

## ESG ANALYSIS: HOW ALTERNATIVE MEAT IS CHANGING THE FOOD PRODUCTS INDUSTRY

### Key Points:

- **Alternative meats are expected to grow from 1% to 10% of the \$1.4T global meat market over the next 10 years.**
- **Around 30% of US consumers plan on reducing their meat consumption, and 32% consider themselves flexitarian (semi-vegetarian).**
- **The segment is positioned to benefit from the shift towards healthy eating, increasing environmental awareness, and concerns for animal welfare.**

Consumer preferences are constantly evolving and industries have to work to stay relevant and adapt to such changes. The rise of alternative, primarily plant-based, meat poses unique opportunities as well as challenges for new and old players in the Food Products industry. Many of these opportunities and challenges can be tied back to larger ESG trends and issues facing society.

When looking at substitutes for traditional meat, options generally fall within two categories: alternative meat and lab-based meat. Alternative meat is plant-based (soy, pea, wheat, rice, etc.) protein that mimics the taste of real meat. Currently popular brands include Beyond Meat and Impossible Burger. For example, Beyond Meat uses pea protein and the Impossible Burger uses genetically modified yeast to produce soy heme that imitates the taste and texture of beef.

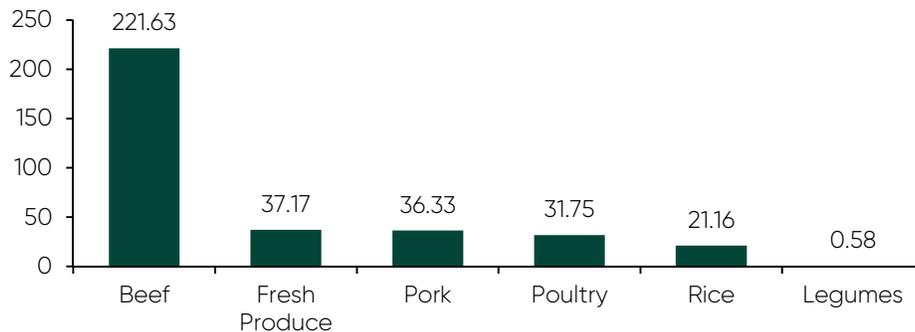
In contrast, lab-based meat takes live animal tissues and reproduces the cells in a tank with growth medium (a soup of nutrients that mimics an animal's body). Not only is this method currently very energy intensive, it actually requires more energy and releases more CO<sub>2</sub> than traditional meat, while also facing significantly more scrutiny from regulators.

## ENVIRONMENTAL CONSIDERATIONS

Agriculture and livestock are responsible for ~14% of total GHGE, and rising beef demand could add another 15% of methane and 5% of carbon footprint in the next 30 years.<sup>i</sup> Global beef consumption is one of the leading environmental threats, and sustainability concerns are on the rise, especially with younger consumers.<sup>ii</sup> Traditional feedlot beef production is especially detrimental to the environment as it accounts for far more GHGE per gram of protein compared to grains, legumes, and other meats.

### EXHIBIT 1: GREENHOUSE GAS EMISSIONS PER GRAM OF PROTEIN

Grams of CO<sub>2</sub> Equivalents

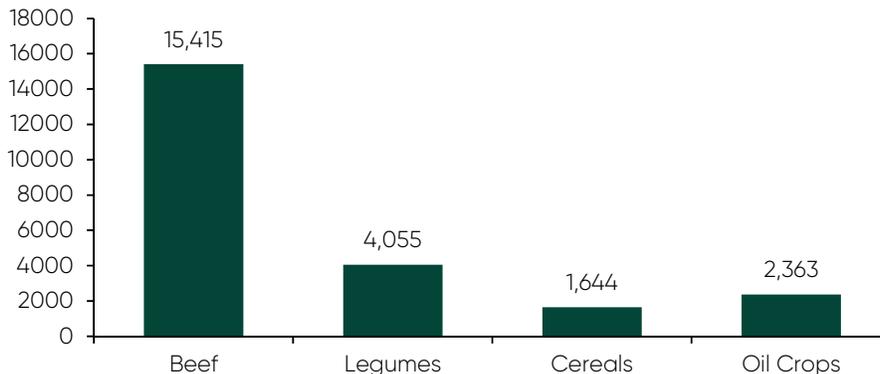


Source: Clark & Tilman. Data as of 2017.

Further, grain-fed beef requires over 15,000 liters of water to produce 1 kilogram. The vast majority of the water is used for the production of animal feed. Pulses, cereals, and oil crops (such as soy), that are often the main ingredients of alternative meats, require materially less water to produce the same quantity.<sup>iii</sup>

### EXHIBIT 2: WATER INTENSITY OF DIFFERENT FOOD CATEGORIES

Liters of Water Per Kilogram



Source: Mekonnen & Hoekstra. Data as of 2012.

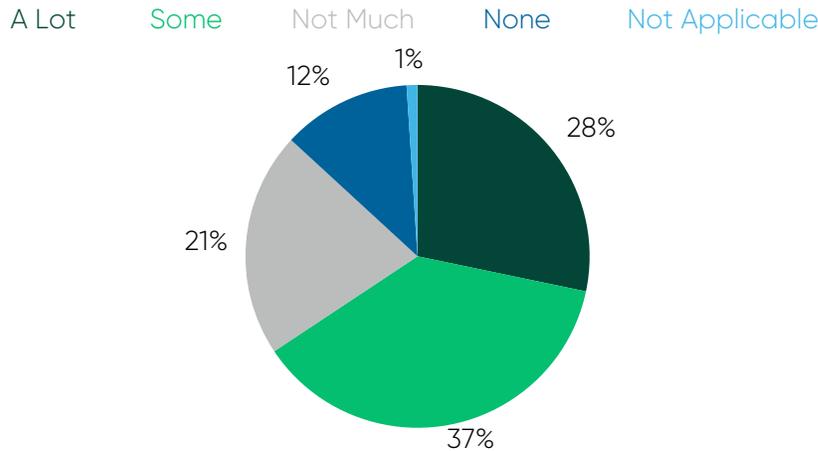
As a result, switching to plant-based meat alternatives could significantly reduce GHGE as well as society's impact on water scarcity and thus partially alleviate climate change concerns. Additionally, while consumer sentiment gradually shifts towards sustainability, companies are adding alternate meat products to highlight their environmental initiatives.

Plant-based foods can still cause significant climate stress, however, although in a different form. For instance, several alternative meat products rely on the use of palm oil, which has been garnering public attention because of illegal and unsustainable deforestation, which contributes to climate change and threatens animal habitats.

**SOCIAL CONSIDERATIONS**

Cattle are most profitable when grown fast. This has increased controversial practices such as feeding an unnatural diet consisting predominantly of corn and soy, antibiotic use, and restrictive living conditions (feedlots) that eliminate natural grazing and produce more tender meat. Consumers around the world are becoming increasingly aware of and concerned with such practices and issues regarding animal welfare in general.

**EXHIBIT 3: CONSUMER ATTENTION TO ANIMAL WELFARE LABELS**

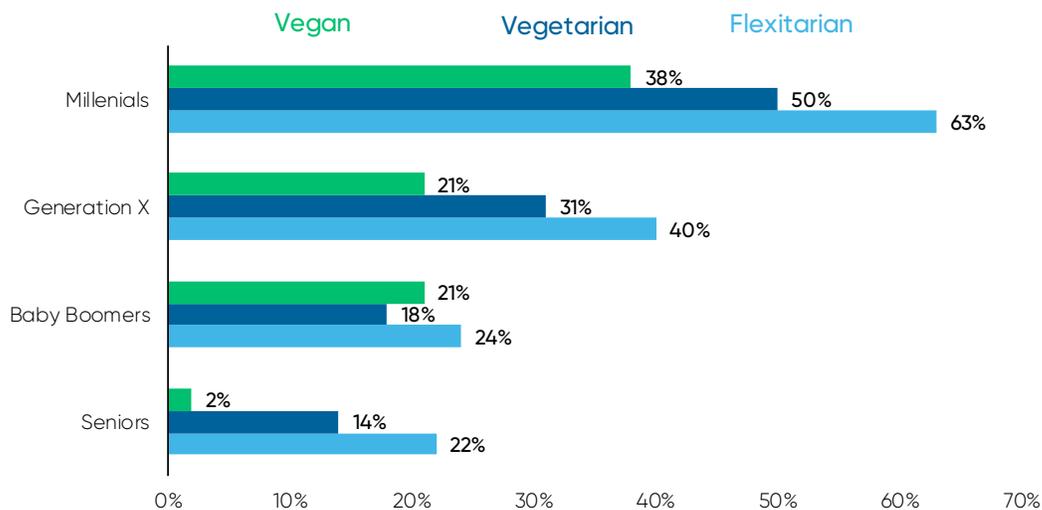


Source: Animal Welfare Institute. As of 2018.

Further, plant-based meat is well-positioned to benefit from a global trend towards healthy and socially-conscious eating. Red meat generally has more saturated fat, which contribute to higher blood cholesterol and higher risk of heart disease. Around 30% of US consumers plan on reducing their meat consumption, and 32% consider themselves flexitarian (semi-vegetarian).<sup>iv</sup>

It is important to point out that this shift is not occurring uniformly across the population. Interest in a flexitarian, vegetarian, or vegan diet varies significantly by generation, with the interest in each diet increasing gradually from older to younger generations (Exhibit 4).

**EXHIBIT 4: SHARE OF U.S. CONSUMERS INTERESTED IN DIFFERENT TYPES OF DIETS, BY GENERATION**



Source: Statista. Survey of U.S. Consumers in 2018. A flexitarian diet implies eating mostly plant-based foods, but also meat and animal products in moderation.

However, there are also potential downsides to plant-based meats. While, alternative meat has zero cholesterol, it has 5 times more sodium for preservation and flavor. Further, when looking at the top factors influencing meat purchases, taste and price continue to rank higher than health, and both Beyond Meat and Impossible Burger currently cost more than standard ground beef.<sup>v</sup>

## INDUSTRY DEVELOPMENTS

The alternative meat segment is comprised of smaller and less established pure plays (such as Beyond Meat and Impossible Burger), as well as large conglomerates (such as Kellogg, Nestle, and Tyson Foods). This space has seen and should continue to see significant investments, led by start-ups, mainstream food companies and restaurants.

In response to shifting consumer sentiment, an increasing number of US burger chains have started to offer meatless burgers in order to attract younger diners who are often more likely to prioritise sustainability and health. 15% of US burger chains offered meatless alternatives in mid-2019, up from 3% in 2018. More broadly, 58 out of the top 100 U.S. restaurants offered plant-based entrees in 2019, compared to 55 in 2018 and 48 in 2017, indicating a wider trend in recent years.<sup>vi</sup>

However, while pure plays are garnering most of the media attention in recent months, they may not be the biggest beneficiaries from a potential shift in consumer tastes, and established firms could end up being the biggest winners. In a Q4 2019 conference call Nestle CEO Mark Schneider called the integration of alternative meat products a “once in a generation opportunity.” Considering existing advantages—e.g., infrastructure and production capabilities—the best way to benefit from a potential mock meat shift might be to own traditional food products companies.

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<sup>i</sup> Sources: Food and Agriculture Organization of the United Nations, accessed on 12/08/2020, <http://www.fao.org/news/story/en/item/197623/icode/> and “Winds of change: Tackling the impact of the cattle industry on climate change”, Barclays Research, 12/04/2019, <https://www.investmentbank.barclays.com/our-insights/the-cattle-industry-on-climate-change.html>

<sup>ii</sup> Source: “One in five Millennials has changed their diet to reduce their impact on the planet”, YouGov, 23/01/2020, <https://today.yougov.com/topics/food/articles-reports/2020/01/23/millennials-diet-climate-change-environment-poll>

<sup>iii</sup> Mekonnen & Hoekstra (2012). A global assessment of the water footprint of farm animal products.

<sup>iv</sup> Source: “Can plant-based meat grow from a \$1 billion industry to a \$20 billion industry?,” Adele Peters, Fast Company, 13/05/2019. <https://www.fastcompany.com/90347902/can-plant-based-meat-grow-from-a-1-billion-industry-to-a-20-billion-industry>

<sup>v</sup> Source: “Survey reveals top attributes for fresh-meat purchases”, Sustainable Food News, 07/08/2018. <https://sustainablefoodnews.com/survey-reveals-top-attributes-for-fresh-meat-purchases/>

<sup>vi</sup> Source: “2019 Good Food Restaurant Scorecard”, The Good Food Institute, <http://goodfoodscorecard.org/2019-scorecard/>

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