive to invest. It does really depend on the relationship you have with your landlord. Thankfully we have a good relationship – until the rent goes up (laughing)” (Farmer)

“You wouldn’t…invest unless you had the full backing of the landowner. And the trouble is now, that a lot of places are in such short tenancy agreements that…farmers are loath to commit any money to a tenancy, if they’re only there for five to ten years, because they could invest that money and it could be gone” (Grower)

“We went from one extreme where there was too much protection for the tenants to another where there’s too little protection. Tenancies should be somewhat longer than they tend to be now, then tenants would invest.” (Food Manufacturer)

The supermarket as the customer

As well as being a driver to change and adapt, businesses who have major supermarkets as customers also feel that their supermarket customers can be a barrier to adaptation. Some businesses felt that short term contracts with supermarkets and ‘squeezed margins’ were preventing them from investing long term in climate change adaption and mitigation.

‘I think there is some acute issues in terms of the economics at the moment in the fresh produce sector in particular…the whole of the profit of the supply chain is migrated up to the retailers. They get all the value. There is very little left on the table for the growers. There is also a lack of security so everything is done on a one year basis, which gives the growers absolutely zero confidence to invest in stuff. I think that it is starting to eat the industry up to be honest…it is like David and Goliath every time. It is always short term contracts. There is never any money left on the table for the farmer. Farmers have absorbed all the inflation. We still sell carrots now for the same as we did when I left college in 1986… …So you know the profit has…moved up the supply chain and [the supermarkets] have all the power. And that is an issue; it is an issue for the industry.’ (Farmer/ Grower)

“We could lose it (agreement with supermarkets). We don’t have a contract. I don’t think we ever get a signed contract. But yes, you get a contract for season or whatever, but they could take it away from you tomorrow.” (Farmer/ Grower)

Key Insight

Short term contracts and uncertainty around future contracts are preventing businesses from adapting today.
MINDSPACE - Messenger

We are heavily influenced by who communicates information.

There is evidence that people are more likely to act on information if experts deliver it. There is a clear role for Government as a messenger but this role is a strategic, facilitated and independent role, and when necessary an ‘intervening role’. Businesses are looking to government to lead in many instances.

Whilst expertise matters, so do peer effects and this was witnessed during the research. Businesses are more likely to seek and receive information from experts, peers and organisations within their sector, or supporting their sector including their customers and competitors. Organisations such as The British Retail Consortium (BRC), The Food and Drink Federation (FDF), The National Farmers Union (NFU), Dairy UK, AND Association of Cereal Manufacturers (to name just a few) who represent the interests of businesses working in specific sectors are arguably a more effective messenger and were mentioned by businesses during the research.
Local planning regulations

Those businesses that can invest have described instances where red tape around planning has held up their plans or even prevented them from making changes.

“We would never get planning permission in this part of the world for things like wind turbines. They hate them around here. We have had trouble adapting our building to cope with a flood on the grounds that we are in a flood risk area! So you try, but it just ends up costing more” (Farmer)

Too much / too little information

Interviewees either said there was too much or too little information available on climate change adaptation. Over half said that there was too little. The businesses that said there was too much said that they were unsure what to trust (see below).

“I think there is the support out there if you look for it (but) I think it can be very confusing trying to navigate around so many different organisations that offer so many different things” (Retailer)

“I think there is very little out there to help us. I haven’t seen anything that will help us” (Food Processor)

Trusted Sources of Information/ Evidence

When discussing information, the issue of trust arose. Those interviewees who said there was a lot of information available felt that one of the barriers to progress was deciding what information and evidence to trust. Many felt that they needed the security that adaptation plans would work and deliver on cost savings. For example, one retailer we spoke to felt that they didn’t know who to turn to for advice in regards to purchasing the most environmentally sustainable fixed assets.

“Who are the solid sources of information? If we’re looking at what are the best new fridges to install in our stores and in our distribution centres, which is the best type of fridge?” (Retailer)

Three businesses wanted to see a Government approved supplier list that they could access.

A well known food manufacturer told us that nothing was a barrier to adaptation and felt the issue was mainly evidence as they felt it was right to fully investigate the benefits of investing in climate change adaptation and having the right evidence to support plans before they made changes.

“Nothing is stopping us – it is just new territory and it is important (for us) to understand what is the right solution for (our business) as we are dealing with the unknown in many cases. We must remember that climate change is a secondary effect to cost driven objectives ” (Food Manufacturer)

A lack of relevant and industry specific information

The majority of businesses we spoke to felt that there was a lack of relevant, industry specific information on climate change mitigation and adaptation. Almost all businesses said that they would like to see case studies and examples of both good and bad practice relevant to the food and drinks industry.

“They (case studies) don’t go as far as being specific to your industry or your business” (Food Manufacturer)

Key Insight

Addressing climate change is secondary to cost driven objectives.
“I think the trouble with the food industry is it is all cloaks and daggers. Nobody wants to give away anything for fear of losing competitive advantage which is ridiculous” (Retailer)

A number of businesses were surprised to find out that there was guidance and tools to help them with adaptation. Many wanted to see the documents we took with us to the interviews. When we explored why they had not seen them or looked for them a common answer was as follows:

“We never know what’s there... You have to go looking for it. And if you don’t have the time...no one feeds any information to us” (Food Manufacturer)

Isolation

Businesses not supplying into the main supermarkets (and including convenience retailers) or those who are not working with their customer(s) on environmental outcomes are working in isolation. This means that they do not have the luxury of sharing knowledge and best practice within the industry and are not progressing at the same speed.

“There is no place to cross fertilize and see how you are doing or share best practice and experiences with others” (Retailer)

“Big organizations are big enough to have people and departments looking at this but it is just me and another colleague that head up climate change and this is just an add on to our day jobs” (Retailer)

“it would be good to have someone to talk to about this - a trusted source or expert” (Grower)

Government

A number of businesses felt that the ‘Government’ was a barrier for them in regards to investing in both climate change adaptation and mitigation. Many businesses were frustrated by recent policy changes, such as the reductions in feed in tariffs for example.

“With the feed in tariff they (Government) have made a muck up of it really. But it’s the uncertainty and the short time frame they’ve changed their mind - stopping and starting. No business wants to invest when it’s a start/stop thing” (Grower)

During the period in which our research was conducted, many interviewees mentioned that their business was waiting upon an appeal hearing in respect to the Government’s changes in its solar panel policy.

“With the feed in tariff, they have made a muck up of it really... No business wants to invest when it’s a start/stop thing” (Grower)
“[The Government] have let us down. These policy changes affect business decisions. We have to think long and hard about how far we rely on these things. It is not fair to move the goalposts. We lose confidence … [w]e need to know that [the Government] are not going to do a U-turn.” (Grower)

Recent policy changes are seen to reflect a lack of cross-party commitment to specific and long-term climate change policies. This produces instability for businesses and hinders any possible investment by those wishing to tackle climate change within their company.

“Businesses were looking to Government to help them set a long term vision for the industry. Also, some businesses felt that the Government was doing less for climate change adaptation – particularly in relation to farming – and too much for biodiversity and questioned their priorities.

“There are all these grants for wildlife. I think there is an overemphasis on this.” (Farmer)

“I am fed up with hearing about what I should do to protect wildlife. Don’t get me wrong, I care, but I care more about surviving through to next year and some more help with this would be more valued.” (Farmer)

A number of businesses also felt that government support was more forthcoming if you are a ‘larger business’ or well known brand and they sometimes felt left out of potential development opportunities or discussions concerning their sector.

“I find that the government listen more to the bigger businesses and don’t think to ask us about anything to do with our sector and this can be unfair” (Manufacturer)

“They (bigger companies) don’t need the help and guidance as they have it all already - we could do with a bit more help” (Grower/ farmer)

“[The Government] have let us down. These policy changes affect business decisions. We have to think long and hard about how far we rely on these things. It is not fair to move the goalposts. We lose confidence … [w]e need to know that [the Government] are not going to do a U-turn.” (Grower)

Recent policy changes are seen to reflect a lack of cross-party commitment to specific and long-term climate change policies. This produces instability for businesses and hinders any possible investment by those wishing to tackle climate change within their company.

“The industry needs a really long term strategic view of where we will be in say 25, 30 years ” (Grower)

Because of the reduction in feed-in-tariffs, we “stopped…investing in large scale PV panels at a suitable site in Cornwall…which would’ve been able to generate three quarters of (the business) electricity usage or perhaps…at least half of our electricity usage from photovoltaic panels.” (Food Manufacturer)

Key Insight

Many businesses feel there is a ‘lack of vision’ for the food industry and cannot picture where the industry will be in 20 years.
Drivers and Enablers

We asked the interviewees a number of questions to help uncover some potential drivers and enablers. This included exploring what support, information and guidance would enable their business to adapt to climate change.

Incentives

The majority of businesses we spoke to believed that the Government ought to provide fixed and long-term incentives to business which reward the adoption of sustainable and responsible modes of production, environmentally friendly technologies and the efforts of early leaders.

Some of the incentives proposed by our interviewees were grants, low interest loans, better access to capital for the construction of new buildings and the renovation of old; funds for employee education and training on climate change adaptation; tax breaks in the form of energy efficiency savings, environmental related rebates; and also mentioned was a Government recognized award scheme.

"[a barrier to adaptation is the poor] payback on technologies. If there was an initiative set up by Government [which gave] a grant, or a sum of money, to invest within the company which will help you do something that is beneficial to you but that is also very beneficial to the climate would be good.” (Food Manufacturer)

When asked ‘what sort of incentives would appeal to you as a business?’ One manufacturer responded with “Money… [a]bsolutely we’d be on it like a rat up a drain pipe.”

Many businesses also sought low cost independent external support to prove the payback of tailoring their economic model to be environmentally friendly. Some businesses have in-house expertise and are dedicated to both climate change adaptation and mitigation, however, even if this was the case there was still a requirement for independent external help.

A number of businesses spoke about employing environmental consultants and often looked to them to provide answers on how to deal with climate change. The Carbon Trust and the Environment
Agency were both seen as reliable and trusted organisations for the sourcing of information and with whom businesses could have open conversations. Some businesses welcomed our meeting with them and said that they wanted “someone like you” (referring to our researchers).

“We do need help and have employed a third party company to help us get our E[environmental] M[anagement] S[ystem] up. We need them to assist us, guide us, steer it and develop it – so yes, we are highly reliant on external support.” (Food Manufacturer)

It was important, however, that external support understood the food industry and specifically, the wants and needs of the business sector. One company told us that they had employed external help but they came up with a list of things to do - many of which were out or reach and unaffordable. Realistic objectives were considered very important.

“She (referring to external support from a well known body) was very nice but she had no idea about business. She created a wish list - something from Peter Pan”. (Food Manufacturer)

**MINDSPACE - Incentives**

Our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses

Incentives are a motivation. Our research found that grants, rebates and financial reward move some businesses to consider and act. However, these same businesses are looking for short-term financial gain and not incentives that promise a pay back in 10-15 years time.

This research also found that losses loom larger than gains. The reason many businesses had invested in some adaptation (and mitigation) is because certain practices, processes or technologies have helped them to reduce costs (such as energy and water bills) or avoid losses. Charges, fines and levy’s imposed on companies was a strong motivation to act, as was financial loo due to crop failure for example.

But financial incentives are not the only motivator. This research has shown that many businesses are adapting (and mitigating) to climate change because it makes them look good in the eyes of the customer or consumer.
**Partnerships**

Many felt that partnerships with other organisations – including other food businesses – helped them to achieve more. Several businesses share lorry space to help them achieve their targets on reducing the number of lorries on the road. This partnership has worked in bad weather too when sharing resources – such as transport – helps to keep products on the shelves.

A few businesses talked about working in partnership with The Environment Agency, The Carbon Trust and universities on the climate change agenda. Facilitating partnerships and encouraging alliances is a powerful enabler.

“Well, we are not experts. Our core business is potatoes but what we do best is work with others to make it happen” (Grower)

**Long term Government commitment**

Many businesses we spoke to wanted to see the policies of government encouraging and enabling businesses to invest in both mitigation and adaptation strategies for the long term.

They felt that this would give them the confidence to act now. They were keen to see cross party support for this issue and felt that food security was serious enough to warrant a consensus.

“We need some robust and static government policies that encourage businesses to invest in mitigations and adaptation projects” (Grower)

“How can the government expect us to invest for 10-20 years when they will not do the same?” (Food Manufacturer)

**Cost Cutting**

Driving down costs in energy and water is the first priority for almost all of the businesses we engaged with. All businesses saw the rising costs of energy and water as ‘crippling’ to the business and all were looking for ways to reduce costs.

**Customers**

Although we cited customers as a barrier, customers are also a clear driver to addressing climate change adaptation (and mitigation). Retailers in particular are moving food producers, manufacturers and processors to mitigation and adaption.

“Because we are a Tesco supplier, they look to us to be leaders and they are talking about a 30% reduction in carbon emissions by 2020” (Food Processor)

“They (retailers) come to us and ask us to redesign the packaging. We do and then they come back and say they don’t want that sort of packaging anymore, they want the vac pack so they dictate”. (Food Manufacturer)

“They (retailer) measure and question and see how you are doing – taking an interest in everything” (Food Manufacturer)

“We are very strictly controlled in the food industry by the likes of Sainsbury’s, Tesco and Adsa who expect us to (change) otherwise they won’t do business with us” (Food Manufacturer)

“We only buy our fish from authorized suppliers because there is a certain criteria that Tesco enforces… and Sainsbury’s will only take fish that have come from fisheries and fishing areas that have been certified by the NSC, so in an indirect way when it comes to climate change (and sustainability) them asking you to do these certain things drives it really” (Food Processor)

“If Tesco require it… (The ISO) It’s all driven by what Tesco wants – quality, technical manuals or procedure manuals and that’s really what we go by” (Food Manufacturer)
Reputation

Other drivers identified included motivation by customers and consumers to ‘go green’. Businesses felt that there was benefits to adapting to climate change including a good reputation (see page 30 for more on reputation).

“People want to be seen to be going green” (Food Manufacturer)

“It looks good to do this - and it can help the business in the long term” (Retailer)

“We are doing it to look good with our customers (retailers) and because it is the right thing to do” (Grower)
Opportunities

We asked the interviewee(s) if their business had identified any opportunities from changes in the climate – such as new products and services. Just under half said that they had identified some opportunities.

“...Only that we might be able to grow more extensively in the UK. Linseed could be grown commercially but we still have a long way to go” (Food Manufacturer)

“Different crops and strawberries that can grow with less water” (Grower)

“The only thing would be that these machines work for eight weeks of the year. There is an argument that if there is enough moisture to get the peas to go, we could extend the season and therefore we can increase more tonnage going through the machines, so if we can guarantee, we could start earlier in June and finish in mid-August then we have added two more weeks to our season.” (Grower)

“Yes. In periods of bad weather if we can get the product to the doorstep it has definitely helped us retain that customer as it highlights the value of the doorstep service. Some of the roads we look after and grit ourselves to ensure deliveries.” (Dairy Producer)

“...if the barbeque season is moving into October, then that's definitely an opportunity.” (Food Manufacturer)

“...you could potentially build a new glasshouse where you could get more...energy advantage or cost advantage for doing so...” (Grower)

“Yes. The opportunity for us is that, as the temperature goes up, we sell more. We are...

New Products to cope with heat

Warmer summers in the UK has led United Biscuits to create a new biscuit for people who like chocolate biscuits in the summer but don't want sticky hands. Quirks have already hit the supermarket shelves and are available in three different varieties.

United Biscuits told us that this product was developed as a direct result of climate change. Research showed that the UK was ready for a ‘summer chocolate biscuit’.

introducing new lines all the time as the changing fashions of the salad world [dictate].” (Food Manufacturer)

“...indirectly yes. It automatically starts you thinking [about] how I can be innovative in the process because you know the climate is going to play its part, you then automatically innovate looking at new varieties that you can grow, that are drug resistant and how you utilise your crop better.” (Grower)

“Yeah, varietal strawberries...looking at strawberries that require less water.” (Grower)

“Sweetcorn on the south coast; maize for silage virtually everywhere in England now... these Anaerobic Digestion plants that are going up everywhere there is a lot of maize being grown for them, which taking... land from food production into energy production...’ (Grower)
Wine making in the North

Fulbeck Farm in Lincolnshire moved from growing Hereford wheat to a different variety – solstice, following a growing season that only produced one and a half tonnes of yield. This crop did a tonne more than the Hereford variety, which was important for the balance sheet. The farm doesn’t irrigate so they have found it more difficult to keep growing Hereford in the dry climate.

Fulbeck have recognised that a changing climate means changing what they do and over the last few years they have been looking at developing their oil and wine business. They have created a vineyard and planted grapes in 2010 to see if they can survive in Lincolnshire. They were surprised to find that they could in fact produce good quality wine and they are currently crushing and fermenting the grapes and working with a wine maker. They feel a drought this year will be bad for some crops but not for their vines. This year they are looking to experiment with fruit juices as another potential market to operate in.

“we’re always trying to extend the growing season, and the grazing season, and use as little forage as possible, or make the stock work…outside longer. So I think it’s enabling us to do that…” (Farmer)

“The Heavy snowfall – everyone was panic buying or buying more than usual which is great but you have to keep up with demand and supply” (Grower)

“Weather creates sales opportunities but it also creates challenges. Last week we were selling summer stuff… BBQ’s were going out by the pallet but this week we are back to rock salt, soups and pies. If you can meet changes in demand it is great for sales. We have to be responsive and meet demands like this”. (Retailer)

“Drought would imply hot weather. You may get more people out on the high street. It might actually drive up sales so it might be beneficial in a perverse kind of way. However, poor weather has an impact on footfall on the high street so it depends on the type of weather change” (Retailer)

Extreme cold snow brings about a fantastic uplift in sales because people shop more locally (and) we see the same with warm weather. People don’t bother to travel further afield for their shop. So from that point of view it is good for us. In some ways we welcome the extremes” (Retailer)

“We are always looking at ways to innovate as a direct result of climate change. Currently we are looking at growing new varieties and drought resistant crops. The change in weather can drive innovation. You can see it as a problem or an opportunity. We see it as a potential opportunity” (Grower)

The remainder of businesses (just under half) said that they couldn’t see any immediate opportunities.

“I would like to see examples because I can’t see anything specific” (Food Processor)

“I am not sure there is right now” (Food Manufacturer)
Segmentation

This secondary and primary research undertaken by the team at Social Change UK allowed us to find out a lot about businesses - in particular their attitudes and behaviours with regards to climate change. An analysis of the information allowed us to group the businesses into four clear segments. Each segment is a group of relatively homogeneous businesses who exhibit common attitudes and behaviours with regards to climate change.

We have identified these segments as:
- Leaders
- Strivers
- Reactors
- Sceptics

Pen portraits of each segment and the most likely or common type of business (such as retailer, farmer or grower can be found on the following pages).

We have mapped these segments on an axis which shows their commitment and ability to act as either high or low.

In the recommendations you will see the type of interventions that are more likely to work for each of the segments identified.

Overview of type segments identified

- Leaders: 21.9%
- Strivers: 41.4%
- Reactors: 26.8%
- Sceptics: 9.7%
Pen portraits

**Leaders**
- Proactive - thinking ahead and adapting
- Setting the agenda - leading the way
- Resources in house - such as a dedicated CSR manager
- High commitment at a senior level/board level
- Have the financial resources to invest
- Working in partnership to progress own agenda
- Strategies and plans to address both climate change mitigation and adaptation, usually embedded in overall business strategy linked to cost reduction and growth
- Mitigation strategies that are long term: 10-20 years
- Alternate sourcing strategies in place to reduce the potential risk if a product becomes unavailable due to weather.
- Peer effects: likely to move and adapt based on what the competition are doing
- Government legislation/regulation forces them to act (particularly where cost in incurred)
- Want to be seen to be ‘doing the right thing’ and recognise that they must act to achieve this
- Investing in innovation products
- Businesses thinking about the end user - the general public

**Most likely to be:**
Retailers - mainly supermarket chains, large manufacturers and established brands, businesses signed up to the Carbon Disclosure Project

**Strivers**
- Adapting, investing where there is demonstrable ROI and evidence to prove ROI and success
- Striving to be a leader in their sector
- Adapting to please customers and secure contracts (usually leaders)
- Available capital preventing them from being a leader and doing more
- Short term contracts prevent them from making long term investment decisions
- High level of commitment at a senior level
- Mitigation strategies are medium term: 3-5 years.
- The affects of weather change is considered in strategies and business plans and part of risk management
- Weather is a high risk to the business
- Heavily influenced by who communicates information
- Government incentives/support highly valued
- Customer demands for quality, safety, greener processes forces them to act
- Value external support and guidance
- International impacts of weather on the business are considered
- Adaptation is embedded within other policies/strategies such as health and safety or within environmental policies

**Most likely to be:**
Large scale growers/farmers who own the land, Businesses supplying major supermarkets, Some convenience/smaller retailers
Reactors

- Investing at time of need
- Little available capital to invest in both mitigation and adaptation
- Interested only in investments that will cut costs and grow business in the short-medium term (demonstrable ROI)
- Aware of the need to adapt but lack skills, support and resources to make changes
- Information hungry - want to know how to adapt and change
- Coping with the current impacts of climate change and ‘doing their best to change/adapt’ (temporary fixes/changes)
- Wait and see attitude
- No strategy or plan
- Struggle to meet customer wants and needs and or doing the bear minimum to meet customer contract requirements
- Driven by cost savings to the business - in particular energy costs, fuel, water bills

Sceptics

- Doing very little adaptation
- Interested only in adaptations/changes to business processes and infrastructure that will benefit the business
- Changes made to the business will not be driven by the climate change agenda
- Trying to resist demands/calls for change from customers
- No climate change strategy/not embedded in overall business strategy
- Lack general understanding of climate change
- Sceptical about climate change - is it really happening?
- Complacent
- Choose not to supply to supermarkets because of the contractual obligations (relating to the climate change demands)

Most likely to be:

Businesses unlikely to be supplying into the major supermarkets, tenant farmers/growers, businesses who are doing the bear minimum to meet customer contract obligations

Most likely to be:

Manufacturing/processing firms unknown to the consumer, some producers, those who supply to supermarkets but have very long term relationships
Collectively the industry has told us that it knows that there is a need to adapt to climate change but in practice there is limited evidence of any wholesale move to adapt for climate change in the future, with just a few exceptions, as described in this report. Most of the adaptation evidence we collected was temporary and reactionary and in many cases implemented not as a result of climate change but a drive to reduce costs.

The majority of businesses we interviewed didn’t believe there was a significant and immediate problem facing them. Businesses sourcing raw products felt that their strategy to ‘source from other suppliers’ or ‘hedging bets’ by having more than one or two suppliers is a safe strategy, with few concerned about the future availability of raw products, believing that the issue facing them was one of cost rather than availability. With the exception of a few, one might conclude therefore that the business’s general approach to adaptation was to source from elsewhere (rather than work with growers and producers to stabilize the supply chain).

Businesses that had recently faced interruptions as a result of extreme weather had generally dealt with these in reactionary ways and in the example of severe snow, had felt frustrated that there was not the same level of snow in 2011/12 as there was the previous year. Few, if any, businesses could demonstrate that they had assessed the impact of weather on the business both now and in the future despite an apparent high level of awareness and engagement in climate change issues. On closer inspection, this high level of awareness and engagement is evidenced for cost reduction programmes that could see the business saving money or pleasing customers and consumers. One might therefore conclude that adapting (and mitigating) to climate change is in fact a secondary behaviour change – a net effect of a primary driver, which is to drive down costs.

The pressure from supermarkets on the supply chain to force changes in food production, packaging and distribution has moved food businesses to make changes. However, some producers are finding it more and more difficult to invest in the longer term when contracts are short term and margins are relatively small.

The information on climate change and adaptation from organisations such as DEFRA and UKCIP are available to all the businesses we spoke to but few could recall their existence, and none had used the tools available. Businesses are more likely to seek and receive information from experts, peers and organisations within their sector, including their customers and competitors. Organisations such as The British Retail Consortium (BRC), The Food and Drink Federation (FD), The National Farmers Union (NFU), Dairy UK, and The Association of Cereal Manufacturers (to name just a few) who represent the interests of businesses working in specific sectors have been more influential in the area of climate change.

There is a need to bring the industry together with relevant bodies to agree a consensus approach for the industry that balances the needs and wants of both the industry and government. We identified some very real barriers to change that need to be addressed to inspire confidence, encourage innovation and importantly protect the food chain now and in the future.

We hope our recommendations start a much needed conversation on this important issue.
Businesses sourcing raw products felt that their strategy to ‘source from other suppliers’ or ‘hedging bets’ by having more than one or two suppliers is a safe strategy, with few concerned about the future availability of raw materials.
Recommendations

In designing possible recommendations we have been careful to consider the feedback from interviewees about what is suitable, feasible and acceptable (SFA) and we have focused on one simple behaviour goal; moving businesses of all sizes to consider and act on climate change today for tomorrow.

However, for the majority of business planning for tomorrow is never / rarely 20-30 years. Many told us that in practice they worked to short-term objectives focussing on cost, competitiveness and responding to the customer. There is no incentive to explore adaptation or the guidance offered by government and other bodies unless the businesses can see it meets either a cost benefit need or customer demand.

With this in mind there are three potential strategies:

1. Adaptation based on evidence of cost benefit

Within the evidence collected for this report were several examples of positive changes made by businesses that improved sustainability and robustness of the supply chain and saved costs. Whilst these may have been discovered following various efficiency drives they represent a “win win” and we have recommended several interventions on the following pages that adopt this “win win” approach.

2. Regulatory enforcement

Hard instruments such as legislation and regulation to compel businesses to act in a certain way and lever change is an option. These approaches are often very effective, as evidenced in this report, but they are costly and resistance from businesses and the current government which is adverse to direct interference with business may make this option unworkable. Nevertheless, it should be subject to the SFA test.

There are several type of legislation that could be invoked from a full Act of Parliament which would include mandating organisations to comply to certain evidential criteria that could be independently audited. This would be highly bureaucratic and costly but would be certain to deliver results. Less onerous requirements would be for voluntary statements of compliance in a similar fashion to those given under CSR. These may result in less actual change in the medium term. However, as evidenced in this report, legislation and regulation (especially where financial penalties exist or impact on the business) has become an internal driver in some businesses, but further work is required to assess this option.

3. Customer & Industry driven demand

All businesses said that changes they had made were as a direct result of customer and/or consumer demand. Based on this assertion that the businesses are customer driven it is conceivable therefore, that should the customer demand their suppliers to act in ways that protect the food supply chain in the future, businesses are likely to respond. The customer is a powerful change agent and collaboration and co-creation with ‘change agents’ such as retailers is recommended. This is a very complex issue requiring considerable further analysis, which is outside the scope of this report and it should be developed further.

Changing behaviours

Assuming that a ‘helping hand’ rather than a ‘hard instrument’ such as legislation and regulation is the preferred approach to moving businesses to adapt to climate change, we have suggested a number of possible interventions using nine of the most robust (and non-coercive) influences on behaviour captured in the simple mnemonic - MINDSPACE³.

MINDSPACE draws on the psychology and the behavioural sciences. Throughout this report we have captured behaviours demonstrated by businesses and described them in brief in the gold boxes. In this section we have provided further
evidence of those behaviours and suggested a number of recommendations that could help to change behaviours, or in many ways ‘harness’ the power of a particular behaviour. We have also noted at the bottom of each page the segments (identified on page 67) who are more likely to respond or engage with the recommendations. Finally, we would like to point out that these are recommendations put forward to encourage debate and discussion. We believe it is very important to work up proposals with representatives from the industry and would advocate a development phase where recommendations can be put through the SFA test rigorously and with stakeholders.

Messenger

Evidence

A number of useful interactive tools and publications are available to businesses to help them consider and adapt to climate change. Our research found that these tools are under-utilised mainly due to a low awareness that such resources exist. Businesses were unlikely to source information and resources about climate change adaptation for businesses from climate change programmes. Instead, businesses are more likely to seek and receive information from experts, peers and organisations within their sector, or supporting their sector including their customers and competitors. Organisations such as The British Retail Consortium (BRC), The Food and Drink Federation (FDF), The National Farmers Union (NFU), Dairy UK, and Association of Cereal Manufacturers (to name just a few) who represent the interests of businesses working in specific sectors are arguably a more effective messenger.

Our research found that there was a messenger role for the Government. This role was largely a strategic, facilitated and independent role, and when necessary an ‘intervening role’. Many businesses wanted to see the government set out clear policy directives that meet the needs of the industry in the long term and facilitate changes to ensure fairness and equality within the sector.

The language used by the messengers must be relevant to the industry. As we have discovered, mitigation and adaptation – and even climate change – is not used internally by businesses and externally with the general public.

Possible interventions

1. Tools and resources specific to the sector/industry and backed up with case studies and examples of practice delivered by peers, competitors, industry supporting organisations and communicated using channels known and used by businesses.

2. A clear benchmark that sets out ‘good adaptation practices for food businesses’ with an indication of the benefits and the cost involved and broken down by sector.

3. A robust five-year marketing and communications plan with measurable outputs and outcomes that promotes the support, tools and resources available, utilising a range of appropriate marketing and communications channels and designed with the target audience is mind.

Best for:  

SCEPTICS  LEADERS  STRIVERS  REACTORS
Evidence

Offering incentives will help businesses consider and adapt to climate change. Our research found that incentives are only likely to work if they focus on reward (financial) and/or recognition (public). Our research showed that money is an overriding motivator. The reason many businesses had invested in some adaptation (and mitigation) is because certain practices, processes or technologies have helped them to reduce costs (such as energy and water bills) or because it makes them look good in the eyes of the customer or consumer.

Incentives cannot be time bound and ideally need to extend beyond a government term as there is a fear of loss and some distrust when schemes are cut short, and/or changed. Businesses are looking for short-term financial gain and not incentives that promise a pay back in 10-15 years time. Incentives by the Government now will be met with some suspicion due to the recent issues regarding the cut in subsidies paid for solar panels.

Possible interventions

1. Consider financial incentives that help businesses to see a faster return on investment – ideally less than five years. Some adaptations already have clear benefits but are not communicated in ‘business language’.

2. Continue to incentivise businesses with further tax breaks especially those businesses that invest in long-term adaptation and mitigation.

3. Recognise businesses through a dedicated recognition and award scheme led by industry support organisations such as the FDF and BRC and supported by government. This will allow businesses of all sizes to enter an annual awards scheme and showcase their achievements and progress in key sustainability areas. Case studies of how businesses have adapted and made changes will become available and can be shared more widely.

4. Whilst recognising that parliament cannot constrain the next, it would be beneficial to increase stability and confidence by having a cross party agreement on climate change support for businesses in the food industry and we believe this should be explored.

Best for: SCEPTICS, STRIVERS, REACTORS
Evidence

The competitor and customer as influencer came out strongly in this research. Businesses were more likely to make changes to their business processes, practices and infrastructure if they were aware their competitors were doing so. What might have been a competitive advantage at one time (such as recycling) has now become a ‘business norm’. Businesses are watching what is occurring within the industry and where they can see either competitive advantage, cost savings or growth opportunities they are quickly following suit.

‘Corporate Social Responsibility’ (CSR) is relatively new in the public eye but is fast becoming a necessary and ‘norm’ for business. Businesses are more likely to make a contribution to society when they see other businesses contributing as well and with many of the larger and well known businesses and brands driving forward CSR internally within their organizations and externally with their suppliers and customers, other businesses are watching and following.

Possible interventions

1. Our research found some good examples of businesses adapting (and mitigating) to climate change. A case study database showing examples broken down by sector (not just UK) will encourage businesses to consider and act. These case studies need to be well researched and presented in a language businesses can understand including capital required, payback periods, business benefits and opportunities for growth. Following this, promotion through business channels.

2. A series of pilot ‘visionary’ sites across the UK in the food and drinks industry (one for bakery, one for dairy, one for food distribution, one for farming/growing, one for retail etc) that bring together all partners in a food chain (and other partners and stakeholders such as universities, industry experts) with a key aim of ‘future proofing’ a sector and capturing the learning and transformation will inspire other businesses within the industry to follow suit (see box x for further ideas on visionary sites).

3. Regular networking events hosted by business supporting associations (or even businesses) and supported by the government will help to encourage the exchange of stories, ideas and suggestions. Interactive sessions, case study examples, surgeries and seminars linking people and organizations can move businesses towards adaptation and mitigation.

Best for:

- **Leaders**
- **Strivers**
- **Reactors**
Defaults

Evidence

Our research found that ‘defaults’ have helped to move businesses to adapt to climate change. The biggest default we have discovered in our research is the default option of switching supplier(s) should a product become unavailable. This has become the ‘easy option’.

We also found in our research a negative default that would need to be addressed. This default is one of passing responsibility to others – such as The Environment Agency, local councils and government to address climate change impacts such as sea level rises and defences, gritting of roads for snow etc. Whilst it is the responsibility of these agencies and organisations to fulfil these responsibilities and minimise impact, improved partnerships and a sense of ‘equal’ responsibility is needed.

Possible interventions

1. An example of a default that could lever change is a flood levy for businesses operating in high flood risk areas. The money generated will assist affected communities by providing additional funding to rebuild essential infrastructure - for example, roads, bridges and schools. It could also assist businesses that struggle to operate following a flood due to insurance issues. Businesses who demonstrate robust adaptation strategies to cope with flood could see a reduction in their levy. It is likely that this would be highly resisted by businesses. A similar scheme is currently operating in Australia.

2. A responsibility deal (a form of commitment too) between business and agencies to address climate change adaptation, setting out clear roles and responsibilities could move both parties to consider climate change adaptation in business planning, risk mitigation and long term strategy (For example, in relation to road gritting, The Highways Agency has a responsibility to grit major roads, councils grit minor roads and businesses must ensure clear access and health and safety on their own premises, gritting pathways and access areas).

3. Linked to other recommendations, there should be further encouragement within the sector to work together to find solutions that do not always involve looking for other suppliers as the worse case scenario for businesses and the consumer is that secondary sources will become depleted and expensive.

Best for: SCEPTICS REACTORS
Evidence

We are drawn to what is novel and seems relevant to us. Businesses are always looking for competitive advantage and innovative ways to reduce costs and grow their businesses. A few businesses talked about using new technologies, comparing themselves to their competitors and the opportunities they have uncovered with climate change such as wine making in the north of England, new crops that can be grown in warmer temperatures or are more resistant to colder conditions. Our research also showed that some businesses had not recognised the opportunities that climate change presents.

Possible interventions

1. Further encouragement and promotion of ideas and examples of how businesses can exploit the opportunities for business diversification and growth as a direct result of climate change (linked to networking, case studies, innovation events etc)

2. Set the industry a challenge. Can it grow grapes in Scotland? Can products typically brought from outside of the UK now be grown and manufactured here in the UK? Linked to the visionary pilot sites and summits, and also to universities and schools (involving children in thinking about food security and innovation) this could be a fun, profile raising and potentially a profitable proposition (although this is likely to require some start up funding).

Best for: LEADERS, STRIVERS
Evidence

The current weather activity (over the last two years) has primed business behaviour. Past weather events such as freezing temperatures and snow in 2010, high temperatures in February/March 2012 and the current drought have stimulated adaptation plans. The current ‘unpredictability of the weather is the subject of much debate internally within the businesses we spoke to and externally in the media.

Possible interventions

The current weather system and its unpredictability presents an opportunity to open up the debate on a changing climate and how businesses can and should adapt, focusing solely on the effects of weather (to avoid further focus on reducing energy etc). A summit inviting the food and drinks industry to debate whether the weather of today is a symptom of tomorrow and why businesses should act will start a much needed conversation on food security. A sense of urgency needs to be instilled and with collaboration and co-creation of solutions with businesses and those representing the industry a partnership approach between government and business on this issue will develop.

Best for:

1. SCEPTICS
2. LEADERS
3. STRIVERS
4. REACTORS
Evidence

Businesses affected by climate change were more likely to consider mitigating against weather risks because of an immediate financial loss. Weather events (such as the floods in Spain, prolonged frost in Lincolnshire) had a terrible negative effect on many businesses and their company finances. The impact of these events hit bottom lines and forced businesses to act. There was a noticeable emotional connection with climate change aside from the repeated views that it was either too remote (far into the future), or based on flawed data. However, individuals interviewed connected well with the impact on their personal lives, such as getting to work in the snow.

Possible interventions

It is likely that further weather events will continue to affect businesses and such events will force people to act in order to save livelihoods and protect the bottom line. Further awareness raising is required to highlight the impact of weather today and in the future, using examples from case studies and presenting visual ‘realistic’ scenarios linked to specific sectors. A call to action must be present – maybe linking to the benchmark or a ‘simple steps’ guide to future proofing your food business.

Best for:

1. Affect
Evidence

Many businesses we interviewed had committed to reducing their carbon footprint, reducing water use, saving energy and so on. There were fewer commitments to adapting to a changing climate – such as relocating premises because of flood or making changes today for an event that may happen in the future (such as sea level rise). Commitment to adapting now for future climate change was therefore less attractive than adapting now to help reduce costs from rising energy bills, fuels costs and water rates which businesses see as a priority and are currently engaged in. Building commitment for adaptation for climate change therefore needs a stronger case. Most of the interviewees we spoke to had not seen the UK Climate change projections and those who had felt they were ‘exaggerated’ despite recognising that climate change is real and happening. Many felt the impact would be less severe (especially for ‘critical businesses’ who would be protected) and ‘something would be done’ by government before it gets to that situation.

We have seen commitment in many of the larger businesses but less so in the small/medium sized businesses and the reasons can be found in the barriers section of this report. It is therefore necessary to think about how to help small/medium sized businesses to commit alongside the larger companies who often have the resources, skills and in house capabilities to make commitments and see them through.

Possible interventions

1. Encourage businesses to commit to adaptation by signing up to a public ‘pledge’. Linked to norms, a public commitment to ‘future proof our food industry’ by taking on the challenges and opportunities of a change in weather (please note the reference to ‘weather’ rather than ‘climate change’) will commit organisations to make changes and report back on their progress.

2. Capacity building in the small/medium sized businesses, to include technical assistance to help develop, implement and manage adaptation projects would assist these businesses, alongside some of the other interventions presented in this report.

3. A commitment by retailers to a longer contract period would give producers the confidence and security to invest and innovate and provide longer term stability for the UK food chain.

Best for: STRIVERS, REACTORS
Evidence

Our research showed that in addition to financial reward, many businesses believe that it is better for business to be seen to act responsibly. As well as environmental programmes, many businesses also engage in social change programmes such as community development programmes and fundraising. All contributions, if executed well help to enhance image, credibility and worthiness with customers and consumers. For many it part of their brand values. Recognising businesses for their efforts to address climate change would encourage businesses to get behind it.

Possible interventions

1. As already mentioned in incentives, recognition (such as an annual awards ceremony, publicity etc) will support businesses own PR plans to raise awareness about their contribution to society.

2. League tables or honour systems, endorsed and monitored by associations such as the FDF and NFU will encourage competitiveness between businesses but also highlight those businesses in each sector who are pushing ahead and meeting the benchmark for each sector (see benchmark in messenger)

Best for:
References


“Our strategy was to source crops from Spain. Until Spain started having problems. We have learnt that it isn’t always a safe bet going elsewhere” (Grower)
Appendix 1

DAIRY CREST

Nature of Business:
Integrated dairy business

Overview:
Dairy Crest’s roots can be traced back to 1933 and the creation of the Milk Marketing Board (MMB) by the British Government. In the 1960s the MMB began to manufacture butter and cheese for the retail and catering markets; and currently Dairy Crest produces milk, butter and cheese brands such as Utterly Butterly, St Ivel Gold, Vitalite, St. Hubert, Petit Filous, Frij and Cathedral City.

Turnover:
£1.6 billion

NORTHUMBERLAND CHEESE COMPANY

Nature of Business:
Cheese producer

Overview:
The Northumberland Cheese Company produces sixteen cheeses which are all available online and at farmer’s markets, farm shops, wholesalers and retail outlets including Waitrose and Tesco.

Turnover:
Unknown

E. OLDROYD & SONS

Nature of Business:
Producers and packers of vegetables

Overview:
E. Oldroyd & Sons have five generations of experience in forced rhubarb growing from their farm in Carlton, Yorkshire. The company also grows strawberries, cereals, and other vegetables; and is listed as one of Rick Stein’s Food Hero Producers.

Turnover:
Estimated £3 million

UNITED BISCUITS

Nature of Business:
A biscuits and crisps producer and distributor

Overview:
United Biscuits was formed in 1948 and has grown to the point where it now produces and sells some of the most famous biscuit and crisp brands, including McVitie’s, Jacobs, Jaffa Cakes, McCoy’s, Mini Cheddars, KP, Penguin, and many others.

Turnover:
2009: £1.3 billion

NORTHUMBERLAND FREE RANGE POULTRY

Nature of Business:
Meat and poultry farmer

Overview:
Northumberland Free Range Poultry (NFRP) produce beef and sheep, all off grass, and also run a poultry enterprise which rears chickens, guinea-fowl, ducks and turkeys for Christmas; and rear on average 6000 birds, 1600 lamb, 1700 ewes and 110-120 cows a year. Cattle is sold to Waitrose; sheep to Sainsburys; chickens to local farmers’ market, farm shops, butchers, and restaurants; and pigs to Marks & Spencer and Sainsburys again.

Turnover:
Unknown

GREGGS

Nature of Business:
Retail baker

Overview:
Established in 1951 by John Gregg in his hometown of Newcastle, Greggs operated from 1,571 stores nationwide by the end of 2011 with over 20,000 employees, and has plans to open 600 more in the next few years which will create 6,000 jobs. The company specialises in fresh sandwiches, pasties, sausage rolls and other savouries, as well as sweet pastries, mainly for takeaway purposes; however, Greggs has recently begun to participate in the coffee shop market with the opening of a ‘Greggs moment’ coffee shop in Newcastle, and also now sells frozen sausage rolls via Iceland food stores.

Turnover:
2009/10: £622 million
2010/11: £701 million
APPENDIX 1

ALDI SUPERMARKETS

Nature of Business: Supermarket retailer

Overview: Founded in 1913 in Essen, Germany, and began trading in the UK in 1989. Aldi focuses on providing the best value for customers, most often via their own branded goods, and sell everything from meat, fish, vegetables and cakes to homeware, wine, and flowers.

Turnover: 2010: Estimated group turnover globally, £42.4 billion.

NOBLE FOODS

Nature of Business: Leading supplier of fresh eggs to the nation’s major retailers

Overview: Over seventy-two million eggs are sourced from independent producers each week, many aided by Noble Foods’ producer scheme which provides hens and feed, and then graded, packaged and delivered to Noble’s customers, with its main line currently being the Happy Eggs Co. The firm has also branched out into the dessert industry as a majority shareholder of GÜ Chocolate Puds and owner of Didier’s Patisserie.

Turnover: Excess of £600 million

COTE HILL CHEESE

Nature of Business: Cheese producer

Overview: Cote Hill Cheese is an awarding winning soft cheese producer based in Market Rasen, Lincolnshire. Run by Michael and Mary Davenport, Cote Hill Cheese began production in October 2005 using milk produced by a herd of seventy Friesian, Holstein and Red Poll cows, and supplies delicatessens, retailers including the Co-op, farm shops, hotels, restaurants and wholesalers throughout England and Scotland; and Cote Hill are also a Diary Crest farmer.

Turnover: Unknown

THE NORTHUMBERLAND SAUSAGE COMPANY

Nature of Business: Livestock farmer

Overview: The Northumberland Sausage Company raise pigs, sheep and cattle which is butchered and manufactured into sausages and various other cuts to be sold at their own farm shop and online store; and to agents who sell on to major retailers.

Turnover: Unknown

DGM GROWERS

Nature of Business: Work on behalf of vegetable growers as a marketing agent and packer

Overview: DGM Growers began life as Jack Buck Growers in the 1980s, but is now a subsidiary of the wholesaler, importer and grower organisation, the Fresca Group, who purchased the Lincolnshire business in 2007, and consists of seventeen separate businesses which function in unison including Primafruit, Manor Fresh, and Thanet Earth Marketing. DGM now grows and sources specialist vegetables such as chicory, celeriac, fennel, pak choi, Jerusalem artichokes, peas, broad beans, and purple sprouting broccoli for most of the country’s large food retailers, with Tesco purchasing a 60% share of their produce.

Turnover: 2010/11: £390 million (Fresca Group as a whole)

PRODUCE WORLD

Nature of Business: Vegetable grower and supplier

Overview: The business grows brassica vegetables cauliflower, broccoli and bellaverde (long stemmed broccoli) and allium and root vegetables such as onions, carrots, beetroot, cabbage, Brussels sprouts and potatoes, on 20,000 acres of land both in the UK and Spain.

Turnover: 2009/10: £210 million
GLENNANS

Nature of Business:
Manufacturer of hand cooked vegetable and potato crisps

Overview:
The business’ origins can be found in the Better Tasting Snack Company of Staffordshire and have been operating since 1984 and under the name of Glennans since 2006. The company is split into two distinct sides: Glennans own branded crisps for retailers and the food service industry and their private label creations for restaurants and pubs who wish to stock their own labelled crisps. Glennans was acquired by Tyrells in January 2012.

Turnover:
Excess of £6 million (Estimated)

LINCOLNSHIRE CO-OPERATIVE

Nature of Business:
A large retail co-operative based in Lincolnshire and Newark, Nottinghamshire

Overview:
Lincolnshire Co-op was formed in 1861 as part of the wider national co-operative movement, its trading activities now comprise of food stores, pharmacies, home stores, filling stations, post offices, travel agents, coffee shops, funeral services, a florist, bakery, Jaguar car dealership, a pharmaceutical wholesaler and a portfolio of commercial and residential properties.

Turnover:
2010/11: £285.2 million

BRANSTON

Nature of Business:
A large buyer, packer and distributor of potatoes within the UK

Overview:
Branston was founded in 1968 and is now one of the largest buyers, packers and distributors of potatoes in the UK, with sites in Lincoln, Perth, Scotland and Somerset. Branston also produce a range of ready to cook prepared vegetables for retail and foodservice customers such as Tesco (80-90%), Bookers and United Biscuits.

Turnover:
Roughly £100-110 million

PIPPERS CRISPS

Nature of Business:
Crisp manufacturer

Overview:
Producer of premium potato crisps for upmarket retailers based in north Lincolnshire. Pipers source potatoes locally, whilst other ingredients are sourced throughout the UK.

Turnover:
£1.3 million

NISA TODAY

Nature of Business:
A consortium of independently owned retail outlets

Overview:
Nisa is a member owned organisation which helps independent retailers remain competitive in the food and drink markets by serving as a buying group in the market. Each member holds 100 shares in the company and there are currently 1030 registered members.

Turnover:
£1.5 billion

E. PARK & SONS

Nature of Business:
A grower, buyer, packer and distributor of potatoes

Overview:
Established in 1924, E.Park & Sons inspect, grade, pack and then distribute throughout the UK and also buy and sell seed to other pack houses.

Turnover:
Approximately £49 million a year
2 SISTERS FOOD GROUP

Nature of Business: A major European food company who supplies poultry, fish, chilled bakery and frozen products to the retail, food service and food manufacturing sectors.

Overview: 2 Sisters Food Group is a Birmingham based private company established in 1993 which has evolved from a small scale frozen retail cutting operation to a major food company which now employs 18,000 people. Its brands include Buxted, Devonshire Red, Fox’s Biscuits, Goodfella’s Pizza, Matthew Walker Christmas Puddings and Green Isle vegetables.

Turnover: £2 billion

LANCHESTER DAIRIES

Nature of Business: Dairy farmers

Overview: Lanchester Dairies is an industrial milk producer and supplier whose steady growth from the early 1990s onwards has seen it become the largest independent dairy in the north-east of England. The dairy produces more than twenty million litres of milk per year for milk men, local shops, national supermarkets, food manufacturers, cafes, pubs, restaurants and nursing homes, including Asda, Tesco, Greggs, International Cuisine and Heron Frozen Foods.

Turnover: £14 million

ACORN DAIRY

Nature of Business: Family owned local dairy farmers and distributors.

Overview: The Tweedle family have been farming at Archdeacon Newton near Darlington since 1928. Acorn Dairy produce their own milk as well as buying in from three other local farmers; milk which is then packaged and delivered to 3500 local customers, North-East businesses, shops, schools, restaurants, and nationally to Morrisons.

Turnover: Unknown

HAIN DANIELS GROUP

Nature of Business: A chilled, fresh and natural food manufacturer

Overview: The Hain Daniel Group makes and sells fresh soup, drinks, fruit, chilled ready meals and hot traditional eating desserts via their own brands such as Covent Graden Soup, Johnson’s Juice and Linda McCartney. The Group is 100% owned by SATS, a publicly listed company on the Singapore stock exchange.

Turnover: Estimated £180 UK turnover; £1.7 billion in Canada its base market

CARR’S FLOUR MILLS LTD

Nature of Business: Flour miller and distributor

Overview: Carr’s mill flour at three production plants in Kirkcaldy, Scotland, West Cumbria and Essex; and supplies independent bakers, major food manufacturers and retail outlets.

Turnover: 2010: £345 million (Carr’s Milling Industries as a whole)

WILLOUGHBY FOODS

Nature of Business: Arable and livestock farming; and school catering

Overview: Run by Stuart and Alison Ashton, Willoughby Foods is a catering business which supplies hot meals and packed lunches to local schools. Stuart is also an arable and livestock farmer who of course is keen on using fresh local produce throughout the business.

Turnover: Unknown

FULBECK FOODS

Nature of Business: Wheat farmer

Overview: Fulbeck Foods mainly grow wheat, barley, oilseed rape to be supplied to Warburtons bakeries and Sainsbury’s.

Turnover: Unknown
**WARBURTONS**

**Nature of Business:** Industrial bakers

**Overview:** Warburtons produce wrapped loaves, crumpets, pancakes and rolls in its thirteen UK bakeries and distributes them through its thirteen depots.

**Turnover:** £500 million

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**WENSLEYDALE CREAMERY**

**Nature of Business:** Cheese producer and seller

**Overview:** The Wensleydale Creamery produces award-winning cheeses and supplies a broad range of customers including major multiple retailers, wholesalers, export, and the food service sector mainly in the UK and North America; and also has its on-site visitor centre.

**Turnover:** £26 million

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**STATESIDE FOODS**

**Nature of Business:** Chilled pizza and frozen pizza crust supplier

**Overview:** Stateside Foods has been supplying chilled pizzas and frozen pizza crusts, both branded and customer own labels, to leading food retailers and food service companies for twenty years. Stateside have two major brands, ‘Stateside’ and ‘Pizza Al Forno’.

**Turnover:** £100 million

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**LINCOLNSHIRE FIELDS PRODUCTS**

**Nature of Business:** Producer and distributor of fresh produce

**Overview:** Lincolnshire Fields Produce grows brassica, green veg, wheat, potatoes, oilseed rape and sugar beet; and through its transportation service, FreshLinc, distributes their produce in specialist refrigerated vehicles.

**Turnover:** £150 million

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**MIDDLESTON FOOD**

**Nature of Business:** Produces food coatings and mixes

**Overview:** Based in the West Midlands, Middleton Food Group (est.1989) creates and supplies a range of breaded coatings and mixes for and to the food industry; for use in fish and chip shops, fried chicken outlets, theme parks (donut mixes) Brighton pier, restaurant chains and individual customers from the UK, Europe, America and Australasia.

**Turnover:** £12 million

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**FEN PEAS**

**Nature of Business:** Pea producer

**Overview:** Based in Lincolnshire, Fen Peas formed in 1968 and currently harvests over 5000 acres of peas which are sold on to Pinguin Lutosa UK where they are frozen and Princes where they are canned.

**Turnover:** £3 million

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**WILLIAM JACKSON FOOD GROUP**

**Nature of Business:** A group comprised of several different and autonomous businesses including Aunt Bessie’s, Jackson’s Bakery, Hazeldene Foods and Parripak Foods.

**Overview:** Aunt Bessie’s produces Yorkshire puddings, frozen desserts, gravy granules and stuffing mixes; Jackson’s Bakery, which has evolved from the first grocery shop set up by William Jackson in 1851, now manufactures bread for sandwich makers, service restaurants, coffee shops, distributors and retailers in twenty-nine countries; Hazeldene Foods, which is a salad supplier, and Parripak Foods, a supplier of fresh veg, both supply to major food manufacturers.

**Turnover:** £100 million for entire group

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**KING ASIA**

**Nature of Business:** Food manufacturer

**Overview:** King Asia is a family owned business established in 1985 which manufactures mainly frozen ready meals. Their speciality is Chinese food but Thai, Indian and English dishes are also produced; in addition to a range of desserts.

**Turnover:** £7.5 million

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**REFERENCES AND APPENDICES**

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**Turnover:** £7.5 million
HUMDINGER

Nature of Business: Food manufacturer

Overview: Humdinger are part of the Zetar Group (www.zetarplc.com) and produce a range of health snacks from dried fruit mixes to bars and nuts. The business operates from two separate addresses in Hull, where dried fruit products, fruit bars, lentils, apricots, figs and prunes are processed and packed, and in Heckington where culinary nuts and seeds are produced. Humdinger pack for Sun Sweet and Community Foods as well as producing their own brands Ambrosia, Vimto and Fruit Factory, all the above is sold in Tesco, Sainsburys, Waitrose, Asda and Morrisons.

Turnover: £40 million

WORLDWIDE FRUIT

Nature of Business: Fruit supplier

Overview: World Wide Fruit is 50% owned by Enzo New Zealand and 50% by Fruition PO, the business grows and sources apples, pears, avocados, kiwis and dates from thirty countries worldwide, and then grades, packs and supplies the fruit to the UK’s major retailers.

Turnover: £100 million

ICELANDIC GROUP

Nature of Business: A fish processor

Overview: The Icelandic Group is has three operating divisions: Icelandic UK, Coldwater and Seachill. An international company mostly supplying Tesco, it also has its own brand: the Saucy Fish Co.

Turnover: £130 million

WEETABIX

Nature of Business: Cereal grower and manufacturer

Overview: Weetabix is a global brand which produces thirty-six breakfast cereals and bars. In addition to Weetabix, its brands include Alpen and Oatibix.

Turnover: £500 million

FENTON FARM

Nature of Business: Farmer

Overview: Fenton Farm is run by arable crop tenant farmer Simon Henderson, and is based in West Fenton, near Wooler in Northumberland. Simon produces barley and oats for John Hogarth’s miller in Scotland, for use in cereals, muesli, and animal feed; as well as peas and beans to be sold dried. Organic lamb is also reared on his grassland for Asda, on behalf of a neighbouring farmer.

Turnover: Unknown

HUMBER GROWERS

AND INTERGROW LTD

Nature of Business: A grower, marketer and distributor of salad produce

Overview: Through the Intergrow Producer Organisation, Humber Growers of East Yorkshire (est.1961) grow, pack, market and distribute a range of glasshouse salads to supply UK supermarkets, food processors and caterers as well as wholesale fruit and veg markets. Humber Growers also produces crops for the pharmaceutical industry.

Turnover: £6 million

TESCO

Nature of Business: Supermarket retailer

Overview: Tesco has grown from a market stall in the East End of London in 1919 to become currently one of the world’s biggest supermarket chains. The company employs over 500,000 members of staff in fourteen countries worldwide, including China, in which Tesco began trading in 2004, and the United States, where Tesco has operated under the name Fresh and Easy since 2007. Although 60% of the business’ sales and profits still come from the UK.

Turnover: £38 billion
### GOOD ADAPTATION

<table>
<thead>
<tr>
<th></th>
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<th><strong>SOURCE</strong></th>
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<tbody>
<tr>
<td>1</td>
<td>Identifying any upcoming new initiatives that could be weather – or climate sensitive and making sure the current and future climate are taken into account at the outset (beginner)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 10</td>
</tr>
<tr>
<td></td>
<td>Have factored climate change into location and design of developments</td>
<td>The Environment Agency (2009)’Climate Change, adapting for tomorrow’ page 7</td>
</tr>
<tr>
<td>2</td>
<td>Actively made changes to developments to reduce risk such as green roofs, cooling and insulating buildings and rain water run off (advanced)</td>
<td>The Environment Agency (2009)’Climate Change, adapting for tomorrow’ page 8</td>
</tr>
<tr>
<td>3</td>
<td>Making sure that when assets that are exposed to weather and climate are renewed or serviced (maintained), climate risk is considered (beginner)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 10</td>
</tr>
<tr>
<td>4</td>
<td>Climate change impacts and adapting to climate change are discussed at board/ committee meetings (medium)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 10</td>
</tr>
<tr>
<td>5</td>
<td>Adaptation is mainstreamed at the review stage of relevant plans and management systems (medium)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 10</td>
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<tr>
<td></td>
<td>At the review of management systems consideration has been given to whether the business can mainstream their adaptation response (advanced)</td>
<td></td>
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<tr>
<td>6</td>
<td>Adaptation measures have been implemented in a cost- effective way when assets have been renewed or during routine maintenance (advanced)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 10</td>
</tr>
<tr>
<td>7</td>
<td>Business has collected information on how past weather events have affected the business (medium)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 11</td>
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<td>GOOD ADAPTATION</td>
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<td>8</td>
<td>Precautions have been taken to reduce the risk of disruption in the event of a</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 11</td>
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<tr>
<td></td>
<td>flood, such as keeping valuable items off the ground, putting in place a</td>
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<td></td>
<td>flood response plan or taking out business continuity insurance (beginner)</td>
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<td></td>
<td>damage is covered and has/ is considering taking out business continuity</td>
<td>UK Trade &amp; Investment (2011) Adapting to an uncertain climate: a world</td>
</tr>
<tr>
<td></td>
<td>insurance (beginner)</td>
<td>of commercial opportunities’ page 22</td>
</tr>
<tr>
<td>10</td>
<td>Business has checked Environment Agency maps to see if they are in a flood</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 11</td>
</tr>
<tr>
<td></td>
<td>risk area (beginner)</td>
<td>UK Trade &amp; Investment (2011) Adapting to an uncertain climate: a world</td>
</tr>
<tr>
<td></td>
<td>Business has signed up to the Environment Agency’s Flood warning Service</td>
<td>of commercial opportunities’ page 22</td>
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<tr>
<td></td>
<td>(medium)</td>
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<td></td>
<td>Business has considered the impact of sea level rise (beginner)</td>
<td>The Environment Agency (2009)’Climate Change, adapting for tomorrow’</td>
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<tr>
<td></td>
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<td>page 7 &amp; page 9</td>
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<td></td>
<td>– (advanced)</td>
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<td></td>
<td>and obtained buy in (beginner)</td>
<td>SCCIP (2010) Adapting to Climate Change: A guide for businesses’ page 4</td>
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<td></td>
<td>Organisation has encouraged, enabled or supported adaptation in the sector</td>
<td></td>
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<tr>
<td></td>
<td>(beginner)</td>
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<td></td>
<td>Organisation has built adaptive capacity in the sector (medium)</td>
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<td>GOOD ADAPTATION</td>
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</table>
| 14  | Businesses have become more water efficient and there is evidence of consideration and adoption such as water storage, reducing leaks, water measurement systems etc (medium)  
Business has considered the impact of less water in the future (beginner)  
Business has considered the impact of temperature increases both now and in the future (beginner)  | The Environment Agency (2009)‘Climate Change, adapting for tomorrow’ page 13 & 14 |
| 16  | There is a high level of commitment in the business  | UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 12 |
| 17  | Business has considered organisational structures – what needs to be put in place and what information is required (advanced)  
When decided which adaptation measures to implement, consider what institutions will be needed to support this action (advanced)  | UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 12 |
<table>
<thead>
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<th>GOOD ADAPTATION</th>
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<tr>
<td>19 Selected preferred adaptation options using cost benefit or multi criteria techniques (or informal methods) such as looking for win-wins (advanced)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 14</td>
</tr>
<tr>
<td>21 Aware of, and used the UKCIP’s BACLIAT tool or brainstormed with colleagues the potential threats and opportunities from climate change (beginner) Aware of, and used the UKCIP Adaptation Wizard Aware of, and used CLARA (Climate Adaptation Resource for Advisors) Has generated a comprehensive list and assessed risk(s) and prioritised key risks (beginner)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 15 <a href="http://www.ukciporg.uk/bacliat">www.ukciporg.uk/bacliat</a> <a href="http://www.ukciporg.uk/wizard">www.ukciporg.uk/wizard</a> <a href="http://www.ukcip.org.uk/clara">www.ukcip.org.uk/clara</a></td>
</tr>
<tr>
<td>22 Weather risks are included on the companies risk register (medium)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 15</td>
</tr>
<tr>
<td>24 Business has considered the impact greater than 10 years Business has used the climate projections (UKCP09) and considered the effects of these changes on the business (beginner)</td>
<td>UKCIP (2010) ‘A changing climate for business, 3rd edition’ page 15 <a href="http://ukclimateprojections.defra.gov.uk">http://ukclimateprojections.defra.gov.uk</a></td>
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<tr>
<td>25</td>
<td>Business has considered potential opportunities that climate change presents – growth, new line, innovation, specifically the business has thought about the products and services that society will need more of as the climate changes and is thinking about exploiting any of these markets (beginner)</td>
</tr>
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<td></td>
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<tr>
<td>26</td>
<td>Business has thought about the demand for their product(s) or the production capabilities under a new climate and has made sure there are resources to make the most of new opportunities (beginner)</td>
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<td></td>
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<tr>
<td>27</td>
<td>Business has already obtained ‘first mover advantage’ or tried out new products, processes, technologies or ways of working (advanced)</td>
</tr>
<tr>
<td>29</td>
<td>Business has considered, or is currently, working in partnership with other organisations around the issue of climate change and adaptation (beginner) &lt;br&gt; Business has contacted external organisations that exist to support – e.g. Environment Agency, UKCIP, insurer etc (beginner)  &lt;br&gt; Business has subscribed to newsletters, purchased books, reports, visited website related to adaptation (beginner)</td>
</tr>
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<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>GOOD ADAPTATION</td>
<td>SOURCE</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>30 There is senior management ‘buy in’ to adaptation</td>
<td>UK Trade &amp; Investment (2011) Adapting to an uncertain climate: a world of commercial opportunities’ page 22</td>
</tr>
<tr>
<td>31 There is evidence of an adaptation strategy or plan (written) that sets out short term and long term measures and aspirations</td>
<td>UK Trade &amp; Investment (2011) Adapting to an uncertain climate: a world of commercial opportunities’ page 22</td>
</tr>
<tr>
<td>32 Business has evaluated any adaptation measures they have implemented</td>
<td>SCCIP (2010) Adapting to Climate Change: A guide for businesses’ page 4</td>
</tr>
</tbody>
</table>
Appendix 3

Research prompt card
## Research prompt card

<table>
<thead>
<tr>
<th>Name of the tool, resource, guide available to businesses to help them adapt to climate change</th>
<th>Description</th>
</tr>
</thead>
</table>
| UK Climate Impacts Programme (UKCIP) has a number of tools to help organizations access their vulnerability to climate change and to devise appropriate ways to adapt to the hanging climate. All are available free of charge. Tools include:  
  - Adaptation Wizard  
  - Local Climate Impacts Profile (LCLIP)  
  - Business Areas Climate Impacts Assessment Tool (BACLIAT)  
  - The brain  
  - Climate Adaptation Resource for advisors (CLARA) | **Adaptation Wizard**  
An online tool to help businesses adapt to climate change.  
**Local Climate Impacts Profile (LCLIP)**  
A tool to help you determine your sensitivity to current weather variability  
**Business Areas Climate Impacts Assessment Tool (BACLIAT)**  
Provides a simple checklist for organizations to assess their potential impacts of climate change either on their business or on an entire business sector  
**The brain**  
A searchable, web based database which combines databases on adaptation examples, impacts examples and research  
**Climate Adaptation Resource for advisors (CLARA)**  
A web based resource aimed at those providing advice and support to SMEs. Advice is provided on making the business case and some practical tips for providing appropriate support. |
| UK Climate Projections (UKCP09) | Provides the latest climate change scenarios for the UK. Provides probabilistic projections at a resolution of 25km(2) for seven overlapping 30 year time slices over the next century for three future emissions scenarios. |
| The Institute of Environment Management and Assessment (IEMA) | A guide called: “Adapting to Climate Change: A guide to its management in organizations” |
| Met office | Provides a range of information and guidance on climate change |
| Environment Agency | Can provide extensive information on flooding |
| Business Link | Provides information on a range of issues. Guide for businesses on adaptation available on their website. |
### Appendix 4

#### Discussion Guide (summary) Business overview

**Business profile**
- Name of business
- Description of business / overview of product / service range
- Turnover
- Location of operations/HQ
- Reach
- Turnover/financials/market share
- Workforce
- Supply chain

#### Discussion Guide: Section A: Understanding and awareness

**Terminology**
- Testing understanding of mitigation and adaptation, understanding the difference between the two terms;
  - What is understood by talking about ‘extreme weather conditions’
- Language of risk

**Climate change: the effects on the business**
- Perceived effects of climate change on the Food and drink industry
- Perceived effects of climate change on the business/Identified issues that might affect the business as a result of extreme weather conditions
- The effect climate change might have on the company’s financial performance (including calculating the cost to the business)
- Current or past effects on the business (such as recent weather conditions or experience of flood in the past)
- Can the business talk about how the weather might affect the business in the future?
- Impacts of temperature on the business
- Impact of less water in the future on the business
Section A: Understanding and awareness

**Awareness**
- Awareness of various supporting organizations (to name with prompt card if necessary)
- Awareness of available tools and resources available to the business (prompt cards if necessary)
- Awareness of competitors adapting to climate change
- Awareness of potential effects on any new initiatives – such as the design of new buildings and the location of current operations
- Awareness of flood risk/ sea level rise
- Awareness of the Climate Change Act and any impact on their business

Section B: Attitudes

- Questions testing whether the business take a short term or long term view on this issue
- Level of commitment in the business
- View on competitors adapting to climate change
- Identification of opportunities for the business

**Internal commitment**
- Resources dedicated to adaptation and climate change
- Precautions taken to reduce the risk of disruption
Section C: Behaviour

Consideration

- Evidence that the business has considered a wide range of adaptation measures (using appendix 2)
- Considered partners and agencies to involve in adaptation
- Discussion of issues at a senior level

Taken action

Questions focused on actions in appendix 2, and in particular:
- Undertaken cost benefit analysis (or similar)
- Gathered information on past weather effects
- Checked insurance policy
- Drafted plans for implementation, buy in at senior level.

Implementation

- Evidence of implementation (such as insulated buildings, renewal plans etc)
- Evaluation of any measures

Section D: Barriers and enablers

Barriers and enablers not identified in other areas of discussion will focus on the following:

- Perceived barriers by the participant to adapting in own business and in the industry
- Testing of barriers identified during secondary research — are these barriers real barriers in the food supply chain?
- Identifying the support/ help/ resources that might move businesses to consider/ change
- Identifying social/ cultural/ financial rigidity and conflicts
About us

Who are we?

We are a change agency who utilise the power of research, marketing, communications and design to make a difference. We work across the UK and in Europe on research programmes and marketing campaigns that inspire change in people and communities.

We work with a wide range of clients from small start up’s to multi-million pound organisations. We work across sectors to design programmes and strategies that have a positive impact on people and society. Our clients include government departments and public sector organisations such as local authorities and NHS Trusts who we work with on a number of marketing and behaviour change assignments including smoking and drugs prevention, healthy eating campaigns and crime prevention.

Our clients also include private sector businesses who recognise that there is genuine competitive advantage running a socially responsible business and we help them to design winning strategies.

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Email: hello@social-change.co.uk

Website: www.social-change.co.uk

Join the conversation at www.facebook.com/socialchangeuk or twitter: @socialchangeuk