



GLOBAL DAIRY PLATFORM

Sustainable healthy diets: balance between plant and animal-source foods

- Diet quality is defined by whole foods, not individual nutrients: the food matrix matters
- Plant-based diets, complemented with animal-based foods, increases the variety and bioavailability of vitamins and minerals, and ensures a high-quality source of protein
- There is a need for greater recognition of the positive role of livestock in sustainable food systems, in all its dimensions: nutrition and health, economic, social, and environmental
- Animal and plant-foods should not be thought of as competing entities, but rather as synergistic food sources that provide different nutritional, social, economic, and environmental benefits

Introduction

Paragraph 11 of the Committee on World Food Security Voluntary Guidelines on Food Systems for Nutrition Draft for Negotiations highlights unhealthy diets as a major risk factor for multiple forms of malnutrition and health outcomes globally¹. The document also defines the concepts of healthy diets and sustainable healthy diets in paragraph 20 and 21. The issue of what constitutes an unhealthy diet, as well as a sustainable healthy diet is important and requires contemplation, balance, and careful consideration of the wide-ranging impacts of any recommendations.

Diet quality is defined by foods and dietary patterns, not individual nutrients

- On one level, identification of individual nutrients as being healthy or unhealthy runs counter to the emerging perspective of many health and nutrition experts that we refrain from a reductionist thinking about the overall diet².
- Modern nutrition science recognizes that individual nutrients do not define a diet as healthy or unhealthy; rather it is the foods and habitual diet that matter most².
- A focus on individual nutrients prevents recognition of the synergistic effect of nutrients that exist naturally as part of a food matrix [i]^{3,5}.
- Nutrient intake and its impact on the body can be contextual. Nutrients deemed unhealthy in one context (e.g. sodium; calories) may be lifesaving in another (e.g. oral hydration therapy and undernutrition).

These factors need to be kept in mind, particularly when developing food systems guidelines with global implications, for regions where nutritious food is plentiful to areas where undernutrition and hidden hunger are prevalent.

ⁱ The food matrix embodies diverse attributes of foods that include its microstructure, texture, form (e.g., solid, gel, liquid) and how nutrients and bioactive compounds are packaged and interact in ways that impact health



The role of animal sourced foods - achieving balance

The unique and complementary roles of animal and plant-sourced foods in a sustainable food system requires a balanced approach; it should be recognized there is synergy between the two. Both plant and animal foods have their place in healthy global diets. Animal sourced foods have a role to play in preventing undernutrition while simultaneously contributing to economic livelihoods and addressing equity concerns ⁶.

Furthermore, plant-based diets should not be interpreted as plant-only diets. An acknowledgement that animal sourced foods provide micronutrients that are not plentiful or not present in bioavailable forms in plant sourced foods is required. For example, plants contain vitamin A (carotenoids), iron, zinc, and calcium in forms that are less bioavailable than animal sources due to chemical form, the plant food matrix, and presence of anti-nutrients such as phytate and oxalate ^{6,7}. Animal sourced foods are the only natural source for vitamin B12 whose deficiency presents a wide variety of serious symptoms ranging from anemia to psychiatric disorders ⁸. Conversely, nutrients such as vitamins C and E and fiber are found primarily in plant-based foods, which speaks to the synergy that exists between plant and animal sourced foods, and the benefits of consuming diverse diets from multiple sources.

Animal sourced foods generally contain higher quality proteins than most plant sources ⁹; animal sourced foods have been shown to improve growth, health, and cognition particularly in regions of the world that have primarily relied on plant- and grain-based proteins for much of their sustenance ^{6,10}.

- Diets without animal sourced foods must rely on a wider variety of foods, in combination, to provide adequate quantities of all amino acids ^{6,11}.
- This increased variety has implications for dietary adequacy as well as calorie consumption and land usage, issues that may be accentuated as we seek ways to healthfully feed a growing global population in the future.
- Food with higher protein quality are particularly important for vulnerable populations or those with unique nutrient needs: young growing children, pregnant women, the elderly, malnourished or immunocompromised people, or those with other illnesses.

Greater recognition of the positive role of livestock in sustainable food systems Discussions about what constitutes a sustainable food system are increasingly addressing the impact of global food production on the environment, as well as the economic and social aspects of local and global foods systems. Yet the positive role of livestock is often undervalued and misunderstood in part because livestock remains net CO₂ producers.



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Regardless, following are important considerations:

- Livestock, particularly ruminants, consumes substantial human-inedible plants and plant by-products that might otherwise become CO₂ producers, and turn them into high quality human-edible foodstuffs^{12,14}.
- Much of the land used by grazing animals is not in competition with food crops because animals can graze on land that is unsuitable for growing crops^{6,15,16}.
- Nearly 70% of the land globally on which animals graze is not suitable for edible plant growth. Without animals inhabiting and grazing this land, pasture that is highly productive would become unproductive grassland¹⁶.
- Livestock provides important natural fertilizer and composting materials that help plants to grow.

Burgeoning technologies will enable the livestock industry to lower GHG emissions from field to fork in the coming years¹⁷, another reason not to deemphasize animal sourced foods in a sustainable food system as it could disincentivize these investments and adoption of these technologies.

The impacts of livestock on the economic and social domains of the global food system The potential economic and social impact of guidance to reduce production and consumption of animal-sourced foods cannot be overstated as it could negatively impact the economic status of over 1.3 billion global inhabitants whose livelihoods are tied to animal agriculture, as well as numerous cultural and dietary drivers that help to sustain societal traditions, health, and wellbeing worldwide.

Conclusion

The global population is projected to reach ten billion inhabitants by 2050. To healthfully meet the nutrient and energy needs of a growing global population, animals and plants should not be thought of as competing entities, but rather as synergistic food sources that provide different nutritional, social, economic, and environmental benefits. Plants provide both humans and livestock with nutrients while livestock can help plant foods grow, and they provide a usable outlet for plant byproducts. They produce foods high in nutrients that are lacking in plant-based foods, and vice versa. The balance between animal and plant sourced foods in creating healthy diets for healthy people without causing harm to the environment is important. It is a balance that should be stressed in developing policy guidelines for a sustainable global food system.



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