

THE FUTURE OF FOOD: EAT OR BE EATEN

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- The impact of the food value chain to both the global economy and financial markets is huge
- But food systems face multiple challenges, from climate change to population growth and unsustainable practices
- There are investable opportunities with solutions to enhance the sustainability and health of our food systems, and financial markets can play a role in supporting these



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The food value chain is vital to the success of many economies and global financial markets, as well as sustainable development.

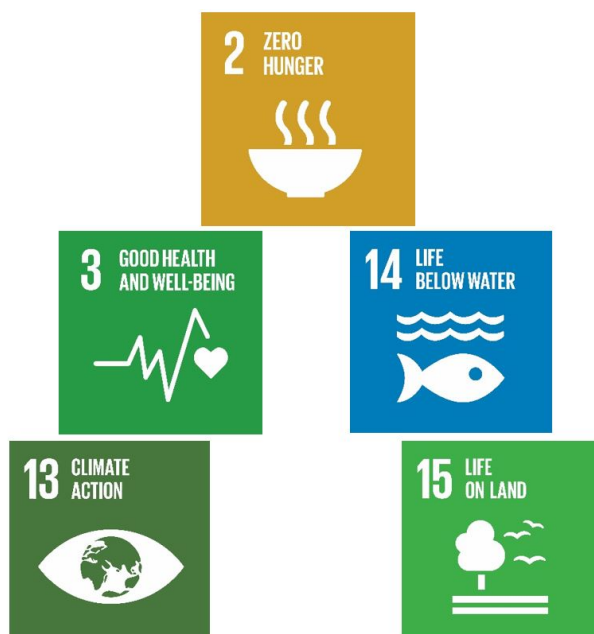
Thus, UN Sustainable Development Goal 2, Zero Hunger, emphasises the importance of nutrition, food security and sustainable agriculture to global development and prosperity.¹ Other UN SDGs also relate to food, either directly, such as number 3, Good Health and Wellbeing, given the rise of food-related non-communicable diseases, and 14, Life Below Water, which includes a focus on sustainable fishing; or indirectly, such as goal 13, Climate Action, and goal 15, Life on Land, given the impact of farming on emissions and forestry (Figure 1).

In terms of global GDP, the share from agriculture, forestry and fishing is relatively modest at 3.5%, but there is a considerable range. For example, in low income countries this figure can be in excess of 25%.² When related areas such as food staples, retail and services are considered, the impact of the food value chain to the global economy is even greater.

¹ <https://sustainabledevelopment.un.org/sdg2>

² https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?year_high_desc=false

Figure 1: Food-related UN SDGs



Source: United Nations

This picture is similar for financial markets, which are exposed to food through asset classes such as commodities, but also through areas within conventional asset classes. For instance, we estimate that around 7% of the most commonly used global equity index, the MSCI All-Country World Index, is exposed to food-related health and nutrition issues through their business models.³

Critically challenged

Despite this, our food systems are facing fundamental changes and challenges on multiple fronts.

- **Climate change poses risks to global food and health** In 2017 alone, climate-related disasters caused acute food insecurity for around 39 million people across 23 countries.⁴ It is estimated that with global warming of 1.5°C above pre-industrial levels (the most conservative and “best-case” estimate of future warming), 35 million people would be exposed to crop yield changes. At 3°C (increasingly seen as likely) this is expected to be 1.8 billion.⁵
- **Unsustainable past practices threaten the future** Nearly a third of fish stocks are overfished and a third of freshwater fish species assessed are considered threatened.⁶ Furthermore, it is estimated that agriculture and land use has accounted for 24% of global

³ CTI 17 April 2019, drawing from data provided by MSCI ESG Research.

⁴ World Economic Forum, Global Risk Report 2019

⁵ Food and Agriculture Organization Climate Smart Agriculture Sourcebook, 2017

⁶ FAO report on Biodiversity, 2019

greenhouse gas emissions, and dairy and cattle around 40% of this total.⁷ At a time of increasing drought risk, agriculture is also the largest consumer of the earth's available freshwater: 70% of "blue water" withdrawals from watercourses and groundwater are for agricultural usage.⁸

- **Demographic growth increases pressure** It is expected there will be approximately 10 billion people on the planet by 2050, an increase of around 30% from today.⁹
- **The health impact of food is increasingly of concern** One in eight adults are obese and 8.5% have diabetes.¹⁰

Given these challenges there is a critical need for not only greater risk awareness, but innovation and the scaling up of alternative models and improved practices to offer up potential solutions.

Technology and innovation

Importantly, new models and techniques can help reduce the impact of agriculture on the environment, including those offered by investable companies.

One avenue is the use of precision techniques: farm management based on observing, measuring and responding to conditions, with the goal of optimising returns while preserving resources. Through such solutions US firm Trimble, for example, helps improve farm yields by up to 30% while reducing water use by up to 20%.¹¹ A development which addresses climate impact, meanwhile, is from Dutch company DSM, which has created a feed additive for cows that reduces internal fermentation and hence their methane emissions by 30%.¹²

Despite such pockets of innovation within public markets, many of the new solutions are being developed by start-ups of varying size and focus. These range from Californian Indigo, a late-stage venture backed by The Investment Corporation of Dubai among others, which is developing crops capable of surviving climate change; to the Small Robot Company, a UK-based, equity-crowdfunded firm aiming to replace much of the work done by tractors with a series of highly accurate, smart, lightweight robots.

Harnessing the potentially disruptive power of these private businesses, whether through investing in them or partnering with them, is an area which larger companies will need to explore. One such example is Campbell Soup Company which has launched its own venture capital fund Acre Venture Partners, investing in new agricultural businesses such as Inari, which is focused on developing climate-resilient, less resource intensive, and more nutritious crops.

Health and consumers

Another challenge faced by the food value chain is around health and nutrition and the related shifts towards alternative products, especially in developed markets. For instance, greater understanding of the relationship between sugar consumption and lifestyle diseases, from obesity to diabetes, has catalysed a range of policy shifts and consumer demand for

⁷ IPCC, Barclays, April 2019

⁸ <https://www.globalagriculture.org/report-topics/water.html>

⁹ UN World Population Prospects: The 2017 Revision

¹⁰ WHO Global Report on Diabetes, 2016

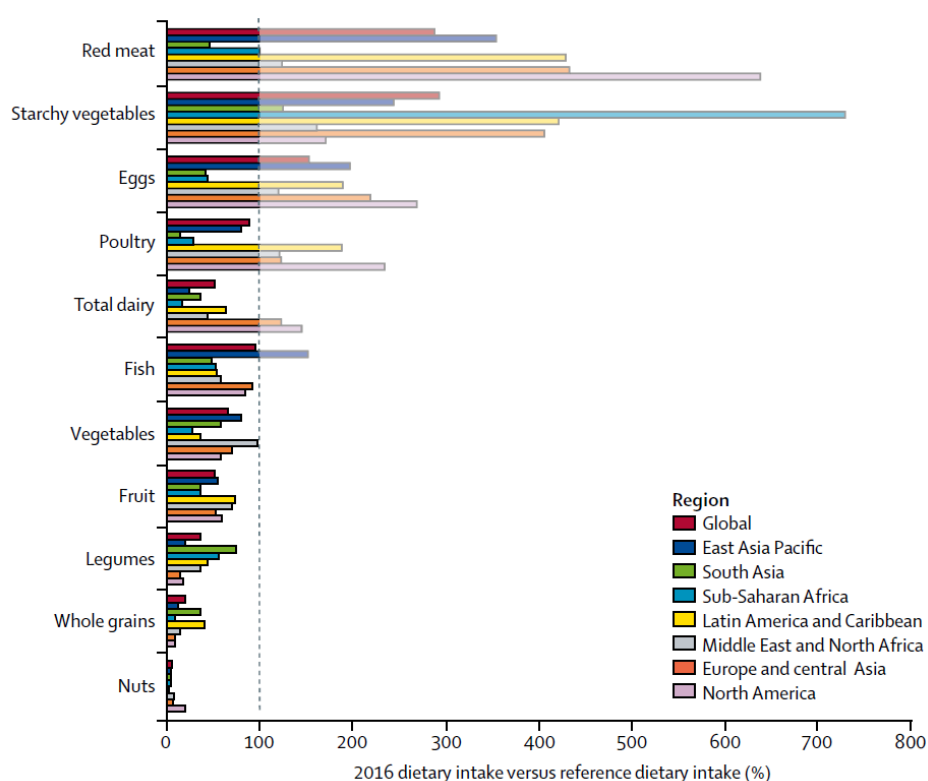
¹¹ <https://www.trimble.com/Corporate/RCC/Our-Solutions.aspx>

¹² <https://www.dsm.com/corporate/science/climate-energy/methane-reduction.html>

healthier alternatives. Now, 28 countries across developed and emerging markets have sugar taxes in place.

Sugar is not the only area of focus, with growing concerns about the overconsumption of meat. This was one of the key findings of the EAT-Lancet Commission on Food, Planet, Health, which is formed of more than 30 world-leading scientists and which quantitatively describes a “healthy reference diet”. The findings showed the need for a substantial increase in the consumption of foods such as vegetables, fruits and whole grains, and a decrease in the consumption of red meat, sugar and refined grains in order to provide major health benefits, and also increase the likelihood of attaining the SDGs. Strikingly, it also found that globally meat consumption was more than 2.5x the recommended amount, while in the US this was over 6x (Figure 2).¹³

Figure 2: Regional consumption of food types vs. recommended amounts



Source: Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems, 16 January 2019

While demand for sugary products and red meat has persisted to date, the recent acceleration of demand for alternatives is even more striking. For instance, plant-based food sales growth was 10x that of all food sales growth in 2018 in the US.¹⁴ Testament to this is the recent success of Beyond Meat’s IPO which, at the time of writing, had soared 250% per share since

¹³ <https://www.thelancet.com/commissions/EAT>

¹⁴ Sugar, fat, salt and Obesity HSBC, Feb 2019

its 2 May IPO.¹⁵ In the UK, meanwhile, a recent survey showed 45% of shoppers were actively looking for healthy snacks and 41% want snacks with less sugar.¹⁶

This poses a risk for companies with less healthy product lines and portfolios, particularly in a digital era when the barriers to entry for insurgent brands are lower than ever. Yet some have responded proactively to these shifts. Unilever, for instance, has 26 sustainable living brands, which are healthier and/or more sustainable, which have delivered 70% of its recent sales growth. Examples include organic food and tea brands, as well as its recent acquisition The Vegetarian Butcher.

Other developments include Danone's acquisition of WhiteWave, giving it access to plant-based alternatives, and even Amazon's diversification into healthier food retail through Whole Foods. Coca-Cola has also ventured into the company behind Dirty Lemon, a direct-to-consumer brand which offers premium functional drinks featuring ingredients such as turmeric, matcha and collagen.¹⁷ Similarly, General Mills has developed a venture arm, 301 Inc, to identify emerging brands with a specific health angle, such as plant-based meal and snack company Urban Remedy.¹⁸

Conclusion

As the impacts of climate change, natural resource constraints, health and new consumer demands increase, companies will need to continue to innovate and adapt. Harnessing new technologies, proactively looking for alternatives and staying close to regulatory and consumer shifts will be increasingly critical for public companies.

We have identified some specific, investable opportunities with solutions to enhance the sustainability and health of our food systems. Mainstream financial markets can already play a role in supporting these as they seek to scale up, broadening their impact.

For established companies, however, these challenges are risks to business as usual. Some proactive companies are further ahead in mitigating these issues, evolving products and practices which form part of the solution. The question remains as to whether more traditional companies have the capacity to evolve at sufficient pace, and whether or not they will contribute towards the achievement of the UN SDGs by their 2030 deadline.

¹⁵ Eat dirt Uber! Beyond Meat is most successful IPO of 2019 so far. CBS News, 16 May 2019

¹⁶ Sugar, fat, salt and Obesity HSBC, Feb 2019

¹⁷ <https://dirtylemon.com/>

¹⁸ <https://www.foodbev.com/news/general-mills-301-inc-leads-17m-investment-urban-remedy/>

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