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Understanding sustainable food systems

Today’s global food sector is responsible for a third of all greenhouse gas emissions, 60% of global biodiversity loss and two thirds of forest loss, whilst one third of all food produced is wasted. It’s time for change.

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Introduction

While food is essential for human survival, it is increasingly becoming a central factor to many of the challenges facing the world today.

The food sector's impact on our planet and people is far-reaching and wide-ranging, and in its current form, it's unsustainable.

We're currently using nature 1.7 times faster than the rate at which our planet's biocapacity can regenerate[1], and food security is forecast to be increasingly affected by projected climate change.

In 2022, more than 9% of the world's population faced chronic hunger, while the food system's unsustainable practices accounted for around a third of greenhouse gas emissions, and 70% of the world's freshwater use.

Poor soil health, droughts and flooding, meanwhile, are significantly impacting our food supply – which, in turn, is intrinsically linked to people's health and the consequential strain on our health systems.

Urbanization, changing consumption patterns, population growth and climate change strain food systems, while deforestation, primarily for agriculture, further increases greenhouse gas emissions.

These issues are complex and interconnected, which is why a systematic approach is needed if we are to create a truly sustainable food system.

Every organization working in the food industry is aware of many of these issues. Sustainable food systems were identified by the United Nations' Sustainable Development Goal 2: Zero Hunger, while sustainable, resilient food systems were also a key pillar of the 2016 United Nations General Assembly's 'Decade of Action on Nutrition 2016-2025'.

70%

of the world's freshwater was used in unsustainable food practices around the world.

Many organizations in the food industry have taken steps to help create this, and launched initiatives to work towards a sustainable food system.

For others, the challenge has been lost in a sea of more pressing, more immediate concerns – workforce challenges, rising costs, packaging and labeling challenges have all been very real, and time-consuming.

However, legislation and government change is coming, and the businesses that adapt now will be in a strong position – both internally and externally – to thrive in the coming years.

We explore what a sustainable food system is, how businesses across the food system can take action, and the frameworks that can be employed to create a sustainable measure across the industry.

The case for sustainable food systems

One-third
of GHG emissions are contributed by food systems.[2]

Approx. 30%
of the world's food is lost or wasted every year.[3]

640 million hectares of land
could be saved through dietary shifts away from animal proteins.[4]

Two billion people
are facing food insecurity.

60% of global biodiversity loss
is due to the food sector.[5]

We're using nature 1.7 x faster
than our planet's biocapacity to regenerate.[6]

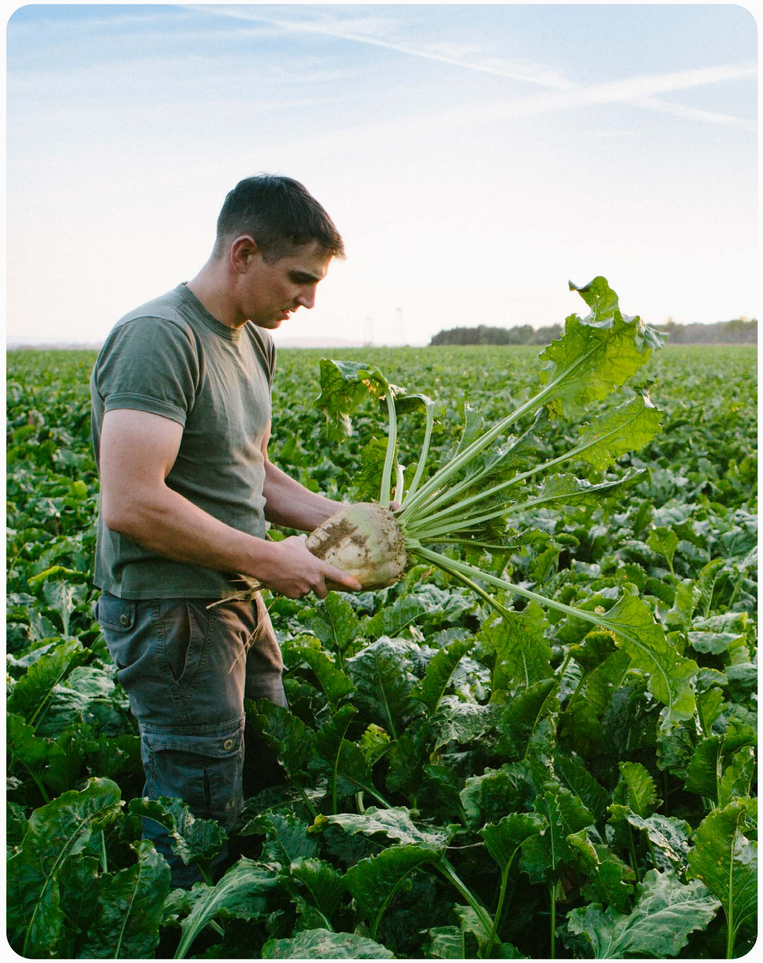
600m people
will face hunger by 2030 if we don't act now.[7]

What is a sustainable food system?

The UN defines a sustainable food system as ‘a food system that delivers food security and nutrition for all. The system encompasses everything from the processing, packaging and transporting of food to consumers, with three overarching factors considered: economic sustainability, social sustainability and environmental sustainability.’

“Our food system connects everything from production, processing, distribution and consumption to disposal. This is why it’s essential we’re thinking about our food system in context, as an interconnected ecosystem that we all impact,” says Emily Field, Food Sector Lead at BSI.

Reducing emissions often dominates conversations about what organizations can do to impact climate change. While that is a good place to start, there are a host of other issues within our ecosystems that are negatively impacting our food systems, affecting soil health, biodiversity and land use – all of which, collectively, organizations in the food system can impact.



“When we consider the food system, we should think about everything from nutrition to food security, soil health to public health.”

Emily Field
Food Sector Lead at BSI

Why a systemic approach is needed for a future of sustainable food?

Given the interconnectedness of the food system, the challenge of creating sustainability cannot be solved in isolation.

For example, a net zero approach alone does not solve issues of health. Tackling biodiversity loss doesn't automatically solve food security. Across the entire food system, farmers and producers, manufacturers, retailers and consumers all impact – and are impacted by – our food system.

Taking a systemic approach to our food system allows us to address the interdependence of the various components of a food system, how they connect and how they impact one another.

"By having that awareness of the interconnected nature of what you're doing, and the decisions that you're making, the potential positive impact becomes greater and clearer." says Emily Field, Food Sector Lead at BSI

"In the first instance, businesses are going to think about the raw materials they need to make their products, the tangible products they're actually producing and selling, the impact each process has. It's important to keep asking questions, however" says Field.

"When human and planetary health are the foundation of the entire ecosystem of food production, every stakeholder, from producers and manufacturers to retailers, communities, governments and consumers, has a role to play."

World Economic Forum, 2023

The need for consumer involvement

Businesses naturally follow consumer demand and trends, and research continues to show that consumers take ESG factors into consideration when making purchasing decisions.

This is critically important in the food and drink sector, with a study finding consumers are more aware of environmentally friendly communication from food and beverage brands, more than in any other category.

Regardless of the sector in which they are operating, however, brands are increasingly wary of accusations of greenwashing – which can create greenhushing, whereby brands are hesitant to share ESG stories and claims.

This creates a challenge, as education of consumers is needed around all aspects of a sustainable food system. For example, the benefits of buying local, eating a plant-based diet or using alternative proteins are not adequately represented where greenhushing is in play. It prevents important opportunities to educate consumers and provide those sustainable purchasing choices.

Research from The Economist Intelligence Unit found that consumers believe brands have as much responsibility to create positive environmental change as governments do, and brands and manufacturers have the visibility to lead change – before that change is mandated.

What does a sustainable food system look like... and how do we get there?

Every business operating in the food system has a significant part to play in creating a food system that will be sustainable for generations, fuelling the health of the planet and the population.

Reaching the end goal of a fully sustainable food system can seem like a challenging prospect. However, by understanding an organization's key attributes, and where they impact the system, we can take steps towards achieving this goal.

Net zero

Our current food system is responsible for one-third of greenhouse gas emissions, with methane from agriculture and emissions from food loss and waste being two major contributing factors.

To reach net zero a systems approach is needed to mitigate the impacts of climate change and look to decarbonize our food value chains. Climate change is both a cause and casualty of our food systems, looking towards nature positive solutions can support a net zero future.

32%

of human-caused methane emissions are produced as the result of manure and gastroenteric releases from livestock emissions.[8]

8%

of total greenhouse gas emissions are generated by human-caused food loss and waste.[9]

Sustainable food production

A sustainable food system needs to contribute positively to our environment, promoting biodiversity and protecting natural resources. However, today, our food system is responsible for 60% of global biodiversity loss[9], and two-thirds of forest loss[10]. Looking at the land we use, and how we farm, could offer solutions to support a shift towards more sustainable food production.

Regenerative agriculture

Regenerative agriculture offers a solution to combat climate change, reverse nature's decline and halt biodiversity loss. It prioritizes farming practices that restore nature, increase biodiversity, enhance soil health and improve animal welfare. It can also help prevent land degradation and deforestation and reduce the need for for chemicals. Which, in turn, ensures healthier foods are produced to support improved population health.

As well as reducing the negative impact of more conventional farming practices, regenerative agriculture helps build resilience against our changing climate. It can help in:

- protecting against flooding
- improving food security and
- in the sequestration of carbon.

This is crucial, because half of the world's agricultural land is degraded, leading to productivity losses of US$400 bn per year, and intensive farming involving churning soil releases C02 that's naturally stored in the soil.[11]

Deforestation

Deforestation – where land is cleared to be used for other purposes, primarily agriculture – is increasing at the rate of around 10 million hectares every year[12], and causes around 10% of global warming[13].

In total, agricultural land covers approximately 4.9 billion hectares, or 38% of the world's terrestrial area, and is estimated to account for approximately 80% of global land-use change, as land is cleared or converted for cropland, feed production, or grazing land[14].

The majority of the world's deforestation is linked to the production of meat, soya and palm oil[15] – with soya primarily grown to feed farm animals, including pigs and poultry, to meet consumer demand for meat.

Clearing forests destroys animal's natural habitats, and also affects rainfall patterns, water and soil quality and flood prevention. In addition, trees absorb and store C02, and release C02 and other greenhouse gasses when cleared or disturbed.

60%

of global biodiversity loss is due the food system.

Population health and nutrition

Our food systems are linked to our health systems, and our dietary habits are negatively impacting population health. Our diets are increasingly taking a massive toll on our health, causing illness and placing an unsustainable strain on our health systems.

Creating a sustainable food system can impact not only our planetary health, but also population health. By creating healthier food options, through sustainable farming practises, increasing plant-based diets, and consuming alternative sources of protein, individuals' health can be improved, and the strain on health services reduced.

Biofortification
By enhancing the nutritional quality of crops through better soil management, increased soil quality as well as biotechnology, the issues of health, nutrition and food security can all be improved.

Reformulation
Small changes to formulations can significantly impact food's nutritional profile. By reformulating to reduce salt and sugar content, brands can make subtle changes that have a notable impact.

Alternative proteins
Plant-based proteins and lab-grown meats offer healthy and sustainable protein sources that can encourage a reduction in meat consumption. By developing and marketing alternative protein products, brands can help reduce the environmental footprint and change consumer behavior. Similarly, plant-based diets, consisting of fruits, vegetables, legumes and nuts, offer health and environmental benefits. As such, the investment in – and promotion of – plant-based product lines is impactful.

Environmental/sustainability labelling
Labelling is one solution that can support more sustainable consumption choices. Labels can help inform consumers by providing information about environmental credentials of products, and can help drive more sustainable purchasing decisions. A report by the World Economic Forum[16] found that 65% of consumers want to make the right choices to live a healthier and more sustainable lifestyle.

Labelling with sustainability credentials of products can support a shift towards healthier and more sustainable diets, further supporting the transition towards sustainable food systems.

Solutions to support your business towards sustainable food systems

Your path to net zero

- **PAS 2050** Carbon footprint of product
- **ISO14068-1** Carbon neutrality
- **ISO 50001** Energy management
- **ISO 14090** Climate change adaptation
- **ISO 14064-1** Greenhouse gas management quantification/verification
- **BSI's Connect Climate service**

Your path to nature positive

- **ISO 140001** Environmental management system
- **ISO 16001** Water management
- **BS 8683** Biodiversity net gain
- **BSI Flex 701** Nature markets – overarching principles and framework

Population health & nutrition

- **PAS 233** Zinc – enriched grains
- **PAS 235** Vitamin A – enriched grains
- **PAS 234** Iron – enriched grains
- **PAS 224** 100% Plant-based foods. Code of practice

Case study

How Morrisons achieved certified carbon-neutral eggs

Supermarket chain Morrisons is British farming’s biggest direct customer. It is actively reducing its supply chain emissions, having committed to achieving net zero operational emissions (scope 3) by 2035.

In 2020, it launched a pilot scheme selling carbon-neutral eggs in 50 stores, with the carbon footprint calculated by academics at the University of Cambridge.

Morrisons wanted independent and customer-recognized validation of its carbon neutral status, so it worked closely with BSI to achieve three kitemarks: Carbon footprint of products (BS EN ISO 14067:2018), Demonstrating carbon neutrality (PAS 2060:2014), and Carbon Footprint Management Plan (CFMP).

Initially, the eggs’ carbon footprint was 1.56kg of carbon per 1kg of egg, and a number of actions were taken to reduce this by 60%, including:

- Installing solar panels to provide renewable energy to hen houses.
- Developing and maintaining woodland, grass and wildflowers to capture and store carbon.
- Removing soy from the hens’ diets and introducing insects and food waste.
- Improving hen production and efficiency through good health and welfare.

Sustainable food systems – time for action

The transition towards sustainable food systems has begun and it's important for businesses to get ahead of the curve before governments and legislators mandate it.

There are plenty of advantages to being a company that leads, rather than follows – and the key question here is where to start. After all, a sustainable food system is wide-ranging and all-encompassing and impacts many areas.

It's important for businesses to align their strategy with the United Nations' Sustainable Development Goals (UNSDGs), and demonstrate positive progress by implementing certification standards – for example, BSI's PAS 2060 – Carbon neutrality standard, which is internationally recognized.

By identifying areas of influence, businesses throughout the food system can begin to understand where changes can be implemented.

For farmers, those changes may involve shifting towards more regenerative practices.

For manufacturers, reformulating products could help improve public health, while more transparent, clearer labelling can help consumers make better health choices.

For retailers, giving more prominence to alternative protein lines, and promoting plant-based diets, may encourage consumers to consciously shift dietary habits towards more sustainable, low-carbon options.

Measurement frameworks and new ways of working are needed to enable organizations to assess impact and tell the right story accurately and authentically.

BSI can support organizations in the food industry to identify ways in which they can become more sustainable, embed systems and processes and measure impact – working towards independent certification and validation in the form of internationally recognized kitemarks.

Maximize your business potential with BSI: consulting, training, certification, standards – driving progress and positive change

- Environmental management
- Circular economy
- Energy management
- Ethical and fair supply chains
- Greenhouse gas emissions measuring and monitoring
- Life cycle assessment and product carbon footprint
- Purpose-driven practices
- Smart and sustainable packaging solutions
  Sustainable procurement
- Traceability
- Transportation and logistics
- Waste management

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BSI has a range of standards to help organizations navigate this path across net zero, nature positive and population health.

To find out more about how BSI can help you, visit **bsigroup.com**