

Climate Change Health Impacts

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Climate Transparency Discussion 28 October 2021

KEY FACTS

- Climate change affects the social and environmental determinants of health clean air, safe drinking water, sufficient food and secure shelter.
- Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress.
- The direct damage costs to health (i.e. excluding costs in health-determining) sectors such as agriculture and water and sanitation), is estimated to be between USD 2-4 billion/year by 2030.
- Areas with weak health infrastructure mostly in developing countries will be the least able to cope without assistance to prepare and respond.
- Reducing emissions of greenhouse gases through better transport, food and energy-use choices can result in improved health, particularly through reduced air pollution.

THE LANCET

"Climate change is the biggest global health threat of the 21st century."

See The Lancet Commissions page 1693

Comment

Compensation for brain drain Amnesia from canned tuna? from developing countries Ske page 1672 See page 1665

mnesia from cannod tuna?

Correspondence

RECORD4. Rivaroxaban for thromboprophylaxis after total knee arthroplasty See page 1673

Articles

TACT: sequential docetaxel as adjuvant chemotherapy for early breast cancer See page 1681

Articles

The Lancet Commissions

www.thelancet.com

Management of health effects of climate change See page 1693

£5.00 Registered as a newspaper - ISSN 0140-6736 Founded 1823 - Published weekly

Volume 373 · Number 9676 · Pages 1659-1734 · May 16-22, 2009



Cartogram: Emissions of greenhouse gases Total CUMULATIVE Greenhouse Gas Emissions in the Year 2002, by Country



Density-equalling cartogram. Countries scaled according to cumulative emissions in billion tonnes carbon equivalent in 2002. Patz, Gibbs, et al, 2007

Cartogram: (Selected) health impacts of climate change



Malnutrition > diarrhoea > malaria > floods

Density-equalling cartogram: Patz, Gibbs, et al, 2007.

WHO regions scaled according to estimated mortality (per million people) in the year 2000. Based on burden-of-disease attribution to the climate change that occurred from 1970s to 2000 (McMichael et al., 2003).

CC: potential health impacts



Adapted from: Patz et al, 2000



Heat related Illnesses and Deaths

Extreme weather Related Health effects

Air pollution related Health Effects

Allergic Diseases

Infectious Diseases

Vector and Rodent-Borne Diseases

Water and Food-Born Diseases

Malnutrition

Forced migration, salination coastal fresh water

Global Dengue Epidemiology





Estimasi populasi yg terkena risiko DBD "terendah" skenario perubahan iklim: 1990, 2085



Source. Hales S et al. Lancet (online) 6 August 2002. <u>http://image.thelancet.com/extras/01art11175web.pdf</u>

TREND INCIDENCE RATE DHF PER 100 000 PEOPLE BY DISTRICT/CITY





Association of IR DHF and precipitation in Central Jakarta 1992-2010 and Bukittinggi 2006-2011



Association of IR DHF and temperature in Padang 2006-2010 and Palangka Raya 1999-2009



Regresi IR DBD per 100.000 Penduduk dan Temperatur



Jakarta Pusat 1992-2010

r= 0,23



Distribution of DHF cases and its buffering risk area (100 M radius) in Padang and Banyuwangi in 2006-2010







Trend of Nox from Anthropogenic Sources in Jakarta by Sector







Trend of PM10 from Anthropogenic Sources in Jakarta by Sector





combustion in manufacturing industry

- non-industrial combustion plants
- combustion in energy and transformation







Trend of CH4 from Anthropogenic Sources in Jakarta by Sector



FRANK FENNER 1914-2010

Microbiologist, Australian Academic of Science, Royal Society, ANU, having studies evolution of every scale, from molecular level to the ecosystem and planetary levels.



- \succ Evidence of global warming is in. Our fate is sealed.
- \succ We are going to be extinct. Whatever we do now is too late.



WHO Executive Board 2015 work plan on climate change and health

- \succ **Partnerships**: to coordinate with partner agencies within the UN system, and ensure that health is properly represented in the climate change agenda.
- > Awareness raising: to provide and disseminate information on the threats that climate change presents to human health, and opportunities to promote health while cutting carbon emissions.
- Science and evidence: to coordinate reviews of the scientific evidence on the links between climate change and health, and develop a global research agenda.
- Support for implementation of the public health response to climate change: to assist countries in building capacity to reduce health vulnerability to climate change, and promote health while reducing carbon emissions.



THANK YOU