

# Health, wellbeing and sustainability

# Diets



## Cambridge Forum for Sustainability and the Environment

**A rising world population, declining resources and a changing climate are all reshaping where we live and how we live. So how do we respond?**

This key question is the focus of a Forum in the University of Cambridge which aims to stimulate cross-disciplinary conversations about some of the planet's most pressing global sustainability challenges and to bring fresh ideas and perspectives to research which will help to prepare for and address those challenges.

On a global scale, we need to find a way in which 7 billion people, expected to rise to 8 billion by 2030 and 9.6 billion by 2050, can live a high quality of life that is less demanding on our planet. And to adapt, be efficient and be sustainable, we need to know where to place our energies – nationally and globally – to meet the challenges the future will bring. Unfortunately there is no silver bullet: The solutions will need to be 'multi-pronged' and multi-disciplinary, requiring knowledge from many different sources.

'Sharing the knowledge' and catalyzing those connections are two of the goals of the Forum, which is Chaired by Professor Lord Martin Rees and has 25 core members who work in areas ranging from energy, biodiversity and food security to anthropology, architecture, history and economics.

One of the Forum's aims is to bring people together who would not usually meet each other but who are working in areas which overlap enough to stimulate an interesting discussion. Each month during term time, three expert 'witnesses' are invited to help us to explore a particular area. They tend to be from outside Cambridge, and by inviting a rich mixture of policy and decision-makers from governments, researchers and business and technical experts, the Forum aims to derive fresh and innovative perspectives and generate new trans-disciplinary research questions.

### Our themes

The general theme of all the Forum discussions is 'sustainability in an uncertain future' and specific topics change each academic year. In our first year, we brought together a rich mixture of policy and decision-makers, technical experts and researchers to talk about sustainable cities. In October 2014, our focus shifted to a second topic, 'Land-use change', which aimed to stimulate connections between three of the University's Strategic Initiatives: Cambridge Conservation Initiative, the Cambridge Global Food Security Initiative and Energy@Cambridge. During these meetings, we explored the challenges we face as we place ever increasing and sometimes competing demands on land and natural resources. Our third topic was 'Risk, resilience and response', where we explored how cities, the food and water chain and energy systems can be made resilient in the face of increasing systemic pressures and environmental changes.

Our fourth topic is 'Health, wellbeing and sustainability' and each term we explore a different theme. In addition to the meetings outlined in this report, in October, November and December we discussed the determinants of health and wellbeing in the places we live and work and the importance of green spaces in cities. In May and June we will explore health, wellbeing and sustainability in a changing world.

## Forging new connections

Our overarching theme forges connections between health, wellbeing and sustainability and in this report we are focusing on diets and lifestyles.

At the first meeting in January, we started by looking at how our diets may change in the future and ways in which these changes could impact the environment. In February, we turned to what drives the choices people make, and in March we discussed 'catalysing change' and the role that policy and advocacy could play in changing what people eat and how active they are.

As always, a panel of three witnesses joined us each month and to provide their perspective on gaps and future research questions, followed by an open question and answer session.



## Between January and March 2017:

9

Expert witnesses, including a technical experts a food writer, policy expert and academic experts in ecosystems, food behaviours and health psychology

32

University departments, Centres and Initiatives and...

52

Experts took part in the discussions.

## Meeting themes

### Diet, health and the environment

At our first meeting we started by looking at how our diets may change in the future and ways in which these changes could impact the environment.

**Dr Michael Obersteiner**, Director of the Ecosystems Services and Management (ESM) Program at the International Institute for Applied Systems Analysis (IIASA) in Austria joined **Dr Marco Springmann**, a researcher from the Oxford Martin Programme on the Future of Food who is interested in connections between climate change, diets, and health. The final witness was **Professor Sumatra (Shumone) Ray** a cardiologist who founded NNEdPro Global Centre for Nutrition and Health to help us to explore how our diets may change in the future and ways in which these changes could impact the environment.

### Food behaviours

In the second meeting of the series the panel of witnesses helped us to explore factors that shape and drive what people choose to eat.

Our first witness **Professor Martin White**, a clinical academic who leads the food behaviours and public health interventions group at the Centre for Diet and Exercise Research (CEDAR), based within the MRC Epidemiology Unit at the University of Cambridge. He was joined by **Bee Wilson**, a food journalist and historian who is particularly interested in the ways in which our experience as children shapes what we like and what we choose to eat. The final witness was **Professor Charles Godfray**, the Director of the Oxford Martin Programme on the Future of Good, who helped to put questions about choice in the context of health environment co-benefits of diet change.

### Catalyzing change in in our diets

In the final meeting the three witnesses examined the ways in which policy could – and should – shape what we eat.

For the last meeting of term, our working title is always 'catalyzing change' and our first witness was **Professor Tim Lang**, Professor of Food Policy at City University London's Centre for Food Policy. He was joined by **Dr Brent Loken** from the EAT Foundation in Oslo. EAT was created by the Stordalen Foundation, the Stockholm Resilience Centre and the Wellcome Trust in 2013 and aims to stimulate inter-disciplinary research in order reform the global food system, enabling us to feed a growing global population with healthy food from a healthy planet. The final witness was **Professor Theresa Marteau**, the Director of the Director of Behaviour and Health Research Unit, who is keen to talk about ways to increase public support for effective policies.



## Theme Summary

The overall theme for this term was health, wellbeing and sustainability with regard to diets. Whilst the three meetings are summarised individually in more detail over the following pages, this section highlights some of the key themes that came up over the course of the entire term.

There was general agreement across the three forums that when it comes to what constitutes a 'good' diet and its importance with regard to health, wellbeing and sustainability **there is a large, albeit evolving, evidence base**. There remain some outstanding areas to explore, such as determining exactly what nutritional factors are best for human health. **Diet is a multidisciplinary and multicriteria problem**, which Professor Tim Lang related to food quality, health, environment, social and cultural issues relating to diet, economics and governance. Professor Charles Godfrey emphasised that health and the environment overlap and can have co-benefits, but exactly how these interrelate and how negative rebound effects can be avoided was a frequent discussion point.

There was also agreement that, overall, **rapid change of the food system is needed** for health and environmental reasons, although it was noted that in some instances maintaining the status quo in areas of good practice will be just as challenging. Dr Marco Springmann asserted that animal-based diets are unhealthy and unsustainable, and that food production will exceed emissions targets if land change is also considered.



Dr Michael Obersteiner and others considered **whether policy interventions should occur at the point of consumption or point of production**. At the moment interventions are often at the supply end and changing our demands could have a greater impact. There was disagreement across the Forums as to which of these intervention points were most important; however, it was agreed that both were vital and could serve different purposes.

**Policymakers often know the changes that can make people's diets healthier, but how to catalyse those changes is much less clear**. There are very few existing models for large-scale interventions at the population or even community-level. Examples from other European countries and the US has shown that food and drink-related taxes are politically sensitive; subsidies can have unintended adverse consequences for the environment; certifications can lack a solid evidence base; and clear, effective food labels are hard to achieve. Modelling studies can examine the theoretical effect of policy changes and these also need to



be 'ground-truthed' with information about how people behave in real life. Even when the correct policy approach is known, **public opinion needs to be galvanised so that policymakers can be emboldened** to enact interventions that can affect behavioural change. Professor Theresa Marteau explained that communicating evidence concerning the intervention can make it more acceptable to the public and suggested that the public sector could encourage behavioural change in advance of cultural shifts.

Whether policy interventions should occur at a **population or individual level** was also discussed. Dr Brent Loken suggested that the urgency of the issue meant that population-level changes were more effective and vital, but could be supported by interventions at other levels. Each population, and its demographic subsets, will require a different approach.



**It is hard for the public to access and absorb the complex information regarding diet**, and as a result they become sceptical and revert to default practices. Although digitisation offers opportunity to convey information more effectively, health and environmental messages alone will not change our food culture: a holistic, systems approach is required. Bee Wilson suggested that a change in approach is required. For example, **people's malleable flavour preferences could be changed** so that they actively enjoy healthy food over sugary treats. She and others recognised the importance of education at all levels, but especially at a young age, in changing our relationship to the environment and food production.

Looking at industry, there is scope to optimise agricultural practice, and this could cause beneficial indirect land-use change. Professor Martin White suggested that regulation was probably necessary in this area as voluntary commercial change had not been forthcoming, but this can have negative consequences if the cost is passed on to other areas. As things stand, the food and drinks industry has too much power, and the mechanisms by which public pressure on industry can be created needs investigation. Crucially **we need to know more about how the food industry influences dietary choices**.

There are many layers between researchers and the individual consumer, and **research is needed into how messages can be communicated clearly so as to influence behaviour**. Professor Sumantra Ray advocated the need for effective and trusted knowledge brokers, such as healthcare professions, that would help people to understand the evidence behind diets, and the research community needs to take an active role in this process.

With the rapid pace of urbanisation, these problems need to be addressed before they become unmanageable. A final thought considered whether policy change directly focused on the global food system was enough to catalyse significant change by itself or whether the status quo of other large-scale economic forces can lead to inertia in food policy.



## Diet, health and the environment



### Research gaps

The witnesses examined the relationship between the human diet and environmental and health impacts. After stating the nature and scale of the problem they offered some suggestions for effecting change through technological, systems and policy approaches at the point of production and consumption.

**Dr Michael Obersteiner** emphasised that optimising agricultural practice can have a greater environmental impact than dietary changes. For example, a global scenario in which algae were grown with saline water in the desert to feed livestock (combined with a circular economy around manure) would lead to positive indirect land-use change: land is freed up for harvesting biomass, soil amendment and carbon capture sequestration, and water is saved through reduced irrigation. Theoretically you could meet the 1.5° climate change scenario and feed double the current population. Nonetheless, human behaviour regarding diet is also important, particularly for personal health. In this area, information through digitalisation will have a larger impact on consumption patterns than on the optimisation of agriculture. More research is needed regarding precisely what nutritional factors are best for us so this can be compared with environmental impacts, how to convey this information reliably to citizens and how policy can interfere and guide people towards a better diet.

**Dr Marco Springmann** explained a dual problem whereby current animal-based diets are unhealthy and there are unsustainable greenhouse gas (GHG) emissions from our food system: factoring in land-use change, global emissions budgets will be exceeded through food production alone by mid-century. Shifting towards plant-based diets would help alleviate both issues and is largely accepted as necessary. How do we do that? Traditionally GHG taxes on food commodities are considered to negatively impact food security, but this is not necessarily the case as changes in consumption may shift unequal global weight distribution, and high emitting food groups (such as red and processed meats) can be targeted. Tax policy must be designed in a health sensitive manner, such as using revenues for fruit and vegetable subsidies or offsetting income losses. However, more research and case studies is needed to inform policy, as well as modelling studies that factor in industry and multinational companies and increase the number of environmental and economic indicators.



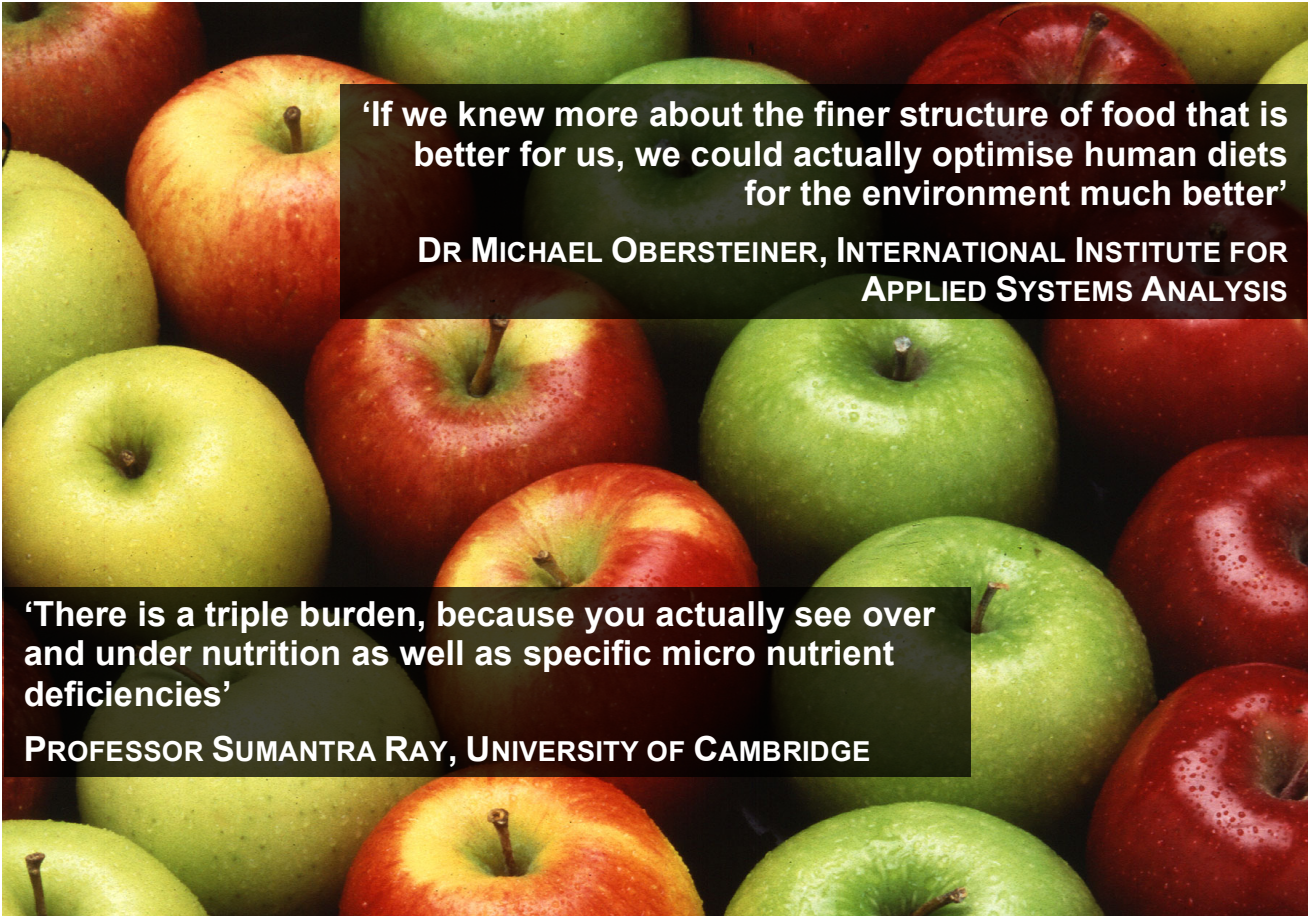
**Professor Sumantra Ray** pointed out that humanity is currently undergoing a nutrition transition and currently there is a triple burden of malnutrition through diseases of undersupply, oversupply and specific micronutrient deficiencies. These issues tend to be considered separately despite the fact they can all occur at a population (developed/developing), family and individual (through life course) level. There is a massive, and fluctuating, evidence base regarding the potential of diet through nutritional pathways (and agricultural or food production nutrition), but this is not being translated to positive health outcomes. Unable to access or digest this information, individuals revert to default behaviour. Accountable and regulated knowledge brokers, namely healthcare professionals, need to be trained and empowered to aid people in making informed dietary choices. Studies are needed that follow such processes through to the health outcome.

### Wicked problems and questions generated by the open discussion

**How can we communicate research in a way that influences individual behaviour?** This was the key question highlighted by all the speakers and the ensuing discussion. There are a number of communication filters between research and the individual that can alter or confuse messages about dietary practice: impenetrable policy documents; biased or flawed knowledge brokers, such as the media; the challenge of communicating dynamic evidence-based research; and industry pressures. We know enough about human diet to ensure healthy and environmentally positive outcomes, but not how to communicate this in a way that influences behaviour. We need better regulation and public health advocacy to combat these problems.

**What is the best policy approach to influence change?** Taxing food to cause a price increase is one option although this is unpopular with policymakers. Any tax needs to be supplemented by a range of other factors such as advertising to communicate the purpose of the tax and subsidies for healthier and more environmentally efficient products. Subsidies alone can have unintended consequences, such as increased overall food consumption leading to negative outcomes.

**Where is change needed most?** Taxing the industry or the point of production can serve a different purpose than taxing the individual or point of consumption. It is potentially more efficient to tax consumption and may have a greater impact; however, it is clear that effecting change in both areas is necessary.



**'If we knew more about the finer structure of food that is better for us, we could actually optimise human diets for the environment much better'**

**DR MICHAEL OBERSTEINER, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS**

**'There is a triple burden, because you actually see over and under nutrition as well as specific micro nutrient deficiencies'**

**PROFESSOR SUMANTRA RAY, UNIVERSITY OF CAMBRIDGE**

### How do you unpick which factors ultimately have the most significant impact on human behaviour?

In pre-existing cases there are often a huge range of interventions that have led to change, so trying to isolate one factor is difficult. A holistic, whole systems approach is required.

**What other factors affect what we eat?** The science of taste and how this interrelates with behaviour could be important and it, along with other research areas, needs to be incorporated into a genuinely multidisciplinary discussion. Food is culturally important and simply communicating health or environmental messages will not change behaviour.

**How do we account for rebound effects?** Better dietary practice leads to a reduced mortality rate which can have a negative impact on the environment; subsidising healthy foods allows consumers to buy other products which will have their own environmental impact. Studies need to be mindful of conflicting aims and the dual problem of human health and environment health needs to be considered as one.

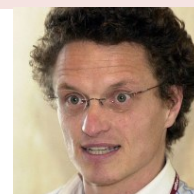
**Is change always necessary?** Sometimes maintaining the status quo is just as challenging as catalyzing change. Areas where there is already a healthy diet with sustainable local agriculture need to be protected from the encroachment of more harmful global practice.

### Witness profiles

#### Dr Michael Obersteiner

Program Director of the Ecosystems Services and Management (ESM) Program, International Institute for Applied Systems Analysis (IIASA).

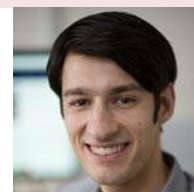
Michael joined IIASA's Forestry Program in 1993 and has led the Group on Global Land-Use Modeling and Environmental Economics since 2001. His research experience stretches from plant physiology and biophysical modelling in the areas of ecosystems, forestry and agriculture to environmental economics, bioenergy engineering and climate change sciences. During the past decade he has been the principle investigator at IISA of more than 30 international projects as well as coordinating three EU FP6/7 projects. He has been a consultant for national and international organisations, including the EC, WWF and OECD Committee and has worked with WHO, the UK-China Forum and the EC.



#### Dr Marco Springmann

James Martin Fellow, Oxford Martin Programme on the Future of Food, Post-doctoral Researcher, Department of Population Health, Oxford University

Marco currently works with researchers from the Nuffield Department of Population Health, the Department of International Development and the Environmental Change Institute to develop an integrated model of environmental sustainability, health and economic development in order to analyse the effects of current and future policy approaches. His interests include the policy analysis and questions related to sustainability, and his doctoral research focused on the distributional impacts of national and global climate policies and on options for integrating the responsibility for consumption-driven greenhouse gas emissions into policy-making.



#### Professor Sumantra (Shumone) Ray

Founding Chair and Executive Director of the NNEdPro Global Centre for Nutrition and Health – Senior Medical Advisor and Head of the Volunteer Studies and Clinical Services Facility, MRC Elsie Widdowson Laboratory, University of Cambridge

Shumone is a licensed medical doctor and registered nutritionist with special interests in cardiovascular disease prevention and medical nutrition education. His posts also include, amongst many others, UK National Diet and Nutrition Survey lead clinician (Honorary Consultant in Nutrition with Public Health England), University of Cambridge Senior Clinical Tutor, Honorary Senior Clinical Fellow at Addenbrooke's Hospital, Cambridge, Fellow of the Higher Education Academy, a task force member of the British Nutrition Foundation and being an external reviewer for the European Food Safety Authority and WHO.





## Food behaviours



### Research gaps

The forum examined the relationship between dietary choices, health and environmental sustainability. The formation and composition of public health messages were discussed as well as the interplay between industry, policymakers, researchers, consumers and the environments that can affect food choice for better or worse.

**Professor Martin White** and CEDAR aim to generate new knowledge that helps promote a healthier diet at a population level, which is often more effective, efficient and equitable than at the individual level. Dietary choices can be considered as the product of both a complex commercial food system and various systems that affect consumer choice, which are chiefly socio-economic in nature. How can we distribute resources so as to allow people to make healthier choices and get the food industry to support public health goals? The latter can be achieved through voluntary changes by the sector, which have not been forthcoming, or regulation. The soft drink industry levy is an example of regulation but this may have unintended consequences, such as the cost being passed on to consumers, even in healthier product lines. The research community needs to know how the food industry influences diet; how it can influence the food market offer in the interests of public health; how it can interact with the food industry without compromising scientific integrity; and how much can the public influence the industry. All the above principles can also be applied to changing sustainability-related behaviours.

**Bee Wilson** highlighted that a key element of food choice is preference and this area is often neglected in food policy actions. If people like a foodstuff they will not need to be told to eat it. Our food preferences are deeply malleable and learnt through exposure at childhood, or even during pregnancy. Currently happy childhood memories tend to revolve around obesogenic foods, and these habits persist into adulthood; however, there need be no intrinsic reason why one type of food is more enjoyable than another, and healthy and sustainable plant-based diets could be as appetising as high-sugar treats. Flavour preferences on an individual and population level can, in theory, be learnt as the human olfactory system remains adaptable. To instil change, interventions must tackle the food environment that encourages unhealthy food preferences and educate children about taste, such as through deploying in schools the Sapere method based on sensory experience.

**Professor Charles Godfray** discussed the overlap between health and environmental sustainability and analysing their significant, if not universal, co-benefits in an economic framework. Following a WHO recommended diet could globally reduce deaths by 5 million a year and also substantially reduce greenhouse gas generation by the food system. Each population requires a different approach, perhaps best exemplified by the range of income percentage spent on food (e.g. 9% in the US versus 40–50% in developing countries). Current interventions have merit but face challenges: certification schemes often lack a good evidence base and creating food labels for a multi-dimensional issue such as sustainability may be reductive and disregarded by consumers. Environmental sustainability narratives also can be appropriated by different advocacy groups, which generate conflicting and disorientating advice. Research into health and environmental co-benefits is needed, and at Oxford a project is examining these with regard to animal-sourced foods.

### Wicked problems and questions generated by the open discussion

#### **How can policymakers be empowered to make population-level public health interventions?**

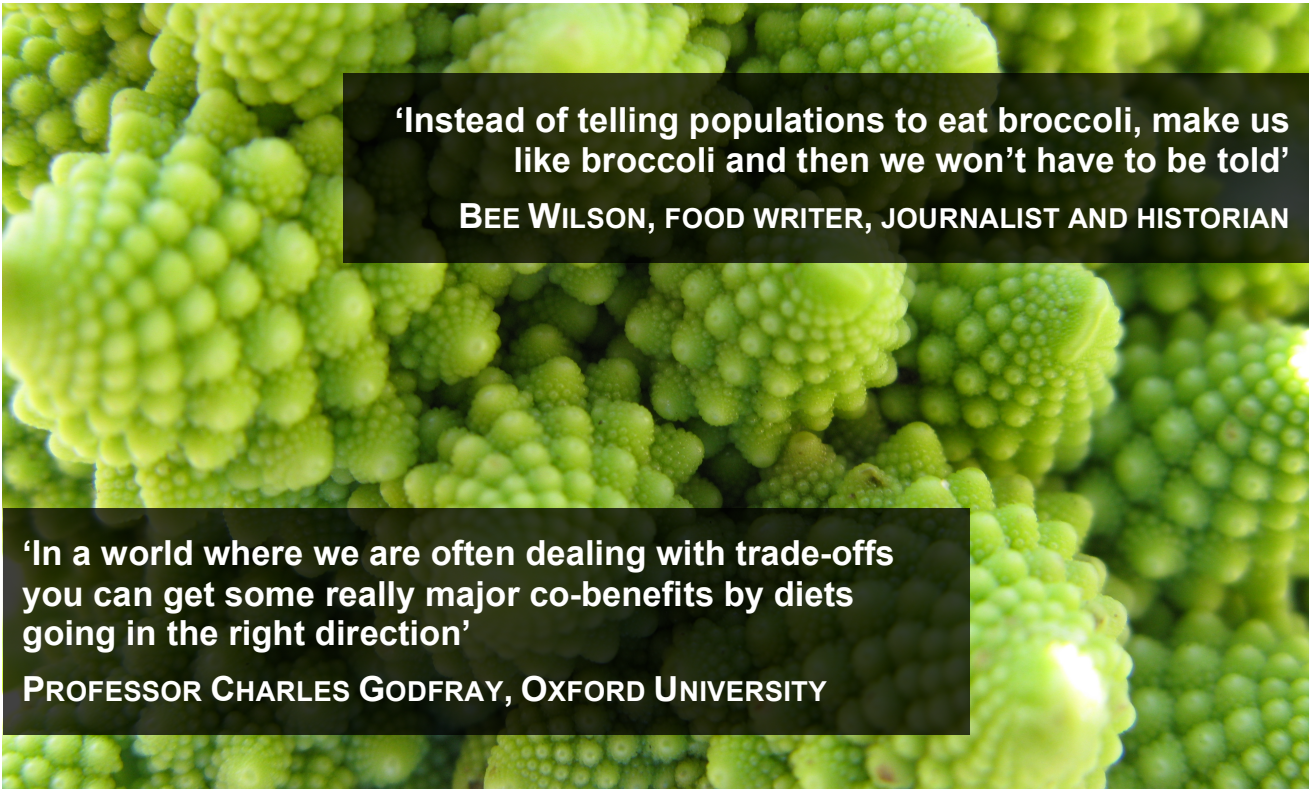
Politicians often know what needs to be done, but may be constrained by adverse public perception. There are also problems regarding the relative power of the food and drink industry and concerns regarding potential job losses and GDP pressures from a policy change. Public discourse has to be stimulated so that people are supportive of government-led interventions, and we need more data regarding how and why public discourse changes.

#### **How can policymakers in different areas collaborate to create mutually beneficial initiatives?**

Different aspects of health, food and the environment will often be the responsibility of different government departments resulting from anachronistic divisions. Collaboration and clear decision-making pathways are needed.

**Can we apply lessons from marketing to public health interventions?** Marketing and advertising companies can often gain quick insights without being constrained by the need for time-consuming randomised control studies. Researchers need to engage with industry as well as generate evidence and get it into policy faster to avoid the addressed policy question no longer being relevant by the time action is taken.

**How can we effect change in society's relationship with food?** This is an area that has become very complicated, as there are often conflicting, evolving or overwhelming levels of advice that can lessen the efficacy of public health messages. Researchers need do a better job of being an honest broker of knowledge, summarising what is and is not a good diet for people to construct advocacy positions.



**'Instead of telling populations to eat broccoli, make us like broccoli and then we won't have to be told'**

**BEE WILSON, FOOD WRITER, JOURNALIST AND HISTORIAN**

**'In a world where we are often dealing with trade-offs you can get some really major co-benefits by diets going in the right direction'**

**PROFESSOR CHARLES GODFRAY, OXFORD UNIVERSITY**



**How severely does the growing urban environment impact on our food habits?** Urbanisation is happening at an unprecedented rate and this is changing our relationship with and knowledge of the food system. Understanding the social, cultural, economic and physical environments that influence our food choice is crucial.

**Should measures to improve diet be led by supply or demand?** At the moment the former takes precedent, but perhaps this should not be the case. How can we encourage people to demand something different and make the 'right' demands? Does this require more education or the encouragement of public curiosity?

**Is it better to focus on a pleasure principle instead?** Our understanding of food can be cultural and ritualistic. Can we use food rituals to build a web of value around healthy food? Encouraging pleasure to be associated with healthy food may be more effective than negative messaging about health. Conversely, overcoming disgust (or redirecting it towards unhealthy food) could be a future avenue of research.

### Witness profiles

#### Professor Martin White

Programme Lead – Food behaviours and public health interventions, UKCRC Centre for Diet and Activity Research (CEDAR), MRC Epidemiology Unit, University of Cambridge

Martin is a clinical academic, trained in medicine and public health, and has broad experience of public health research and practice. He has an interest in developing research on the influence of the food industry, the impact of social and policy interventions on diet and the population impact of individual-level interventions. At CEDAR he will lead a research programme focused on understanding the determinants of behaviour and the development and evaluation of interventions that impact dietary behaviours. Previously he was professor of Public Health at the Institute of Health and Society at Newcastle University as well as Director of Fuse, the Centre for Translational Research.



#### Bee Wilson

Food writer, journalist and historian

Bee's books include *Consider the Fork: A History of How We Cook and Eat* and, most recently, *First Bite: How We Learn to Eat*. The latter title considers the psychology of eating, where our food habits come from and how we can change our diets for the better. It won the Fortnum & Mason Food Book of the Year 2016 and Special Commendation at the Andre Simon awards. Bee also writes on food and other subjects for a wide range of publications including *The Sunday Telegraph*, *The London Review of Books*, *The Guardian*, *The New Statesman*, *The New York Times* and Borough Market Blogs. In 2016 she won the Food Writer of the Year award from the Guild of Food Writers for articles in *The Times Literary Supplement* and *The Happy Reader*.



#### Professor Charles Godfray

Hope Professor and Director of the Oxford Martin Programme on the Future of Food, Oxford University

Charles is a population biologist and has published in fundamental and applied areas of ecology, evolution and epidemiology. He is interested in how the global food system will need to change and adapt to the challenges facing humanity in the 21<sup>st</sup> century, and in particular the concept of sustainable intensification and the relationship between food production, ecosystem and biodiversity. He chaired the Lead Expert Group of the UK Government's Foresight Project on the Future of Food and Farming and is a member of the Strategy Advisory Board of the UK Global Food Security Programme, the Steering Group of the UK Government Green food project and the writing team for the UN's Committee on World Food Security.



## Catalyzing change in our diet



### Research gaps

The final forum of the series discussed the need for research that helps policymakers to undertake bold interventions at a population level that can effect behavioural change which leads to a healthy and sustainable diet.

**Professor Tim Lang** stated that despite vast resources being poured into non-communicable diseases the food system is currently unsustainable, and we need to calibrate a 'good' diet that factors in ecosystems and health and social considerations. Although most effort currently focuses on production issues, looking at consumption and dietary shifts is vital. He emphasised that our current food supply and dietary issues require a multi-disciplinary and multi-criteria approach. The latter should focus on six overlapping areas: food quality, health, the environment, social and cultural issues relating to diet, economics and governance. A crucial challenge is creating food cultures that live within environmental limits. Whilst culture has plasticity, there are very few policy frameworks for fashioning dietary changes at a population level.

**Dr Brent Loken** examined further the level at which policy should focus. The scale and pace of the problem suggests that rapid transformation of the entire food system is required. As a result his approach has shifted from seeking small-scale changes to large-scale population-level interventions, as localised thinking can neglect large economic and political forces that can massively impact small communities. Although it is easy to assume people want to adopt a good diet or protect natural resources, other factors can easily override these drives. Thus research is needed to understand the leverage points that alter food cultures. Despite a generally good evidence base regarding what constitutes a healthy and sustainable diet, telling people what to do is ineffective. However, universal targets and guidelines can help policymakers and governments to make effective interventions.

**Professor Theresa Marteau's** research seeks to generate evidence regarding effective or ineffective ways of changing behaviour. Food policy needs to tackle the availability and affordability of certain types of food in order to create sustainable diets. To do this, we need to embolden policymakers by increasing public support for policies that encourage behavioural change. One possibility is that there is evidence to suggest that communicating the evidence and efficacy of an intervention can make a policy acceptable to the public. Another, although challenging ethically, is to reverse the usual progression whereby changes in belief lead to behavioural change. Instead, changing behaviour, as with the smoking ban, can lead to cultural shifts. For example, changing public sector environments could signal model behaviour, and more studies are needed on how great an impact such policies could have.

### Wicked problems and questions generated by the open discussion

#### **Have we reached an understanding concerning exactly what is a sustainable and healthy diet?**

Although there is a large evidence base, there is still disagreement regarding exactly what diets would be suitable for environmental and human health, and indeed how far we should go in creating universal recommendations. Should our approach be to create a global concept of a sustainable and healthy diet or to have regionalised versions that factor in local contexts?

**How can the public be empowered to make good decisions?** Healthy and sustainable diets must not be separated, but may be in conflict. This can lead to government departments and media giving mixed



messages, which in turn can cause public scepticism. Clear communication and improved education are key drivers that can empower the public to make good decisions.

**Should food policy intervene at a population or local level or would a mixture of these be most effective?** The urgency and scale of the problem seems to dictate that population-level interventions, which can have the quickest and greatest impact, are needed. However, cultural influences on food choice are very strong so local or community-level interventions and changes to food environments could catalyze behavioural change. Deciding which groups—religious, cultural, linguistic, geographical, age-related—to target and which interventions would be most effective needs further research.

**What are the opportunities for policy to intervene that would lead to large-scale changes in our diets?** Disruptions such as war or food scares can have a large impact on people's food choices. Policy 'nimbleness', and the ability and preparedness to seize such opportunities for change, is crucial.

**Can food policy meaningfully change within the current economic and political status quo?** It is important to work with existing large-scale economic forces as these currently have the most leverage. However, most discussions assume that the current global system will be maintained, but is even more radical thinking required?

### Witness profiles

#### Professor Tim Lang

Professor of Food Policy, Centre for Food Policy, Department of Sociology, City, University of London

After a PhD in social psychology at Leeds University, Tim became a hill farmer in the 1970s in the Forest of Bowland, Lancashire. This shifted his attention to food policy and for years he has engaged in academic and public research and debate about its direction, locally and globally, and how policy can make food serve the environment, health, social justice and citizens. Tim founded the Centre for Food Policy at City, University London in 1994 and, amongst other things, he has also been a consultant with WHO (e.g. auditing the Global Top 25 Food Companies on food and health, 2005), FAO (e.g. co-chairing the FAO definition of sustainable diets, 2010) and UNEP (e.g. co-writing its 2012 Avoiding Future Famines report). He has also been a special advisor to four House of Commons Select Committee inquiries.



#### Dr Brent Loken

Science Liaison Office, EAT Foundation, Oslo

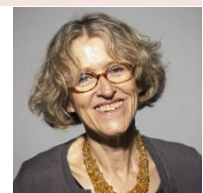
Brent is a social entrepreneur and an interdisciplinary, conservation scientist involved in research pertaining to the integration of sustainability science and resilience thinking regarding the role of NGOs, power and politics in conservation initiatives. He currently works for EAT, an Oslo based organisation working to transform the global food system to feed 9 billion people healthy and sustainable diets. For the past 20 years he has been involved in coordinating, building and organising large projects and teams in various contexts around the world, most recently as Executive Director and co-founder of the NGO Integrated conservation.



#### Professor Theresa Marteau

Director of the Behaviour and Health Research Unit, Department of Public Health and Primary Care, University of Cambridge

Theresa is Director of the Behaviour and Health Research Unit in the Department of Public Health and Primary Care, and Fellow and Director of Studies in Psychological and Behavioural Sciences at Christ's College, Cambridge. Her research interests include the development and evaluation of interventions to change behaviour (principally diet, physical activity, tobacco and alcohol consumption) to improve population health and reduce health inequalities, with a particular focus on targeting non-conscious processes. She also works on risk perception and communication, particularly of biomarker-derived risks, and their weak links with behaviour change as well as the acceptability to the public and to policymakers of population-level intervention to change behavior.



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January, p5: Wikipedia Commons – [Damnoen Saduak Floating Market, Indonesia](#); p6: Scott Bauer, USDA – [Apples](#)

February, p8: Postconsumers – [Grocery Shopping](#); p9: Jacopo Werther – [Romanesco broccoli](#)

March, p11: Kalyan Varma – [Monsoon](#)

## Forum Participants

**Chair: Lord Martin Rees**

**Director: Professor Paul Linden**

**Deputy Director: Dr Rosamunde Almond**

**Head of Partnerships and Development: Dr Konstantina Stamati**

The Forum was founded in January 2013. For this topic, members are drawn from all six University Schools and 22 University departments, centres and institutes, ranging from the Centre for Development Studies, the Departments of Engineering and Architecture to the new Leverhulme Centre for the Future of Intelligence and the Institute for Public Health. People from the Cambridge Institute for Sustainability Leadership (CISL) and the Cambridge Centre for Science and Policy (CSaP) are also founding members of the group. In addition to the nine expert witnesses detailed in this report, the following people attended the Forum during this series.

Core Members: **Professor Alan O'Neill**, Emeritus Professor of Meteorology, University of Reading and visiting professor, Cavendish Laboratory; **Professor Alison Smith**, Professor of Plant Biochemistry, Department of Plant Sciences; **Professor Andy Hopper**, Professor of Computer Technology and Head of the Computer Laboratory; **Professor David Dunne**, Professor of Parasitology, Department of Pathology and Founding Member, Cambridge–Africa Initiative; **Dr David Pencheon**, Director, NHS Sustainable Development Unit; **Dr Hildegard Diemberger**, Senior Associate in Research, Mongolia and Inner Asia Studies Unit (MIASU), Department of Social Anthropology; **Professor Ian Leslie**, Professor of Computer Science, Computer Laboratory; **Dr Julian Huppert**, Director, Intellectual Forum, Jesus College; **Professor Koen Steemers**, Professor of Sustainable Design, Department of Architecture; **Dr Mariana Fazenda**, Innovation and Enterprise Project Officer, Department of Plant Sciences; **Professor Nick Wareham**, Director, Centre for Diet and Activity Research (CEDAR) and Director, MRC Epidemiology Unit; **Professor Peter Guthrie**, Centre for Sustainable Development, Department of Engineering; **Dr Rob Doubleday**, Executive Director, CSaP; **Dr Shailaja Fennell**, Lecturer in Development Studies, Department of Land Economy; **Dr Stephen Cave**, Director, Leverhulme Centre for the Future of Intelligence; and **Professor Susan Owens**, Professor of Environment and Policy, Department of Geography.

University Guests: **Professor Andrew Balmford**, Professor of Conservation Science, Department of Zoology; **Dr Charlotte Sausman**, Coordinator, Public Policy Strategic Research Initiative, Department of Politics and International Studies (POLIS); **Dr David Reiner**, Senior Lecturer in Technology Policy, Judge Business School; **Professor Howard Griffiths**, Professor of Plant Ecology, Department of Plant Sciences; **Jacqueline Garget**, Coordinator, Strategic Research Initiative in Global Food Security, Department of Plant Sciences; Professor Martin White, Programme Lead, Food Behaviours and Public Health Interventions, CEDAR, MRC Epidemiology Unit; **Dr Jean Adams**, Senior Research Fellow and Programme Lead, CEDAR, MRC Epidemiology Unit; **Nicola Buckley**, Associate Director, Policy Fellowships Programme, CSaP; **Professor Roderic Jones**, Professor of Chemistry, Department of Chemistry; **Dr Simon Beard**, Postdoctoral Researcher, Centre for the Study of Existential Risk (CSER); and **Professor Simon Redfern**, Professor of Mineral Physics and Head of Department, Department of Earth Sciences.

External Guests: **Professor Charlie Kennel**, Emeritus Director, Scripps Institute of Oceanography, University of California and Visiting Research Fellow, CSaP; **John Curnow**, Policy Fellow, CSaP and Chief Economist, Department for Environment, Food and Rural Affairs (Defra). **Julie Pierce**, Policy Fellow, CSaP and Director of Openness, Data and Digital, Food Standards Agency; and **Tom Hook**, Policy Fellow, CSaP and Programmes Director, London Borough of Barking and Dagenham.



## **Cambridge Forum for Sustainability and the Environment**

For more details about the Forum and the meetings please contact Dr Rosamunde Almond ([r.almond@damtp.cam.ac.uk](mailto:r.almond@damtp.cam.ac.uk)) and Dr Konstantina Stamati ([ks712@cam.ac.uk](mailto:ks712@cam.ac.uk))

Centre for Mathematical Sciences,  
Wilberforce Road, Cambridge, CB3 0WA