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Commentary

Saving our Planet: One Bite at a Time!

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ABSTRACT

By 2050, the world's population will reach almost 10 billion. Demand for high protein products is increasing while the negative impact from food production devastates our planet. We desperately need new ways to feed the next billion humans.

Keywords: Animal protein; Food diet; Global animal agriculture

INTRODUCTION

Humanity is currently using nature 1.7 times faster than our planet's biocapacity can regenerate. If everyone lived like an average European or American, we'd currently need around 3 or 5 Earths respectively! Needless to say that we just can't continue like this for much longer. https://www.overshootday.org/how-many-earths-or-countries-do-we-need/

While climate mitigation discussions and policies are dominated by a big focus on energy, fossil fuels, transportation and industry, it is essential that animal agriculture is also mainstreamed in these processes. Even with very conservative estimates, global animal agriculture is responsible for approximately 15% of anthropogenic greenhouse gas emissions, and is thus more impactful on climate goals than the entire transport sector combined! It is therefore simply impossible to address climate change objectives and meet the Partis targets without addressing the food system. http://www.fao.org/news/story/en/item/197623/icode/

THE PROTEIN TRANSFORMATION

The challenge of feeding a growing population well and feeding them better without destroying our planet in the process is a massive task, but it's one that we must tackle no matter what. At the same time, we're living in extremely exciting times, with novel food products arriving in the market at an unprecedented pace, starting with plant based proteins a few years ago to cultivated proteins entering the scene now. Since limiting food production is not really an option we have, it is essential to focus on such alternative sources of proteins.

Based on our analysis, by 2035, every tenth portion of meat, eggs, and dairy eaten around the globe is very likely to be alternative. That's a lot. If the alternative protein market were a country, by then it would be a top 50 economy, larger than Finland's 2020 GDP. Is this unrealistic? Not at all. And it could be much more, if all four of the dominoes now lined up were to tip over.

The first domino is already falling: public concern for the climate and, more broadly, sustainability is rife. Many consumers want to reduce the amount of animal protein in their diets, especially if they can do it without sacrificing taste or paying more. In addition, fully 85% of investors now incorporate environmental, social, and corporate governance (ESG) criteria into their investment strategies.

We predict that, taken together, these concerns will generate enough consumer demand and investor interest to tip over the second domino: refinement and scaling of existing technologies to unlock parity, when the taste, texture, and price of alternative proteins closely match those of animal proteins. The first two dominoes are all that's needed to allow alternative proteins to capture 11% of the global protein market by 2035, our base case growth estimate.

What if the industry can generate even more momentum? Step changes in alternative protein technology, whether at incumbent food companies or start-ups and supported by public or private investment, could lead to rapid gains in production efficiency, better taste and texture, and lower cost. The result: the third domino falls, leading to earlier parity and a 16% market share by 2035.

The final domino could fall if regulators give it a push. Higher carbon prices and support for farmers transitioning from animal agriculture to alternative protein inputs could boost consumption to 22% by 2035. At that rate, Europe and North America would reach "peak meat" by 2025, and then the consumption of animal protein in those markets would actually begin to decline.

The rise of alternative proteins is a transformation, not a revolution. Several major incumbent meat companies are already redefining themselves as "protein" companies, making and marketing their own alternatives. This makes sense, given the size of the prize. We

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estimate that alternative protein revenues will reach $ 290 billion in 2035, with the profits distributed throughout the value chain: to the startups and incumbent food companies producing alternatives, the upstream players providing the industry with the inputs and tools needed to unlock these revenues, and the investors willing to support their efforts. Profits aside, the protein transformation can make an enormous contribution to the efforts to combat climate change.

In this first of its kind report, we crystallize the expertise of the alternative protein field, on the basis of a recently conducted survey and more than 40 interviews with industry veterans, researchers, and startup entrepreneurs. We provide detailed forecasts of the growth potential of the market for alternative plant, microorganism, and animal cell based proteins that can directly replace conventional animal protein, excluding traditionally plant based foods such as pulses, tofu, and tempeh. We support our model with deep dives into the relevant protein production technology. From this body of knowledge, we then identify the most exciting investment themes along the value chain.

We also aim to answer key questions posed by all stakeholders, including farmers, incumbent food companies,

startups, investors, and consumers: How will parity determine the future growth of the market? What will be required to bring each type of alternative protein to parity, and when will that happen? How can investors both support and benefit from its growth?

Our report "Food for Thought: The Protein Transformation" can be accessed here: https://www.bluehorizon.com/alt-protein-report-video-2021/

DECLARATION OF INTEREST

Author does not have any conflict of interests.