

Investment Insight July 2021

ESG INSIGHTS: THE PROMISE, OPPORTUNITIES AND RISKS OF PLANT-BASED NUTRITION

Our core belief is that sustainability is critical to long-term investment. Only companies that are sustainable in the way they do business can have sustainable competitive advantages and generate long-term sustainable returns.

We set out the key pillars of our own internal ESG framework in our January 2020 Investment Insight [Our Roadmap for Sustainable Investing](#). This framework is vital from both a business and an ethical perspective as different stakeholders increasingly ask investors to put ESG considerations to the forefront of investment decisions. In our January 2021 Investment Insight [Sustainability³ – Reflections on a Year of ESG Implementation](#), we discussed how we had put this framework into action. Together, they provide a comprehensive overview of how we have integrated ESG into our investment approach.

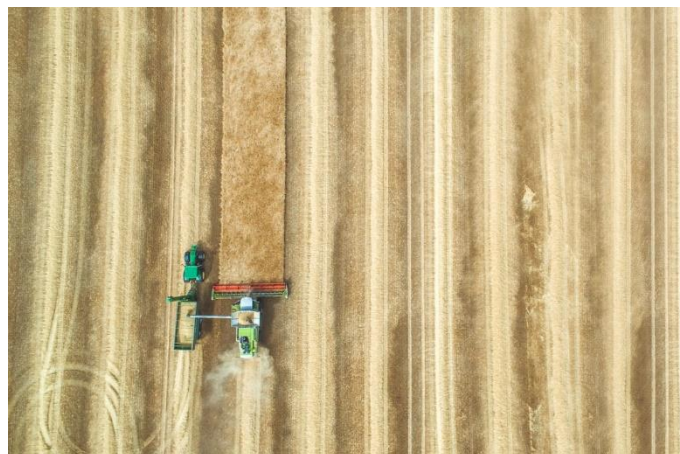
Going forward we intend to publish a series of follow-up Investment Insights taking a deeper look at some of the key sustainability issues affecting our investments and bringing to life some of the complexities that this work entails.

The problem: Feeding the world sustainably

One of perhaps the most complex challenges facing the world in the decades ahead is how to continue feeding an ever-expanding population whilst attenuating the environmental impact of global food production and the constraints that the food & beverage (F&B) industry is already pushing against.

Agricultural production uses 70% of the world's freshwater supply and 50% of the total habitable land. The global food system as a whole (including agriculture, processing, manufacturing and distribution) is responsible for up to 30% of global greenhouse gas (GHG) emissions. Despite this significant drain on the planet's limited resources, the global food system is still unable to feed and nourish the current population. It is estimated that over 800 million people are hungry and that one in three people on the planet suffers from diet-related malnutrition. At the same time, over 650 million people are classified as obese, with diet-related chronic illnesses like cancer and heart disease among the leading causes of death globally.

Animal-based diets are a key source of the problem. Three-quarters of the world's agricultural land is used for the rearing of livestock through a combination of grazing land and land used for the production of animal feed. Beef is one of the biggest



Source: Unsplash

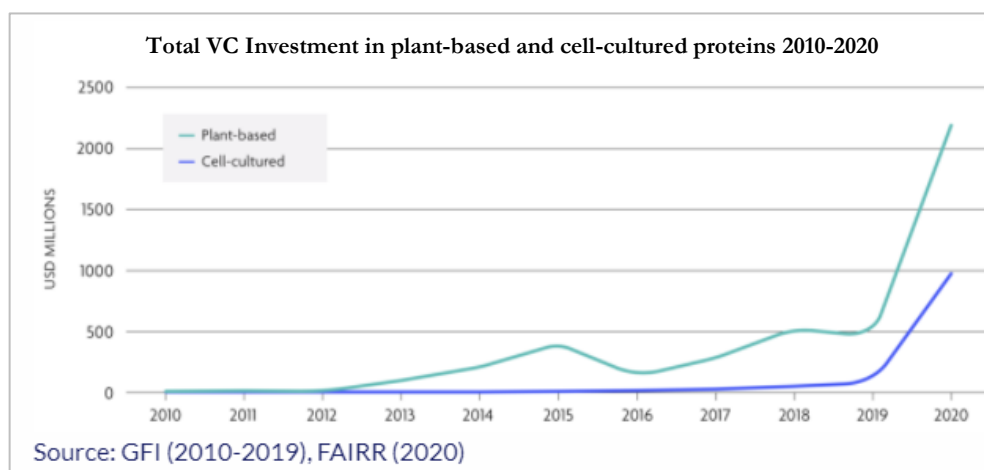
contributors of methane emissions due to cattle belching. And the production of beef, pork and chicken respectively uses nine, four and three times as much water per kilogram of meat as the production of cereal does. Yet despite this drain on resources, animal products only supply 17% of global calories consumed and 33% of global protein intake.

The challenge will become ever greater in the years ahead. Over the next three decades, food demand is expected to increase by up to 70% as the global population increases from seven billion today to over nine billion and increasing income levels and expectations drive changes in dietary habits. Meeting this increased demand sustainably is one of our greatest challenges today. The alternative is grim: if we continue with ‘business as usual’, we could need up to 65% more farmland and irrigation water, increasing agriculture related GHG emissions by over 85%. It is therefore no surprise that climate policies are exploring ways to promote plant-based diets. For instance, the European Union’s ‘Green Deal’ will include EUR 10 billion for the ‘Farm to Fork’ strategy, which seeks to foster sustainable food production practices.

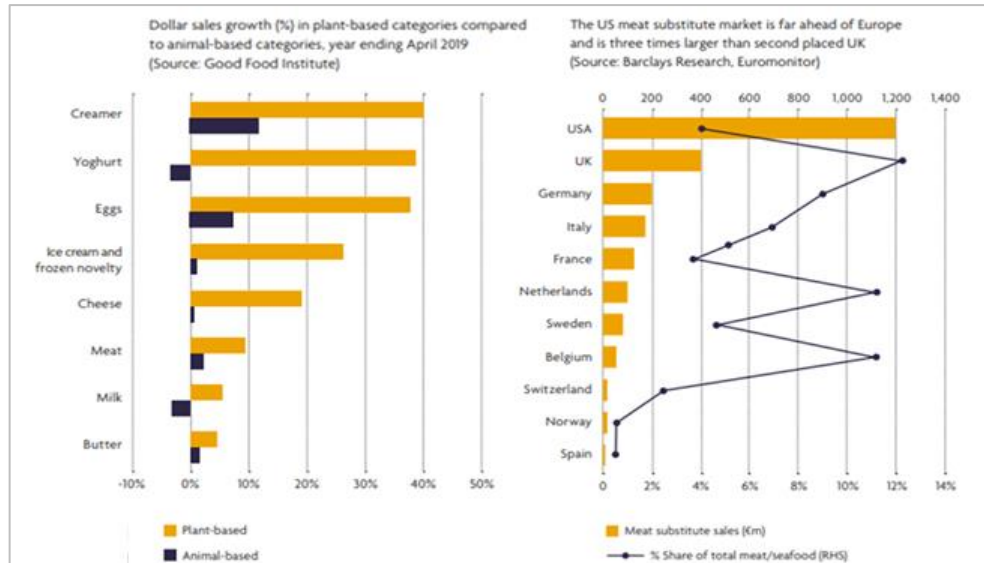
The market opportunity: A multi-billion opportunity for the global food & beverage industry

The global F&B industry is key to producing food at scale. It is a big part of the problem but also of the solution. Amidst the increasing focus on ESG issues, consumers have started to demand alternatives that address concerns about health and the environment. A walk down any supermarket aisle reveals that plant-based dairy and meat-alternative products are an increasing presence on the shelves. Over the last few years there has been a proliferation of new companies that have been trying to capture what is a rapidly growing plant-based nutrition market, and investors have been rewarding these disruptors with generous valuation multiples. Plant-based burger producer Beyond Meat has a market valuation of USD 9 billion on revenues of USD 407 million in 2020, while milk-alternative producer Oatly flew off the charts at its stock market debut in May this year, with a market cap of USD 13 billion on USD 421 million of revenues in 2020.

The market opportunity is clear: the global meat market is worth over USD 1.2 trillion, and the global dairy market is worth another USD 600 billion. Plant-based meat alternatives currently represent less than 0.5% of the market and plant-based dairy alternatives around

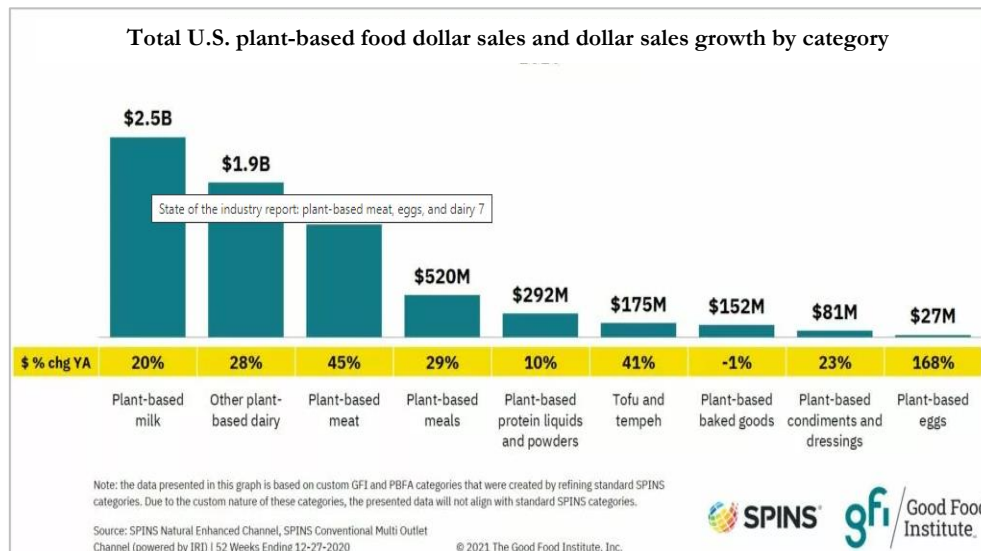


3%, leaving significant scope for growth. As an indicator, in the more developed US market, plant-based milk alternatives have reached 13% of the market.



Source: FAIRR

We believe a new landscape is emerging for the global F&B industry, with new products and participants targeting the fast-evolving shifts in consumer behaviour. Barriers to entry to the industry have been brought down, facilitated by digital and technological disruption. Large multinationals were initially slow to respond due to their scale and bureaucratic nature, while new companies like Beyond Meat and Oatly have prospered, eating away at the multinationals' market dominance.



Source: GFI

But with the size of the opportunity clear to see and market shares eroding, the food giants have stepped up their response by adapting to new consumer trends, building their own offerings and acquiring smaller brands. This puts the valuations of some of the smaller companies in a different light. The white space initially available to them is becoming

increasingly crowded, and better-capitalised multinationals with extensive manufacturing footprints, deep R&D capabilities and global distribution reach are in a strong position to drive the next level of market expansion.

Nestlé is a case in point: the company has a long-term strategy of building its presence in nutrition, health and wellness, with CEO Mark Schneider rapidly expanding the company's plant-based offerings through the acquisitions of Garden Gourmet and Sweet Earth in 2017, followed by Terrafertil in 2018, building what is now a CHF 800 million business in plant-based offerings. *Nestlé* launched its Awesome Burger under the Sweet Earth platform as the company's own offering in the meatless market, whilst its recently launched carbon-neutral, pea-based milk (Wunda) marks a significant entry into the dairy-alternative milk market. Other leading F&B companies like Kellogg's (under the MorningStar Farms brand), Tyson Foods, Conagra (through its 2018 acquisition of Gardein) and Danone (through its USD 12.5 billion acquisition of WhiteWave in 2016) have all been rushing to build their presence in this growing market.



Source: *Nestlé*

Food ingredients are an important part of the plant-based food value chain that is less obvious but just as important as consumer brands. In the past, consumers may have compromised on taste in return for healthier or lower-impact products, but today their expectations are much higher, with taste often at a premium. Food ingredients companies play a key role in helping to develop new products that achieve an appealing taste profile while providing lower levels of fat, sugar and salt, and often adding further benefits such as vitamins and probiotics. Leading flavour & fragrance company *Givaudan*, for example, has established its 'Integrated Solutions' business to provide bundled solutions that seek to address some of these challenges. It helps accelerate product development and time to market for customers and has already allowed *Givaudan* to generate over CHF 100 million in plant-related offerings.

The issues: Balancing the ESG trade-offs

The UN Sustainable Development Goals (SDGs) provide a universal call to action to end poverty, protect the planet and provide peace and prosperity for its people. Its 17 goals are integrated, but can also conflict with one another at times. Achieving the goals requires trade-offs and entails both opportunities and risks. As responsible investors we look to analyse how our investments can have a positive impact by helping to achieve certain goals, but must also ensure that they do not cause harm in other areas. This is a complex task that requires looking closely at the direct and indirect impacts of products throughout their entire value chain.

As the F&B industry gears up to meet the demands of the future, its transition presents opportunities but also unique social and environmental challenges. Plant-based products are a great example of the complex interlinkages and trade-offs within the industry. Using the SDGs as our lens, we have identified a number of important issues.

Impact on climate change – UN SDG 13

Clearly, plant-based proteins have an important contribution to make in addressing climate change concerns. A plant-based burger, for example, produces up to 90% less GHG emissions than its beef counterpart.

But amidst all the promises that the companies are making, it is important to look at the detail of what is being pledged. For us as investors, it is key that carbon targets set by F&B companies include a consideration of Scope 3 emissions (emissions that occur across the value chain), as these can account for over 90% of these companies' carbon footprints. Such targets encourage investments in agricultural communities in order to enhance best practice and foster a better understanding of the life-cycle impact of different food products.

Nestlé announced in December 2020 that it is committed to achieving carbon neutrality by 2050. As part of this commitment, the company announced that it would make CHF 3.2 billion in associated investments over the next five years, including CHF 1.2 billion in fostering regenerative agriculture practices and scaling up its reforestation programme. The company also said that it would continue the expansion of its plant-based portfolio, the reformulation of its products to lessen their environmental footprint, and the development of carbon-neutral brands.

Although these plans are not perfect, they are indicative both of the significant investment and resources that F&B companies have to commit in order to meet some of the environmental challenges that our planet faces, and of the scale advantage that a company like Nestlé benefits from.

Impact on biodiversity, deforestation and water resources – UN SDGs 6 and 15

While plant-based products are attractive in terms of their positive contribution to climate change mitigation, investors must be careful to ensure that the supply chains of these products do not negatively impact other SDGs. We pay particular attention to how agricultural supply chains may affect goals 6 ('Clean Water and Sanitation') and 15 ('Life on Land').

For instance, a significant number of meat-alternative products use soy as a primary ingredient. However, soy has been linked to deforestation, soil erosion, biodiversity loss, human rights violations and the loss of indigenous communities' livelihoods. Latin America has already lost 40% of its forests to the expansion of land for export-oriented agriculture such as livestock and soybeans. Although over 70% of soy production is used for animal feed, just like with animal-product value chains, the traceability of the supply chains of plant-based alternatives is essential to manage these risks. We believe it is crucial to engage with companies to encourage them to establish best practices and promote the highest standards of production from an early stage, in order to avoid the pitfalls associated with the conventional protein industry.

Water management is another key focus of our ESG analysis of F&B companies. Conventional meat production accounts for nearly a third of all water usage in agriculture, which poses serious risks because we are currently facing a looming global water crisis.

However, alternatives to cow's milk can also be very water intensive. For example, a glass of almond milk requires 74 litres of water. Although that is better than the 131-litre equivalent needed for a glass of cow's milk, it is significantly more than is needed for a glass of rice or oat milk (at 56 and 9 litres respectively). Equally importantly, 80% of global almonds are produced in the US state of California, which is facing severe water shortages, raising serious issues about the diversion of water resources for agricultural purposes.



Source: Unsplash

As plant-based alternatives to meat and dairy multiply, we must be vigilant about their comparative ESG performance and scrutinise their supply chains. Given that food supply chains can often be seven to ten layers deep, this is an area we pay particular attention to in the analysis of the companies we invest in. Transparency and traceability in the value chain are key considerations for us, as we seek to deeply analyse commitments and practices for biodiversity, deforestation, responsible sourcing and the protection of local communities.

Increasing consumer awareness and sensitivity mean that social media can turn seemingly local issues into threats to global brands with a single post. As an example, in our recent discussion with Givaudan's head of sustainability, we talked extensively about the company's target that 100% of its raw materials of natural origin will be responsibly sourced by 2030. We discussed some of the challenges which that target entails, especially when considering the fact that some of these raw materials are only available in very specific geographic areas. Givaudan's global reach allows it to source, process and deliver these often scarce raw materials to its customers, another example of sustainable practices leading to sustainable competitive advantage.

Access to affordable and nutritious food – UN SDGs 2 and 3

Another issue of importance is how F&B companies promote access to healthy, affordable and nutritious food, in line with UN SDGs 2 ('Zero Hunger') and 3 ('Good Health and Well-being').

The investment community has become more aware of the co-existing obesity and malnutrition crises, and is putting pressure on companies to increase the proportion of healthy products in their portfolios. A predominantly plant-based diet has been shown to have significant health benefits, including lower risk of heart disease and cancer. Plant-based products also contribute to improved human health in indirect ways. Globally, the meat industry is the largest consumer of antibiotics, which drives antimicrobial resistance (AMR). AMR is not only a risk to meat producers, but it also poses a systemic risk to global health that investors must take into account. Equally, the pandemic has highlighted some of the challenging working conditions that are commonplace in the meat industry, as evidenced when numerous meat-packing plants became hot spots for Covid-19 outbreaks last year.

However, although alternative proteins have so far enjoyed the 'healthy' halo of plant-based diets, not all products fare equally in this area. Some meat-substitute products such as soy-based burgers incorporate high amounts of saturated fats, sodium and heavily processed ingredients to recreate the flavour that meat-loving consumers are seeking. Therefore, as

more companies launch their new plant-based product lines, we seek to look closely at the true health benefits of these items.






Source: Unsplash


An important challenge is that most alternative proteins are still far from being able to compete on price with the meat and dairy products they are hoping to replace, with price premiums of two to three times reflecting their higher-cost structure. This goes back to the inescapable need for scale in food production and the fact that the global F&B industry has to be part of the solution. Basically, in order to unlock the environmental benefits of a plant-based transition, alternative proteins will have to become more affordable, and so accessibility is a key consideration in achieving a fair transition for all. This is another area of focus in our discussions of best practice with the companies we invest in, encouraging them to strengthen their efforts to reformulate products where needed, provide appropriate nutritional information on the product labelling and support nutritional-education programmes for consumers.

Looking to the future: Pushing the frontiers

Science, technology and innovation will continue to provide solutions to the issues we face. For alternative proteins, one of the next frontiers is lab-grown meat. These products use cultured animal cells to grow 'real' meat. Start-ups in this sector are multiplying, and are all at a pre-commercial stage, with some being backed by large traditional protein producers. While lab-grown meat has the distinct advantage of creating 'real' meat without needing to consider the environmental impact of farming animals, GHG emissions or the animal ethics quandary, it nonetheless has its own set of ESG risks. Ethical issues, regulatory hurdles and consumer reluctance will be significant challenges for these companies. The issues which will arise are likely to be similar to the current issues around the use of GMO modification for major crops like corn and soy. Whereas GMO modification has contributed greatly to higher yields, thus increasing food supply and lowering costs, it has also given rise to significant real and perceived concerns among customers and consumers.

Alternative protein investment summary, 2010-2020

Category	Total invested capital, 2010-2020	Invested capital, 2020	1-year growth	Largest round
Total alternative protein	\$5.9 billion	\$3.1 billion	3x	\$500 million Impossible Foods Series F
 Plant-based	\$4.4 billion	\$2.1 billion	3x	\$500 million Impossible Foods Series F
 Fermentation	\$1 billion	\$590 million	2x	\$300 million Perfect Day Series C
 Cultivated	\$490 million	\$360 million	6x	\$186 million Memphis Meats Series B



Using a holistic approach to assessing the full impact of plant-based products allows us to shed light on some of the complex trade-offs that sustainability issues give rise to. The challenge for us as investors is to identify market opportunities while assessing the ESG issues that they entail and holding our companies to account. The link between sustainable business practices, sustainable competitive advantage and the prospects of generating sustainable returns over the long term will only get stronger, and we look forward to the opportunities ahead.

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July 2021

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