

Title Luxus consumption: wasting food resources through overeating
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Abstract

In this paper, we redefine the term luxus consumption to mean food waste and over consumption leading to storage of body fat, health problems, and excess resource utilization. We develop estimates of the prevalence of luxus consumption and its environmental consequences using US food supply, agricultural, and environmental data and using procedures modeled after energetics analysis and ecological footprint analysis. Between 1983 and 2000, US food availability (food consumption including waste) increased by 18% or 600 kcal (2.51 MJ) per person. This luxus consumption required 0.36 hectares (ha) of land and fishing area per capita, 100.6 million ha for the US population, and 3.1% of total US energy consumption. Luxus consumption increased more for particular foods, such as high fructose corn syrup (HFCS), 22% of which was used in carbonated beverages. As an example, the luxus consumption of sweetened soda, 31.8 l per capita, used 0.8% of the US corn crop (230,555 ha of land); 33.6 million kg of nitrogen fertilizer; 175,000 kg of Atrazine herbicide; 34 million kg of nitrogen fertilizer; 2.44 trillion kcal (10.2 PJ) for production inputs and post-harvest handling; and led to 4.9 million metric tons of soil erosion. Diet soft drink luxus consumption was 43.9 l/capita. Assuming half of US soft drink luxus consumption was bottled in plastic, the energy cost for plastics would have been 2.49 trillion kcal (10.4 PJ) in 2000. Total HFCS availability above baseline in 2000 required 4.6 times the resources used for soft drinks alone. This analysis suggests the utility and applicability of the concept of luxus consumption to environmental analysis and for estimating the effects of excess food utilization.