



Dispatches From The Wild, Weird World Of Humanity And Its Biosphere

September 8 2021

## Climate Change & Pollution



As China industrialized and coal plants and cars abounded, **Beijing's** air pollution became legendarily terrible. In 2013, [PM2.5 particles](#) (a catch-all term for tiny inhalable floating stuff in the air like soot or smoke particles, and a major component of smog) in the air of the capital reached

900 micrograms per cubic meter, an unbelievable *90 times higher* than the [WHO safe limit](#) of 10 micrograms per cubic meter. After this "airpocalypse," citizen protests (an *extremely* risky activity in China) pushed the central government to finally impose some basic clean air regulations, similar to those that became law in the US in the 1970s.

Now, [Beijing has seen its best monthly air quality since records began in 2013](#), with an average of just 16 micrograms of PM2.5 per cubic meter in July 2021. It's always difficult to know whether to trust numbers filtered through the Chinese government, but anecdotal evidence makes it clear that there has been a dramatic shift: after years of constantly smog-covered skies, Beijing now regularly sees completely blue skies. (Pictured above: Beijing on July 30, 2021). This benefits the health of the citizens of Beijing and reduces the global air pollution burden. Great news!

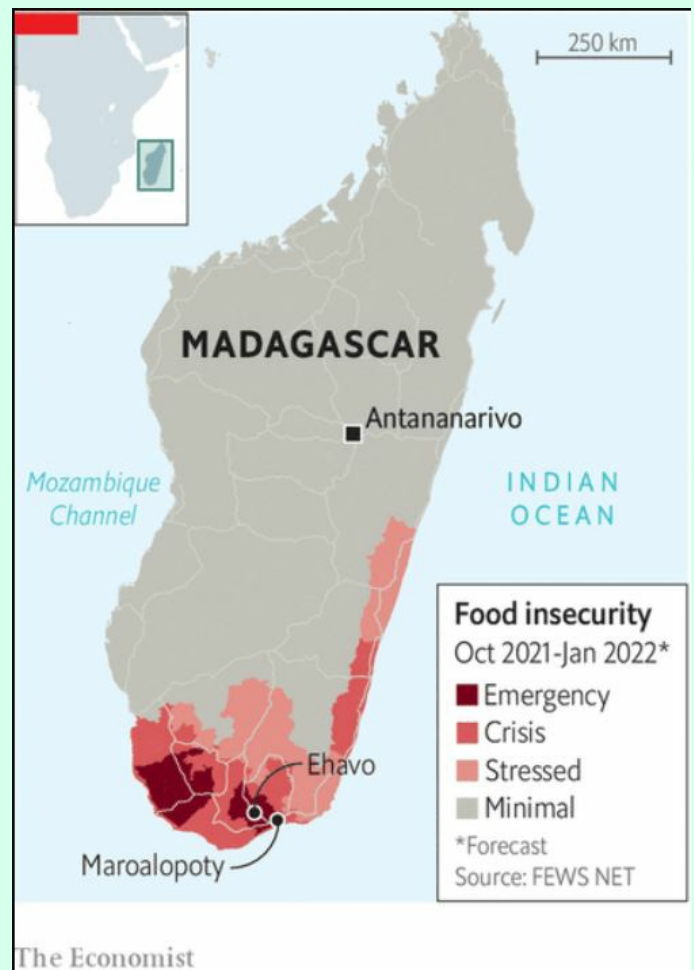
Communities in far southern Madagascar are [nearing famine conditions](#), as four years without rain and an escalating drought have dried out the soil so badly that crops cannot grow. In a country dependent on subsistence agriculture ([as observed by this writer](#) during work in the fortunately-wetter eastern mountains) that can amount to a death sentence. This is likely the first famine primarily caused by climate change.

Over three million people are affected, and [the UN estimates that 30,000 people are now at the highest level of food insecurity](#) (see the "Emergency" regions in [the map](#)), and people on the ground are scrounging for insects and cactus leaves to survive. The region is undergoing desertification due to the extreme drought, with [sandstorms](#) now silting up already-parched croplands. Children are dropping out of school to forage for food and [some families are selling their daughters](#).

United Nations relief teams [are active on the ground](#), and 800,000 people have already received some degree of emergency lifesaving assistance, but there's still hundreds of thousands undergoing hideous horrors, and the situation could worsen substantially. This is one of the most brutally, agonizingly unfair aspects of the Anthropocene-these people were struggling to survive already, and now the farmlands on which they clung to life have been destroyed by a global crisis they did nothing to cause.

The [remnants of Hurricane Ida](#) brought flooding to the northeastern US, killing at least 24 people and causing the first-ever flash flood warning for New York City. There is a clearly identified optimal solution that we need to pursue to protect coastal infrastructure from hurricane floods, though: [oyster reefs](#).

[A leak at an Assad regime-controlled oil refinery](#) in Syria caused an oil spill stretching over 25 square kilometers of the Mediterranean and oozing out to sea towards the beaches of [southern Turkey](#).



Kenya is trying to maintain a record achieved for the first time in 21 years: [not a single rhino was poached in the nation's national parks](#) in 2020! Funding for rangers was key, and more ranger housing is in the works. This is the latest step in an epic come-from-behind victory for rhino conservation in Kenya: poaching reduced the



nation's rhino population from 20,000 in the 1960s to just a few hundred in the 1970s. However, a [recent wildlife census showed](#) that Kenya is now home to 1,759 rhinos! These consisted of 840 [southern white rhinos](#) (*Ceratotherium simum simum*) and 897 [black rhinos](#) (*Diceros bicornis*, [pictured](#)), plus the last 2 northern white rhinos (*Ceratotherium simum cottoni*, both female, but potentially soon joined by baby northern white rhinos [due to cutting-edge de-extinction technology](#)).

India is successfully pursuing a project to restore its coastal mangrove forests, which sequester carbon, aid biodiversity, and [protect](#) against sea level rise. Over [20,000 hectares](#) of mangroves have been planted since 2010.

The Colombian city of [Medellin](#) has [planted 30 "green corridors"](#) to help reduce the urban heat island effect, draping the verges of 18 roadways and 12 waterways with trees. Medellin, once known as a drug cartel hub, has [successfully reinvented itself](#) as a hub for public transport, renewable energy, and clever urban planning- this is a great example!

The landmark Great American Outdoors Act of 2020 is [already funding projects to maintain infrastructure in America's public lands](#)! An unheralded success story, the bill has ended years of woeful underfunding in the national parks system.



## Technology & Emissions Reduction



Decarbonization of the shipping industry (currently responsible for [about 2.5%](#) of humanity's greenhouse gas emissions) is finally getting underway. In Norway, the Kongsberg Marine company has created a [true technological marvel](#): the [Yara Birkeland](#) (pictured), the world's first fully autonomous, zero-emission ship. It has been completely built, is equipped with a 7 megawatt-hour battery (roughly 100 times that of one electric car), can carry 103 shipping containers, can function with zero human crew members (although the first few trips will have human monitors on board), and will carry its first load, from Herøya to Brevik, later this year. The project had to work with the Norwegian government to write brand new regulations governing autonomous ships!

Furthermore, shipping giant Maersk [has ordered](#) eight vessels that will be able to run on carbon-neutral [methanol](#), to be built by Hyundai in South Korea and delivered by 2024. Methanol is produced by the hydrogenation of carbon monoxide-this can be a fossil fuels-heavy process, but Maersk has pledged to use only methanol from a process powered by renewable energy, with the carbon sourced from [either](#) biomass or carbon capture.

Spain is [decarbonizing rapidly](#), with only one coal mine left (to be shut down in December 2021) and one coal plant (to be shut down in 2030). The Spanish government has targeted 74% renewable electricity by 2030-and already reached 50% renewable electricity during the sunny month of May 2021. Notably, as part of a deal the government reached unions reached three years ago, coal workers were offered a landmark Just Transition deal: early retirement and comfortable pensions for life. Great news!

In addition to accelerating renewables growth around the developed world (the US saw a [new high for renewables installation](#) in the first half of 2021) the developing

world is experiencing a renewables boom of its own.

Between 2010 and 2019, the number of people living without electricity worldwide [declined](#) from 1.2 billion to 759 million (although after that, COVID likely made electricity unaffordable for 30 million more people). That's an amazing success-but even better, it also appears that



many of those people have benefited from renewable energy. Amazingly, [420 million people worldwide now get all of their electricity from off-grid solar power](#), powering everything from water pumps to lightbulbs-often with life-changing effects ([pictured, construction](#) of off-grid solar array in Malawi). The World Bank estimates that number could nearly double by 2030.

The unlikely benefactor here is the [secondhand solar panel market](#), a little-studied but surprisingly massive contributor to global progress. As solar panel technology advances rapidly, homeowners and grid-scale facilities in the developing world are discarding vast amounts of perfectly good solar panels to replace them newer, more efficient models. Selling these to poorer countries is a [massive win-win](#), preventing them from going to waste while providing a cheap electricity source (plus, many solar panels that are fairly inefficient in Europe or the US produce more power in sunny sub-Saharan Africa!). It's unclear how many of the first-electricity-providing solar panels came from these developing world cast-offs (because, again, no one's really comprehensively tracking the secondhand solar industry), but the answer is likely somewhere between "a lot of them" and "most of them." As the renewables revolution continues, this ancillary sector will almost certainly continue to grow, and it's gaining more interest-Japanese company Marubeni recently launched a [blockchain-powered market](#) for used Japanese solar panels. Great news!

[The Weekly Anthropocene](#)

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