

Abstract

Defining Public Health Nutrition Goals Based on Food Balance Sheets—A Proof-of-Principle[†]

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Abstract: Background and objectives: Food balance sheets (FBSs) provide comprehensive annual information on a country's food supply, reflecting possible trends in a population's overall food consumption. However, FBSs essentially refer to agricultural products and primary commodities, rather than foods ready to be consumed. Therefore, FBSs have only limited value for assessing the nutritional adequacy of a country's food supply. However, certain data transformations could substantially enhance the suitability of FBSs for public health purposes, considering human and planetary health alike. Methods: Schwinglhackl et al. (2019) [1] estimated disability-adjusted life years (DALYs) attributable to the intake of food groups as well as respective theoretical minimum risk exposure levels (TMRELs). These data are translated into respective food supply using ratios of FBS data and respective nationally representative food consumption. Poore and Nemecek (2018) [2] provide data on the environmental impact of 43 agricultural products along the complete supply chain, allowing the analysis of various sustainability parameters for specific products or the entire food supply. Results: The inadequate consumption of nuts or fruits has the highest contribution to food-related DALYs (approx. 20% each), followed by fish and soft drinks (approx. 15% each), and legumes, vegetables, meat, or dairy (approx. 8% each). The average consumption of red meat exceeded the respective TMREL by a factor of 2.6, whereas the consumption of most other food products reached the TMREL only by fraction, e.g., fish and legumes: 20%, respectively, nuts: 26%, and vegetables: 49%. Animal products make up more than 75% of the greenhouse gas emissions attributable to the food sector (red meat: 28%, dairy: 30%, butter: 10%, poultry, fish, and eggs together: 8%). The situation is quite similar when considering freshwater use. Discussion: Despite serious methodological limitations of FBS data, they can provide a valuable basis for defining public health nutrition goals. Clearly, human and planetary health would both benefit from a drastic reduction in meat consumption and a sincere endeavor to replace animal products with plants.

Keywords: food balance sheets; food supply; DALYs; sustainability; public health nutrition



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