

# The intrinsic food price: A new metric for global food policy

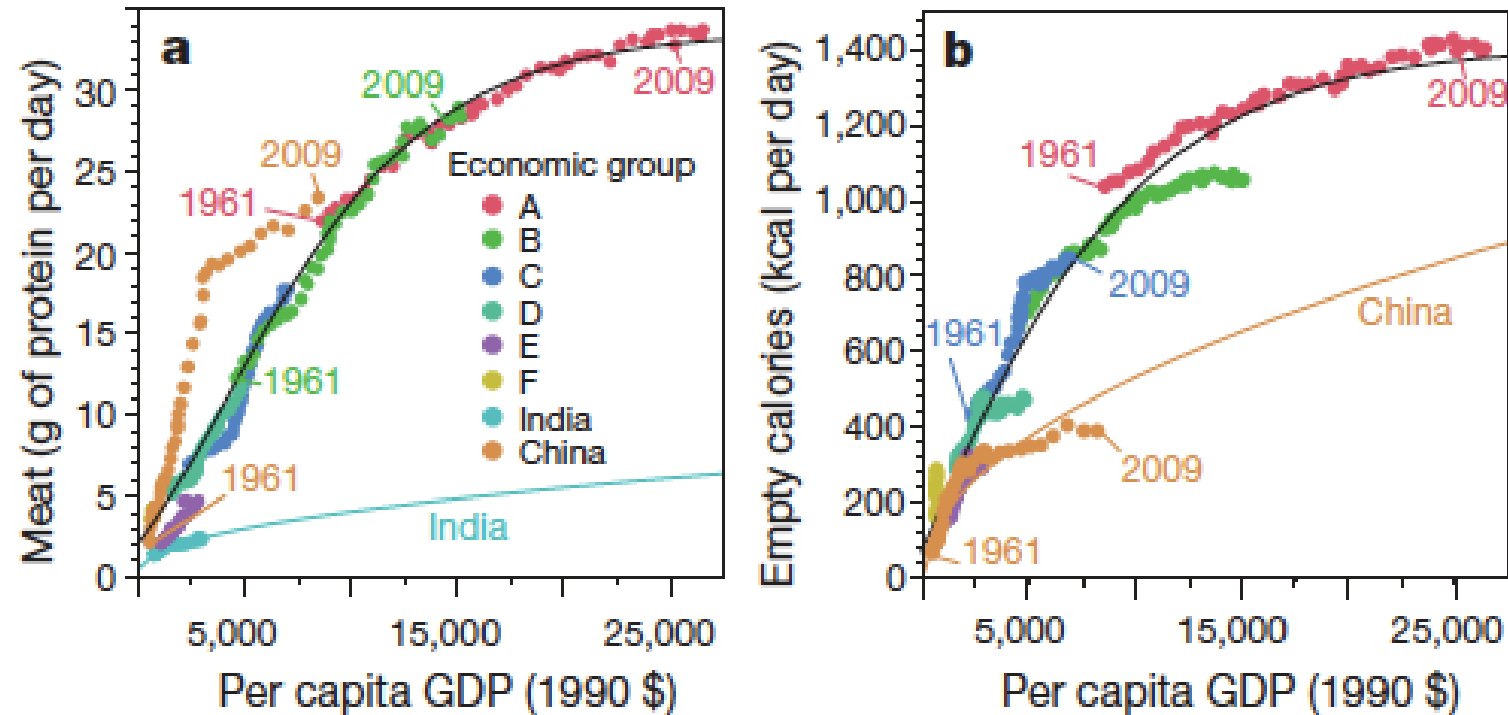
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# Unhealthy and unsustainable dietary trends



Note: Each point is an annual datum for 1961 to 2009 for India, China, and six economic groups containing 98 other nations.  
Source: Tilman and Clark (2014).

# Motivate healthy and sustainable food consumption behaviours

- Debates on food price
  - Price changes may shift diets
  - Food price elasticity is low
- Underlying assumptions of the neoclassical consumption theory
  - Independence of utilities (the utilities of goods are well presented by monetary values, perfect market)
  - Homogeneity (structure of demand does not change)
  - Consistency (preference does not change)

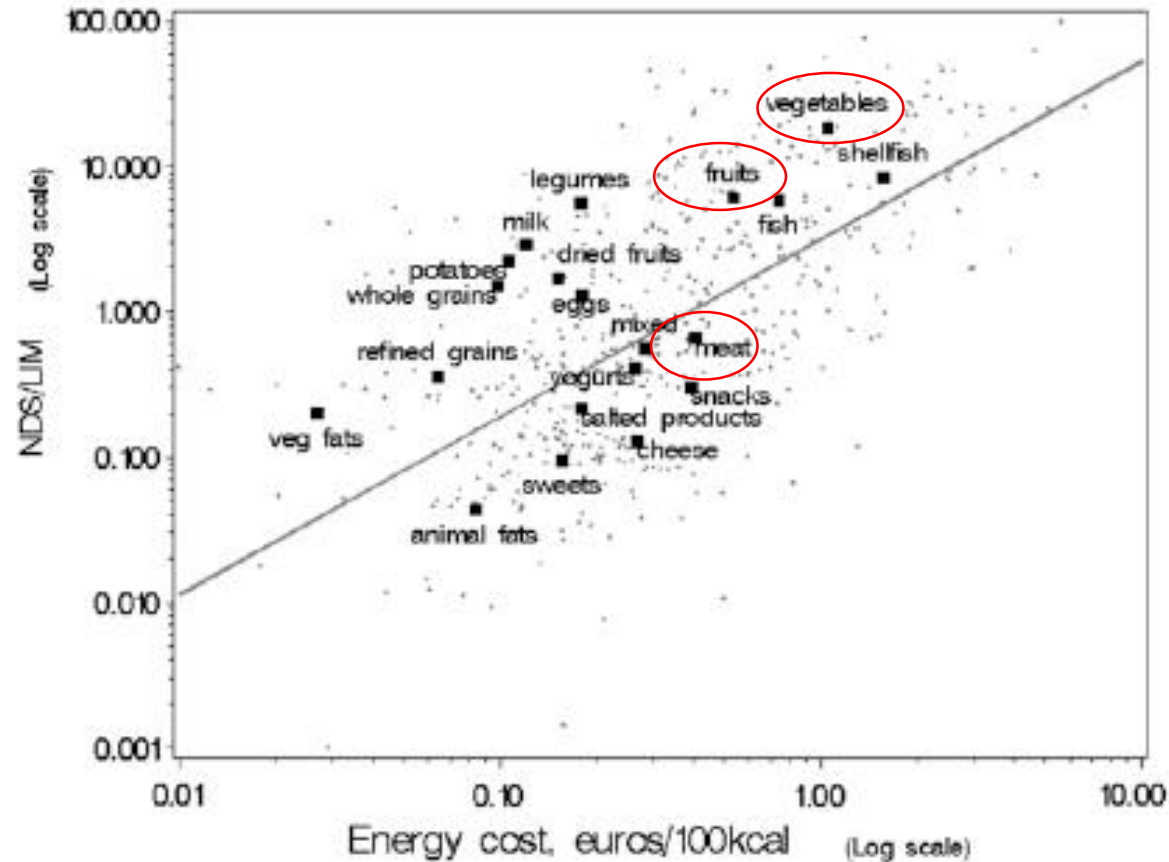
# Value the intrinsic characteristics

- Any food item possesses more than one intrinsic characteristic and these intrinsic characteristics can provide the satisfaction that a consumer requires, while the food item represents a combination of these intrinsic characteristics (Lancaster, 1966)
- Food contains many intrinsic characteristics, such as nutrients, ecology, outlook etc. and these intrinsic characteristics are the drivers of food consumption behaviour

# A new metric - Intrinsic food price

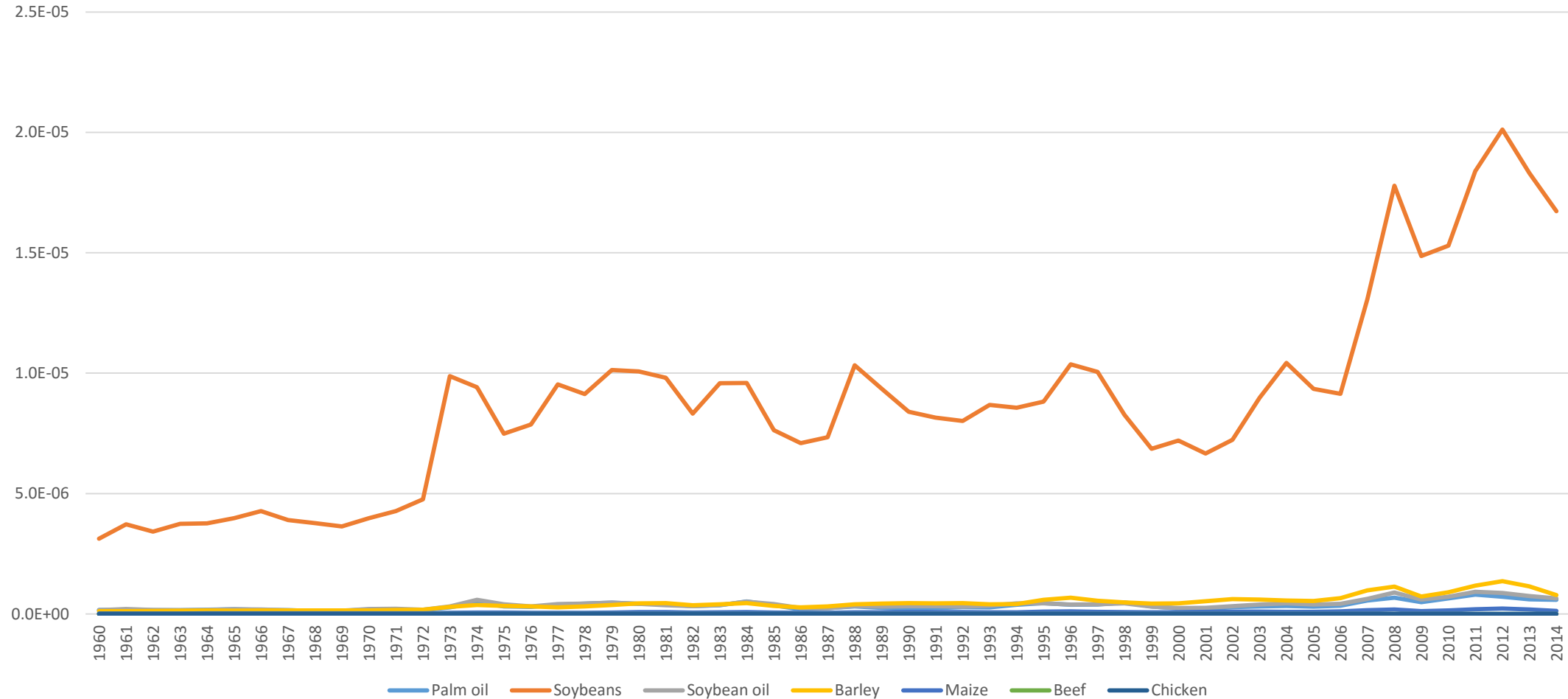
- Food price is  $P$  (\$/kg)
- Calorie content per kg is  $N$  (Kcal/kg)
- $\text{CO}_2$  emission per calorie is  $S$  ( $\text{gCO}_2/\text{Kcal}$ )
- Intrinsic food price is measure by  $P/N/S$  (\$/ $\text{gCO}_2/\text{Kcal}$ )

# Market imperfections— unhealthy food is cheaper



Note: Log of NDS/LIM indicates the quality of food. The higher of the index, the more nutritious of the food. Nutrient Density Score (NDS) and Limited Nutrient Score (LIM).  
Source: Maillot et al. (2008). French INCA survey.

# Market imperfections– unsustainable food is cheaper



Source: USDA (2016). Unit:  $\$/\text{CO}_2/\text{Kcal}$

# Market imperfections— unsightly food is cheaper



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# Outlook

- Analyse dietary patterns under food market imperfections
- Estimate the impacts of intrinsic prices on the structural change of food consumption

Thank you very much for your attention!

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