World Nutrition

World Nutrition **Volume 5, Number 5, May 2014**

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



Climate change. IPCC Impacts Report

On the brink



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Access December 2009 Tony Michael, Colin Butler on climate change here
Access January 2014 Tony McMichael on climate change here
Access March 2014 IPCC report on food systems impacts here
Access March 2014 IPCC report on health impacts here
Access April Editorial on climate change and food systems here
Access this issue Editorial on climate change and food systems here
Access this issue Update on EAT Forum here

Editor's note

This is the first of a *WN* series concerning the effect of climate change on food systems, public health and on societies, economies, politics, the living, physical world and the biosphere. This issue contains *an editorial on climate change* and notice of a *conference this month of May* on the need to integrate thought and action on food, nutrition and the environment. Tony McMichael and Colin Butler have written extensively on climate change as its impact on all world systems – links to some of their work are above. Here they and Helen Louise Berry summarise conclusions of the Intergovernmental Panel on Climate Change impact report published on 31 March, and specifically its *chapter on food systems*, and that on health impacts, to which they were all contributing authors.

Impact on food systems and health



The impact of climate change on food security, water availability, and agriculture, especially in impoverished parts of the world, are now well-known. The general effects will be more widespread

The consequences of human-driven global climate change as this century progresses will be wide-ranging. So far, discussion has focused on a largely spurious debate about basic science, and on risks to property, iconic species, ecosystems, jobs, gross domestic products, and the economics of taking action versus taking our chances.

Missing from the discussion is the threats climate change poses to Earth's life-support systems. These include declines in regional food yields, freshwater shortages, damage to settlements from extreme weather events, and loss of habitable, especially coastal, land. The list goes on: changes in infectious disease patterns and the mental health consequences of trauma, loss, displacement and resource conflict. Human-driven climate change poses a great threat, unprecedented in type and scale, to well-being, health and for many communities, perhaps even survival.

The scientific evidence of many current and future risks to health has strengthened in recent years. During at least the next few decades, climate change will mainly affect human health, disease and death by exacerbating pre-existing health problems. The largest impacts will occur in poorer and vulnerable populations and communities where climate-sensitive illnesses such as under-nutrition and diarrhoeal disease are already high – thus widening further the world's health disparities.

Currently, the worldwide burden of ill-health clearly attributable to climate change is relatively small compared with other major blights on health such as from poverty,

poor sanitation and exposure to tobacco. Even so, researchers in many countries have reported that rising temperatures and changing rainfall patterns have, variously, increased heat-related illnesses and deaths, altered the distribution of some water-borne infectious diseases and the insect transmitters (vectors) of some diseases (such as malaria), and have reduced food yields in some already food-insecure populations. Less certainly, extreme weather events, influenced in part by climate change, are likely to have contributed to the recent rise in global food prices.

Three impact categories are singled out:

- Under-nutrition and impaired child development due to reduced food yields.
- Injuries, traumas and deaths due to intense heatwaves, fires and other disasters.
- Shifts in the seasonal duration and spatial range of infectious diseases.

There is also mounting evidence of the adverse health consequences of workplace exposure to heat extremes, including reduced work capacity and productivity.

Looking ahead to 2100, for which some modelled scenarios now project an average global warming of 4 degrees Celsius. In such conditions people won't be able to cope, let alone work productively, in the hottest periods of the year. And that's assuming social and economic institutions and processes are still intact. Some regions may become uninhabitable. Impacts on mental health could be similarly extreme, further limiting our collective capacity to cope, recover and adapt.

Overall, while limited health gains from climate change may occur in some regions, harmful impacts will greatly outweigh benefits. The impacts of climate change will also undermine hard-won gains achieved through social development programmes, impeding progress in the world's poorest countries.

The world community has dithered for two decades over climate change since it rose to prominence during the 1992 Earth Summit. As valuable time to reduce the risks has been squandered, the need to also focus on managing risk has increased. But excessive reliance on adaptation carries its own risks – including fooling ourselves that we don't need immediate and aggressive mitigation.

The most immediate effective way to manage health risks is through programes that introduce or improve basic public health measures. Human rights-based access to family planning also needs boosting. As climate change proceeds, additional climate-specific measures such as enhanced surveillance, early warning systems and climate-proofed building design, will be needed to protect population health, even in high-income settings. Recent extreme events such as the severe heat waves and fires in Australia in 2009-2014 and in Russia in 2010 underscore this need.

Near-term benefits from reducing greenhouse emissions could be very large. Reducing emissions of methane and black carbon may avoid more than two million deaths per year. Other mitigation actions likely to improve physical health, social connectedness and mental health include:

- Encouraging communities to be more active by means of improved public transport and reduced car reliance.
- Reducing exposures to temperature extremes with well-insulated energy-efficient housing.
- Promoting healthier dietary patterns through the transformation of food production and processing systems.

In economic terms, the health co-benefits from reducing emissions would be extremely cost-beneficial. They would be one thousand times greater than the economic co-benefits to agriculture yields from reduced exposures to short-lived, crop-damaging, airborne climate pollutants. The up-front costs of reducing emissions could be substantially offset by early and extremely large health and other benefits.

None of this matters if human well-being, health and survival mean little to us. In that case we can emit all we like, then suffer, dwindle or even in the almost unthinkable extreme, die out as a species and leave this planet to recover and thrive without us. One way or another we will eventually emit less.

Status

Readers may make use of the material in this commentary if acknowledgement is given to the Association, and *WN* is cited. Cite as: McMichael AJ, Berry HL. Butler CD, Climate change. IPCC impacts report. On the brink. [*Commentary*]. *World Nutrition*, May 2014, **5,** 5, 432-435. All *WN* contributions are obtainable at www.wphna.org.

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