

**Paper 13: Design of a
statistical system for
measuring food quality and
food safety in the perspective
of consumer needs**

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UK

Dimensions of food quality

- Nutrition – methodology outlined
- Methods of production on farm
- Food safety
- Public perception
- Example of measurement within a wider framework of indicators

Significance of nutritional dimension of quality

- Increasing segmentation of society into disciplined and undisciplined
- Obesity trebled in England since early 1980s
- Diet related health problems cost National Health Service £2b a year
- Plus wider social and economic costs
- Compare with costs of food safety issues

Nutritional methodology

- Expenditure and Food Survey of 7,000 households
- Wider household budget survey
- Diary of food purchases including quantities
- Calculation of nutrient content of food purchased
- Nutrient factors applied to each food type

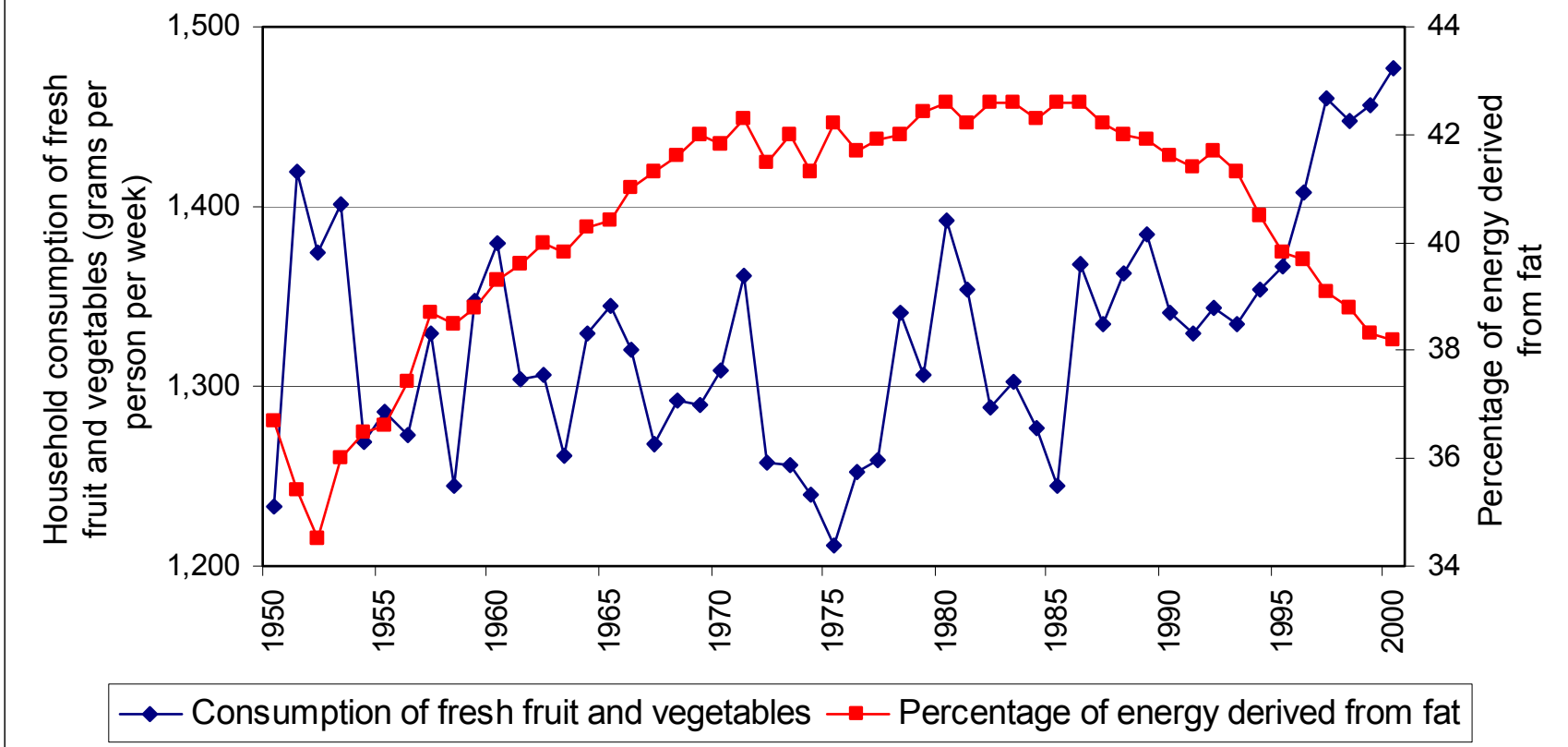
Examples of factors

Food item	nutrient	unit	nutrient factor
Pasteurised whole milk	Animal Protein	g	0.034056
	Fat	g	0.042622
	Saturates	g	0.028277
	Mono-unsaturates	g	0.011868
	Poly-unsaturates	g	0.001445
	Carbohydrate	g	0.052632
	Energy - Kcal	kcal	0.709758
	Calcium	mg	1.29
Iron	mg	0.000413	
...			
Minced beef	Animal Protein	g	0.202683
	Fat	g	0.141603
	Saturates	g	0.062781
	Mono-unsaturates	g	0.062916
	Poly-unsaturates	g	0.004521
	Carbohydrate	g	0
	Energy - Kcal	kcal	2.085156
	Calcium	mg	0.086026
Iron	mg	0.014891	
...			

Nutrient factors

- In total factors for 47 nutrients for each of 260 food items i.e. over 12,000 factors
- Similar calculation for food eaten out of home
- Factors determined through nutritional analysis of different products within each food code
- Targeted periodic updates of factors
- Complication of growth in processed foods

Trends in household consumption of fresh fruit and vegetables (a), and percentage of energy derived from fat



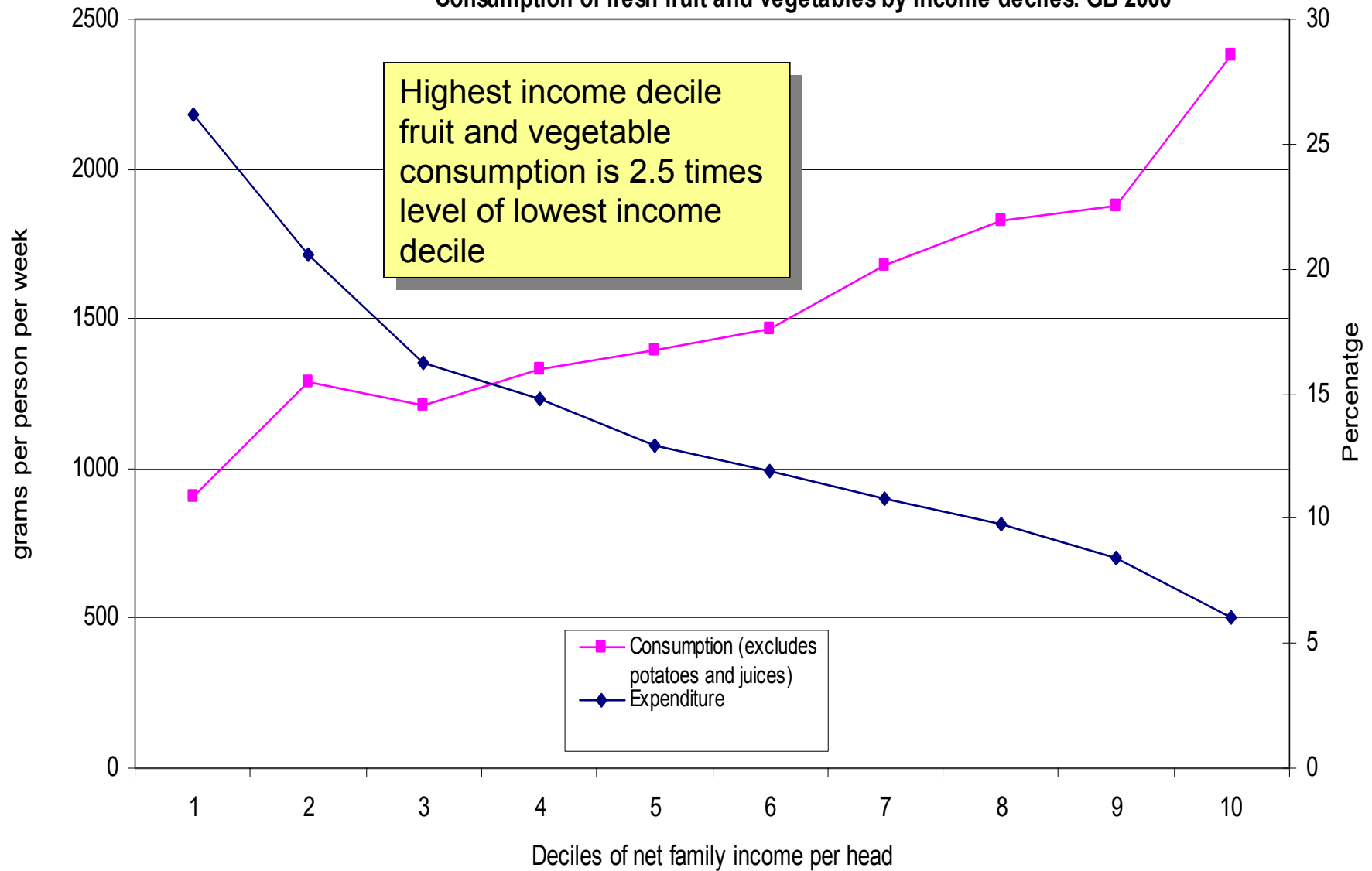
(a) includes only fresh fruit and fresh vegetables (excluding potatoes).

Juices, canned, frozen and other fruit and vegetable products are excluded.

Source: National Food Survey, DEFRA

**Target for energy
from fat of 35%**

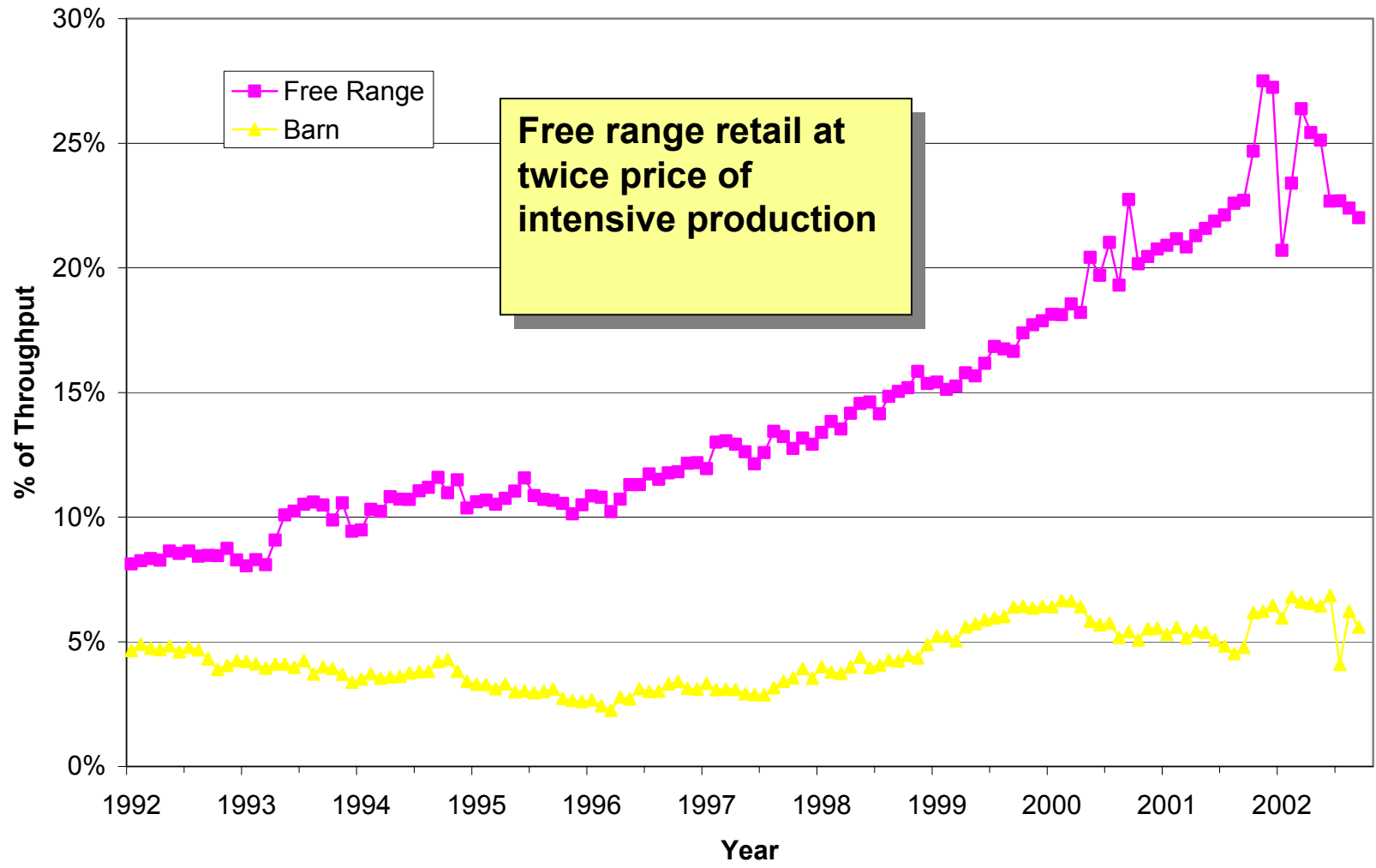
**Expenditure on food and drink as percentage of net family income per head
and
Consumption of fresh fruit and vegetables by income deciles: GB 2000**



Methods of production

- Important aspect of quality even when no impact on nutritional content
- Can use direct measurement of production methods
- Environmental impact of production
- Animal health and welfare
- Overlap with agri-environment measure

UK Egg Packing Station Throughput by System

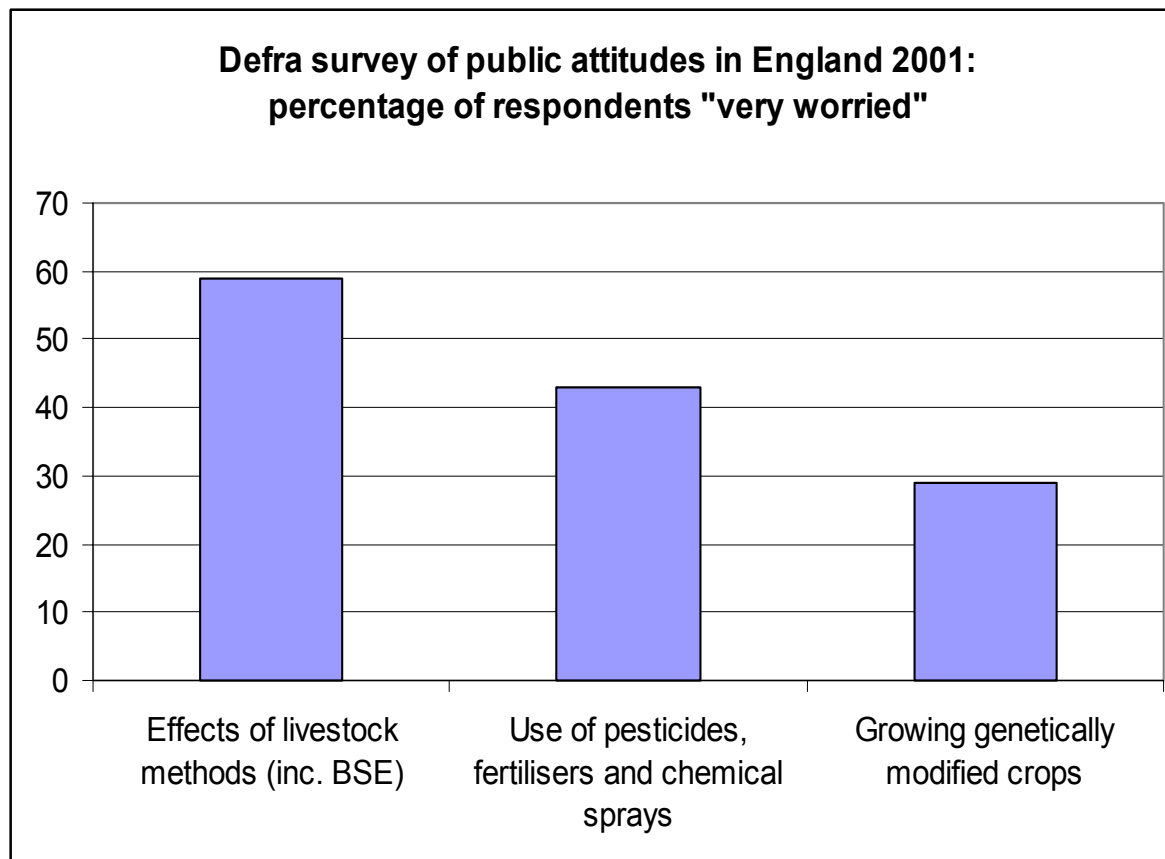


Food safety

- Food borne illnesses e.g. salmonella
- Measurement difficult (e.g. 50% of cases of diarrhoea and vomiting not due to food)
- UK target restricted to laboratory confirmations only
- Can measure bacteria and toxin levels at points in food chain
- Data from surveys plus administrative testing regimes (e.g. pesticide residues)
- Survey of chicken on retail sale in UK found 50% contained campylobacter

Public perception

- Largely determined by other dimensions of quality
- Can be measured directly in its own right



Sustainable Farming and Food Strategy

- Policy on sustainability spans whole food chain
- 9 outcomes across 3 pillars of sustainability (economic, environmental and social)
- Food quality within all 3 pillars
- Set of indicators to monitor progress with the strategy
- Indicators of food quality incorporated into this wider set of sustainability indicators of food chain