Wrong bodies? Or culture and economy?  
Policy Challenges for Ecological Public Health  

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Themes of this talk

• Gap between evidence/policy/action
  – Not just NCDs but widely across health, society, environment, economy...how we live!

• Change agents and direction:
  – structural vs. individualisation?

• Goals for food system: what is a good food system?
  – Eat better vs. eat *ad libitum* (at our pleasure)?
  – Sustainable diets from sustainable food system?

• Who are the actors in the situation?
  – Organised chaos? Any emerging improvements?

• What is Progress?
  – We need a sense of direction
  – Make a low impact food and life feasible
Competing analyses (simplified)

The food system is fine
- Right economics
- Wrong consumers
- Wrong mindsets
- Wrong bodies

Solutions:
- Change behaviour
- Personalisation
- Some tech fixes

Food system is in crisis
- Physiology is fixed
- Wrong environment
- Wrong €$$£ signals
- Distorted culture

Solutions:
- Multiple complex acts
- Reframe conditions
- Systems transition
Where are we now?

Mountains of evidence!
Focus on food
Food systems are already failing many: 1.02 billion people hungry in 2009

Note: This map shows the prevalence of undernourishment in 102 developing countries in the world. It uses statistics covering the period from 2004-2006, based on FAO’s flagship publication The State of Food Insecurity in the World 2009. For more information, visit: www.fao.org/publications/sofi.
Food and NCDs (a familiar story) (WHO Global Status Rep 2010)

- Tobacco
- Alcohol
- Salt
- Saturated fats
- Trans fats
- etc
- Blood pressure
- Overweight
- Social gradient
- Raised cholesterol
- etc
Food’s environmental impact

summary in: Rayner & Lang World Nutrition April 2012
http://www.wphna.org/2012_apr_wn3_commentary_public_health.htm

• Modern agriculture = c14% greenhouse gas (GHG) (UN)
• Of agriculture-related GHGs (Stern 2007)
  – animals are responsible for 31%
  – fertilizers (nitrous oxide: N2O) for 38%.
• Meat &dairy = 24% of EU consumers’ impact (EIPRO 2009)
• 40- 50% cereals fed to animals. (Steinfeld/FAO 2008)
• 15 / 24 world ecosystem services = degraded or unsustainably used
  – Food is a major source of this degradation (MEA 2005)
• Global agriculture uses 70% of all freshwater extracted for human use (WWF Thirsty Crops)
Planetary Boundaries already exceeded?
Food cultural transition

• What we eat
• How it is made
• Where we buy it
• How and where we consume
• Food’s meanings
• Cultural rules (e.g., permanent eating)
• Nutritional impact (obesity +)
‘Modern’ supply chains spread new culture

(photo G Rayner - Tesco in Thailand)
This raises issue of Progress

What is a good food system?
A good living standard?
Price & Power
FAO Food Price Index May 2013

http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/ (22.05.13)
FAO Food Price Index May 2013

http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/ (22.05.13)
Productionism (1930/40s)

Science + Technology + Distribution → cut Waste → Output rise → Prices fall → Affordability rise = Health + Progress
...Altered by what C19th Agricultural progressives did and invested in...

Sir John Bennet Lawes (1803-1873)
agricultural research
Rothamsted

Justus von Liebig (1803-1873)
chemist
Giessen
...and delivered by mid C20th change agents: food, health, income & farm such as:

Sir John Boyd Orr (1880-1971) 
public health 
1st D-G of FAO

Elsie Widdowson CH (1908-2000) 
nutritionist 
Cambridge

Sir George Stapledon (1882-1960) 
soil scientist 
Aberystwyth
Today’s evidence on food and living: implications for science & scientists

• The role of knowledge in policy
  – Is there a clear message / voice from science?

• Belief in evidence:
  – We need to remember tobacco (50 years)

• Fragmentation of knowledge
  – Policy cacophony not help by rivalry

• Research funding encourages specialis
  – Inter-disciplinarity is needed
What is the idea of Public Health?

5 models
The health of the public
5 Models and Traditions of Public Health


- Sanitary-Environmental
- Bio-Medical
- Social Behavioural
- Techno-Economic
- Ecological
Sanitary Environmental

Classically (from Romans on), this model meant clean water and sewerage.

Implications: today this model encompasses environmental determinants of all kinds: pollution, traffic, noise, tobacco environments, food marketing.

Drawbacks. Many opponents: infrastructure needs investment, political and public support. The rich world has it; much of the poor world does not.

Modern exemplar: Bike Routes everywhere or Mass Gyms.
Bio-Medical

- Arguably in two dimensions – population-based and individual orientation.
- Jenner’s ‘vaccination’ (coined by Pasteur) method spread rapidly C19th - often oppressively - but effectiveness not clear until C20th. Germ theory revolution in late C19th was followed by antibiotics from the 1940s.

Implications: Main model through which public health field is interpreted. In fact term ‘public health doctor’ is a creation of the 1980s.

- Drawbacks: From 1950s Rene Dubos warns of antibiotic feedback and NCDs link to dietary change. Today Antibiotic Resistance (AMR) & dietary disease growing challenges. What can medicine do about either? On obesity - not much (we saw that the Acad of Royal Medical Colleges agrees).

Modern exemplar: genetic screening
Social Behavioural

• This model is old. King James’s booklet against tobacco (1604), Louis XIV on size of the handkerchief! Today Michelle Obama and more…

• Culture is important. This model seeks to change health beliefs & social norms – birth control, handwashing, seatbelt use, nutrition, smoking, etc.

• Implications: health education, exhortation, social marketing, and now Nudge – popular with governments.

• Drawbacks: Governments like ‘soft measures’ not threatening to industry -- but commercial marketing ‘primes’ public belief and has the money. The focus on culture ignores material world.

• Modern exemplar: calorie labelling or Celebrity campaigns
Technology and economic development improve conditions—soap, better food, heating, housing—argue social epidemiologists (McKeown) and economic historians (Fogel, Mokyr).

- Implications: Living standards, technical development and social knowledge often matter more than biomedical measures.

- Drawbacks: Commercial and technological dynamics (processed food) pose new problems for health. Economic growth alone insufficient for dealing with inequalities, urbanisation, etc. In fact, spread of NCDS linked to urbanisation and consumer-led economic growth damages ecosystems.

Modern exemplar: GM

John Jeyes patented a disinfectant fluid in 1877— the first to work!
Ecological Public Health

• Sees health and eco-systems health as linked
• Assumes complexity but ..... 
• .....offers a simplifying lens on it
• Living within environmental circumstances
• Sustaining (bio)diversity
• Implication: We cannot focus on one plane of causation (eg ‘individual choices’) to the avoidance of others (eg societal and economic determinants of choices)

• Modern exemplar: Nepal well-being? German commitment to renewable energy?
1. The Dynamics of Ecological Public Health: A simple model
Looking at a problem through the lens of EPH: obesity

The physical and energetic infrastructure of existence eg heating, power, water, minerals, buildings, transport systems.

The bio-physiological process of life, from micro to macro, and all eco-systems support; eg plants, animals, including humans and their physiology.

Ideas and consciousness; everyday meanings; how people think; collective consciousness.

Human relations; how society is organised; interactions between people, and the institutions through which they operate.
2. Aligning the 4 Dimensions with the Dynamics of Ecological Public Health
Five models of Public Health

Bio-Medical

Techno-Economic

Social-Behavioural

Sanitary-Environmental

Ecological Public Health
Advantages of Ecological Public Health

Advantages:
• Addresses complexity
• Locates humans in context
• Requires multi-level knowledge
• Does not deny the other models/traditions
• Messages across government

Problems:
• Schism in ‘ecology’: biology vs social ecology
• Few rewards in academia!
Is Policy engaged with this?

What do we tell the Minister?
The people? Industry?
The core idea to convey: mismatch

- C20\textsuperscript{th} success has left a Mismatch to be resolved / addressed in the C21\textsuperscript{st}
  - Bodies: no change in 400k years
  - Food supply: over-supply and land use?
  - Economics: cheap or quality?
  - Retail geography: cars or bikes?
  - Living: aspirations to more or better?
  - Culture: choice or sufficiency?
There is not yet agreement on....

• What a sustainable lifestyle is
• What sustainable consumption is
• What sustainable production is
• What sustainable food systems are
• What a sustainable diet is

• We cannot be surprised that ...
  – politicians are nervous
  – the public ignores us!
  – We have work to do to synthesise knowledge
Thinking is needed about different intellectual traditions

- **Malthusian**: population, land, food \(\rightarrow\) neo-Malthusianism (we’re doomed)
- **Brundtland**: 3 Ps: people, planet, profit (too simple?)
- **Economism**: price everything \(\rightarrow\) cost internalisation \(\rightarrow\) Triple Bottom Line (all is reduced to money)
- **Technical**: apply science + capital (Productionism v3)
- **Societal**: income growth raises the poor (McKeown/ Fogel) (growth delivers health)
- **Philosophical**: ‘how much is enough?’; rich/poor inequalities (Royal Society: People & Planet)
UK Sustainable Development Commission 2011 report proposed sustainability as a complex set of ‘poly-values’

http://www.sd-commission.org.uk/publications.php?id=1187

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<thead>
<tr>
<th>Quality</th>
<th>Social values</th>
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<td>• Taste</td>
<td>• Pleasure</td>
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<td>• Seasonality</td>
<td>• Identity</td>
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<td>• Cosmetic</td>
<td>• Animal welfare</td>
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<td>• Fresh (where appropriate)</td>
<td>• Equality &amp; justice</td>
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<td>• Authenticity</td>
<td>• Trust</td>
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<td>• Choice</td>
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<td>• Skills (citizenship)</td>
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<td>• Climate change</td>
<td>• Safety</td>
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<td>• Energy use</td>
<td>• Nutrition</td>
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<td>• Water</td>
<td>• Equal access</td>
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<td>• Land use</td>
<td>• Availability</td>
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<td>• Soil</td>
<td>• Social status/ affordability</td>
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<tr>
<td>• Biodiversity</td>
<td>• Information &amp; education</td>
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<td>• Waste reduction</td>
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<th>Economy</th>
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<tr>
<td>• Food security &amp; resilience</td>
<td>• Science &amp; technology evidence base</td>
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<tr>
<td>• Affordability (price)</td>
<td>• Transparency</td>
</tr>
<tr>
<td>• Efficiency</td>
<td>• Democratic accountability</td>
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<tr>
<td>• True competition &amp; fair returns</td>
<td>• Ethical values (fairness)</td>
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<td>• Jobs &amp; decent working conditions</td>
<td>• International aid &amp; development</td>
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<tr>
<td>• Fully internalised costs</td>
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The elephant in the room: consumers

• The evidence points to the need to...
  – reduce consumption....not just switch it
  – shift culture to less of everything for the rich but more for the poor (in LDCs)

• Consumption-led food policies are based on consumers making the correct choices, but...
  – Where is the model consumer?
  – Few eat ideal healthy diet, let alone sustainable diet
  – Few openly support raising food prices to internalise externalised costs
  – EU has no SustLabels yet for food: some food industries resist
The beginnings of policy development

Tentative steps
But are they fast and deep enough?
### Northern Europe emerging Govt policy advice

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<thead>
<tr>
<th>Year</th>
<th>Institution/Initiative</th>
<th>Focus Area</th>
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<tbody>
<tr>
<td>UK 2006</td>
<td>Sustainable Development Commission (SDC) &amp; National Consumer Council</td>
<td>Sustainable Consumption “<em>I will if you will</em>” – generic</td>
</tr>
<tr>
<td>Germany 2008 -</td>
<td>German Council for Sustainable Development</td>
<td>Sustainable Shopping Basket: includes food – lists labels and schemes (3rd ed)</td>
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<tr>
<td>EU 2008</td>
<td>Sustainable Consumption-Production &amp; Sustainable Industrial Policy Action Plan</td>
<td>Voluntary initiatives – but little food focus</td>
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<tr>
<td>Netherlands 2009</td>
<td>LNV Ministry – Policy outline for achieving Sustainable Food</td>
<td>Sustainable food production &amp; consumer educ. campaigns</td>
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<tr>
<td>Sweden 2009</td>
<td>National Food Administration (&amp; Swedish EPA) – notification to EU (withdrawn 2011)</td>
<td>Environmentally friendly food choices</td>
</tr>
<tr>
<td>UK 2009</td>
<td>SDC, Council of Food Policy Advisors → Dept Environment Food Rural Affairs (Defra)</td>
<td>Recommend defining low impact (sustainable) healthy diet</td>
</tr>
<tr>
<td>France 2011</td>
<td>Agrimonde study</td>
<td>Security focus but flags consumer change</td>
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Sweden takes the lead

- Offers evidence-based eco-nutrition guidelines (May 2009)
- Now submitted to the European Commission
- Joint work by National Food Administration & Swedish Environmental Protection Agency
- Other input (e.g. Swedish Board of Fisheries)
- Framed around eco-conscious consumers, rather than population
- Focus on key food groups

Concerns the food groups:
- Meat – beef, lamb, pork and chicken
- Fish and shellfish
- Fruits and berries, vegetables and leguminous plants
- Potatoes, cereals and rice
- Cooking fat
- Water

UK Government policy, 2008-10

Food 2030: How we get there

Setting the table
Advice to Government on priority elements of sustainable diets
EU general approach relevant to SustDiet

1. UN Sustainable Consumption and Production
   – Marrakech process (post Rio 1992 → Johannesburg 2002 CSD)  
   – Focus on products / LifeCycleAnalysis (LCA) / Sustainable lifestyles

2. CAP slowly changing (situation normal)
   – Shift from paying for production to environmental goods

3. EU Platform for Action on Diet, PA and Health (parallel to SCP)
   – focus on NCDs / Consumer information/ But weak so far on Sust’l Consumption in food; Food Information regulation (2011) / focus on ingredients not impact / years arguing Nutrition labels

4. Commercial focus on products not health:
   – Integrated Product Policy (IPP) focus on enviro’t eg waste
     [http://ec.europa.eu/environment/ipp/integratedpp.htm](http://ec.europa.eu/environment/ipp/integratedpp.htm)

5. Focus on Carbon and Waste reduction as efficiency
‘Best practice’: companies

• International companies:
  – 2009: G30 top TNCs initiative Coca-Cola, Tesco, Unilever
  – 2002: SAI launched Groupe Danone, Nestlé, Unilever
  – 2010: Barilla Centre’s double inverted pyramid

• UK companies:
  – 2007: IGD Food Industry Sustainability Strategy Champions Group focus on low carbon + ethics
  – 2008: Tesco gives £25m → Manchester SCI
  – 3 retailers’ choice-edit M&S Plan A, Co-operative Group, Waitrose
  – Unilever, PepsiCo brand sustainability strategies

• VERDICT: product-specific approach not overall diet, but some movement (eg Unilever)
Barilla Centre: combining nutrition with environment gains

‘Best practice’: civil society / NGOs

- WWF: *One Planet Diet*
- UK ‘eat less meat’ campaigns: CIWF, WWF, FoE
- CSO experiments
  - Vancouver 100 mile diet; Fife Diet, etc.
- Consumers International /BEUC question labelling as policy instrument for behaviour change

**VERDICT:** single issue NGOs see the problem but find it hard to go beyond their territory
Complex labelling is possible: OmniStandards in a label + traffic lights
source: Sustain ©
Consumer information sharing ‘apps’

• A focus on transparency through social media networks / a food knowledge role / sharing inform’n

• They illustrate virtual-led culture change

• There are 3 broad modes:
  – Food product choice eg MSC fish certification ‘to eat / to avoid’ list: http://www.msc.org/cook-eat-enjoy/fish-to-eat
What about the Professions? (1)

• Nutrition slow but accelerating engagement:
  – UK Nutrition Society 2012
  – BNS/NutSoc/FNS Lille May 28-29 2013: 
  – Barilla Center, Bocconi Univ, Italy (2009--)
  – Aberdeen University for Scottish Govt

• Agricultural Science:
  – SCAR 3rd Foresight rept
  – Clash between 2 policy narratives: ‘productivity’ and ‘sufficiency’ (how much is enough?)
  – Rallying around ‘sustainable intensification’?
Professions (2)

• Engineers:
  – Resource-focus
  – technological solutions eg waste → digesters on-farm
  – Inst Mechanical Engineers report 2012:
    http://www.imeche.org/knowledge/themes/environment/global-food

• Social Science:
  – Sustainable Consumption Institute (£25m Tesco funded at Manchester Univ) – warning consumers of change
    http://www.sci.manchester.ac.uk/
  – Behaviour change: ‘nudge’ individualism vs ‘shove’ control eg LSE
Where next? Example: Sustainable Diet Guidelines (SDGs)

Possible processes
Defining and delivering
Rethinking Brundtland’s triple focus
Refining what we mean by sustainability: move on from Malthus

- Malthus: environment determines capacity
- Food revolution expanded production by mining eco-systems and resources
- Hot Springs 1943 set the policy framework
- Brundtland 1987 tried to recalibrate
  - Sustainable Devt: environment + economy + society
- We now need to redefine food progress
- We need a Hot Springs 2 (in EU a revision of CAP into a Common Sustainable Food Policy)
The case for SDGs is that they....

• Provide a rational basis to the general food policy framework which is good for public and supply
• Reconnect nutrition with agri-food
• Bridge the gap between NCD and CO₂e discourses
• Re-set moral/political drivers for interdisciplinary research
• Recalibrate institutions around consumer needs
• Provide new basis for public advice and supply chain goals: what to eat + how to consume + how produced
What process options for SDGs?

• **Public policy (government-led)**
  – WHO, FAO, UNEP do a joint high level report – ICN 2013?
  – Intergovernmental Panel on Sustainable Diets - like IPCC?
  – A consortium of governments – a N EU consortium?
  – EU itself – EC create a process from Eurodiet to SustEuroDiet?
  – A consortium of agencies

• **Professions-led:**
  – Interdisciplinary Working Grp: Science & Social Science – FCRN?
  – Foundations-led: eg Wellcome+Gates → ATNI?

• **Commerce /corporations-led:**
  – Corporate Responsibility (eg Barilla Centre)
  – Sust Diet Labelling - carbon labels

• **Civil Society:**
  – Consumer culture campaigns (eg WWF One Planet Diet)
  – UK Sustainable Diet Coalition
Engaging with the politicians

What do we need to aim for?
The case for government leadership on sustainable diets (5 mins with the President)

- There is no need to be frightened
- This is evidence-led
- Government’s role is facilitator / framework setter
- Organised change is better than enforced change
- Self-interest coincides with eco-systems health
- Embryonic shifts are underway by companies
- Map sustainable dietary change; it could come soon
- Think children and parental interests
Some changes we need

• Global:
  – Hot Springs 2 (beyond the IAASTD, Foresight, etc)
  – Sustainable Consumption&Production in UN, WB etc

• EU:
  – CAP → Common Sustainable Food Policy
  – Eg Eurodiet → EuroSustDiet

• MSs:
  – Land use change + consumer strategies: CO2+H2O + biodiversity
The current ‘lock-in’ might be unlocked by...

• Internal food systems dynamics:
  – Recognition of the limits of current (slow) incremental change; consumer pressures (unlikely); corporate pressures (more likely)

• External shock:
  – War; resource crisis (eg oil? water? climate change?)

• Leadership:
  – One country takes a lead (as Germany has on nuclear)
  – International city alliances
Conclusions

- There is no agreed best practice
- We are in a period of tentative experimentation
- There is no strong framework
- Rapid acceleration of change is needed
- We lack leadership and common EcoPubHealth goals
- While food crosses borders and boundaries, this requires multilevel action (global-local)
- Food control is highly concentrate so this might be a power battle
We have much to do!

Thank you!

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