

139 Promote production and consumption of sustainably produced high-quality proteins

The Solution: A global, multi-stakeholder engagement that promotes production and consumption of sustainably produced high-quality proteins to mitigate global risk of protein-energy malnutrition (PEM) and other related conditions. The initiative will also seek ways of assessing the land use and environmental implications of consuming a diet consisting of fewer high-quality protein sources. The initiative will seek commitments from global food/agriculture companies and organisations to conduct the necessary research to assess global dietary protein needs more accurately. Progress will be determined and reported globally via published research, symposia at high-level international health/nutrition conferences, and expert workshops.

Source(s) of the Solution: The initiative builds off ongoing research on the measurement of dietary protein quality as called for in FAO Report #92 (Dietary Protein Quality Evaluation in Human Nutrition, 2013). The report indicated that existing methods for measuring protein quality tend to overestimate the quality of some protein sources and called for a more accurate measurement to be developed. This systematic error can have great health implications when planning and promoting diets and food sources, particularly (but not exclusively) in LMICs, where high-quality protein sources are often scarce or expensive. Current partners of the initiative are the Global Dairy Platform, International Dairy Federation, and Dairy Sustainability Framework. Potential partners may include groups such as FAO, Sustainable Agriculture Initiative Platform, and ILRI and other private-sector actors, donors, NGOs, academia, civil society, and governmental and intergovernmental organisations.

Problem addressed within food systems: The initiative will encourage a more in-depth understanding of the health and environmental implications of high-quality protein sources and the potential for unintended consequences by dramatically de-emphasising their use in the human diet.

Malnutrition is a universal public health problem among both children and adults globally. It is not only a public health concern but also an impediment to global poverty eradication, productivity, and economic growth. By eliminating malnutrition, it is estimated that 32% of the global disease burden would be removed. One prevalent form of malnutrition, particularly in the developing world, is PEM. Children with PEM present with marasmus and kwashiorkor. Marasmus is characterised by a lack of protein and energy in the diet, while an inadequate intake of protein causes kwashiorkor. Both can cause stunting and wasting, as well as lifelong health issues. According to the WHO, 462 million adults are underweight; in children under 5 years of age, 155 million are stunted, 52 million are wasted, and 17 million are severely wasted. More accurate information on the protein quality of foods and diets will lead to more informed policy and ultimately better diets and enhanced food security.

How this solution will address that problem: Access to sufficient high-quality protein sources can help to minimise or alleviate several of the aforementioned health conditions. A greater understanding of the foods (and their production) that can optimise the consumption of high-quality protein sources is imperative. High-quality proteins represent a more efficient way of producing and consuming dietary protein, which not only has great health implications but also can impact the amount of land needed to grow food. It is also noteworthy that many high-quality protein foods are often also rich in other nutrients (e.g., iron, zinc, vitamin B12) that may be limiting in the diet.

Further, it should be noted that while a lack of high-quality protein foods represents an ongoing issue in LMICs, it is also not an insignificant problem for several demographic groups in high-income countries. Numerous studies have identified protein as a key nutrient for well-fed elderly adults. High protein intake may improve muscle health, prevent sarcopenia, and help maintain energy balance, weight management, and cardiovascular function in the elderly and others. Multiple health benefits

have also been noted in physically active people, children, and individuals consuming specialised diets who reside in Western countries.

Solution's alignment to the 'game changing and systemic solution' criteria: Greater understanding and support for consumption of more high-quality protein sources has implications for all five of the FSS action tracks, as well as several SDGs, particularly SDGs 2, 3, 10 and 12, making this a strong game changing solution. High-quality protein foods, so important in the fight to reduce hunger and malnourishment, have an important role in the attainment of more equitable and sustainable food systems. Removing high-quality foods from the diet, or diminishing their use, may have severe unintended consequences.

Existing evidence: There are numerous studies that have demonstrated the benefits of adding more high-quality protein to the diets of malnourished people, particularly in LMICs. Several studies using dairy, eggs, and several other animal-source foods to supplement existing local diets have shown (though not exclusively) improved MUAC scores in children, greater cognitive performance, improved immunity, and several other health benefits. In the developed world, studies in the elderly, physically active people, people losing weight, and other demographic groups have not only demonstrated improved health and performance measures but, in many cases, indicate that present protein recommendations may be too low, suggesting the need for even more high-quality protein in the diet. Finally, recent modelling exercises suggest that to consume enough protein to reach recommended daily levels, individual adults would need to ingest about 300 more calories per day if they subsisted on lower-quality protein sources. This has implications not only for human health but also the amount of land that would be needed to produce this extra food, particularly in the face of a growing global population. These are not 'black and white' issues, and certainly require greater understanding and assessment of the intended and unintended consequences of dramatically altering our global food systems. Furthermore, conclusions reached concerning the environmental footprint of food protein production can be altered greatly when the quality of food proteins are considered.

Current/likely political support: The initiative is aligned with several of SDGs; particularly SDG 2 (Zero Hunger); SDG 3 (Good Health and Wellbeing); SDG 10 (Reduced Inequalities); and SDG 12 (Responsible Consumption and Production). The initiative also builds on and aligns with established international processes such as the United Nations Framework Convention on Climate change reporting on Nationally Determined Contributions and the Koronivia Joint Work on Agriculture. We believe this approach would be largely supported by the scientific community and those who view these issues based on empirical science. Already several scientific organisations and food sectors are involved in the work.

Contexts where this is well/not well suited: This game changer has global implications but is most well-suited for regions of the world where high-quality protein sources are scarce and daily protein intake remains far below recommended levels, and where arable land is in short supply.