WN *Update*

World Nutrition **Volume 6, Number 3, March 2015**

Journal of the World Public Health Nutrition Association
Published monthly at www.wphna.org/worldnutrition/




WN *Big Food Watch. Sugar*

Going easy on sugar

Access BMJ February 2015 on sugar and influence on UK policy here
Access BMJ February 2015 on sugar and research funding here
Access BMJ February 2015 on sugar and UK 'responsibility deal' here
Access BMJ February 2015 on sugar and the case of Mars here



Jonathan Gornall (left) reveals links between UK nutrition leaders Susan Jebb, Ian Macdonald and Ann Prentice, and Big Food and Big Sugar. David Stuckler and Alan Jackson (right) are troubled

The Straight Thinking team reports

The *BMJ* (previously the *British Medical Journal*) is with *The Lancet,* the British world-leading, immensely influential medical journal with a commitment to public health. In February it published four reports totalling 12,000 words by investigative journalist Jonathan Gornall (left, above). This shows that the distinguished nutrition scientists Susan Jebb, Ian Macdonald and Ann Prentice, two of whom are former presidents of the UK Nutrition Society, have had research funded by corporations whose interests conflict with public health, including Coca-Cola, Nestlé, and Mars.

The problem is that they hold pivotal appointments as government advisors on its 'responsibility deal' with industry, or on its Scientific Advisory Committee on Nutrition. The SACN draft report on carbohydrates, including recommendations on sugar, commissioned seven years ago, was out for consultation until 1 September last year and is due to be published late this Spring. A background on the SACN committee, updated from initial publication in *WN* a year ago, is in Box 1 overleaf.

Box 1

The curious case of the UK carbohydrate committee



Adapted from WN Update, March 2014. While the WHO NUGAG group was completing its report on sugar, leaked in February 2015, a UK government advisory expert panel was labouring on a similar report. *The Sunday Times* (1) revealed that Ian Macdonald, chair of the panel whose recommendations on sugar had in mid-2014 not been agreed after 6 years and 20 meetings, is personally paid as an advisor to Coca-Cola. He also has receivesd research funding from Mars, and leads his university's 'strategic relationship' with Unilever (2). He says 'I understand people saying "You are so close to those companies you should not have anything to do with gathering the evidence for UK policy". I just disagree' (3)

Ian Macdonald, a former president of the UK Nutrition Society, should not be singled out. There is a context. All governments since the 1939-45 war have supported current food manufacturing policies and practices. Civil servants are expected to work with industry associates and collaborative scientists. The chances of any official committee taking a position that unpleasantly surprises affected industry, are meant to be nil. With sugar, a hot topic, Ian Macdonald's eight-person panel is examining carbohydrates, so the dice are loaded against clear specific findings on sugar other than on dental caries and maybe body weight, and the panel is judging evidence some from studies funded by the sugar industry.

The panel reports to the overall Scientific Advisory Committee on Nutrition, seven of whose members are a former Nutrition Society president Ann Prentice (its chair since 2010) whose research has been funded by Coca-Cola, Kellogg, and Nestlé; Gill Fine, vice-chair of the industry-controlled British Nutrition Foundation (4); Ian Macdonald; David Mela of Unilever, also on the carbohydrate panel; Monique Raats, who has had some funding from the industry-controlled European Food Information Council; and Ian Young and Julie Lovegrove, also on the carbohydrate committee, who have been funded by Sugar Nutrition UK.

Identifying individuals masks the main point. The context makes links with conflicted industry practically inevitable. Most food or nutrition scientists in the UK probably have such links, because of the system by which research science is funded and careers advanced (2). As in the US, in the UK scientists are judged by their ability to bring in external private funding which often comes from conflicted sources. It is also normal for civil servants to appoint scientists who collaborate with industry to advisory committees. Harry Keen and John Durnin, the chair and vice-chair of the government's previous panel on sugars, which reported in 1989, were both funded by the sugar industry and spoke at sugar industry events in defence of sugar. They were 'safe pairs of hands' as 'known quantities' (4).

Those who thrive in this system and do the state some service on official committees, may eventually become appointed as Officer or Commander of the Most Excellent Order of the British Empire (OBE or CBE) or in special cases become a knight or dame, honours bestowed by the monarch. This all helps to explain the state of public health in the UK.

References

1 Ungoed-Thomas J, Mansey K. Sugar watchdog works for Coca-Cola. *Sunday Times,* 19 January 2014.
2 Boseley S. Sugar intake must come down, says WHO – but UK likely to resist. *The Guardian*, 7 September 2013
3 Channel 4 *Dispatches.* Government scientific advisors funded by food and drinks industry. 20 January 2014.
4 Cannon G. Why sugar stays sweetish. *The Independent,* 12 December 1989

So what is new



Before politics Margaret Thatcher formulated ice-cream. Tony Blair approved of McDonald's funding a Labour Party conference event. The London Olympic Games were part funded by Coca-Cola and McDonald's (street art, second to right). The London Eye now advertises Coca-Cola

Does it matter that key nutrition scientists depend on conflicted money for their research? A lot, in the opinion of food policy authority (and *WN* family member) David Stuckler. Any scientist appointed by the UK government is likely to be industry-friendly and committed to 'public-private partnerships' and voluntary 'responsibility deals'. But, David Stuckler says

> Public health advocates . . . may actively seek partnerships and alliances with food companies. Food, they say, is not tobacco. [But there are] inherent conflicts of interest between corporations that profit from unhealthy food, and public health collaborations. We find no evidence for an alignment of public health interest in curbing obesity with that of the food and beverage industry. Any partnership must create profit for the industry, which has a legal mandate to maximise wealth for shareholders.

The *BMJ* investigation does not mention the wider political and economic game in which nutrition scientists are pawns. This is illustrated above. The UK prime minister who unleashed corporate power was Margaret Thatcher (left) who before politics was an industrial chemist specialising in formulations for ultra-processed food products, including aerated 'soft' ice-cream like Mr Whippy™. UK governments ever since have welcomed transnational ultra-processed product makers. Tony Blair (next to left) as Prime Minister was pleased that McDonald's funded a reception at a Labour Party annual conference. David Cameron as a next Prime Minister was delighted that Coca-Cola and McDonald's sponsored the 2012 London Olympics (next to right), as was Tony Blair, who said these corporations were great for youth sport. And now a conspicuous landmark in the capital city has become the Coca-Cola® London Eye, repainted Coke red (right).

The context of conflicts of interest involving nutrition scientists who are UK government advisors, whose judgements shape the nation's dietary patterns, is the continued privatisation of public health and public goods. Scientists who support collaboration with corporations, including those whose products harm public health, became appointed to such committees. Those who see the conflict, and who resist 'public-private partnerships', rarely become government advisors. They are not 'safe pairs of hands'.

An exception to this rule was Alan Jackson, SACN chair from 2001 to 2009. Interviewed by Jonathan Gornall he says that it is UK government research funding policy that drives scientists into the arms of conflicted industry. The problem is 'a failure within government' that places scientists 'in the invidious position of particular vulnerability to being conflicted.' As stated in the BMJ investigation:

> A report last June by Universities UK… identified a 'real terms decline in the overall level of core public funding,' with universities estimated to have lost more than £460 million between 2009-10 and 2012-13 and expected to lose a further £150 million by 2015-16. As a consequence, collaboration between higher education and business was becoming 'more strategically important for universities,' with income rising steadily over the past decade and surpassing £2 billion in 2012-13.

Research scientists' jobs depend on ability to raise funds from industry, and in the nutrition field, the private sources most likely to fund researchers are those with the keenest commercial interest in the topic, approach and findings of research. Alan Jackson explains further:

> Over the past 10-15 years government has increasingly encouraged and required academics… to develop a mixed portfolio of support for their research. This has explicitly included support from industry. So most, if not all, researchers will have some form of industry support and funding and hence have potential conflicts of interest. By the very nature of its complex roots and wide interdisciplinary engagement nutrition has particular vulnerabilities in this regard.

Now it is transnational corporations who have the money and the muscle. In February the media stories about HSBC bank irregularities noted that Rona Fairhead, now chair of the BBC governing body, is also chair of HSBC's US operations. Some stories also mentioned that she is a director of PepsiCo. Those who appointed her obviously did not see a problem.



Rona Fairhead, Chair of the British Broadcasting Corporation (left), a director of the HSBC bank, is also a director of PepsiCo (right above, with Pepsi CEO Indra Nooyi in the middle)

The Straight Thinking team. Going easy on sugar. [Big Food Watch. Sugar] [Update]. World Nutrition March 2015, ***6****, 3, 131-134*



Brazilian dietary guidelines

The lead is coming from the South

Wayne Roberts reports:

Editor's note. Wayne Roberts was manager of the Toronto Food Policy Council from 2000 to 2010, and is author of twelve books including *The No-Nonsense Guide to World Food.*

Brazil's new - food and meal-based *dietary Guidelines* (cover above) are the most down-to-earth yet visionary rethink of food's role in health promotion, ever since national food guides were first introduced in a big way during World War II. This was a rare time in history, when improving the physical strength and stamina of factory workers and foot soldiers captured the attention of national governments.

No big change since the World War

Food guides in many countries have been modified significantly since the 1940s. But remarkably, the core concepts have remained largely unchallenged, by the population at large as well as by food and health professionals and government policy analysts. As a rule, guides divide food into groups – grains, dairy, and so on – and treat food merely as a delivery vehicle for fuel and chemicals essential to physical nutrition in a narrow medical definition. They largely ignore mental, social, economic and environmental nourishment, and positive including mental and emotional health and well-being.

This era is ending, and with it the dominance of nations of the global North. Since the 1990s, when so-called 'neo-liberalism' slammed the brakes on imaginative initiatives in public policy, almost all innovative thinking about food, health and well-being has come from the global South. Urban agriculture, food sovereignty, agro-ecology – and now these comprehensive dietary *Guidelines* – come from the South. Perhaps not surprising, since the rapid rise of exploitative foreign-based industrial food regimes, food insecurity and the privatisation of water supplies, trigger mass protests in countries where threadbare medical systems and militant peasant movements make food hot politically.

Ultra-processing – the big issue

The basic scientific thinking behind Brazil's guidelines has come from a partnership between Carlos Monteiro and Geoffrey Cannon, who have published a lengthy series of articles in *World Nutrition,* culminating in the December 2012 commentary on ultra-processing as 'the big issue for nutrition, disease, health, well-being.' Their

analyses and conclusions inform the 150 pages of the Brazilian *Guidelines*. These use a new classification system based not on food groups, but on the nature, purpose and extent of food processing. There are three kinds of processing, the argument goes. The first and oldest is minimal processing, which does not alter the food, such as methods of preservation like drying. The second adds oils or sugar or salt so that foods are modified – preserved, but less healthy.

The third, ultra-processing, became the norm as from the 1980s when global corporations mined wonder-foods such as corn for a welter of chemical ingredients and mixed these up with an array of artificial factory-made food-like substances that added colour, flavour, mouth-feel, shelf-life, and extreme convenience. Just as important – and this is where the new classification method confronts transnational corporations – ultra-processed products are rejected because their 'means of production, distribution, marketing, and consumption damage culture, social life, and the environment.'

Protecting the rights of children

Social equity is put on the menu, in sections urging everybody in households including children, to plan and shop for, prepare, cook, and clean up after meals. Social cohesion is promoted in multiple sections, all attesting to the power of meals to bring people together and encourage conviviality. Eating alone or devouring food at a work station or while using a mobile phone are identified as eroding the food environment needed to promote fellowship and slow digestion, which cue mechanisms signalling the body that it has had sufficient food.

The guide is designed as a partnership and collaboration between governments, health professionals and people – not just as consumers but also as citizens. 'As a citizen acting collectively, much can be done,' a section concludes. 'As a member of a community group or civil society organisation you can advocate and campaign for fiscal and other statutory public policies that protect farmers and the price of their produce so these remain absolutely and relatively cheap, and that make ultra-processed foods relatively expensive.'

This is not a recipe for government action, but for popular engagement and mobilisation. Government, however, is assigned the role of protecting citizen rights, especially the human right to food entrenched in Brazil's Constitution. Several sections of the report draw attention to the promotion of ultra-processed food and drink products to children, which accounts for two-thirds of television advertising, and suggest – as many public interest civil society organisations insist – that such dominance of the airwaves violates requirements for advertising accuracy and protection of children's rights.

*Roberts R. Brazilian dietary guidelines. The lead is coming from the South. [Update]. World Nutrition March 2015, **6**, 3, 135-136*



***WN** Sick societies*

Mexican diabetes devastation. It is essential to tax soda

Access December 2013 Big Food Watch Fabio Gomes on Mexican junk food taxes here
Access May 2014 Big Food Watch Fabio Gomes Letter to Mexican President here
Access July 2014 Big Food Watch on the Mexican Alliance for Healthy Food here
Access December 2014 Big Food Watch on diabesity in Mexico here



One of the powerful images produced by the Alliance for Healthy Food, the Mexican public interest coalition supported by scientists whose mission is to reduce rates of malnutrition, obesity and diabetes

The Update team reports:

Diabetes, uncommon in Mexico until the 1980s, is now the second most common cause of death in Mexico after heart disease. Its rocketing rates run in parallel with the very rapid penetration of ultra-processed food products and in particular sugared soft drinks, as a result of the North American Free Trade Agreement (NAFTA) that opened up Mexico to transnational corporations.

In 2012, estimates indicate that more than 80,000 Mexicans died from diabetes. According to Mexico's National Health and Nutrition Survey of 2006, 14 per cent of the population aged 20+ suffer from diabetes. Diabetes is closely linked with obesity – so closely that the two conditions are often called 'diabesity' – and Mexico now has almost the highest rates of obesity in the world.

One in three Mexican children and seven of every ten adults are now overweight or obese. More details, including of the campaigns waged by the leading civil society organisation *El Poder del Consumidor,* are in the pdfs accessible above.



Diabetes as well as obesity is devastating the health of Mexicans of all classes. This image is taken from an interview with a lower middle class soda drinker carried out by El Poder del Consumidor

Mexican diabesity forecast to cost 150 billion pesos by 2017

The economic impacts of diabetes on families, livelihoods and the health system, as well as the devastation to health, are enormous. A report published this January by the Mexican Institute for Competitiveness estimates that the total cost of diabetes associated with overweight and obesity is more than 85 billion pesos per year (around $US 5.8 billion), representing 63 billion pesos (around $US 4.3 billion) for treatment, and 22 billion pesos (around $US 1.5 billion) for loss of income due to absence from work and premature death. By 2017, the Mexican National Institute of Public Health reckons that the national cost of obesity and its associated diseases, notably diabetes, will rise to 150 billion pesos, or $US 10.2 billion.

Research now shows the crisis that Mexico confronts today. But what circumstances will future generations face? A study being carried out by Rafael Meza of the department of epidemiology at the University of Michigan, US, projects how Mexican children will experience the diabetes epidemic in their lifetime. The information here is taken from an interview with him to discuss the results of a study he is currently preparing for publication. He develops mathematical models to map the impacts of preventive strategies on the burden of chronic diseases. He has now calculated the chances that Mexican children born today will be diagnosed with diabetes over the course of their lifetime.

A half of Mexican children may suffer diabetes

He ran two models. The first is based on diabetes incidence estimates from 2005. The second uses incidence estimates from 2010. Both models use mortality rate data from 2010. He estimates that the lifetime risk that a Mexican child born in 2010 will be diagnosed with diabetes is between 37 per cent, or more than one-third, and 53 per cent, or more than a half, depending on the model used.

His findings are consistent with research carried out at the US Centers for Disease Control and Prevention (1). This estimates that there is a 33-39 per cent lifetime risk of being diagnosed with diabetes among the US population as a whole born in 2000.Among US-born Latinos the risk is higher, increasing to about 50 per cent.

Diabetes will certainly cause devastating health, social and economic consequences for Mexico's future generations. Given that even by his most conservative estimate one in three Mexican children will grow up to be diagnosed with diabetes, Rafael Meza's work is a call to action. He urges the need for comprehensive public policies that focus on preventing obesity and diabetes.

A high soda tax could save a million lives by 2030

These policies clearly must include fiscal measures, such as Mexico's soda tax. Enacted in January 2014, it places a 1 peso per litre, or 10 per cent, excise tax on all sugar-sweetened drinks. Applauded by international and national academics, civil society and the Pan American Health Organization, the tax is a cost-effective measure that should curb the prevalence of overweight, obesity, and diabetes in Mexico. Rafael Meza agrees that the tax is a rational and promising preventive measure against obesity and diabetes, given the colossal levels of soda consumption in Mexico (an average of 163 litres per person per year) and the convincing evidence causally linking consumption of sugar-sweetened soft drinks with increased diabetes risk and premature mortality.

In a study carried out with colleagues Tonatiuh Barrientos-Gutiérrez, Rosalba Rojas and others from Mexico's National Institute of Public Health, he estimates that by 2030 the current 10 per cent tax should reduce the number of diabetes cases by between 400,000 and 630,000, and that a 20 per cent tax would prevent between 800,000 and 1,275,000 cases. He uses these projections to demonstrate the dramatic impact that public policy action can have in controlling the diabetes epidemic.

Rafael Meza's estimates of lifetime risk of diabetes, together with the projections of his soda tax impact study, show that the soda tax, and other public health actions to prevent more diabetes cases, are imperative and urgent. But is the Mexican government ready, willing and able to take sufficiently strict, timely, adequate and comprehensive action? The answer must be yes, for the sake of the well-being of the people of Mexico and for the future of the country as a whole.

Reference

1 Narayan V, Boyle J., Thompson T et al. Lifetime risk for diabetes mellitus in the United States. *Journal of the American Medical Association* 2003, **290**, 1884-1890

*The Update team. Mexican diabetes devastation. It is essential to tax soda. [Sick Societies][Update]. World Nutrition March 2015, **6,** 3, 137-139*



***WN** Balance*

Feeding one another



Shannon Hayes lives and works with her family at Sap Bush Hollow Farm in upstate New York. She is the author of Radical Homemakers, and of A Long Way on a Little (Left to Write Press)

Shannon Hayes writes:

Sooner or later the question comes up, whether it is between two friends sharing a pot of stew made from local grass-fed beef and their garden harvest, neighbours working together to tend a flock of backyard chickens, or organic vegetable producers discussing yields at a conference. 'But can we feed the world this way?'

As we try to move humanity away from dominant power regimes and thoughtless extraction of the earth's resources, toward ways of life that honour the earth and her creatures, this is the most maddening question. We've been conditioned reflexively to turn to this question as we challenge our methods and consider new paths toward sustainability. However, 75 or 100 years ago, to ask local farmers how their production methods were going to 'feed the world' would have been absurd. Their job was to support their family, the community, and their bioregion – not the world.

But following World War 2, 'feeding the world' became a mantra. It was a ubiquitous 'good' that handily justified the discovery that the petrochemicals used in warfare could find postwar applications if dumped on our food supply. 'Feeding the world' consoled farmers as they incurred mountains of debt to afford the fossil-fuel-intensive machinery and expansive acreage that would enable them to crank out tons of food for which they would garner increasingly lower prices. 'Feeding the world' was the elixir offered as our grandparents attempted to adjust their palates to a food supply that was suddenly tasteless as local food disappeared from the market. 'Feeding the world' was the slogan tossed about as rural people the world over surrendered ties to the land, moved to cities, and trusted that the food system would take care of itself. 'Feeding the world' was the background tune playing in the bank, on the car radio of the seed salesman, in the office of the accountant as farmers were counselled to expand their production and change their growing practices to participate in a global food supply, rather than a regional one. 'Feeding the

world' was the motto that let us all not notice the polluted waters, the increasing severity of floods, soil loss, or that the little farm next door had suddenly gone.

But those farming practices that feed the world are washing away our topsoil and leaving what remains deficient. The goal to feed the world has led to a form of agriculture that has made it increasingly difficult for the people of the world to feed themselves. And the fact that fossil fuels are not quite as abundant as they once were, nor as cheap, means that even if we could generate yields of global proportions in perpetuity, we wouldn't be able to deliver the goods in any cost-effective manner.

No one can feed the world. One country cannot do it, nor can any specific model of production. The earth must be allowed to reclaim its natural productivity. We need local and regional food systems, designed in harmony with local ecosystems. It would be absurd to think what works for us here in upstate New York is going necessarily to work in Africa. Heck, many of the methods that work on farms ten miles from our house won't work on our steep hillside farm. There is no such thing as a universally applicable production practice, or a universally acceptable diet.

How do we feed ourselves?

This is not to say that we shouldn't be concerned about global starvation. But if enabling everybody to have access to good, nutritious food is really our goal, we need to look deeper than crop yields and feed conversion ratios. In addition to the complicated politics involved, we need to examine our individual actions. Our daily sustenance should not require that other people in the world go without nourishment. Our daily sustenance should not demand excessive fossil fuels for growing, processing, and transporting the food to our tables.

Beyond that, our consumption habits ideally should not be requiring people in foreign lands to destroy their own access to clean water and fertile soils for the sake of dying our clothing, building our electronics, or making our children's toys. Feeding the world starts with personal accountability. Rather than asking farmers if the methods they use can feed the world, we need to ask ourselves, 'Do my choices help enable the world to feed itself?' If the answer is no, then it is time to make different choices. It is not solely up to the farmers. It is up to each and every one of us to strive to live a life of personal accountability that will enable this earth to heal, and enable this world to feed itself.

No single agricultural practice will be universally applicable. Nor will any single life path. There are many routes to a healed planet. What matters is that we keep asking ourselves to be accountable, and keep making the changes that are direly needed. What can you do today that will enable the world to feed itself?

From Homespun Mom Comes Unraveled: Left to Write Press 2014.
Shannon Hayes's website is TheRadicalHomemaker.net

Hayes S. Feeding one another [Balance]
[Update] World Nutrition March 2015, **6***, 3, 140-141*

WN *Development*
Visions for this century 4

Access November 2014 Visions for this century (1) here
Access December 2014 Visions for this century (2) here
Access January-February 2015 Visions for this century (3) here

Brooke Aksnes writes:

In the last three issues, *WN* editorial family members have written about the state of the world now, and their visions for the future. See above. We will continue to publish *Visions* of *WN* contributors throughout 2015, as *Updates,* and as letters in our *Feedback* section.

Seva Khambadkone





Eric Garner and Michael Brown, two unarmed black men, were killed as a result of police action in the US, my country. Academics like me cannot remain detached from unjust and unequal societies

What mainly determines population well-being, health, and disease?

Many variables directly or indirectly determine health. 'Socio-economic determinants of health' has become a buzz-phrase in public health, for good reason. The interaction between humans and our environment – the interplay between the myriad

geopolitical and socio-cultural and natural factors – shapes us personally and collectively.

Most of us who live in privileged societies have the agency to shape our environments, and thereby inputs and outputs, of health, happiness, and so on, to some degree. We can choose what to eat, how to exercise, whom to surround ourselves with, which books to read. But there are aspects of our environmental upbringing that we cannot personally control, such as where we were born and raised Also, differentials in means create a differential in agency. Poverty and systemic oppression of marginalised populations create resource-poor environments and, adding to the devastation, reduce the agency of people and groups to improve their environments.

By 'agency' I do not mean 'willingness,' but 'the power to carry out action.' It is difficult to eat healthily when the only local food options are corner stores filled with chips, fast foods, and liquor, and when you have no car, and public transportation is unreliable, and you have children at home. All the more so when even if you can get to a grocery store the more economic and calorically efficient options are high-fat/-sugar/-preservative. It is difficult to seek healthcare when you are without insurance and free clinics have very specific hours of operation and you cannot miss work.

Environmental factors, socio-economic in particular, are major determinants of health and wellness. To improve population health, these determinants must be addressed, in collaboration across sectors and alongside communities, to reduce disparity in environment and to create collective power toward the pursuit of health and happiness for us all.

What mainly determines good population nutritional status?

See above.

How useful are the current nutritional sciences?

I am deeply interested in nutrition and have studied it from the angle of my own fields of purpose – neuroscience, public health, medicine – but I do not feel I have the expertise to comment on the current state of nutritional sciences. However...

First, no major issue can be addressed by one field alone. They are all multidisciplinary problems, and must be addressed by multidisciplinary solutions rather than academic silos. Nutrition sciences are extremely useful, but as a component of a systems approach to understanding and addressing the world.

Second, the application of nutrition sciences to real world health and nutrition, or more broadly the application of academic work to real life, must be well aware of socio-environmental context. For example, a recommendation based on the amount of, say, vitamin B1 needed, means little without work to create the structural changes required to make achieving this recommendation possible for a population.

Are enough governments and official agencies making real progress?

There is some progress being made, such as the new Brazilian dietary guidelines. However, in seeing the sustained, wretched poverty and malnutrition in so much of the world, and now the phenotype of co-morbid obesity and malnutrition, it has to be said that while some real progress is being made, it is far short of enough.

Are current dietary guidelines and nutrition education programmes effective?

Some guidelines and programmes are admirable. Many are sorely lacking. There seems to be some sort of a 'feel-good' attitude in public policy and programming of good intentions (and many times good publicity), which does not reflect scientific or socio-environmental realities. Some of the factors playing into this are lobbying from Big Whatever, and restricted funding from big-pocket donors with good intentions but little situational understanding.

Funny how many of the factors involve money… The only way to rise above this, and to implement effective, evidence-based policy and programming, is through collaboration. No one person can know about the biochemistry of nutrition, and its socio-environmental context, and also how to affect evidence-based policy and programming changes, and be able to woo conscientious donors and rise above the systemic bullying of big business. But partnerships can. So to the next question…

What types of civil society groups are most responsive to the big issues?

The big issues are multi-dimensional and must be addressed multi-dimensionally. The most responsive civil society groups are those that work systemically. They reach beyond their own capacity and work with and learn from governmental and other non-governmental organisations, and – essential but so often forgotten – communities themselves. In this way each discipline and each sector contributes its unique perspective and strengths toward creating effective and lasting change. Carl Taylor's posthumously-published call to action is just so relevant here: 'Real social change occurs when officials and people with relevant knowledge and resources come together in joint action around mutual priorities.'

Name up to three inspiring leaders likely to be active to 2030, with reasons.

Students – We are babes, nourished on Paul Farmer and Paulo Freire and Audre Lorde, in our impassioned dormitory debates, our final papers, our courtyard protests. It is now our chance to take these inputs, process them in our brains and hearts, and produce outputs pursuing this real social change.

Community members and activists – But the first step in doing this, students, is by realising how little we know about the world. Rather than being blinded by good intentions or stuck in academic theory like so many of our forefathers, let's escape the ivory tower and its high horses, and instead approach those we hope to serve alongside as equal partners in 'joint action around mutual priorities.'

Identify up to three of your greatest fears, with reasons

I have a personal fear. I am currently a second year medical student, studying interaction between environment and neurodevelopment in low-resource and marginalised communities, so as to contribute to creation and implementation of more effective, evidence-based interventions. The scientific and clinical skills this goal requires takes years of training in school and laboratory, which I've always really enjoyed. But I worry that the time and energy the training requires will remove me for too long from the context of why I am doing what I am doing, to use my strengths to contribute to real, evidence-based, empowerment-centred social change.

This last year I've have made engagement in the outside world a priority. I am co-chairing the Latino Medical Student Association's northeast regional conference this year with a theme of Creating Alliances in Solidarity for Latino Health. My intention is to learn how I can work in collaboration with my institution, and with community-based organisations and the Latino community in pursuit of social justice in health. I am engaged in a year-long service-learning project with a Baltimore-based community organisation that does similar work to that I previously did in Nicaragua.

My other fear is societal. In the US, my country, the deaths of Michael Brown, Eric Garner, Tamir Rice, and many others, through police brutality and systemic devaluation of Black lives, are deeply disturbing. The public reaction has made clear once again, that not every human believes a basic tenet of humanity: that each and every human being is just as human. It terrifies me to live in such a world. Rage and sadness accompany this fear. I am so aware of my privilege that while ethnically Indian and thus a non-Black person of colour, I have the luxury to be angry and sad while not having to worry about my own life. I feel nausea in knowing that so many fellow human beings are constantly in danger, and that so many others refuse to see this as a problem. Such thoughts plague me and my colleagues and friends.

Identify up to three of your greatest hopes, with reasons.

At the same time, the massive national and international response to injustice, and experiencing grassroots organisation in action, makes me hopeful that societal progress is possible. So do my conversations with some incredible friends and mentors. In the most harrowing moments of tragedy, hope seems almost flippant. But just as an ocean is made of drops, society is made by people coming together. Honest conversations and collaborations, and the actions they spur, can make for social change. This strengthens me. In the words of Arundhati Roy: 'Another world is not only possible, she is on her way. On a quiet day, I can hear her breathing.'

Make any other remarks as you may wish.
Thank you.

*Khambadkone S. Development. Visions for this century: 4 [Update]. World Nutrition March 2015, **6**, 3, 142-145*