



# Public Health Nutrition and Children: possible approaches to obesity prevention

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# Topics

- \* **Social determinants of health**
- \* **Health Promotion & Prevention – the prevention ladder**
- \* **Public Health Nutrition**
  - ➔ **Food and health issues**
  - ➔ **Consumers, children & parents**
  - ➔ **Food security**
  - ➔ **The Environment**

# Story so far...public health and determinants

# What is public health?

(Nuffield 2007)

- \* About understanding the factors that influence people's health, and finding ways of improving it.
- \* Public health policies emphasize prevention rather than treatment of illhealth
- \* Prevention policies are highly effective (Wanless 2004)
- \* Australia spends < 2% of its health budget on prevention.

# Social determinants of health

The social gradient

Stress

Early life

Social exclusion

Work

Unemployment

Social Support

Addiction

Food

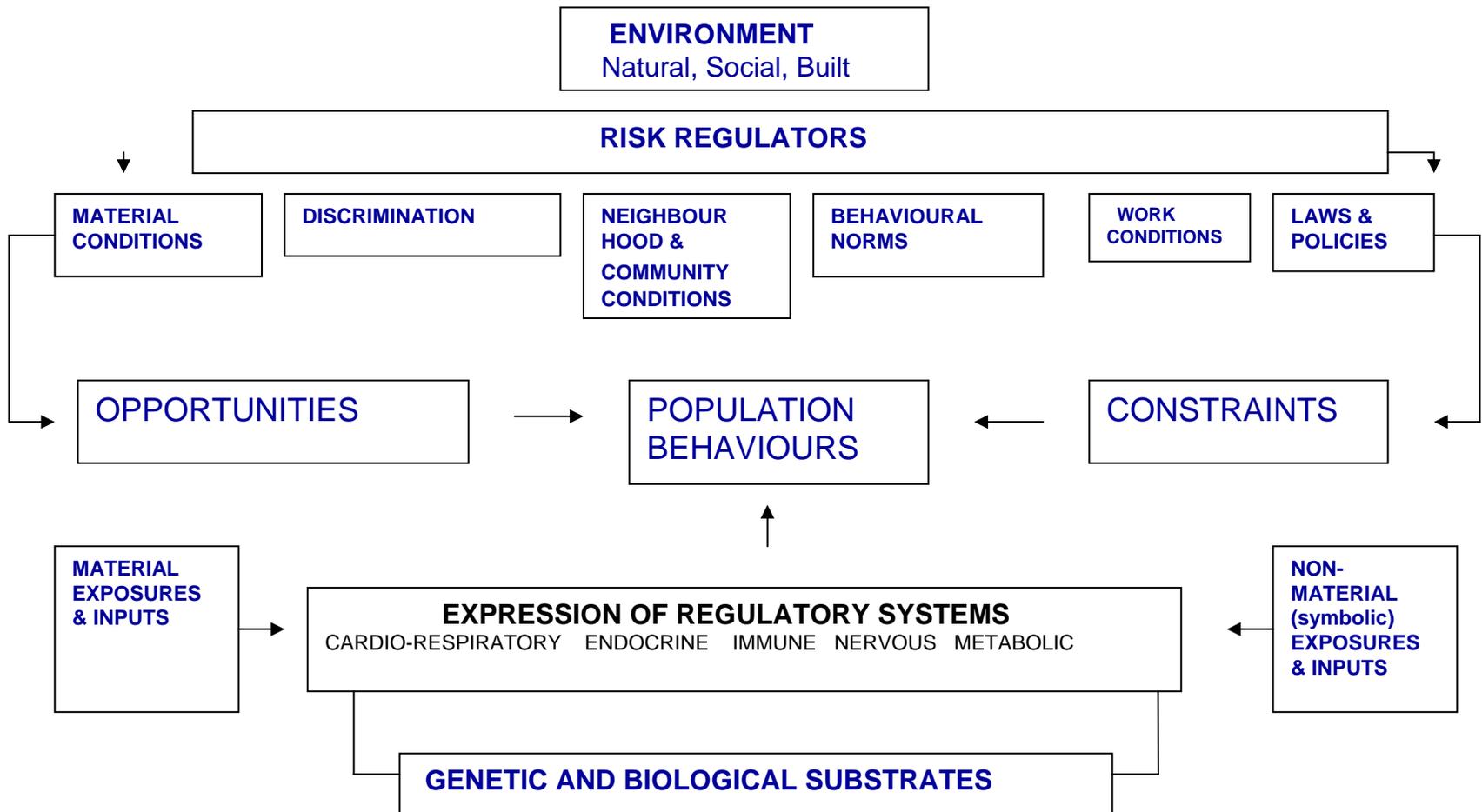
Transport

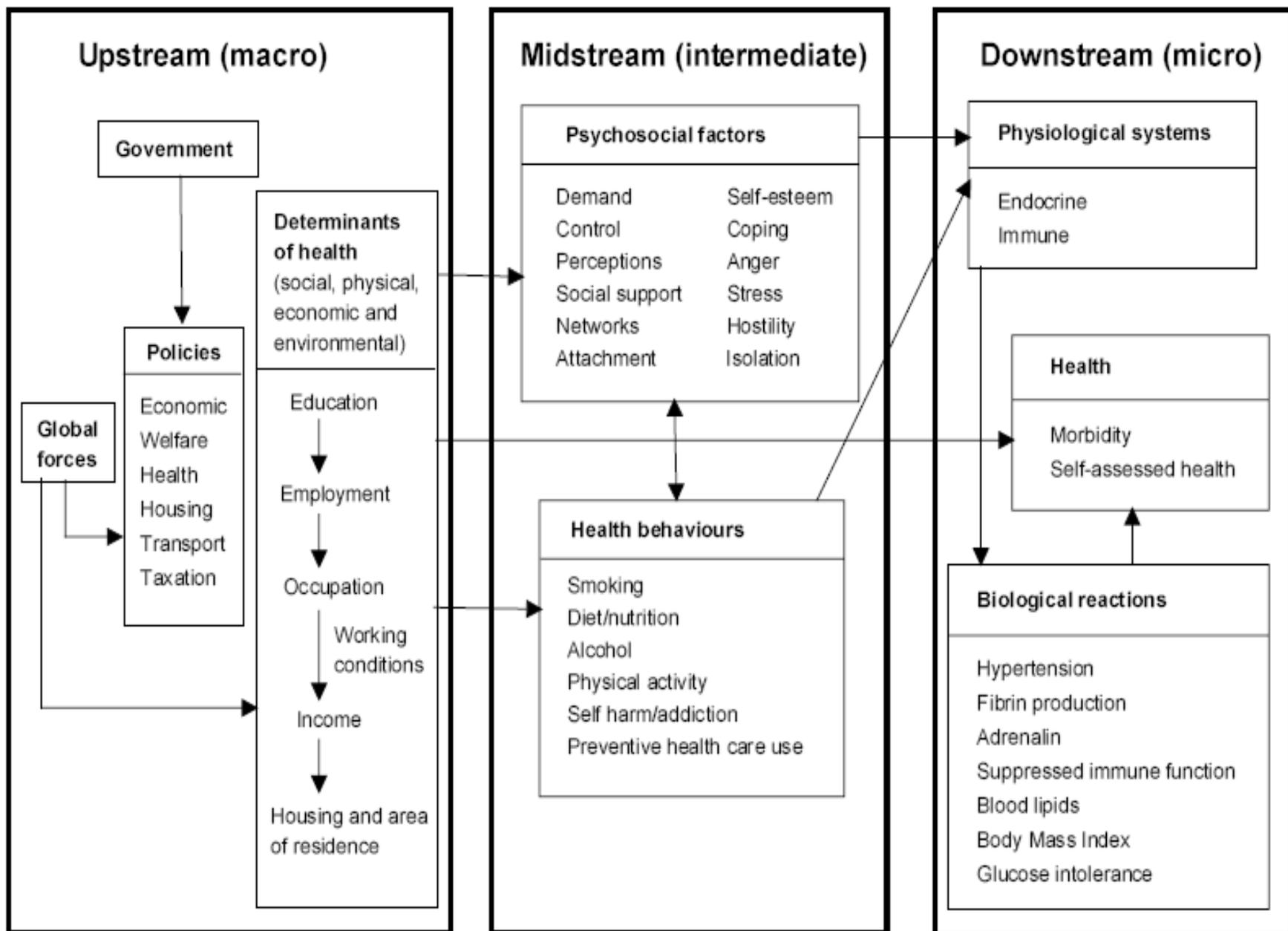
# Commission on Social determinants of Health

- \* [http://www.who.int/social\\_determinants/en/](http://www.who.int/social_determinants/en/)
- \* Wilkinson R and Marmot M (eds) The Social Determinants of health – the solid facts. 2nd Edition, Copenhagen: World Health Organisation.  
<http://www.euro.who.int/document/e81384.pdf>

# Socio-Behavioural–Biological Model

(Glass and McAtee, 2006)





**Doing things about public health  
problems...**

# The Intervention Ladder (Nuffield 2007)

- \* Eliminate Choice - ban high fat foods
- \* Restrict choice – reduce salt in foods
- \* Guide Choice through disincentives – tax high energy foods
- \* Guide Choice through incentives – subsidise fruit and vegies
- \* Guide Choice through changing default policy – offer salad instead of chips as side dish
- \* Enable choice – help to change people’s behaviour – free fruit in schools, bike lanes
- \* Provide information – campaigns - 2+5 a day
- \* Do nothing or monitor the situation – laissez faire marketing regulation in Australia

# The Stewardship model

(Nuffield 2007)

- \* The state has a duty to enable people to lead healthy lives.
- \* Everyone should have a fair opportunity to lead a healthy life. Therefore governments should try to remove inequalities that affect disadvantaged groups or individuals

# Ethical principles in public health

- \* Reduce the risk of ill health that result from other people's actions (drink driving, passive smoking)
- \* Reduce the environmental causes of ill health eg provide clean drinking water, set housing standards
- \* Protect and promote the health of children and other vulnerable people (eg DE&ECE)

# Ethical principles in public health

- \* Help people overcome addictions that harm health or help them avoid unhealthy behaviours
- \* Ensure it is easy for people to lead a healthy life, eg provide convenient and safe opportunities for exercise
- \* Ensure people have access to medical services
- \* Reduce unfair health inequalities

# Public health programs should:

- \* Not attempt to coerce adults to lead healthy lives
- \* Minimise implementation of measures without consulting people (individually or through political processes)
- \* Minimise measures that are very intrusive or conflict with important aspects of personal life (eg privacy)

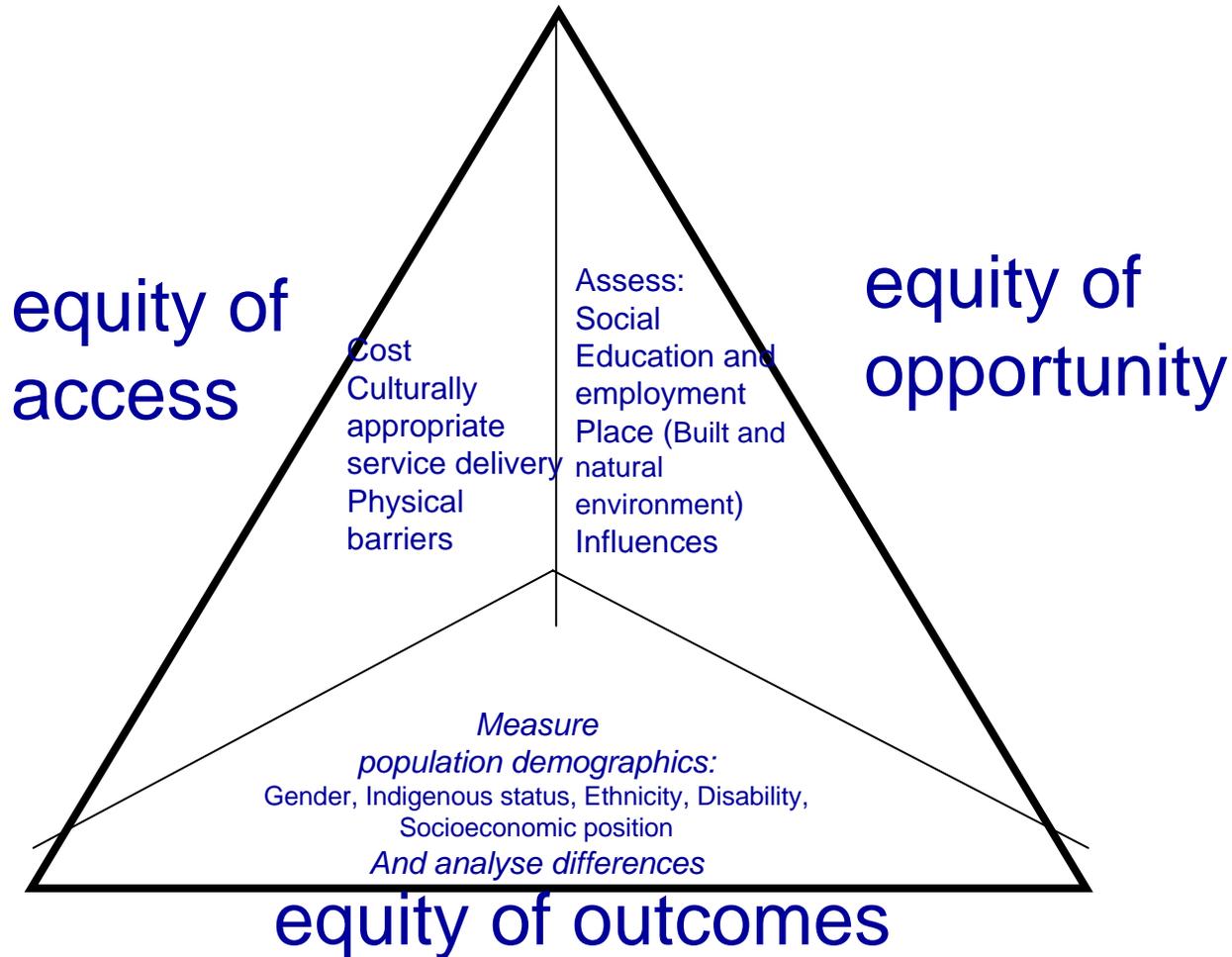
# Jargon terms

- \* **Health** – an instrumental goal – not an end in its own right. Health helps us lead “good” lives – do what we and others want us to do. A necessary condition.
- \* **Disease prevention** – usually chronic disease prevention – emphasized in Australian govt policy
- \* **Health communication** – and social marketing – often sued by governments – can be effective – eg tobacco advertising
- \* **Health promotion** – often deals with inequities and distal social determinants – generally poorly evaluated
- \* **Health production** – extent to which a setting produces health or disease

# Types of health promotion

- \* Communication campaigns – social marketing
- \* The Intervention project
- \* Action Research
- \* Community Participatory Action Research
- \* Systemic change – Total Quality Management

# The Equity Triangle



**THEY'RE HAPPY**  
Because they eat  
**LARD**

www.StrangeCosmos.com



Issued by the Lard Information Council

**Public  
Health  
Nutrition!**

# What is public health nutrition?

- \* Follows the agenda of public health
  - The public good
  - Equity values
  - Policies for Prevention
- \* Multidisciplinary – macroscopic rather than microscopic
  - Social science, Environmental science
  - Organisational behaviour
  - Politics & economics
  - Behavioural science
  - Nutrition science

# What is PHN?

- \* How the food system influences health
- \* Emphasis on upstream influences on dietary patterns leading to health or disease
- \* Strong environmental sustainability, equity, inter-sectoral emphases

# Public Health NUTRITION

*From principles to practice*

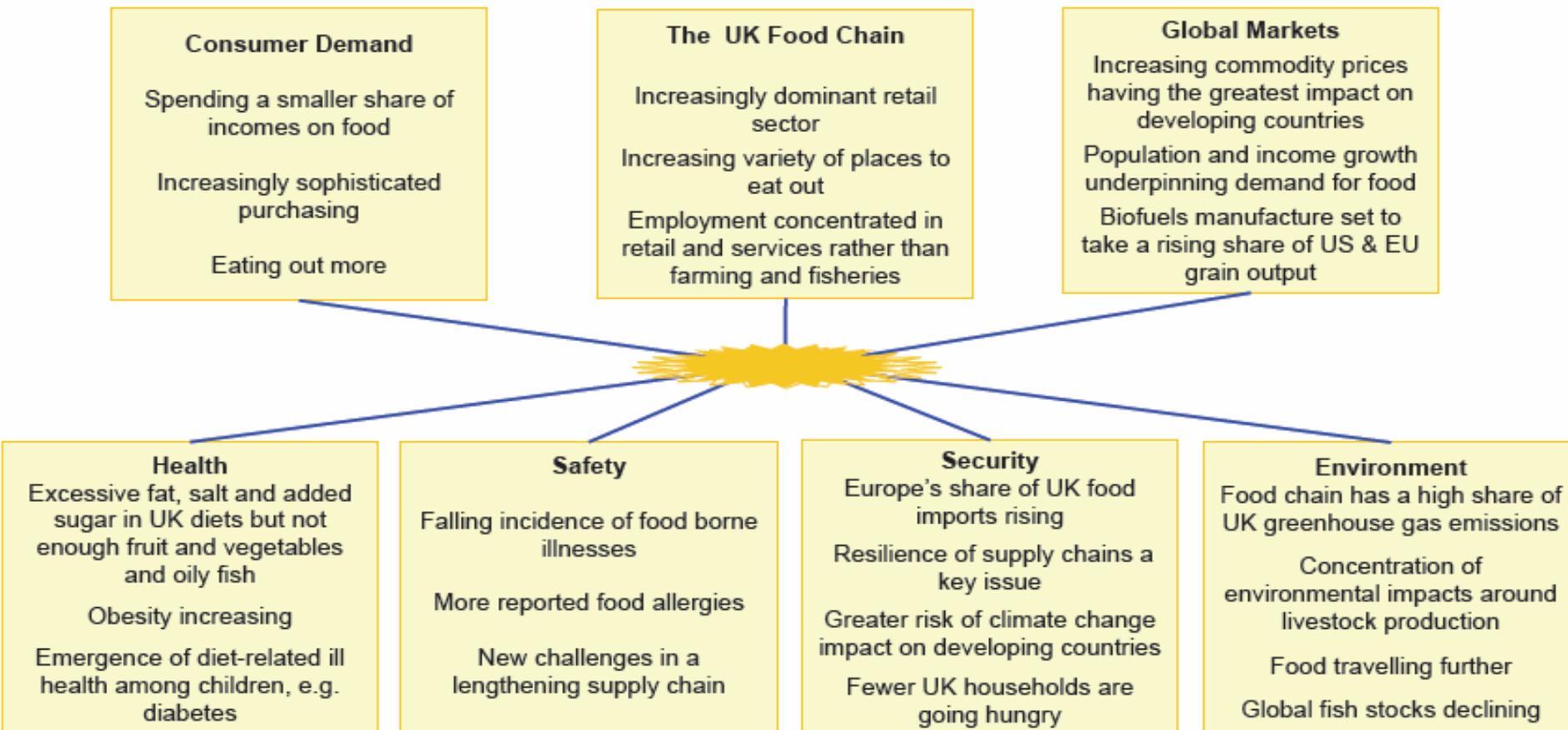


Edited by  
**MARK LAWRENCE & TONY WORSLEY**

# Four important aspects of PHN

- \* **The food supply** - does it promote health or not? Is it sustainable?
- \* **Other sectors** – do they support health food consumption?
- \* **The nutrition science** – how is it used? Functional foods? Is it used to make healthier products eg for children?
- \* **The consumers** - how do they decide what to buy, are they food savvy?
- \* **Education and Communication** – have consumers the cognitive tools to understand the food world?

# Issues in the food system – The example of the UK (UK Cabinet Report 2008)



# Health Issues

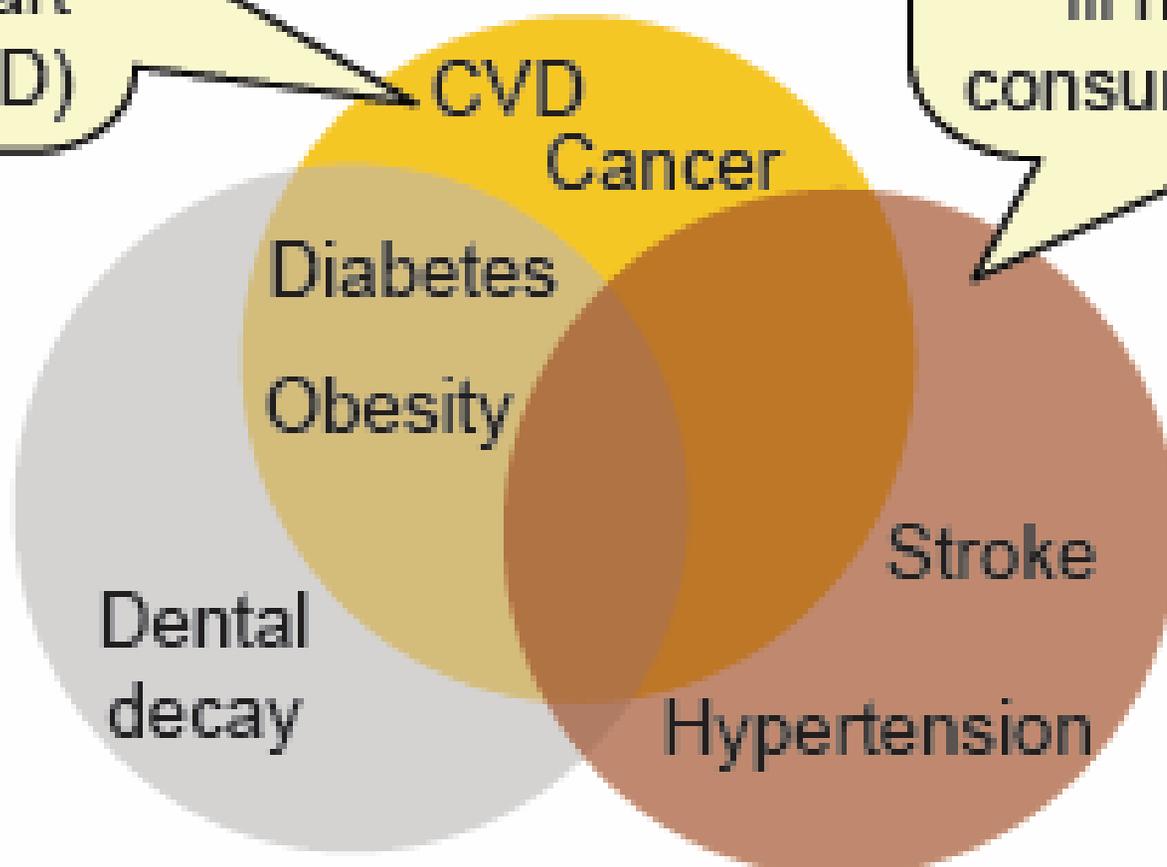
- \* Excessive fats, salt and sugars added to our diets but not enough fruits and vegetables and oily fish
- \* Obesity increasing
- \* Re-emergence of diet related illhealth among children eg Type 2 diabetes
- \* Also, micronutrient deficiencies.

Cardiovascular disease (CVD) includes coronary heart disease (CHD)

Too much saturated fat

Salt, saturated and sugar can become contributing factors in diet related ill health when consumed to excess

Too much added sugar



Too much salt

## Possible Diet and health gains (UK)

	Premature mortality avoided	Quality adjusted life years gained)
Increase fruit and vegetable intake by 136g/day	42,000	411,000
Reduce daily salt intake from average 9g to 6g	20,000	170,000
Cut sat fat intake by 2.5% of energy	3,500	33,000
Cut added sugar intake by 1.75% of energy	3,500	49,000

# Obesity leads to some debates!

## Some of the Work of the Obesity Prevention Coalition

- \* Advertising bans – SA about to act!
- \* Monitoring of breaches of Food standards Code
- \* Front of pack labelling
- \* State governments have a lot of power!

# Front of Pack Traffic Lights

**LOW**

**Fat**

7.7g per serving

**LOW**

**Saturates**

2.0g per serving

**HIGH**

**Sugars**

42.2g per serving

**MED**

**Salt**

2.0g per serving

# The Daily Intake Guide



# The ANGELO Model (Swinburn et al 1999)

TABLE 1

Examples of Prioritized Projects for Further Investigation in Pacific Island Communities

Size	Type			
	Physical (Food and PA)	Economic (Food and PA)	Political (Food and PA)	Sociocultural (Food and PA)
Micro (settings)				
Festivities				Cultural importance of high-fat foods
Neighborhoods	Recreation and sports facilities Safe walking paths			
Schools	Canteens serving local food		Policies on physical education Promotion of traditional activities, e.g., dancing	
Homes	Home gardens			
Churches				Church leaders as role models
Markets	Availability of local food (especially fish and vegetables)			
Macro (sectors)				
Transport	Availability of buses and bus stops			
Health regulatory system			Policies and standards on imported food quality/ labeling	

Note. PA, physical activity.

**TABLE 2****Examples of Microenvironmental Settings and  
Macroenvironmental Sectors**

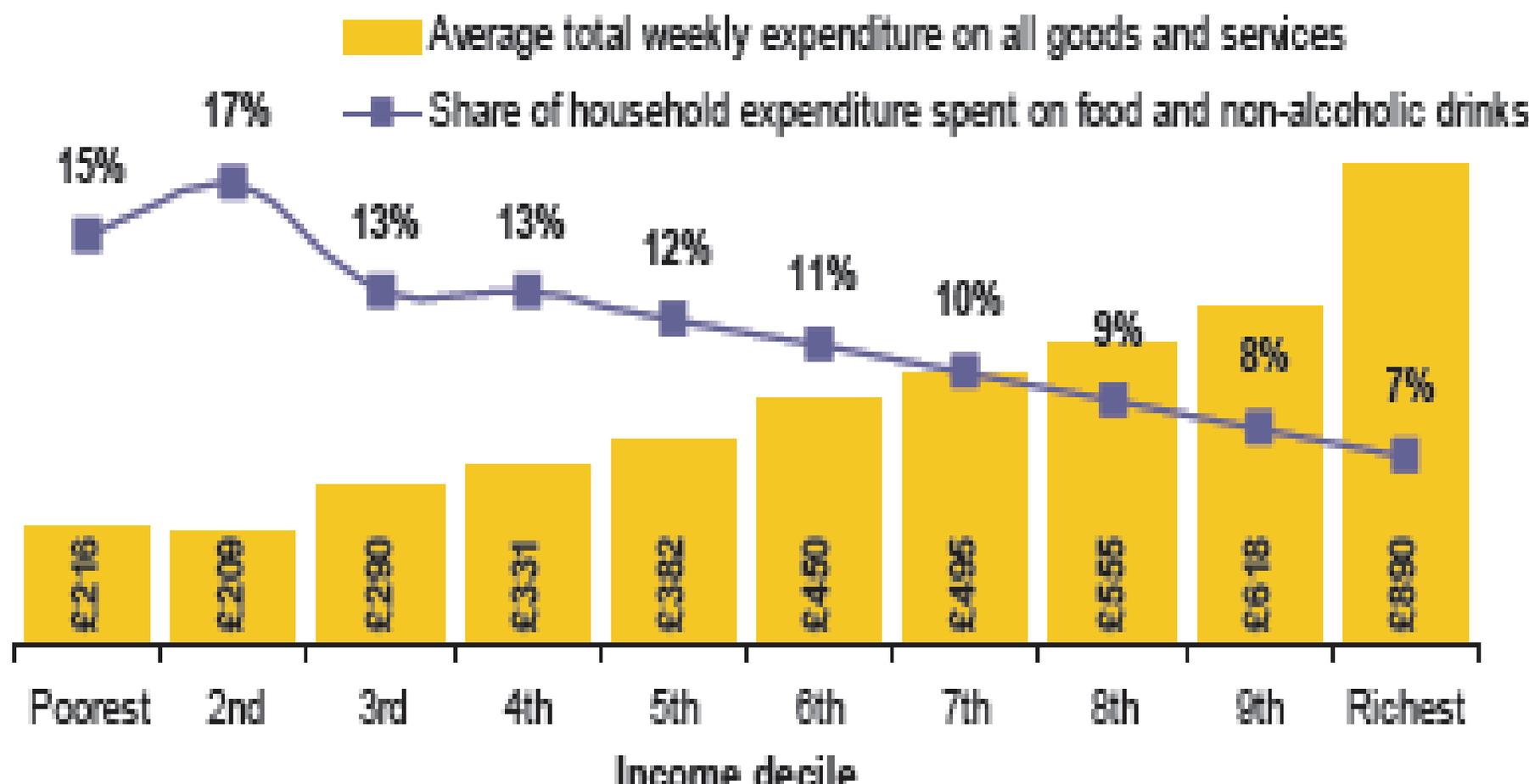
Microenvironmental settings	Macroenvironmental sectors
Homes	Technology/design (e.g., labor-saving devices, architecture)
Workplaces	Media (e.g., women's magazines)
Schools	Food production/importing
Universities/tertiary institutions	Food manufacturing
Community groups (e.g., clubs, churches)	Food marketing (e.g., fast food advertising)
Community places (e.g., parks, shopping malls)	Food distribution (e.g., wholesalers)
Institutions (e.g., hospitals, boarding schools)	Food catering services
Food retailers (e.g., supermarkets)	Sports/leisure industry (e.g., instructor training programs)
Food service outlets (e.g., lunch bars, restaurants)	Urban/rural development (e.g., town planning, local councils)
Recreation facilities (e.g., pools, gyms)	Transport system (e.g., public transportation systems)
Neighborhoods (e.g., cycle paths, street safety)	Health system (e.g., Ministry of Health, medical schools, professional associations)
Transport service centers (e.g., airports, bus stations)	
Local health care (e.g., GP, hospital)	

# Consumers

- \* Until recently, spending a smaller share of income on food (note SES differences)
- \* Increasingly sophisticated purchasing (eg nutraceuticals)
- \* Eating our more(1/3 meals prepared outside home – hence HF Tick and McDonalds!

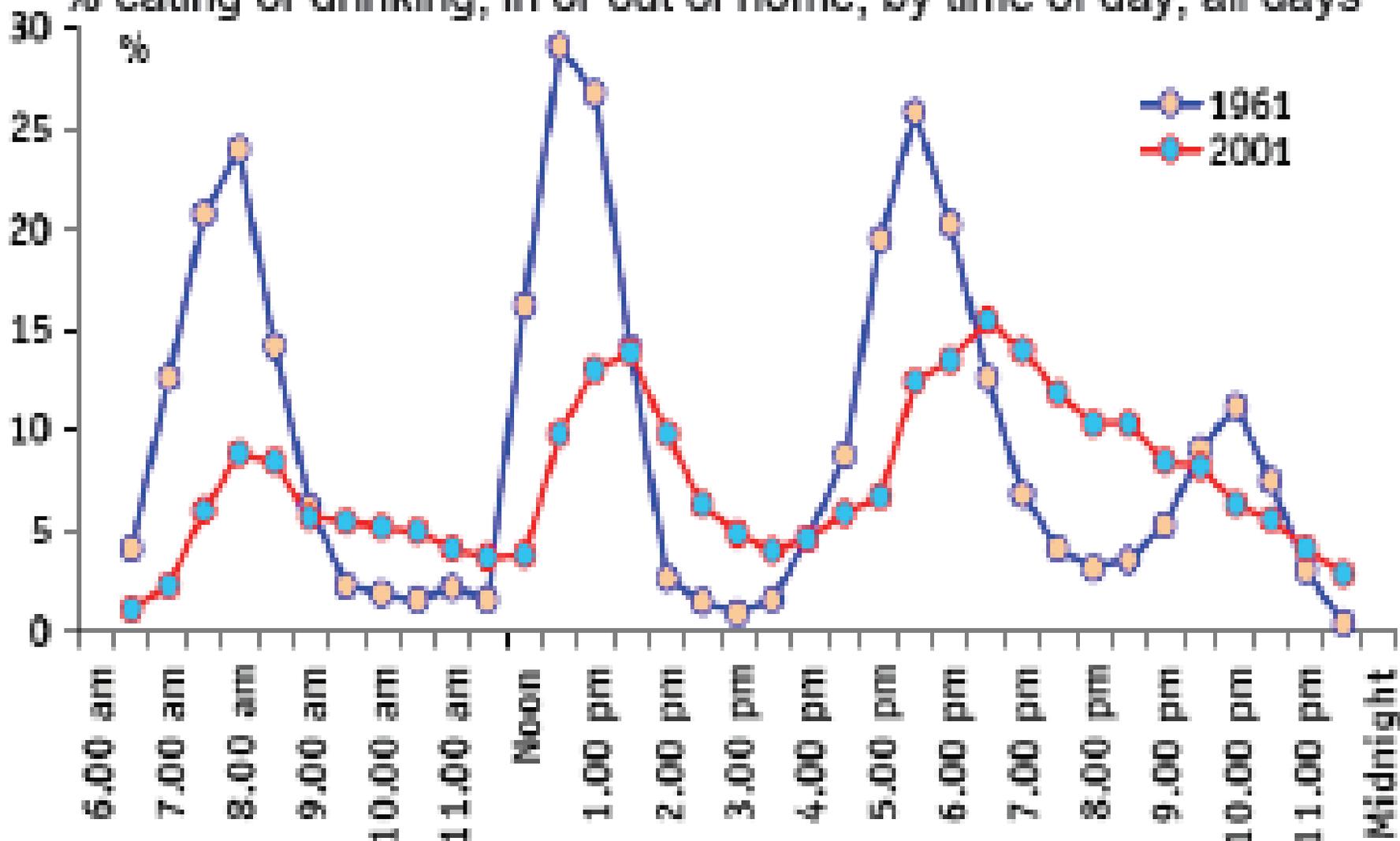
# The poor allocate a higher share of total household expenditure to food than the rich

Average total weekly household expenditure (£) and proportion spent on food (%) by income decile, 2005-06 (equivalised)<sup>2</sup>



# Meals are no longer bound to particular times - people are eating when and where it is convenient

% eating or drinking, in or out of home, by time of day, all days<sup>1</sup>



# Toddlers' liking for foods

% foods liked in each Australian Guide to  
Healthy Eating food group

Russell and Worsley Public Health Nutrition 2007

Extra Foods	56%
Fruit	46%
Dairy	53%
Vegetables	7%
Cereals	64%
Meats	34%

No parent education differences

No breast feeding differences

No SEIFA differences

Major neophobia differences

# Neophobia and food preferences

Russell and Worsley J Nutr Educ & Behavior, 2008

**Table 3.** Pearson Correlations between Scores for Average Liking for Food Groups in the Australian Guide to Healthy Eating and Scores on Children's Food Neophobia Scale (N = 351)

<i>Australian Guide to Healthy Eating Food Group</i>	<b>Pearson Correlation*</b>
Vegetables <sup>a</sup>	-0.60
Meats <sup>ab</sup>	-0.52
Fruit <sup>bc</sup>	-0.44
Cereals <sup>bd</sup>	-0.27
Dairy <sup>cd</sup>	-0.27
Extra Foods <sup>bd</sup>	-0.27

\*P (2-tailed) was < .001 for all correlations. Variables sharing a super-script letter were not significantly different in strength of correlation.

# Neophobia and energy, fat, sugar and sodium content of diet

Russell and Worsley J Nutr Educ & Behavior, 2008

Relationship between the Mean Liking and the Macronutrient and Sodium Content of Each of the Listed Foods<sup>†</sup>

Neophobia Tertiles	Energy Density	Total Fat	Saturated Fat	Sugar	Sodium
Tertile 1 (n = 116)	0,28*	0,09	0,14	0,23*	0,11
Tertile 2 (n = 121)	0,31*	0,08	0,16	0,29*	0,11
Tertile 3 (n = 114)	0,40*	0,16	0,19	0,30*	0,09

\*P < .01

# How parents encourage toddlers to eat vegies

(n= 212=282; % Sometimes or Often: Russell 2007)

Encourage to eat	92	Disguise	77
Eat together	91	Explain or reason	76
Encourage to try	91	Explain health +s	75
Lead by example	90	Offer reject later	73
Prepare differently	89	Select in shopping	69
Expose to variety	87	Help prepare meal	68
Offer untried vegies	83	Peer influence	64
Modify meal	81	Choose for family	62

# How parents encourage toddlers to eat vegies

(n= 212=282; % Sometimes or Often: Russell 2007)

Offer a bribe	60
Grow at home	53
Eat without noticing	52
Offer disliked vegie	51
No siblings criticism	45
Take to restaurants	45
Force to eat	39
Fight or battle	24

# The Food Chain

- \* Increasingly dominant retail sector (especially supermarkets)
- \* Increasing variety of places to eat out
- \* Employment concentrated in retail and services rather than farming and services
- \* Global “free trade” leads to cheap imports which threaten some rural industries

# Global Markets

Increasing commodity prices  
having the greatest impact on  
developing countries

Population and income growth  
underpinning demand for food

Biofuels manufacture set to  
take a rising share of US & EU  
grain output

# Safety

Falling incidence of food borne illnesses

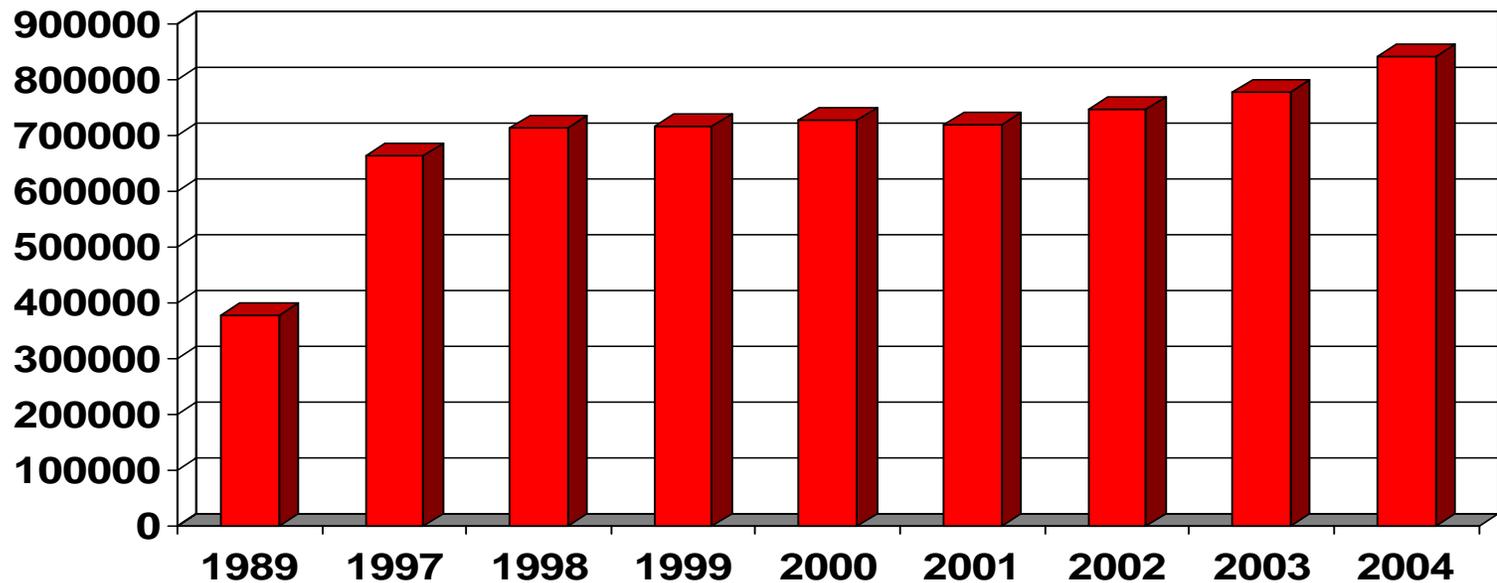
More reported food allergies

New challenges in a lengthening supply chain

# Food Security

- \* Distinguish national, regional and personal food security
- \* Personal insecurity in Victoria ranges from 5 to 10% and likely to increase
- \* Australian food imports rising – risky supplies?
- \* Resilience of supply chains a key issue
- \* Climate change will have biggest impact on poorer countries
- \* Fewer households going hungry in UK, USA ...?Australia (drought in rural areas)
- \* Links between personal insecurity and obesity

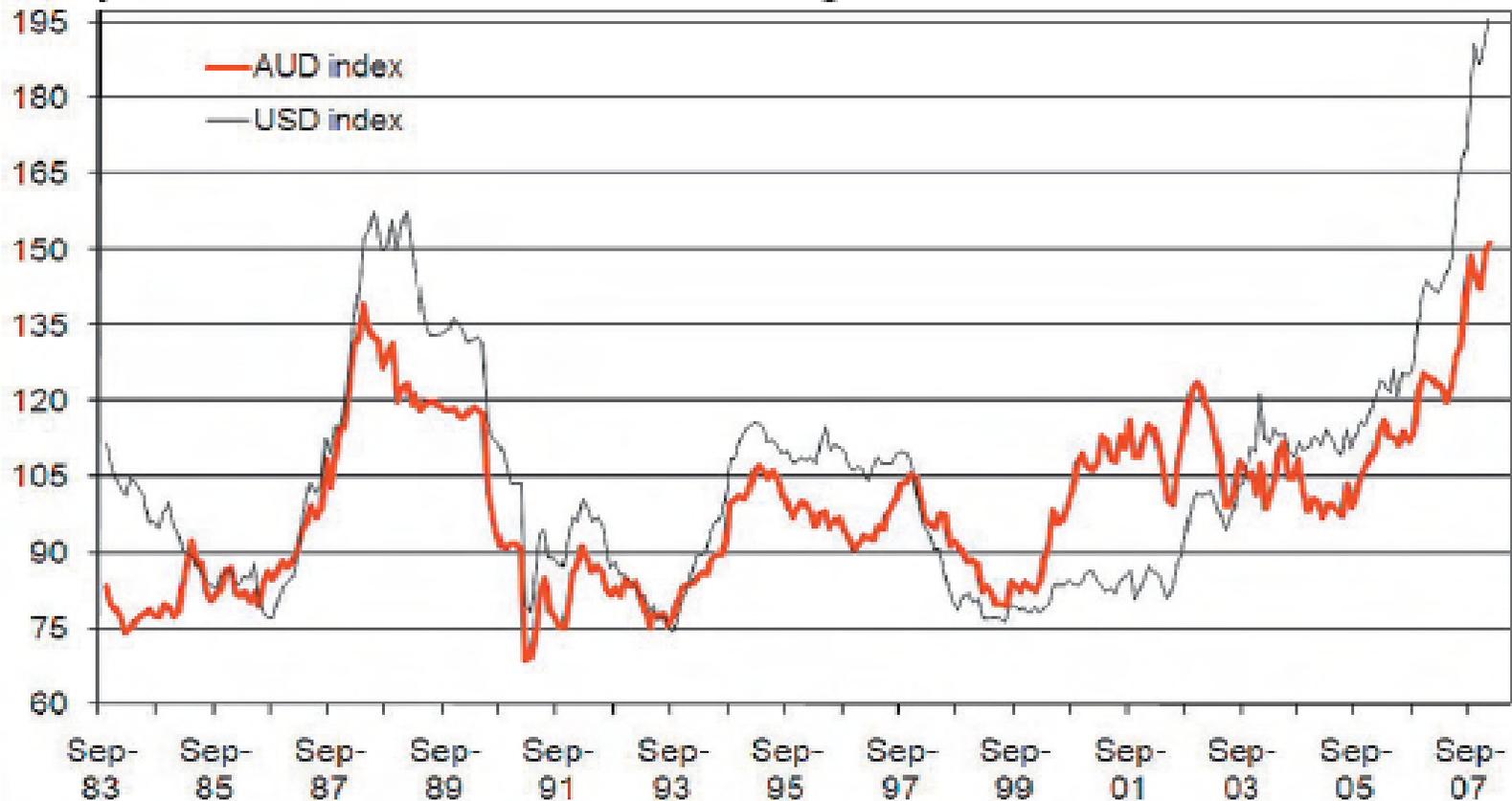
Figure 2.3 Number of Canadians using food banks in the month of March, over a 9 year period; 1989-2004



Source: Canadian Association of Food Banks 'HungerCounts' 2002, 2003, and 2004.

# Australian/US food commodity prices

Graph 2. Historical Index: Average Of 1997/98 = 100.

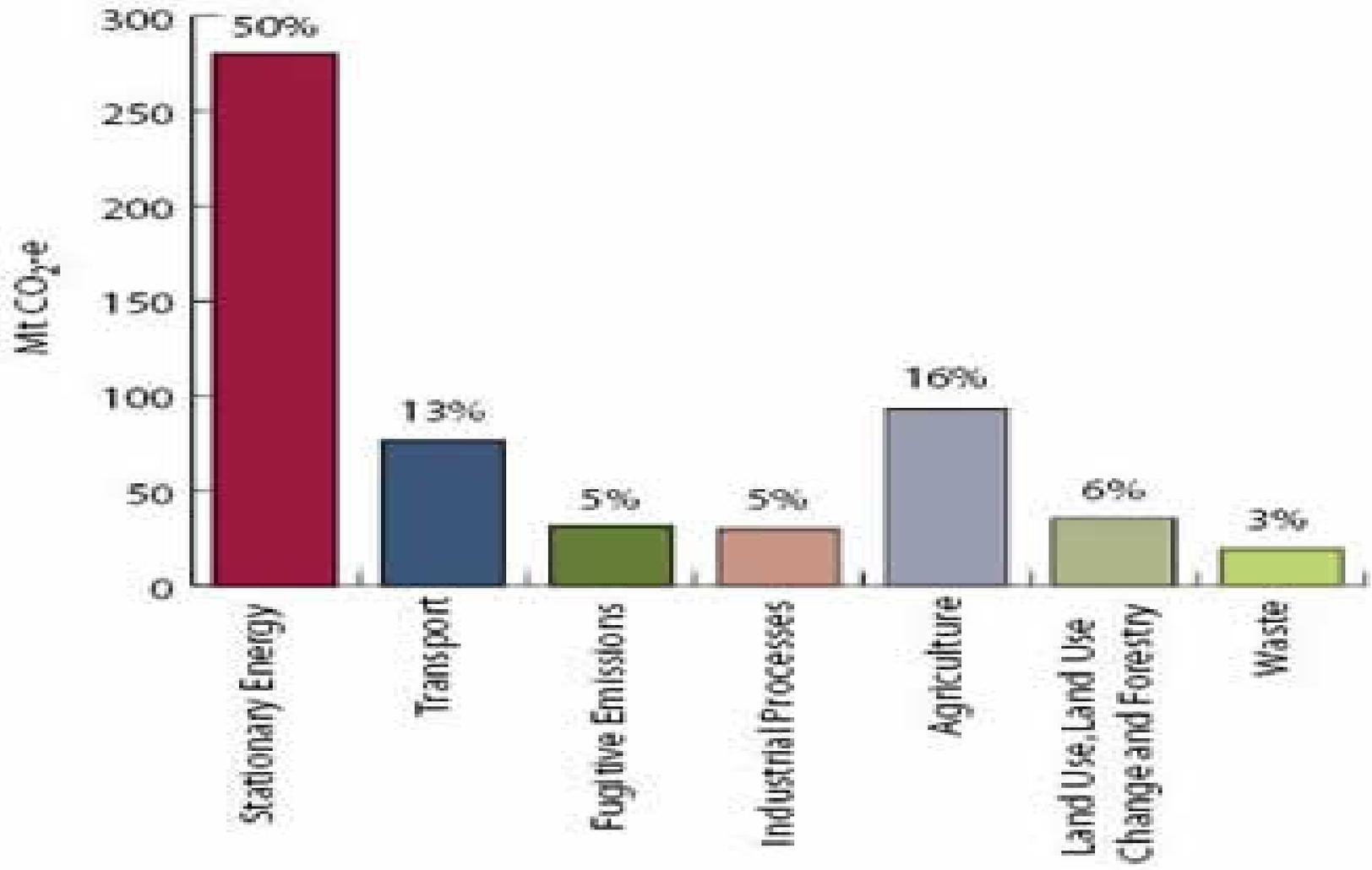


# Environment & Food

- \* Food system accounts for about 40% greenhouse emissions
- \* Most greenhouse emissions around livestock production (methane)
- \* Food travels a long way – even in Australia
- \* Global fish stocks declining
- \* ? Local production??

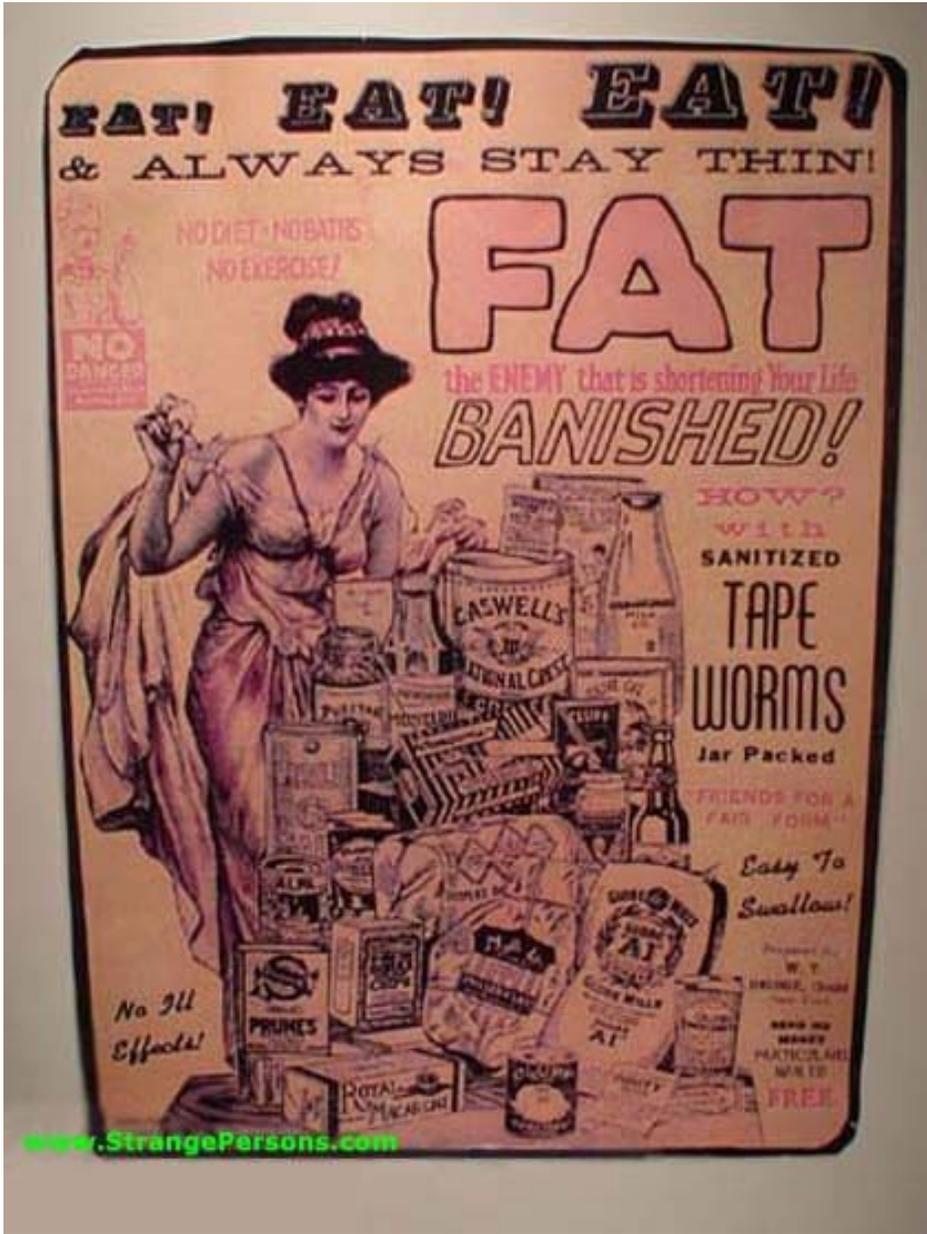
# Australia's greenhouse gas emissions

Australian Science Media centre



# Climate change and environmental degradation

- \* Southern Australia most affected
- \* 10% drop in rainfall = 50% drop in river flows
- \* Desalination
- \* Reductions in food supply – rising food prices
- \* More food insecurity
- \* No state mechanisms to deal with this



EXTREME MEASURES!

# Giessen Declaration

Public Health Nutrition 2005; 8(6A): 667–804.

- \* **Biological, social and environmental dimensions**
- \* **Personal, population and planetary health**
- \* **Food systems and nutrition science**
- \* **The general challenges of this century**
- \* **General principles ethics: responsibility and sustainability, life course, human rights, evolution, history and ecology**

# The nutritional challenges of this century

## **Hunger and undernutrition remain**

Global food and nutrition insecurity & inadequacy and chronic hunger unchanged.

Nutritional deficiencies increase vulnerability to infectious diseases, especially in women, infants & children.

**New epidemics of metabolic disease** - obesity, diabetes and other chronic diseases afflict middle and low-income countries, populations and communities.

**Nutrition science can meet challenges** only through **integrated** biological, social and environmental approaches.



**Thank you!**

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