

Acting in the Anthropocene: the EAT–Lancet Commission

Expanding waistlines are a problem not just for dietitians and population health specialists but, increasingly, for Earth system scientists too. The waistlines belong largely to the growing global middle class. The world is undergoing a dramatic nutrition transition to western diets. Wealth, industrialisation, and rapid urbanisation are driving a surge in resource-intensive meat and dairy products and ultra-processed foods. This dietary shift is the main cause of an exponential rise in obesity and non-communicable diseases (NCDs). Worldwide, in 2014, about 1·9 billion adults were overweight, of whom 600 million were obese.¹ This epidemic is accompanied by another horror: almost 800 million people suffer from hunger and about 2 billion have micronutrient deficiencies.²

Overconsumption of unhealthy food occurs at the expense of the resilience of the planet—the atmosphere, oceans, waterways, land, and a rich diversity of life that supports a population of 7·3 billion people.³

The global food system is one of the most important drivers of detrimental change of the Earth system. An area about the size of South America is used for crops and of Africa for livestock, and food production commandeers up to 25% of net primary productivity on land.^{4,5} Human activity is drawing upon the Earth's resources to such an extent that some geologists now argue Earth has left the relative climatic stability of the 11700-year-long Holocene.⁶ This stability allowed agriculture, and then civilisation, to flourish. The

world is slipping rapidly into a less predictable place: the Anthropocene.

A recent analysis to identify planetary boundaries protecting this stability shows that four out of nine boundaries have been transgressed. These relate to climate, deforestation, biodiversity loss, and nitrogen and phosphorus use in fertilisers.⁷ The global food system is a major emitter of greenhouse gases and the prime driver of the transgression of the other boundaries.⁷ This situation should set global alarm bells ringing.

With the population set to top 9 billion by 2050, the world must increase food calories by about 70%.⁸ But continued food-induced global environmental degradation generates shocks—droughts, floods, disease, desertification, biological collapse—potentially closing the door for future food security. A transition from business as usual to sustainable intensification has the potential of feeding the world a healthy diet without undermining the Earth system.⁹ Yet, political progress on sustainable intensification has been haphazard and often counterproductive.

According to WHO, modifying four risk factors—ie, unhealthy diets, physical inactivity, tobacco use, and excess alcohol consumption—could prevent up to 80% of cardiovascular disease and type 2 diabetes, and at least one-third of all common cancers.¹⁰ NCDs are expected to cost the global economy US\$47 trillion over the next two decades,¹¹ with unhealthy diets leapfrogging smoking as the leading risk factor for disease globally. However, the good news is that new data show that minimally processed diverse diets rich in fruits and legumes, whole grains, nuts, seeds, and tubers with little meat and moderate amounts of sustainably-sourced seafood are beneficial for health.^{12,13} These diets generally come with a lower environmental footprint than the typical North American diet.^{12,13} However, several trade-offs exist—for example, many dietary guidelines recommend regular consumption of fatty fish. This is incompatible with the current availability of sustainably sourced fish. Or, so-called nose-to-tail use of the whole carcass, which leads to greater processed meat production with potential adverse health consequences.



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Food is linked to almost all of the UN Sustainable Development Goals (SDGs). It will be impossible to meet these goals, or the Paris Climate Agreement, without a radical transformation of the global food system. Although challenging, this transformation is possible. Changes in dietary choices, such as reduced red meat consumption, could avoid further deforestation even with a population of over 9 billion.⁹ Moreover, such a dietary shift could reduce global mortality by 6–10% and food-related greenhouse gas emissions by 29–70% by 2050.¹³

No universal and comprehensive synthesis exists to elucidate how to implement sustainable healthy eating patterns at scale for both consumption and production. This is why *The Lancet* and EAT—an independent, international consortium of research institutions, philanthropic foundations, non-government organisations, and companies—are launching a new Commission. The EAT–*Lancet* Commission will unravel the complex mechanics of the food system, and investigate the connections between diet, human health, and the state of the planet to provide a basis for new, evidence-based integrated policies.

The new Commission will, for the first time, scientifically assess whether a global transformation to a food system delivering healthy diets from sustainable food systems to a growing world population is possible, and what implications it might have for attaining the SDGs and the Paris Climate Agreement. The EAT–*Lancet* Commission will explore synergies and trade-offs between food-related human and planetary health; identify knowledge gaps, barriers, and levers of change in support of the recent international agreements; and tackle issues such as food-price volatility and food waste. It will explore which companies control the global food system and how behavioural change of consumers and producers could push the world onto a more sustainable course. And finally, the Commission will provide economic metrics to quantify the costs and savings of transforming the food system.

This global assessment, due for completion in 2017, will be delivered by a unique interdisciplinary group of world-leading experts from health, economics, behavioural psychology, food systems, governance, and Earth system science. Ultimately, this Commission will provide the foundation for an evidence-based roadmap that links policy, behavioural change, business practices, and technology out to 2050.

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We declare no competing interests. JR is a member of the EAT Advisory Board. GAS is Founder and President of the EAT Foundation/EAT Stockholm Food Forum. The Co-Chairs of the EAT–*Lancet* Commission are Johan Rockström (Professor Global Sustainability and Director of Stockholm Resilience Centre, Sweden) and Walter Willett (Professor of Epidemiology and Nutrition, Chair, Department of Nutrition, Harvard T H Chan School of Public Health, USA). The Commissioners are: Rina Agustina (Head of the Nutrition Cluster at the University of Indonesia School of Medicine), Francesco Branca (Director of Nutrition for Health and Development, WHO, Switzerland), Juan Rivera Dommarco (Center Director, National Public Health Institute of Mexico, Mexico), Shenggen Fan (Director General, International Food Policy Research Institute [IFPRI], China), Jessica Fanzo (Distinguished Associate Professor of Ethics and Global Food and Agriculture at the Johns Hopkins Berman Institute of Bioethics, USA), Tara Garnett (Founder and Director the Food Climate Research Network, UK), Zakri Abdul Hamid (Science Adviser to the Prime Minister of Malaysia, Malaysia), Corinna Hawkes (Professor of Food Policy at City University London, UK), Tim Lang (Professor of Food Policy at City University London, UK), Chris Murray (Professor of Global Health at the University of Washington, Institute Director of the Institute for Health Metrics and Evaluation, USA), Sunita Narain (Director General of the Centre for Science and Environment, India), Sania Nishtar (Co-chair, WHO Commission on Ending Childhood Obesity, Pakistan), Srinath Reddy (President of the Public Health Foundation of India and the former Executive of the World Heart Federation, India), Lindiwe Majele Sibanda (Chief Executive Officer and Head of Mission, FANRPAN, Zimbabwe), Ann Thrupp (Executive Director of the Berkeley Food Institute at the University of California, USA), David Tilman (Regents Professor and McKnight Presidential Chair in Ecology at the University of Minnesota, USA), Sonja Vermeulen (Head of Research, Climate Change, Agriculture and Food Security Research Programme, CGIAR), and Rami Zurayk (Professor at the Faculty of Agricultural and Food Sciences at the American University of Beirut).

For more on EAT see
<http://www.eatforum.org/eat-initiative/what-is-eat/>

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