

Health can help saving negotiation on climate change

In 2006, in *The Lancet*, Anthony McMichael and colleagues proposed a general and inspired framework to link health to climate change.¹ Building on an increasing number of studies, the latest report from the Intergovernmental Panel on Climate Change (IPCC) highlighted several issues related to health.²

Climate change is already inducing a variety of alterations in environmental conditions, enhancing exposure to health risks and impairing the state of health among populations.³ At the same time, other major changes, such as population growth and urbanisation will certainly occur in the future and will increase the vulnerabilities of our societies.¹

The health effects of climate change need to be addressed in their diversity, multiplicity, and complex interactions. It is crucial not only to assess all these effects individually (eg, heatwave, air pollution, infectious diseases) but also their possible interactions. In 2015, the frameworks to investigate the health effects of climate change are available. The exposome concept, which was put forward in 2005,⁴ is particularly well suited to assess climate change effects. It aimed at integrating all exposures over the life of an individual, including fetal stage and encompassing exposures to chemical, physical, or biological agents, diet, infection, but also psychological and socioeconomical stresses. The combination of climate change effects might lead to more deleterious consequences than when these effects are considered individually. But having a framework is not enough, there is now a need to develop interdisciplinary skills and generate large datasets. Lack of relevant health and environmental data, specifically for developing countries, which will be the more vulnerable to these new conditions,

may be the main obstacles in advancing an appropriate research agenda.

There are convergences between policies dedicated to mitigate greenhouse gas emissions (GHGE) and public health policies.⁵ Indeed GHGE reductions of around 40% could be achieved by modifications of diets.⁶ Promoting physical activity for urban transportation is also a key preventive measure against non-communicable diseases.⁷

Despite converging evidence, there is still strong reluctance from many states to adhere to GHGE mitigation policies. Up to now there has been little attention paid on the potential of health sector to increase adhesion and commitment of people and their governments in reducing GHGE. We need not only to do good science but also to advocate for mitigation and adaptation. Mitigation and adaptation can be seen as primary and secondary prevention for many health issues. Worldwide, researchers and professionals work to improve health through better environment (such as the EcoHealth approach), better access to health care, to safe air, food, and water. All should ally across borders and disciplines to mitigate climate change and to promote efficient, fair, and ethical adaptation.

We hope for change with the upcoming Conference of the Parties (COP21), to be held in Paris in December, 2015. The health sector is part of the solution to fighting against climate change. For governments to sign binding treaties and adopt effective adaptation measures and mitigation policies, our key (health) messages for the COP21 are as follows: first, all should recognise that adaptation to climate change is essentially a matter of basic public health protection. Climate change and environmental stresses should help to refocus political and financial commitments. Second, it is about protecting future generations but also on a short term, development choices that protect the climate can benefit

public health. If benefits of mitigation policies are often seen as long-term investments with many uncertainties, immediate cobenefits on health can be far more convincing arguments. In this regard, the upcoming conference "Climate, Health, Inequalities: solutions?" in Paris June 18–19, organised by the French Ministry of Health ahead of COP21, represents a huge opportunity. Importantly, COP21 is only one battlefield in the fight against climate change. Before and after December 2015, health professionals and researchers should commit to get informed on climate change, and mobilise their creativity to develop studies that will support decision making, both in the fields of adaptation and mitigation.

We declare no competing interests.

Our group of 14 signatories include:

Antoine Flahault, Stefanie Schütte, Jean-François Guégan, Mathilde Pascal, Robert Barouki, and Rajae El Aouad (University Mohammed V, Rabat, Morocco), Pierre Fournier (School of Public Health, University of Montreal, Montreal, Canada), Yves Coppieters (School of Public Health, University Libre de Bruxelles, Brussels, Belgium), Man-Koumba Soumahoro (Institut Pasteur, Abidjan, Côte d'Ivoire), Sidi Coulibaly (Ministry of Health, Ouagadougou, Burkina Faso), Ammar Abdo (Institut Supérieur des Sciences de la Santé, Djibouti), Francelyne Marano (CNRS UMR Université Paris Diderot, France), France Wallet (EDF, Levallois-Perret, France), Sylvia Medina (Institut de Veille Sanitaire, Saint Maurice, France).

**Antoine Flahault, Stefanie Schütte, Jean-François Guégan, Mathilde Pascal, Robert Barouki, on behalf of 14 signatories*
antoine.flahault@unige.ch

Centre Virchow-Villermé de Public Health Paris-Berlin, Université Sorbonne Paris Cité, 75004 Paris, France (AF, SS); Institute of Global Health, University of Geneva, Geneva, Switzerland (AF); EcoHealth initiative and Institut de Recherche pour le Développement, UMR MIVEGEC 5290 IRD-CNRS-Université de Montpellier, Montpellier, France (J-FG); Institut de Veille Sanitaire, Saint Maurice, France (MP); and INSERM UMR-S 1124, Université Paris Descartes, and Service de Biochimie Métabolomique et Protéomique, Hôpital Necker Enfants Malades, AP-HP, Paris, France (RB)

- 1 McMichael AJ, Woodruff RE, Hales S. Climate change and human health: present and future risks. *Lancet* 2006; **367**: 859–69.
- 2 Woodward A, Smith KR, Campbell-Lendrum D, et al. Climate change and health: on the latest IPCC report. *Lancet* 2014; **383**: 1185–89.

For more on "Climate, Health, Inequalities: solutions?"
http://ptolemee.com/climat_sante_inegalites/index.html

For more on Ecohealth see
<http://www.ecohealth.net/>

Submissions should be made via our electronic submission system at <http://ees.elsevier.com/thelancet/>

- 3 Semenza JC, Menne B. Climate change and infectious diseases in Europe. *Lancet Infect Dis* 2009; **9**: 365–75.
- 4 Wild CP. Complementing the Genome with an « Exposome »: The Outstanding Challenge of Environmental Exposure Measurement in Molecular Epidemiology. *Cancer Epidemiol Biomarkers Prev* 2005; **14**: 1847–50.
- 5 Friel S, Dangour AD, Garnett T, et al. Public health benefits of strategies to reduce greenhouse-gas emissions: food and agriculture. *Lancet* 2009; **374**: 2016–25.
- 6 Green R, Milner J, Dangour AD, et al. The potential to reduce greenhouse gas emissions in the UK through healthy and realistic dietary change. *Clim Change* 2015; **129**: 253–65.
- 7 Haines A, McMichael AJ, Smith KR, et al. Public health benefits of strategies to reduce greenhouse-gas emissions: overview and implications for policy makers. *Lancet* 2009; **374**: 2104–14.