



PLANETARY HEALTH WEEKLY

BRINGING YOU CURRENT NEWS ON ECOLOGICAL WELLNESS & GLOBAL HEALTH

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CAPE TOWN'S WATER CRISIS

Cape Town's drought and associated water shortage has officially escalated to the level of a disaster. The hope for a natural solution ended with the close of the main rainy season last September, and it is clear that water in the dams supplying the city will not last until the next rains in May to June this year. The City of Cape Town is experiencing its worst drought in over a century and if nothing is done the city is likely to run out of water before the rainy season of 2018. This plot of Cape Town's supply over the last five years aims to make that obvious to everyone. If historical usage trends continue, there is not enough water to get Cape Town through the summer. Despite this major crisis, many people in the city are not changing their behavior fast enough.

[Read More on Cape Town Drought](#)

[See Also More on CNN](#)



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HERE'S WHY GLOBAL HEALTH SUFFERS IN A FRACTURED WORLD

Globalism may have fallen out of favour with some, but the forces driving it are not likely to be so easily swayed. Formidable trends will continue to drive both globalization and globalism, and in doing so will bring new challenges that will threaten us all by, among other things, making it harder to prevent the spread of deadly infectious disease. So, in the face of such growing threats to global health security, it should become increasingly clear that putting national interests first doesn't always mean focusing all your attention at home. The fact is that the same aspects of the modern world that have helped to make global trade and economic growth possible have also helped promote some of the biggest challenges we are likely to face in the 21st century. Climate change, population growth, human migration and urbanization are just some examples. All have an impact on global health security.

[Read More on World Economic Forum](#)





Coral Reefs are Bleaching Four Times as Frequently as they Did in the 1980s, Scientists Say

Coral reefs are bleaching four to five times as frequently as they did around 1980, scientists said in a study, that suggests climate change may be happening too rapidly for some reefs to withstand. "With a fourfold increase over the last 35 years, if you take that forward, it's unfortunately in complete agreement with what the climate models have been saying," said Mark Eakin, one of the study's authors and head of the National Oceanic and Atmospheric Administration's Coral Reef Watch. "We're looking at 90 percent of reefs seeing the heat stress that causes severe bleaching on an annual basis by mid-century." Coral bleaching occurs when corals lose their color after the symbiotic algae that live in coral cells and provide them with nutrients are expelled due to heat stress. The longer this state of stress lasts, the longer the estranged algae stay away and the less likely that corals will recover. So scientists tend to distinguish between moderate bleaching, which can be managed, and severe bleaching, which can kill corals and also leave surviving corals more vulnerable to disease and other threats. [Read More on Washington Post](#)

Billions of Pieces of Plastic Spread Disease Across the World's Coral Reefs

It's no secret that the world's coral reefs are in bad shape. Climate change has led to widespread coral bleaching, overfishing has disrupted the ecosystems that keep reefs healthy and toxic runoffs from human industry are destroying the so-called "rainforests of the sea." Now, as Ed Yong reports for the *Atlantic*, a new study has highlighted the distressing magnitude of yet another threat to coral reefs: plastics. As part of the study, published in the journal *Science*, researchers analyzed more than 124,000 corals from 159 reefs in Myanmar, Thailand, Indonesia and Australia. And nearly everywhere they looked, they saw bits of plastic. "We came across chairs, chip wrappers, Q-tips, garbage bags, water bottles, old nappies," Joleah Lamb, a marine disease ecologist at Cornell University and lead author of the study, tells Yong. "Everything you see on the beach is probably lying on the reef." The team estimates that at least 11 billion plastic items are ensnared in coral reefs in the Asia-Pacific, and they believe that number will increase by 40 percent by 2025. This could spell disaster for the world's reefs; the team found that when corals come into contact with plastics, the likelihood of the corals developing a disease jumps from four to 89 percent.

[Read More on Smithsonian](#)



Fossil Fuels Only Part of Human Carbon Emissions; Land Use & Deforestation Matter Too

In discussions of climate change, much of the focus has been on the combustion of fossil fuels: coal, oil and its gasoline and diesel-fuel derivatives, and natural gas. Collectively, the trillions of tons of carbon dioxide emitted into the atmosphere by man since the start of the industrial revolution around 1750 have contributed to a massive rise in airborne concentrations of that gas. But that's only half the story, as scientists have long known. A recent study now estimates a far higher impact from deforestation and other human activities than previously estimated. Published late last year in the science journal *Nature*, the study was conducted by 12 researchers at the Institute of Social Ecology in Austria and several other institutions in Germany, The Netherlands, Portugal, and Sweden. As summarized in mid-December by an article in The Washington Post, "If true, it's a finding that could shape not only our response to climate change, but our understanding of ourselves as agents of planetary transformation." [Read More on Green Car Reports](#)



Community Health Workers as Accountability Agents?

Community health workers (CHWs) are increasingly put forward as a remedy for lack of health system capacity, including addressing challenges associated with low health service coverage and with low community engagement in the health system. While definitions vary, CHWs are generally community-based workers who: are members of the communities where they work; are selected by the communities they serve; and are required to represent and/or deliver health services (WHO, 2007). CHWs are also commonly envisioned as being answerable to the community for their activities, and they often perform a linking function between communities and the health system (WHO, 2007). In June of 2017, thirty researchers, health advocates, and program implementers from eight countries attended a two-day 'think-in' at American University in Washington D.C. While many country experiences were discussed, the meeting focused in particular on the experiences of Brazil, India, South Africa, and the United States. These countries were selected because, with the exception of the United States, they have large, scaled-up CHW programs where there have been at least some instances of CHWs facilitating, or demanding, greater health system accountability.

[Read More and Access Report on Accountability Research Center](#)

Bring out your dead!: A Study of Income Inequality and Life Expectancy in the United States, 2000-2010

We test whether income inequality undermines female and male life expectancy in the United States. We employ data for all 50 states and the District of Columbia and two-way fixed effects to model state-level average life expectancy as a function of multiple income inequality measures and time-varying characteristics. We find that state-level income inequality is inversely associated with female and male life expectancy. We observe this general pattern across four measures of income inequality and under the rigorous conditions of state-specific and year-specific fixed effects. If our analyses suggest, income inequality undermines life expectancy, redistribution policies could actually improve the health of states. There are many avenues to income redistribution ([Schrecker, 2017](#)). States can increase investments in public education and employment training programs, shift more of the tax burden to corporations and the top 10% expand public health insurance to reduce medical debt, and regulation predatory loan programs (e.g., home loans, student loans, and credit cards). States can also scale back regressive anti-labor laws, renew legal protections for unions, and revitalize labor movements by organizing a broader spectrum of workers.

[Read More on Science Direct](#)



A New Powerful Drug to Combat River Blindness

Onchocerciasis, which is a disease caused by the filarial worm *Onchocerca volvulus*, is transmitted from individual to individual by *Simulium* black flies that breed in fast flowing rivers. The millions of larvae (microfilariae) released by the adult parasites invade skin and eyes where they can cause severe manifestations, including blindness. Insecticide spraying to eliminate the vector was supplemented and ultimately replaced from the 1990s by mass administration of ivermectin, a drug which kills microfilariae and prevents their release by the adult worms for several months. This mass treatment was made possible by the decision of Merck & Co to donate ivermectin for the control of onchocerciasis. Since ivermectin does not kill adult *O. volvulus*, annual treatments are required to keep microfilarial densities low. To ensure distribution of the drug is sustained in the long term, the African Programme for Onchocerciasis Control implemented community-directed treatment with ivermectin. The programme has had an impressive impact; in most endemic foci, onchocerciasis is no longer a public health problem and transmission might have been interrupted in some foci. However, the focus is now global elimination of onchocerciasis, which requires treatment in areas of low endemicity that are not covered by community-directed treatment with ivermectin, use of new diagnostic and therapeutic tools, and alternative treatment strategies. [Read More on the Lancet](#)



Crying Elephants and Giggling Rats, Animals Have Feelings, Too

Studies have shown that sheep are able to recognise the faces of their sheep friends even after being separated for two years. Elephants form strong family groups with immense memories and they cry when they are hurt (both physically and emotionally). Chimpanzees like to keep their peace by redistributing bananas if someone complains that their share is unfair and even rats have been shown to demonstrate empathy by giving up their favourite snack to save a drowning friend. They also giggle when being tickled. But it isn't just from watching their behaviour that we can say animals are sentient. When we examine the brains of species (and indeed individuals), we can draw parallels from what we know about human brains and start to make assumptions. Emotions mainly stem from a part of our brain called the "limbic system". Our limbic system is relatively large and indeed humans are a very emotive species. So when we come across a brain that has a smaller limbic system than ours, we assume it feels fewer emotions. But, and here's the big but, when a limbic system is comparatively much bigger than ours, we don't assume it feels more emotions than us. Most likely because we cannot imagine something that we do not feel or even know about.

[Read More on The Conversation](#)

SPOTLIGHT ON POLICY: Cows Exude Lots of Methane, but Taxing Beef Won't Cut Emissions

Will taxing meat products based on their carbon footprint reduce greenhouse gas (GHG) emissions and improve public health? The answer is maybe, but not notably, and it will come with significant costs. A recent study in the journal *Nature Climate Change* advocates applying taxes to the consumption of meat as a means of lowering GHG emissions. The idea is that if meat is more expensive, consumers will buy less of it. In turn, when faced with reduced consumption, farmers will produce less cattle. While it's clear we need to proactively reduce GHG emissions globally, we believe the emissions tax approach is unlikely to achieve success. Since cows produce a lot of methane (a greenhouse gas), fewer cows should mean less methane, which in turn should help lower GHG emissions. Pigs and chickens don't spew methane the way cows do, but there are also the emissions associated with feeding them, as well as with the decomposition of manure.

[Read More on The Conversation](#)



SPOTLIGHT ON INDIGENOUS HEALTH: How Indigenous Knowledge Advances Modern Science and Technology

Throughout history, Indigenous peoples have been responsible for the development of many technologies and have substantially contributed to science. Although the value of integrating Indigenous science with Western science has been recognized, we have only begun to scratch the surface of its benefits. Indigenous perspectives are holistic and founded upon interconnectedness, reciprocity and the utmost respect for nature. Both Western and Indigenous science approaches and perspectives have their strengths and can greatly complement one another. For centuries, Indigenous people's lives depended on their knowledge about the environment. Many plant species, including three-fifths of the crops now in cultivation and enjoyed across the globe, were domesticated by Indigenous peoples in North, Central and South America. Corn, squash, beans, potatoes and peppers are just a few examples of foods that now contribute vastly to global cuisine! Indigenous peoples, with their decades of personal experience combined with that of their ancestors, harbour vast knowledge about the environment and the ecological relationships within them. Tremendous opportunities exist where such knowledge can contribute to modern science and natural resource management. [Read More on The Conversation](#)



QUOTE OF THE WEEK

Talking about sex crimes against people with intellectual disabilities and new data that show people with intellectual disabilities are sexually assaulted at much higher numbers—"more than seven times higher than the rate for persons with no disabilities."

"If this were any other population, the world would be up in arms, we would be irate and it would be the No.1 health crisis in this country."

Nancy Thaler, a deputy secretary of Pennsylvania's Department of Human Services, who runs the state's developmental disability programs

[Read More on Pennsylvania's Department of Human Services](#)

EVENTSTABLE

DATE	CONFERENCE	LOCATION	REGISTER
Feb 9-18	World Urban Forum 9	Kuala Lumpur Malaysia	http://wuf9.org/registration/
March 16-18	2018 CUGH Conference	New York Canada	www.CUGH2018.org
April 20-22	BioVision Alexandria 2018	Alexandria Egypt	http://www.bibalex.org/bva2018/home/StaticPage.aspx?page=69
June	McGill University Summer Institutes in Infectious Diseases and Global Health	Montreal Canada	http://mcgill-idgh.ca/courses/tuberculosis-research-methods/
Oct 8-12	5th Global Symposium on Health Systems Research	Liverpool England	http://healthsystemsresearch.org/hsr2018/



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TOOLKIT FOR TRANSFORMATION



TRANSFORMATION TOOLKIT

Toolkit for Transformation is a guide for challenging the expansion of corporate power and building the corporate accountability movement. This toolkit is designed for you to use immediately. What follows are seven things you can do right now to challenge corporate influence over our lives and help shape the world we will live in for the better. Whether you're a seasoned organizer or brand new to taking action, we've created this toolkit to give you the tools you need to take effective action to challenge the expansion of corporate power in your community and beyond and to build anew.

Corporate power has never been more visible, and that makes it ready to be named, shamed, and challenged. And because of outrageous actions by the Trump administration that are putting people and our planet at risk, many, many people like you are fired up to come together and take action. Together, we can ignite a corporate accountability movement that will challenge the Trump administration's agenda and actions at the rapid response, day-to-day level. At the same time, we can build a movement together that will transform this society from one where corporate power runs the show to one where the common good and people's rights, well-being, and dignity come first. This toolkit provides seven things you can do, starting today. Do one, a couple, or all seven. What's important is that you opt-in, say "yes," get connected, and start building toward a better world. The toolkit is designed to provide both inspiration and concrete steps to take forward. We hope you spread this toolkit widely among your friends, families, and networks. We need as many people with us as possible.

[To Get Involved, See Toolkit for Transformation](#)



EARLY ACTION KEY TO PREVENT EL NINO AND LA NINA RELATED CRISES: OCHA



It's essential to "get out in front" of humanitarian crises that are fuelled by the destructive weather patterns known as El Niño and La Niña. That's the strong view of one senior official with the UN Office for the Coordination of Humanitarian Affairs (OCHA), who's been working on how best to address the problem during 2018. The El Niño and La Niña effect, describes the cyclical cooling and warming of water in the central Pacific, which can fuel devastating drought and flooding in many parts of the world. During the last major El Niño event two years ago, 23 countries, representing 60 million people, had to ask for emergency help to deal with its effects. Kirsten Mildren spoke to OCHA senior official, Greg Puley, who's been planning OCHA's response to the La Niña effect this year. There's a 70 per cent chance it's going to have a profound impact, especially in the Horn of Africa region.

[Listen to the Episode on United Nations Radio](#)



MILAN IS GROWING TREES ON SKYSCRAPERS



A short walk from Milan's busy Garibaldi train station, a new library is springing up from the ground. But this library isn't filled with books, it is a "Library of Trees". Transforming the grey piazza in the heart of Milan's Porta Nuova business district began with the planting of seeds in September, and will be followed by trees and plants in November. In total there will be 450 trees from 19 species, plus 90,000 plants including hedges, shrubs and climbers. When complete next year, the Biblioteca degli Alberi will be a 3,500m² green space in the heart of a city that is increasingly returning to nature.

Overlooking the Biblioteca degli Alberi is Milan's "Vertical Forest": two residential tower blocks built in 2014 that are covered in 800 trees, 4,500 shrubs and 15,000 plants. If this forest was planted on the ground, it would cover 20,000m² – the size of three and a half football pitches. Designed by architect Stefano Boeri, the vertical forests concept has proven so popular that similar projects have been commissioned for Lausanne in Switzerland, Utrecht in the Netherlands, and the Chinese cities of Nanjing and Liuzhou. The proposed Liuzhou Forest City is the most ambitious project yet: a new town with homes for 30,000 people, where buildings will be covered by 40,000 trees and 1 million plants. Each year the trees will absorb 10,000 tonnes of CO₂ and 57 tonnes of pollutants. They should also produce about 900 tonnes of oxygen. Boeri's team of architects say the plants will also decrease the average air temperature, create noise barriers and boost biodiversity by creating a habitat for birds, insects and small animals.

Reducing pollution and increasing biodiversity have been two of the key themes driving the popularity of foliage-clad buildings in cities across the world. But it is not just physical wellbeing that is aided by large green structures in our cities. The team behind Sydney's 100m high "vertical garden" claims it is a new form of "living architecture" that reminds us of "the restorative impact that nature has on our souls". Just how restorative living near trees and plants is for our souls is open to debate; but studies in Germany have suggested that it can be extremely beneficial for our brains.

[Read More on We Forum](#)



HOW TALL IS MOUNT EVEREST? FOR NEPAL, IT'S A TOUCHY QUESTION



Mount Everest is the tallest mountain in the world, but precisely how tall is it? It's not a simple question.

In the past, geologists have disagreed about what to include in their calculations: Should the summit's snowcap be included? Or should surveyors drill down to the peak's rock base? What about the recent earthquakes in Nepal, which geologists believe shrunk the mountain by about three centimeters, or a little more than an inch? Or the fact that wind speed affects how much snow covers the summit at any given time?

Then there is the challenge of geography: Reaching the summit of Everest is only possible a few weeks each year, and measuring the mountain's height from sea level has presented difficulties in the past.

Today, Everest's height is widely recognized as 29,029 feet. But teams from around the world, including China, Denmark, Italy, India and the United States, have come up with other calculations, which have sometimes strayed a little bit higher, or a little bit lower, than that figure. Italy, in 1992, lopped seven feet off the standard height, measuring it at 29,022 feet. In 1999, a measurement by American scientists pushed the peak a little higher, saying the mountain reached 29,035 feet.

These measurement expeditions have typically excluded experts from Nepal, which shares the mountain with China and is one of the poorest countries in Asia. Now, for the first time, Nepali surveyors are limiting intervention from foreign powers and sending a team to the summit to settle the height question for themselves. In addition to the science, a bit of national pride is at stake.

[Read More on The New York Times](#)



IN THE COLDEST VILLAGE ON EARTH, EYELASHES FREEZE, DINNER IS FROZEN AND TEMPERATURES SINK TO -88 DEGREES

In this remote outpost in Siberia, the cold is no small affair.

Eyelashes freeze, frostbite is a constant danger and cars are usually kept running even when not being used, lest their batteries die in temperatures that average minus-58 degrees Fahrenheit in the winter, according to news reports. This is Oymyakon, a settlement of some 500 people in Russia's Yakutia region, that has earned the reputation as the coldest permanently occupied human settlement in the world. It is not a reputation that has been won easily. Earlier this month, a cold snap sent temperatures plunging toward record lows, with reports as extreme as minus-88 degrees Fahrenheit. The village recorded an all-time low of minus-98 degrees in 2013.



Though schools in the area remain open as temperatures dip into the minus-40s, they were closed on this time, the Associated Press reported. Dark 21 hours a day in the winter, the town has been an object of international curiosity as its reputation for fearsome cold and the resilient residents who withstand it year after year, has grown.

The harsh cold climate permeates nearly every aspect of existence for the people who live in the area. The winter diet is mostly meat-based, sometimes eaten raw or frozen, due to the inability to grow crops in the frigid temperatures. Some regional specialties include stroganina, which is raw, long-sliced frozen fish; reindeer meat; raw, frozen horse liver, and ice cubes of horse blood with macaroni, according to news reports. "Yakutians love the cold food, the frozen raw Arctic fish, white salmon, whitefish, frozen raw horse liver, but they are considered to be delicacies," local Bolot Bochkarev told the Weather Channel. "In daily life, we like eating the soup with meat. The meat is a must. It helps our health much."

The village was once a stopover in the 1920s and '30s for reindeer herders who would water their flocks at a thermal spring that didn't freeze. Bathrooms are mostly outhouses; the ground is too frozen for pipes. According to the Weather Channel, the ground has to be warmed with a bonfire to break into, such as for digging a grave.

[Read More on The Washington Post](#)



THE CONTROVERSIAL SILICON VALLEY FUNDED QUEST TO EDUCATE THE WORLD'S POOREST KIDS



Founded by Shannon May and Jay Kimmelman in 2007, Bridge aims to bring affordable, high-quality private school education to some of the poorest students in the world. The company addresses a grim reality in many developing countries: nearly 600 million kids in the world are either out of school, or in school but not learning. In many countries, teachers lack proper training and materials. Worse, many teachers often don't show up. According to the World Bank, during random spot-checks across seven African countries, 20% of teachers were absent, and another 20% were in the school but not in the classroom.

Bridge's solution to the problem is well-suited to these tech-enabled times: Optimize education by standardizing and automating some of it. Every week, teachers at Bridge's 599 schools download highly-scripted lesson plans designed by experts in Cambridge, Massachusetts, along with in-country teams. During the day, in any given country, teachers in the same grade are delivering the same lesson. Bridge collects data that allows it to compare the efficiency of teachers in one school to another, or measure the performance of students across different classes, schools, and countries.

The results are promising. Teachers show up; kids have learning materials; teachers get detailed lesson plans and plenty of feedback; and data-based evidence informs class design. "There are hundreds of millions of kids not in school and hundreds of millions in schools and not learning. Bridge exists to close that gap and to show its possible to run high-performing schools on a constricted budget," says May. We also wanted to understand the Silicon Valley ethos that drives Bridge. Because it uses technology to disrupt the delivery of a key service, it is often compared to Uber. And like Uber, at least under its founder Travis Kalanik, Bridge has little patience for its critics. Does Bridge represent an important breakthrough in scaling quality education? Or is it another Silicon Valley fad that's driven by hubris, struggling to rightsize its ambition?

Bridge will need to keep expanding if it wants to become a sustainable business; it is currently losing about \$12 million a year. The issue is a matter of scale: its low-cost model means it needs many more students to make money. There are 100,000 Bridge students today. At 500,000, May says it will break even. Its ambition is far loftier: to educate 10 million children by 2025, not just in basic reading and math skills, but through later primary years, when skills become more complex.

[Read More on Quartz](#)

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