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Climate & Health News

Monthly Newsletter of the JHU-UPF Public Policy Center Climate Change Working Group



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Welcome to the June issue of *Climate and Health News* of the [JHU-UPF Public Policy Center](#), covering news and science during the month of May.

Dominating climate news over the last month has been speculation over whether President Trump would withdraw the United States from the Paris Climate Agreement; on June 1 the [US exit was announced](#). The [reaction](#) both in the US and around the world has largely condemned the move. The decision has spurred the formation of [America's Pledge](#), a group of US states, cities and businesses -led by Michael Bloomberg- that aims to meet the US Paris commitment "from the bottom up" without the federal government.

In other news and science, see a comprehensive "review of reviews" of extreme heat and health, new evidence of excess heat's impact on sleep disruption and eye health, and findings that even modest industrial energy efficiency investments bring major health and climate benefits in China.

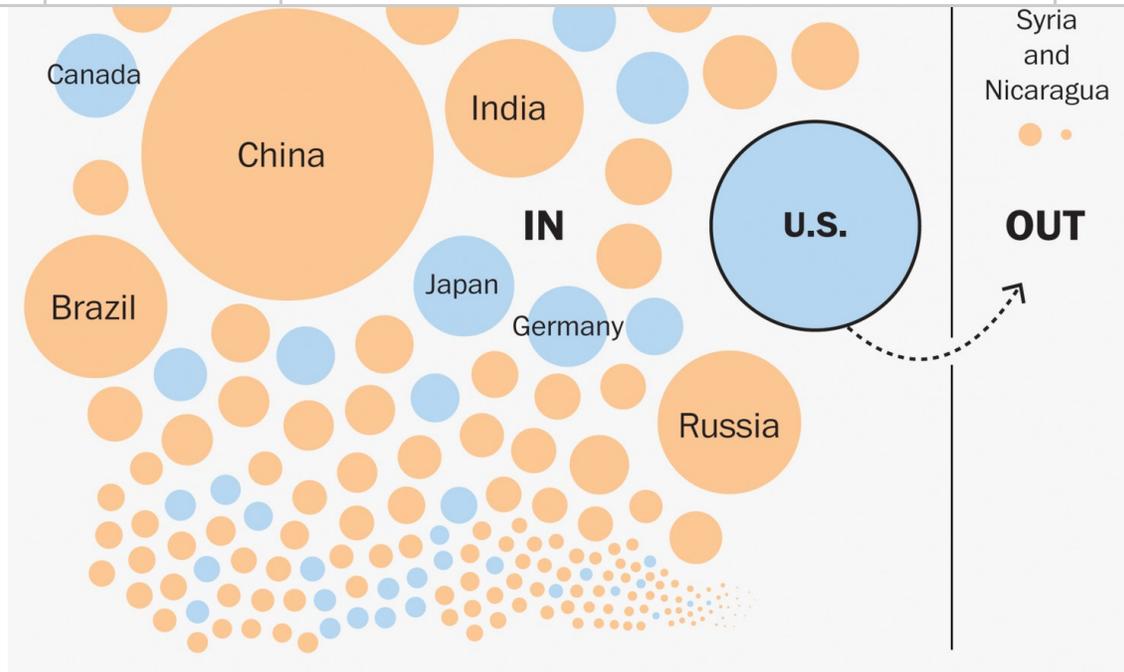
As always, comments and suggestions are welcome!

NEWS

US EXIT FROM PARIS DEAL

[Trump exits Paris Climate accord](#)

President Trump announced the United States would withdraw from the Paris climate accord, weakening efforts to combat global warming and embracing isolationist voices in his White House who argued that the agreement was a pernicious threat to the economy and American sovereignty-*NY Times*

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All but two countries are in the Paris climate agreement. The U.S. will be the third. [VIEW Washington Post GRAPHIC](#)

[US cities, states, businesses vow to remain in Paris accord](#)

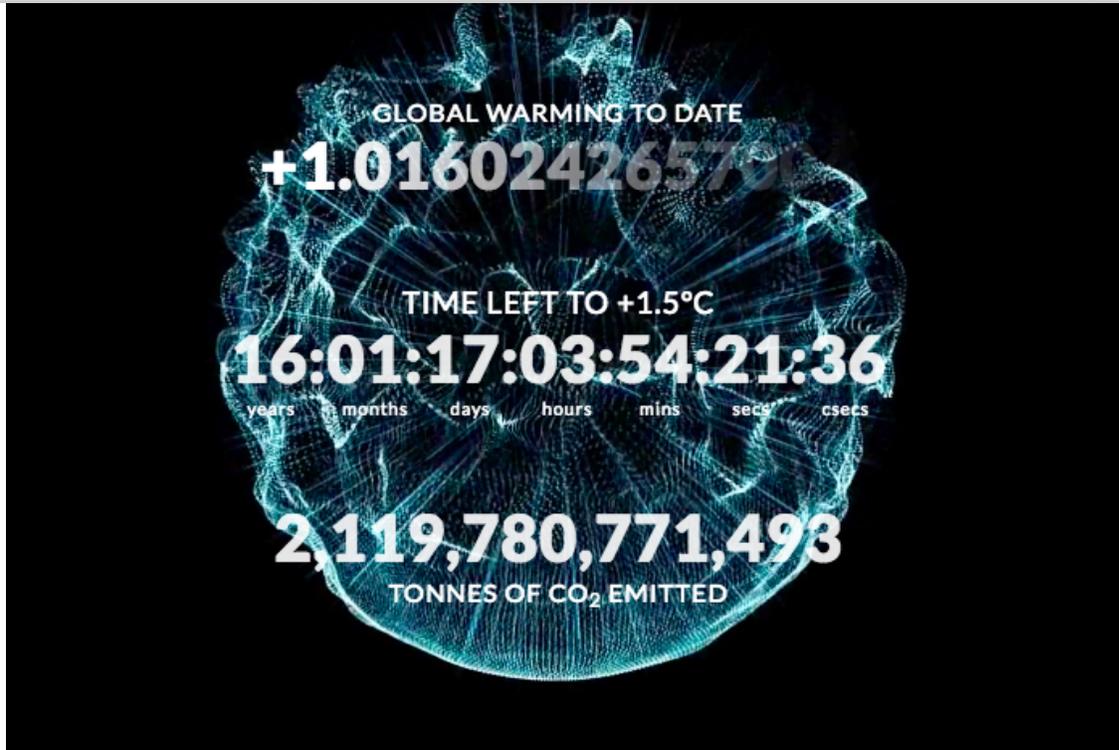
Representatives of American cities, states and companies are preparing to submit a plan to the United Nations pledging to meet the United States' greenhouse gas emissions targets under the Paris climate accord, despite President Trump's decision to withdraw from the agreement- *NY Times*

[Reactions to Trump's withdrawal from Paris agreement](#)

Trump's decision set off alarms worldwide, drawing swift and sharp condemnation from foreign leaders as well as top environmentalists and corporate titans, who decried the U.S. exit from the Paris accord as an irresponsible abdication of American leadership in the face of irrefutable scientific evidence- *Washington Post*

[Climate clock: 16 years until 1.5 degrees Celsius](#)

A Canadian non-profit believes we measure our lives in time not degrees Celsius. With the help of climate scientists, the group has developed a clock ticking down to the point when average temperatures are estimated to reach 1.5 degrees C warmer than the industrial era, a level the Paris accord recently set as an intended upper bound- *National Observer*

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Click above to see David Usher's Climate Clock ticking away on the homepage of the project's website. Screenshot courtesy of climateclock.net

EXTREME HEAT & DROUGHT

[Urban heat island doubles climate costs for cities](#)

The urban heat island effect may double city costs for climate change according to a new survey of nearly 2,000 world cities published in *Nature Climate Change*; cities close to the tropics and with large populations are likely to be at highest risk- *Reuters*

[Photoessay: Drought in Bolivia affecting water availability](#)

Photographs documenting Bolivia's worst drought in 25 years and its effects on water supplies to urban areas- *Guardian*

[Solutions: Long-term UAE drought leads to decision to tow Antarctic iceberg to Middle East](#)

Facing severe extreme heat and drought, the United Arab Emirates is planning to tow an iceberg from Antarctica to its shores. The iceberg would be used to provide drinking water to an estimated one million residents for five years- *nola.com*



Photo Credit: (AP)

[Solutions: Cell phones help find water in Niger's drought](#)

Unable to rely anymore on their traditional methods of predicting the weather amid increasingly erratic droughts and floods, semi-nomadic people are being aided by climate information on radios and mobile phones-

Thompson Reuters

SEA LEVEL RISE

[Oceans rising three times faster than in 20th century](#)

Researchers from the University of Siegen find the Earth's oceans are rising nearly three times as rapidly as they were throughout most of the 20th century, one of the strongest indications yet that a much-feared trend of not just sea level rise, but its acceleration, is now underway- *Washington Post*

[The booming industry arising from Louisiana's vanishing coast](#)

A football-field-size chunk of Louisiana vanishes every hour, according to the US Geological Survey, giving urgency to the battle against climate change. A growing coastal restoration industry is bringing long-term jobs in the water management sector — encompassing coastal rehabilitation, protection and urban water planning efforts — which is growing faster than any other sector in Louisiana's coastal zone, even Big Oil- *ozy.com*

[Low latitude coastlines will see doubling of flooding risk in next decade](#)

Small rises in sea level will double the frequency of severe coastal flooding according to new research. This takes into account the large waves and storm surges that can tip gradually rising sea levels over the edge of coastal defenses. Lower latitudes will be first affected, in a great swath through the tropics from Africa to South America and throughout southeast Asia- *Guardian*

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High tides lash Mumbai on the western Indian coast. A sea level rise of 5-10cm could double the flood risk. Photograph: Pal Pillai/AFP/Getty

[US climate refugees: 17 communities now displaced due to changing climate](#)

A new report from the Center for Progressive Reform suggests at least 17 communities across the US are being forced to relocate due to climate change. The majority are indigenous communities for whom relocation would mean leaving coastal areas replete with cultural and economic significance- [thinkprogress.org](#)

EXTREME PRECIPITATION, STORMS & FLOODING

[More violent storms in Sahel region of Africa with climate change](#)

Catastrophic thunderstorms known as “mesoscale convective systems” in the Sahel, among the most powerful on the planet, were observed to be three times more frequent in 2006-2016 compared with the 1986-2005 period- [Climate News Network](#)



[Extreme flooding in Canada](#)

In heaviest rain in over 50 years, deaths, injuries and losses attributed to flooding in Canada's Quebec and British Columbia provinces- *CNN*

CONTAGIOUS DISEASE

[Ice melt may uncover long-dormant diseases](#)

Climate change is melting permafrost soils that have been frozen for thousands of years, and as the soils melt they are releasing ancient viruses and bacteria that, having lain dormant, are springing back to life. The temperature in the Arctic Circle is rising about three times faster than in the rest of the world. "The possibility that we could catch a [long-extinct] virus suggests the idea that a virus could be 'eradicated' from the planet is wrong, and gives us a false sense of security," says one researcher. "This is why stocks of vaccine should be kept, just in case"- *BBC*



Permafrost tundra in Siberia (Credit: Staffan Widstrand/naturepl.com)

AIR POLLUTION

[Solutions: Cleaning China's air](#)

Air pollution kills an estimated 1.1 million people per year in China. Three years ago, Premier Li declared war on air pollution. In his March this year, he renewed his vow "to make our skies blue again." Among Li's main weapons: Reducing the production of steel and of coal-fired electricity. To replace coal, China is rolling out the world's biggest investment in wind and solar power- *National Geographic*

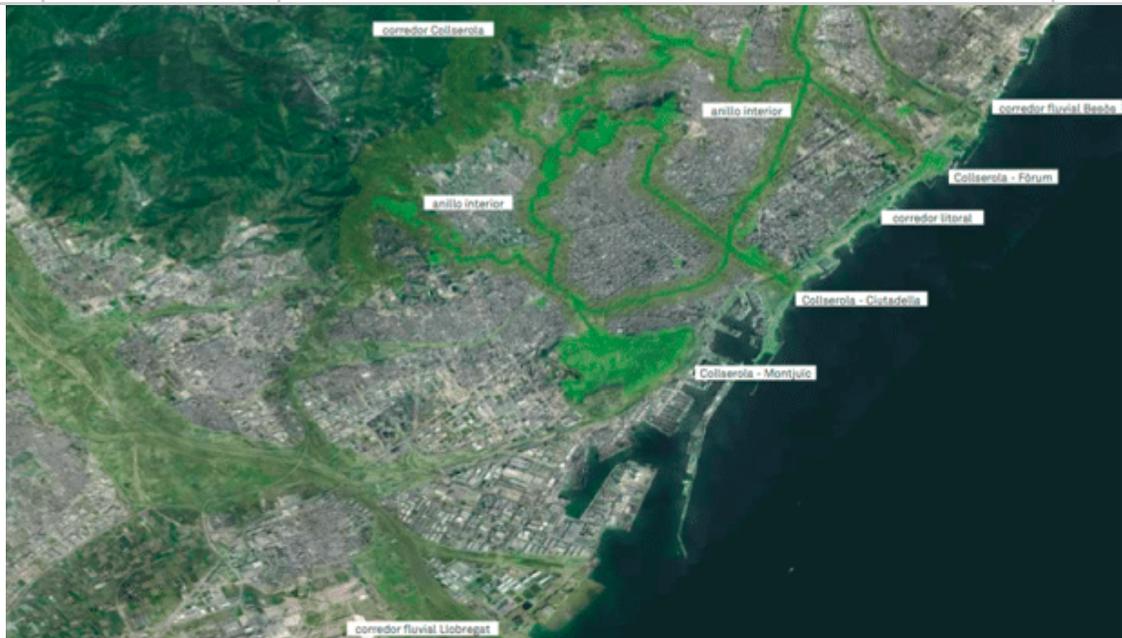
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Tangshan's air is polluted from steel mills and other industrial operations, but the government is ordering clean-up efforts. PHOTOGRAPH BY NICOLA LONGOBARDI, THE NEW YORK TIMES, REDUX

CITIES

[Solutions: Barcelona: a new urban forest to combat the heat island effect](#)

The city has announced a new re-greening program to double the number of trees, increase park space by two-thirds and aim to give each resident an extra square meter of green space. Five spaces are being converted to new parks connected by tree-lined avenues- *citylab.com*

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Barcelona's green corridor network as it will appear when complete. The dark green land in the top left is the Parc de Collserola, which stretches from the city far out into the surrounding region. ([Ajuntament de Barcelona](#))

[Solutions: Dallas: converting parking to parks](#)

Parking lots are being converted to parks and urban garden plots, reducing the heat island effect of concrete and asphalt, improving storm water runoff, and providing green space for residents- [fastcodesign.com](#)



[Image: courtesy SWA]

[Miami: sea level rise affecting real estate](#)

Historically Black communities on higher ground are increasingly in the sights of speculators and investors watching as sea levels rise. South Florida expects 2 feet rise in sea level by 2060- [E&E News](#)

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Miami Beach today. Tomorrow, the hot real estate may be much farther inland. Photo by Daniel Piraino, courtesy of Flickr.

POLICY

[New report suggests carbon tax of \\$100 per ton needed](#)

A report by a group of leading economists in the High-Level Commission on Carbon Prices has warned that the world risks catastrophic global warming in just 13 years unless countries ramp up taxes on carbon emissions to as much as \$100/ton. The report, backed by the World Bank and the International Monetary Fund, suggests poor countries could aim for a lower tax since their economies are more vulnerable- *Guardian*

BOOKS

[Solutions: Is climate change reversible?](#)

One hundred of the best bottom-up solutions based on science, are outlined in a hopeful new book by environmentalist Paul Hawken- *KQED Science*

DRAWDOWN

THE MOST COMPREHENSIVE
PLAN EVER PROPOSED TO
REVERSE GLOBAL WARMING
EDITED BY PAUL HAWKEN



Source: drawdown.com

SCIENCE

EXTREME HEAT

[Review: Impact of ambient temperature on morbidity and mortality: an overview of reviews](#)

Based on a systematic review of reviews, heat exposure seemed to have an adverse effect on mortality and cold-induced cardiovascular morbidity increased in the elderly. Developing definitions of temperature exposure at the regional level may contribute to more accurate evaluations of the health effects of temperature.

[Temporal changes in mortality related to extreme temperatures for 15 cities in Northeast Asia: adaptation to heat and maladaptation to cold](#)

A study of heat-related mortality in 15 cities in Northeast Asia found death rates have decreased continuously over time, with more substantial decrease in earlier decades, for older populations and for cardiorespiratory deaths. Future assessment of health effects of climate change should account for the continuous changes and variations by factors such as age.

[Impact of climate change on heat-related mortality in Jiangsu Province, China](#)

Little evidence has been reported for cause-specific heat related mortality. Analysis suggests higher likely heat-

[Heat effects of ambient apparent temperature on all-cause mortality in Cape Town, Durban and Johannesburg, South Africa: 2006-2010](#)

City-specific daily ambient apparent temperature (Tapp) thresholds were found to be 18.6°C, 24.8°C and 18.7°C, respectively for Cape Town, Durban and Johannesburg. A 3.3%, 2.6% and 2.8% increase in mortality per IQR increase in Tapp (above the city-specific thresholds) was observed. Combining cities, an increase of 0.9% in mortality per 1°C increase in Tapp was observed for all groups, and for those ≥ 65 , the mortality increase was 2.1%.



Durban, South Africa-Source: Wikimedia commons

[Vulnerability to extreme-heat-associated hospitalization in three counties in Michigan, USA, 2000-2009](#)

Researchers observed a null association between extreme heat and cardiovascular hospitalization, and a positive association with myocardial infarction hospitalizations and with renal disease hospitalizations among non-whites.

[Ambient temperature and air quality in relation to small for gestational age and term low birthweight](#)

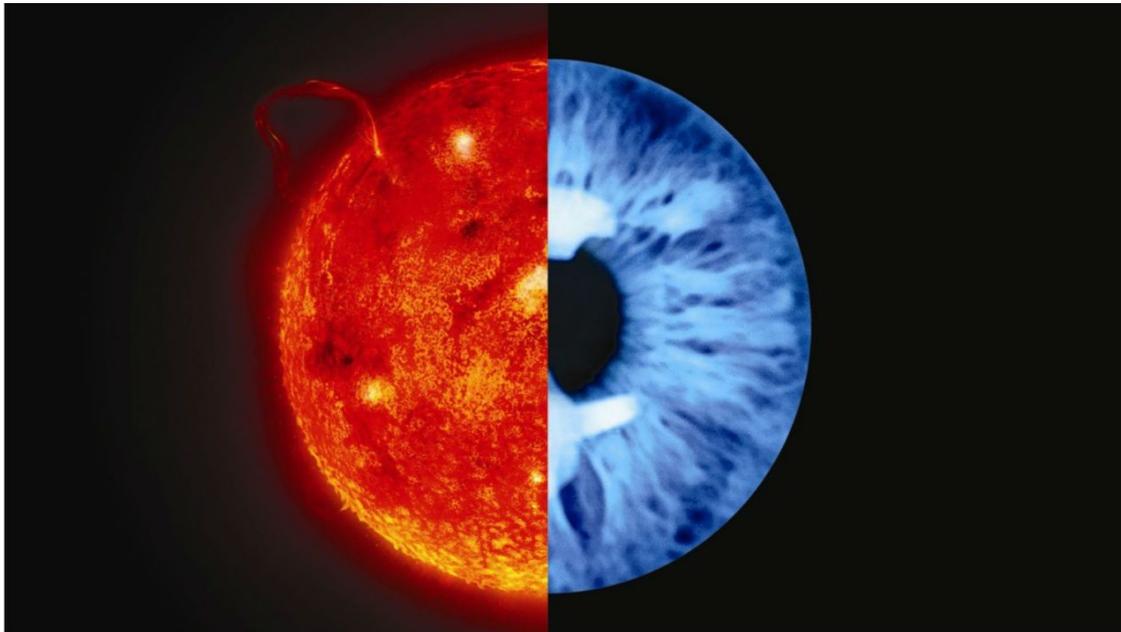
Based on analysis of data for 12 US sites, prenatal exposures to extreme ambient temperature relative to usual environment were found to increase term low birth weight risk.

[Nighttime temperature and human sleep loss in a changing climate](#)

Based on data from 765,000 U.S. survey respondents and nighttime temperature data from 2002 to 2011, increases in nighttime temperatures amplify self-reported nights of insufficient sleep. The largest effects were during the summer and among both lower-income and elderly respondents.

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Retinal detachment is an important cause of visual loss. Analyzing 14,302 individuals with inpatient procedures for retinal detachment from between 2006 and 2013 in Quebec, Canada, exposure to elevated temperature the preceding week was associated with a higher likelihood of traction detachment, but not other forms of retinal detachment.



Source: Raconteur (<https://www.raconteur.net/healthcare/climate-change-is-harming-eye-health>)

EXTREME PRECIPITATION, STORMS, & FLOODING

[Infectious diseases and tropical cyclones in Southeast China](#)

Southeast China is frequently hit by tropical cyclones (TCs) with significant economic and health burdens each year. However, there is a lack of understanding of what infectious diseases could be affected by tropical cyclones. Based on disease data from 2005-2011 in four coastal Southeast China provinces, TCs were more likely to increase the risk of bacillary dysentery, paratyphoid fever, dengue fever and acute hemorrhagic conjunctivitis, and more likely to decrease the risk of measles, mumps, varicella and vivax malaria.

VECTOR BORNE

[Solutions: Rebuilding transformation strategies in post-Ebola epidemic Africa](#)

In post-Ebola epidemic West Africa implementing effective national 'One Health' approaches, coupled with climate change mitigation and adaptations strategies, are urgent public health needs aimed at improving the quality healthcare access, delivery trust and uptake in anticipation of immunization programs, and enhanced productivity and economic growth.



Police enforce a quarantine in West Point, the largest slum in Monrovia, in August 2014. (John Moore / Getty)
from: <https://www.theatlantic.com/magazine/archive/2016/07/after-ebola/485609/>

[Global change, parasite transmission and disease control: lessons from ecology](#)

Parasitic infections are ubiquitous in wildlife, livestock and human populations, and their negative impacts can be extreme. Synthesis of evidence regarding potential effects of 'system changes' (both climatic and anthropogenic) on parasite transmission from wild host-parasite systems, suggests a more integrated approach to investigating transmission dynamics is called for, recognizing complexities and making use of new technologies for data capture and monitoring to support robust predictions of parasite dynamics in a rapidly changing world.

[Control of mosquito-borne diseases in Northwestern Italy: preparedness from one season to the next](#)

Mosquito-borne diseases (MBDs) are spreading worldwide due to globalization and climate change. Based on mosquito sampling in Northern Italy, West Nile Virus was found in mosquitos in three (Novara, Alessandria, Vercelli, and Torino) provinces. Given the positive trend in WNV activity and the emergence of other flavivirus such as Zika the level of attention for the 2016 vector season should be increased.

AIR QUALITY

[Who among the elderly is most vulnerable to exposure and health risks of PM2.5 from wildfire smoke?](#)

Climate change has increased the frequency of wildfires, which burn over 7 million US acres annually; little is known about most vulnerable populations. In the Western US over 2004-2009 risk of respiratory hospital admissions from wildfire smoke was found to be significantly higher for females than males (10.4% versus 3.7%) and Blacks than Whites (21.7% versus 6.9%).

[Characterizing the impact of projected changes in climate and air quality on human exposures to ozone](#)

Based on integrating existing modeling tools for climate, weather, air quality, population distribution, and human exposure for 12 US cities, when climate is held constant and population demographics are varied, minimal

CO-BENEFITS

[Substantial air quality and climate co-benefits achievable now with sectoral mitigation strategies in China](#)

China is the world's top carbon emitter and suffers from severe air pollution. Near-term air quality and CO₂ co-benefits of four sector-based mitigation strategies (power fuel substitution, transport fleet replacement, residential stove replacement and industry energy efficiency) were examined. Analysis highlights the importance of even modest industrial energy efficiency improvements and air pollution control technology upgrades for health and climate benefits.

[Is HIA the most effective tool to assess the impact on health of climate change mitigation policies at the local level? A case study in Geneva, Switzerland](#)

Compared to environmental impact assessment (EIA), Compared to strategic environmental assessment (SEA) and sustainability assessment (SA), it appears health impact assessment (HIA) is the tool which provided the most elaborate assessment of the consequences for health (co-benefits) of greenhouse gas (GHG) reduction policies of Geneva. However, the HIA community should identify the situations in which HIA should be carried out.

DATA & MONITORING

[Global disparity in the supply of commercial weather and climate information services](#)

Information about weather and climate is vital for decision-making related to climate change. An examination of climate and weather spending by 180 countries found no relationship between the level of climate and weather risks that a country faces and the level of per capita spending on commercial weather and climate information. Action is being taken to improve access to information services to increase resilience to climate and weather risks.

[Developing health-related indicators of climate change: Australian stakeholder perspectives](#)

Climate-related health indicators are useful for tracking and predicting adverse public health effects of climate change. Interviews with government and non-government organizations in South Australia identified the need for indicators to monitor health impacts and time trends, vulnerability to climate change, and to serve as communication tools; four indicator utility criteria were identified: credibility, specificity, data availability, and spatial representation.



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