



# Decision Making in a Nature-Positive World:

Nature-based Solutions  
for the Food and  
Beverage Sector



**NATURE  
POSITIVE**





## The University of Cambridge Institute for Sustainability Leadership

The University of Cambridge Institute for Sustainability Leadership (CISL) partners with business and governments to develop leadership and solutions for a sustainable economy. We aim to achieve net zero, protect and restore nature, and build inclusive and resilient societies. For over three decades, we have built the leadership capacity and capabilities of individuals and organisations and created industry-leading collaborations to catalyse change and accelerate the path to a sustainable economy. Our interdisciplinary research engagement builds the evidence base for practical action.

### Authors

Dr Gemma Cranston, Polly Ghazi & Adrian Greet.

The editorial team wishes to thank: Laura Deltenre for their contributions.

### Citing this report

The University of Cambridge Institute for Sustainability Leadership (CISL). (2022). *Decision Making in a Nature-Positive World: Nature-based Solutions for the Food and Beverage Sector*. Cambridge: The University of Cambridge Institute for Sustainability Leadership.

### Acknowledgements

This project has been enabled by funding and support from: The Prince of Wales's Charitable Foundation.

The authors would like to thank the expert review of Luc Beerens and Nigel Davies for their comments and suggestions that helped to improve the analysis presented in this business brief. We are also grateful to the rest of the project team at CISL for their help throughout the project and in preparation of this final publication.

### Copyright

Copyright © 2022 University of Cambridge Institute for Sustainability Leadership (CISL). Some rights reserved. The material featured in this publication is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike License.

# Contents

About this brief .....	3
1. Context .....	4
2. The business case for F&B sector Nature-based Solutions.....	6
3. Nature-based Solutions in action .....	8
4. Accelerating adoption of Nature-based Solutions .....	11
Next steps.....	11
References .....	13

# About this brief

This business briefing highlights nature-based solutions (NbS) as an effective strategic approach for food and beverage companies seeking to future-proof their businesses against the growing impacts of climate change and biodiversity loss. NbS work by protecting and restoring nature whilst providing a solution to a business and societal need. These emerging solutions can deliver real and tangible benefits to people, nature and the global climate, and have a key role in the business transformation needed to deliver a nature-positive world.

The brief first describes the regulatory, policy and operational imperatives that support the adoption of nature-based solutions at scale. It then highlights the business case for the sector and provides proven examples of cost-effective, nature-based measures and successful UK projects. Finally, it explores common challenges to adopting NbS and how co-benefits can be leveraged by working across sectors.

This is one of a series of sector specific business briefings that CISL has produced to support effective decision making in a nature-positive world. The other sectors covered include built environment and linear infrastructure, finance, and water.

## What are Nature-based Solutions?

There are many definitions of NbS, but all focus on natural systems and ecosystems to address environmental and societal challenges. Typically, a range of partners, including ecosystem services providers (such as farmers) and buyers (such as water companies), adopt nature-based schemes at a water catchment or landscape scale.

CISL defines NbS as “ways of working with natural systems to strengthen them while solving broader problems such as climate change, health, social inclusion, and more.” Nature-positive is the term used to describe a world where nature – species and ecosystems - is being restored and is regenerating rather than declining.

# 1. Context

The UK, and the world, face dual and intertwined climate and biodiversity crises. Food and beverage (F&B) companies are on the frontline of both crises, seeking to deliver robust services for customers amid climate-related supply chain challenges while stewarding the natural resources on which their businesses – and society – rely.

Nature-based solutions offer a proven and cost-effective way forward as the sector seeks to future proof its operations. Around the world, first mover companies are working with suppliers and farmers on landscape level interventions that use nature to make the global food supply more resilient while mitigating climate change and enhancing biodiversity. These efforts include regenerative agriculture, an increasingly popular approach to farming that works alongside natural systems, protecting and enriching soil and increasing biodiversity.<sup>1</sup>

While such measures must be farmer-centred for success, the entire F&B value chain – from food producers and processors to manufacturers and consumer retailers – has an interest and responsibility in advancing NbS.

Agriculture is one of the key drivers of both greenhouse gas emissions and the loss of nature through land use change, pollution and resource exploitation. Increasingly, F&B companies recognise the sector's key role in delivering a global low-carbon and nature-positive economy and the need to take an integrated approach to the climate and nature crises. In response, upstream agricultural producers are moving to implement NbS on the ground. Further down the supply chain, companies such as food manufacturers are supporting nature-based interventions to help secure their supply. Over 1,100 companies with collective revenues of more than US\$5 trillion have signed up to support the [Business for Nature Call for Action](#).

## **Regulatory and policy drivers provide both incentives and deterrents.**

National and global regulations and policies, coupled with consumer and investor pressure, are setting the stage for nature-based solutions to move from the margins to the mainstream of F&B corporate strategies.

In the UK, the Government's 25 Year Environment Plan (25YEP) lays out a roadmap and stringent targets to improve water quality and protect biodiversity – both challenges that require a shift towards more sustainable and regenerative agriculture. Under the Agriculture Act 2020, farmer subsidies will be phased out in favour of payments for taking actions that improve water quality and biodiversity, mitigate climate change and generate other societal benefits.

Globally, UN negotiations are underway on a new [post 2020 Global Biodiversity Framework](#) that nations are set to agree by the end of 2022. Under pressure to be part of the solution, agricultural and F&B companies are signing on to [science-based targets for nature \(SBTN\)](#) and new reporting initiatives such as the [Task Force for Nature Related Financial Disclosures \(TNFD\)](#).

These approaches seek to incentivise sustainable outcomes and penalise unsustainable behaviour across the complex global agricultural and F&B supply chains.

**As a result, the industry is shifting its philosophy and approach to operations.**

Food and beverage companies increasingly recognise that their business models depend on the health of nature. Leading retailers, in particular, are making changes within their supply chains to reduce climate and biodiversity impacts and introduce nature-based solutions.

For example, through the 2021 'Retailers' Commitment to Nature', the chief executives of Sainsbury's, Tesco, Waitrose, Marks & Spencer and the Co-op jointly committed to halve the nature and climate impacts of their food systems by 2030.<sup>ii</sup> Brought together by WWF, these five supermarkets serve more than half the UK's food shoppers.

Food and drink manufacturers, including two of the sector's largest global corporations, are also taking action. [Nestlé's 'nature protection plan'](#) aims to source half its global ingredients by 2030 through regenerative farming methods that protect and renew natural resources, including forests and waterways. Agriculture makes up 30 per cent of PepsiCo's greenhouse gas emissions and the firm's [PepsiCo Positive](#) strategy embraces nature-based farm level solutions alongside new approaches to finance, technology and partnerships.

### **There are early moves towards more collaborative and "landscape" or "catchment" solutions.**

Companies within the global F&B sector have primarily progressed sustainable sourcing and nature-based solutions independently. Global corporations such as Unilever, Mars, Nestlé and Danone, for example, have taken direct measures within their farm to plate value chains. At the same time, third party organisations have provided valuable forums to drive business collaboration and shared action. These include the Consumer Goods Forum, World Business Council for Sustainable Development, SAI Platform and CISL's [business](#) and [finance](#) communities.

To be effective, NbS at the landscape or catchment level also depend on collaboration between F&B companies and other organisations with a stake in sustainable working landscapes. As well as farmers, these public and private partners may include, for example, local authorities, government agencies such as Natural England, housing developers and water companies. Together, these stakeholders can reduce costs, share resources and strengthen actions that deliver win-win benefits for business, communities and the environment in areas ranging from commodity production to flood mitigation, carbon sequestration and biodiversity protection.

In the UK, examples of how the sector is innovating to advance climate mitigation and biodiversity protection together include the [Landscape Enterprise Networks \(LENS\) model](#), detailed in CISL's report [Modelling Nature-Positive Land Management](#). The LENS East of England project alone has generated £3.5 million over two years from Nestlé Purina, Cereal Partners UK and local water companies to pay farmers to implement nature-based solutions.<sup>iii</sup>

## 2. The business case for F&B sector Nature-based Solutions

Individually or collaboratively, the benefit for action through nature-based solutions is strong and falls into three main areas.

### Improving operational resilience

F&B companies often have sustainability targets for their operations, typically water efficiency and quality, and carbon reduction. Increasingly, companies are also setting targets for nature through global initiatives such as the [Science Based Targets Network](#). However, despite the sector's dependence on natural resources, few firms have adopted a comprehensive approach to leveraging nature-based solutions to future proof their business.

A more strategic approach to NbS offers F&B companies tremendous opportunities from an operational and reputational risk perspective. Working in close collaboration with farmers and other stakeholders, such solutions can help secure food supply chains that face increased cost volatility resulting from climate change and other environmental challenges, tighter regulation, and stakeholder and consumer expectations.

For F&B manufacturers, such nature-based solutions are most effective when adopted at a landscape level, in partnership with local producers and other stakeholders, taking local material issues, needs, culture and governance into account. For example, amid rising global demand for rice, Mars Incorporated now sources 97 per cent of its supply from sustainable sources, namely farmers who grow rice in line with [Sustainable Rice Platform](#) standards. This global target has been met by working at the landscape level to introduce sustainable farming techniques and support communities and nature in ways that deliver direct benefits to farmer suppliers (see box).

Other F&B giants such as Nestlé are embracing the growing regenerative farming movement, which employs NbS to reduce environmental degradation, improve soil, water and carbon outcomes, and support farmer livelihoods.<sup>iv</sup> The company has pledged to source 50 per cent of its key ingredients through regenerative agricultural methods by 2030.<sup>v</sup>

### Managing business risk

Supply chain resilience is a key and growing priority for food and beverage businesses, retailers and commodity buying teams. As they look ahead, C-suites are preparing to manage both the availability, quality and price of their products and the wider impacts of their supply chains on climate, society and nature. The UK supermarkets' 'Retailers' Commitment to Nature', part of a broader commitments by 95 leading UK companies to "get nature-positive"<sup>vi</sup>, is a prime example of this strategic shift.

*Mars farmer suppliers in Pakistan have seen a 32 per cent increase in income and a 17 per cent increase in yield. "I have been a contract farmer for the last three years. Mars has a quality team that visits us regularly and advises us on what to do and what not to do including pesticide and fungicide usage and timing. Because of this my crop quality has improved."*

Muhammad Idris, rice farmer, Sidham village, Pakistan

Source: [Sustainably Sourcing Rice For The Future | Mars, Incorporated](#)

The medium to long term risks of business as usual are substantial. As agricultural yields and productivity take a hit from the loss of nature's services, volume and quality of supply may be affected, and prices will likely rise. Experts estimate that crops worth up to \$577 billion are at risk annually from the loss of pollinators alone, threatening the availability of cocoa, coffee and soy. In addition, damaged ecosystems provide less robust buffers against floods and other extreme weather events, putting raw materials and built assets at risk for all types of businesses. Investing at scale in practical nature-based interventions, such as planting trees and hedges and setting aside land, can protect crops and infrastructure alike in various ways, described below under nature-based solutions in action.

### Wider business and environmental benefits

Nature-based solutions are holistic in approach and outcomes. They drive benefits for local ecosystems, climate change mitigation, and secure and sustainable food supply and local social needs. Given the size of leading F&B companies, the adoption of NbS systematically and at scale has the potential to make a significant global difference. The outcomes can also benefit other business stakeholders, as shown in the table on page 9, providing an incentive for them to join landscape or catchment level nature-based solutions. For example, setting aside land can deliver pest reduction and flood protection outcomes that benefit farmers, water companies, housing developers and infrastructure agencies while providing more natural beauty for public enjoyment.

Unaddressed, however, the sustainability challenges facing the sector threaten soil health and resilience, farming yields, crop and consumer product quality, corporate and consumer costs and the security of the global food supply. Given these high stakes, in 2021, the UK based Sustainable Markets Initiative launched [Terra Carta](#), a business-centred recovery plan for nature, led by HRH Prince of Wales.

*“Terra Carta (Earth Charter) will provide a roadmap to 2030 for businesses to move towards an ambitious and sustainable future; one that will harness the power of Nature combined with the transformative power, innovation and resources of the private sector.”*

HRH Prince of Wales



## 3. Nature-based Solutions in action

Interest is surging among the private sector, local authorities, farmers and other land owners to collaborate on solutions that respond to regulatory and policy drivers to combat biodiversity decline and climate change and address business risks and opportunities. The food and beverage sector is among those leading the charge.

In the UK, successful, scalable collaborative models are emerging to support sustainable agriculture and corporate adoption of nature-based solutions, offering transformational blueprints for other sectors and parts of the country. Examples include:

- [New approaches to land management that work with nature](#) to offer benefits for farmers, utilities, the private sector, the natural environment and public services. In its 25 Year Environment Plan (25YEP), the Government singled out the [LENS model](#) as an approach that shows real value. The first project, launched in Cumbria, involves Nestlé, United Utilities, First Milk, Eden Rivers Trust, the Environment Agency, Eden District Council and the National Trust. Together, they are trading with farmers to fund NbS that improve soil and nutrient management, reduce phosphorus in water courses and protect and create habitats.
- [New schemes that pay farmers for adopting sustainable practices](#) and nature-based solutions that protect, restore and deliver ecosystem services such as flood protection and carbon sequestration. Under the Agriculture Act 2020, in place of subsidies, farmers will begin receiving payments for Environmental Land Management Services (ELMS) starting in 2022. Businesses are helping complement such policies through pioneering initiatives such as the [Poole Harbour Agriculture Group](#) (PHAG), a farmer collective working with local water companies and authorities to reduce nitrate runoff. CISL advises on the scheme, which offers the potential to deliver multiple co-benefits for sustainable, productive agriculture, biodiversity and carbon reduction.

Below, we highlight specific NbS measures relevant to F&B companies, drawn from projects that CISL is engaged in, and provide an in-depth case study of the AlVelAl project in southern Spain. Other organisations, including the [SAI Platform](#) and [Unilever](#), have developed principles and practices for regenerative agriculture that offer more specific crop options to consider.

### Examples of nature-based solutions and benefits for agriculture stakeholders

Taking action through nature-based solutions provides direct benefits not only for the food and beverage sector but also for nature, society and other sectors. Below we link common, effective examples of NbS to the specific benefits they can generate for different stakeholder groups.

Nature-based solutions	Benefits for food and beverage companies and their supply chain partners	Co-benefits for nature, society and other sectors
<b>Nature-positive commitment and action</b>	A nature-positive commitment and the implementation of related strategies and NbS can support improved supply chain resilience, enable cost avoidance within the supply chain and provide reputational benefits.	
<b>No/minimal tillage</b>	Cost avoidance for farmers. Supports net zero commitments.	Reduces carbon release and overall GHG footprint. Encourages more biodiverse farm soil and habitat variety.
<b>Plant autumn cover crops on bare land</b>	Reduces risk of nitrate leaching into water. Improves soil fertility and structure and protects soils from erosion during winter. Reduces the need for additional inputs to support soil quality, resulting in cost avoidance and a more resilient farm business.	Improves soil fertility and structure, reduces nitrate leaching and protects soil erosion during winter. Improves soil organic content enables sequestration of additional atmospheric carbon and the potential to establish a carbon market that provides incentives to farmers.
<b>Set aside land/wildlife strips to create or maintain floodplain meadows</b>	Promotes flood management by retaining rainfall, which improves resilience of farm supply chains. Can provide habitats for pests and pollinators, which can boost yields.	Reduces risk to water sector and other infrastructure. Provides habitats for birds, wetland plants, amphibians, invertebrates and small mammals.
<b>Create species-rich, semi-natural grassland through grazing, hay-cutting and avoiding pesticides</b>	Reduces farmers' chemical input costs. Can boost corporate reputation.	Supports water sector by contributing to flood management and storing carbon. Protects against flooding and provides rich habitat for grasses, flowers and wildlife.
<b>Plant new cross-slope hedgerows</b>	Reduces flooding and water pollution risks.	Reduces soil erosion and runoff while providing habitat and pollen for many species.
<b>Plant new native woodland</b>	Contributes to flood management and water resources. Contributes to corporate net zero commitments.	Slows surface water runoff and increases water take-up, leading to richer soil and flood prevention. Provides habitats.
<b>Protect waterways</b>	Depending on the solution adopted, reduces the volume and cost of chemical inputs for crop delivery and reduces the risk of regulatory actions for soil mismanagement.	Reduces runoff that requires further treatment, which in turn cuts costs and pollution issues for other stakeholders.

## Case Study: Nature at the Centre of a New Future – [AlVelAI](#) <sup>vii</sup>

The Altiplano in southern Spain is the world's leading organic almond producing region. The semi-arid steppe contains 100,000 hectares of rain-fed almond groves, but most farms suffer from degraded soils, poor water infrastructure and biodiversity loss. The territory is also critical for its ecological functions, including clean water, a habitat for unique flora and fauna and a stable climate.

In 2014, a new farmer association, AlVelAI, united producers across the region in adopting large scale landscape restoration. Members use a "4 Returns approach" to nature-based solutions that focuses on Inspiration and Social, Natural and Financial capital to drive practical, scalable change. Farmers employ regenerative practices, including making swales, restoring terraces, planting green cover and creating windbreaks to retain soil and water and enhance biodiversity.

In 2016, AlVelAI collaborated with local producers to process and market regeneratively farmed almonds. Other business cases, including for centennial olive oil and compost, are in development, and AlVelAI also enables the supply of local produce to tourist towns in the region. In 2021, the farmer association programme became the first in Spain to be verified against the international Forest Ecosystem Restoration Standard. <sup>viii</sup>

### Through 2021, progress includes:

- 380 AlVelAI members
- 200+ farmers participating in landscape restoration
- 129 farmers applying technology to capture water in the landscape
- 149,000 trees planted since 2017
- 10,000 ha under improved regenerative management

### AlVelAI targets for 2034

By 2034, AlVelAI aims to enlist 800 farmers, bring at least 60,000 ha under regenerative farming practices and establish 20+ business cases for landscape restoration.

Source: [The AlVelAI Territory | The 4 Returns Community Platform \(commonland.com\)](#)

## 4. Accelerating adoption of Nature-based Solutions

Food and beverage companies and other sectors reliant on nature, have a timely opportunity to solve strategic business and environmental challenges by embracing nature-based solutions at scale.

As described above, when companies put resources into an NbS project, they are choosing to work with nature to address current or expected challenges to their business model and operations, such as flooding, drought, or the need to increase carbon sequestration. An NbS project might be an alternative to a conventional (possibly high carbon) approach to the challenge, or an investment in improving the business's resilience.

However, in CISL's experience, when organisations embark on this journey they typically face common internal and external challenges. While NbS can deliver clear benefits, it is still a relatively new approach, and corporate proponents often have to work hard to get the support to implement them. To help bridge this gap, CISL has published a detailed diagnostic tool to advance organizational understanding of NbS projects and accelerate corporate adoption and implementation. In conjunction with this brief, companies may find [Decision Making in a Nature Positive World: A Corporate Diagnostic Tool to Advance Organisational of Understanding of Nature-based Solutions Projects and Accelerate their Adoption](#) helpful in moving forward.

The tool, illustrated below, helps internal advocates navigate four common obstacles:

- **Dealing with the unknowns** that delay or obfuscate NbS decision-making processes
- **Making the financial case** for NbS benefits, especially when compared to a company's traditional solutions
- **Navigating external and reputational pressures** such as external stakeholders, regulatory compliance, supply and value chain actors, and possible NbS partners
- **Engaging and influencing colleagues** to convince them of the benefits of NbS and convert them from undecided to NbS supporters.

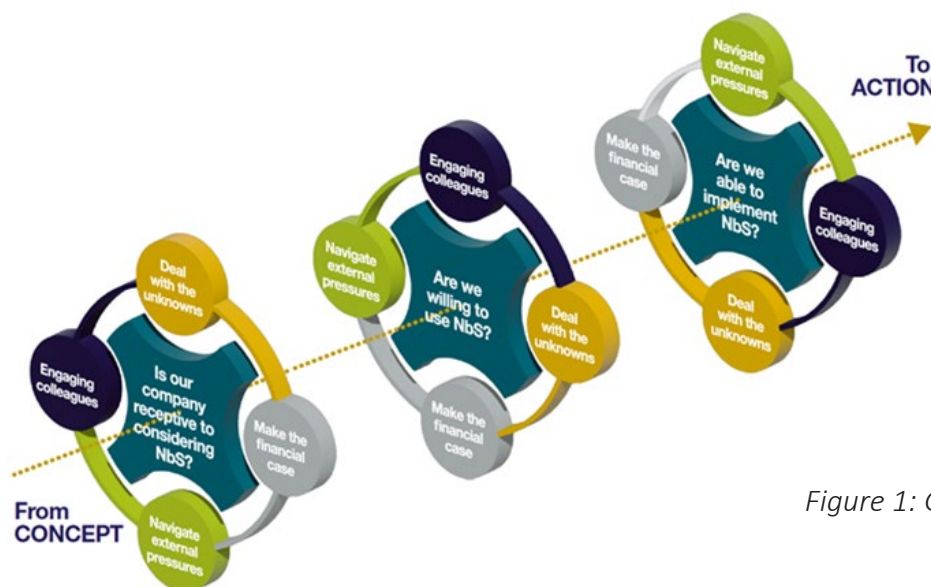


Figure 1: Getting NbS ready.<sup>ix</sup>



## Next steps

The time is ripe for UK sectors whose business models and success depend on nature to transform their strategic planning by embracing nature-based solutions at scale. Food and beverage companies are among those that can benefit from prioritising NbS as they pursue more resilient and cost-effective operations in response to regulatory pressures, rising risks from climate change and nature degradation, and internal carbon targets.

This business briefing provides a snapshot of how NbS approaches work, the benefits already being generated by existing schemes, and the co-benefits that can be delivered beyond the water sector. Food and beverage companies have the opportunity to partner with other stakeholders in ways that harness these benefits collectively, reduce their costs and deliver on a range of outcomes that are broader than their own business objectives.

The Cambridge Institute for Sustainability Leadership (CISL) can assist these companies and other organisations in future proofing their businesses by harnessing the power of nature.

For more information on our work in this area, see [here](#) and contact [business&nature@cisl.cam.ac.uk](mailto:business&nature@cisl.cam.ac.uk).

# References

---

- i Chesapeake Bay Foundation. (26 August 2021). How a holistic approach to farming is key to restoring our environment and saving the Bay. Retrieved from: <https://www.cbf.org/blogs/save-the-bay/2021/08/what-is-regenerative-agriculture-and-why-is-it-re-emerging-now.html#:~:text=In%20simple%20terms%2C%20regenerative%20agriculture,long%20before%20industrial%20agriculture%20occurred>
- ii Edie Newsroom. (6 November 2021). Five major UK supermarkets pledge to halve food system's environmental impact by 2030. Retrieved from: <https://www.edie.net/five-major-uk-supermarkets-pledge-to-halve-food-systems-environmental-impact-by-2030/>
- iii Nestlé. (28 April 2022). Nestlé and 3Keel launch network to protect and restore the UK landscape. Retrieved from: <https://www.nestle.co.uk/en-gb/media/pressreleases/allpressreleases/nestl%C3%A9-3keel-launch-network-protect-restore-uk-landscape>
- iv WBCSD. (1 September 2021). OP2B's Framework for Regenerative Agriculture. Retrieved from: <https://www.wbcd.org/Projects/OP2B/Resources/OP2B-s-Framework-for-Regenerative-Agriculture>
- v Nestlé. (n.d.). Protecting and enhancing biodiversity. Retrieved from: <https://www.nestle.com/sustainability/nature-environment/protecting-biodiversity>
- vi SYNTEGON. (11 November 2021). 95 British businesses pledge to get nature positive by 2030. Retrieved from: <https://spnews.com/british-businesses-pledge-naturepositive/>
- vii Elvira Marin. (6 April 2022). The AlVelAl Territory. Retrieved from: <https://4returns.commonland.com/landscapes/revitalizing-land-and-community-in-the-altiplano/>
- viii Preferred by Nature. (1 April 2021). AlVelAl project in Spain becomes the first restoration effort to be verified against Forest Ecosystem Restoration Standard. Retrieved from: <https://preferredbynature.org/newsroom/alvelal-project-spain-becomes-first-restoration-effort-be-verified-against-forest>
- ix The University of Cambridge Institute for Sustainability Leadership (CISL). (2022). Decision-making in a nature positive world: a corporate diagnostic tool to advance organisational understanding of nature-based solutions projects and accelerate their adoption. Cambridge: The University of Cambridge Institute for Sustainability Leadership.