

Food security or food democracy?

As food production faces greater challenges, single issue NGOs need to work together to ensure that food policy moves towards greater food democracy – safe, justly produced, sustainable food for all. **Tim Lang**, Professor of Food Policy at City University, London gave the 2007 PAN UK Rachel Carson Memorial Lecture.

Today, a century since Rachel Carson's birth and 45 years since *Silent Spring*^{1,2}, we face competing visions of the future of food. The dominant view is that great advances are being made in the long struggle to feed people adequately. True, there are some clouds on the horizon, but the general picture is of advance. A counter view is that these advances have come at a cost, are faltering in their own terms (notably malnutrition) and that a fundamental redirection of food supply is again in order. Issues such as climate change, oil-dependency, looming mass water stress, obesity alongside hunger, are structural not peripheral issues. Groups such as PAN and the cohort of specialist NGOs need to ensure their voices are heard in what I anticipate will be a difficult debate about food supply.

Principles at stake

As we enter this period, I want to propose four principles which might unite us and which I find helpful.

Principle 1 – The health of people and the planet are linked

Policy-makers, like us all, still tend to see health as a function of physiological mechanisms: biology, bodies, inputs and outputs where problems can be fixed. 'Health' becomes defined as healthcare, ie what we want when disease strikes. A more useful framework is what is now being called ecological public health, which views health as a function of ecological relationships: human, planetary and societal^{3,4,5}. Health is the outcome of how we manage four domains of existence: the material (our environment), the physiological (biological), the social (human interaction) and the cognitive or life-world (culture)^{6,7}. From this perspective, in food, we need to break down the barriers in thinking between nutrition and environment, safety and plentiful supply, quantity and quality. We need to think about a diet and food system which meets all these goals and does not mine resources to give plentiful supply today to the detriment of tomorrow. Yet that, I will suggest below, is just what we are doing.

Principle 2 – The sustainable development challenge cannot be bolted on to existing models of progress; growing evidence

suggests that progress must be redefined

In an era of peak oil, climate change, water shortage and rising population, the stakes are high. The debate about whether increasing material goods – the gross domestic product (GDP) approach to general welfare – brings increased happiness is interesting⁸. Environmental economists have for decades argued we need better indices, such as the Index of Sustainable Economic Welfare (ISEW)^{9,10}. This new policy terrain will again have to address old and fundamental questions. How much consumption is enough? Who needs to consume less and who more but differently? In food this is central. For instance, we must revisit the old questions about land and food security. What is land for – food, fuel, feed (animals) or fibre? Is it right to define food security as sufficiency of food when sustainability of methods is as important? Can they both be achieved? Whose security are we talking about? And who and what controls food, anyway? Are the national and international institutions created since World War Two to oversee food fulfilling the public interest?

In a corporate dominated and highly concentrated food system¹¹, national laws and institutions look weak. They are the only policy locations where 'big picture' policy directions can be hammered out, but they seem unable to get a grip of the drift to unsustainability. Some levers of government are rusty; others are hollowed-out; others transferred to international bodies. Improvements in the name of sustainable development too often suffer from rhetoric or creeping incrementalism – a little welcome change here or there, but not enough. In a world where food consumption accounts for a third of all greenhouse gases emissions¹², and where if everyone consumed food like the UK it would take six planets¹³, can we conclude anything but that the present system is unsustainable or that markets are warped, and wants are being confused as needs? In such a food world, the notion of efficiency needs an ecological reality-test¹⁴. As we know from climate change alone¹⁵, the stakes are high, and I now wonder if the era of single issue campaigns is coming to an end. Accusing governments of lack of joined-up governance is a thin critique if our big picture is equally fractured.

Principle 3 – We are seeing the end

of untrammelled choice as a policy goal. Choice-editing needs to be brought out into the open, harnessed and made to work for sustainable development

Consumer choice has been a core theme of the neo-liberal paradigm. The cry is 'let the consumer decide.' This rubric only has traction if matched by full information and education, which is rare. Such is the complexity of sustainability that no food packet could be large enough to provide space for printed suitable information: embedded carbon, nitrous oxide (N₂O) and water; nutrients; fair trade etc. The reality of modern food chains is that retailer buyers 'choice-edit' before consumers even see products. They set contracts and specifications which frame choice. As Toyota-style lean management has been applied in the food system, Governments can appear left behind. Sometimes I wonder if UK governmental food policy is 'Leave it to Tesco et al' so awe-struck is everyone by the forward global march of big retailers. But even giant retailers cannot resolve climate change or oil dependency. They can take low energy bulbs from niche to mainstream, and push forward carbon labels, which is useful but not sufficient to create a sustainable food economy. Retailer action is no substitute for governmental frameworks. Neither workers nor consumers are sovereign in modern food systems where choice-editing 'upstream' rules.

The mantra of consumer choice needs to be replaced by a more sophisticated policy rule: appropriate action by appropriate bodies at the requisite level. Consumer selection (a more apt word than choice) has its place in democratic markets but many big challenges will not be addressed unless there is choice-editing on cycles of continuous improvement and tougher standards in supply chains.

Principle 4 – The long struggle for food democracy must not get submerged by the urgency of the new environmental and societal pressures

When I coined the term 'food democracy' in mid 1990s, I was referring to the long process of striving for improvements in food for all not the few¹⁶. I was interested in but troubled by the notion of food rights^{17,18}. Food rights can be abstract and lost. Food democracy has to be fought for and built into food culture. The term food democracy is being used today in different ways, so I want to reassert my core idea of food as a locus of the democratic process: the interest of the mass, the 'bottom-up' over 'top down', the building of social movements to embed rights into culture/expectations¹⁹. My point is that food has to be struggled for – as the economist Sen hints, with his cultural notion of entitlement²⁰ – to ensure that all have access to affordable, decent, health-enhancing food. Food democracy goes beyond adequacy of supply and stresses decency and social justice in the food

system's wages, working conditions and internal equity^{21,22,23}. Against food democracy, we can posit 'food control', using food as a vehicle of control.

The sustainability crisis could go either way: control or democracy. As the case grows for tough action to preserve quality of life and food security, even good-hearted efforts might backfire if people are not kept in the loop of change. The bipolar tension in food policy between food control and food democracy is clear at the international level – in trade or CAP talks - but the terrain is widening to include issues such as bio-fuel (food land being put to grow fuels for cars and electricity), the renewed vigour of arguments for genetic modification to provide food for expanding populations (the perennial 'can sustainable farming feed the world?' debate), and technical food fixes for diet-related ill-health such as functional foods. Much has been won as these issues have been fought over, but the tectonic plates of world politics are shifting and gains may be crushed. Quick media 'wins' can be swept aside easily.

A long view is necessary. The use of food as a weapon of political control by different power groups is nothing new. Think, firstly, of US Public Law 480's use of food aid in foreign policy²⁴, or think sugar, slaves and trade²⁵. When the British state re-exerted some food control in World Wars One and Two^{26,27,28}, it did so facing serious food shortages. But food democratic campaigns were also asserting demands for decent food^{29,30,31} living wages³², and justice for women and children^{33,34}. Without those pressure, the 'top-down' debate would have been different, and the Agriculture Act 1947 less likely. The UK state was squeezed between social demands and its own strategic interests. Drubbing by Boers led to the 1905 Royal Commission on food supply in time of war³⁵. But only in 1939 were lessons fully learned: even rich countries take risks if they do not use their land wisely for food. In 1939, the UK only produced a third of its food needs but colonial preference collapsed in dire war circumstances, and home production was rebuilt to two thirds of needs by 1945 and spawned the Agriculture Act: never again weaken food capacity. As the UK again hovers near to allowing its indigenous farming to slide, we do well to re-ask what is land for: views, amenity, carbon sequestration, water, housing? And food? I support fair trade but also worry that UK production is dropping. It is currently 63% self-sufficient (74% for indigenous foods, growable here)³⁶. The food trade gap is widening; around £22 billion of food and drink is imported, 68% of which comes from elsewhere in the EU³⁷.

I locate the great work of PAN and other NGOs within the above four principles. You know that food, as a basic need, offers opportunities for exploitation. Commodities pesticides are used on suggests so: sugar, coffee, potatoes, wheat^{38,39,40,41}. My point is that, as the policy tectonic plates move in this emerging world of new and old pressures, single issue campaigning will not be enough. Our work needs to be cross-checked for how it con-

tributes to the processes of food democracy, ecological health, choice-editing and re-articulating progress. The return of GM as 'necessary' to counter hunger is based on good evidence; the decline of hunger is stalled⁴².

Structural change

The food system is always dynamic. Ever since settled agriculture began around 10,000 years ago, a process of learning, experimentation and exchange has been undertaken. But many observers are agreed that the last half century ushered in a period of unprecedented and rapid change in the food system. We have witnessed an unparalleled range and pace of change in: how food is grown; animal rearing; the emergence of bio-technology; a shift from local to regional and now global supply points; the blurring of seasonality; the application of technology to mass and niche foods; restructuring of the workforce on and off farms; heavy marketing and branding; the emergence of giant retailers gate-keeping between primary producers and consumers; wholly new distribution and just-in-time logistics; computer-led supply chain management; internationalisation of standards and regulations. These features have transformed the food landscape in a remarkably short space of time (in evolutionary terms) and have delivered a change in the power relations within the food economy.

Today, giant food retailers are widely per-

ceived to be sovereign in the food sector. Even in developing countries, rapid concentration of large retailing is apparent^{43,44,45}. The hyper-market model is lionised as 'modernity'. In fact, catering rivals it in employment and value-added terms. Figure 1 gives the picture of where value is added in the UK food chain. Farming and primary production provided 540,000 jobs but only £5.2 billion of value-added. Retailing provides 1.16 million jobs and £18.8 bn of value-added, and catering 1.3 million jobs and £21 bn value added⁴⁶. Table 1 is an attempt to depict the shifting fortunes of different sectors over the last century⁴⁷.

Modern food power matters

This unprecedented food power is now mostly expressed at international level. Companies may be big in one country but when one sees their spread, their power is truly awesome. But it escapes any international framework. An old theme (as old as the East India Company⁴⁸) returns: whether and how to get leverage over multinational corporations. The UN created a Centre on Transnational Corporations (UNCTC) in 1975 but closed it in 1993 after heavy lobbying, and failing to win approval for a Code of Conduct. That experience should not be lost. It is also another sober reminder of the limitations of codes of conducts.

There is now a real fissure in policy-making. As states have withdrawn or ceded the

Figure 1. Value in the UK food chain

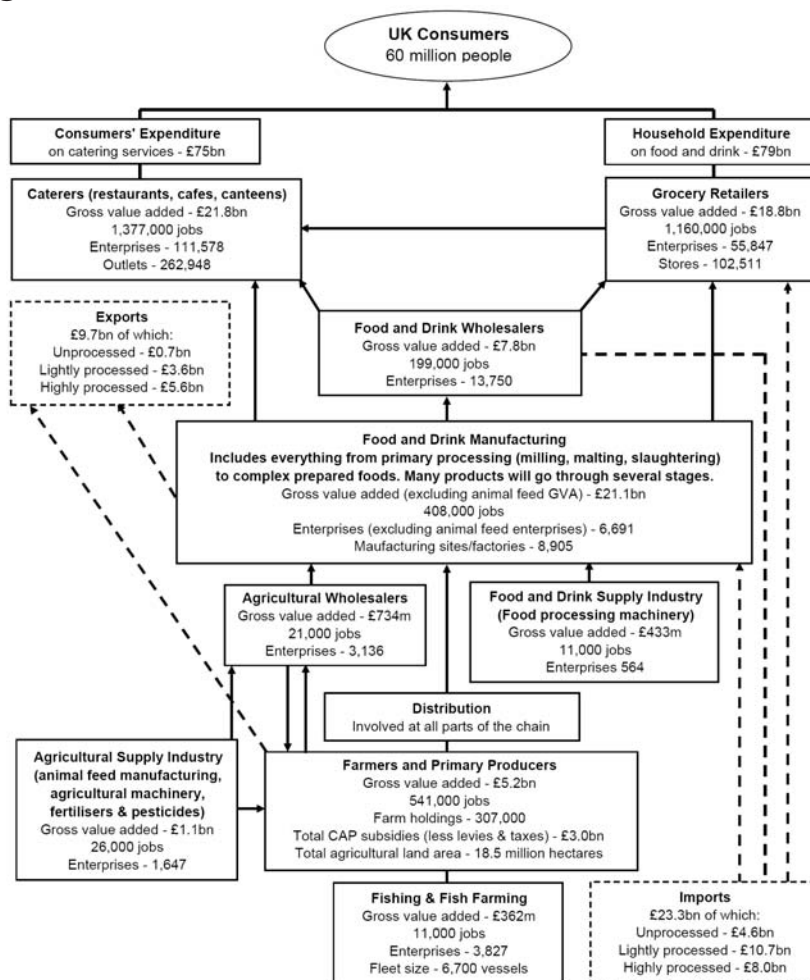


Table 1. Shifting power in developed countries' food value-added chains

Period	Farming	Manufacture	Wholesale	Retail	Food service
pre-1900	Dominant	Minor	Major in a few trades	Very Minor	Dominant
1900 - 1950	Declining (but WW2)	Dominant	Major in many trades	Minor	Declining (but WW2)
1960 - 1970	Rebuilding (CAP)	Dominant	Dominant	Emerging	Latent
1980 - 2000	Declining	Declining	Rapidly Declining	Dominant	Emerging
2000s?	Returning?	Uncertain	Minor	Dominant	Emerging?

Source: adapted and expanded from: C. von Schirach-Szmigiel (2005)

driving seat to large companies – become 'hollowed out' – companies have created a parallel universe. There are now dual systems of food standards-setting in food. We are witnessing this in the tussle over nutrition labelling: traffic lights versus guideline daily amounts. With GM, the situation was slightly different, here in Europe at least. Member States wanted to introduce it but consumer campaigns won the retailers over. With pesticides, the situation is different again. State residue standards are now weaker than leading retailers'. The UK Government sets a de facto baseline and there are different company systems: GlobalGAP, Voluntary Initiative and separate company actions⁴⁹. In the UK, the Co-operative Group made the first significant move when it banned 20 active ingredients in July 2001⁵⁰. (It now has over 100 banned.) Marks and Spencer then phased out 60 active ingredients (after initially considering doing so for 79) from January 2002⁵¹. All companies are aware through their consumer attitude tracking surveys that consumers want their food to be residue-free. UK retailers now broadly have a shared focus to deliver residue-free produce. J Sainsbury, for example, has stated that it wants its primary fruit and vegetables to be insecticide and herbicide residue-free by the end of 2008⁵².

One could conclude that this is evidence for the 'consumer votes' theory ie markets working and food democracy being advanced by corporate power. But is it, if the position is so patchy, so subject to the whim of company boardroom support? What if M&S retreats from its 'Plan A'? Or J Sainsbury is finally taken over by private equity and the team driving up residue standards laid off (such things happen)? The problem is the state hesitating over raising the level playing field for all! Such situations institutionalise what Geof Rayner and I called 'policy cacophony', mixed messages all competing for policy space⁵³. Public policy is becoming private goods. It would be better if the baseline was ratcheted up to catch all foods, all products. This was the intent of the EU's draft Directive on 'Sustainable Use of Pesticides'⁵⁴. It proposed everybody in the chain looks for alternatives and aims to reduce pesticides but the proposal to set reduction targets was voted out in late 2007⁵⁵.

Another reason current power imbalances should not be assumed to be constant is that change is coming anyway. Even the triumphant Toyota/Tesco quality management cannot control climate change or global water crises or peak oil. The model of controlling factors one by one and damping down effects through attention to quality and detail works well when and if systems are fundamentally stable.

Emerging structural factors

Optimists think these factors are manageable. I am no neo-Malthusian and am persuaded of the potential of sustainable agriculture, but I worry about the clock and the combination of pressures. Here are some reasons why:

Rising food prices

Rises are for many reasons: affluence in India and China (good news); strategies to obviate oil dependency such as biofuels (subsidised); looming water shortages; and huge animal consumption. World wheat prices have doubled in the last year or so. Buffer stocks are at their lowest status for decades. Per capita availability has faltered since the 1980s^{56,57}. The FAO notes imported foodstuffs exceeded US\$400 billion in 2007, 5% above the 2006 record. Most of this increase is due to rising prices of imported coarse grains and vegetable oils – the commodity groups which feature most heavily in bio-fuel production. FAO forecasts these to rise by 13% in the coming year⁵⁸. This poses strain on rich country importers but dire strains for developing countries. Optimists say new land (or old land in East Europe) will be planted. But displacing what?

Demography: population, urbanisation

World population is rising. Already at 6.6 bn in 2007, it is expected to rise to 9.1 bn by 2050⁵⁹. Urbanisation appears unstoppable. In 1961, one billion lived in towns; it was two billion by 1986; three billion by 2003, and is projected to be four billion by 2018 and five billion by 2030⁶⁰. Who will be the rural labour force? Look at hostility (racism) towards migrant pickers in the UK and Europe already.

Land

Let me repeat: what is land for? Surely wise use for food must be at the heart of land use. The Stockholm Environment Institute calculates that the UK's current food and farming ecological footprint (land, energy and sea-space use) is up to six times the food growing area of the UK itself. In northwest England, total household consumption equated to 6.2 global hectares (gha) per resident, of which food consumption, estimated at 1.4 gha/per capita, was the biggest component⁶¹. In that region, 20 million tonnes of raw materials produced eventually became only 4.2 million tonnes of food consumed. Half a million tonnes of packaging was used and almost one million tonnes of food and drink were never eaten and sent directly to landfill. Much vaunted progress in waste reduction due to efficient systems has actually replaced one form with another.

Oil / energy

Oil prices are nudging \$100 a barrel⁶². Business discussion debates whether production has peaked⁶³. After a century of use⁶⁴. What would an oil-free food economy look like? Farming alone – let alone consumers getting to shops – is oil dependent: pesticides, fertilisers, equipment, cultivation modes, distribution. The entire (in)efficiency of food supply chains relies on fossil fuels.

Climate change

Climate change is now almost certainly underway⁶⁵. Food systems are heavily implicated. Sir Nicholas Stern's report to the UK Treasury on Climate Change (in Annex 7.g) states that animals are responsible for 31% of greenhouse gas (GHG) emissions and fertilisers (N₂O) for 38%⁶⁶. A 2006 European Joint Research Centre life cycle analysis concurred, finding the food and drink sector to be the most significant source of greenhouse gases, accounting for 20-30% of the various environmental impacts of the most common forms of European consumption⁶⁷. This study concluded that the most significant sectors were firstly meat and meat products and secondly the dairy sector. Perhaps PAN should add fertilizers to its portfolio⁶⁸!

Water

Water is fundamental to any food system. Of all freshwater (ie potable water), 10% is used for household use, 20% for industry and 70% for agriculture⁶⁹. In the UK, agriculture accounts for 742 million cubic metres (m³) of water compared to the food and drink industry's 155 million m³ used⁷⁰. Globally, water stress (having less than 1,700 cubic metres of water per person per year) is widely expected. Today 92% of humanity has a relative sufficiency but by 2025 this is anticipated to drop to 62%⁷¹. Embedded water is likely to be as, or more, important as greenhouse gas emission. One kg grain-fed beef takes 15 m³ of water, 1 kg of lamb from a sheep fed on grass needs 10 m³ and 1kg cereals needs 0.4-3

cubic metres⁷². The notion of virtual water, developed at SOAS by Tony Allen to conceive of international water trade, is actually becoming an important indicator for consumerism. A 250ml glass beer uses 75 litres of water; a glass of apple juice takes 190; a bag of crisps takes 185; a 150g hamburger takes 2400; one cotton T-shirt takes 4100. Table 2 gives more such figures⁷³. For PAN, which has done such excellent work on organic cotton, this might be a good index for sustainability. As Fred Pearce has shown, the equivalent of 20 Nile Rivers are transferred each year from developing to developed world⁷⁴.

Health

The liberal argument for pesticides was about tackling hunger (rather than replacing labour). I have argued elsewhere that meeting under-production was the right policy 60 years ago⁷⁵. Today, the health picture is more complex: a co-occurrence of over-, under- and mal-consumption, all well documented. 'Old' issues of contagion still exist but are dwarfed by non-communicable diseases (NCDs): cancers, heart disease, diabetes, obesity, etc^{76,77,78}. The important policy point to note is that there is a gradual convergence of guidance emerging from different health bodies: more human physical exercise plus plant-based diets, and restrained (if any) dairy and meat. Whether it is cancers, obesity or heart disease, the Western lifestyle is unsustainable. We eat and exercise inappropriately. Population obesity levels rise with car use⁷⁹. Yet as countries get richer, diets change from simple staple foods to processed foods with too high levels of fat, sugar and salt, and consumption^{80,81}. The transition is symbolised by the shift from drinking water to soft drinks⁸². This transition is not just dietary but cultural. Indeed, the moulding of minds is critical in dietary change, hence the importance of current campaigns to curb marketing^{83,84}.

Meat production and culture

The FAO calculates that livestock generates 18% of greenhouse gas emissions (CO₂ equivalent), more than transport⁸⁵. It is also a major source of land and water degradation.

Table 2. Virtual water embedded in consumer products, litres

- glass milk (200ml) = 200
- glass wine (125ml) = 120
- glass apple juice (125ml) = 190
- cup coffee (125ml) = 140
- cup of tea (125ml) = 35
- slice of bread (30g) = 40
- slice of bread (30g) with cheese (10g) = 90
- 1 potato (100g) = 25
- 1 bag of potato crisps (200g) = 185
- 1 egg (40g) = 135
- 1 hamburger (150g) = 2400
- 1 cotton T-shirt (medium, 500g) = 4100
- 1 sheet A4 paper (80g/m²) = 10
- 1 pair of shoes (bovine leather) = 8000
- 1 microchip (2g) = 32

Source: WWF, Rich Countries, Poor Water, 2006.

Globally, the livestock sector accounts for 9% of anthropogenic CO₂ emissions; 37% of anthropogenic methane (with 23 times the global warming potential (GWP) of CO₂) most of that from enteric fermentation by ruminants; 65% of anthropogenic nitrous oxide (with 296 times the GWP of CO₂), the great majority from manure; and 64% of anthropogenic ammonia emissions, which contribute significantly to acid rain and acidification of ecosystems. We have made feeding animals then to eat them a cornerstone of food 'progress', surely unsustainable⁸⁶.

Where to now?

The terrain I have sketched is known. There is good news here too. Sustainable agriculture could produce plant-based foods, get biodiversity into fields not just their edges; restore meat to feast days (if wanted)⁸⁷. Various scenarios are possible, from optimistic to pessimistic, strong to weak action, sustainable to crisis, costly now to unaffordable in the long-term. Jeremiah voices have prophesied doom for years but here we are (mostly but unequally). Others favour technical fixes for each 'single issue'. Stomach stapling for obesity + electric cars + nuclear power for all + functional foods (pharma-foods) + cows that do not emit methane, etc, etc. I personally doubt the viability or applicability of such hi-tech routes but we should see. Certainly, their effectiveness should not be relied upon.

My point in rehearsing these features of the modern food policy terrain is, as I set out at the start, to suggest that, ultimately, food policy is a matter of principles. We are entering a time where big principles will come into play. Staying on familiar territory is not an option. In that respect, I am an optimist. We should take heart from generations before us. It is possible to win hearts and minds for social justice. It is possible to redirect the food system. It is possible to temper food control tendencies and 'choice-edit' by improving standards across many criteria in democratically accountable ways. We have been here before⁸⁸. Some conditions need to be met.

Firstly, governments need to be more proactive. The 'hollowed-out' states need to lead in creating intellectual space for new ecological thinking. Government is needed to weigh up competing evidence and visions. For 30 years the neo-liberal model has encouraged a different vision of governance, the retention of authoritarian powers (military, police, justice) while abrogating a supposed 'market' to large players and their interactions with civil society and consumers. This model is reaching its beyond sell-by date. Personally, I don't seek heavy government; I just want governments to stop pretending that food has nothing to do with them when – not least under the 1948 Universal Declaration of Human Rights! – they have duties.

Secondly, I think the supply chain needs better overall goal-setting. Why couldn't both governments and private systems such as GlobalGAP aim to reduce pesticide use by half in ten years as suggested by the European Parliament's Environment Committee in

2007? And could not assurance schemes like the UK's 'Red Tractor' be widened to cover more sustainable goals? When even big players are getting nervous about uncertainties, there is room for bold policy negotiation. Setting new frameworks within which market forces can work is not the same thing as unbridled 'choice'.

Thirdly, the NGO sector needs to have courage. It has worked wonderfully and well for decades, filling the gap between state, supply chains and civil society. But the coming challenges dwarf much they / we have collectively worked for. They must not fudge or ignore it. After decades of triumphant consumerist policy, more sober long-term politics might return, replacing the incrementalism.

Finally, as I think Rachel Carson would have recognised, we need to ensure that the future is addressed on all four fronts of ecological public health: not just the material and biological realignments that currently garner most policy attention, but also the social and cultural dimensions. Hearts and minds need to be won. Current societal processes and institutions are weak. Consumer expectations of a particular form of progress are deeply held (not just a success of marketing but a desire to better our conditions). We all need to work together – simultaneously across all four dimensions - to provide food that is healthier for people and the planet. The either/or policy options are fading before our eyes.

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