

A Tesco case study

Climate Change: Impacts and Adaptation.

Thanks to the following suppliers for their contribution:



dps Home Farm - cover crop sown of Phacelia in a grubbed orchard in flower, May 2022

Introduction.

A key theme for Tesco to explore in this year's supplier food waste reporting is the impact of climate change on food loss. Climate change increases the volatility of weather patterns, causing disruption for farmers and growers. Adaptations can be made to overcome some of the challenges posed by extreme weather, but impactful challenges remain.

The impacts of climate change



Espersen, a seafood own-label supplier, explained that “climate change is affecting their raw fish producers both locally and globally, and has negative consequences such as sea ice loss, rising sea temperature, moving fish stocks and extreme weather conditions, including torrential rain, floods, heat waves and dry wells”. As well as disrupting fishing practices, they explain that climate change is even driving an increase in uneven fish sizes. There currently is a lack of research on this, so it can be difficult to predict what will happen and how it will affect fish stocks. This goes to demonstrate the wide variety of impacts that climate change can have on production, ranging from impacting the food item itself, to impacting the ability to harvest the fish.

However, climate change isn't the only force driving the decline in ocean biodiversity. Espersen explain that “The destruction of habitats by pollution and eutrophication and poor fishing practices are also to blame. Biodiversity plays a vital role in maintaining the functionality and productivity of marine ecosystems and therefore making habitats more resilient to environmental change.”



Espersen: Cod loin product in processing

Climate adaptations



For growers, climate change impacts a farmer's ability to grow and harvest crops. Dps Home Farm experienced a range of extreme weather events that impacted their harvests. Seeing 18 consecutive frost events in April 2021, the majority of apricot and plum flowers were severely damaged, resulting in near complete crop loss.

To prevent such frost damage from happening again, dps Home Farm invested heavily in frost protection in late 2021. In July 2021, one week prior to harvest, the farm experienced torrential rain and hail, which impacted their ability to harvest crops and resulted in cracking and splits in the cherries. One hundred percent of the loss was attributed to this event. Installing hail netting and rain covers has allowed dps Home Farm to mitigate this risk, however, the unexpected nature of such extreme weather events continues to pose new challenges. dps Home Farm continue to learn from their international suppliers to anticipate and mitigate climate-related challenges.

Facing the challenge of sustained high temperatures, dps Wicks Farm was established in 2019 to increase climate resilience of UK berry production. The farm use light diffusing glass fitted to their glasshouses to reduce extreme heat impacts; have increased irrigation capacity through rainwater harvesting; and high pressure misting to increase humidity and reduce temperatures. Mitigations such as misting can reduce the crop environmental temperature by 3 degrees. Whilst these interventions require the use of additional water and energy, dps Wicks Farm utilise capture and storage mechanisms to harness heat and rainwater, meeting 95% of the site's water requirements in this way.

Many other growers also attributed their harvest losses to adverse weather conditions, such as Agrolibano (Central America), whose melons were impacted by heavy rain and multiple hurricanes, and Banacol (South America), who attributed their higher-than-expected banana food loss and waste of 5% to extreme weather conditions.

Viewed together, these examples indicate that climate change is impacting a wide range of crops and geographies, making it increasingly hard for farmers to harvest their expected yields, and proving that sharing learnings and best practice in climate adaptation will become increasingly more important.



dps Home Farm: Broken stones on plums due to temperature damage, 2022



dps Home Farm: Sunburnt Apricots during the 2022 summer heatwave