

The economic cost of climate-related disasters hit \$2.25 billion over the last two decades, an increase of more than 250 percent compared to the previous 20 years, the UN said on Wednesday.

'Carbon sink' Bhutan counts cost of plans for green future

The gentle whirring of the wind turbine speaks volumes of Bhutan's record as the world's only carbon negative country, but major challenges stand in the way of the Himalayan kingdom's decision to follow a green path over rampant economic expansion.

The mountainous state, holding only its third election on October 18, absorbs three times more CO₂ than it emits, thanks mainly to the lush forests covering 72 percent of its land, daily-mail.co.uk wrote.

Famed as the 'last Shangri-La' for using happiness as a measure of success, Switzerland-sized Bhutan has been careful to keep its environment pristine, often by sacrificing profits.

The nation of 800,000 has restricted tourist numbers with a daily fee of \$250 per visitor in high season, helping keep at bay the kind of boom that has ravaged other scenic hotspots.

In May, Bhutan opted out of an India-backed regional road connectivity project mainly

over concerns that trucks coming in from other countries will pollute its air.

The constitution stipulates that at least 60 percent of Bhutan must be covered in forest, putting a brake on farming and a potentially lucrative timber industry.

"There was a great temptation to dig into our forest wealth but we thought of the longer term," said Dasho Paljor Dorji from Bhutan's National Environment Commission.

Under its 11th Five-Year Plan, Bhutan aims to reduce 'substantially' its forest fuel imports by 2020. It has just 100 electric cars so far but wants to increase numbers and plans to introduce a nationwide network of charging stations. In 2016 it installed its first wind turbines.

A rare sight in South Asia, heavy road-cleaning vehicles sweep the streets in slow circular motions, while trucks collect organic waste from households.

Just two hours away in Punakha District earthmovers and bulldozers are chugging away at



AFP

a hydropower project. It is one of the 10 the country aims to build as part of its plan to remain carbon neutral.

All existing and future hydropower projects are financed by its friend and biggest partner India.

Hydropower was also Bhutan's largest export in 2016, accounting for 32.4 percent of the country's total exports and eight percent of its GDP, according to the Asian Development Bank.

All of the energy currently goes to India but there are plans

to export also to Bangladesh.

But concerns have been growing over the impact of dams on biodiversity especially as Bhutan shifts from low-impact 'run-of-the-river' dams, which do not require large reservoirs, to larger-scale barriers

that do.

Heavy price

And being able to afford staying on a green path depends on Bhutan receiving outside funding, something in doubt since President Donald Trump announced last year that the US would withdraw from the 2015 Paris Climate Accord.

Under that accord, wealthy nations agreed to establish an annual \$100-billion fund to help developing nations adapt to a heating planet.

Bhutan is keenly feeling the ravages of climate change, from melting glaciers, changing crop patterns to the spread of mosquito-borne diseases.

Temperatures have started touching 30°C, alarming locals unused to heat and humidity.

"Even the snowfall pattern has changed. Earlier it would snow for a few days, now it doesn't even last a day," Tenzin Wangmo, Bhutan's chief environment officer, told AFP.

Wangmo said the warmer

climates meant paddy fields dot places like Bumthang that never grew rice in the past.

"Climate change is not in our control. We haven't done anything but we are paying a heavy price," she said.

Furthermore, new drainage systems required to prevent flooding downstream require the deployment of workers in remote areas high in the mountains, Wangmo explained.

"A lot of money and manpower is needed for such measures. But where is the funding and capacity-building?"

A Green Climate Fund (GCF) delegation that visited Bhutan in August said it would help the country's progress on a low-emission and climate-resilient path.

"I think Bhutan's contribution to the global community through keeping its carbon sinks intact, its nature as pristine as possible is a great one," said Dorji.

"Our cause is worth supporting. We should be rewarded equally, if not more."

Deep below the ancient volcanoes scattered around the Philippines sits a simmering stockpile of intense heat that officials hope will help revive the nation's sputtering green energy machine.

The Philippines — thanks to its spot in the Ring of Fire zone of Pacific volcanoes — has long been one of the world's top producers of geothermal power, but years of neglect have sent the industry sliding.

Now a surge of new exploration efforts are underway in a nation that has some of the world's largest untapped sources of volcanic heat, but which relies on coal for half its electricity, phys.org wrote.

"It's an exciting development," Enrique Nunez, the country director for Conservation International, told AFP.

"In an environment where coal is king, this is good stuff."

One of the nation's freshly upgraded plants, Maibarara, puffs out white steam from shining metal stacks on a jungle-covered hillside about

Philippines revs up flagging green energy engine

an hour south of Manila.

High-temperature water vapor from the Earth's red-hot underbelly is piped to the surface where it makes power-producing turbines spin.

"There is no smoke," said facility manager Paul Elmer Morala.

"Only a bit of noise, but our neighbors don't complain."

The Philippines was for years the world's number two, behind the US, in drilling deep to tap the scorching hot steam.

But as the nation's economy has boomed in recent decades, it has opted to feed its needs with cheaper and quicker-to-develop plants that burn fossil fuels.

The amount of its power from geothermal sources has stayed relatively constant since

2002, while coal and gas-powered production has nearly tripled.

Early in 2018 the Philippines lost its number two geothermal status, which it had held for over two decades, when Indonesia finished its massive Sarulla project.

That demotion was years in the making for a country which had an initial rush of geothermal exploration in the 1970s and 1980s in response to the world's first global oil crisis.

Decades of neglect followed until a growing global commitment to slow climate change led to the Philippines passing a law a decade ago to spur renewable energy investments.

'Geothermal is risky'

The Philippine government launched in June

a string of new exploration surveys, which comes on top of the roughly 10 contracts the nation has signed in recent years with power companies to drill exploratory wells.

"Of course the target is to increase the existing capacity," Ariel Fronda, head of the renewables division of the Philippine Energy Ministry told AFP.

"There is a high degree of interest in renewables in general... Energy has suddenly become an attractive business," he added.

The Philippines' seven geothermal fields now supply about 12 percent of the nation's energy, with a long-term plan to nearly double capacity by 2040.

The Philippines has the fifth-largest geothermal reserves, behind only the US, Indonesia, Japan and Kenya.

Though nominally free, finding the resource is an expensive enterprise, with exploration wells costing up to \$8 million each with no guarantee of success.

"Geothermal is that risky," said Fronda, with the government requiring at least two wells per private exploration project in order to more accurately estimate the yield of a site.

The effort to stoke up the nation's geothermal engine largely pre-dates the arrival of President Rodrigo Duterte.

However, last year he created an energy investment council that can greenlight major new projects in 30 days. A geothermal exploration effort is among the four initiatives it has approved.

Though the Philippines has tumbled, it still can be an important player in geothermal, said David Livingston, a renewable energy expert with the US-based Atlantic Council think-tank.

"The Philippines can serve as a catalyst for other developing nations' interest in geothermal, particularly if its newest... programs prove successful," he added.

By Anote Tong*

A new report by the Intergovernmental Panel on Climate Change paints a picture of what the world will look like if it gets 1.5°C, and 2°C, hotter than pre-industrial levels.

Half a degree of warming may seem trifling but, for my country, Kiribati, these fractional figures are a matter of life and death, theguardian.com wrote.

Our whole nation is only two meters above sea level, and the report shows that the difference between 1.5°C and 2°C of warming is several centimeters of sea level rise. Given that we are already feeling the impacts of rising water, every millimeter counts.

Increasingly frequent king tides and storm surges, floods and longer droughts are new, unwelcome additions to our way of life on Kiribati.

Sea level rise is turning our freshwater resources salty, rendering the land unable to grow staple crops such as coconut and taro, and eating away our shoreline.

We are being told that we may have to abandon our islands, the places where our ancestors have been buried, where our children have a home and an identity.

If this disastrous outcome comes to pass, my people will need a place of safety to move to. Rather than be regarded as 'climate refugees' — a term that has no definition or status in the international legal system — I seek migration with dignity for my people.

As we reflect on the frightening future ahead of us, there is no escaping the deep injustice of the fact that, despite our negligible contributions to greenhouse gas emissions, we are on the frontline of climate change consequences.

Making matters worse is the fact that instead of heeding the IPCC's recommendation for urgent and deep emissions cuts to make sure we don't exceed 1.5°C of warming, industrialized nations such as Australia are doing virtually nothing to solve the problem.

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While Kiribati sinks, Australia is doing nothing to solve climate change



JONAS GRATZER/LIGHTROCKET/GETTY IMAGES

It's bad enough that the United States, one of the world's largest polluters, has pulled out of the Paris agreement. Now, there are rumblings that Australian politicians want to do the same.

Already, Australia is one of the highest per capita emissions in the world, and its national greenhouse gas emissions are still rising. The country is twiddling its thumbs as the window of opportunity to keep the people of the Pacific — and Australia — safe slams shut.

Historically, many in the Pacific have regarded Australia as a big brother to our region, and looked to the country for leadership.

The inspiring advocacy of ordinary Australians, businesses, unions, city governments, state governments, churches and NGOs gives us hope that Kiribati could have a fighting chance at survival.

But the inaction and recalcitrance of federal politicians makes us despair.

As we witness their indifference to the reality of climate change, this longstanding friendly relationship is giving way to disillusionment and disappointment. We believe Australia is failing in its duty as a regional leader.

The implications of this for Australia's foreign policy are immense, as the inroads made by Chinese diplomacy have shown.

Australia must play a more constructive role. Ceasing to approve new coalmines would be a good place to start. It must also adopt obvious solutions such as renewable energy, which will help bring its emissions down to zero.

It's not just us that stands to gain from this. In Australia, supporting these solutions will also create new, green jobs, and unlock billions of dollars in economic opportunities.

And your own country, which has been ravaged by bushfires and droughts over the past few months, will also be safer from climate change impacts.

Ultimately, as I head to Australia later this month for a series of public lectures and meetings, I hope to leave the Australian people and politicians with one simple message. The future of Kiribati, Australia and the region is in your hands. It's time to act.

*Anote Tong is the former president of Kiribati.

Ancient Greeks predicted robots, modern technology, claims Stanford historian



Published by reece.greekreporter.com
Talos, a giant automaton made of bronze.

Ancient Greeks not only created the foundations of modern civilization but they also predicted future technological innovations, according to a new book.

Stanford University historian Dr. Adrienne Mayor, in the upcoming 'Gods and Robots' argues that Greek myth prefigured artificial intelligence, robots, driverless cars, and other modern technologies, greece.greekreporter.com reported.

Mayor's arguments revolve to a large extent around Hephaestus, the Greek god of craftsmen and metalworking.

One of his creations was Talos, a giant automaton made of bronze, who Mayor describes as a 'bronze killer-robot' and an early precursor to the kinds of androids now being built by Boston Dynamics.

Another of his creations was Pandora, a 'replicant' and 'wicked AI fembot'

who, according to Mayor, was 'programmed' to release evil into the world. Pandora wasn't the only 'AI' Hephaestus constructed, since he also built mechanical Golden Maidens to help him with his work.

These were designed to predict his needs and to act on them without direct instruction, something which Mayor believes makes them early versions of such AI-powered personal assistants as Amazon's Alexa.

And neither were these creations the only ancient Greek prophecies of future tech.

According to Mayor, Homer's epic poetry foretells the arrival of driverless cars and transportation. In the Odyssey, Odysseus sails back to Ithaca on pilot-less Phaeacian ships, while in The Iliad Homer writes about autonomous wheeled tripods that transport ambrosia.