Peter Stevenson
Chief Policy Advisor

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POSITION STATEMENT ON MEAT ALTERNATIVES

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Meat Alternatives

Compassion in World Farming believes that meat alternatives are a vital part of the solution in ending factory farming and transforming the global food system to one that is healthy, humane, and regenerative. Alternative protein innovations, whether plant-based meat analogues, cultured meat from stem-cells or proteins from fermentation, offer the potential to replace the consumption of meat from intensively farmed livestock and thereby reduce animal suffering.

There are three primary areas to consider when discussing meat alternatives: plant-based meat analogues, cultured meat from stem cells, and protein from fermentation.

Plant-based meat analogues

Compassion in World Farming's founder Peter Roberts was an early pioneer in this field, importing soya products for human consumption. During the 1970s and 1980s, his company, Direct Foods, developed and sold a range of plant-based innovations made from soya that included Sosmix and Sizzles, the latter mimicking the smoky taste of bacon.

Today, more people than ever are trying plant-based alternatives to meats such as the **Impossible burger** and **Beyond Meat**, among others. Research shows that these plant-based meats are popular with meat eaters and can lead to lower consumption rates[i] of meat. The market is undoubtedly on the rise. Plant-based alternatives were worth $12 billion in 2019 and were forecasted to reach $28 billion in 2025.[ii] These products help consumers who like the taste and feel of meat to reduce their meat consumption.

Cultured meat

Unlike plant-based 'meats' headlined by the Impossible Burger, Beyond Meat or Quorn that draw their protein from sources such as soya and peas, cultured meat at the cellular level is undisputedly meat. It is grown in a culture using the same kind of cells that would otherwise make up an animal. While the scientists, investors and regulators involved in the technology have yet to alight on a unified term, 'cultured meat' remains an accurate description. The cells used to start the process are harvested from a living animal in a harmless biopsy. These stem cells from the fat or muscle of an animal are placed in a culture medium – a nutrient-rich soup - that allows them to grow in a bioreactor similar to those used for fermenting beer and yoghurt. No GMO is required – the cells do just what comes naturally: multiply. And to staggering effect: a single sample from a cow can produce 80,000 quarter pounders.[iii]

The Intergovernmental Panel on Climate Change has identified high-meat diets from intensively farmed livestock as running counter to efforts to combat climate change and cited cultured meat among the answers.[iv] Cultured meat production has been found to be 80 to 95 per cent lower in greenhouse gas emissions and 98 per cent lower in land use than conventionally produced meat products.[v]

Although still an emerging technology, cultured meat has already attracted the attention of big companies like Tyson and KFC.

When mainstream market entry will come for cultured meat has been a subject of conjecture for some time. A worldwide breakthrough came in December 2020 when the first commercial sale of cultured meat happened in Singapore. Informed opinion in the same year suggested that widespread market entry for cultured meat could be 5-10 years away.

Compassion in World Farming fully supports the development of cultured meat as having great potential to reduce both animal suffering and the environmental impact of factory farmed livestock production.

Proteins from Fermentation

Whilst much media attention has focused on cultured meat, there is a more immediate transformation of the food system approaching: precision fermentation. Precision fermentation is based on the same symbiotic relationship formed over millions of years between the cow and the microbes in her gut, only without the cow. It is based on the idea that microbes can be programmed to produce specific building blocks of food without any need for an animal. At its simplest, food is made up of packages of nutrients, whether they are proteins, fats carbohydrates, vitamins or minerals. Precision fermentation allows for those constituent parts to be built to precise specifications, whether that's nutritional composition, texture or taste. There's talk of 'food as software', a technique where food engineers can use 'molecular cookbooks' to design food products in much the same way as software developers design apps. And compared to the industrial production of food from cattle, the efficiency savings of precision fermentation, could be huge: it is reported to be a hundred times more land-efficient, up to twenty-five times more efficient at converting feed into food and ten times more water-efficient.[vi]

Precision fermentation offers tremendous scope to transform the world of protein, with new types and availability that were hitherto unimaginable. It builds on the fermentation process used for millennia, where microbial cultures have been used to preserve food, create alcoholic drinks and to produce foods ranging from yoghurt to kimchi and to tempeh. Precision fermentation takes things to a new level, using specific strains of microbes, often altered or 'programmed', to produce precise proteins or other ingredients. Instead of rearing an animal to get protein from the meat, micro-organisms can produce individual nutrients directly. Furthermore, food can be made of specific nutrients and to exact specifications, avoiding the painful business of rearing and killing animals to access them. And in shifting food production to the molecular level, the number of potential nutrients expands enormously; no longer constrained by what is available from the plant and animal kingdom. Food moves from being a process of extraction to one of creation.[vii]

Meat Reduction Targets

As part of transitioning toward a healthy, humane, and regenerative food system, Compassion in World Farming is calling for a reduction in the production and consumption of red meat, poultry and fish by at least 70% in high-consuming nations by 2030, and by 60% globally (against 2018 baseline figures) by 2050.

This will require rapid and dramatic changes in the way we produce and consume food, particularly in high meat consuming nations where consumption levels of livestock products will need to be cut by much more than half by mid-century to achieve the overall reductions required globally.

It would deliver health benefits by reducing the incidence of heart disease, obesity, type 2 diabetes and certain cancers. The Planetary Health Diet proposed by the EAT-Lancet report recommends per capita consumption of no more than an average of 300g of red meat/poultry and 200g of fish per week for a diet that is both healthy and environmentally sustainable.[viii] [ix] To meet EAT-Lancet guidelines, average consumption of red meat/poultry in the EU and UK would need to be reduced by two-thirds (66 per cent). The US would need to reduce red meat/poultry consumption by 80 per cent. Studies show that a substantial global reduction in the consumption of meat and dairy is essential if we are to meet the Paris climate targets.[x] [xi]

We encourage people to eat less and better – to lower their meat intake and replace it with plant-based foods as well as other alternative proteins such as cultured meat as they become available. Where livestock products are consumed, we encourage people to choose only higher welfare products from regenerative, pasture-fed, free range or organic farming.

Policy Action

To end animal suffering on factory farms and avoid environmental disaster, urgent policy action is needed to reduce the otherwise escalating consumption of meat and other livestock products from factory farmed animals.

Doing so will require governments to send clear policy signals to citizens; as Chatham House put it, 'to prompt shifts in consumer food choices, away from the most resource-intensive meat products and towards more sustainable alternatives'.[xii]

Governments should set a path for favourable regulatory, labelling and marketing rules, allowing meat alternatives to be desirable, affordable and accessible. Supporting the development of alternative proteins will eliminate the risk of pandemics and antibiotic resistance associated with industrial animal agriculture. At the same time, their production uses much less cropland, water and energy than livestock.[xiii] [xiv] Governments should ensure that unnecessary regulatory barriers do not impede the market entry of such alternative proteins.

Investment of public money should move away from supporting intensive meat production and marketing and instead support research, development and promotion of alternative non-meat sources of protein.

Encouraging the development, availability and widespread consumption of meat alternatives will be game-changing in transforming our food system globally to one that is healthy, humane and regenerative.

Compassion in World Farming International is a registered charity in England and Wales, registered charity number 1095050, and a company limited by guarantee in England and Wales, registered company number 4590804.

The registered office is at River Court, Mill Lane, Godalming, Surrey, GU7 1EZ, UK.

Web ciwf.org **Email** supporters@ciwf.org **Phone**: +44 (0) 1483 521 953

[i] https://www.nbcnews.com/business/consumer/almost-90-percent-people-eating-non-meat-burgers-are-not-n1082146
[ii] https://www.marketsandmarkets.com/Market-Reports/plant-based-meat-market-44922705.html
[iii] https://www.mosameat.com/technology
[iv] https://www.ipcc.ch/srccl/; https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/
IPPC, 2019: 'B.6.2 Diversification in the food system (e.g., implementation of integrated production systems, broad-based genetic resources, and diets) can reduce risks from climate change (medium confidence). Balanced diets, featuring plant-based foods, such as those based on coarse grains, legumes, fruits and vegetables, nuts and seeds, and animal-sourced food produced in resilient, sustainable and low-GHG emission systems, present major opportunities for adaptation and mitigation while generating significant co-benefits in terms of human health (high confidence).'
'Meat analogues such as imitation meat (from plant products), cultured meat, and insects may help in the transition to more healthy and sustainable diets, although their carbon footprints and acceptability are uncertain. {5.5.2, 5.6.5}'
[v]
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