

## INSIGHTS 03

## SYSTEM POSITIVE



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- > We suggest five questions investors should ask to assess whether a company is 'system positive.'
- > Our approach complements existing Environmental, Social and Governance (ESG) data and Science-Based Targets.
- > System-positive companies will help to enable and drive the changes we need to see in economic, social and environmental systems.
- > In our opinion, system-positive companies will be among those that create the most value in the coming years.



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## INTRODUCTION

**As investors focused on the long term, we are deeply aware of the scale and urgency of the changes required to move to a sustainable economy and society. We need to know if a company will survive and thrive under these shifts. We want to invest in companies that we believe are leading the way. We call such companies 'system positive.'**

*'System positive' is our shorthand for companies that we believe will thrive in the transition to sustainability. Such companies are also helping to enable and drive the changes we need to see in economic and social systems.*

As we explored in a previous Insights piece, today's [ESG data](#) has important limitations. It focuses on the how not the what. By 'how', we mean that companies conduct their business in a long-term, responsible way, with regard to all stakeholders. By 'what', we mean that companies produce goods and services aligned with the society we want.

It is also anchored to past performance rather than forward-looking. Yet, we know that many sectors need to undergo a profound transition in the coming years to achieve sustainability. A waste management firm might be doing well on recycling rates, but how will it fare if consumers and policymakers get serious about a zero waste, circular economy? A food producer might be improving its environmental footprint, but is it ready for a switch to healthier diets?

As 2020 has surely demonstrated, if you ignore systemic risks, you can miss what really matters. Yet, applying systems thinking to investing is easier said than done. Reports on sustainability are often filled with complicated diagrams illustrating many feedback loops. Even small changes in such systems can lead to tipping points and cascades of impact. There are few straightforward calculations here to be plugged into a discounted cash flow analysis.

TOWARDS SYSTEM-POSITIVE INVESTING

To establish whether a company is system positive, we focus on the following five questions:

TOWARDS SYSTEM POSITIVE INVESTING

Q1.

What are the systemic shifts required to make the sector truly sustainable?

Most sectors are in some kind of transition, but the nature and speed of this transition varies. We think it is important to map out this broader context before seeking to assess the company's specific situation. This also helps avoid being trapped in the narratives that often surround individual companies. To do so, we use a broad range of published literature, particularly major scientific assessments such as those by the Intergovernmental Panel on Climate Change.

Q2.

Does the company stand to benefit from a sustainable transition?

This question gets at the basic opportunity (or cost) that the company would face under a systemic shift to sustainability. It also helps identify whether the company sees its interests in promoting an accelerated shift or seeking to hold it back. We want to see that it gains more from an accelerated transition than from a business as usual pathway. Disclosure in line with the Task Force on Climate-related Financial Disclosure provides useful information on some of these risks, but is less clear on the opportunities.

Q3.

Does the business and management team have a long-term orientation?

We want to know if the company has the capability to lead and drive change at the system level. This includes innovation in the broad sense: technical capacity and know how, as well as the wider ability to develop and deploy new products and services, or move with agility to new business models. We consider whether remuneration and progression in the firm are connected to progress on sustainability. We also consider whether companies are testing their corporate strategy against a wide range of possible futures.

Q4.

Does the company have levers available to catalyse a system-level change?

All companies can have some impact on their stakeholders. But, some have more powerful levers than others, or to put it another way, are more systemically important. Asking this question helps put the companies' ability to drive change in perspective. If the levers are weak, we also have to ask if this is the most effective place to allocate capital. This question also helps reveal whether management are approaching this passively or looking for opportunities to act.

Q5.

Is the company mobilising effective coalitions for systems change?

Partnerships are often needed to catalyse the change to a new system, and ensure that there is a fair transition. We consider whether companies are playing an active role within existing coalitions of the willing; for instance, they may have joined initiatives on regenerative agriculture, committed to ensuring a 'net-gain' for biodiversity and set a net-zero emissions goal. We want to see companies using their influence and capacity to create new partnerships in communities, sectors and supply chains. Clearly, their lobbying needs to be aligned with policies designed to support the transition.

**SYSTEM-POSITIVE INVESTING ACROSS DIFFERENT MARKETS**

The following table gives an idea of where we believe the threshold lies i.e., whether a company can be seen as ‘system positive.’ These brief examples are all drawn from our internal discussions and decisions.

This can have a direct application to our investing process. For instance, we recently chose not to bring a waste-management company onto our Focus List because it had little vision for a shift to the circular economy, even though it was performing well on social and environmental grounds as compared with its peers.

That said, every company and context is unique. We will continue to invest in some companies that we consider to bring incremental, but still very meaningful, benefits for society, as long as they are not standing in the way of a systemic shift to sustainability.

Helpful resources on this topic are provided by Transition Pathway Initiative (TPI), a global initiative led by asset owners and supported by asset managers. TPI focuses on low-carbon transition but its framework has useful elements for evaluating transition risks more broadly.

 <b>MOBILITY</b> 	<p><b>SYSTEM POSITIVE</b></p> <p>Aligned with electrification, autonomy, and green hydrogen for long-distance travel. A cradle-to-cradle approach to energy and materials.</p>	<p><b>INCREMENTAL BENEFIT</b></p> <p>Aligned with internal combustion engine (ICE) vehicle-efficiency improvements and first-generation biofuels use.</p>
 <b>BUILDINGS</b> 	<p><b>SYSTEM POSITIVE</b></p> <p>Enabling net-zero buildings, including operations and materials for both new and refurbished buildings. Embedding buildings in healthy and biodiverse urban contexts.</p>	<p><b>INCREMENTAL BENEFIT</b></p> <p>Incremental efficiency improvements in cement and steel sector and in construction standards.</p>
 <b>FOOD</b> 	<p><b>SYSTEM POSITIVE</b></p> <p>Aligned with a rapid shift to sustainable and healthy diets and regenerative agricultural systems. A circular approach to nutrition, including tackling food waste and encouraging balanced nutrition choices.</p>	<p><b>INCREMENTAL BENEFIT</b></p> <p>Productivity enhancements within agricultural systems which degrade soil and water quality.</p>
 <b>HEALTHCARE</b> 	<p><b>SYSTEM POSITIVE</b></p> <p>Expanding access to healthcare and enhanced patient outcomes for vulnerable and underserved populations, enabling a shift to preventative, personalised care.</p>	<p><b>INCREMENTAL BENEFIT</b></p> <p>Providing less critical healthcare services or focused on services that benefit only certain groups.</p>
 <b>FINANCE</b> 	<p><b>SYSTEM POSITIVE</b></p> <p>Expanding access to modern financial services to those who need it most e.g., microfinance, low-margin remittances, rapid payroll. Increasing the availability of sustainable finance products.</p>	<p><b>INCREMENTAL BENEFIT</b></p> <p>Better application of technology within legacy systems, with services focused on wealthier users.</p>
 <b>WASTE &amp; MATERIALS</b> 	<p><b>SYSTEM POSITIVE</b></p> <p>Creating and supporting markets for the reuse of materials and promoting design-led solutions that cut out waste and pollution.</p>	<p><b>INCREMENTAL BENEFIT</b></p> <p>Gradually increasing the proportion of recycling activities and capturing of methane from landfill sites in the waste sector.</p>

## PART 2: THE CASE OF FOOD SYSTEMS

**For the second part of this piece, we use the example of the transitions underway in food and land systems to illustrate the importance of analysing companies from a systems perspective.**

**Generation has been investing in different parts of the food system since we were founded in 2004. We invest, for instance, in agricultural equipment, in alternative proteins, in [online](#) food retail, in green food logistics, in software platforms for restaurants, and in food and drink products.**

We strive to continuously generate new insights in this area as it has direct relevance for how we allocate capital. Our library of research includes roadmaps on precision agriculture and irrigation, food-supply-chain traceability, last mile logistics, biologicals for pest and disease management, environmental intelligence and plant-based protein.

In the past few years, a series of high-profile reports and academic papers have shown conclusively that a transition in food and land systems is essential to meet the Sustainable Development Goals, as well as the Paris Agreement on Climate Change.<sup>1</sup> The transition will have wide-ranging implications from farm to fork; a revolution in agricultural practices and logistics alongside a significant shift in our diets.

This emerging body of knowledge was reflected in the research-driven roadmaps put together by our investment teams. In turn, it fed into the discussions we had with many companies.

In the box below, we describe our recent engagement with one such company, in which we sought to assess whether the company is system positive. The following sections unpack some of the areas we discussed with the company and also provide other relevant company case studies.

### ENGAGING A KEY PLAYER IN AGRICULTURAL ECOSYSTEMS

**In autumn 2019, we invited a company that provides goods and services to the agriculture sector to join us for an in-depth discussion on sustainable food systems.**

We had engaged with this company on sustainability for many years. They have a long-term perspective we appreciate and they develop cutting-edge technology that could help enable a sustainable transition.

Yet for some time, our research had highlighted how much needs to change in the global food system for it to be sustainable. Nothing short of a fundamental reset will be sufficient. In light of this, we wanted to discuss the company's strategy.

We sat together with the company's leadership team, the CEO, Chairman, CFO and chief economist, at Generation's London office. We shared with them the data and outlook by leading third party organisations (such as those we have cited in this piece) to illustrate the degree of change the food system needs to undergo if it is to be sustainable.

While there was no sharp disagreement between the company and us, there was a gulf in perspective over the scale and nature of the challenge. It became clear that the company, like many others in the industry, was not closely tracking the same data that we were. Notably, while they were familiar with specific issues raised, they did not have an integrated, broader view on how they would impact the future of food systems. As we note in this piece, the transition to sustainable food production and healthy diets has important implications for land use, for the type of equipment required and for new revenue streams for farming and food.

If management were not focused on how such sweeping changes could affect the business, risks were potentially going unmanaged. We also felt that the company could do more to use its position as a leader in the sector to drive change at all levels and help their customers better navigate these changes.

We continue to have constructive discussions with management and are optimistic that they can take a leadership role in this transition. As we hope this Insights piece makes clear, judging whether a company is system positive is a complex calculation, requiring constant review.

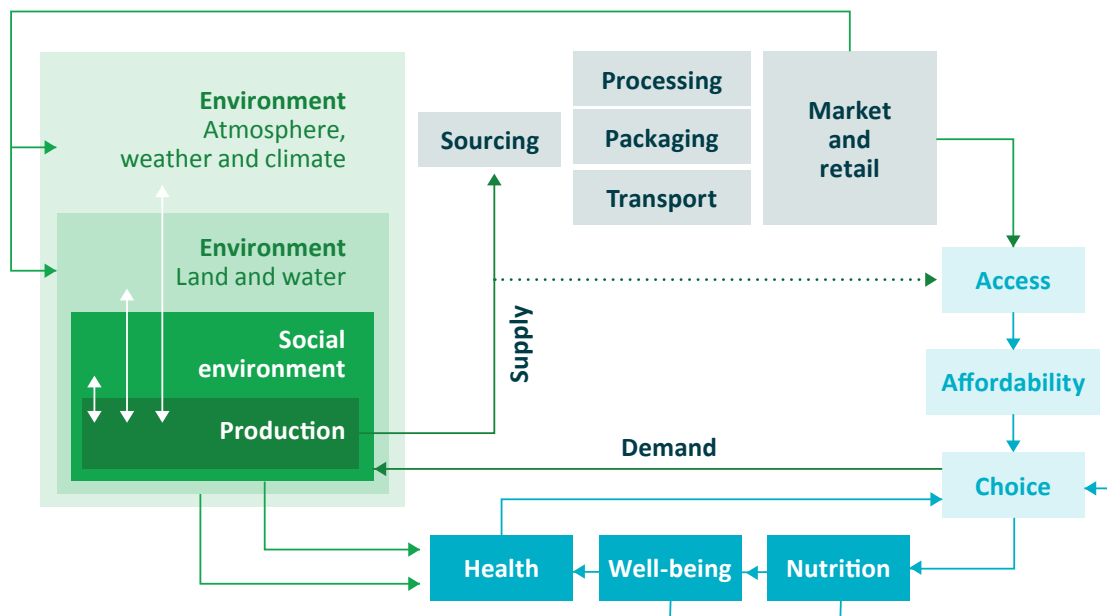
**PART 2: THE CASE OF FOOD SYSTEMS**

**Food systems involve complex interactions between organisations, as well as between humans and the natural environment. A wide variety of stakeholders will need to be involved in the sector’s transition to sustainability.**

As the diagram below shows, food systems are not limited to the production and consumption of food. They include a range of logistical, marketing and financial decisions. Each area interacts with the natural environment and with society through their impact on health, well-being and access to nutrition.

**A FOOD SYSTEM DIAGRAM**

Highlighting some social and environmental influences and feedbacks



Source: Benton, 2017<sup>2</sup>



## SUSTAINABLE AGRICULTURAL PRODUCTION

### The scale of the change required in food-production systems is quite staggering.

As much as 30% of global greenhouse gas emissions come from agri-food systems.<sup>3</sup> Agriculture is responsible for 70% of global freshwater withdrawals.<sup>4</sup> Meanwhile, around one third of food is wasted.<sup>5</sup> Demand for food is rising due to a growing population and middle class, and there are real concerns about our ability to meet global nutrition needs in the future.<sup>6</sup>

One focus of innovation in recent years has been precision agriculture, the collection and use of data to enhance productivity and enable farmers to innovate. Among other benefits, precision agriculture promises to reduce the use of fertilisers and pesticides, which would be sprayed only where needed. Trimble, a company providing solutions in this space, claims that precision spraying can cut the chemical costs for the farmer by up to 90%.<sup>7</sup> Data generated from individual farms can also be processed via machine learning and the insights made available to all farmers.

Clearly, this has the potential to address some of the challenges we list above.

There is, however, a risk that smart technologies help to entrench aspects of existing modern agricultural systems which are far from sustainable. For instance, tractors and other heavy equipment are a major cause of soil compaction, which in turn reduces soil quality and biodiversity. Modern agriculture is also increasingly focused on a handful of crops, which is a further concern for global food security.<sup>8</sup>

In many locations, alternative approaches such as switching to *no-till* methods can enrich soil and enhance carbon storage. So one area we are focused on is whether precision agriculture in *combination* with no-till or other approaches could help to enable agricultural production that protects and enriches the natural environment (sometimes called regenerative agriculture – see the box below). This is an example of how solutions in one area must be placed in a broader systems context in order to be meaningful from a sustainability perspective.



## A GROWTH EQUITY PERSPECTIVE

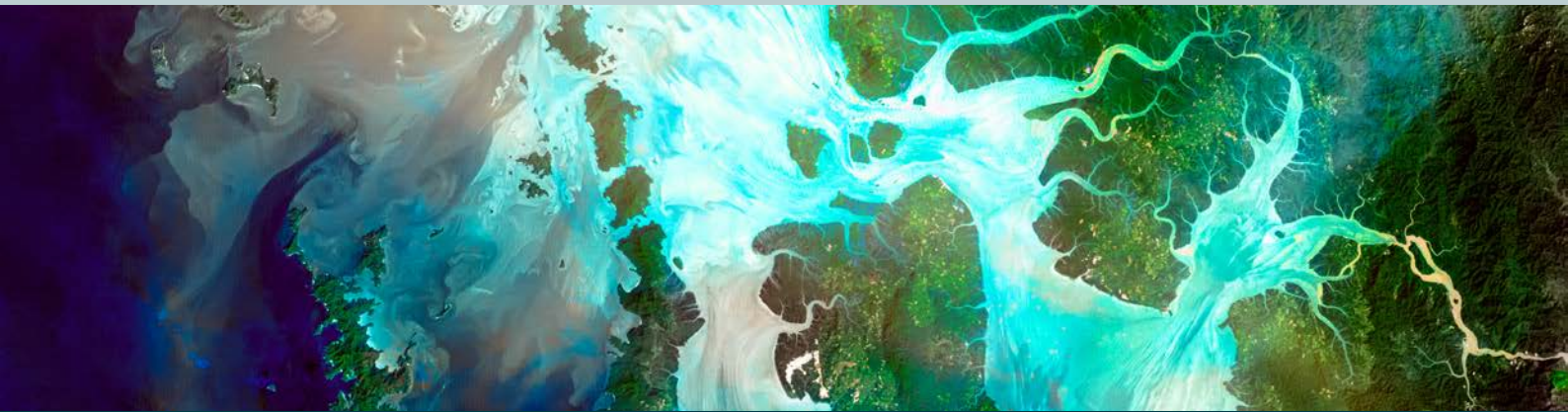
### Our Growth Equity strategy invests principally in private companies. For over 15 years, we have tracked many innovators and disrupters in agriculture and food systems.

We have seen an explosion of start-ups in the areas of advanced biologicals, artificial intelligence to inform growing decisions, autonomous tractors, smart irrigation and many more. Despite this, there are few examples of innovations reaching scale and driving system change. New solutions face much inertia from the existing system.

CiBO is an example of a company in our private equity portfolio that we consider to be system positive, due to its role in enabling regenerative agriculture, a framework that can improve and restore soils among other benefits. Rates of soil erosion on arable land and intensively grazed areas are around 100 to 1,000 times higher than natural background erosion.<sup>9</sup> Without topsoil, we hinder the earth's ability to produce nutritious food, store carbon and filter water. Storing carbon in soils is also crucial to tackle the climate crisis. There is three times more carbon stored in soil than there is in the atmosphere, and much more still could be stored both in soil and in vegetation.<sup>10</sup>

CiBO has developed a land intelligence platform that delivers science-driven insights on hundreds of millions of acres of farmland. The platform generates proprietary insights for each parcel and also provides access to publicly available data for farmers, investors, lenders, and other stakeholders in agriculture and the rural land economy. CiBO's proprietary insights include land and lease valuation, productivity, stability and environmental impact for each parcel. CiBO also tracks greenhouse gas emissions, nitrate leaching and carbon accumulation in the soil over time. The platform creates a quantified sustainability footprint for each parcel, encouraging regenerative agricultural practices that improve environmental and social outcomes.

In time, we think it could enable practices that benefit biodiversity across a range of scales and locations, truly driving a system-level change.



## SMART AND SUSTAINABLE SUPPLY CHAINS

To ensure that consumers and governments have reliable information on the environmental and social impact of food systems, information needs to flow along food supply chains, often through several stages of processing.

**One of the most important issues is avoiding deforestation. In the 2014 New York Declaration on Forests, 190 different organizations including 57 transnational companies committed to eliminating deforestation from the agriculture and forestry sector by 2020.<sup>11</sup> Sadly, we are not on track to meet this target.<sup>12</sup> Pressure to step up corporate action is growing in the run up to a major UN summit on biodiversity, known as COP-15.<sup>13</sup>**

Smart technology has a role to play in ensuring food is not associated with deforestation. One possibility is geofencing equipment so that it cannot be used in deforestation sensitive zones, though this may not be welcomed by all farmers. Alternatively, the technology could help to assure that the equipment has been used only in appropriate areas, using sustainable methods of production.

From an investor's perspective, this is not just about screening out risk. When you buy food badged as sustainable in a supermarket or café, you want to know that there is a clear and reliable trail of certification all the way back to the farmer. Data securely captured on-farm should be the start of this journey. We believe this would unlock sizeable opportunities for a switch to sustainable food purchases and also represent an opportunity for farmers.

Such an approach could also help to create additional revenue streams by enabling soil carbon payments. This is an area that governments are increasingly focused on, with soil carbon markets being piloted in Australia and the US and soon to be rolled out in Europe.





### SUSTAINABLE AND HEALTHY DIETS

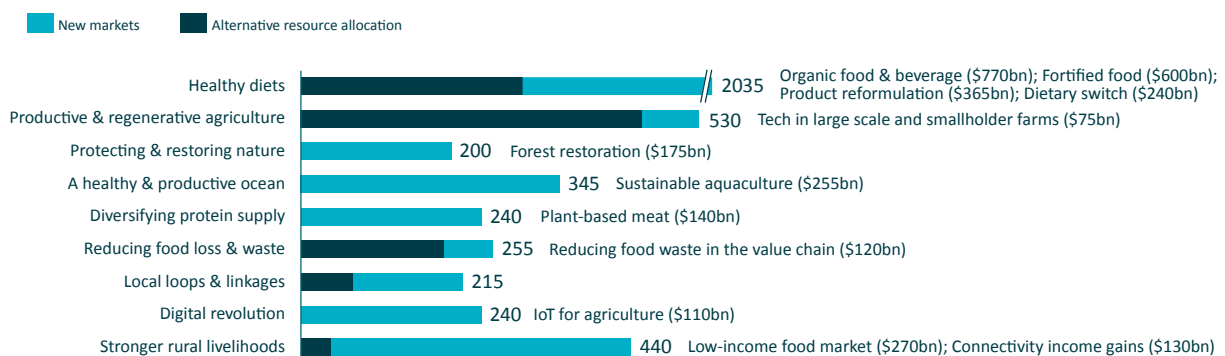
Today, there is a twin disaster occurring for nutrition at the global level. 1.9 billion adults are overweight or obese, which leads to a variety of health problems and loss of well-being.<sup>14</sup> Meanwhile, 462 million people are underweight. Around 45% of deaths among children under five years old are linked to undernutrition, due not only to lack of calories but also the absence of a balanced diet.<sup>15</sup>

In 2018, the Food and Land Use Coalition (FOLU) identified nine areas of investment opportunity for food and land systems. These include many of the aspects we touch upon in this piece, such as eliminating food waste, harnessing smart technology and promoting stronger rural livelihoods.

But the largest opportunity by far comes from a shift to sustainable and healthy diets. That’s partly because it opens up new markets for healthier products, and because it would free up vast areas of land currently used for raising cattle and growing crops to feed animals.

### CLOTHING AND CLOTHING ACCESSORIES, US<sup>23</sup>

USD billions (2018 prices), 2030 estimates, examples of opportunities >\$100bn



Source: SYSTEMIQ, Blended Finance Taskforce, 2019 (see online technical annex for methodology).

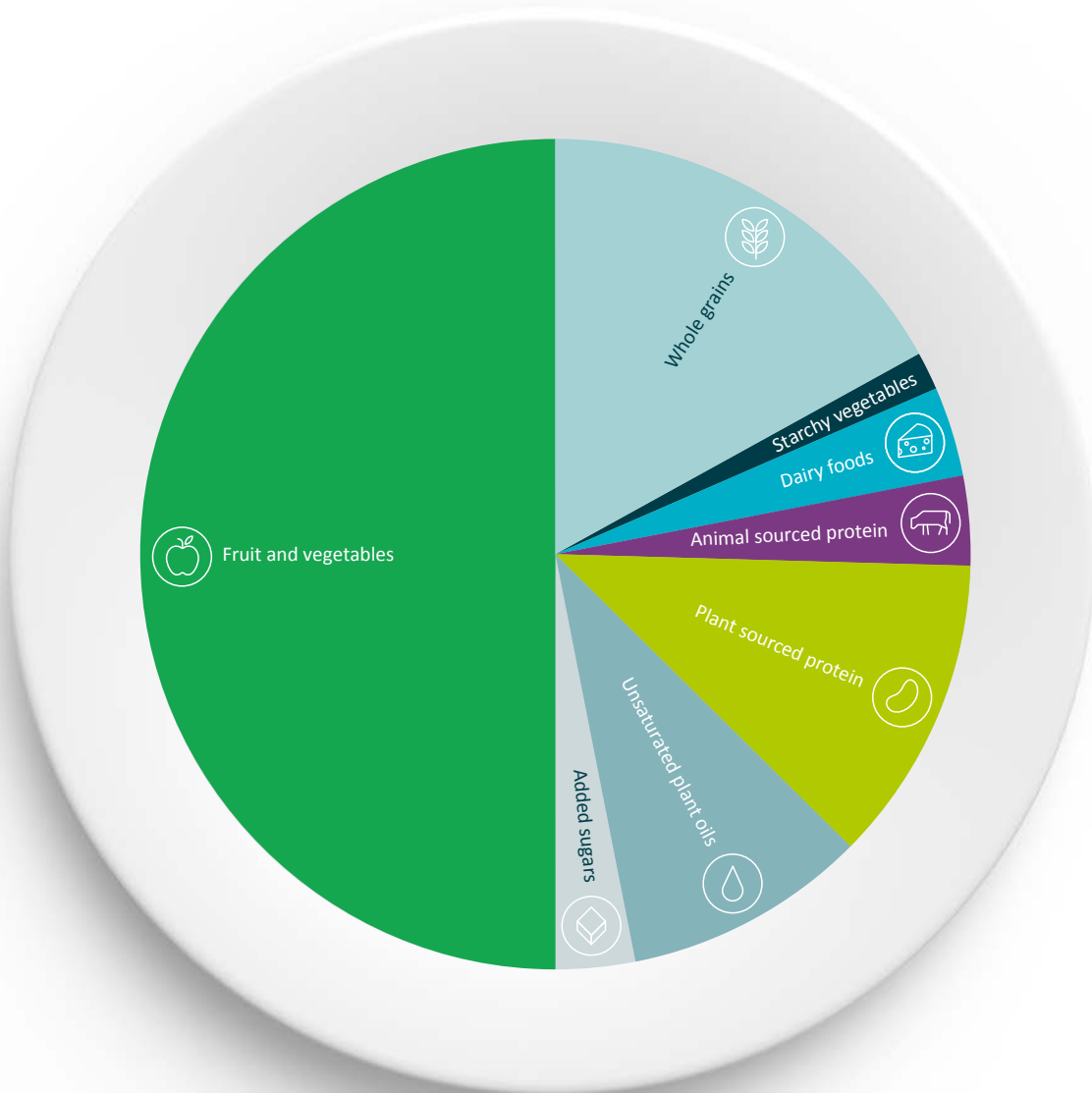
Source: FOLU 2019<sup>16</sup>



## The EAT-Lancet Commission recently set out what such a diet would look like.

In short, a diet that is good for both the planet and for human health would be much more diverse than our diets today, with only a limited role for meat and dairy. Food prices may rise once we properly account for all the social and environmental impacts of food production, so other measures will be needed to ensure that poorer people have access.

### A 'PLANETARY HEALTH PLATE'



Source: EAT-Lancet Commission (2019)<sup>17</sup>

## THE LANDING ZONE

**We believe the changes in food systems described above, both shifting diets and moving to alternative agricultural production models, will have a major impact on land use. The amount and type of land under production is a key factor in the total available market for many companies involved in food production.**

We can put some tentative figures on this. Agriculture covers about one third of all ice-free land in the world.<sup>18</sup> The nine interventions listed by FOLU collectively reduce the amount of land needed for agriculture by about 10%, versus today. In FOLU's baseline scenario, the land under production increases by 15%.<sup>19</sup> So, this alone is a 25 percentage point swing.

Reducing the amount of land required for agriculture would allow space for afforestation and other nature-based solutions, which are often land-intensive but have the potential to provide one third of the cost-effective greenhouse gas mitigation needed between now and 2030.<sup>20</sup>

There are huge costs associated with our current food system. FOLU puts the cost to human health, communities and the environment at \$12 trillion per year.<sup>21</sup> This is before we consider how food systems may be contributing to the risks of pandemics. Agriculture is a major driver of land use change and degradation. The resulting disruption to ecological systems contributes to the risks of pests and disease outbreaks.<sup>22</sup> Meanwhile, widespread over- and under- nutrition amplifies the health burden of those outbreaks.<sup>23</sup>



## CONCLUSION

**In our opinion, system-positive companies will be among those that create the most value in the coming years. We believe companies that succeed in the future will come out on the right side of the systems changes that are in the pipeline today, whether these are driven by societal shifts, policy, the physical impacts of climate change or technological revolutions.**

We set out five questions that can help shed light on whether a company crosses the 'system positive' threshold. This requires continuous assessment, because companies change and so does our shared knowledge of sustainability. For instance, within the emerging vision for a sustainable food system we describe in this piece, there are still important debates to be had about the role of individual companies, in different geographies.

The five questions are complementary to existing tools for sustainable investing. They are a useful counterpoint to ESG data, which offer limited insights into systems in transition. They provide important context for Science-Based Targets, commitments to reduce greenhouse gas emissions in line the goals of the Paris Agreement.

We believe asking these questions adds to the rigour of our process. It helps us to connect the analysis of individual companies to some of the most important discussions in sustainability.

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- 23 WHO (2020), 'Protecting nature protects health – lessons for the future from COVID-19'. See [link](#)

## IMPORTANT INFORMATION

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