



Bwyd a Diod Cymru
Food & Drink Wales



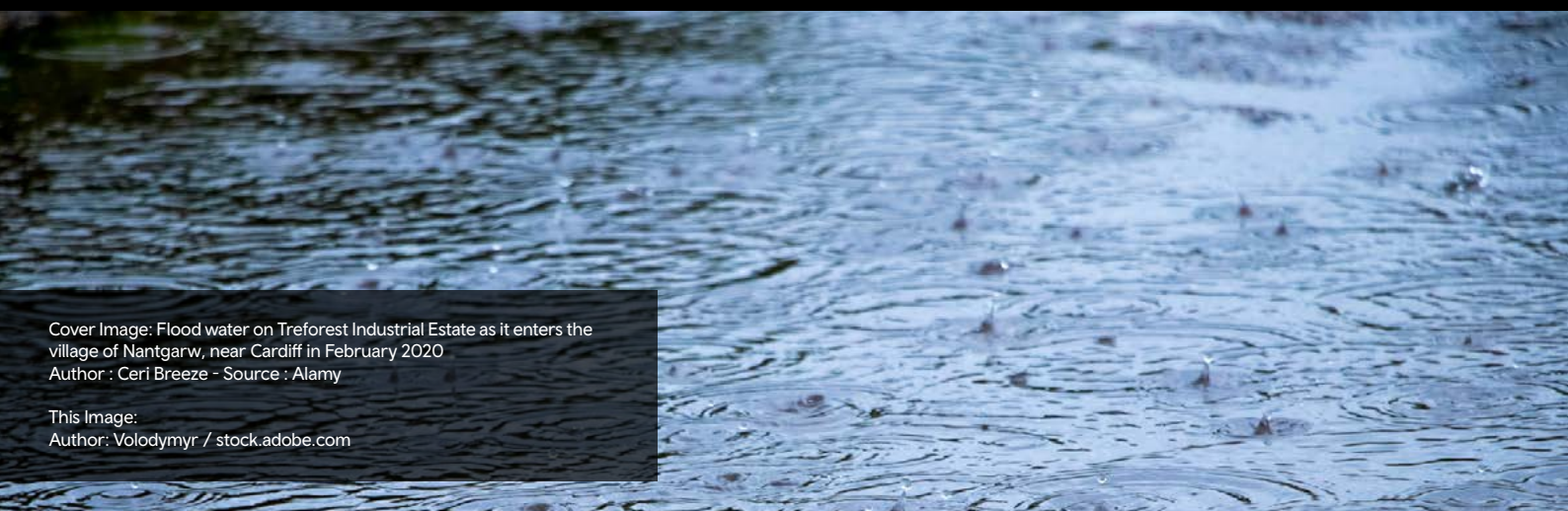
Climate Adaptation & Resilience Training

Module 2: Introducing Risk and Change Management

Assessing Risk, Using the CCACCP (Climate Conscious
Analysis and Critical Climate Points) Approach
and Techniques for Change Management

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Cover Image: Flood water on Treforest Industrial Estate as it enters the village of Nantgarw, near Cardiff in February 2020
Author : Ceri Breeze - Source : Alamy

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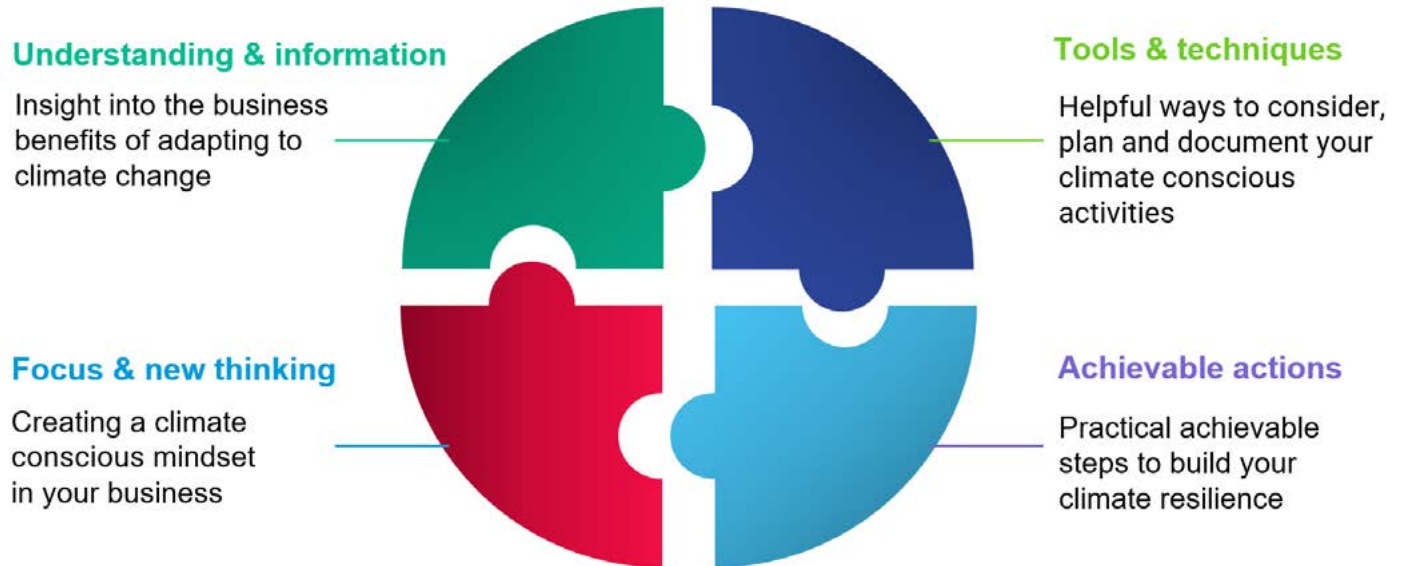
Abbreviations

Please find a list of abbreviations used in this training below:

AHDB	Agriculture and Horticulture Development Board
CCACCP	Climate Conscious Analysis and Critical Climate Points
CCJ	County Court Judgement
CCRA's	Climate Change Risk Assessments
CMA	UK's Competition and Markets Authority
COSHH	Control of Substances Hazardous to Health
CO2	Carbon Dioxide
C3S	EU's Copernicus Climate Change Service
ENA	Energy Network Associations
EPD	Existing Product Development
GDPR	General Data Protection Regulation
GHG	Greenhouse Gas
HACCP	Hazard Analysis and Critical Control Points
ICT	Information and Communication Technologies
INNS	Invasive non-native species
IPCC	Intergovernmental Panel on Climate Change
ISSB	International Sustainability Standards Board
MPRN	Meter Point Reference Numbers
NPD	New Product Development
NRW	Natural Resources Wales
ONS	UK Office of National Statistics
RCPs	Representative Concentration Pathways
TCFD	Task Force on Climate-related Financial Disclosures
UK SDS	United Kingdom Sustainability Disclosure Standards
UKCCC	United Kingdom Climate Change Committee
UNEP	United Nations Environment Programme
WMO	World Meteorological Organization
WRAP	Waste and Resource Action Programme

Welcome to the Climate Adaptation & Resilience Training (CART)

The training modules aim to encourage businesses to become climate conscious in their everyday operations by providing practical support to build the skills and approaches needed to deal successfully with unpredictable events.



By acknowledging the risks and opportunities that climate change presents and making well-considered adaptations, your business can bolster its resilience to deal with shocks within your supply chains, reduce or avoid negative impacts and take advantage of the opportunities that may arise.

This is the second of 8 modules that we hope you find both insightful and useful.

How to use this training module

The training modules have been designed as instructive guides to help you assess your business in the context of climate change.

While every food and drink enterprise is unique, we hope that by selecting and acting upon the modules most relevant for your business you will build a framework to decide on the adaptations required to make your business more resilient to climate change, both now and in the future.

The training modules have been structured in the following way:

Module 1: Introduction to Climate Change Adaptation

Module 2: Introducing Risk & Change Management & a CCACCP
(Climate Conscious Analysis & Critical Climate Points) approach

Module 3: Premises & Access

Module 4: Food Manufacturing & Production

Module 5: Supply Chains & Business Inputs

Module 6: Finance & Legal Considerations

Module 7: Staff & Service Providers

Module 8: Customers & Consumers

Throughout the modules you will find examples, references and links to editable checklists and templates to help you in assessing and implementing the desired changes in your business.

How to access the checklists, templates and step-by-step guides

By clicking on the links indicated throughout the training modules, you can access the checklists, templates or step-by-step guides of your choice.

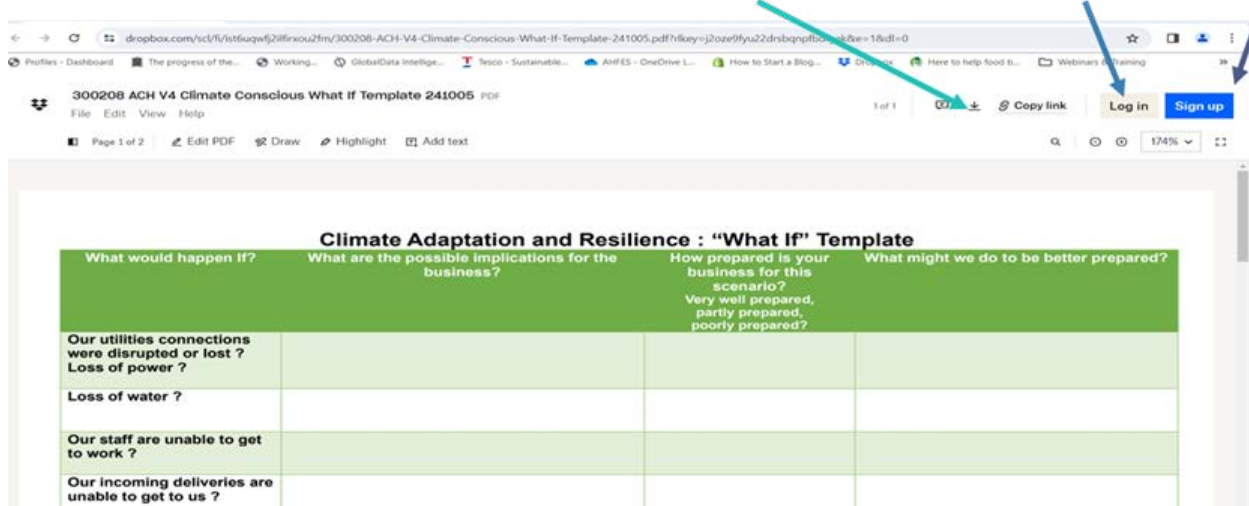
The link will take you to a Dropbox location where you have a number of choices:

1. If you have an existing Dropbox account, you can log into this.
2. If you wish to create a Dropbox account, this option is available to you.
3. If you simply wish to access the document, click on the Download arrow to download it to your device.

Download the Document here

Log into your Dropbox Account here

Create a Dropbox Account here



The screenshot shows a web browser displaying a PDF document in a Dropbox viewer. The URL in the address bar is a Dropbox link to a PDF titled "300208 ACH V4 Climate Conscious What If Template 241005.pdf". The interface includes a top bar with "File Edit View Help" and a right sidebar with "Log in" and "Sign up" buttons. A green arrow points from the "Download the Document here" box to the download icon (a downward arrow) in the top bar. A blue arrow points from the "Log into your Dropbox Account here" box to the "Log in" button. Another blue arrow points from the "Create a Dropbox Account here" box to the "Sign up" button. The main content area shows the first page of the PDF, which is titled "Climate Adaptation and Resilience : 'What If' Template". The table in the PDF has four columns: "What would happen if?", "What are the possible implications for the business?", "How prepared is your business for this scenario?", and "What might we do to be better prepared?". The first row of the table lists "Our utilities connections were disrupted or lost ? Loss of power ?". The second row lists "Loss of water ?". The third row lists "Our staff are unable to get to work ?". The fourth row lists "Our incoming deliveries are unable to get to us ?".

What would happen if?	What are the possible implications for the business?	How prepared is your business for this scenario? Very well prepared, partly prepared, poorly prepared?	What might we do to be better prepared?
Our utilities connections were disrupted or lost ? Loss of power ?			
Loss of water ?			
Our staff are unable to get to work ?			
Our incoming deliveries are unable to get to us ?			

Introducing CCACCP: Climate Conscious Analysis and Critical Climate Points

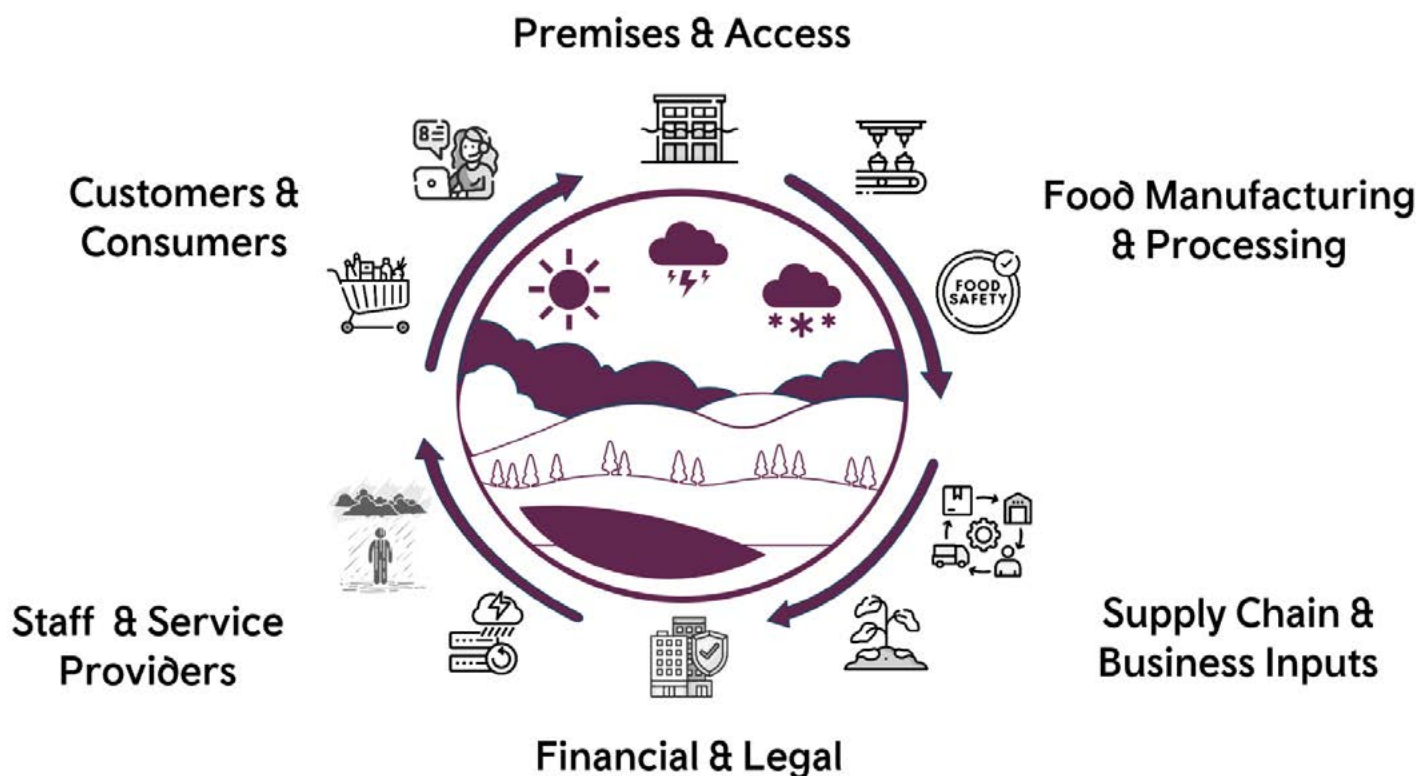
CCACCP – A systematic approach

A serious climate event can disrupt business continuity in many different ways and therefore this training introduces the concept of CCACCP, Climate Conscious Analysis and Critical Climate Points, as a practical and methodical way to assess, prioritise, and address climate impacts, risks and opportunities for your business.

This framework draws upon the principles of HACCP (Hazard Analysis and Critical Control Points) which form the bedrock of ensuring food safety and are well known to practitioners across the food industry.

The seven steps of HACCP give food and drink producers a systematic methodology through which to assess risk, identify key points at which action can be taken to ensure safety and define what the safety parameters are for their particular product, along with determining what actions, monitoring, recording and verification processes are needed to ensure that every item produced is safe to consume.

CCACCP: Climate conscious analysis & critical climate points



Using CCACCP's systematic approach, this training will suggest some simple yet effective ways for your business to address climate change. It outlines preparations which you can make before you encounter extreme weather conditions which impact your business.

Taking the CCACCP approach

The areas that will be covered in the training include:

- Your site and buildings.
- Your supply chains for raw materials, equipment, utilities or other business inputs.
- Your downstream logistics arrangements to your customers.
- Your team and how they might best cope with and bounce back from challenging situations.
- Proactive actions which can enhance your pitches to customers and finance providers, that will reduce costs in the longer term and protect your reputation.

Climate change may present your business with new commercial opportunities as consumer behaviours and needs respond to these changes, some possible examples are:

- As weather and growing conditions shift, raw materials previously sourced from overseas may become available from the UK.
- It may become viable to produce new types of products consistently to a desired quality in Wales.
- With warmer weather extending into autumn and spring months, products popular in the summer months may have sales over a much longer period than previously.
- Consumers may be looking for products and brands which help them reduce their carbon footprints in various ways such as:
 - Avoiding non-recyclable packaging.
 - Supporting environmentally sensitive farming practices.
 - Eating more plant-based foods or other low carbon options.
 - Choosing to eat more locally and seasonally produced foods.

For many food and drink businesses, implementing HACCP often represents a specific workstream within their Quality Management Systems. It may require particular skills and knowledge, with team members contributing to establishing and ensuring the effective ongoing management of HACCP plans.

However, with CCACCP we take a slightly different approach which acknowledges that food and drink businesses have finite resources and may lack the time to undertake a separate “project” around climate adaptation.

Instead this training advocates embedding climate change awareness in every aspect and decision within your business, so it is not just one more task on your lengthy “to do” list that you never quite get round to tackling!

As climate impacts become more frequent, erratic and severe, there are important business benefits to be gained by climate consciousness becoming a seamless part of your day-to-day ways of working.

Across the training modules we will provide support for the steps to implement your CCACCP plans as outlined in the infographic below, including a checklist which you can edit to tailor it to your specific business circumstances which will help guide you through these steps.

[Click here for an editable checklist which will guide you through the steps to creating your CCACCP plan](#)

8 Simple steps to your CCACCP plan



1. Understand the potential risks & opportunities presented by climate change within your business operations



2. Assess & identify specific risks & opportunities across 6 key business areas



3. Identify critical points at which actions could be taken to reduce or avoid negative outcomes



4. Decide what immediate actions to take & what plans or preparations are needed for an emergency situation



5. Determine the conditions under which emergency action plans will be triggered



6. Identify what needs to be monitored & schedule this at appropriate frequencies



7. Confirm that the activities, preparations & plans in place are still relevant & adequate – update when necessary



8. Share your activities & plans with your team, shareholders, customers or other stakeholders as you feel is appropriate



The benefits of the CCACCP approach

This CCACCP approach might initially strike you as rather daunting!

The concept may seem like a lot of work for benefits that, at the outset, may be difficult for your business to grasp or you may think we are addressing climate events that appear to be a long way off.

However, as the recent incidents of major storms and floods in Wales, and drought and erratic rainfall conditions in many food producing countries overseas have shown, the negative impacts of climate change are with us right now.



So, we're going to break down the task of building your climate conscious approach down into manageable "bite-sized chunks" and look at six different facets of your business in turn.

As you turn your attention to each of these six topics, you will see that they often overlap or are interdependent, but it is a handy way to move forward without getting overwhelmed.

Alongside these six topics, we will also introduce some management techniques to help you consider potential impacts and ways to approach unpredictable events. Hopefully you may find these useful not only when thinking about the climate, but for dealing with any type of unforeseen circumstances that may arise and threaten your business continuity.

Risk Analysis and Assessment

Conducting a risk assessment is a well proven way of considering whether, and to what extent, something is a potential threat, thus allowing the prioritisation of plans, actions and resources to address those areas that represent the highest risk of negative impacts.

Food and drink manufacturing businesses already use risks assessments when considering topics such as the health and safety of staff or other persons involved in their business, mapping hazards that could impact food safety and in the planning of preventative maintenance schedules.

With the frequency and severity of negative climate events increasing, it is good practice to include a climate conscious risk analysis which focuses on protecting your business from climate related issues that could significantly undermine your ability to operate.

Whilst it may not be possible to control the weather, you can take steps to adapt and manage its consequences, and these measures will speed up business recovery times after a major incident.



Risk analysis

Risk analysis and risk management are crucial components of project planning and decision-making in today's dynamic business environment.

Almost every activity involves some level of risk, ranging from climate changes to the emergence of new competitors or unforeseen external factors.

The purpose of risk analysis is to assess these potential risks and determine the most effective actions to minimise disruptions to plans or projects. Additionally, it helps evaluate the cost-effectiveness of strategies used to control these risks.



What is risk?

Risk is often defined as “the perceived extent of possible loss.” Typically, everyone perceives the impact of a particular risk differently - what might seem a small risk for you could be perceived as a significant threat to someone else.

Risk assessment involves estimating the combined effect of two components: Severity (impact) and Likelihood (probability). The formula for calculating risk is expressed as:

$$\text{Risk} = \text{Severity} \times \text{Likelihood}$$

The practical significance of this formula lies in the fact that, even with what appear initially to be high risks, by putting proper control measures in place you can reduce the likelihood of problems, resulting in effectively controlled risks. Conversely, a relatively low initial risk can become substantial if you do not control it properly.

Carrying out a risk assessment

You will typically undertake the risk calculation for existing activities, taking into account any control measures you already have in place. However, it is also very useful when you are looking at potential scenarios and formulating actions to mitigate potential future risks.

To carry out a risk assessment, the process involves you:

1. Identifying potential risks.
2. Assigning appropriate numerical values (usually on a scale of 1-5) for both severity and likelihood, multiplying these values together, and then mapping and cross-referencing the result on a risk rating table.

The risk rating table helps categorise the level of risk based on the calculated score to enable you to prioritise risks and allocate resources more effectively.

By systematically evaluating and managing risks, you can enhance your business's ability to navigate uncertainties and increase the likelihood of successful project outcomes.

The risk assessment table

As you can see from this risk assessment table, the likelihood of the risk occurring and how severe the consequences would be, are scored from 1 to 5 and the particular risk that you are assessing will then fall into one of the boxes on the matrix.

These boxes are colour-coded to indicate if the level of risk has been judged to be low (green), medium (amber) or high (red).

Likelihood

5	Certain	5	10	15	20	25
4	Very Likely	4	8	12	16	20
3	Likely	4	6	9	12	16
2	Unlikely	2	4	6	8	10
1	Very Unlikely	1	2	3	4	5
		1 low	2	3	4	5 high
		Severity				

Mitigating the risk

The action you should take to mitigate the risk is determined by the score that you have allocated to it, as outlined in the table below.

[Click here for an editable Risk Assessment template](#)

Risk Score	Actions Needed
0-5 Low Risk	No further action needed
6-9 Medium Risk	You should identify appropriate additional control measures and implement them promptly
10-25 High Risk	Work should not be started or should cease until you can identify and implement appropriate additional control measures that lower the risk score into the amber or green zones.

Learning from near misses

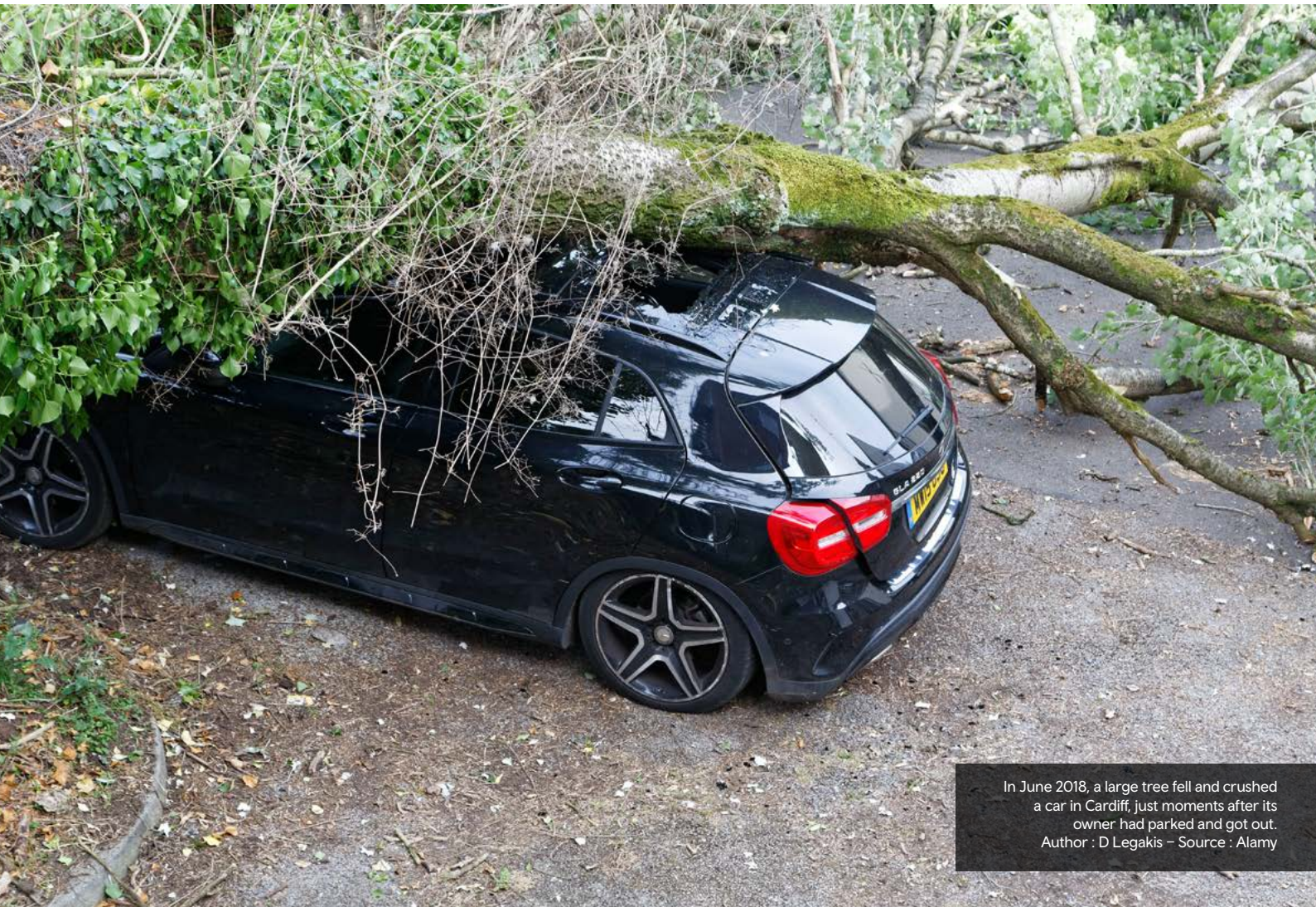
“Near miss” events are adverse incidents where an undesirable outcome is narrowly avoided. They are those “phew, that was close” moments!

Examples might be:

- An accident – someone in your team narrowly avoids being hurt by a tree falling on their vehicle during a storm.
- Shorting a customer order - a key ingredient that has been in short supply due to adverse climate conditions arrives just in the nick of time to allow you to fulfil an important order.
- Flooding – stops just short of causing damage and disruption to your premises.
- Storm damage – your roofing panels just about stay attached at a couple of points and don't detach completely.

In the context of risk management, near misses can provide you with valuable insights into potential hazards and vulnerabilities within your business.

Taking a proactive approach and analysing near misses allows you to proactively identify and address underlying risks before they escalate into actual incidents, it can help enhance safety, operational efficiency and overall business resilience.



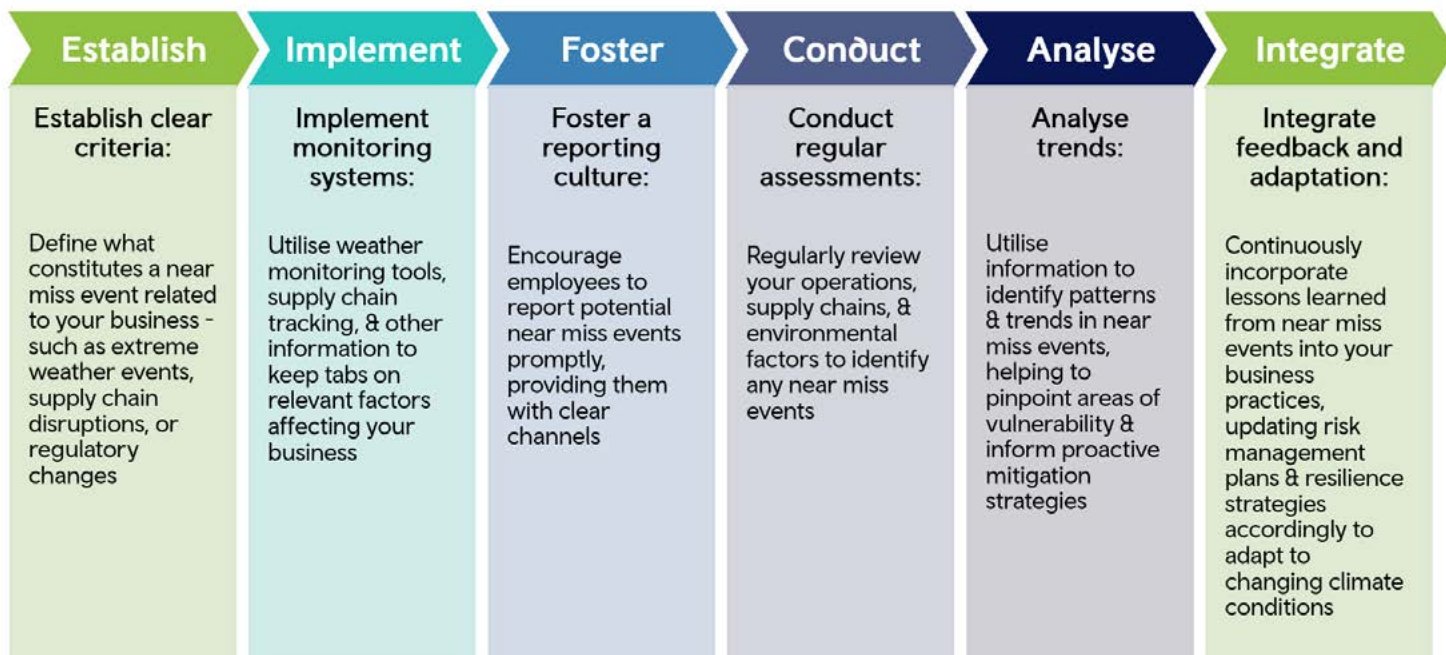
In June 2018, a large tree fell and crushed a car in Cardiff, just moments after its owner had parked and got out.
Author : D Legakis – Source : Alamy

A strategy of reviewing near miss events not only safeguards your employees, assets, and reputation but also contributes to your long-term sustainability and success.

Embracing near miss analysis as a tool for continuous improvement aligns with best practices in risk mitigation and fosters a safety-conscious culture within your organisation.

By following the steps below, you can ensure that “near miss” events are used to inform and improve your understanding of risks. This will help you determine how to avoid or lessen the negative outcomes of any shock event that may occur.

Spotting near miss events



[Click here for an editable Near Miss template](#)



In December 2024, damage from Storm Darragh resulted in fallen trees and exposed cables near Ponterwyd and led to the closure of the A44 between Llangurig and Aberystwyth. Image reproduced with kind permission of Traffic Wales.

Focus On: Cascade Effects

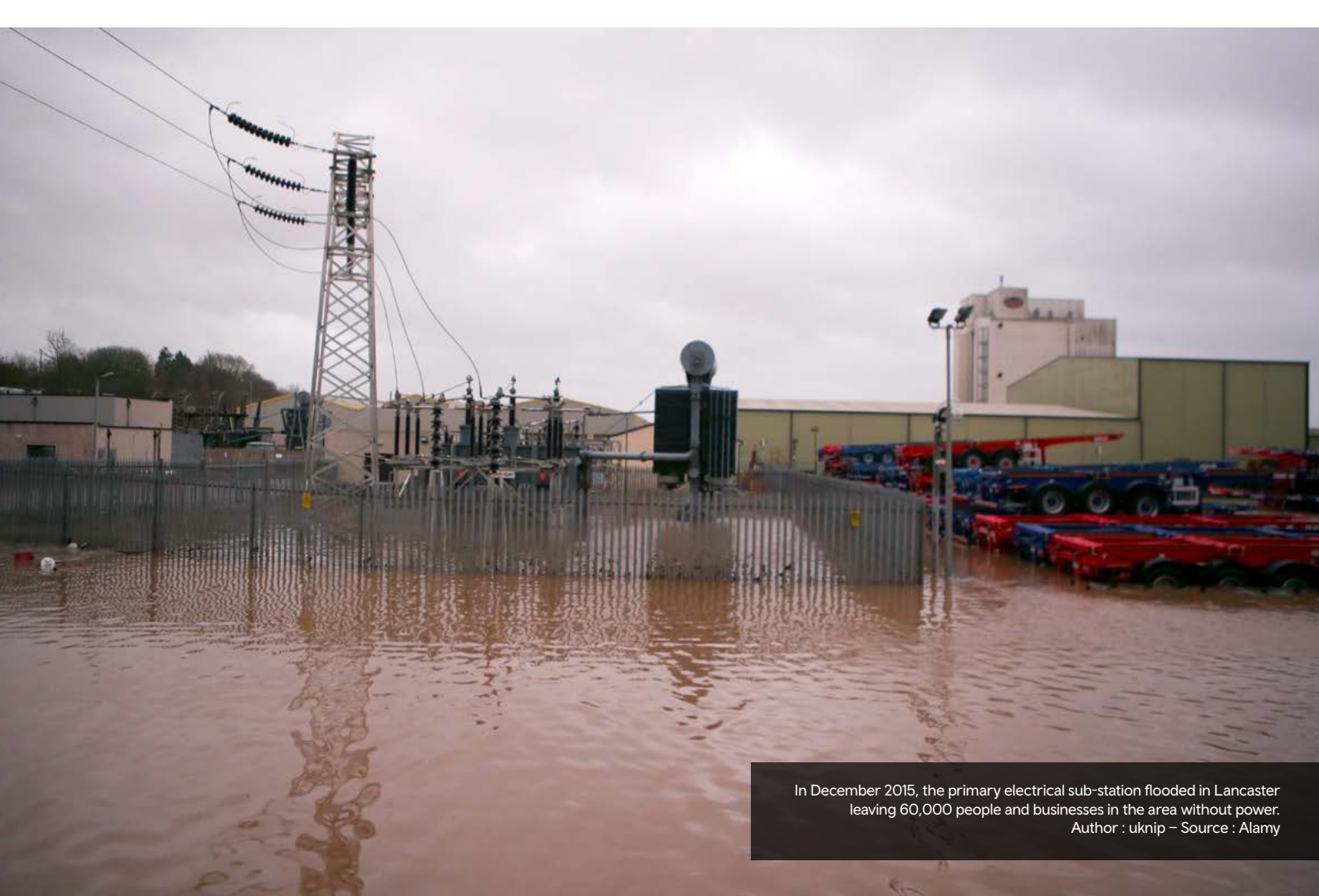
When a climate related shock event occurs, it is common for there to be a “cascade” or domino effect, meaning that several negative impacts occur simultaneously, triggered by one another.

For example:

- In a major storm, gale-force winds may bring down power cables, whilst flooding overwhelms water treatment plants and obstacles such as fallen trees or land slippages block roads.
- Without electricity, ICT (Information, Communication and Technology) systems and gas supplies will not function as normal.
- Equally, water treatment may not be possible and water supplies may be shut off.
- Lack of power may mean that shops are not able to sell food, either boosting demand because of “panic buying” or reducing demand as stock is not required by shops that are closed.
- Official advice may be to stay at home, meaning staff may not report for work, especially if schools are shut and they have childcare responsibilities.

In this scenario, your manufacturing site might be without electricity to power production equipment or maintain refrigeration or freezer temperatures, you might have no potable water supply or means to dispose of effluent safely.

You may not to be able to communicate with staff, suppliers and customers as ICT equipment is not functioning and your staff, and inward and outgoing deliveries, may not to be able to reach your site.



In December 2015, the primary electrical sub-station flooded in Lancaster leaving 60,000 people and businesses in the area without power.
Author : uknip – Source : Alamy

Identifying cascade effects

When assessing risks and what plans you might need to put in place for emergencies, you should plot out how risks might combine and escalate for your premises.

Each situation will vary but examples of questions to ask yourselves might include:

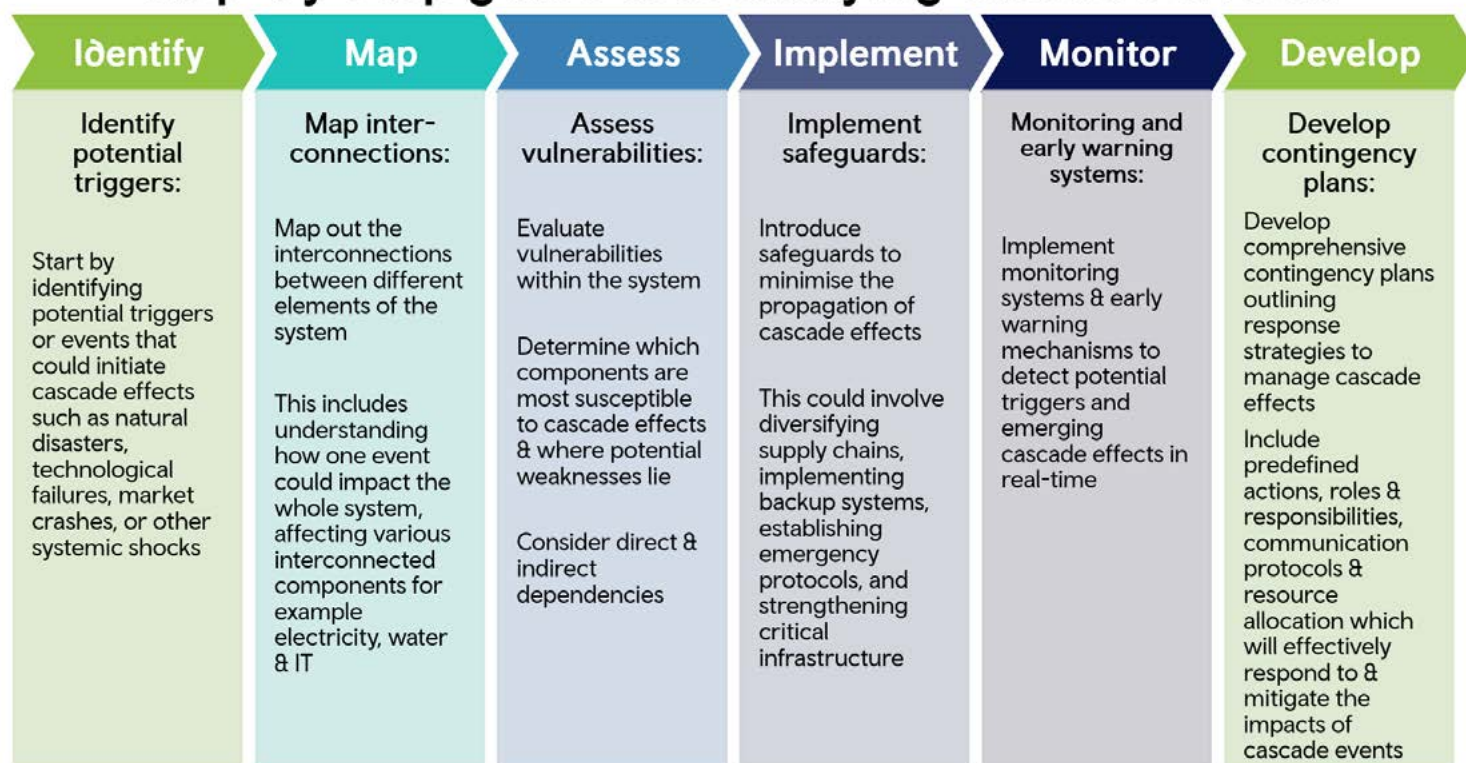
- If loss of electricity supplies to your area prevented water treatment centres from working effectively and water supplies are cut off or became contaminated, could you operate without potable water supplies for staff, hygiene and production purposes?
- If there was a lack of electricity to power chilled or frozen areas of the site, how long would it be before the food safety and quality of raw materials and finished stock are compromised – hours, days? What other impacts might occur?
- How would you communicate with key staff, manage customer orders or check the status of remotely monitored areas of the site if your Wi-Fi and IT servers were not working?

Taking the CCACCP approach is useful to consider the risk or combination of risks, decide at what “trigger” point emergency measures would need to be taken and to plan what these would be.

Below is a step-by-step guide available to assist you in your assessment process and there is also a checklist available.

[Click here for a helpful checklist for assessing cascade scenarios](#)

Step-by-step guide to identifying cascade effects





Managing Change

Being able to manage change effectively is a critical business skill and is essential for ensuring resilience, innovation, and sustainability in any business, big or small.

These change management skills are particularly crucial during times of uncertainty, such as economic shifts and technological advancements, but also, as highlighted in recent times, global crises like the COVID-19 pandemic and climate change.

In such circumstances, these change management skills become paramount as you and your team must be agile and adaptive to navigate unforeseen challenges.

The entire CCACCP approach supports the management of change by assisting you to make well-informed plans to identify and target areas which will bring you the optimum benefits from well considered and proportionate actions.

One of the key challenges in managing change is resistance from individuals and groups who are accustomed to, and comfortable with, existing processes and structures.

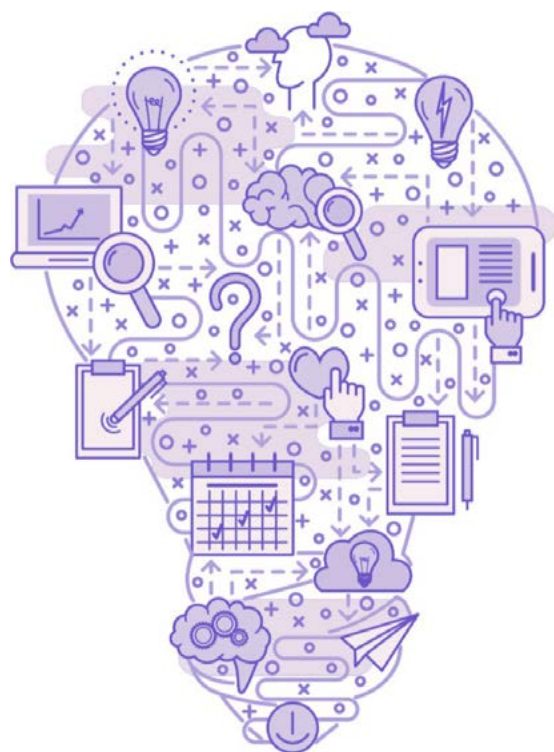
This is why the process of change management involves planning, communicating and implementing changes to mitigate resistance and enhance the likelihood of successful adoption. It encompasses a range of activities, from assessing the need for change to designing strategies, implementing plans, and evaluating outcomes.

Uncertainty can intensify this resistance, making it crucial for you to foster a culture of open communication, empathy, and collaboration. Additionally, managing change during uncertain times often involves making decisions with incomplete information, necessitating flexibility and quick reactions to evolving circumstances - all of which can be extremely challenging.

Whether addressing climate adaptation or other changes, effective change management is a cornerstone of success in an ever-evolving world and fosters adaptability and resilience within an organisation. This not only ensures survival but also positions your business for sustained success by fostering an agile mindset, embracing opportunities and driving forward well-targeted new innovation.

There are a number of frameworks that assist in managing change, as well as risk assessment, discussed above, we will also look at scenario planning. See **Module 4 Food Manufacturing and Production** and action centred leadership in **Module 7 Staff and Service Providers**.

One particularly helpful framework for change management is force field analysis which is outlined below.



Force field analysis

Steps for carrying out a force field analysis

This step-by-step guide sets out a helpful approach to creating your analysis of the positive and negative forces that may be impacting on your ability to implement change effectively within your business and is accompanied by an example to spark your own ideas.

Step 1	Define the Change or Decision	Clearly articulate the change or decision you are considering. This could be related to climate change adaptation or many other things from implementing a new process, introducing a product, or making an organisational change.
Step 2	Identify Driving Forces	List all the factors that support or push for the change. These are the driving forces that contribute to the success of the change and will be wide ranging – they could be internal or external factors and include both logical and emotional factors.
Step 3	Identify Restraining Forces	List all the factors that resist or hinder the change. These are the restraining forces that act as obstacles or challenges to the change. Like driving forces, these can be internal or external, emotionally driven or based in fact and figures.
Step 4	Assign Scores	Assign a numerical score to each force based on its strength or impact on the change. Use a scale, such as 1 to 5, where 1 is weak and 5 is strong.
Step 5	Create a Force Field Analysis Diagram	Create a visual representation by drawing a horizontal line across the centre of a piece of paper, representing the current state or decision. On the left side, list the driving forces and assign scores. On the right side, list the restraining forces and assign scores. You can plot these forces as lines with lengths proportional to their scores. The longer the line, the stronger the force.

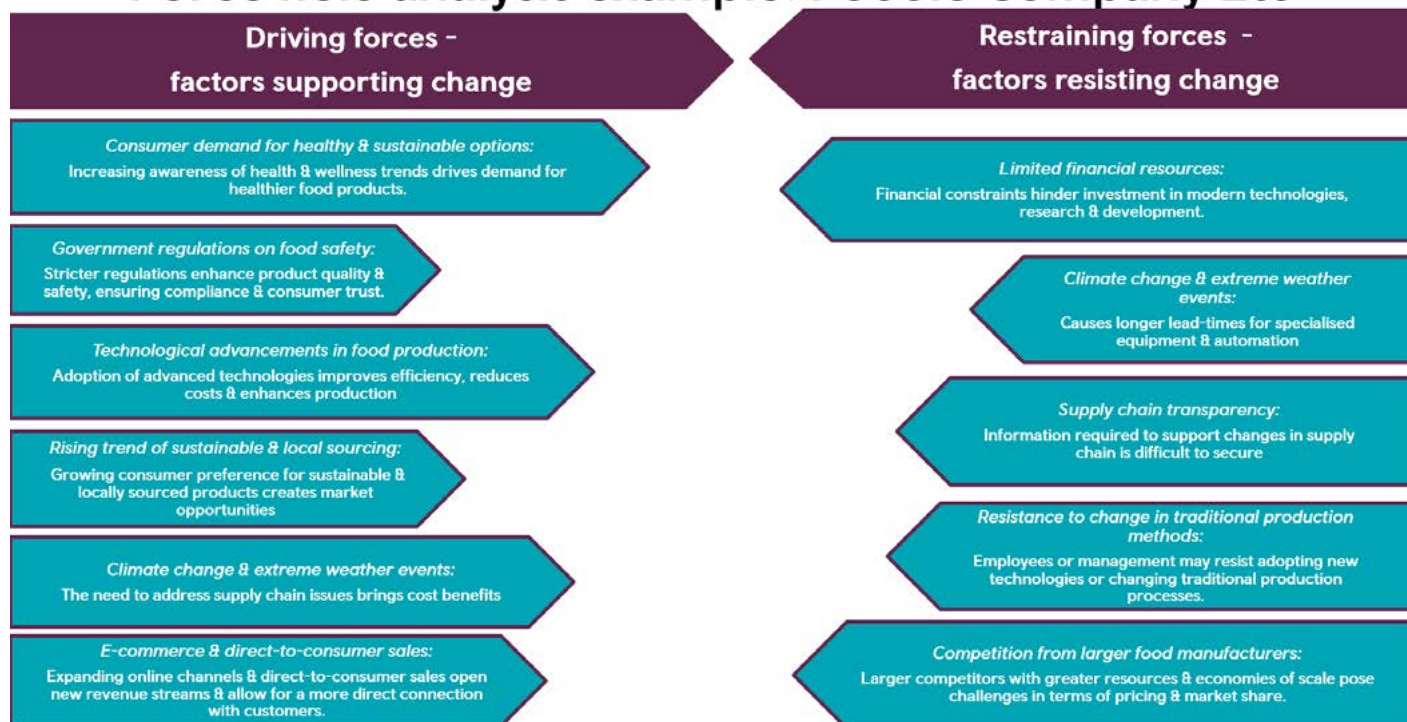
Step 6	Analyse the Diagram	Examine the diagram to assess the overall balance between driving and restraining forces. If driving forces are stronger, there's a higher likelihood of successful change but if restraining forces dominate, the change may face more challenges.
Step 7	Develop Strategies	Identify strategies to reinforce driving forces and/or weaken restraining forces. This may involve leveraging strengths, addressing weaknesses, capitalising on opportunities, or mitigating threats.
Step 8	Implement and Monitor	Implement the planned changes and continuously monitor the forces. Periodically reassess the force field analysis to adapt strategies as needed

The analysis provides a strong visual representation of these forces, giving you a better understanding of the dynamics at play by assigning longer lines to stronger forces and shorter lines to weaker forces.

You will find it particularly useful in managing change within your business and for strategic planning, and decision-making processes. By visualising the forces at play, force field analysis provides a framework for your business to make informed decisions and manage change effectively within a business context.

This practical example of a force field analysis below may offer a helpful starting point for conducting your own analysis tailored to your business circumstances.

Force field analysis example: Foodie Company Ltd

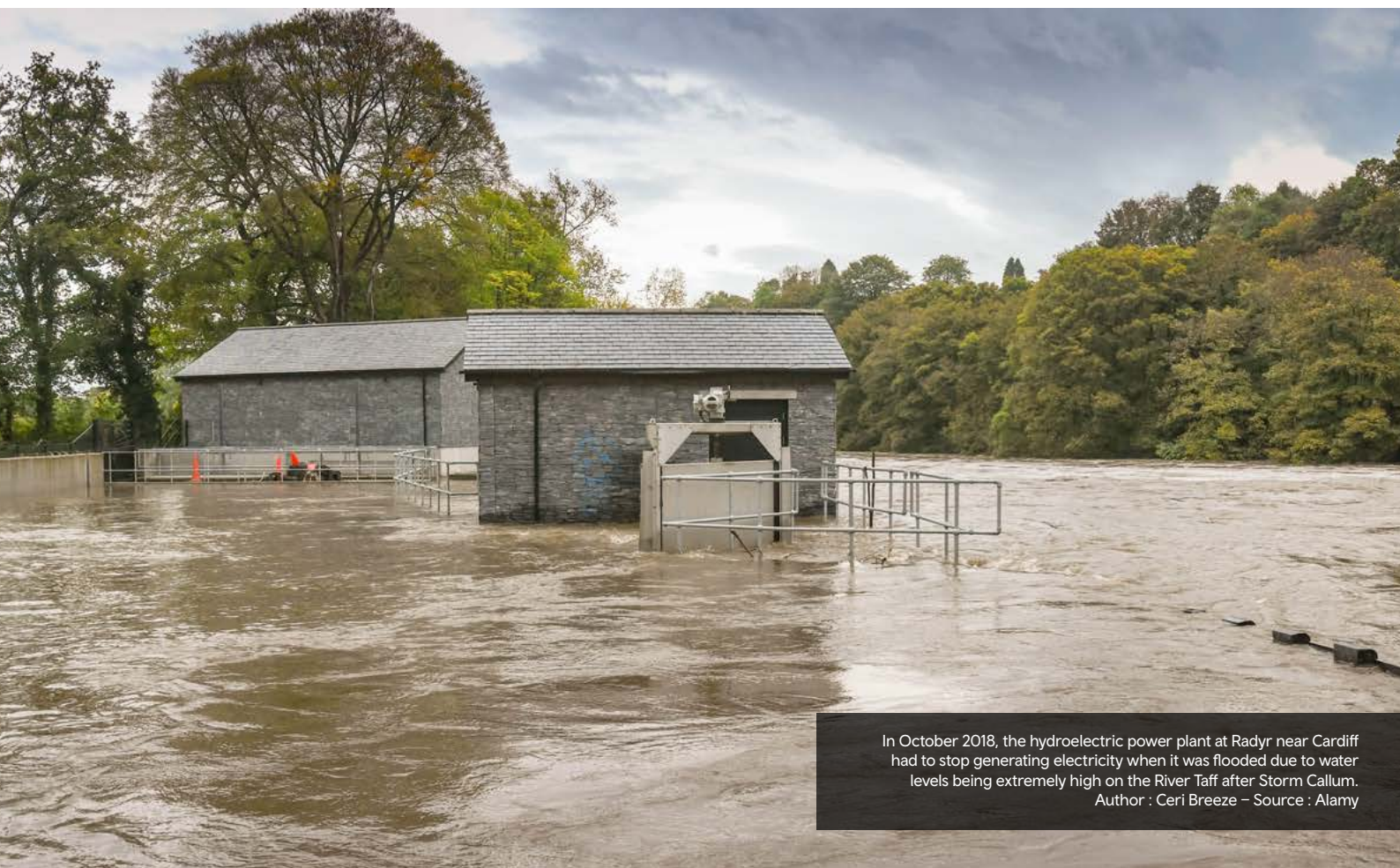


Coming Next:

Module 3 of the Climate Adaptation and Resilience Training looks at the significant topic of how you can assess the climate risks to the sites and buildings which form the important places for your business, as well the access routes used to reach these locations.

Every effort has been taken to ensure the information contained within this publication is accurate and current at the time of writing. We cannot take responsibility for links to external websites which may have become broken over time.

June 2025



In October 2018, the hydroelectric power plant at Radyr near Cardiff had to stop generating electricity when it was flooded due to water levels being extremely high on the River Taff after Storm Callum.
Author : Ceri Breeze – Source : Alamy