Dear Colleagues:

The International Meat Secretariat appreciates the opportunity to participate in the High Level Panel of Experts (HLPE) consultation regarding the objectives and content of the report entitled “Food Security and Nutrition: Building a global narrative towards 2030”.

The following comment aims to highlight knowledge gaps and uncertainties, evident from prior HLPE reports and other resources, regarding the role of livestock in the advancement of the 2030 Sustainable Development Goals (SDGs). We highlight the need for more precise and harmonized global data collection tools to ensure that dietary recommendations are evidence-based and representative of vulnerable, as well as food/nutrient secure populations. Precise data regarding meat production efficiency, intake, and food loss and waste are scarce and heterogeneous amongst nations most vulnerable to malnutrition. Extrapolation of data from developed to developing countries, and failure to consider the consequences associated with broad dietary assumptions, is likely to thwart efforts to accomplish SDG goals related to ending global malnutrition.

**Livestock produce nutrient-dense food mainly from resources that are not suitable for humans (such as grass) or that would otherwise go to waste (such as residues from production of biofuels)**

The 2016 HLPE report regarding the role of livestock in sustainable agricultural development for food security and nutrition recognizes that a reduction in animal sourced foods (ASF) is often recommended to mitigate climate change but that this recommendation fails to “…take into account the higher micronutrient levels and better protein quality found in ASF (linked to ASF’s higher nutrient density), or the fact that livestock … consume feed that is non-edible by humans (in particular, grass) and recycled waste.”

The 2016 HLPE report notes that “75 percent of global livestock’s dry matter feed intake consists of products such as leaves, grass, fodder crops, crop residues and swill that are non-edible to humans. Grains represent just 12 percent of global animal feed, with an additional 9 percent derived from by-products that can be considered edible to some extent.” Furthermore, it is estimated that grain-finished beef cattle can provide 19% more human-edible protein than they consume (Mottet et al., 2017). According to the FAO hosted Multi-stakeholder Global Agenda for Sustainable Livestock (GASL 2014), “global food security and health needs to be addressed through livestock”.

**Improving the efficiency of red meat production systems improves sustainability**

Factors involved in improving the efficiency of meat product systems go far beyond simply reducing consumer demand and subsequent herd size, but rather producing the same or more meat with fewer animals. Regions around the globe have demonstrated the ability to more efficiently produce meat (Capper et al., 2011; Ledgard et al., 2011; Legesse et al., 2015; Wiedemann et al., 2016). The 2016 HLPE report further notes that “Improving the efficiency of livestock production systems would, in turn, require addressing a range of associated challenges and, for instance, to reduce animal mortality rates, which are still very high in some developing countries. The most obvious and important way to do this will be to improve farmers’ access to veterinary and extension services.”
Sustainability of Meat Production is compromised by Food Loss and Waste

HLPE 2016, recognized the importance of reducing ASF food loss and waste (FLW) for the improvement of food security and nutrition (FSN) – “Attention to losses and waste in the livestock sector can make a useful contribution to sustainable development, including by ensuring a more efficient use of natural resources, mitigation of GHG emissions and reducing other environmental damages. It can improve outcomes for FSN. There is also the potential to capture FLW for feed (most smallholder mixed farms rely heavily on reusing as much of the nutrition and energy produced on-farm as possible, using animal manure for fertilizer and household and crop residues for feed).”

“Of the 263 million metric tons of meat produced globally each year, over 20% is lost or wasted. This is equivalent to the loss of approximately 75 million cows at the point of slaughter. Overall losses are relatively similar in different parts of the world, although somewhat higher in sub-Saharan Africa.” (Global Panel, 2018)

“All along the food chain, from the producer to the consumer, most of the micro-causes of FLW can be linked to lack of investment and/ or lack of implementation of good practices.” (HLPE, 2014)

Key areas for improving the preservation and conservation of ASF and nutrients include improvement of harvest practices and infrastructure for handling and transport. Initial cooling of perishable foods such as meat is critical for maintenance of quality. Lack of proper storage facilities is a major cause of post-harvest losses in developing countries. It is also recognized that, in developing countries, lack of proper transportation vehicles, poor roads and poor/inefficient logistical management hinder proper conservation of perishable commodities during transport (HLPE, 2014)

Food Waste and Malnutrition

Yet the consequences of FLW in the livestock sector go beyond compromised environmental sustainability to increased risk of malnutrition. Research from Spiker et al. (2017) found that in the United States alone, “the amount of iron embedded in food wasted at the retail and consumer levels each day (per population) was equivalent to the Recommended Dietary Allowance for iron for 92 million adult women (age 19 to 30 years) or 208 million adult men (age 19 to 30 years), which averages to 150 million adults, which was 66% of the adult population.” “The RDA for iron differs greatly between men and women; daily per capita iron loss in the US food supply is equivalent to 30% of the adult women’s RDA and 66% of the adult men’s RDA, which averages to 48%. (Spiker et al., 2017)

Considering global malnutrition the Global Panel 2018 report notes, “Some of the most important deficiencies are associated with calcium, iron, vitamin A and zinc. Deficiencies in a single micronutrient can carry serious health, as well as economic costs. For example, the cumulative economic cost of cognitive impairment and lower labour productivity due to iron-deficiency anemia is on average 4% of GDP for low-income countries.”

Meat Provides a Unique Nutrient Package Important to Reducing Key Indicators of Malnutrition

“Defining an optimal level of ASF consumption is a challenge considering the complex impact of ASF on health and nutrition status. While all ASF contain unique packages of highly bio-available nutrients, certain ASF make significant contributions of key nutrients, such as calcium in dairy, zinc and iron in meat and omega-3 fatty acids in oily fish. Diets low in ASF often result in deficiencies in iron, zinc, vitamin A and vitamin B12 (Allen, 2012). The key micronutrients present in ASF, except vitamin B12, are also present in plants but their density and bio-availability is higher in ASF, making them an important source of nutrients. The specific needs of vulnerable groups should be considered when making recommendations regarding ASF consumption. The nutrients in ASF are especially important for young children, pregnant and lactating women, as well as for people suffering from malnutrition.” (HLPE, 2017)

Access to ASF by the poorest remains limited. This limitation affects health because ASF are more concentrated sources of nutrients. (HLPE, 2017)

The WHO Global Nutrition Targets 2025 include a global reduction of anemia in women of reproductive age by 50%. The recently released 2018 Global Nutrition Report finds that no country is on track to reach this target and as such categorizes anemia in this vulnerable population as “intractable”. Global prevalence of anemia in girls and women aged 15 to 49 remains high at 32.8%, increasing from 31.6% in 2000. “There are significant differences between pregnant and non-pregnant women. In pregnant women, global prevalence has decreased only slightly from 41.6% in 2000 to 40.1% in 2016. Among women who are not pregnant, it has risen slightly from 31.1% to 32.5% over the same time.” (Global Nutrition Report, 2018)
The WHO Global Nutrition Targets 2025 also include a global reduction of stunting in children under the age of 5 by 40%. It is estimated that 22% of the world’s children are stunted and while the average annual rate of stunting is declining globally, the rate (2.3%) is insufficient to keep pace with the 2025 goal.

The nutrients in ASF are especially important for young children, pregnant and lactating women, as well as for people suffering from malnutrition. (HLPE, 2017) Results from a cross-sectional study conducted through the Global Network for Women’s and Children’s Health Research in Guatemala, Democratic Republic of Congo, Zambia, and Pakistan indicate that, after controlling for covariates, meat consumption is associated with less stunting (OR=0.64; 95% CI, 0.46-0.90) among toddlers (Krebs et al., 2011). Randomized controlled trial results support this observation with breastfed infants randomly assigned to receive meat puree vs infant cereal as their primary complementary feeding experiencing greater linear growth and weight gain without excessive gain in adiposity (Tang and Krebs, 2014).

Children living in livestock-owning households are often less likely to be stunted, regardless of household poverty levels (Carletto et al., 2015). (HLPE, 2017). Further results indicate that expanded livestock ownership can improve livelihoods (Banerjee et al., 2015) and can shift the entire local food economy in that it influences food consumption by households that lack farm animals (Jodlowski et al., 2016; HLPE, 2017).

**Policy recommendations related to red meat production and consumption are hampered by imprecision in global production, food and micronutrient consumption, and loss/waste data**

Global FLW data is scarce. At a recent workshop hosted by the U.S. National Academies of Sciences, Engineering, and Medicine’s (NASEM) Science and Technology for Sustainability Program, FAO Statistician Carola Fabi noted that the FAO food database is missing 95.6% of global FLW data.

http://sites.nationalacademies.org/pga/sustainability/foodloss/index.htm

Collection of FLW data is inconsistent between and within countries. At the same NASEM workshop, Jane Buzby of the United States Department of Agriculture Economic Research Service noted that USDA, in contrast to FAO, excludes inedible portions from loss and waste calculations but considers lost moisture in their calculation of loss and waste  http://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_189377.pdf.

There is a need to harmonize, across commodities and different stages of the supply chain, the measurement frameworks for FLW, to allow for structural, reliable and comparable data about the amount of FLW within countries but also at global level, to facilitate exchanges of information and experiences. The use of standardized criteria is key to measuring FLW and to assess where to take action to reduce FLW. These criteria must be scientifically supported and validated by stakeholders in order to reconcile the different situations regionally and over time. (HLPE, 2014)

The lack of reliable measurements for meat consumption and lack of a standardized lexicon for meat is a rate limiting step in an accurate and reliable evaluation of red and processed meat intake. “Meat” is a broad food category that is not standardized in the nutritional epidemiology literature. Observational studies commonly report intake of “red meat” or “red and processed meat” or “white meat” without further definition making associations between meat intake and disease outcomes nebulous (Oostindjer et al., 2014).

Despite anemia reduction being a WHO Global Nutrition Target, few countries collect internationally comparable data on the quality of women’s diets (HLPE, 2017).

“Although consumption data could be conceived as a proxy for nutritional status, evidence of actual change in nutritional status is needed if we are to compare the effectiveness of agricultural interventions with that of more nutrition-specific interventions such as infant food fortification. However, food consumption data are required in addition to nutritional outcomes, as nutritional status can change as a result of nondietary factors.” (Turner et al., 2013)

Regarding the Global Burden of Disease database which tracks the association between non-communicable diseases (NCDs) and food consumption, the recently released 2018 Global Nutrition Report notes: “There are limitations of the GBD data that should be noted. Standardized primary individual-level dietary data collection and analysis is not available in many countries and regions of the world. Thus, the GBD relies on various surveys and modelled data and does secondary data analysis to understand how key dietary indicators relate to undernutrition and NCDs. Dietary data is from mixed sources and is not available for all countries; particularly limited data is available from nationally representative 24-hour dietary recall from developing countries. The 24-hour diet recall is considered the gold standard method of dietary assessment while evidence from validation studies suggests it is not highly reliable due to underreporting of intake. In the absence of national food composition tables, many countries rely on data from other countries (e.g. US Department of Agriculture food composition tables) to estimate nutrient intake and this approach can under or overestimate the true intake of nutrients in those countries” (Global Nutrition Report, 2018)
For example, inaccurate estimation of the total and saturated fat content of beef available in the marketplace can impact national food intake survey data that links to national nutrient databases and further confound associations between food consumption and NCD risk. In a recent comparison of selected nutrients in beef according to food composition databases from various countries, Wyness et al. (2011) noted a range of 3.6–10.4 g total fat per 100 g of raw, lean, beef. Wyness et al. (2011) listed variable time periods of analyses, with some being conducted more recently than others or with newer methods, as one of the reasons for this range.

The 2018 Global Nutrition Report recommends the prioritization and investment in data collection and the capacity to use it as one of 5 critical steps to speed up progress on meeting goals to reduce malnutrition, noting that, “Without good data, we’re just guessing.” Specifying that “In particular, disaggregated data – by geography, socioeconomic status and gender – and increased use of geospatial and disaggregated subnational data, mean we can better understand where the burden of malnutrition lies, how it has changed, why it exists and what this means for reaching nutrition targets. Governments and research, multilateral and academic institutions must increase capacity to carry out data collection and analysis, and improve coverage and frequency of the collection of disaggregated data.” (Global Nutrition Report, 2018)

In conclusion, as noted in HLPE 2015, “Livestock and/or aquaculture are an important part of agricultural production systems and agroecological approaches, providing milk, meat, eggs, fish, cash income, farm power and manure that can enhance soil fertility, while being often nurtured by hay and other crop residues. Being high in nutrition value, livestock products are important for food and nutrition security. Livestock also has important cultural values, and is a means for poor people to accumulate wealth and provide some resilience to drought and other harsh environments.”

“Trade-offs and unintended effects of diet changes: Although a single change in diets may bring multiple outcomes, these may not all be beneficial. A nutritional intervention may have unintended environmental, economic and social consequences.” (HLPE, 2017)

Studies Cited in Comment


Ledgard S., Mark Lieffering, Dan Coup, Ben O'Brien; Carbon footprinting of New Zealand lamb from the perspective of an exporting nation, Animal Frontiers, Volume 1, Issue 1, 1 July 2011, Pages 40–45, https://doi.org/10.2527/af.2011-0010


Additional Publications for Further Consideration by HLPE


