



EXECUTIVE SUMMARY

THE POLITICS OF PROTEIN

EXAMINING CLAIMS ABOUT LIVESTOCK, FISH, 'ALTERNATIVE PROTEINS' AND SUSTAINABILITY



EXECUTIVE

SUMMARY

Animals continue to play a major role in food production systems around the world. Livestock contributes to the livelihoods of 1.7 billion smallholder farmers in the Global South, and plays a crucial economic role for approximately 60% of rural households in developing countries. The sector also employs as many as 4 million people in the EU, where 58% of farms hold animals, including many small and mid-sized holdings. Meanwhile, fisheries and aquaculture provide livelihoods for nearly 60 million people worldwide, and more than 3 billion people rely on fish as a primary source of protein. For a number of populations around the world, however, diets remain primarily based on pulses, grains, and other plant-based foods, with minimal consumption of animal source foods.

Animal production systems have expanded and changed dramatically over recent decades, with major impacts on food systems in all regions. Globally, per capita consumption of meat and fish nearly doubled between 1961 and 2015, driven primarily by the Global North, and more recently by increasing consumption in developing countries. The livestock sector now represents 40-50% of global agricultural GDP, and is increasingly characterized by vast multinational firms with huge market share and political clout. By 2014, the world's top 10 meat processing companies controlled 75% of beef slaughter, 70% of pork slaughter, and 53% of chicken slaughter. And by 2018, seven firms dominated poultry, pigs, cattle, and aquaculture genetics, and made over \$80 billion in sales.

Industrial meat and dairy companies are now expanding into multiple animal source food sectors in order to tap growth opportunities. This 'protein convergence' involves the majority of dominant meat processors in the world – including JBS, Tyson, WH Group, and Cargill. Most of the largest meat processing firms now have poultry, pork, and beef divisions, and the biggest fisheries firms have expanded into salmon aquaculture.

Nearly every large meat and dairy processor/manufacture has also acquired or developed plant-based meat and dairy substitutes, establishing footholds in a market that is growing approximately 20% per year. More than a dozen of these firms have also invested in start-ups that are attempting to commercialize lab-grown meat and fish. Meanwhile, Vanguard and BlackRock – two of the world's biggest asset management firms – have investments in almost all the largest meat, dairy, and animal feed companies.

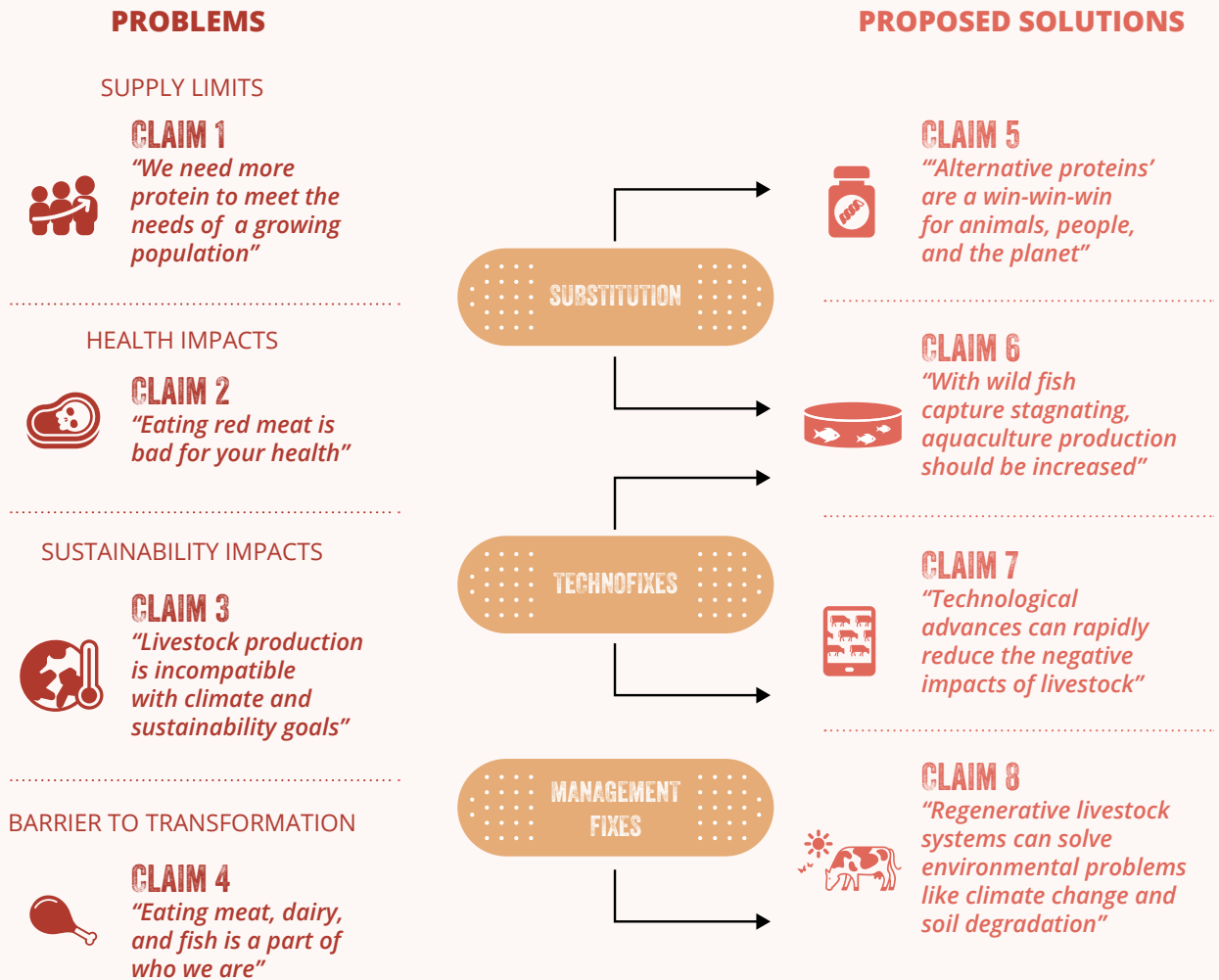
These developments are taking place in a context of unprecedented scrutiny of animal source foods. With 'planetary boundaries' being crossed, the climate crisis accelerating, and threats to food security and human health mounting by the day, *meat* and *protein* have come firmly under the microscope. As production systems have scaled and industrialized in many world regions, their impacts on animals, people, and the planet have grown. The FAO considers that livestock accounts for 14.5% of global greenhouse gas emissions, while some estimates put the figure above 30%. More than 60% of human infectious diseases are caused by pathogens shared with wild or domestic animals. Overuse of antibiotics in livestock is a major contributor to infections from antimicrobial resistant pathogens – which are expected to rise 40% by 2050 (from 2014 levels). Unsafe and abusive working conditions are rife, as evidenced by forced labour and human trafficking in marine fisheries, and high rates of COVID-19 infection and fatalities in industrial feedlots and meatpacking plants. In wealthy and emerging countries, over-consumption of meat and dairy is associated with rising rates of obesity and chronic diseases, while the world's poorest populations are unable to access adequate food, with up to 811 million people undernourished in 2020.

Public awareness of these problems has grown and the urgency of action has been impressed upon governments. It is now beyond doubt that the sustainability challenges we face cannot be met while livestock systems rely on huge quantities of feed crops and continue to occupy as much as 80% of global farmland. There is also broad consensus on what healthy and sustainable diets generally look like, i.e. diets based on a diversity of nutrient-rich foods, such as vegetables, fruits, whole grains, and pulses, and also including meat, dairy, eggs and/or fish in some regional contexts.

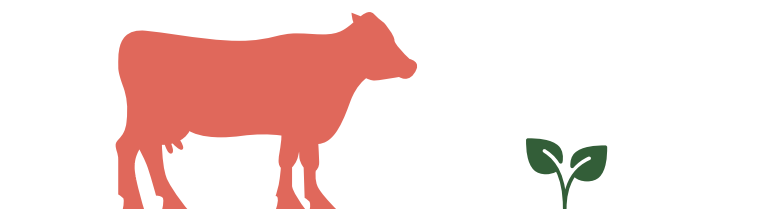
“ If they can get you asking the wrong questions, they don't have to worry about answers. ”

THOMAS PYNCHON IN GRAVITY'S RAINBOW (2000)

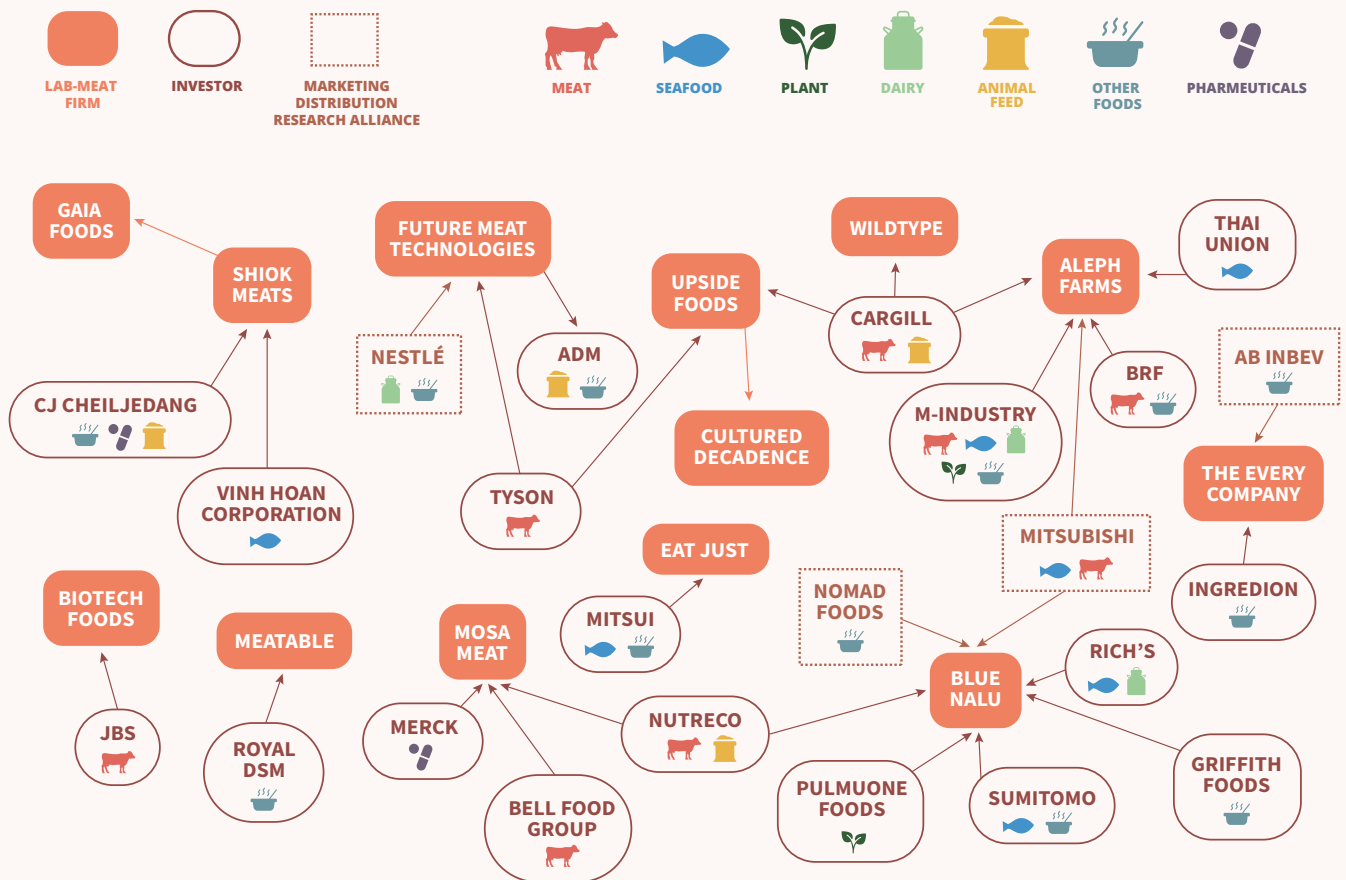
WE IDENTIFIED EIGHT KEY CLAIMS THAT ARE SETTING THE TERMS OF DEBATE AND DRIVING THESE RESPONSES:



But the way forward is far from clear. Discussion is characterized by bold and conflicting claims, as industry groups, philanthro-capitalists, influential media figures, and many others weigh into the debate. Their claims offer competing visions of what problems need to be addressed, and how they should be solved. And in increasingly polarized debates, a range of different solutions and different 'protein transitions' are now being demanded – from meat taxes to R&D funding for lab-grown meat, from vegan diets to regenerative agriculture and ocean farming, from precision livestock packages to industrial-scale insect protein. In response, public and private investment is flowing into a range of sectors, with a number of governments developing 'protein' strategies and channeling funds into lab-grown meat and plant-based substitutes.



THE LARGEST LAB-GROWN MEAT FIRMS AND THEIR INVESTORS



Analysis of these claims reveals that misleading statements and over-generalizations are pervasive in debates on meat and protein. A number of claims are widely repeated and accepted as fact, despite being based on uncertain evidence or addressing only certain aspects of the problem. Framing the discussion around these claims narrows the lens in five key ways, leading to simplistic silver bullet solutions:

1 OVEREMPHASIS ON PROTEIN

For decades, the perceived need for more protein has led to distractions and distortions in development programs, flawed marketing and nutritional campaigns, and calls to increase the production and trade of meat, dairy, and protein-enriched foods. Today, the evidence clearly shows that there is no global 'protein gap': protein is only one of many nutrients missing in the diets of those suffering from hunger and malnutrition, and insufficiency of these diets is primarily a result of poverty and access. However, debates remain protein-centric, with the focus now on producing enough protein to feed the world in the face of supply constraints and rising demand. In this context, animals are consistently reduced to meat, and meat is reduced to protein. The 'protein obsession' is now shaping the political agenda and setting the parameters for scientific studies, media coverage, and public debate, with farming systems assessed primarily (or solely) in terms of protein production per unit of GHG emissions, and the need for a 'protein transition' guiding the various solutions on the table.

2 REDUCING SUSTAINABILITY TO GHGS ONLY

Sustainability challenges vis-à-vis animal source foods are often collapsed into a single dimension – GHG emissions, and sometimes just CO₂ or methane – ignoring other critical sustainability challenges like biodiversity loss, chemical pollution, land degradation, livelihood stresses, hunger, and micronutrient deficiencies. Furthermore, by positioning livestock as a barrier to net zero in the land sector, some simplistic claims end up treating all livestock like an extractive industry and ignoring the diversity of production systems and their impacts (positive and negative) on other aspects of sustainability. Although GHGs are less dominant in discussions on fish, sustainability concerns also tend to be expressed in general terms, overlooking the huge differences between aquaculture systems and between different types of fisheries.

3 FAILURE TO CONSIDER HOW FOODS ARE PRODUCED

In many farming communities, animals play multiple roles: they provide food, hides, wool, and traction, help fertilize soils, act as financial collateral, hold cultural value, and make use of marginal land in a way that brings livelihoods, income, and food security to regions with few alternatives. Huge differences also exist between different models of aquaculture and how they interact with ecosystems and communities, as well as between aquaculture and wild fisheries systems. Yet these barely comparable systems are regularly conflated, with very little discussion of agro-silvo-pastoral systems, multi-paddock grazing, pastoralist systems, integrated multi-trophic aquaculture systems, artisanal fisheries, and other agroecological models. Studies often compare ‘alternative proteins’ against a single (industrial) livestock system on GHG terms. Similarly, plant-based diets are often presented as a singular, standardized option that can be universally adopted in place of meat-based diets, despite the huge differences in impacts depending on how crops are grown and processed.

4 FAILURE TO DIFFERENTIATE BETWEEN WORLD REGIONS

The value of meat as a source of high-quality bioavailable protein and diverse micronutrients for many populations around the world tends to be overlooked, or considered as a secondary question. Pastoralist systems and small-scale artisanal fisheries also tend to be ignored in the universalizing discourse of a ‘protein transition’. From regenerative livestock to ‘alternative proteins’, a number of solutions that are purportedly universal have clearly been envisaged through a Global North lens. The idea that we need *more protein* but *less meat* – as many prominent claims suggest – is out of sync with the realities of food insecurity and livelihood challenges in many parts of the world, particularly in the Global South. Context matters greatly where animal source foods are concerned, and is often lost in current debates.

5 FAILURE TO CONSIDER COMPLEXITIES, PATH DEPENDENCIES, AND POWER DYNAMICS (FAILURE TO SEE THE WHOLE FOOD SYSTEM)

The latest ‘techno-fixes’ for livestock and aquaculture are based on increasing the intensity, uniformity, and density of industrial systems – and are therefore likely to generate further problems down the line, requiring another round of technological innovations in order to preserve productivity gains. Claims about ‘alternative proteins’ also tend to ignore the risks of reinforcing current food system dynamics, such as the reliance of these new technologies on mass-produced, monocultured ingredients and energy-intensive hyper-processing – which will offset many of the benefits of taking factory farms off stream. Furthermore, the potential of various corporate-led solutions to have a positive impact on sustainability, livelihoods, and resilience is severely constrained by the business model of a highly concentrated industrial agri-food sector, which systematically relies on abusive practices and generates hidden costs or ‘externalities’. In other words, these solutions require major shifts in land use, energy systems, economic incentives, and corporate practices in order to deliver benefits. But these same solutions reinforce the power relations that keep current systems in place, and fail to address the question of how systemic changes will be achieved.

Critically, the effect of framing the debate so narrowly is to focus our attention on simplistic silver bullet solutions. Through the lens of protein on one side and GHG emissions on the other, sectors and activities that are barely comparable are set alongside each other, using metrics that are ill-adapted to capture the complex socio-ecological interactions and impacts of livestock, fishery and agricultural systems. Questions of *how* and *where* food is produced are lost in the hype around silver bullet solutions. And when challenges are formulated in such a reductive way, lab-grown meat and novel plant-based substitutes appear to be the most viable solutions. Techno-fixes for industrial feedlots and intensive aquaculture are similarly well-placed to answer such narrowly-defined needs.

Furthermore, **the misleading claims that dominate meat and protein debates prevent consideration of more transformative pathways.** Insufficient attention is paid to diversified agroecological production systems, territorial food chains and markets, and ‘food environments’ which increase access to healthy and sustainable diets. These pathways respond holistically to challenges whose breadth and depth have been well-evidenced. They entail transformative behavioural and structural shifts. They require *sustainable food system transitions*, not merely a *protein transition*. Yet without a consolidated set of claims and claim-makers behind them, these pathways are systematically sidelined.

As new policy frameworks emerge, and meat and protein continue to rise up the agenda, it remains critical to move beyond misleading claims. If not, there is a risk that general inaction is replaced with misguided action, that precious opportunities to reinvest in food systems are wasted on pathways that are disruptive but not transformative, and that public good is confused with private good.

The following recommendations are focused on reframing the discussion, overcoming polarization, and putting the conditions and frameworks in place for truly transformative reform pathways to emerge:

..... **RECOMMENDATION 1**

SHIFT THE FOCUS FROM A ‘PROTEIN TRANSITION’ TO SUSTAINABLE FOOD SYSTEM TRANSITIONS AND SUSTAINABLE FOOD POLICIES.

Making a ‘protein transition’ a global imperative and stand-alone policy goal risks penalizing all livestock systems, and promoting ‘alternative proteins’ irrespective of the risks and uncertainties they entail. However, in some contexts ‘animal source food transitions’ or ‘less and better meat/dairy’ can be useful sub-objectives within a comprehensive sustainable food policy, allowing sequenced shifts in production/consumption of animal source foods to be balanced against and informed by other priorities (e.g. GHG emission reductions, territorial cohesion, defending local food cultures) and advanced in relation to overarching objectives (e.g. food and nutrition security, healthy diets, fair and resilient supply chains, sustainable livelihoods). Transformative reform pathways that reconcile these different priorities are more likely to receive the attention they deserve in the remit of a comprehensive food policy. Indeed, any policy with serious ambitions to improve diets will need to look towards comprehensive ‘food environment’ approaches that connect social policies with food production and supply chain policies, ensuring that as the incentives shift and food prices potentially change, low income populations maintain access to nutritious diets, including animal source foods.

RECOMMENDATION 2
**PRIORITIZE REFORM PATHWAYS THAT DELIVER ON ALL ASPECTS
OF SUSTAINABILITY, STARTING AT THE TERRITORIAL LEVEL
(MEASURE WHAT MATTERS, WHERE IT MATTERS).**

A whole range of social and environmental criteria must be taken into account, alongside GHG emissions, in order to comprehensively assess the sustainability of livestock and fishery systems – including impacts on biodiversity, resource efficiency, circularity, resilience, sustainable livelihoods, local nutrient availability and food security, territorial cohesion, and food cultures. Furthermore, it is crucial to consider how animal production systems compare to the most likely alternative land uses and economic activities, in a context where people need access to nutritious foods. The region/territory is therefore a key level for developing the comprehensive food policies and strategies described in Recommendation 1 – potentially layered into national food policies with multi-level governance approaches. Criteria like resource efficiency and circularity have meaning in their local contexts, and are more likely to be prioritized in regionally-defined food strategies. Focusing on the regional/territorial scale will also help to move beyond abstract assumptions about global land use efficiencies, and to unleash the benefits that many regions can derive from relocalizing livestock production, reintegrating it with landscapes and feed sources, and reusing waste locally/on-farm, while ensuring scale-appropriate trade flows.

RECOMMENDATION 3
**RECLAIM PUBLIC RESOURCES FROM 'BIG PROTEIN',
REALIGN INNOVATION PATHWAYS WITH THE PUBLIC GOOD,
AND RESET THE DEBATE.**

Power imbalances create an environment in which misleading claims about meat and protein are rife and a handful of actors can push profitable silver bullet solutions and set the agenda. A number of actions are therefore required to redistribute power and redress the balance. Firstly, a clear set of parameters is needed to assess technologies and realign innovation pathways with the public good. Such criteria are unlikely to be met by channeling public funds into 'alternative proteins': doing so risks giving protein firms greater power to set the terms of debate, and further distorting innovation incentives in favour of so-called 'disruptive' technologies. Secondly, actions are required to address concentration of power across the food system, including through new approaches to antitrust and competition law. Targeting the practices of a limited number of dominant 'protein' firms could have major ripple effects. Further actions are required to promote organizational diversity and strengthen alternative supply chain infrastructures in a way that rebalances power relations and shifts discussion beyond a narrow choice between industrial meat versus industrial substitutes. Finally, debates on meat and protein must be rebuilt on the understandings and perspectives of diverse actors, including groups whose voices are rarely heard (e.g. pastoralists, artisanal fishers, Indigenous peoples, food insecure groups). This means reinvesting in deliberative democratic processes and consultative decision-making spaces, and resisting attempts to fast-track agreement around seemingly consensual 'solutions'. It also means entering into genuine conversations where ideas are scrutinized, opposing views are confronted, uncertainties are recognized, and normative biases are acknowledged. Only by engaging in inclusive dialogue and overcoming polarization can misleading claims, false solutions, and the vested interests behind them be definitively called out, and transformative change pathways be set in motion.

To conclude, livestock, fish, and 'alternative proteins' will stay in the spotlight for many years to come, as sustainability challenges mount and visions for the future of food systems collide. The solutions put forward and the claims used to advance them will vary between regions and evolve over time. The analysis and the recommendations outlined above are tools that can be used to make sense of claims as they evolve. Underpinning all of these recommendations is the need to widen our lens and open the door to truly transformative reform pathways.

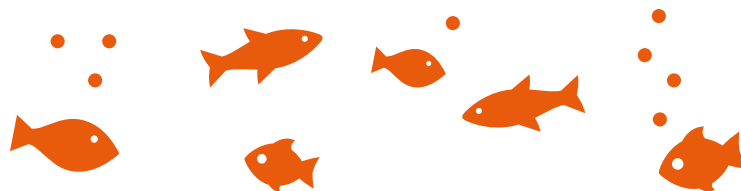
WHAT CLAIMS ARE BEING MADE ABOUT LIVESTOCK, FISH, AND 'ALTERNATIVE PROTEINS', AND WHAT DOES THE EVIDENCE SAY?

CLAIM 1

“WE NEED MORE PROTEIN TO MEET THE NEEDS OF A GROWING POPULATION.”

The claim that there is a “gap” between protein supply and population needs has long been widespread in global food system debates. With ‘nutritionist’ approaches gaining traction and meat/dairy industries seeking export opportunities, development programs were dominated for decades by protein-enriched therapeutic products and milk marketing. Although some of these approaches had been debunked by the 1970s, debates remain protein-centric. The focus is now on producing enough protein to feed the world in the face of supply constraints and rising demand – although the evidence shows that there is no ‘protein gap’ in terms of global supply versus nutritional needs, and that poverty and poor access to food are the main drivers of various dietary deficiencies. A disproportionate focus on protein is also visible today in media coverage of food systems, the emergence of ‘protein’ companies, the marketing of ever more ‘high-protein’ foods to shoppers, and specialist high-protein diets. While they do so indirectly and sometimes unintentionally, calls for a ‘protein transition’ tend to reinforce a protein-centric approach to food system problems.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Animal source food industries; large-scale farmers' groups; alternative protein industries; international organizations & research institutions	Lack of protein; population growth; under-development	Increasing production & trade of meat & dairy; nutrition interventions; protein-enriched foods	Poverty reduction; access to nutritious diets; micro-nutrient deficiencies; environmental issues



CLAIM 2

“EATING RED MEAT IS BAD FOR YOUR HEALTH.”

Claims about health impacts are based on a large body of evidence linking chronic disease risks to red and processed meat consumption. These claims have often come alongside dietary recommendations to curb or eliminate red meat consumption, and/or the promotion of vegan and vegetarian diets. However, the prevailing claims overstate and over-generalize the health risks of red meat, which are partly determined by how livestock are raised and finished, and how meat is prepared and consumed. Meanwhile, the fact that (red) meat is an important source of micronutrients and high-quality bioavailable protein for many populations around the world is regularly overlooked. Furthermore, a holistic view of how meat/livestock interacts with human health is often missing: although they do not affect people as directly as nutritional impacts, a number of severe human health risks result from the environmental contamination caused by industrial livestock.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Some medical associations & health campaigners; vegetarian groups; alternative protein industries	Red meat causes chronic diseases	Reducing or eliminating red meat consumption	Access to nutrition for food insecure populations; impacts of different production systems & preparation methods; livestock-driven environmental health risks

CLAIM 3

“LIVESTOCK PRODUCTION IS INCOMPATIBLE WITH CLIMATE AND SUSTAINABILITY GOALS.”

A wealth of studies have singled out livestock production as a major global driver of climate change, land degradation, and biodiversity loss, leading many actors to question its compatibility with the transition to sustainability. However, claims in this area often rely on simplistic approaches that fail to capture the complexity of livestock-ecosystem interactions or to account for the huge differences between industrial and agroecological livestock systems, and between world regions. Focusing only on narrow metrics like protein/GHGs ignores other crucial and interconnected aspects of sustainability (e.g. biodiversity, resource efficiency, livelihoods). It also overlooks the multifunctional role livestock plays in many farming communities, and the many contexts where it may compare favourably to alternative land uses and economic activities. Life Cycle Assessments (LCAs) allow impacts to be captured more holistically, but the boundaries and methodologies remain contested. Generalized claims about livestock’s sustainability impacts are therefore highly misleading, and end up conflating systems that are barely comparable.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Alternative protein industries; vegetarian/vegan groups; moderated versions of the claim espoused by many environmental groups & other civil society organizations & scientific bodies	Livestock causes environmental problems such as climate change, land degradation, biodiversity loss, water & soil pollution	Livestock production/ consumption should be drastically reduced & replaced by plant-based diets (inc. alternative proteins)	Differences between livestock systems; multifunctionality of extensive & pastoralist systems; livelihoods

CLAIM 4

“EATING MEAT, DAIRY, AND FISH IS A PART OF WHO WE ARE.”

The cultural rootedness of animal source foods is often cited as a major barrier to dietary shifts. It is also one of the arguments in favour of ‘alternative proteins’, with highly meat-like novel products seen by some as the only viable way to reduce the consumption of meat and other animal source foods. It is clear that raising and eating animals has played a significant role in shaping human development. Eating meat is now a part of many culinary traditions and food cultures around the world. However, cultural norms around animal source foods remain highly diverse, reflecting a plurality of relationships to animals. These norms are also in constant evolution. Habits have been reshaped by corporate strategies and government imperatives: current trends towards high consumption of animal source foods are a function of rapid food system industrialization, the promotion of Western-style diets, and the (re)structuring of food access. Despite the efforts of marketers to play on cultural attachments to meat, current trends do not (yet) constitute long-term cultural norms, and further significant shifts in the role of meat and the role of animals in our societies are possible.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Meat & dairy industries; alternative protein industries; farmers’ organizations; consumer groups	Eating meat is central to cultures & identities & cannot/should not simply be phased out	Continue eating animal source foods or adopt highly meat-like substitutes	Diverse cultural norms re. animal source foods; the fluidity of food cultures; the role of marketing/lobbying in shaping diet preferences

CLAIM 5

“‘ALTERNATIVE PROTEINS’ ARE A WIN-WIN-WIN FOR ANIMALS, PEOPLE, AND THE PLANET.”

Plant-based meat, dairy, and fish substitutes, as well as lab-grown meat are being rapidly developed and rolled out, based on bold claims about their ability to reduce environmental impacts, improve diets, and spare animals from being farmed and slaughtered. ‘Alternative proteins’ may improve individual sustainability indicators in direct comparisons with their industrially produced equivalents. However, the evidence to date is limited and speculative (particularly for lab-grown meat). The implications for health and sustainability ultimately depend on what ingredients are used, how they are produced and processed, as well as what they are replacing and where they are being marketed. Many of the latest substitutes rely on energy-intensive hyper-processing to produce key additives, as well as sourcing ingredients from industrial monoculture systems. ‘Alternative proteins’ also represent a new phase of food system industrialization that could undermine resilience, jeopardize the livelihoods of millions of food producers, and reinforce a ‘centre of the plate’ approach to diets – rather than supporting transformational changes in the way we eat. Bold and categorical claims about alternative proteins being a ‘win-win-win’ are therefore misleading.



WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Alternative protein industries; some vegetarian/vegan organizations, animal welfare groups; investors, influencers; meat processors (investing in alt. proteins); media coverage of studies & new products	The environmental, health & animal welfare impacts of animal source foods	Partial or complete replacement of animal source foods with plant-based substitutes and/or lab-grown meat	Labour & livelihoods; resilience; innovation systems, lock-ins & power relations; holistic diet & food system change

CLAIM 6

“WITH WILD FISH CAPTURE STAGNATING, AQUACULTURE PRODUCTION SHOULD BE INCREASED.”

Fish/seafood are significant sources of nutritious food for more than 3 billion people. With wild fish capture stagnant for decades, aquaculture has increasingly been promoted as a sustainable way to raise fish production, address the ‘protein gap’, and meet broader nutritional needs. However, the impacts of aquaculture systems vary substantially, depending on the species cultivated, external input requirements (e.g. fish feed), forms of containment, and political-economic context. Input-intensive, single-species systems are growing fast and generating a range of negative impacts. Promoting aquaculture in general terms gives a green light for further expansion of production models that threaten food security and sustainability – and thus contribute to the problems they are supposed to solve. Addressing aquaculture through a global protein-centric lens also means overlooking the holistic benefits of ecological aquaculture (e.g. multi-trophic systems), and ignoring the needs of many communities around the world for whom small-scale fisheries and aquaculture systems are a source of livelihoods and healthy, sustainable diets.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Aquaculture industries; marine scientists; conservation groups; governments & international organizations	Wild capture fisheries are unsustainable & more protein- & micronutrient-rich foods are required	Continued expansion, upscaling & technological enhancement of aquaculture, particularly input-intensive, single-species production	Livelihoods; environmental contamination, resource depletion & knock-on effects on food security; ecological aquaculture models; power relations



CLAIM 7

“TECHNOLOGICAL ADVANCES CAN RAPIDLY REDUCE THE NEGATIVE IMPACTS OF LIVESTOCK.”

Technological innovations are often highlighted as a means to reduce the impacts and enhance the productivity of industrial livestock systems. The ‘precision livestock’ packages and new breeding approaches being marketed by agribusinesses may deliver initial gains, but they also reinforce the uniformity and density of production units – creating a treadmill of environmental and epidemiological risks, sparking problems further down the line (often with a time lag before they are visible), and undermining resilience. Furthermore, techno-fixes also tend to be designed for large-scale, highly-capitalized farms, ignoring the needs of smaller producers. These innovation pathways are therefore unlikely to substitute a wider reform of food systems – and tend to shift the focus away from systemic questions.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Agribusinesses; livestock producer associations; meat processors; global agri-development partnerships	Problems with animal source food production are technical issues	Better breeding techniques, precision livestock, digitalisation, waste digesters, vaccines, etc.	System redesign around diversification & agroecology; path dependencies & opportunity costs; small-scale & pastoralist livestock systems

CLAIM 8

“REGENERATIVE LIVESTOCK SYSTEMS CAN SOLVE ENVIRONMENTAL PROBLEMS LIKE CLIMATE CHANGE AND SOIL DEGRADATION.”

According to a range of increasingly vocal actors, shifting large numbers of animals into rotational grazing systems is the answer to livestock’s environmental problems. The evidence confirms that efficiencies can be gained by dedicating marginal lands to livestock, with well-managed, pasture-based systems showing considerable soil carbon sequestration potential. However, some claims about the potential of ‘regenerative livestock management’ and ‘carbon farming’ risk overstating the ability of soils to store carbon, while separating GHG-mitigation from other interconnected challenges (e.g. biodiversity loss). Meanwhile, corporate-led schemes reduce regenerative agriculture to a universal ‘management fix’ and lack the holistic vision and structured support that farmers would need to redesign production systems. More generally, calls for regenerative-led transition can ignore the historical legacies of land inequalities and social equity. In sum, discourse around regenerative livestock solutions may simply serve to justify high levels of production/consumption of animal source foods into the future.

WHO IS MAKING, USING, AND PROMOTING THIS CLAIM?	WHAT IS DEFINED AS THE PROBLEM?	WHAT IS THE PROPOSED SOLUTION?	WHAT ISSUES ARE LEFT OUT?
Large landowners & livestock producers; major food processors, manufacturers & retailers; influencers, investors; carbon credit businesses; some civil society organizations	Soil degradation, climate change & industrial feedlots	Rotational grazing & regenerative management, allowing for CO2 sequestration in degraded soils	Limits of CO2 sequestration in agriculture; climate responsibility of other (extractive) sectors; social & political challenges, including complexities of land use & colonial legacies

CONCLUSIONS

There's lots of hype about meat and protein

It's narrowly focused on CO₂

It ignores how food is produced

It ignores differences between world regions

It fails to see the whole food system

It's focused on simplistic silver bullet solutions



RECOMMENDATIONS

1

Focus on achieving a transformation to 'sustainable food systems' - not a 'protein transition'

2

Prioritize reforms that deliver on all aspects of sustainability starting at regional level

3

Reclaim public resources from 'big protein', realign innovation pathways with the public good, and reset the debate



ABOUT IPES-FOOD

The International Panel of Experts on Sustainable Food Systems (IPES-Food) seeks to inform debates on food systems reform through policy-oriented research and direct engagement with policy processes around the world. The expert panel brings together environmental scientists, development economists, nutritionists, agronomists, and sociologists, as well as experienced practitioners from civil society and social movements. The panel is co-chaired by Olivier De Schutter, UN Special Rapporteur on extreme poverty and human rights, and Maryam Rahmanian, independent expert on agriculture and food systems.

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Approved by the IPES-Food Panel, March 2022



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