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STRATEGIC COMMUNICATION AND INITIATIVES SERVICE



Pagasa may raise El Niño alert status in May

By **BELLA CARIASO**

An official of the Philippine Atmospheric, Geophysical and As-

tronomical Services Administration (PAGASA) yesterday said the weather bureau may

raise the El Niño alert status next month. During the Saturday News Forum, PAGASA Impact Assessment

Brace for hotter days in May – Pagasa. See Page 8

tronomical Services Administration (PAGASA) yesterday said the weather bureau may

and Applications Section of the Climatology and Agrometeorology
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division chief Marcelino Villafuerte II said that there is a high probability that the drought will be felt in the next six months.

"We're expecting that this will be mid next year so we started issuing El Niño Watch, and we expect by... May we may increase the alert status," Villafuerte said.

Villafuerte added there is an 80 percent chance that El Niño will be experienced by July until September.

"Based on historical events, we have an increase in the rains, or above normal if it is still developing in July, August, September. But come October, November, December, we will experience the effect where there are less typhoons and will persist in December, January, February, March, April. We expect the impact of possible shortage of water because of limited rains," Villafuerte said.

According to Villafuerte, the drought will start in Mindanao.

"The impact starts to be felt south of the Philippines or Mindanao and then it progresses northward. So, from the Mindanao area, it will be experienced October, November, December because of lack of rains, and then it progresses to the Visayas and then entire Luzon at the latter part of the year, and then until the ensuing or the coming year, where the El Niño phenomenon will fully mature," he added.

The United States Geological Survey said El Niño refers to the warming of the ocean surface, or above-average sea surface temperatures, in the central and eastern tropical Pacific Ocean.

It said El Niño recurs from two years to a decade and can disrupt normal weather patterns globally.

The DA said Mindanao had seen the worst El Niño in the country, with 17,000 hectares of farmlands and more than 20,000 farmers affected in 2016.



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El Niño is coming, ocean temps at record highs can spell disaster for fish, corals

IT'S coming. Winds are weakening along the equatorial Pacific Ocean. Heat is building beneath the ocean surface. By July, most forecast models agree that the climate system's biggest player—El Niño—will return for the first time in nearly four years.

El Niño is one side of the climatic coin called the El Niño-Southern Oscillation (ENSO). It's the heads to La Niña's tails.

During El Niño, a swath of ocean stretching 6,000 miles (about 10,000 kilometers) westward off the coast of Ecuador warms for months on end, typically by about 1 degree Celsius to 2 degrees Celsius.

A few degrees may not seem like much, but in that part of the world, it's more than enough to completely reorganize wind, rainfall and temperature patterns all over the planet.

I'm a climate scientist who studies the oceans. After three years of La Niña, it's time to start preparing for what El Niño may have in store.

How El Niño affects the planet

NO two El Niño events are exactly alike, though we've seen enough of them that forecasters have a pretty good idea of what's likely to happen.

People tend to focus on El Niño's impact on land, justifiably. The warm water affects air currents that leave areas wetter or drier than usual.

It can ramp up storms in some areas, like the southern US, while tending to tamp down Atlantic hurricane activity.

El Niño can also wreak havoc on the many marine ecosystems that support the world's fishing industries, including coral reefs and seagrass meadows.

Specifically, El Niño tends to trigger intense and widespread periods of extreme ocean warming, known as marine heat waves.

Global ocean temperatures are already at record highs, so El Niño-induced marine heat waves could push many sensitive fisheries to a breaking point.

The problem with marine heat waves

A MARINE heat wave is just that: a "wave" of extreme heat in the ocean, not dissimilar to an atmospheric heat wave on land.

At their smallest, marine heat waves can inundate local bays and coves with hotter-than-normal water for a few days or weeks.

At their largest, marine heat waves like the Northeast Pacific Warm Blob of 2013-2014 can grow to gargantuan proportions, with regions three times the size of Texas experiencing ocean temperatures about 2°C to 3°C above average for months or even years.

Warm water might not seem like a big deal, especially to surfers hoping to leave their wetsuits at home.

But for many marine organisms that are highly adapted to specific water temperatures, marine heat waves can make living in the ocean feel like running a marathon.

For example, some fish increase their metabolism in warm waters by so much that they burn energy faster than they can eat, and they can die.

Pacific cod declined by 70 percent in the Gulf of Alaska in response to a marine heat wave.

Other impacts include bleached corals, widespread harmful algal blooms, decimated seaweeds and increased marine mammal

strandings. All told, billions of US dollars are lost to marine heat waves each year.

Marine heat waves flare up for a variety of reasons. Sometimes ocean currents shift warm water around. Sometimes surface winds are weaker than normal, leading to less evaporation over the ocean and warmer waters.

Sometimes cloudy places just aren't as cloudy for a few months, which lets more sunlight in and heats up the ocean. Sometimes both weaker winds and fewer clouds happen at the same time, producing record-breaking marine heat waves.

Where El Niño fits in

IN the climate system, El Niño is king. When it dons its fiery crown, the entire planet takes notice, and the oceans are no exception.

But the likelihood of increased marine heat wave activity during El Niño depends on where you are.

Along the US West Coast during El Niño, surface winds that normally blow from the north tend to subside. This weakens evaporation and slows upwelling of colder, deeper water. That increases the chances of coastal marine heat waves.

Peruvian fishers have for centuries weathered periods of extreme ocean warming that drive fish away. It wasn't until the 1920s that scientists realized that these South American marine heat waves were related to the Pacificwide ENSO.

In the Bay of Bengal east of India, interactions between El Niño and a tropical air flow pattern, known as the Walker Circulation, elevate the risk for marine heat waves.

Seafloor heat waves are another risk

EVEN if marine heat waves aren't more obvious at the ocean surface this year, it doesn't mean all is well down below.

In a recent study, my colleagues and I showed that marine heat waves also unfold along the seafloor of coastal regions. In fact, these "bottom marine heat waves" are sometimes more intense than their surface counterparts. They can also persist much longer.

For example, a 1997-1998 bottom marine heat wave off the US West Coast lasted an extra four to five months after surface ocean temperatures had already cooled.

Events like this can be related to El Niño and put a lot of stress on bottom-dwelling species.

Bering Sea snow crab landings were down 84 percent in 2018 after a marine heat wave reached the seafloor.

We're in (for) hot water

WITH El Niño on the horizon, what can we expect for this year?

The good news is seasonal forecast models can skillfully predict marine heat waves three to six months in advance, depending on the region. And forecasts tend to be most accurate during El Niño years.

The latest forecast predicts several active marine heat waves to persist into June-August, including in the North Pacific, off the coast of Peru, southeast of New Zealand and in the tropical North Atlantic.

The same forecasts predict El Niño to ramp up over the next six to nine months, increasing marine heat wave risk in January to March of 2024 for the US West Coast, the western Indian Ocean, the Bay of Bengal, and the tropical North Atlantic. *Dillon Amaya, NOAA/The Conversation (CC) via AP*



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El Niño alert likely next month

By CHARIE MAE F. ABARCA and PNA

The El Niño alert may be officially released by May as the chances of its occurrence continue to rise.

The phenomenon, characterized by warmer than average temperatures, will be initially felt in Mindanao in October and will progress to the Visayas and Luzon, according to Marcelino Villafuerte, chief of the Climate Impact Assessment and Application of the Climatology and Agrometeorology Division under the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA).

By July to September, the chances of El Niño will increase from the current 70 percent to 80 percent, with "above normal" rainfall before its actual start.

Early preparations and public cooperation are crucial to deal with the extreme weather system that may last until early 2024, Villafuerte said.

"We will have a weak to moderate El Niño so we have to prepare for it," he said at the Saturday News Forum in a Quezon City restaurant.

Water conservation is among the major priorities.

"We have to conserve water. For example, when you are washing your hands or brushing your teeth, close the faucet. Don't let water continuously flow," said Sevilla David Jr., executive director of the National Water Resources Board.

"Simple efforts will have a huge impact in such a situation."

The country last experienced El Niño from 2018 to 2019.

During its final month in July 2019, two tropical cyclones developed in the Philippine Area of Responsibility; moderate to heavy rains were felt in most parts of western Luzon, western Visayas, and some areas of western Mindanao; the water level of several dams in Luzon increased; and flooding, flashfloods, landslides, and soil erosion were reported in Cagayan, Cordillera, Central Luzon, Western Visayas, and Lanao del Norte that caused damage to agriculture.

Villafuerte advised staying indoors as much as possible and hydrating to prevent heat stroke.



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Marcos to Filipinos: Unite vs climate change

By ARGYLL CYRUS GEDUCOS

President Marcos urged Filipinos to take part in worldwide efforts to address the effects of climate change as he assured the public of his administration's commitment to craft policies that will combat it.

The President said this as the world celebrated Earth Day on Saturday, April 22.

In a tweet, the President enjoined the public to partake in efforts against climate change. ▶5

"Ngayong Earth Day, inaan-yayahan natin ang publiko at kapwa nating lingkod bayan na makiisa sa pandaigdigang aksyon laban sa climate change (This Earth Day, we encourage the public and fellow public servants to be united in the global fight against climate change)," he said. "Nananatiling buo ang suporta ng ating administrasyon sa mga programa at polisiya para sa kalikasan (The administration fully supports programs and policies for the environment)," he

added.

According to the President, the country's efforts against climate change are being headed by the Climate Change Commission (CCC).

In a tweet, the CCC listed ways by which the public could help mitigate the effects of climate change.

"By investing in our planet, we can take concrete steps toward mitigating the effects of climate change. This includes implementing sustainable practices, reducing our carbon footprint, and promoting

conservation efforts," it said.

Earth Day is an annual event celebrated on April 22 to show support for environmental protection. The movement started in 1970 and is marked by people worldwide through clean-up events and educational programs.

Meanwhile, International Mother Earth Day was established by the United Nations General Assembly in 2009 to ensure the environment's conservation, preservation, and protection.



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Pinoys urged to join fight vs climate change

President Marcos has called on Filipinos to unite in the fight against the negative effects of climate change as the world celebrated Earth Day yesterday.

"This Earth Day, we urge the public and our fellow public servants to join the

global action against climate change," Marcos said in a post on Twitter.

Each year on April 22, people around the world celebrate Earth Day to demonstrate support for environmental protection.

Citing the Philippines as

one of the most vulnerable countries to climate change with an average of 20 typhoons visiting it annually, Marcos stressed: "Our administration remains fully supportive of environmental programs and policies."

To learn more about the

government's initiatives to combat climate change, the Chief Executive urged the public to visit the social media sites of the Climate Change Commission (CCC), the lead policy-making body which he chairs.

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Pinoys From Page 1

Marcos said the CCC ensures the mainstreaming of climate change in national, local and sectoral development plans towards a climate-resilient and climate-smart Philippines.

Speaking at the Asia-Pacific Economic Cooperation CEO Summit in Bangkok, Thailand in November last year, Marcos highlighted that climate change is "the most pressing existential challenge of our time" that indelibly impacts the global economy.

He underscored how Philippines is at great risk from the climate crisis, as it stands to lose more than six percent of gross domestic product GDP annually by 2100, citing a study by the Asian Development Bank.

Despite global agreements seeking multi-lateral solutions, such as the United Nations Framework Convention on Climate Change and the Paris Agreement, the President noted that "not enough" progress has been made as greenhouse gas emissions continue to rise.

The Marcos administration is pushing for renewable energy options such as hydro-power, geothermal power, solar and other low-emission energy sources.

It set a target for a higher share of renewable energy in the power generation mix of 35 percent by 2030 and 50 percent by 2040.

'Sachet capital'

One thing for Filipinos to ponder on is how the Philippines has been tagged as the "sachet capital of the world" for being the top contributor to ocean plastic pollution.

In a radio interview, CCC Commissioner Albert dela Cruz underscored the need to eliminate the use of single use plastic in the country.

"During his (Marcos') SONA (State of the

Nation Address), he said that the Philippines is the top three contributor to ocean plastic pollution. This was last year; but in January this year, an international magazine said that the Philippines is now the No. 1 ocean plastic contributor," Dela Cruz said.

Environment Secretary Maria Antonia Yulo-Loyzaga has said the country generates at least 2.7 million metric tons of plastic wastes and that 20 percent of these end up in the oceans.

Despite various efforts to ban single use plastics in industries, the country produces 7,000 metric tons of plastic waste daily, she said.

Dela Cruz said authorities have failed to implement Republic Act 9003, the Solid Waste Management Act.

Posing his question to the nation, he said: "When we go to the beach, we bring a sachet of shampoo, a sachet of toothpaste, a sachet of soap, we also have food from the fast food chain. While we enjoy these blessings, do we give back to our Mother Earth in disposing our garbage?" Whether the Philippines is No. 1 or No. 3 among the top plastic polluters of oceans is no longer the issue, said Dela Cruz, but the fact that plastic wastes end up in these great bodies of water and get eaten by fish is what is of concern.

"These plastics will be eaten by fish and cause lead content in the food we eat," he said. The CCC official cited a World Bank (WB) study stating that by 2050, there will be more plastics than fish in the oceans. "By that time, fish in the ocean will no longer be safe for human consumption," he said. Dela Cruz explained how plastics produce micro plastics that invade the food chain.

"That is the reason we have carcinogenic chemical compounds and, according to a



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study in the US, eight out of 10 of males with prostate problems and females with breast cancer were positive of Bisphenol A (BPA). It is a compound that causes prostate and mammary gland cancer and eight out of 10 children with attention deficiency syndrome also have traces of Bisphenol," he said.

The CCC is enjoining all concerned government agencies to ensure the compliance of manufacturers with Republic Act 11898 (Extended Producer Responsibility Act of 2022) making firms responsible for plastic packaging.

RA 11898, which lapsed into law last July 30, amended RA 9003 (the Ecological Solid Waste Management Act of 2000), mandating companies to establish Extended Producer Responsibility (EPR) programs for plastic waste reduction, recovery and diversion.

Through EPR, enterprises are obliged to recover or offset their generated plastic product footprint by 20 percent in 2023 and 80 percent by 2028.

Among the plastic packaging covered by the EPR Law include single or multi-layered plastics such as sachets, rigid plastic packaging products like food and drink containers, single-use plastic bags and polystyrene. Penalties for non-compliance of EPR duties range from P5 million to P20 million, or twice the cost of recovery and diversion of the footprint or its shortfall, whichever is higher.

Dela Cruz called on the nation to celebrate Earth Day, knowing full well that "we only have one planet" and there is "no Plan B" should we destroy it.

"By 2050, if we fail to implement carbon mitigation, the temperature will increase by more than 1.5 degrees Celsius. This will cause a big problem in the climate that we call climate abnormalities," he said.

- Helen Flores, Bella Cariaso



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THE EXPONENT OF PHILIPPINE PROGRESS
SINCE 1900
MANILA BULLETIN
THE NATION'S LEADING NEWSPAPER

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EARTH DAY CLEAN-UP — Volunteers conduct a clean-up drive at the Dolomite Beach on Roxas Boulevard in Manila in line with the global celebration of Earth Day on Saturday, April 22, 2023. The celebration seeks to engage communities all over the world in addressing the pressing environmental issues of today. (Juan Carlo de Vela)



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PICKING UP THE PIECES Volunteers clean up along the Dolomite Beach in Manila on Saturday, April 22, 2023, to mark the global celebration of Earth Day. PHOTO BY MIKE ALQUINTO



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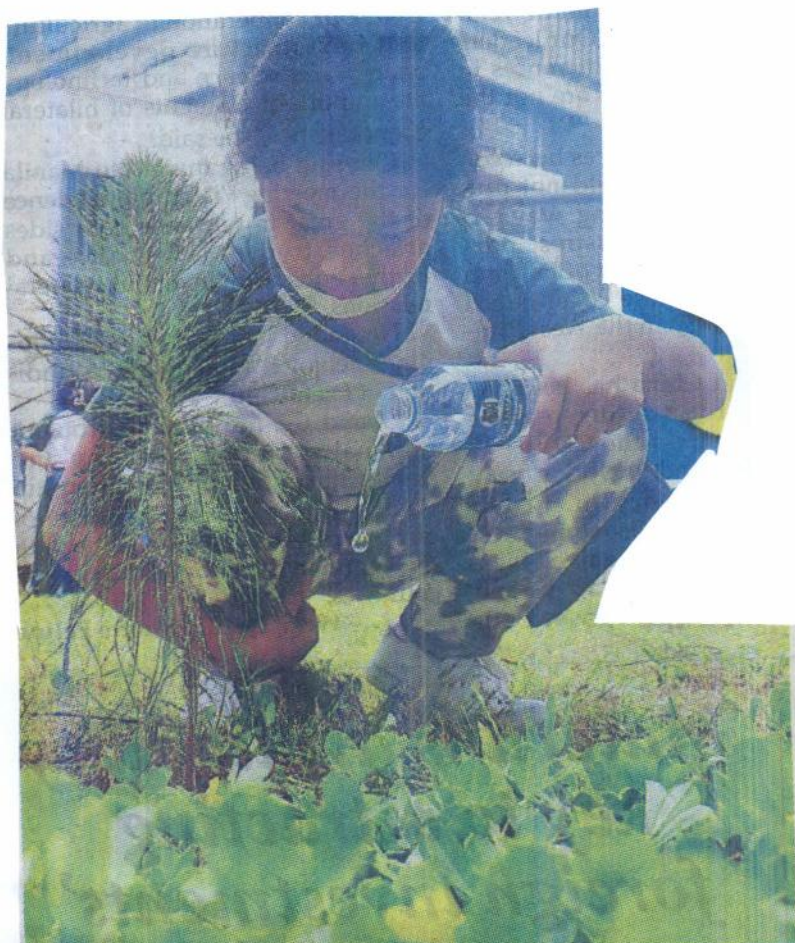


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An elementary school student waters a pine tree seedling during a tree planting activity in Baguio City as part of the celebration of Earth Day yesterday.

ANDY ZAPATA JR.



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PALAWAN SCIENTIST ON THE CASE

'CHEMICAL FINGERPRINTING' OF OIL SPILL TO HELP FISHERFOLK SEEKING DAMAGES

By Krixia Subingsubing
@krixiasINQ

For Palawan scientist Hernando Bacosa, who has studied the effects of an oil leak on the ocean for nearly a decade, a spill site is much like a crime scene.

This is particularly true regarding the oil spill off the coast of Naujan, Oriental Mindoro province, where 800,000 liters of industrial oil continue to leak since the MT Princess Empress, a tanker operated by RDC Reield Marine Services, which sank there almost two months ago, on Feb. 28.

Just as a detective can search for prints in a crime scene, so, too, can scientists detect an oil spill's "fingerprints" to see if slicks found beyond the spill site came from the original location.

This process, called chemical fingerprinting, is significant for the affected communities who may consider seeking damages, Bacosa said.

So while authorities try to contain the fallout, his work could lay the groundwork for environmental justice for the fisherfolk of Oriental Mindoro.

"For example, if you found oil as far as Palawan and you are sure that this oil came from the tanker, in court you have a



GATHERING EVIDENCE Scientist Hernando Bacosa (in blue shirt) and a member of the Philippine Coast Guard show samples gathered from shorelines which may have been affected by the oil spill from the sunken motor tanker MT Princess Empress.

—HERNANDO BACOSA/CONTRIBUTOR

strong case to claim for damages and for compensations and economic losses," he told the Inquirer.

'Emergency oil response'

In an effort to show authorities the extent of the spill, Bacosa has so far collected oil residues on the shorelines of Palawan (some 445 kilometers from Mindoro Island), the Cuyo Islands (254 km) which are part of that province, Semirara Island (27.5 km) and Batangas province (60 km).

Some of the samples were sent to Japan and France—countries which have the equipment necessary for fingerprinting.

Samples collected from the town of Pola in Oriental Mindoro have been found "positive" by Cedre, which is described on its website as a French "nonprofit association" with "expertise in accidental water pollution."

The Philippine Coast Guard (PCG), which is tasked with the huge challenge of containing the spill,



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'CHEMICAL FINGERPRINTING' TO HELP FISHERFOLK

FROM A3

has availed itself of Bacosa's expertise through the Department of Science and Technology (DOST). On March 17, PCG Vice Adm. Robert Patrimonio wrote Science and Technology Secretary Renato Solidum in March, seeking his agency's assistance in examining oil samples taken by the PCG in Mindoro, Semirara, and Taytay town, Palawan.

It is surprising, as Bacosa has noted, that the DOST was not among the agencies included in the government's National Oil Spill Contingency Plan, drawn up in the wake of the sinking of the MT Princess Empress.

That is why President Marcos himself asked Bacosa last month "if I could help in the crafting of amendments that would include the DOST in the emergency oil response," recalled the scientist.

Biomarkers

A 2018 fellow of the DOST's Balik Scientist Program, Bacosa is currently a professor of environmental science at the Iligan Institute of Technology of Mindanao State University.

He was one of the scientists involved in the chemical fingerprinting of the Deepwater Horizon oil spill in 2010, which saw 4.4 million barrels of oil spread in the Gulf of Mexico.

Bacosa explained that fingerprinting is possible because of biomarkers in petroleum—which are complex molecules that tend to resist "degradation"

and "weathering."

In other words, he said, these markers will show up on oil samples, no matter how far or how long ago they were obtained.

Fingerprinting also helps in tracking changes in the chemical composition of the oil sample, Bacosa said.

For example, freshly spilled oil tends to be more soluble and more toxic, as this can be ingested by phytoplanktons and zooplanktons, thus disrupting the food chain in the affected marine ecosystem.

When exposed to oil, aquatic animals often suffer stunted growth, enlarged livers and weakened hearts, Bacosa said. This is especially damaging to fisherfolk who depend on those species.

Bacosa noted that oil spill science in the Philippines "is really superficial despite [its] being a maritime country."

He said chemical fingerprinting itself is not too complex. But the country still does not have the technological capability and skill for that expertise.

"[That is] why even though the Coast Guard works really hard in containing the spill, there is only so much they can do," Bacosa said. "Plus, nobody is yet doing the assessments on the extent of ecological damage [that the spill] brought to the environment."

He called for a more holistic approach to managing calamities, including regular consultations with scientists who could help provide a clearer picture of their magnitude. INQ



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By Linda B. Bolido
@InquirerBiz

A hilly barangay in Nasugbu, Batangas, is a showcase of how ingenuity, creativity, innovation—along with a willingness and readiness to look beyond the obvious and the usual—can lead to ideas that promote sustainability.

Base Bahay Foundation, Holcim Philippines and Kanya Kawayan recently inaugurated Kanya Kawayan Weaving Center, a 148-square meter sustainably-built structure where artisanal creations will be produced to help generate jobs and alternative livelihood opportunities for Batangueños, particularly women.

A brainchild of philanthropist Bea Roxas, whose family is in the sugar production business, Kanya Kawayan is a trailblazing initiative that transforms bagasse, what remains of the sugarcane after the juice had been extracted, into an eco-friendly, natural woven fabric for use in various products. Kanya is both the Filipinoized

CIRCULAR ECONOMY
Philanthropist Bea Roxas, who grew up around sugarcane, is developing innovative uses for bagasse, which would otherwise just be used as fuel or thrown away.



ECO-FRIENDLY Kanya Kawayan Weaving Center is shaped like a boomerang.

Building new livelihood out of sugarcane waste



ARTISANS Housewives are happy to augment their family income by weaving bagasse into a natural fabric for bags, placemats and other functional items. —CONTRIBUTED PHOTOS

version of the Spanish *caña* for cane as well as the Filipino word for his or hers.

Until Roxas discovered other possibilities for bagasse, waste product from sugar milling was only used as fuel or thrown away.

"I grew up surrounded by sugarcane," Roxas says during the inauguration. "I thought we should be using sugarcane for other purposes." Finding new uses for bagasse would not only reduce trash but could also create jobs, particularly for women

who only did unpaid house work.

Roxas says, "The very essence of Kanya is interwoven with a commitment to be of service to the economic development of rural communities in the province of Batangas."

With help from her friend Jean Goulbourn, a popular fashion designer who uses mainly the native *piña* (pineapple fiber) in her clothes and accessories, and expert assistance from technical people, Roxas found the technology to turn bagasse into fiber that could be used as material for bags, home accessories, etc.

Thoughtful creation
In keeping with its commitment to sustainability, Kanya products use only organic dyes.

Roxas herself designs the woven products, like bags and placemats that are now carried by the high-end Rustans Department Store, among others.

With its focus on eco-friendly products, Kanya needed a workplace built with as much care and concern for the environment.

The Kanya Kawayan Weaving Center—a curved structure designed not only to blend with its environment but also anticipate how the elements would affect it—was built using the cement bamboo frame technology of Base Bahay Foundation Inc. It features bent bamboo poles that give the structure its curves.

Base Bahay general manager Pablo Jorillo says the technology could be used to build more schools and low-cost housing.

Werner Wallner, chief executive officer of the Hilti Foundation, which founded and funds Base Bahay, stresses the organization's commitment to invest in building technology "that's safe, durable and sustainable." **B2**



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BUILDING NEW LIVELIHOOD OUT OF SUGARCANE WASTE

FROM B1

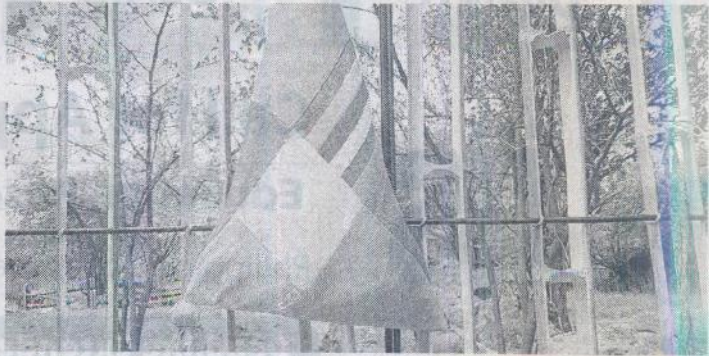
Eco-friendly design

The bamboo frames are fortified by Holcim's ECOPlanet cement, which has 30 percent less carbon footprint compared with ordinary cement.

Eliana Nieto, chief financial officer of Holcim Philippines, says the company is not only happy that its eco-friendly cement is used in the project but also that the weaving center would be helping women—“empowering them and making their lives better.”

Luis Lopez, an engineer and head of technology at Base Bahay, says the Kanya structure was shaped like a boomerang to follow the contour of the site and blend with the environment. This was also to allow maximum air flow so there would be no need for air conditioning.

Base Bahay has also used its cement bamboo frame technology to build a children's village and low-cost



WOVEN “Kanya” bags made from bagasse fabric. —LINDA B. BOLIDO

houses for 4P (For People), a charitable organization founded by Ingar Akerlund, about a kilometer or so from the weaving center.

Holcim Philippines chief sustainability officer Zoe Sibala says their participation in the Kanya project “weaves two key pillars of our sustainability commitment as it uses green products such as our Holcim ECOPlanet (cement) and increases access to better economic opportunities.”

The weaving center, Base Bahay president Maricen Jalandoni says, would allow people to learn new skills to support themselves.

Eileen Ermita Buhain, wife of Rep. Eric Buhain of the first district of Batangas, is hopeful that the Nasugbu initiative could be replicated in other parts of Batangas and that more women would be encouraged to participate. INQ



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Rational energy transition

FOR those of you who may be wondering if there is any substance to this week's unauthorized



**ROUGH
TRADE**
**BEN
KRITZ**

publication contribution from He Who Screams Alone into the Void about the "delusion" of the energy transition that "won't happen," the short answer is no. That argument has been thoroughly overwhelmed by a report published just within the past couple of days and based on actual energy market data that unequivocally shows that not only will the energy transition happen, it already clearly is happening.

I will take up the report in detail in the coming week, as I have only just received it and had time to read it once through. It contains a lot of data to sift and accurately interpret for a general audience, and of course, good practice dictates that everything be thoroughly fact-checked before presenting it.

As for the latest screed advocating environmental destruction, its unauthorized republication invalidates the point it was meant to support by its failure to disclose the associations and financial interests of those behind it, specifically its author Mark Mills and the otherwise inconsequential think tank on whose behalf he was writing, the Manhattan Institute.

The Manhattan Institute for Policy Research is part of the Atlas Foundation for Economic Research, an umbrella organization of more than 500 "free market" groups that, among other things, uniformly promote climate skepticism. Notorious climate denier Anthony Fisher (who, as a bonus, was also an advocate of a "hard Brexit" in the UK and a vocal supporter of Liz Truss, whose disastrous term as prime minister only lasted seven weeks) is listed as a founder of most of them, including the Manhattan Institute, which he co-founded with the equally notorious Reagan-era CIA director William Casey in 1978. Among its large-scale funders are the various foundations run by the Koch Brothers (slightly over \$1.2 million) and Exxon Mobil (about \$1.06 million).

As for Mark Mills, who was listed as an "expert" in the Manhattan Institute's Center for Energy Policy and the Environment — I say "was," because the CEPE website appears to have been recently taken down — he is another veteran of the Reagan administration, and the founder of Mills McCarthy&Associates, a Washington-based consulting firm that, by his own description, "has worked with over 80 utilities in providing strategic plans, market assessment, speeches, seminars, executive briefings, expert testimony and analytic research." Although apparently semi-retired now, Mills was also a scientific adviser for a number of years to The Greening Society, an ostensibly environment-oriented group funded and controlled by the Western Fuels Association in the US "as a vehicle for advocacy on climate change, the environmental impact of CO2 (carbon dioxide) and fossil fuel use."

And of course, it should not be forgotten that the fossil fuel industry — the same one that is directly or indirectly the source of livelihood for the likes of people such as Mark Mills or others associated with the Atlas Network — conducted extensive research decades before climate change became a global concern, reached the very same conclusions that are universally accepted as accurate, descriptions of environmental reality now, and actively sought to suppress that information. I have written about that several times since 2021; if anyone would like to revisit that subject in detail, please let me know.

Projection is a common behavior among right-wing misanthropes, and that certainly seems to be to the case here; if anyone is "deluded" about the energy transition, it is those who are quite obviously and intentionally conflating "the energy transition won't happen" with "I don't want it to."

Even if denial of the necessity or actual existence of a global energy transition is puerile nonsense that ought to be ignored, the broader subject is a complex one, and even among those who agree that the energy transition needs to happen, and needs to happen as quickly as possible, there is still a vast space in which the best way to go about it can and almost certainly should be debated. Climate change denial, or the even more insidious denial of it cloaked in statements like, "conventional energy is inexpensive, reliable and clean given the proper policy environment," is an unrealistic extreme, but so is the other end of the spectrum that asserts that the energy entire supply can and must be replaced by solar and wind energy all at once.

Somewhere in that big space between those two unhelpful extremes is a solution that works, though finding it might be akin to the proverbial needle in a haystack. What is encouraging, however, is that most of the interests in the Philippines' energy sector, who are, after all, the ones who will ultimately have to do the heavy lifting in the country's energy transition, have a surprisingly rational view toward the challenge. Indeed, there is a commercial interest in this — that is to be expected, and is not necessarily wrong — but the guiding principle is energy security.

No one benefits if energy is not equally accessible, affordable, reliable and sustainable.

Decarbonization is accepted as the necessary goal, but the path to it has to be managed in such a way that we can count on the lights staying on, and being able to afford to keep them on, along the way.

After all, Mankind's ability to destroy the only planet we can live on didn't develop overnight; cleaning up the mess isn't going to happen in one great leap, either. I have less faith than others that there is still enough time to actually clean up the mess, but all faith is a hypothesis, and all hypotheses must be tested to be proven true or not.



UN reports 'off the charts' melting of glaciers; sea levels at record high

GENEVA, Switzerland (AFP) — The world's glaciers melted at dramatic speed last year and saving them is effectively a lost cause, the United Nations reported Friday, as climate change indicators once again hit record highs.

The last eight years have been the warmest ever recorded, while

concentrations of greenhouse gases such as carbon dioxide hit new peaks, the UN's World Meteorological Organization said.

"Antarctic sea ice fell to its lowest extent on record and the melting of some European glaciers was, literally, off the charts," the WMO said ▶5

as it launched its annual climate overview.

Sea levels are also at a record high, having risen by an average of 4.62 millimeters per year between 2013 and 2022—double the annual rate between 1993 and 2002.

Record high temperatures were also recorded in the oceans, where around 90 percent of the heat trapped on Earth by greenhouse gases ends up.

The 2015 Paris Agreement saw countries agree to cap global warming at "well below" two degrees Celsius above average levels measured between 1850 and 1900—and 1.5°C if possible.

The global mean temperature in 2022 was 1.15°C above the 1850-1900 average, the WMO report said.

Record global mean temperatures over the past eight years came despite the cooling impact of a drawn-out La Niña weather phenomenon that stretched over nearly half that period.

The report said greenhouse gas concentrations reached new highs in 2021.

The concentration of carbon dioxide (CO₂) reached 415.7 parts per million globally, or 149 percent of the pre-industrial (1750) level, while methane reached 262 percent and nitrous oxide hit 124 percent.

Data indicate they continued to increase in 2022.

Glacier game lost

WMO chief Petteri Taalas told a press conference that extreme weather caused by greenhouse gas emissions "may continue until the 2060s, independent of our success in in climate mitigation"

"We have already emitted so much, especially CO₂ in the atmosphere that this kind of phasing out of the negative trend takes several decades."

The world's 40-odd reference glaciers—those for which long-term observations exist—saw an average thickness loss of more than 1.3 meters between October 2021 and October 2022—a loss much larger than the average over the last decade.

The cumulative thickness loss since 1970 amounts to almost 30 meters.

In Europe, the Alps smashed records for glacier melt due to a combination of little winter snow, an intrusion of Saharan dust in March 2022 and heatwaves between May and early September.

"We have already lost the melting of the glaciers game, because we already have such a high concentration of CO₂," Taalas told AFP.

In the Swiss Alps, "last summer we lost 6.2 percent of the glacier mass, which is the highest amount since records started."

"This is serious," he said, explaining that the disappearance of the glaciers would limit freshwater supplies for humans and for agriculture, and also harm transport links if rivers become less navigable, calling it "a big risk for the future."

"Many of these mountain glaciers will disappear, and also the shrinking of the Antarctic and Greenland glaciers will continue for a long-term basis—unless we create a means to remove CO₂ from the atmosphere," he said.

Glimmers of hope

Despite the report's bad news, Taalas said there was cause for some optimism.

The means to battle climate change were becoming more affordable, he said, with green energy becoming cheaper than fossil fuels, while the world is developing better mitigation methods.

The planet is no longer heading towards 3-5°C warming, as forecast in 2014, but was now on track for 2.5-3°C warming, he said.

"In the best case, we would still be able to reach 1.5°C warming, which would be best for the welfare of mankind, the biosphere and the global economy," the WMO secretary-general told AFP.

Taalas said 32 countries had reduced their emissions and their economies still grew.

"There is no more automatic link between economic growth and emissions growth," he said.

In stark contrast to the world leaders of 10 years ago, now "practically all of them are talking about climate change as a serious problem and countries have started acting," he said.



World's 'oldest' tree able to reveal planet's secrets

VALDIVIA, Chile (AFP) – In a forest in southern Chile, a giant tree has survived for thousands of years and is in the process of being recognized as the oldest in the world.

Known as the "Great Grandfather," the trunk of this tree measuring four meters (13 feet) in diameter and 28 meters tall is also believed to contain scientific information that could shed light on how the planet has adapted to climatic changes.

Believed to be more than 5,000 years old, it is on the brink of replacing Methuselah, a 4,850-year-old Great Basin bristlecone pine found in California in the United States, as the oldest tree on the planet.

"It's a survivor, there are no others that have had the opportunity to live so long," said Antonio Lara, a researcher at Austral University and Chile's center for climate science and resilience, who is part of the team measuring the tree's age.

The Great Grandfather lies on the edge of a ravine in a forest in the southern Los Rios region, 800 kilometers (500 miles) to the south

of the capital Santiago.

It is a *Fitzroya cupressoides*, a type of cypress tree that is endemic to the south of the continent.

In recent years, tourists have walked an hour through the forest to the spot to be photographed beside the new "oldest tree in the world."

Due to its growing fame, the national forestry body has had to increase the number of park rangers and restrict access to protect the Great Grandfather.

By contrast, the exact location of Methuselah is kept a secret.

Also known as the Patagonian cypress, it is the largest tree species in South America.

It lives alongside other tree species, such as coigue, plum pine and tepa, Darwin's frogs, lizards, and birds such as the chucao tapaculo and Chilean hawk.

For centuries its thick trunk has been chopped down to build houses and ships, and it was heavily logged during the 19th and 20th centuries.

Excitement in scientific community

Park warden Anibal Henriquez discovered the tree while patrolling

the forest in 1972. He died of a heart attack 16 years later while patrolling the same forest on horseback.

"He didn't want people and tourists to know (where it was) because he knew it was very valuable," said his daughter Nancy Henriquez, herself a park warden.

Henriquez's nephew, Jonathan Barichivich, grew up playing amongst the *Fitzroya* and is now one of the scientists studying the species.

In 2020, Barichivich and Lara managed to extract a sample from the Great Grandfather using the longest manual drill that exists, but they did not reach the center.

They estimated that their sample was 2,400 years old and used a predictive model to calculate the full age of the tree.

Barichivich said that "80 percent of the possible trajectories show the tree would be 5,000 years old."

He hopes to soon publish the results.

The study has created excitement within the scientific community given that dendrochronology — the method of dating tree rings to when they were formed — is less



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Antonio Lara, a researcher from the laboratory of the Faculty of Science and Climate of the Austral University, observes the 'Alerce Milenario' at the Alerce Costero National Park in Valdivia, Chile, taken on April 10, 2023. (AFP)

accurate when it comes to older trees as many have a rotten core.

Symbols of resistance

This is about more than just a competition to enter the record books though, as the Great Grandfather is a font of valuable information.

"There are many other reasons that give value and sense to this tree and the need to protect it," said Lara.

There are very few thousands-years-old trees on the planet.

"The ancient trees have genes and a very special history because they are symbols of resistance and adaptation. They are nature's best athletes," said Barichivich.

"They are like an open book and we

are like the readers who read every one of their rings," said Carmen Gloria Rodriguez, an assistant researcher at the dendrochronology and global change laboratory at Austral University.

Those pages show dry and rainy years, depending on the width of the rings.

Fires and earthquakes are also recorded in those rings, such as the most powerful tremor in history that hit this area in 1960.

The Great Grandfather is also considered a time capsule that can offer a window into the past.

"If these trees disappear, so too will disappear an important key about how life adapts to changes on the planet," said Barichivich.