



NEWS ROUNDUP

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ABANTE

[\[Opinion\] Climate Change Champ!](#)

By Lray Villafuerte

Kalahating taon pa lang ang administrasyon ni Pangulong Marcos pero ngayon pa lamang ay nakikilala na siya ng buong mundo bilang isang climate change champ.

BUSINESS MIRROR

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By Elmer Recuerdo

DAWAHON ISLAND, Bato, Leyte—The cuttings of the brownish seaweeds were piling up. But 31 years old Marifel Gabison is undaunted as she picks them one at a time to tie them to a fiber rope of about two-meter long while she chats with five other women, who are doing the same task.

BUSINESS WORLD

[No rebound seen for Philippine farms](#)

By Luisa Maria Jacinta C. Jocson

PHILIPPINE FARM output is likely to either contract or stay flat next year due to elevated input costs on faster inflation, according to analysts.

[Toward a Japan-focused foreign policy](#)

By Calixto V. Chikiamco

Philippine foreign policy is usually defined by its relations with the two major powers, the United States and China. Thus, foreign policy under former President Benigno Aquino III was seen as close to the United States and even “anti-China.” Foreign policy under former President Rodrigo Duterte, however, swung the other way: away from the United States and much closer — one might say, an embrace — of China. Presently, President Bongbong Marcos is seen to rebalance the relationship, adopting a more centrist position.

[What key COP27 outcomes mean for PHL companies](#)

By Benjamin N. Villacorte

It's been almost a month since the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27) concluded. In November 2022, stakeholders from the public and private sectors around the world gathered to delineate the next steps and help ensure that the existing goals to tackle the climate crisis are met.

CHANNEL NEWS ASIA

[Philippines floods force tens of thousands to flee homes](#)

MANILA: Christmas Day floods in the Philippines forced the evacuation of nearly 46,000 people from their homes, civil defence officials said on Monday (Dec 26).

CNN PHILIPPINES

[65% of Antarctica's plants and animals could disappear, scientists say. Its iconic penguins are most at risk](#)

By: Rachel Ramirez

(CNN) — It was only a matter of time before human-caused climate change and pollution reached even the most isolated continent on the planet. As global temperature rises, Antarctica's pristine landscape is already changing, and new research shows most of the region's plant and animal species – including its iconic penguins – are in trouble.

EAST ASIA FORUM.ORG

[Securitising climate policy will keep the Indo-Pacific afloat](#)

By Mely Caballero-Anthony, NTU

In 2021 the Sixth Assessment Report released by the Intergovernmental Panel on Climate Change (IPCC) said that climate change is rapid and intensifying in every region of the world. The Indo-Pacific is widely known as the region most exposed to natural disasters, with climate change causing more frequent and intense extreme weather events.

MANILA BULLETIN

[Productive six foreign trips in first six months of Marcos presidency](#)

By Betheena Unite

Envoys and allies under the new administration believe that it is a must for a head of state to travel.

[Canadian polar bears disappearing fast: study](#)

By: Agence France Presse

OTTAWA, Canada – Polar bears are disappearing fast from the Western part of Hudson Bay, on the southern tip of the Canadian Arctic, according to a new government survey.

MANILA STANDARD

[PH, China discuss energy investments outside WPS dispute](#)

By: Alena Mae Flores

The Philippines and China are looking at areas of cooperation in the energy sector outside the West Philippine Sea dispute, according to Energy Secretary Raphael Lotilla.

PHILIPPINE DAILY INQUIRER

[Inclusion of climate lessons in curriculum sought](#)

By: Jeannette I. Andrade

Camarines Sur Rep. Gabriel Bordado Jr. has proposed a measure that would require the Department of Education (DepEd) to include lessons on climate change and environment protection in the K-12 curriculum.

[What's next in science: Look out for these in 2023](#)

By: Cristina Eloisa Baclig

MANILA, Philippines—This year had some of the biggest science events—from the release of new studies on climate change, emerging SARS-COV2 variants and sub-variants, and monkeypox to the creation of bivalent vaccines and significant developments in the study of several other diseases.

SUNSTAR

[DA tackles climate change issues through radio school](#)

By Ian Ocampo Flora

CITY OF SAN FERNANDO The Department of Agriculture DA is now using radios to reach more farmers in far-flung areas to teach farmers about innovative agricultural practices amid global warming and climate change issues.

THE GUARDIAN

[Can geoengineering fix the climate? Hundreds of scientists say not so fast](#)

By Oliver Milman

As global heating escalates, the US government has set out a plan to further study the controversial and seemingly sci-fi notion of deflecting the sun's rays before they hit Earth. But a growing group of scientists denounces any steps towards what is known as solar geoengineering.

THE MANILA TIMES

[DENR chief urges private sector to unite for climate action](#)

By Bella Cariaso

ENVIRONMENT Secretary Maria Antonia Yulo-Loyzaga called on the private sector to work closely together in accelerating their adoption of nature-based solutions that will result in co-benefits of climate action and disaster risk reduction.

[\[Opinion\] How bad will a global recession be for PH?](#)

By Rafael Alunan 3rd

THERE are two schools of thought based on my readings: one says not too bad, the other says it will be beyond our imagination. Which is the correct reading?

[How climate change affects kids' health](#)

When it comes to climate change, no one is exempt from experiencing its impact on their health — and children are bearing the most brunt.

THE PHILIPPINE STAR

[BSP eyes climate risk stress testing by banks](#)

By Lawrence Agcaoili

MANILA, Philippines — The conduct of climate risk stress testing by banks is one of the initiatives in the pipeline of the Bangko Sentral ng Pilipinas (BSP) as it advocates green and sustainable policies and practices.

CCC IN THE NEWS:

BUSINESS MIRROR

[EDC inks power supply deal with Visayas hospital](#)

By: Lenie Lectura

Energy Development Corp. (EDC) will start supplying power to Negros Oriental's leading medical institution, Silliman University Medical Center Foundation, Inc. (SUMCFI), making it the first hospital in the island to be directly powered by geothermal energy.

PHILIPPINE DAILY INQUIRER

[\[Opinion\] Bridging mayors](#)

By: Cielito F. Habito

It is well known that the Philippines ranks among the most vulnerable countries to the adverse effects of climate change. Climate resilience is best achieved from the bottom up, and even as we have a Climate Change Commission at the national level, it is actions taken on the ground at the local levels that would spell our ability to withstand the escalating effects of climate change. For this reason, municipal and city mayors can be critical linchpins toward achieving climate resilience.

Information and Knowledge Management Division

ABANTE

[\[Opinion\] Climate Change Champ!](#)

By Lray Villafuerte

Kalahating taon pa lang ang administrasyon ni Pangulong Marcos pero ngayon pa lamang ay nakikilala na siya ng buong mundo bilang isang climate change champ.

Dito sa katatapos na biyahe ng ating Pangulo sa Brussels, kanyang binigyang diin ang pangangailangan na magbigayng kompensasyon ang mga mayayamang bansa sa Europa at ang lahat ng nabibilang sa First World para sa “loss and damage” na naidudulot nila sa ating planeta.

Ipinaalalang muli ni Pangulong Marcos sa mga mayayamang bansa na sila ang world’s heaviest carbon polluters na nagiging dahilan kaya nangyayari sa mga umuunlad pa lang na bansang tulad ng Pilipinas ang iba’t ibang climactic disasters tulad ng malalakas na bagyo, pagbaha at tagtuyot.

Dahil po sa mga malalaking industriya ng mayayamangbansa, tumatatas ang temperatura ng mundo at ito ngaang nagdudulot ng malalakas na bagyo, malawakangpagbaha at iba pang panganib sa klima. At ang Pilipinas po ang isa sa mga bansang hinahagupit ng todo-todo ng climate change na dulot ng global warming.

Sa mga nagdaang overseas trip ni Pangulong Marcos mulanang siya’y manumpa noong June 30, naging misyon at adbokasiya na niya ang climate change. Sa 40th and 41st Associations of Southeast Asian Nations (ASEAN) Summit na ginanap sa Cambodia at 29th Asia-Pacific Economic Cooperation (Apec) Economic Leaders Meeting (AELM) sa Bangkok, Thailand ay ipinaalala rin ng ating Pangulo ang malaking responsibilidad ng mayayamangbansa dahil sila ang may malaking pananagutan sa GHG (greenhouse gases) emission o carbon pollution.

Sa 27th session of the Conference of the Parties (COP27) na ginanap sa Egypt noong Nobyembre, napagkasunduan ang “damage and loss” funding mechanism kung saanbibigyang kompensasyon ang mga bansang maya’t mayangbinibisita ng mga kalamidad na pinapalala ng global warming. Ang pondong ito ay gagamitin para sa reconstruction efforts sa mga developing economies na lalo pang pinapalugmok ng mga natural calamities na hatid ng climate change.

At sa Belgium ay isinulong ng Pangulo ang paglikha ng mga konkretong guidelines kung paano matutulungan ng mga biggest GHG emitters ang mga vulnerable economies tulad ng Pilipinas.

Nakaka-proud nga po na, itong pagtutok para sa loss-and-damage compensation, kung saan ang konseptong ito ay binuo noong nakaraang buwan sa COP27 summit sa Egypt, ay muling binigyang pansin ni Pangulong Marcos. Gustuhin man niya o hindi, lalo na ngayon sa kaniyang rising international stature bilang kampion o unofficial spokesman ng mga high-risk na bansa na naghahanap ng climate justice mula sa mga mayayamang bansa gaya ng mga nasa Europa na mga lalo pang yumaman dahil sa kanilang pagiging heaviest carbon polluters o sanhi ng matinding polusyon sa buong mundo.

At nakikita po natin na nakukuha ng ating Pangulo ang atensyon ng mayayamang ekonomiya. Mismong si European Council (EC) President Charles Michel ang sumasang-ayon sa proposal ng Pangulo na umpisahan na ang green fund on climate change para sa ‘loss and damage’ policy.

“We couldn’t agree with you more,” sabi ni Michel sa inilabas na Office of the Press Secretary (OPS) statement matapos ang ASEAN-EU (Association of Southeast Asian Nations-European Union) working luncheon.

Inayunan nito ang pagkakaroon ng mas concrete financing guidelines sa loss-and-damage compensation mechanism na napagkasunduan sa COP27 summit. Tiniyak din ni Michel sa Pangulo na handa ang European Union (EU) na makipagtulungan sa Pilipinas at ASEAN sa climate change partikular na sa paglilipat ng green technology para sa pagbabawas ng pagbuga ng GHG.

Sa ASEAN-EU working luncheon kasama ng EU officials and businesspersons sa Brussels, nanawagan ang Pangulong Marcos sa mga European leader na paigtinginang kanilang tulong sa mga climate change-vulnerable developing economies gaya ng ating bansa.

Naging matapang din ang Pangulo sa pagsasabing, “the concept of damage and loss has now been accepted by all parties involved ... However, this still brings us to a very difficult and fundamental question, and when you speak of damage and loss, how do we quantify that damage and loss? What are the rules that we apply? When does it begin?”

“The world must get together to fight the effects of climate change and to ensure sustainable development. Climate change threatens to radically transform for the worst

many vulnerable ASEAN landscapes,” anang Pangulo. “It is a race against time to conserve and prevent habitat and biodiversity loss ... There is no problem like climate change that is so global in nature that it requires immediate and united effort. We need to act now. We need to act together. We need to get it right.”

Kita nyo naman kung gaano manindigan ang ating Pangulong Marcos pagdating sa isyu ng climate change. Hindi siya ang tipong makukuntento na lamang sa napagkasunduan sa halip ay ipinaglalaman niya na magtuloy-tuloy ito at hindi mauwi na lamang sa magagandang salita. Ang mga kalidad na ito ay nagpapakitang isa siyang tunay na climate change champion.

At ngayon pa lamang ay nakikita na may resulta ang mga ginagawa ng ating Pangulo. Patunay dito ang Spanish conglomerate Acciona na nag-commit na ng pag-invest sa ating bansa partikular sa renewable energy (RE) projects tulad ng solar and offshore wind power.

“We find it (the Philippines) welcoming and business-friendly, so we would like to make the Philippines one of our—if not our main hub for the Southeast Asia,” ayon sa chairman ng Acciona na si Jose Manuel Entrecanales.

Iyong ibang taong walang magawa sa buhay at nagsasabing wala raw ginagawa ang ating Pangulopagdating sa mga nangyayaring kalamidad sa bansa ay hindi natin dapat pakinggan. Dahil mas malalim, mas malaki at mas makabuluhan ang ginagawa ng ating Pangulo upang mabigyan ng saklolo hindi lamang ang Pilipinas kundi pati na rin ang iba pang mahihinang bansao highly vulnerable countries na sumasalo ng palala ng palalang polusyon na sanhi ng mga mayayamang bansa.

Ang pagiging isang tunay na climate change warrior ay malaking responsibilidad at nakikita nating ginagawa itong ating Pangulo.

Hindi para pakitang tao lamang. Pangmatagalan po ang kanyang ginagawang solusyon na mapapakinabangannating lahat, hindi lamang ng Pilipinas kundi ng iba pang umuunlad na bansa sa buong mundo.

BUSINESS MIRROR

As climate clock ticks, aviator races to photograph glaciers

VOSS, Norway—Chunks of ice float in milky blue waters. Clouds drift and hide imposing mountaintops. The closer you descend to the surface, the more the water roars—and the louder the “CRACK” of ice, as pieces fall from the arm of Europe’s largest glacier.

The landscape is vast, elemental, seemingly far beyond human scale. The whole world, it seems, lies sprawled out before you. Against this outsized backdrop, the plane carrying the man who chases glaciers seems almost like a toy.

“No one’s there,” the man marvels. “The air is virtually empty.”

This is Garrett Fisher’s playground—and, you quickly realize, his life’s work.

He is traveling the world, watching it from far above, sitting in the seat of his tiny blue-white “Super Cub” aircraft. It’s here that he combines his two longtime passions—photography and flight—in a quest to document every remaining glacier on the face of the Earth.

On one level, the 41-year-old Fisher does it for a simple reason: “Because I love them.”

But he does it, too, because of weightier things. Because the climate clock is ticking, and the planet’s glaciers are melting. Because Fisher is convinced documenting, archiving, remembering all of this serves a purpose.

Because, in the end, nothing lasts forever—not even ancient glaciers.

Glaciers getting smaller

Glaciers aren’t static. In a world that’s getting warmer, they’re getting smaller.

“In 100 or 200 years, most of them will be gone or severely curtailed,” Fisher says. “It is the front line of climate change ... the first indication that we’re losing something.”

According to data from the European Environmental Agency, the Alps, for example, have lost about half their volume since 1900, with the most evident acceleration of melting happening since the 1980s. And the glacier retreat is expected to continue in the future.

Estimates from the EEA say that by 2100, the volume of European glaciers will continue to decline by between 22 percent and 84 percent—and that’s under a moderate scenario. More aggressive modeling suggests up to 89 percent could be lost.

“We have a record of observations of small glaciers in settled areas, particularly in the Alps and Norway and New Zealand,” says Roderik van de Wal, a glacier expert at Utrecht University in the Netherlands. That record, he says, shows glaciers retreating even more. “That’s a consequence of climate change.”

The slow demise of glaciers, of course, is a problem that transcends aesthetics or even the glaciers themselves. A rise in sea level of about 15 centimeters around the globe during the past century is due in large part to glacier melt.

Which sets that ticking clock running. And which has gotten Garrett Fisher moving.

For Fisher, it started—as so many things do for so many people—in childhood.

He grew up in a quiet rural community in upstate New York, the child of local business owners and grandson of a scrappy pilot who introduced him early to aviation. He lived next door to a private airport.

Fisher was only a toddler when his grandfather Gordon plopped him in the back of his plane. The boy wasn’t happy about it, but the dismay quickly turned to delight. By age 4, he was hooked on flight.

Fisher recalls endless hours spent gazing out of his bedroom window, waiting for the barn door to his grandfather’s airplane hangar to open. The older man would tell him: “Whatever you set your mind to, you can do.”

Then, as a young man, he took up photography. Two of the three parts of his obsession were in place.

Sense of urgency

Sometime in the late 1990s, a friend told Fisher that the world’s glaciers were disappearing. It has haunted him ever since, so much so that it added the third piece of the triangle: the urgency to beat the clock.

He saw them disappearing, and he wanted to make sure these pieces of the world—pieces he saw as indescribably beautiful—were preserved, if only in pixels.

“When I’m high up, I see these forbidden views,” he says. “They’re views you can’t have on the ground, that don’t really exist for anyone else.”

He aims his efforts squarely at posterity. Any documentation he makes of the glaciers before their demise, he believes, could be invaluable to future generations. So, he has launched a glacier initiative, a non-profit to support and showcase his work, and he plans to open his archive to the public for research—some now, the rest when he is gone.

Fisher is hardly the first to feel the archival instinct when it comes to glaciers. Since the invention of photography in the early decades of the 19th century, glaciers have been documented with fascination by everyone from passing travelers to scientists.

Norwegian photographer Knud Knudsen, one of his nation’s founding art photographers, delved into the landscape with an obsession similar to Fisher’s. He traveled around Norway’s west coast, photographing nature: fjords, mountains, waterfalls ... and glaciers.

But in an era where everything related to photography was heavy, unwieldy, and slow, Knudsen was earthbound, traveling on wagons and boats. On one trip, he brought about 175 pounds in gear—including glass negatives. Unlike Fisher, he could not soar—and could not capture the feeling of looking down upon the vast and magnificent natural formations that he was chronicling in his homeland.

For Fisher, Norway is only the latest glacier frontier. He spent years documenting them in other places, including the American West, before shifting his focus to the Alps and Europe. He has photographed thousands of glaciers and is hungry for more.

Never, though, even amid the silence and beauty of his flights, does Fisher lose the sense of documenting the “decisive moment”—the inflection points of a glacier that is still here but in the process of disappearing.

He knows, with every flight, that he is documenting a slow-moving tragedy as it unfolds.

Small plane

The Piper Super Cub is a small two-seater. Fisher squeezes in. He is about to ascend into skies of crystal and cotton in hopes of photographing Nigardsbreen.

“There’s about a 30 percent chance we get to see the glacier,” he says. “There’s a bunch of clouds sitting right there.”

The Piper feels—and rumbles—like an old car. It smells of oil and fuel and everything is manual. Fisher brings in his iPad for navigation, but his aviation software doesn’t have GPS information on glaciers. So he flies using a mix of instinct, observation and Google Maps.

The aircraft’s huge glass windows serve up incredible views. When he’s aloft, the houses start to feel like Monopoly pieces. Anxiety dispels into moments of profound peace. It’s as if the altitude—the distance from the world we know—makes all that’s happening on the planet below seem a little more manageable. And yet he knows: One false move would end all this.

“The weather’s bad, extremely cold, the winds are very strong and the flying’s extremely technically challenging,” Fisher says. “And to photograph glaciers, we’re getting very close to all of this action. So, it requires a lot of skill, time and determination.”

Lots of people are afraid of flying, especially in small planes. When news hits of a plane down, it’s usually a small craft.

He adds: “I’ve been told by many pilots that I’m crazy.”

Many glaciers are remote and hard to reach or document—except by satellite or by air, making the tiny Super Cub the perfect vehicle for this photographic journey. It is built to navigate the blustery winds and dangerous environments necessary for his work.

Why risk it? Fisher believes satellite images will never capture glaciers effectively—not aesthetically and not scientifically. The glow of a glacier at “magic hour.” The way shadow falls on the ice, revealing an unending, undefinable blue. The sheer epic presence of these ice goliaths that are in a constant state of unbecoming.

Will the engine quit? He has detailed plans in case of a crash on a glacier. He has calculated that he can survive for about 24 hours if he goes down and has measured

the tail of the plane to be sure he can fit into it and stay out of the elements while he waits for help. Not for the faint of heart.

Fisher moves around a lot: The United States, Spain, and Norway. He rarely stops. His wife, Anne, his friend since childhood, drags him to bed most nights; left to his own devices, he says, he would hardly sleep. This is what happens to people so bent on something that everything else starts to fall away.

Until now, Fisher has paid for his passion with his own money, but it's not cheap; he is running out of funding and looking for backers.

He positions the work carefully. It is, in many ways, science. In other ways, it is public service. But he always comes back to one thing: beauty.

"Science has all of the data we need. They have tons of datasets, which will be available in the future," Fisher says. "The problem is, it's not beautiful."

What he does, he says, is something whose aesthetics are not only pleasing but might encourage people to change their ways.

He adds: "It's not a dataset. It's a very motivating, emotionally compelling rendition of these glaciers while they're here. Because these views will not come back."

Window to our past

Glaciers are a window to our past. Photography, too, is a window to our past. Garrett Fisher has combined these pursuits to ensure many views to this moment are available—and that whatever disappears will be remembered.

In the end, so much of his work is about memory. But what about the here and now? Can a photograph communicate the profound experience of being in front of something that is soon to be lost forever? In many ways, that is what his work is trying to figure out.

The archive is the thing he has poured everything into, dedicating countless hours. And beyond the archival dreams, he dares to hope for change.

If he finds the right light, the right angle, the right moment, then maybe people will care more. He's chasing the perfect image; one so beautiful it can make people and policymakers act. And if it isn't one image, then maybe an entire archive convinces people to come, to look, to get close, to pay attention.

“We can live without them. We will live without them,” Fisher says. “However, it hurts us to lose them.”

Everything disappears. But not yet. There is still time, and Garrett Fisher has an airplane and a camera and is not turning away.

[Leyte seaweed farmers bear brunt of climate-change impact](#)

By Elmer Recuerdo

DAWAHON ISLAND, Bato, Leyte—The cuttings of the brownish seaweeds were piling up. But 31 years old Marifel Gabison is undaunted as she picks them one at a time to tie them to a fiber rope of about two-meter long while she chats with five other women, who are doing the same task.

Her hands are quick, the twigs are perfectly tied even without looking at them—a skill that she developed from over three years of doing the job. She receives P6 for every line of 100 cuttings which she gets in cash at the end of the day.

The cuttings are the seedlings that will be planted back to the sea in the vast expanse of the town's seaweed farm.

“Earnings are not always the same. Today I will receive more than P200 for what I have completed,” she said as she took a peek into a room at her back where her four-month-old baby is peacefully sleeping.

Gabison said there is big demand for new seedlings to replenish those that were destroyed by Typhoon Paeng (international code Nalgae) from October 28 to 31, just three days before the interview.

Dawahon Island, which straddles between Leyte and Bohol, is the biggest seaweed producer in Eastern Visayas and accounts for 90 percent of the region's seaweed production.

Before Typhoon Odette destroyed their marine farms in December 2021, this expanse in Camotes Sea was one of the biggest sources of seaweeds in the country.

The Bureau of Fisheries and Aquatic Resources (BFAR) Regional Office-8 said Paeng damaged an estimated P16-million worth of crops and properties on the island, the second worst disaster since Odette, when total damages reached P200 million.

“We haven't even fully recovered from Typhoon Odette, then we have Paeng,” lamented Benjamin Taño, the president of the 342-strong Dawahon Seaweeds Farmers Association.

“Typhoons are getting more destructive now,” he said. “During Odette all our seaweed farms were washed out and houses were blown away. We were able to replant after five months by gathering those that were washed to the deeper part of the sea as our seedlings.”

Even then, Taño said the seaweed seedlings that he gathered could cover a small portion of his 20-hectare seaweed farm.

He also lost his boat that he used to access his seaweed farm, which was about half-kilometer away from the island.

For its response to Odette, BFAR-8 distributed 93 fiberglass boats with engines and complete accessories worth P4.6 million and P500,000 worth of propagules.

Vicenta Projimo, BFAR-8 regional civic coordinator, said one boat will be shared by three seaweed farmers, while each farmer is provided with 100 kilograms of seaweed propagules.

To date a total of 220 hectares out of the 1,300 hectares of potential area for farming have been planted and replanted with seaweed propagules by its 578 earnest fisherfolks, some of them have started selling their seaweeds to consolidators and buyers in Leyte and Cebu.

Ruel Inoc, a barangay councilor and spokesman of the association, said he believes that the increasing frequency of destructive typhoons, as well as the emergence of seaweed diseases, such as “ice-ice,” is due to global warming.

“We had strong typhoons before but they were not as destructive and more often as they are now,” Inoc said. “We also didn’t have these seaweed diseases in the past.”

He added that the changing climate pattern has also reduced the number of times where they could experience a bountiful harvest.

“We used to have a good harvest all year round. In recent years, we only have good harvest during habagat [southwest monsoon] from June to October,” Inoc added.

During habagat season, Inoc said he earns more than P200,000 per month selling them at P40 a kilogram.

With the help of BFAR-8, the association has also started adopting the use of fiber ropes in tying the propagules instead of the usual plastic straw as its own little way of making a climate change adaptation.

BFAR-8 has also advised the seaweed farmers to transfer their farms to areas farther from the shore, where seawater is colder than near the shoreline.

“We always remind our seaweed farmers to give importance to the interventions given by the government through the BFAR. We should not always depend on BFAR, and also continue to work hard to help ourselves,” Inoc said.

BUSINESS WORLD

No rebound seen for Philippine farms

By Luisa Maria Jacinta C. Jocson

PHILIPPINE FARM output is likely to either contract or stay flat next year due to elevated input costs on faster inflation, according to analysts.

“We will be starting from a low 2022 base,” Raul Q. Montemayor, chairman of the Federation of Free Farmers, said in a Viber message. “I cannot see agriculture rebounding significantly in 2023 unless the problems of high fertilizer and fuel prices are addressed.”

Farm output value rose by 1.8% in the third quarter after declining by 0.6% a quarter earlier and by 2.6% a year ago, according to data from the local statistics agency.

For the nine-month period, agricultural output inched up by 0.3% from a year earlier. Production contracted by 2.5% in January to September last year.

Agriculture Undersecretary Mercedita A. Sombilla last week said the agriculture sector might expand by 2.3% to 2.5% in 2023 on crop, livestock and poultry growth.

The average yearly agriculture growth in the past two decades was 1.3%, former Agriculture Undersecretary Fermin D. Adriano said in a Viber message. “With lower fertilizer application, rising fuel costs, lingering African Swine Flu and avian flu virus, not to mention destructive typhoons brought by climate change, I don’t know how that growth can be achieved next year.”

Fuel and fertilizer prices have been rising amid soaring inflation, which quickened by 8% in November — the fastest in 14 years and breaching the central bank’s target for an eighth straight month — mainly driven by rising food prices.

As of Dec. 20, the prices of gasoline have risen by P13.95 a liter this year, by P27.50 for diesel and by P20.80 for kerosene.

As of Nov. 11, the average price of a bag of prilled urea fertilizer had risen by 16.5% to P2,538.27 from a year earlier.

Mr. Montemayor said the farm sector faces recurrent shortages in rice, corn, pork, fish and many vegetables. “The slack has been filled up by imports. Excessive imports including smuggling have discouraged farmers from increasing their production, making us even more susceptible to seasonal shortages and reliance on imports.”

“In the case of poultry and livestock, the unlimited import policy of the government, including the extension of the effectivity of Executive Order No. 171, will dampen the willingness of producers to step up,” he added.

President Ferdinand R. Marcos, Jr. last week approved the recommendation of the National Economic and Development Authority to extend lower tariffs for pork, corn, rice and coal until the end of next year.

Tariffs on pork for in-quota shipments will be kept at a reduced rate of 15% from 30%, while those for out-quota shipments will be kept at 25% from 40%.

Rice tariffs will be retained at a lower rate of 35% for in-quota shipments and 50% for out-quota imports. Corn tariffs will be cut to 5% for in-quota imports from 35% and to 15% from 50% for out-quota shipments.

Analysts said the government should focus on boosting its support for the agriculture sector.

“Food security and the agricultural sector should be one of the primary concerns,” Antonio A. Ligon, a law and business professor at De La Salle University, said in a Viber message. “We have big tracts of land that can be utilized for food production.”

Mr. Ligon said ensuring adequate food supply would lessen the country’s import dependence. “We need not import if we have sufficient supply of basic food commodities. The prices of basic ingredients should not have been an issue if we had good production and support for our farmers.”

The government should upgrade the skills of farm workers, John Paolo R. Rivera, an economist at the Asian Institute of Management, said in a Viber message.

“Put effort in developing agriculture from largely subsistence to more commercialized farming by equipping farmers with technical skills and business acumen,” he said. Middlemen should be eliminated as much as possible, while improving transportation and investing in technology to boost productivity, he said.

“This will alleviate food shortages and manage inflation driven by food prices.”

“We cannot see for now a clear policy direction and game plan from the Department of Agriculture,” Mr. Montemayor said. “What they are doing and planning to do is more of the same, except with a larger budget, so we cannot expect much difference in the results.”

Toward a Japan-focused foreign policy

By Calixto V. Chikiamco

Philippine foreign policy is usually defined by its relations with the two major powers, the United States and China. Thus, foreign policy under former President Benigno Aquino III was seen as close to the United States and even “anti-China.” Foreign policy under former President Rodrigo Duterte, however, swung the other way: away from the United States and much closer — one might say, an embrace — of China. Presently, President Bongbong Marcos is seen to rebalance the relationship, adopting a more centrist position.

I contend, however, that Philippine foreign policy should be more Japan-focused. It’s the third big planet in our foreign relations universe that exerts a gravitational pull on the Philippines. We have more interests aligned with Japan than with the other two countries. Consider:

1. Japan is physically in the neighborhood, unlike the United States. The latter can be distracted by its interests and relationship elsewhere, say in Europe and the Middle East. On the other hand, Japan has a permanent interest in the region. It would want to keep the sea lanes open and not allow China to dominate.

2. Japan, like the Philippines, is highly dependent on food and oil imports, unlike the United States. The United States is self-sufficient in energy and is a net exporter. The US is also self-sufficient in food, being a big net exporter. Its big land mass with favorable climactic conditions makes it a food superpower. Its economy is also not dependent on trade, unlike Japan. In other words, the US can afford to ignore the world.

Not so Japan. Japan is a country, like the Philippines, that must be obsessed with energy and food security, being so dependent on others. We have mutual interests to keep the trade routes open and to keep striving for greater energy and food independence.

3. Japan and the Philippines can complement each other. Japan’s principal problem in the coming decades is its aging and declining population. The Philippines, on the other hand, has a young demographic profile, with a median age of 24 years.

Japan can benefit not only by importing skilled labor from our labor-surplus country, but it can also relocate some of its factories to the Philippines. Japan has done that in Thailand, especially after the Plaza Accord, which caused the revaluation of the Japanese yen. However, Thailand, too, is rapidly aging. Its workforce is projected to

shrink in the coming years. Its average age is about 40 years. Thailand is so short of labor that it is importing labor from nearby countries like Laos and Cambodia.

It's true that Vietnam is a more attractive destination compared to the Philippines when it comes to manufacturing. However, Vietnam is still a Marxist-Leninist state, an authoritarian Communist regime like China. That carries a geopolitical risk for investors. The Philippines, on the other hand, is a democracy like Japan.

The Philippines could be to Japan what Mexico, under NAFTA (North American Free Trade Agreement), is to the United States: a base for low-end manufacturing making use of low-cost labor. Another advantage the Philippines has is that its workforce is relatively proficient in English and therefore through the Philippines, Japan can reach further out in the world where English is the primary language of commerce.

It's not only in manufacturing that Japan and the Philippines can cooperate. Agriculture too. Japan's farming population is aging. The average age of farmers in Japan is 68 years. Its rural communities are fast depopulating as younger people seek their fortunes in big cities like Tokyo. Pretty soon, nobody will be left to sustain Japan's farms and Japan is still years behind other countries in adopting digital technologies and artificial intelligence in agriculture.

With Japan so near, the country can export agricultural produce to Japan — but only if our farms are modernized. That means moving away from small-scale traditional agriculture toward bigger commercial farms.

Another possible area of interest to Japan is our mining industry. Japanese automotive manufacturers have to shift toward electric vehicles if they are to survive and electric vehicles require minerals like nickel and copper, which the Philippines has in abundance.

Another shared interest between the Philippines and Japan is trade. In contrast, the United States has abandoned its role as a free trade champion and has been reluctant to give out trade concessions. Its Indo-Pacific Economic Framework (IPEF) involves no trade concessions, just mutual agreements on issues like climate change and good governance. Because of its domestic politics, the United States withdrew from the Comprehensive Pacific Economic Partnership.

Japan, on the other hand, is a leader in global trade facilitation. It is a member of RCEP (Regional Comprehensive Economic Partnership). It took leadership of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

when the United States withdrew. The Philippines has more to gain with the Japan-led CPTPP than with the US's IPEF, where a trade deal isn't on the horizon. Vietnam is a member of the CPTPP. It would be well if the Philippines joins too.

4. Japan's GDP is still the third biggest in the world. On the military side, while its Constitution limits Japanese participation to self-defense, the Japanese military remains powerful. Japanese military spending has been quite modest but the Japanese government has signaled that it will boost military and defense spending, especially with threats to its security from China and North Korea.

Because of all of these, the Philippines should move closer to Japan and make it a focus of its foreign policy. This is why it is a surprise that President Bongbong Marcos has visited other countries but not yet Japan. On foreign aid alone, Japan is the biggest donor to the Philippines.

The Philippines should deepen cooperation with Japan at all levels — economic, military, social, and cultural. In the military field, Senate President Juan Miguel Zubiri has suggested a VFA (Visiting Forces Agreement) with Japan. On the labor front, there's a lot of room for our skilled workers, especially healthcare workers, to find jobs in Japan.

The government should be promoting more cultural exchanges with Japan, and even encourage the teaching of the Japanese language in tertiary schools. This deeper cultural understanding and exchange will help facilitate military and economic cooperation.

Our foreign policy should cease to be a two-planet universe with China on one side and the United States on the other. China will remain a vital economic partner while the US will be important in security cooperation and partnership. However, our foreign policy should be multi-planetary. Japan should be a big planet in that universe, if not the biggest. We should also deepen our relationship with countries like South Korea and Canada for various reasons. (Both South Korea and Canada are also fast aging, while South Korea will also need minerals for its automotive industry. Therefore, there's a need to urgently forge an FTA or Free Trade Agreement with both countries).

President Bongbong Marcos has made diplomacy and foreign relations a big part of his presidency. Why not focus on Japan?

What key COP27 outcomes mean for PHL companies

By Benjamin N. Villacorte

It's been almost a month since the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27) concluded. In November 2022, stakeholders from the public and private sectors around the world gathered to delineate the next steps and help ensure that the existing goals to tackle the climate crisis are met.

At the end of the summit, held in the coastal Egyptian city of Sharm el-Sheikh, parties instituted a landmark deal that would establish and operationalize new funding arrangements for developing countries, including the Philippines. Droughts, rising seas, typhoons, and more affect the communities in these places. The dedicated fund was pegged to provide assistance to those ruined by loss and damage caused by the worst impacts of climate change.

While the Philippines stands to benefit from this move, we may have to wait for some time for the details of how this decision will be implemented. The rate at which global temperatures are rising makes climate change not only an environmental issue but also an economic and social concern. We need all the help we can get to reduce greenhouse gas emissions through bolstered technology, finance, and capacity building.

BUSINESSES AND DECARBONIZATION

Within five years, the average global temperature could pass the target limit of 1.5 degrees Celsius set in the Paris Agreement if our collective will to prevent it slackens. COP27 reaffirmed its members' commitment to avoid this, but countries, businesses, and civil society must collaborate to ascertain a tangible outcome.

In particular, private sector organizations are well-positioned to be a force for good on the path to sustainability. In the Philippines, while the government leads COP27 efforts, companies can work hand-in-hand to ensure financial and human resources are channeled toward aligning with global decarbonization targets.

Alignment and financing are significant factors in adaptation, which is on the country's agenda alongside securing financial support from developed nations. Matching current targets and goals is crucial in cutting emissions drastically; exceeding them can have opposite effects we might not be prepared to handle. Funding must also flow in support of building climate resilience. Underfinancing adaptation poses more risk and focusing on mitigation strategies could be more costly.

With their influence and levers for change, businesses and institutional investors can tackle the big sustainability challenges by:

- Becoming leaders in the decarbonization journey and going beyond what's legally required (more on this later), such as reducing pollution and other environmental impacts for businesses and supporting green initiatives for investors;
- Engaging key decision-makers and clients across many areas like climate security, decarbonization, food security, sustainable finance, and gender equality to increase collaboration and facilitate collective action; and
- Fostering innovation that drives change.

Climate change innovation and investment can be further strengthened by the government's formation of local policies and guidance and the promotion of partnerships with the private sector.

CLIMATE-RELATED DISCLOSURES

What's noteworthy is that more and more companies worldwide are disclosing climate-related financial information: a way for them to communicate with stakeholders, including investors and potential investors.

The fourth EY Global Climate Risk Disclosure Barometer reveals that corporate reports scored 84% — climbing from 70% — for their coverage of the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. In terms of the quality of disclosures, the average score was 44%, just slightly higher than last year's 42%. Both figures are up, but there's clearly a gap between coverage and quality that must be addressed to enable businesses to deliver meaningful disclosures around the challenges they face.

Philippine companies should work twice or even thrice as hard to accelerate their efforts. They must improve their disclosures by following the TCFD and increasing the quality of their reports at the same time. And to truly deepen their reporting, it is imperative to address the global climate problem by materializing concrete actions. They would need to re-strategize or embed decarbonization efforts in their corporate policies and long-term plans.

This commitment will soon become more than just an option for publicly listed companies (PLCs). In 2019, the Securities and Exchange Commission (SEC) released a memorandum that required PLCs to report on the management of their economic,

environmental, social, and governance (EESG) impacts in a “comply or explain” approach. It means PLCs can attach their sustainability reporting template to their Annual Report and provide explanations for items they have no data on — all within the first three years upon implementation. That three-year window is closing as the SEC plans to make sustainability reporting mandatory for all PLCs by 2023.

To complement the SEC’s efforts in mainstreaming EESG disclosures among PLCs, the Philippine Financial and Sustainability Reporting Standards Council (FSRSC) recently approved the formation of the Philippine Sustainability Reporting Committee (PSRC). The PSRC, composed of members from accounting firms, regulatory agencies, academic institutions, and industry associations, will provide technical assistance to the FSRSC on the adoption and issuance of sustainability reporting guidelines and standards in the Philippines. To achieve this, the PSRC will leverage the guidelines from the International Sustainability Standards Board, which are expected to be released in 2023.

ENERGY INDUSTRY TO TAKE THE LEAD

Improving climate disclosures for greater transparency and accountability is just one facet of the journey. Companies must develop roadmaps with short-term, medium-term, and long-term goals and design concrete steps to achieve them.

Those with the most significant exposure to risk can and should lead the way in managing it. There are two things to focus on: 1) how they adapt their own assets to changing climate conditions and 2) how they handle resources, such as water, to ensure efficiency and avoid harming the resiliency of other industries.

In this light, the energy industry has much to gain and to lose. Eliminating greenhouse emissions is the first hurdle to meet, which ties in closely with limiting dependence on fossil fuels. Shifting to renewable energy sources should continue to grow to balance how the sector generates the capacity needed to power our post-industrial world.

Meanwhile, innovation and investments in the agriculture, food, and forest products sector should also be directed toward activities that enhance adaptability. On-farm emissions usually come from livestock, soil management, and practices like rice cultivation and crop fertilization. Changing the way we farm — making it greenhouse gas-efficient — involves the use of technologies that can be scaled across regions and production systems.

We cannot talk about significant climate action without dealing with the plastic crisis. With 400 million tons of plastic waste produced every year, the sector will continue to

rely on fossil fuels (from which the chemicals used in creating plastic are sourced). Funding the shift to plastic substitutes is vital, but just as valuable and urgent is the need to push policies to stop the illegal traffic in plastic waste.

COMMITMENT INTO TANGIBLE ACTION

The climate crisis requires everyone's concerted effort. It's an all-hands-on-deck type of situation. We need solutions that aggressively tackle the climate problem. Businesses should begin to feel the urgency of investing time, resources, and leadership efforts into long-term, sustainable performance, which includes funding relevant technology like data and analytics for developing early warning systems; and pursuing innovation in areas like agriculture, applied materials, and biofuels. It is also their duty to provide more sustainable choices to consumers.

Our corporate report scorecards show there are still gaps in the communication between companies and stakeholders. Through improved ESG disclosures, businesses can be more transparent and earn long-term investors' trust. This setting and meeting of expectations can help both sides assess performance and address risks and opportunities that translate to investment and innovation. Such actions would translate to a greater impact than just pure commitments.

The race is on to find climate-related solutions that can scale rapidly. Businesses and investors should see it as an investment with a payoff that is worth so much more in the long run: the lives that will be saved and the survival of this planet.

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CHANNEL NEWS ASIA

Philippines floods force tens of thousands to flee homes

MANILA: Christmas Day floods in the Philippines forced the evacuation of nearly 46,000 people from their homes, civil defence officials said on Monday (Dec 26).

Two people were killed and nine others were missing after heavy seasonal rain inundated parts of the southern region of Mindanao, the officials added.

The disaster dampened celebrations on the mainly Catholic nation's most important holiday.

"The waters rose above the chest in some areas, but today the rains have ceased," civil defence worker Robinson Lacre told AFP by phone from Gingoog city, which accounted for 33,000 of the 45,700 people evacuated from their homes.

The coastguard said it rescued members of more than two dozen families in Ozamiz city and Clarin town at the height of the flooding.

Photos released by the coastguard showed its orange-clad rescuers cradling toddlers plucked from homes in waist-deep floodwaters.

Two deaths were reported in the town of Jimenez.

The central and southern Philippines have been hit with bad weather as the disaster-prone nation of 110 million people began a long Christmas holiday.

Millions of people travel to their hometowns for family reunions during this period.

The coastguard also said strong winds and big waves sank a fishing boat on Christmas Day off the coast of the central island of Leyte. Two crew members were killed, while six others were rescued.

The Philippines is ranked among the most vulnerable nations to the impacts of climate change.

Scientists have warned that storms are becoming more powerful as the world gets warmer.

CNN PHILIPPINES

[65% of Antarctica's plants and animals could disappear, scientists say. Its iconic penguins are most at risk](#)

By: Rachel Ramirez

(CNN) — It was only a matter of time before human-caused climate change and pollution reached even the most isolated continent on the planet. As global temperature rises, Antarctica's pristine landscape is already changing, and new research shows most of the region's plant and animal species – including its iconic penguins – are in trouble.

The study published Thursday in the journal PLOS Biology found that 65% of Antarctica's native species, emperor penguins top among them, will likely disappear by the end of the century if the world continues its business-as-usual ways and fails to rein in planet-warming fossil fuel emissions.

The study also showed that the current conservation efforts in Antarctica are not working on the rapidly changing continent. Researchers concluded implementing an extra layer of cost-effective strategies, which they lay out in the study, could save up to 84% of Antarctica's vulnerable biodiversity.

"Antarctica is not really contributing to climate change; there's not a large-scale number of people living there, so the greatest threat to the continent is coming from outside the continent," Jasmine Lee, lead author of the study, told CNN. "We really need global action on climate change, as well as some more local and regional conservation efforts, to give Antarctic species the best chance of surviving into the future."

Antarctica's geographic isolation has long protected the continent from the worsening impacts of the climate crisis and other environmental disasters that plague the rest of the world, such as wildfires, flooding, and drought. Scientists have already observed significant changes in its northern counterpart, the Arctic, which is warming four times faster than the rest of the planet.

But the impacts of climate change are just starting to emerge in Antarctica. Recent data, for example, suggests Antarctica's sea ice is dropping more rapidly now than decades prior.

Thursday's study shows that disappearing sea ice threatens several species of marine seabirds, like emperor and Adélie penguins, that rely on the ice from April through December to nest their little ones. If the ice melts earlier or freezes later in the season, as a result of rising temperatures, penguins struggle to complete their reproductive cycle.

"These iconic species, like emperor penguins and Adélie penguins, are at risk and it's really sad to think that Antarctica is one of the last great wildernesses on the planet and

human impacts are being seen and felt there,” Lee said. “It’s just incredibly sad to think that we could drive those kinds of species towards extinction.”

Human presence and activity are also increasing in the region. The study shows that scientific expeditions and infrastructure are expanding, while annual tourist numbers have skyrocketed more than eight-fold since the 1990s.

A separate study from earlier this year showed that increasing human presence in the region is causing more snow melt. Scientists found black carbon – the dark, dusty pollution that comes from burning fossil fuels – settling in locations where people spend a lot of time. Even the tiniest amount of this pollutant can have a significant impact on melting.

What can be done?

While the threat to Antarctica’s species and its ecosystem are increasingly well-documented, they aren’t as widely understood among policymakers, Lee said. And finding the funds for conservation can be challenging.

But the study lays out several measures that are actually cost-effective, with an estimated cost of \$1.92 billion over the next 83 years, or around \$23 million per year – a fraction of the global economy.

These strategies include minimizing and managing human activity, transport and new infrastructure, as well as protecting native species while also controlling non-native species and diseases that enter the region.

It also includes a focus on external policies, like achieving the broader international climate goals under the 2015 Paris Agreement, which aim to reduce planet-warming emissions and stave off a dire rise in global temperature.

“The benefits of doing something about climate change is good for human health, livelihood and also the economy,” Lee said. “The incentive is there, but it’s just finding that initial investment, and it just depends on priorities.”

Cassandra Brooks, an assistant professor at the University of Colorado Boulder who has done extensive research on marine animals in Antarctica, said that the study is “timely and important” to draw attention to how critically threatened Antarctic biodiversity is.

“This study builds on previous work showing the urgency with which policymakers need to take action on climate change, if there is any chance of safeguarding Antarctic biodiversity,” Brooks, who is not involved with the study, told CNN. It “makes crystal clear that current conservation strategies are insufficient at doing anything beyond supporting the decline of biodiversity.”

The latest research comes days after negotiators at the UN biodiversity summit in Montreal reached a landmark agreement to better protect the planet's vital ecosystems, including a pledge to protect 30% of land and oceans by 2030.

With the climate crisis now the most pervasive threat to Antarctic biodiversity, Lee said influencing global policy is needed more than ever to save one of Earth's vast, pristine biomes.

"This is just the tip of the iceberg," Lee said. "We're at this huge turning point now not just for Antarctica, but globally, when it comes to climate. We've got the opportunity to stop it and if we don't do something now, then the impacts are going to be much, much worse than what they could be."

[Securitising climate policy will keep the Indo-Pacific afloat](#)

By Mely Caballero-Anthony, NTU

In 2021 the Sixth Assessment Report released by the Intergovernmental Panel on Climate Change (IPCC) said that climate change is rapid and intensifying in every region of the world. The Indo-Pacific is widely known as the region most exposed to natural disasters, with climate change causing more frequent and intense extreme weather events.

It is particularly exposed to rising sea levels with its archipelagic countries, small island states and large coastal population centres, while extreme heat is impacting large geographic areas and densely populated urban settlements.

The region faces huge challenges not only in dealing with the geophysical effects of climate change, but in terms of fragility risks such as adaptation capacity, lower economic development and governance. For countries in the region that have ongoing domestic conflicts, the economic and cultural effects of climate change, such as the forced displacement of vulnerable groups and communities, are likely to compound the conflicts.

Despite the plethora of robust scientific studies, global summits and conferences on climate change, the urgency in dealing with the climate emergency is often lost in the technical details. The kinds of framings associated with climate change also inform the nature of policy responses. Policies to address climate change are framed within the environment and sustainable development, green growth, circular economies, resilience and climate justice. What has been missing in the policy debate is the language of security — climate security. This framing could help elevate this issue to the highest priority in the political and security agendas of states.

For non-security analysts, linking climate change with security often raises concerns about the unintended consequences. There are concerns that climate security may become a military-driven agenda, given that this kind of framing is now seen in military circles. It could justify an increased role of the military in ‘non-military’ matters.

Getting the militaries of like-minded states to work together on climate security may also be viewed as reinforcing alliances or defence arrangements like the Quad. Despite the expansion of the Quad’s agenda beyond naval exercises, it has not been able to shake off the perception that its purpose is to contain China. Climate security becoming part of

the Quad's agenda could risk reinforcing major power competition instead of cooperation.

While climate security sits well with the conventional considerations of the climate's impact on national security and defence, security threats from a human security perspective are equally — if not more — compelling. Climate change affects all aspects of human security. The wide-ranging security impacts can be seen in times of extreme weather events. In 2021, 174 natural disasters were reported in the Asian region, with around 66.8 million people affected, including over 12 million displaced in East Asia and the Pacific region — all significant increases on previous years. Between 2017 and 2021, approximately 36,000 lives were lost because of natural disasters.

The economic loss of these disasters has been staggering. Thailand's floods in 2011 caused more than US\$45 billion in economic loss and damage. As the flood inundated large parts of human settlements, farms and infrastructure, close to 10,000 factories were affected — seriously disrupting international supply chains.

The IPCC report noted that the impacts of climate change on food security can be seen in declining crop yields and quality of produce, increasing incidence of pests and diseases, stunted growth, livestock mortality and low farm incomes. In China, flooding patterns are expected to alter crop areas and land use. Within Southeast Asia, areas in Cambodia, Northwest Vietnam, Northeast Thailand and the Philippines are expected to have significant yield reductions, although these are within longer timeframes.

Climate change poses threats to human health as environmental changes can affect the occurrence of communicable and non-communicable diseases. Dengue cases are expected to become more severe and health issues relating to increased heat are set to become more prevalent. The ongoing COVID-19 health crisis has also flagged the increasing incidence of infections of zoonotic origins. The COVID-19 pandemic was not just a global health crisis but also an economic crisis. Global poverty rose significantly with 150 million more people falling into extreme poverty and 100 million more undernourished people globally.

The magnitude of the climate emergency is such that its effects extend well beyond food, the environment and health. The Indo-Pacific region is a geostrategic arena for geopolitical tensions and competition between major powers in the region. This explains why the Secretary General of the United Nations has called the climate emergency a danger to global peace and security. There is urgency for the region to engage proactively on climate security.

For a region where ideas of comprehensive security, human security and non-traditional security are deeply ingrained and seen in states' practices, advancing the agenda of climate security goes a long way in helping states address climate-related security risks while promoting regional cooperation. Regional organisations like ASEAN should be at the forefront of climate security engagement and urge other regional institutions to integrate climate security in their respective agendas.

These regional organisations should put more effort into 'climate-proofing' areas of cooperation, which include economic cooperation, trade and investment, food, energy, health and the environment. Existing regional mechanisms like the ASEAN Coordinating Centre for Humanitarian Assistance and Disaster Relief, the ASEAN Plus Three Emergency Rice Reserve and the ASEAN Centre for Public Health Emergencies and Emerging Diseases should be strengthened. More attention should be given to building regional capacity in adaptation, including climate financing. More investment is also needed to support energy transition, such as building sustainable infrastructure in renewables.

Inter-agency learning would also be useful and should take a leaf from how the military sector has advanced operational preparedness in emergency responses in a changing climate. Military investments in green technology and adaptation of military training to navigate exposure to extreme weather events reflect how seriously they take the security threats of climate change. Efforts by South Korea and Singapore to bolster 'military greening efforts' and use renewable energy are noteworthy.

Given that climate security is cross-cutting, governments should build partnerships with civil society groups, academic and scientific communities and the media. Countries in the region should be thinking about what needs to be put in place today to protect and ensure the security of their peoples and states, prevent conflict and sustain peace in a climate change world.

MANILA BULLETIN

Productive six foreign trips in first six months of Marcos presidency

By Betheena Unite

Envoys and allies under the new administration believe that it is a must for a head of state to travel.

President Ferdinand ‘Bongbong’ Marcos Jr. and First Lady Liza Araneta-Marcos (Photo courtesy of Malacañang)

And so, six months into the presidency, President Ferdinand “Bongbong” Marcos Jr. has made the most out of this task by bringing to larger platforms the Philippines’ agenda and visions.

Even when he said he was “traveling too much”, Marcos was still compelled to acknowledge and accept invitations from fellow foreign leaders as he believed that there was no better way to communicate the country’s agenda and positions on regional and international concerns than to do it in-person.

The President is also convinced that showing up is the “best way to drum up business” for the country. So, he took it by heart and went on to visit six countries in his first six months in office.

Indonesia: The maiden foreign trip

Marcos made his international debut as a head of state in Indonesia in September for his first-ever state visit.

Before embarking on the trip, Marcos repeatedly said that he wanted to first settle down as the 17th Philippine President and deal with pressing domestic issues first. These included assuming the role of Agriculture secretary on a concurrent basis.

In Indonesia, one of his main goals was to lure investments for the agriculture sector, which he achieved after getting Indonesia’s commitment to supply fertilizers to the Philippines.

When he returned to the country, the President revealed that he and Indonesian President Joko Widodo “discussed the delimitation of our boundaries respective to our continental shelves which I hope can become a template to resolving conflicting claims.”

Singapore, and an orchid named after the Marcoses

Marcos made it a back-to-back foreign trip as he flew from Indonesia to Singapore in September.

Several business meetings and agreements took place during his two-day visit there. The highlight of this trip, however, was the naming of an orchid after the President and First lady Liza Araneta-Marcos—*Dendrobium Ferdinand Louise Marcos*.

It is a tradition in Singapore to name orchids after visiting dignitaries such as royalties, heads of state and government, and even celebrities.

The so-called “orchid diplomacy” is a gesture of friendship to promote goodwill between Singapore and other countries.

Marcos tagged the back-to-back trips as fruitful and engaging as these yielded \$14.36 billion or P804.78 billion in investment pledges.

“These investments if we put it all together value 14.36 billion US dollars or 804.78 billion Philippine pesos. This will support our country’s economic recovery efforts and create more jobs for Filipinos here in our country,” he said upon returning to the country.

Historic USA visit

Marcos’ visit to the United States was historic for two reasons.

It was his first trip there since a contempt order was issued against him by a local court, and it was also the first time in 12 years that a Philippine president addressed the United Nations General Assembly (UNGA).

Given his position as a head of state, Marcos enjoys “diplomatic immunity” which allowed him to travel to the US despite the contempt judgment.

President Ferdinand ‘Bongbong’ Marcos Jr. (Noel Pabalate)

His visit to the US was, by far, the longest trip he had. He stayed there for six days.

The President described it as “successful” as he was able to accomplish everything he had planned to achieve, and was able to meet world leaders he wanted to, including US President Joseph Biden, Japan Prime Minister Kishida Fumio, and UN Secretary-General António Guterres.

One of the highlights of Marcos' stay in the US was ringing the closing bell of the New York Stock Exchange from the small balcony of the Trading Floor.

It was also during this event that he had a close encounter with protesters, who later staged a lightning rally inside the Asia Society headquarters just minutes before Marcos' speech at the New York Stock Exchange.

A "hopeful" Marcos came back to the country after this trip, saying that his working visit in the United States will serve as a "good start" for programs and opportunities under his administration.

"There will be, I believe, good news to share in the next few months, particularly in terms of their plans to expand and further broaden their investment footprint in our country," he said.

"Our discussion with the US business community affirms the optimism with which international investors view the Philippines today," he added.

No missed chances in Cambodia

Marcos' trip to Cambodia in November was "interesting" as he was able to meet his fellow Association of Southeast Asian Nations (ASEAN) leaders and other counterparts outside the region.

He concluded his participation in the 40th and 41st ASEAN summits with no missed chances after several business meetings and bilateral talks.

It was also during this trip that Marcos got invited by World Economic Forum (WEF) Founder and Executive Chairman Klaus Schwab to the WEF in Davos, Switzerland on Jan. 16 to 20 next year, for which the President already confirmed his attendance.

The Chief Executive said, upon arriving in the Philippines, that it was "quite gratifying" to see that there was "very large consensus" among the ASEAN member states, stressing that they are going through the same issues in food supply, prices of fertilizer and surging oil prices.

He also said that the "most important takeaway" from his trip was that all member states reach a consensus that no country can do it all, they must work together and help each other.

Thailand, and a ‘secret weapon’

Marcos’ visit to Thailand in November for his maiden participation in the 29th Asia-Pacific Economic Cooperation (APEC) economic leaders’ meeting was the first time his administration made it publicly known that former president Gloria Macapagal-Arroyo was giving him legal advice, particularly in his APEC meetings.

In fact, the former president accompanied Marcos to his first-ever bilateral meeting with Chinese President Xi Jinping on the sidelines of APEC meetings.

Before leaving Thailand, Marcos personally introduced Arroyo to the Filipino community there as his “secret weapon.”

“We have an additional secret weapon who came with us—former president GMA,” Marcos said in Filipino. “I’m calling her secret weapon because I am the newbie here. I am the new leader so whenever she walks in the meeting, when other leaders see her, they recognize her as their good friend. That makes the discussion easier.

Withstanding sub-zero Brussels

A meeting with King Philippe of Belgium, delivering remarks at several gatherings including the ASEAN-European Union Commemorative Summit, and serving as the ASEAN coordinator in the summits were what went down in the President’s trip to Belgium in December, capping his foreign trips this year.

Despite having a hoarse voice and catching cold during his stay in the European country, Marcos was able to amplify potential priority agendas between the two blocs.

He brought to the bigger platform the conversation on the effective application of UNCLOS to address the maritime disputes and geopolitical rivalries in the Indo-Pacific.

He pitched for closer economic cooperation for the two blocs and urged the international community, like what he has been doing in all his overseas engagements, to act against climate change now.

The chief executive dubbed his Brussels trip as “productive”, bringing home at least P9.8-billion investment pledge from European firms.

Controversial Singapore trip

While the President had six official trips this year, he also had an “unannounced” trip to Singapore in October, which, he claimed, was an offshoot of his Singapore working trip in September, and a way to “drum up business.”

“They say that playing golf is the best way to drum up business, but I say it’s Formula 1. What a productive weekend!” Marcos then said.

He made clear that he was invited to meet other “business friends” willing to invest in the country.

“It was fulfilling to have been invited alongside several dignitaries and to have met new business friends who showed that they are ready and willing to invest in the Philippines,” he said.

The Palace did not make a formal announcement about the trip and only confirmed it days after.

Fierce on climate change

Aside from calling for solidarity among nations whenever he was given the chance to speak at a wider audience, Marcos also constantly brought up the issue of climate change.

He brought it up during his UNGA speech, and became a constant part of his agenda until his Belgium trip where he even asked the EU to keep extending support to ASEAN and other vulnerable countries like the Philippines.

He always said that climate change was “a race against time” that needs the effort of all nations to fight it.

“The world must get together to fight the effects of climate change and to ensure sustainable development. Climate change threatens to radically transform for the worst many vulnerable ASEAN landscapes,” he said in Belgium.

“There is no problem like climate change that is so global in nature that it requires immediate and united effort. We need to act now. We need to act together. We need to get it right,” the President stressed.

Billions worth of investments

Marcos' foreign trips this year yielded \$23.6 billion of investment pledges, according to the Department of Trade and Industry (DTI) said.

According to DTI's year-end report, Marcos' visits to Indonesia, Singapore, the United States, Cambodia, and Thailand brought billions of pesos in investments as the administration gears toward aggressively attracting more foreign businesses to come to the Philippines.

The trade department also included in its report the recent government export registered and generated investment leads, particularly with the DTI Board of Investments (BOI).

The DTI's performance report said the BOI and the Philippine Economic Zone Authority (PEZA) had a combined approved investment of P402 billion, which could generate some 54,217 local jobs.

Future trips

Marcos has already at least three trips being lined up for next year.

He is expected to visit China and Davos, Switzerland in January.

It has also been made known earlier that Japan will also welcome the President for a state visit.

[Canadian polar bears disappearing fast: study](#)

By: Agence France Presse

OTTAWA, Canada – Polar bears are disappearing fast from the Western part of Hudson Bay, on the southern tip of the Canadian Arctic, according to a new government survey.

The number of female bears and cubs in particular has seen a dramatic decline.

Researchers have flown over the region — which includes the town of Churchill, a tourist destination touted as the “polar bear capital of the world” — every five years to count the number of bears and extrapolate population trends.

During the last survey in late August and early September 2021, the results of which were released earlier this month, they spotted 194 bears and, based on that count, estimated a total population of 618 bears, down from 842 five years earlier.

“Comparison to aerial surveys estimates from 2011 and 2016 suggests that the WH (Western Hudson Bay population) may be decreasing in abundance,” the study said.

It also “revealed significant declines in the abundance of adult female and subadult bears (cubs) between 2011 and 2021.”

“The observed declines are consistent with long-standing predictions regarding the demographic effects of climate change on polar bears,” the researchers said.

They also cited possible displacements of bears to neighboring regions and hunting for the population decline.

The bears’ sea-ice habitat has been disappearing at an alarming rate, with the far north warming up to four times faster than the rest of the world.

The sea ice has become less thick and is breaking up earlier in the spring as well as freezing later in the fall.

The bears rely on the ice for foraging for seals, movement and reproduction.

Since the 1980s, the ice pack in the bay has decreased by nearly 50 percent in summer, according to the US National Snow and Ice Data Center.

A report published two years ago in the journal Nature Climate Change suggested this trend could lead to the near-extinction of these animals, noting there were 1,200 polar bears on the western shores of Hudson Bay in the 1980s.

MANILA STANDARD

[PH, China discuss energy investments outside WPS dispute](#)

By: Alena Mae Flores

The Philippines and China are looking at areas of cooperation in the energy sector outside the West Philippine Sea dispute, according to Energy Secretary Raphael Lotilla.

“I can tell you I have discussions with the Ambassador of the People’s Republic of China on different aspects of cooperation in the energy sector, and that’s not only limited to the West Philippine Sea issue,” Lotilla said.

Lotilla said the Department of Energy was also in talks with Chinese companies for possible investments in renewable energy.

The energy chief said Chinese firms visited the DOE for possible investments in offshore wind, solar and other technologies.

Lotilla said the Department of Foreign Affairs and the Office of the President were taking the lead regarding the West Philippine Sea issue, with the DOE in close coordination.

He said the agency was working with concerned parties regarding the prospects of developing service contracts in the West Philippine Sea.

“These are in the delicate stages of negotiation and therefore, best we leave it to the President and DFA to talk about this on this topic,” he said.

“We continue to encourage the exploration and development in all areas of the country, and we hope there will be other movements on this as well, which are not necessarily tied to negotiations or ongoing talks between China and the Philippines,” Lotilla said.

The Marcos administration wants to revive investor interest in oil and gas exploration in the country, which has been lagging compared to other countries in the ASEAN.

The Philippines ranked 9th among ASEAN countries in terms of exploratory drilling, according to the 2021 IHS report.

“We are also looking at the areas that are clearly undisputed. And we are looking at the near fields around Malampaya. And that’s why the President has indicated that he wants to have all legal and policy issues that have been a sword of Damocles over investments in the upstream, clarified fully,” Lotilla said.

Lotilla said the Cabinet was addressing the desire of the President, “to make sure that the investment climate and the legal environment for the investment in the upstream becomes absolutely clear.”

PHILIPPINE DAILY INQUIRER

[Inclusion of climate lessons in curriculum sought](#)

By: Jeannette I. Andrade

Camarines Sur Rep. Gabriel Bordado Jr. has proposed a measure that would require the Department of Education (DepEd) to include lessons on climate change and environment protection in the K-12 curriculum.

Bordado has filed House Bill (HB) No. 6530, or the proposed Climate Change and Environmental Protection Education Act of 2022, aimed at raising the youth's awareness on the urgency and importance of reversing the effects of climate change.

The lawmaker pointed out, "Climate change is quickly becoming a daunting issue that the world can no longer ignore. Effects of this crisis, such as extreme storm surges and droughts and heavy flooding, have been plaguing countries across the globe."

"The Philippines is particularly vulnerable to the effects of climate change. If we fail to address this worsening crisis, the nation stands to lose millions in damaged properties and, even worse, loss of life," he said.

According to Bordado, "In order to protect the environment for future generations, we should ensure that everyone understands the gravity of this crisis, particularly the youth."

He said it was important to educate and prepare the youth, future stakeholders and leaders, who would soon be taking an active role in reversing the effects of climate change.

"Raising awareness during their formative years in school would better equip them for the environmental challenges ahead," Bordado pointed out.

Under HB 6530, the Deped is mandated to include in the appropriate subjects of the curriculum of basic education lessons on climate change and environmental protection. "Such lessons shall emphasize how our school children could be of assistance in protecting our environment," he said.

Basic education includes kindergarten, six years of elementary and two years each of junior and senior high school.

What's next in science: Look out for these in 2023

By: Cristina Eloisa Baclig

MANILA, Philippines—This year had some of the biggest science events—from the release of new studies on climate change, emerging SARS-COV2 variants and sub-variants, and monkeypox to the creation of bivalent vaccines and significant developments in the study of several other diseases.

Three years into the COVID-19 pandemic progress has been made in terms of understanding how SARS-COV2—the virus that causes the disease—affects the human body, especially in long-term scenarios, which scientists and health experts called “long COVID” cases.

As newer and more transmissible COVID virus variants and sub-variants emerged, huge pharmaceutical companies tested and began rolling out a new tool against it: updated booster shots—also known as “bivalent vaccines.”

In the Philippines, aside from pandemic-related studies, there has also been a focus on science reports on issues like the health implications of vaping and smoking; worsening climate change and how it might sink some of the cities in the country; and cybersecurity and digital privacy amid cases of financial cybercrimes—among many more science-related events and news this year.

As the year draws to a close, INQUIRER.net lists some of the biggest local and global science events to look out for in 2023.

Local: Virology and vaccine institute

This year, the Bases Conversion and Development Authority (BCDA) announced that it had recently signed an agreement with the Department of Science and Technology (DOST) for the establishment of the country’s “premier virology research institute.”

The proposed Virology and Vaccine Institute of the Philippines (VIP), set to rise on a five-hectare land in New Clark Clark Economic Zone in Capas, Tarlac, will house facilities and laboratories needed for research and development and virology-related projects.

Last May, Science and Technology Undersecretary for Research and Development Rowena Cristina Guevara said the construction of the VIP may be done by the end of 2023 or in 2024. While waiting for the construction’s completion, the virology institute can still be partially operated at the DOST’s Industrial Technology Development Institute.

The House of Representatives last December 5 approved on third and final reading the measure pushing for the creation of VIP, also known as House Bill No. 6452 or the Act Establishing the Virology and Vaccine Institute of the Philippines.

Local: R&D and virology projects, ‘Balik Scientist’ program

While the construction of the VIP is still ongoing, the DOST announced this year that it had already initiated research and development works for the VIP program.

Among these projects to watch out for in 2023 include six projects in partnership with the Baylor College of Medicine in the United States, St. Luke's Medical Center, and Research Institute for Tropical Medicine.

"The six projects will focus on the fields of human, animal, and plant virology and the research areas of diagnostics, therapeutics, and vaccines," said Guevara.

The DOST, as well as President Ferdinand "Bongbong" Marcos Jr., has also urged the participation of Filipino scientists abroad in the VIP program through the "Balik Scientist" program.

Local: Bivalent vaccines in PH

As the country continues to vaccinate its population against COVID in 2023, the government said it is eyeing the procurement of bivalent vaccines early next year.

Bivalent vaccines contain a genetic recipe that can detect and fight both the original strain of the SARS-COV2 virus and Omicron sub-variants BA.4 and BA.5.

According to the US FDA, "[t]he authorized bivalent COVID-19 vaccines, or updated boosters, include an mRNA component of the original strain to provide an immune response that is broadly protective against COVID-19 and an mRNA component in common between the omicron variant BA.4 and BA.5 lineages to provide better protection against COVID-19 caused by the Omicron variant."

Data from the Department of Health (DOH) showed that as of December 14-15, the cumulative count of sequenced Omicron BA.4 and BA.5 cases in the country had already reached 324 and 12,565, respectively.

So far, the companies currently manufacturing and distributing updated vaccines include Pfizer-BioNTech, Moderna, Sinovac, and the China National Biotec Group—a Sinopharm subsidiary.

Last December 17, the DOH said it aims to procure doses of bivalent vaccines by the first quarter of 2023.

"As for the DOH, we are already coordinating with suppliers for the procurement of bivalent vaccines. We are targeting to have vaccines available by Q1 of 2023. We are also coordinating with potential donors of COVID-19 bivalent vaccines," the DOH said.

Local: Nuclear power deals, adding nuclear to PH energy mix

Months before the end of his single six-year term, President Rodrigo Duterte signed Executive Order No. 164, which outlined the national government's position for a nuclear energy program—described as "a process that starts with the inclusion of

nuclear power in the energy mix based on a pre-feasibility study on the need for and viability of nuclear power.”

“It includes the development of nuclear power infrastructure and encompasses the planning and construction, operational, commercial, and post-operational stages of nuclear power plants,” the EO stated, adding that it would examine the opening of the mothballed Bataan Nuclear Power Plant (BNPP)..

During the presidential campaign, Marcos also mentioned the possibility of tapping experts to look into the BNPP and determine if it can still be reopened or if a new one should be constructed despite warnings from experts who believed the move could be risky due to safety issues.

Last November 30, the Philippine Nuclear Research Institute (PNRI) said the Philippine government is looking into possible nuclear deals with South Korea, France, and China as Marcos considers the construction of nuclear power plants to supply the country’s growing energy needs.

International: Pathogen watchlist

The World Health Organization (WHO) is expected to publish the revised list of priority pathogens—“agents that can cause outbreaks or pandemics”—in the first quarter of 2023.

The list, according to WHO, will help guide global investment and research and development (R&D)—especially in vaccines, tests, and treatments—in countries across the globe, including the Philippines.

The pathogen watchlist was first published in 2017, while the last prioritization exercise was done in 2018.

Among the agents currently included on the list were COVID-19, Crimean-Cong haemorrhagic fever, Ebola virus disease and Marburg virus disease, Lassa fever, Middle East respiratory syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS), Nipah and henipaviral diseases, Rift Valley fever, Zika and Disease X.

“This list of priority pathogens has become a reference point for the research community on where to focus energies to manage the next threat,” Dr. Soumya Swaminathan, WHO chief scientist, said.

International: The future of mRNA vaccines

The success of messenger RNA (mRNA) technology-based vaccines against COVID pushed vaccine manufacturers and pharmaceutical companies Moderna and Pfizer to develop and test a series of new mRNA vaccines that target other viral diseases.

Earlier this year, both Pfizer and Moderna announced that they will develop its mRNA-based vaccine against shingles—a viral infection caused by the varicella-zoster virus, which leads to painful skin rash and blisters.

BioNTech already began its first-in-human Phase 1 clinical research study for its BNT163 herpes vaccine candidate designed to prevent HSV-2—also known as herpes simplex virus—which causes genital herpes, a sexually transmitted disease.

The German vaccine maker also noted that the BNT163 could also potentially HSV-1, which causes oral herpes and could eventually lead to genital herpes.

SUNSTAR

[DA tackles climate change issues through radio school](#)

By Ian Ocampo Flora

CITY OF SAN FERNANDO The Department of Agriculture DA is now using radios to reach more farmers in far-flung areas to teach farmers about innovative agricultural practices amid global warming and climate change issues.

Dubbed School-on-the-Air on Smart Rice Agriculture (SOA-SRA), the program was first launched in the town of San Ramon in Dinalupihan town in Bataan. The program taps into local rice farmers using rechargeable radios distributed by the DA through its Regional Agriculture and Fisheries Information Section.

SOA-SRA aims to increase the Palay Performance of the Farmers in Bataan. The purpose of this program is to prevent the threat of climate change and global warming through sustainable education of their fields of smallholder farmers and to identify Smart Rice Agriculture Technologies and Practices.

The topics to be discussed include prospects of the rice production industry in the Philippines, different techniques in rice crop management, palay check systems, rice diseases management, and various marketing technologies.

The DA broadcasts School-on-the-Air programs every Mondays to Friday through its radio partner RW 95.1 FM

The DA believes that the radio remains the most accessible and widely used medium in disseminating information specifically to rural communities even to the far-flung areas in the locality.

The School-on-the-Air (SOA) Program is among the training modalities used by the DA's Agricultural Training Institute in the delivery of agricultural extension services and access to knowledge and information on technological developments, particularly agricultural production technologies for farmers in far-flung communities.

THE GUARDIAN

[Can geoengineering fix the climate? Hundreds of scientists say not so fast](#)

By Oliver Milman

As global heating escalates, the US government has set out a plan to further study the controversial and seemingly sci-fi notion of deflecting the sun's rays before they hit Earth. But a growing group of scientists denounces any steps towards what is known as solar geoengineering.

The White House has set into motion a five-year outline for research into "climate interventions". Those include methods such as sending a phalanx of planes to spray reflective particles into the upper reaches of the atmosphere, in order to block incoming sunlight from adding to rising temperatures.

The work is required by Congress. It is "not new research, but a report that highlights some of the key knowledge gaps and recommendations of priority topics for relevant research", said a spokesperson for the White House's office of science and technology policy, adding Joe Biden's administration wants "effective and responsible CO2 removal" as well as deep cuts to greenhouse gas emissions.

Several American researchers, somewhat reluctantly, want to explore options to tinker with the climate system to help restrain runaway global heating, even as they acknowledge many of the knock-on risks aren't fully known. "Until recently, I thought it was too risky, but slow progress on cutting emissions has increased motivation to understand techniques at the margins like solar geoengineering," said Chris Field, who chaired a National Academies of Sciences report last year that recommended at least \$100m being spent researching the issue.

"I don't think we should deploy it yet and there are still a ton of concerns, but we need to better understand it," Field said. "Climate change is causing widespread impacts, it's costing lives and wrecking economies. We are in a tough position; we are running out of time, so it's important we know more."

Previous attempts at running experiments for what is known as solar radiation management (SRM) have faced staunch opposition. Last year, an exploratory flight in Sweden of a high-altitude SRM balloon, led by Harvard University researchers, was halted after objections by environmentalists and Indigenous leaders.

But at least one US startup is now hoping to leap ahead with solar geoengineering.

Make Sunsets, backed by two venture capital funds, launched in October. It claims to have already run two internal test flights for its plan to inject sulphur via balloons into the stratosphere, more than 20km above the Earth's surface.

The venture, named after the deep red sunsets that would occur if particles were seeded into the stratosphere, says its "shiny clouds" will "prevent catastrophic global warming" and help save millions of lives. "Any human-caused release of carbon dioxide is geoengineering," it argues on its website, which asks people to buy "cooling credits" to fund its work. "We screwed up the atmosphere, and now we have a moral obligation to fix things!"

Edward Parson, an expert in environmental law at University of California, Los Angeles, says Make Sunsets' claims that it could return the world to its pre-industrial temperature for just \$50bn a year are "absurd". He explains that most researchers are wary of deploying what they consider to be a desperate, last-ditch option.

But Parson says the risks in researching solar geoengineering have been overblown and that the US "is probably the bold leader on this. It would be a big step forward if we have a research program."

"In my opinion, the probability that a nation makes a serious effort on solar geoengineering over the next 30 years is about 90%," he adds. "As impacts get much worse and if mitigation doesn't massively increase, I judge it quite likely that some major nation considers its citizens are suffering climate harms that are intolerable."

This prospect horrifies opponents of solar geoengineering. An open letter signed by more than 380 scientists demands a global non-use agreement for SRM; it also says that growing calls for research in this area are a "cause for alarm", due to an unknown set of ramifications that will have varying consequences in different parts of the world and could scramble "weather patterns, agriculture and the provision of basic needs of food and water".

Frank Biermann, an expert in global governance at Utrecht University, said he's also disturbed that solar geoengineering will create a sort of moral hazard where governments ease off efforts to cut emissions and fossil fuel companies use it as cover to continue business as usual. Planet-heating emissions are expected to hit a record high this year, even though they must halve this decade if the world is to avoid dangerous levels of global heating.

This debate threatens to derail current climate policies. It's a huge risk.

Frank Biermann, global governance expert

"I would say the majority of scientists believe this is a crazy idea for a variety of reasons," said Biermann, who thinks the US is an outlier because of its own large per-capita emissions and inconsistent adherence to global agreements.

"Soon, everyone who is dependent on coal, oil and gas will jump on the solar engineering bandwagon and say, 'we can continue for 40 years with fossil fuels' now. This debate threatens to derail current climate policies. It's a huge risk."

Biermann likens research on blocking sunlight to the satirical movie *Don't Look Up*, in which researchers who warn of a catastrophic incoming meteoroid are sidelined in favor of an outlandish plan to deal with it. "The only way to find out whether this works is to do it to the whole planet for several years," he said.

"I mean will 8 billion people sit there in our living rooms having our last meal waiting and hoping that elite western universities got it right, that the Americans will not mess it up?"

There isn't any international governance around solar geoengineering for now. Critics fret that unilateral action to alter the climate could spark conflict if one part of the world benefits, while another suffers knock-on droughts or floods.

Also, the addition of aerosols would have to be continuous to maintain the cooling – any disruption, either intentional or otherwise, would cause a sort of "termination shock", where bottled up warming would be unleashed in a disastrously rapid jolt.

"Termination shock terrifies me," said Lili Fuhr, a climate and energy expert at the Center for International Environmental Law. "This is just a gigantic gamble with the systems that sustain life on Earth. It could be weaponized, it could be misused – imagine if, say, India and Pakistan disagreed over one of them doing this.

"We need to do more than just emissions cuts and I wish we had a magical fix to this, but this doesn't turn bad ideas into good ones," Fuhr adds.

The idea of recalibrating the world's climate to deal with heat-trapping emissions isn't new. A group of scientific advisers to Lyndon Johnson cautioned the US president about global heating in 1965, musing that "deliberately bringing about countervailing climatic changes therefore need to be thoroughly explored".

Calls for intervention have grown in recent years as countries continue to dawdle over emissions cuts and as an internationally agreed limit of 1.5C of global heating over pre-industrial times looms into view.

There are several types of proposed geoengineering, such as pumping a mist of salt water into clouds to make them more reflective of sunlight, or to place ice particles in high-altitude clouds to stop them trapping so much of the heat that bounces off Earth.

The most high-profile method, though, is firing a reflective substance such as sulphur or chalk dust from nozzles into the stratosphere, where the particles would then circulate around the world and start deflecting the sun's rays. David Keith, professor of applied physics and of public policy at Harvard, estimates that around 2m tons of sulphur a year, injected via a fleet of about 100 high-flying aircraft, would cool the planet by around 1C, around the amount it has heated up since the Industrial Revolution.

All of this would cost several billion dollars a year according to an estimate, and provide a relatively quick drop in temperatures. Keith argues it is more compelling than various carbon capture technologies that can take a long time and involve complex, expensive infrastructure. "Pretending that climate change can be solved with emissions cuts alone is a dangerous fantasy," Keith has stated.

"We have lost so many easy paths to limit the harms of climate change that we only face worse options." David Keith, professor of applied physics and of public policy at Harvard University

The basic physics of doing this is well understood, Parson said, likening it to the huge eruption of Mount Pinatubo in the Philippines in 1991, an event that expelled nearly 20m tons of sulphur dioxide into the stratosphere and caused global temperatures to drop temporarily by about 0.5C.

"Most people didn't notice that and there have been studies since that give us confidence it can be done," said Parson. "We don't know how it should be done, yet, and the environmental aspects and the governance remain concerns. It would be reckless to just start deploying this now but we have lost so many easy paths to limit the harms of climate change that we only face worse options."

Spraying sulphur into the skylight of the Earth could deplete the ozone layer, some have suggested, and perhaps make the sky a milky white color.

Other effects on regional weather are more uncertain, to the extent one recent novel based on the topic, *The Ministry for the Future* by Kim Stanley Robinson, depicted India embarking upon solar geoengineering to save itself from deadly heatwaves while another, *Termination Shock* by Neal Stephenson, conversely had India sabotaging a sulphur deployment system in Texas because it interfered with its monsoon.

The debate over how much we should meddle with the climate is likely to intensify as the fallout from global heating worsens. For now, opponents won't back down. To Biermann, solar geoengineering should be considered by governments as being akin to landmines or biological weapons and blacklisted internationally.

"This is just another one on this list," he said. "People talk about the freedom of research, but you don't have the freedom to sit in your back yard and develop a chemical bomb."

THE MANILA TIMES

[DENR chief urges private sector to unite for climate action](#)

By Bella Cariaso

ENVIRONMENT Secretary Maria Antonia Yulo-Loyzaga called on the private sector to work closely together in accelerating their adoption of nature-based solutions that will result in co-benefits of climate action and disaster risk reduction.

Yulo-Loyzaga highlighted the importance of the leadership of the private sector, which has emerged as a critical actor in bridging the cost of financing climate action.

"I urge those present not only look to energy efficiency, the shifts to renewable energy and resource efficiency, and establishing your process and product contributions to the circular economy, but to internalize the role of nature in adapting to climate change and its critical importance to disaster risk reduction," Yulo-Loyzaga said during the "Sustainability Forum PH: United for Climate" held last November 28.

She lauded the creation of Philippine Alliance for Climate Action that aims to make the public sector come together and address the threat of climate change.

"The new alliance could yield the most significant results, as the potential synergy among major corporations in the country will most likely generate new capacity to protect, restore and enhance rich but threatened ecosystems," Yulo-Loyzaga said.

She rallied top business executives present at the event to consider working with the Department of Environment and Natural Resources (DENR) in its mission of building evidence-informed area-based resilience.

Yulo-Loyzaga asked for their support on the establishment of a national risk register that can serve as basis for determining gaps, needs and priorities of development plans.

The Environment secretary said her administration at the DENR seeks to create a national natural resource geospatial database, an accounting of the country's natural resources and environmental assets that will support the development of the agency's strategies.

She added the DENR would highly appreciate the private company's synergized expert insights and alignment of investments to address complex and cascading risk across sectors and scales.

At the same time, Yulo-Loyzaga underscored the importance of the private sector's role in mainstreaming climate and disaster resilience into their core business cycles.

She indicated that the conglomerates must not just refer to the businesses they represent and their respective pathways to net zero emissions but should also include the work needed beyond their fence lines to preserve and protect the ecosystems and communities that support them.

"I believe it is high time for the private sector to come together as an alliance to ensure that the ecological and economic gains as individual companies and organizations are leveraged and magnified for the good of our people, our country, and our planet," she said.

Yulo-Loyzaga asked the private sector to support the goals of the Task Force on Nature-related Financial Disclosures and Task Force on Climate-related Financial Disclosures, which will enable companies and financial institutions to integrate nature into decision making and improve reporting of climate-related financial information.

[Opinion] How bad will a global recession be for PH?

By Rafael Alunan 3rd

THERE are two schools of thought based on my readings: one says not too bad, the other says it will be beyond our imagination. Which is the correct reading?

There are those who predict that the US economy will definitely face a recession. Some say starting in 2023, others with certainty in 2024. Most are saying for now, or hoping, that it would be mild to moderate. They cite significant rebounds in 2022 from the pandemic's crippling effects on the global economy from 2020-2021.

poster

Some predict that it will exceed our worst expectations. Inflationary pressures; consequences of the Ukraine-Russia war on Europe and the world; incomplete global recovery from the pandemic; high interest rates; food and energy security imbalances; climate change impacts on human and ecological security; and China's economic and internal financial woes, point to an unfolding Category 5 disaster with social volcanoes erupting in various parts of the globe.

The UN issued a warning last month that the world is "on the edge of a recession." A global slowdown could potentially inflict worse damage than the 2008 financial crisis and the Covid-19 shock in 2020. "All regions will be affected, but alarm bells are ringing most for developing countries, many of which are edging closer to debt default."

'Shouting from the rooftops'

The heads of the International Monetary Fund and World Bank warned of rising global recession risk as advanced economies slow and faster inflation forces the US Federal Reserve to keep raising interest rates, adding to the debt pressures on developing nations.

The Asian Development Bank (ADB) views the US's economic growth to remain sluggish moving into 2023 due to the Fed's continued monetary tightening and weaker global demand. Other advanced economies are also decelerating substantially, raising significant recession risk next year.

Much of Europe is expected to experience negative growth in the fourth quarter of 2022. The oil sanctions on Russia, the sabotage of the Nord Stream 2 pipeline, and OPEC's production cutbacks pose an existential threat to those without heat in their homes this winter. The ECB's aggressive interest rate hikes will consequently dampen growth.

Takeshi Minami, chief economist at Norinchukin Research Institute, says that "depending on the extent of slowdown in the global economy, Japan could follow suit and you cannot rule out the possibility that it slides into recession next year.

Bloomberg reports that "bond markets around the world are no longer whispering about the possibility of recession, but shouting it loudly from the rooftops." Its October 2022 survey of Wall Street economists points to a 60 percent probability. Bloomberg Economics puts the chance at 100 percent in the next 12 months.

Another survey by The Conference Board that polled more than 1,000 mainly professional/office workers, indicated that 41 percent believe that the US is already in recession, and will differ significantly from previous downturns. Businesses were reminded of past lessons of just how hard it can be to get lost talent back.

JP Morgan Stanley CEO Jamie Dimon, Amazon founder Jeff Bezos and Tesla's Elon Musk are equally raising the red flag. It's time to "batten down the hatches" because a "very, very serious" mix of headwinds was likely to tip both the US and global economy into recession by mid-2023 with geopolitical uncertainties compounding the problem.

What does this mean for PH?

Central bank governor Benjamin Diokno said "there would be no repeat in the Philippines of the pandemic-driven recession," reiterating this amid warnings of possible spillover effects of a faltering economic recovery and downturns in developed markets, especially the United States.

He remains optimistic that the Philippine economy will sustain its recovery as it continues to post strong macroeconomic fundamentals, noting that the economic team has its eyes on getting back to pre-pandemic growth rate levels of 6 to 7 percent.

Diokno also cited the country's gross international reserves that can service import requirements for about 10 months, the steady inflow of overseas Filipino remittances and business process outsourcing receipts, and the rise in foreign direct investments.

My sense is that recession in the US, China and Japan — our top trading partners — will have a domino effect on the tethered economies of the developed world such as the EU that, in turn, will affect the developing world in varying degrees.

As the saying goes, "when the West catches a cold, the rest catch pneumonia." To what extent it impacts us depends on our mix of internal and external variables. Given our culture of self before country, where outcomes always differ from original intent, will our microeconomy be able to weather the oncoming storm?

How many more businesses and households, weakened by the pandemic, will be directly affected?

Our various free trade agreements are our silver linings — Atiga, PJEPA, Pefta, RCEP. How well we cultivate those FTAs, expand our economic horizons, aggressively reinforce the economy, capably compete, manage crises and navigate uncharted territory will determine our destiny.

Those, however, require time and a whole-of-society effort. The government, for example, must put in place safety nets for the BPO sector, migrant workers, trade, tourism and investments that will likely face the same fate from reduced economic activity worldwide. National survival calls for the government, the private sector and society to rise to the occasion to:

- reduce the overall cost of doing business;
- improve the ease of doing business;
- invest in business literacy;
- maximize productivity savings;
- fund entrepreneurship;
- invest in manufacturing, agriculture, aquaculture, digital and financial technology;
- expand our service sectors; and
- develop a more digital and home-based working environment.

We've done less as a nation for so long. We're demoralized, distracted and dysfunctional. My instincts from observed history tell me we'll be hit hard. We could have done more to prepare for the bad times but it's not too late to reform, perform and transform for business recovery.

This is the right time to pivot in the direction of a better Philippines by being better Filipinos. Kaya ba natin ito?

How climate change affects kids' health

When it comes to climate change, no one is exempt from experiencing its impact on their health — and children are bearing the most brunt.

"While it may not be apparent at first, climate change directly affects our children's health," said Dr. Romina Gerolaga, MD from the Department of Pediatrics of top hospital in the Philippines, the Makati Medical Center (Makati Med).

"Our kids' immune system and organs are not quite fully developed; children breathe at a faster rate and therefore, this increases their exposure to toxic air pollutants, which can damage their lungs."

The doctor points out that this was confirmed by a study conducted by Harvard University, in collaboration with the University of Birmingham, the University of Leicester, and University College London. Thousands of kids under age 5, die each year due to respiratory infections attributed to fossil fuel pollution.

"Moreover, the hotter temperature makes it dangerous for kids to play outdoors for a prolonged period of time. With limited physical activity though, they set themselves up for obesity, another major health challenge facing our children today. But if they do play outdoors, the poor air quality could trigger allergies or asthma attacks while prolonged direct sun exposure may cause skin diseases."

The reality is that climate change isn't going anywhere anytime soon. Slowing it down takes a concerted global effort over a significant number of years.

Until then, there are some ways parents can still protect their kids from climate change's ill effects.

More plants on your plate. Shifting to a more plant-based diet is good for not just your kids' health but also the environment. "We are already aware of how beneficial a plant-based diet is, and it can help lessen the world's global greenhouse gas emissions since livestock contributes roughly 15 percent to that annually according to the Food and Agriculture Organization of the United Nations."

Protect your child's skin from the sun. The sun casts its damaging UV rays from 10 a.m. to 4 p.m., the expert points out. If your kids want to be outdoors at those hours, remember to slather them with sunblock and provide them with cold drinks.

Improve air quality. Though you cannot control air pollution outdoors, you can certainly keep the air in your home clean by purging air and allowing better air flow; and if possible, by investing in a portable air purifier or a high-efficiency air filter.

Prevent diseases. Stop dengue in its tracks by clearing your immediate surroundings of standing water, where mosquitoes typically breed. When going out, you can also apply a mosquito repellent for extra safety. Repellants made from natural ingredients which are safe for children are already available in the market.

Prepare for emergencies. "When preparing an emergency bag for your child, fill it with essentials like clean potable water in bottles and ready-to-eat food, clothes, toiletries, a flashlight, and medicines. You may opt to include comforting things like a blanket or their favorite small toy, a book, and some paper and pencils to keep them busy and pleasantly distracted from unfamiliar surroundings or a stressful time," Dr. Gerolaga said.

In ending, the Dr. Gerolaga reminded parents to get help from health experts, "It is best to let your child's pediatrician in on what's going on. They will be able to offer a workable solution for your child's overall well-being despite the challenges."

THE PHILIPPINE STAR

[BSP eyes climate risk stress testing by banks](#)

By Lawrence Agcaoili

MANILA, Philippines — The conduct of climate risk stress testing by banks is one of the initiatives in the pipeline of the Bangko Sentral ng Pilipinas (BSP) as it advocates green and sustainable policies and practices.

BSP Governor Felipe Medalla said the recently launched Sustainable Central Banking Strategy embodies the BSP's role as enabler, mobilizer, and doer with respect to advocating sustainability in the financial system.

"In closing, climate action is a whole-of-society undertaking. The central bank could only do so much, but it will do what it can do. But because we can only do so much, we're calling on everyone's support to help implement the Sustainable Central Banking program and, of course, the rest of society outside central banking must contribute as well. Clearly, what the national government does will dwarf anything that the central bank can do," Medalla said.

The BSP has adopted a phased approach in introducing sustainability related guidelines with due regard to the principle of proportionality via Circular 1085 or the Sustainable Finance Framework, Circular 1128 or the Environment and Social Risk Management Framework, and Circular 1149 or the Guidelines on the Integration of Sustainability Principles in Investment Activities of Banks.

The BSP is already preparing amendments to the disclosure requirement under Circular 1085 and enhancing prudential reports for data collection and surveillance analysis.

It is also incentivizing lending or financing of green or sustainable projects and developing sustainable finance taxonomy.

The central bank is also working with the World Bank, World Wide Fund for Nature Philippines, the Philippine Institute of Volcanology and Seismology, and volunteer banks in the conduct of climate stress testing and vulnerability assessment to better understand climate and other environmental-related risks and estimate its potential impact on the banking system.

Aside from the issuance of enabling regulations, the central bank is also increasing awareness and capacity building activities.

As a mobilizer, the total investments of the BSP in green bond funds reached \$500 million from an initial \$150 million in 2019.

The BSP has also developed an 11-point strategy under the Sustainable Central Banking Roadmap that include the conduct of a comprehensive vulnerability assessment of the Philippine economy and financial system, enhancing mandatory disclosures of climate-related financial risks by all banks, issuance of guidance of mandatory climate stress testing for banks, exploration of the integrated of environmental and social risk into prudential practices, and incorporation of macroeconomic effects of climate change into monetary policy analysis.

The regulator is also considering incentive schemes for the promotion of green lending, inclusion of sustainability considerations in its portfolio management, and risk management, as well as sign the UN Principles for Responsible Investment, development of a task force for inclusive green finance, inclusion of climate-related financial disclosure in its annual report, adoption of sustainable practices for its own facilities and operations, as well as the rollout of a capacity-building program for all staff in relevant areas.

For her part, BSP Deputy Governor Chuchi Fonacier said that regulators want banks and financial institutions that are mindful of the environment and pressing issues, and threats of climate change.

“Walking the talk, the BSP is also committed to serve as a role model for our regulated entities. Under the SCB Strategy, the BSP will foster environmentally responsible and sustainable policies and work practices, as well as integrate environmental, social, and governance, or ESG, principles in its key functions and operations,” Fonacier said.

She said the country’s transition to a sustainable and low-carbon economy is a collective responsibility.

“Let us strive to make sustainability principles the norm rather than the exception. I am confident that with your help, our dear partners and stakeholders, seeing sustainability practices becoming a part of the Filipino people’s day-to-day life is well within reach,” Fonacier said.

CCC IN THE NEWS:

BUSINESS MIRROR

[EDC inks power supply deal with Visayas hospital](#)

By Lenie Lectura

Energy Development Corp. (EDC) will start supplying power to Negros Oriental's leading medical institution, Silliman University Medical Center Foundation, Inc. (SUMCFI), making it the first hospital in the island to be directly powered by geothermal energy.

"After carefully evaluating offers from various proponents, the board has decided to partner with First Gen that will be able to supply us with clean, renewable energy through geothermal power coming from our very own province here in Negros Oriental at a very competitive price," said Engr. Emmanuel D. Abellanos, Corporate Secretary and a member of the SUMCFI Board of Directors, said during the ceremonial signing.

The 800-kilowatt geothermal power supply will commence on January 26, 2023 and will be sourced from EDC's second largest geothermal facility located in Valencia, Negros Oriental.

EDC is a subsidiary of Lopez-led First Gen Corp., which has been supplying renewable energy (RE) to Silliman University since 2019.

EDC said this decision of SUMCFI was largely influenced by Dr. Angel Alcala, a National Scientist who happens to be one of the Board of Directors of the Hospital and from its sister institution, Silliman University. The University is known for its strong environmental advocacy and is one of the few in the country to be 100 percent powered by renewable energy.

"We thank SUMCFI for giving us the same trust that its sister company, Silliman University, has also been giving us since the start of our partnership. It is an honor for us to provide our own brand of reliable, cost-competitive RE to a medical institution that is also considered as *kasaligan* (trustworthy) by its own patients and stakeholders," said Gideon Adriel Butalid, head of EDC's Market Planning and Contracts.

SUMCFI likewise signed up for a 15-year solar rooftop power purchase agreement and remote energy monitoring system with First Gen's Pi Energy subsidiary.

Geothermal energy is considered the “Holy Grail” of RE technologies because—unlike other RE sources—it can provide uninterrupted, year-round baseload power, rain, or shine. Thus, it is referred to by the company as Geo 24/7.

EDC has over 1,480-MW total installed capacity and accounts for 20 percent of the country’s total installed RE capacity. Its 1,185.40-MW geothermal portfolio accounts for 62 percent of the country’s total installed geothermal capacity, making the Philippines the third largest geothermal producer in the world.

Meanwhile, Lopez-led engineering and construction subsidiary First Balfour, Inc., and its vendors have agreed to explore measures meant to help reverse climate change.

As part of its pledge to fight climate change, First Balfour agreed to join a Philippine initiative, called “Ako Ang Bukas Movement” (AAB), which the pro-environment and nongovernment organization Green Convergence convened in an effort to help the country achieve net-zero carbon emissions by year 2050.

The multi-sectoral AAB has developed a calculator that the Climate Change Commission earlier evaluated and enhanced for quantifying the amount of greenhouse gases (GHGs) an individual or an organization creates. Studies have identified GHGs, like carbon dioxide, as major contributors to climate change.

First Balfour will use the AAB calculator to estimate the company’s greenhouse gas emissions across its value chain. At the forum, AAB shared this calculator with First Balfour’s vendors to help them quantify their own carbon emissions.

“Before we can act on the climate crisis, we must know the greenhouse gas footprint we generate,” said Agnes de Jesus, chief sustainability officer of First Philippine Holdings, the parent firm of First Balfour.

PHILIPPINE DAILY INQUIRER

[\[Opinion\] Bridging mayors](#)

By: Cielito F. Habito

It is well known that the Philippines ranks among the most vulnerable countries to the adverse effects of climate change. Climate resilience is best achieved from the bottom up, and even as we have a Climate Change Commission at the national level, it is actions taken on the ground at the local levels that would spell our ability to withstand the escalating effects of climate change. For this reason, municipal and city mayors can be critical linchpins toward achieving climate resilience.

With the above in mind, the Asian Institute of Management TeaM Energy Center for Bridging Leadership focused its recent cohort of bridging leadership fellows on mayors in coastal municipalities and cities faced with environmental challenges. The bridging leadership program was conceived over two decades ago to develop leaders who will address and diminish societal divides, which are particularly challenging in the Philippines. Its initial focus was on Mindanao, given the history of violent conflict in the island. But the whole country is marked by a high degree of inequality in terms of income distribution and access to basic social services such as health and education. Later runs of the program thus widened its geographical scope nationwide, and further on to Asia.

Bridging Leaders' Initiative for Climate Resilience or BLICR is its latest program, which brought together eight mayors and 10 private sector development professionals to "co-create entrepreneurial ecosystems for the country's vulnerable coastal municipalities." Past programs focused on young professionals, mid-career public servants, leaders in conflict-affected areas, and others. This time, the year-long course chose local chief executives from San Roque in Northern Samar, Barugo in Leyte, Borongan City in Eastern Samar, Del Carmen in Surigao del Norte, Bayabas in Surigao del Sur, Pagbilao in Quezon, Sipalay City in Negros Occidental, and Cagayancillo in Palawan—areas with both shared and peculiar environmental challenges associated with their marine ecosystems.

In San Roque, Mayor Don Abalon has pursued mangrove conservation through capacity building for mangrove restoration, mangrove-friendly aquaculture, and community-based ecotourism, along with tighter enforcement of conservation laws, rules, and regulations. In Barugo, Mayor Maria Rosario Avestruz is applying scientific methods to increase the survival rates of mangroves against changing tides and violent weather, while providing alternative livelihoods to coastal dwellers. Mayor Jose Ivan

Agda of Borongan City has focused on diminishing hazardous e-waste in his city. He pursues this with creation of an e-waste management plan focused on sustainable livelihood, establishment of a community-based recycling facility, and partnerships with the private sector on e-waste initiatives. In Del Carmen, Mayor Alfredo Coro II harnesses private sector and civil society partnerships to apply nature-based solutions and ecosystem-based approaches in pursuit of sustainable livelihoods for his constituents.

Mayor Maria Clarita Limbaro has created a multistakeholder body in Bayabas to plan and execute mangrove protection and conservation initiatives, including livelihood and enterprise development that will enhance community climate adaptation benefits. In Pagbilao, former mayor and now Vice Mayor Shierre Ann Palicpic aims to turn her municipality into a center of excellence in mangrove conservation, research and development of medicinal and pharmaceutical products, with a gene pool of 48 mangrove species. Mayor Gina Lizares of Sipalay aims to establish a local conservation area and identify and promote alternative livelihood sources for displaced households. In Cagayancillo, Mayor Sergio Tapalla is managing the municipality's nine marine protected areas through community empowerment, skills improvement, and harnessing synergy among social and ecological networks.

With technical and resource support from major companies' development officers they've been paired with, the eight mayors are showing that with a bridging kind of leadership, climate resilience can be achieved. May we see many more mayors like them in 2023!

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