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Plastic pollution is one of the most pressing environmental issues in the world today. A recent report from the United Nations Environment Programme (UNEP) highlights its threatening impact on agriculture.

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Amid a freezing temperature of -3 degrees Celsius, President Ferdinand R. Marcos, Jr. went on to fulfill his duties in promoting the interests of Filipinos and that of the Association of Southeast Asian Nations at the ASEAN-European Union Commemorative Summit held in Brussels, Belgium.

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By Joe Zaldarriaga

The Philippines' location near the Northwestern Pacific Basin -- the most active tropical cyclone basin in the world -- puts the Philippines as one of the countries in the world that are prone to natural disasters.

THE MANILA TIMES

[Saving the sardine from warming seas](#)

By: Rhaydz Barcia

LIGAO CITY: Couple Romeo de Luna, 62, and Elvira de Luna, 59, of Sitio Tambac, Maonon village in Ligao City survived daily through fishing within the Ticao-Burias Pass, the second-largest seascape in the Philippines.

[Sardines catch up again, PSA report shows](#)

By: Rhaydz Barcia

Second of a series

The species composition in the waters of Fisheries Management Area 7 (FMA-7) has significantly changed in the past two decades based on the Philippine Statistics Authority (PSA) data 2002-2020.

[Climate change threatens local fish species](#)

By: Rhaydz Barcia

Third of a series

WHILE there is no sardine-supply shortage yet, the government and Oceana Philippines are moving to protect and conserve sardines to ensure that they will not go extinct, an official of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources said.

['Ticao-Burias Pass seascape must be a marine protected area'](#)

By Rhaydz B. Barcia

Last of a series

TO protect the Philippines' second biggest seascape, former Albay Third District representative now Ligao City Mayor Fernando Gonzalez filed a bill declaring the Ticao-Burias Pass as a protected seascape. The move was supported by two other lawmakers from Bicol representing areas covering the vital inland seas of the region.

[\[Opinion\] Racing against time](#)

By Ambassador Carlos Salinas

There is something about approaching the end of the year that heightens our concern for the future, but more intensely now that that future is being threatened by the climate crisis.

[Zero waste advocates call for systems change](#)

Instead of just pausing on environmentally damaging practices, the Global Alliance for Incinerator Alternatives (GAIA) Asia Pacific is using the strength of the movement to celebrate International Zero Waste Month this January.

THE PHILIPPINE STAR

[UN: Philippines leads in developing migration governance system](#)

By Pia Lee-Brago

MANILA, Philippines — With over six million overseas Filipinos and nearly two million migrant workers seeking temporary employment, the United Nations (UN) said the Philippines has been leading a system that places migrants' human rights at the center.

CCC IN THE NEWS

PHILIPPINE DAILY INQUIRER

[Carbon insetting: Capturing and storing GHG emissions to mitigate climate change](#)

A new report by the UN Environment Program (UNEP) emphasized the need for the world to reduce 45% of emissions within the next eight years in order to limit global warming to 1.5 degrees Celsius by 2030. Transformational change across industries, governments, and society as a whole is key to making this a reality.

Information and Knowledge Management Division

BUSINESS MIRROR

[Policy, climate, war make 2022 'pivot year' for clean energy](#)

By Sibi Arasu - The Associated Press

BENGALURU, India—For renewable energy companies in India, it's a good time to be in business.

One of India's largest renewable energy firms, Renew Power, will be among the corporations big and small hoping for a piece of a \$2.6 billion government scheme that encourages the domestic manufacturing of components required to produce solar energy. It's the biggest such incentive in India's history.

Renew Power's CEO Sumant Sinha said the government funds for clean energy send "a strong signal" that the country wants "to become a manufacturing location for renewable energy equipment and a global alternative to China eventually."

"We are excited to be a part of this journey," he said.

The company has over 100 clean energy projects across India and has become the world's tenth largest solar and wind energy company in just over a decade.

Other major governments around the world have been green lighting ambitious renewable energy policies this past year that aim for major expansions of wind and solar energies, along with development of technologies like carbon capture, which captures carbon dioxide, a central cause of climate change, and stores it in the ground. Some of the policies also include tax credits to buy electric vehicles, heat pumps or energy efficient materials for construction.

The United States signed into law the Inflation Reduction Act, the most ambitious climate legislation in US history, the European parliament passed the REPower EU plan to reduce dependence on Russian fossil fuels and fast forward the transition to clean energy and China announced ambitious schemes to enable the country to meet its 2030 clean energy goals five years ahead of schedule.

Experts say the task is now to build on this momentum in 2023, strengthen energy grid infrastructure and resolve backend issues which slow down the distribution and transmission of clean energy.

"From an energy perspective, 2022 will go down as a pivot year. For the first time, we have discernible proof that fossil fuel demand after 200 years of growth had reached a peak in 2019 and we are now bumping along a plateau before an inevitable decline," said Kingsmill Bond, an energy strategist at the Rocky Mountain Institute, a clean energy non-profit group.

RMI's research has found that global energy demand grew by around six additional exajoules in 2022—enough energy for around 6 million transatlantic flights. This is less than usual year-on-year growth as energy use is getting more efficient, the report said. Solar and wind supply growth this year was also calculated to be about six exajoules.

Bond added that the price of clean energy was getting closer to that of fossil fuels and in some cases it was cheaper.

A report by the International Energy Agency said that oil prices rose well above \$100 per barrel in mid-2022 and high gas and coal prices accounted for electricity cost hikes around the world. But increased use of clean energy saved Asian countries, including China and India, a total of \$34 billion in the past year, a separate report found.

Energy analysts say that the global energy crisis triggered by the Russian invasion of Ukraine and increasing climate threats such as the disastrous floods in Pakistan have accelerated the clean energy policies and big ticket investments that are needed to transition to renewable energy, especially wind and solar energy, around the world.

The sudden lack of access to fossil fuels and supply chain crunches were also other key reasons for the aggressive tilt towards cleaner energy. For example, Russia's sale of gas to Europe was reduced to a trickle.

The invasion "had the effect of making it apparent that clean energy is the solution," said Lauri Myllyvirta, a lead analyst at the Centre for Research on Energy and Clean Air.

Despite the positive momentum towards clean energy, there were some pitfalls too.

"Knee jerk reactions saw some places shift back to fossil fuels even if it's at a higher price to the taxpayer," said Vibhuti Garg, a New Delhi-based energy economist at the Institute for Energy Economics and Financial Analysis.

India's coal production increased by about 17% from April to November 2022. Bangladesh increased its imports of natural gas and went ahead with opening thermal powerplants in the country. Germany, a strong advocate of clean energy, turned to coal and oil to address its short term power needs.

"It was a good year for renewable energy but sadly, not a bad year for fossil fuels either," Garg added.

But spurred by momentum from previous years the clean energy sector worldwide nevertheless took off this year.

"You know, 20 years ago, renewables became the cleanest forms of energy and then in the last few years, renewables become the cheapest form of energy," said Dave Jones, an energy analyst at London-based environmental think-tank, Ember. "Only this year, they've become the most secure form of energy."

Another report by the IEA said that developments in 2022 triggered unprecedented momentum behind renewables, with the world set to add as much renewable power in the next five years as it did in the past 20.

“There is still a lot that needs to be done but I think 2022 will be remembered as the year in which for the first time, renewables have ticked all the boxes,” Jones said.

There’s acknowledgement from those in the sector that more work needs to be done to overcome the scale of the transition.

Sinha of Renew Power hopes that government policies in 2023 focus on dealing with the bottlenecks that prevent clean energy growth.

“Currently the power sector is designed around fossil fuels and suddenly you have all this clean energy coming into the grid,” said Sinha.

“We need more proactive policies that find ways to make room for renewables.”

ECO-BUSINESS NEWS

[10 devastating extreme weather events in 2022](#)

By Samantha Ho

The world suffered more record-breaking floods, droughts, typhoons, and heatwaves that caused widespread human and economic destruction. Scientists said climate change was largely to blame.

Rising global temperatures once again caused unprecedented heat, floods, and tropical storms that often had deadly consequences. Few regions were spared, with some of the most populous countries experiencing different kinds of extreme weather one after the other.

Across multiple reports and press briefings, scientists and experts pointed to climate change as the primary culprit. The World Weather Attribution Initiative found that human-caused climate change had made South Asia's floods 30 times more likely and Europe's heatwave 10 times more likely.

Eco-Business looks back at 10 noteworthy extreme weather events in 2022, two more than on last year's list.

1. Floods in Pakistan and South Asia

The Global Shield Against Climate Risks is a joint initiative launched at COP27 by the G7 and the V20 (group of countries most threatened by climate change) for climate insurance and disaster funding. Image: UNDP Climate, CC BY-SA 3.0, via Flickr.

Many parts of the world experienced severe flooding this year but none so catastrophic as Pakistan, which saw more than 1,500 people killed and 33 million displaced following a record-breaking monsoon in June. Countries including India, Bangladesh, and Afghanistan also recorded hundreds of deaths and millions displaced due to flooding around the same period.

The heavy rainfall between 11 and 19 June not only spread infectious diseases in Pakistan but also wiped out 45 per cent of the country's cotton crop, costing an estimated US\$10 billion in damages as of September and leaving many farm workers jobless.

Climate change made the floods up to 50 per cent worse and caused three times the rainfall recorded as Pakistan's 30-year average, experts said. Haphazard infrastructure development and deforestation due to urbanisation also contributed to the disaster, as did melting glaciers in the Himalayas.

2. Heatwave in South and Central Asia

An elderly woman having lunch in the sun at Adibasi Sahi IN India'S ODISHA STATE. Extreme heat is impacting hundreds of millions of people in the country. Image: Soumi Das / UNICEF

Massive floods were not the only extreme weather disaster Pakistan and its neighbours had to endure. Just two months before the disastrous monsoons, South and Central Asia had been hit by an early heatwave that saw the region receive 62 per cent less rain than usual in March.

Temperatures reached record highs in parts of India and exceeded 40 degrees Celsius for more than two weeks in May, causing unbearable hot conditions in Indian factories and raging forest fires in northern India. Pastoralists in Kashmir were left with no grass to feed their cattle and in northern Pakistan, fires destroyed medicinal crops that locals depend on for their livelihoods. The heatwave also exposed the dangerous lack of cooling equipment faced by more than 320 million people in India.

3. Heatwave and drought in China

Drought threatened many of Taiwan's reservoirs in August 2022, including the Xinshan Reservoir in Keelung. Image: Taiwankengo/ Wikimedia Commons

Many other parts of the world were also affected by deadly heat. From June to August 2022, China experienced its worst heatwave in 60 years with temperatures exceeding 40 degrees Celsius in several provinces. China's Meteorological Administration issued continuous extreme heat warnings for more than 25 days in the northwest Xinjiang region, northern Shaanxi and eastern Jiangsu provinces.

A severe drought dried up rivers including the Yangtze, Asia's longest, and crippled hydropower production. This resulted in power cuts to key industrial areas, disrupting global supply chains for lithium batteries and more. The drought also affected food production in China's largest wheat-producing area, Henan.

Chen Lijuan, an expert at the National Climate Center who predicted that such heatwaves would become a "new normal", told the media that climate change was an influential factor in causing the heatwave and drought.

4. Heatwave in Europe

A firefighter cries while fighting a blaze in the Losacio area of Spain on July 17, 2022. Image: Emilio Fraile/Europa Press via AP

Record high temperatures did not spare the West, as the United States and countries across Europe experienced their own heatwaves. Hamburg in Germany recorded more than 40 degrees Celsius for the first time ever in July, while the United Kingdom's

highest temperatures in the summer exceeded previous records by 1.6 degrees. Elsewhere on the continent, temperatures soared to between 40 and 43 degrees.

The resulting drought caused wildfires to raze forests in countries including France, Greece, Portugal, Slovenia, and Spain, burning over 785,000 hectares or more than double the 317,000-hectare average over the past 15 years, according to the European Forest Fire Information System. At least a dozen died, thousands were displaced and carbon emissions surged to break records kept since 2003.

5. Floods in Malaysia

Malaysia's monsoon rains, which started in December 2021 and continued into 2022, caused the worst flooding in the country's history. In February, around 6,000 people were displaced in Kelantan and Terengganu, states on Peninsular Malaysia's east coast. At the time of writing nearly 10 months later, more than 56,000 have been evacuated following heavy rains and rising floods in the same states.

While climate change was said to have played a role in causing the more severe rains, experts said other factors such as clogged city drains and over-development in former green areas were also behind the disaster.

6. Tropical storms and typhoons in the Philippines

The Philippines is no stranger to a growing number and intensity of typhoons across its many islands, spurred by warmer oceans and higher global temperatures. After Typhoon Rai killed more than 400 people in December 2021, scientists and activists warned that six super typhoons a year would be the "new normal" for the Philippines.

In 2022, the region witnessed several strong typhoons including Typhoon Noru, which also made landfall in Vietnam, and Typhoon Nesat, which caused thousands to flee across the Philippines. Further north, Japan and South Korea were hit by violent typhoons Hinnamnor and Namadol in August and September, respectively.

But the country's most destructive weather events this year were tropical storms that caused landslides and floods. In late October, Tropical Storm Nalgae caused deadly landslides and more than 550 flooding incidents across the country.

7. Hurricane Ian in the United States

Hurricane Ian struck the state of Florida at the end of September, causing the region's most deaths by hurricane in almost 90 years. More than 100 lives were lost including five in Cuba. Power and risk modeling service RMS estimated that losses totalled US\$100 billion. Around 600,000 homes and businesses went without water and power for days after the hurricane.

Ahead of the hurricane, Tom Knutson, a leading scientist on hurricanes and climate change, had warned that “even if hurricanes themselves don’t change [due to climate change], the flooding from storm surge events will be made worse by sea level rise.”

8. Sandstorms in the Middle East

Countries in the Middle East including Iran, Iraq and Syria were hit with sand and dust storms in May this year that caused more than 1,000 people to be hospitalised for respiratory problems and disrupted flights in and out of several cities. The World Bank had previously cautioned that such storms could damage key infrastructure and transportation, among other costs.

Although sandstorms are not unusual in the region, they have been happening earlier and more frequently, having started as early as March this year and spreading over a wider area. Officials and environmentalists warn that they are likely to become more severe due to rising global temperatures.

9. Drought in the Horn of Africa

In the Horn of Africa, more than 20 million people in Ethiopia, Kenya, and Somalia faced a severe hunger crisis, partially driven by prolonged drought. Image: World Bank Photo Collection, CC BY-SA 3.0, via Flickr.

In the Horn of Africa, which comprises the countries of Djibouti, Eritrea, Ethiopia, and Somalia, as well as neighbouring Uganda, drought has caused one of the most extreme food crises the continent has ever seen.

Drought and famine killed 2,500 people in Uganda and affected eight million in Ethiopia this year, according to Carbon Brief’s analysis of data from the Emergency Events Database, an international disaster database.

10. Extreme floods in West Africa

In contrast to the lack of rain in several countries, other parts of Africa experienced disastrous floods this year. More than 600 lives were lost and at least 100,000 left homeless in Nigeria due to floods in October. In neighbouring Chad, hundreds of thousands faced flooding in August and again in October as the country experienced its heaviest rainfall in 30 years.

At this year’s COP27 in Egypt, Mahmoud Mohieldin, the UN Climate Change High-Level Champion for Egypt said, “People who have done the least to cause the climate crisis are paying the highest price. Africa accounts for no more than 3 per cent of global emissions, yet many of its people are suffering the most from climate change.”

The fallout of climate-related disasters in Africa and across the world propelled a COP27 agreement on loss and damage funding. Countries are expected to hash out the

details of the fund, which is meant to help climate vulnerable nations cope with severe climate-related disasters, at COP28 in the coming.

MANILA BULLETIN

[Microplastics are leaching into agricultural lands at an alarming rate](#)

By Manila Bulletin Agriculture

Plastic pollution is one of the most pressing environmental issues in the world today. A recent report from the United Nations Environment Programme (UNEP) highlights its threatening impact on agriculture.

In the 29th edition of UNEP's Foresight Brief, experts highlighted the alarming increase of microplastics in the world's soils. Microplastics are very tiny plastic particles less than five millimeters in diameter and are known for being a potential health hazard for animals and humans, especially when they enter the food chain.

Because of their durability, plastics are often used as protective wraps or bags, such as for fertilizers and seedlings. Plastics are also used to build farm structures, such as greenhouses and irrigation pipes. However, through time, these plastic materials slowly break down into microplastics and may seep into the soil, according to the report. Depending on their concentration, these materials can change the physical structure of the soil, limit its capacity to hold water, and reduce plant root growth and nutrient uptake. Chemical additives associated with plastic production can also lead to health implications.

In Europe and North America alone, more than 650,000 tons of microplastics are leaching into agricultural lands per year, much greater than the estimated 214,000 tons of microplastics in the world's oceans, according to the report.

Experts reported that the single-biggest source of microplastic pollution in farmlands is fertilizers. Fertilizers made up of manure mixed with microspheres, tiny synthetic particles also used in soap and shampoo, increase the concentration of microplastics in the soil. Other sources, such as wraps and old plastic products, are also contributing to the growing problem of microplastics in farmlands.

There are already efforts to reduce the reliance on hydrocarbon-based plastics and shift to bio-based plastics, but not all emerging alternatives are biodegradable and some may even pose a greater threat to the environment.

The report advised "nature-based solutions," including considering "farming practices that work with nature."

[Opinion] What the ASEAN-EU meet means to Pinoys

By Anna Mae Lamentillo

Amid a freezing temperature of -3 degrees Celsius, President Ferdinand R. Marcos, Jr. went on to fulfill his duties in promoting the interests of Filipinos and that of the Association of Southeast Asian Nations at the ASEAN-European Union Commemorative Summit held in Brussels, Belgium.

As the current country coordinator of the ASEAN, the Philippines is responsible in coordinating and promoting the interests of ASEAN in its relations with dialogue partners, including the EU, as well as regional and international organizations and institutions.

President Marcos pointed out the three priorities of the ASEAN in terms of potential cooperation with EU, and these are closer maritime cooperation; stronger economic cooperation both on bilateral and bloc-to-bloc relations; and getting together to fight the effects of climate change and to ensure sustainable development.

He emphasized the pivotal role of the ASEAN-EU Business Council in advancing ASEAN's regional economic integration and post-pandemic economic recovery. Likewise, he relayed the anticipation of the

ASEAN region on the resumption of negotiations for the establishment of an ASEAN-EU Free Trade Agreement and of the ASEAN-EU Trade and Investment Work Program.

But one might ask, what does these events mean to the ordinary Filipino?

Aside from the activities of the ASEAN-EU Commemorative Summit, the President had many other meetings and side events to promote the Philippine interests. As he met with business leaders from different European companies, President Marcos secured ₱9.8 billion worth of investment pledges, particularly in the sectors of fast-moving consumer goods, shipbuilding, renewable energy, and green metals. This means more jobs, better opportunities, pump priming the economy.

Moreover, as the President met with various leading ship owners all over Europe, he was able to obtain their commitment to help the country hurdle some of the challenges in Filipino seafarers' European Maritime Safety Agency (EMSA) accreditation through the creation of an advisory council composed of concerned Philippine government agencies, international and local ship owners and other stakeholders.

This will prevent massive loss of jobs among Filipino seafarers.

The chief executive also met with the King of Belgium, and held bilateral meetings with his counterparts from the European Council, the European Commission, Estonia, Sweden, Czech Republic, the Netherlands, and Spain, discussing with them many possible areas of further development and future partnerships.

For instance, during President Marcos' bilateral meeting with Estonia's Prime Minister Kaja Kallas, they agreed to strengthen cooperation in digitalization, e-governance, and cybersecurity. Estonia is one of the most digitally advanced nations and the President would want to learn how they were able to pursue digital transformation while effectively addressing cyber threats.

From the onset, President Marcos has been emphasizing digitalization as one of the priorities of his administration because he believes that this is vital in the overall development of the country. This is why Department of Information and Communications Technology (DICT) Secretary Ivan John Uy, who was part of the Philippine delegation, is aligning the Department's programs with the vision of the President. He also stressed that through information and communications technology, the country would be able to have a more efficient government.

Overall, the President's visit to Belgium for the ASEAN-EU Summit would generate opportunities for the benefit of the Filipino people. This is also aligned with what the President has been emphasizing from the start — the Filipino people harnessing opportunities and recovering together towards a stronger, more resilient, and more productive Philippines.

THE MANILA TIMES

[Saving the sardine from warming seas](#)

By: Rhaydz Barcia

LIGAO CITY: Couple Romeo de Luna, 62, and Elvira de Luna, 59, of Sitio Tambac, Maonon village in Ligao City survived daily through fishing within the Ticao-Burias Pass, the second-largest seascape in the Philippines.

The couple, both elementary graduates with two children, are living in the fishing village at Sitio Tambac, Maonon, Ligao City, and have been involved in fishing for more than 40 years.

Romeo said that he went home almost empty-handed in the last five years as fish continue to decline because of the increasing weather conditions and warming ocean.

"Forty years ago, fishing was profitable with a daily good catch. But these past few years, I went home almost empty-handed or went home with just a kilo of fish like "lawlaw" (sardines) and first-class fish. It is tremendously dwindling because of the hottest weather and warming seas. Oftentimes, we came home without a catch which hardly fed our family," he said.

"We've noticed that the very warm and humid weather causes warming ocean, prompting the fish to go on the deeper part of the ocean which is difficult for us marginalized fisherfolk to go on to the high seas," he narrated in the dialect as he and his wife Elvira sat on their boat under the tree.

He said that the changing and very humid weather started to affect them 10 years ago. The changing and now very humid weather is driving the fish away from the municipal waters.

"A few decades ago, the weather was not as warm and humid as today. We endured the sea for a long time and went home happily with 15 iced boxes full of a high-grade variety of fish including sardines after three hours in the 1970s to early 1990s. But in 2000, the sea temperature was different, rising and was getting warmer, driving away the fish near the shoreline," he said.

He said that sardines and other varieties of fish are one of the important sources of their livelihood and survival in the countryside. To survive daily, they resorted to loan sharks, who lend at a 20 to 50 percent interest rates.

The Ticao-Burias Pass is home to lawlaw and high-grade fish species. Many Filipinos depend on fish not only for food but also for livelihood, making this one of the most important resources in achieving food security in the country.

Citing data from the Philippine Statistics Authority, Joyce Siera, Oceana communications manager, said that the usual catch of sardines locally called tamban declined from 442,045.75 metric tons in 2010 to 325,226.20 metric tons or a 26.4 percent decline in 2019.

Oceana, an international nonprofit advocacy organization focused solely on ocean conservation, was founded in 2001.

Siera said GPS trackers were installed on fishing vessels operating in the Fisheries Management Area (FMA) 7 covering Bicol to Visayan seas and allowed the team to monitor fishing activities in the area over time.

This method has led the research team to discover that 60 percent of the total 60,000 metric tons caught in FMA-7 were from Bulan station along the Ticao-Burias Pass.

It said that fish caught in Bulan fall below the size of the first maturity. Many juveniles are caught in this area and there's a need to implement measures to reduce by regulating the fishing — the number of vessels, the frequency of catches, and when they are allowed to operate, Oceana said.

Oceana urged the government's fisheries agency and stakeholders to conduct a participatory process to address the challenges in managing its sardine stocks in the Bicol Region, part of the country's sardine-rich fisheries management area, in response to the incident of sardine spoilage in Bulan, Sorsogon.

[Sardines catch up again, PSA report shows](#)

By: Rhaydz Barcia

Second of a series

The species composition in the waters of Fisheries Management Area 7 (FMA-7) has significantly changed in the past two decades based on the Philippine Statistics Authority (PSA) data 2002-2020.

In 2002, the dominant marine product was seaweed with 16 percent of the total landings followed by round scad at 12 percent, Indian mackerel at 10 percent and anchovies at 6 percent. Small pelagics dominate the landings with about 50 percent of the total landings. Sardines only represent 8 percent of the total landings.

Pelagic fish range from small fish, such as herrings and sardines, to large fish like bluefin tuna. In 2010, the dominant marine harvest was still seaweed at 24 percent followed by round scad at 10 percent, fimbriated sardines at 10 percent, anchovies at 6 percent and Bali sardines at 6 percent. About 50 percent of landings were still dominated by pelagics. Sardines, meanwhile, continued to increase in 2010 with 17 percent of the total landings.

Ten years later, the species composition in FMA-7 changed significantly with Bali sardines dominating at 25 percent of the total landings, followed by seaweed now at only 16 percent, fimbriated sardines at 5 percent, and round scad at 5 percent. The pelagics still dominate the entire landings at about 53 percent.

Sardines contribute about 31 percent of the total landings. The significant change in the species composition is a serious jolt on the biodiversity of marine life in FMA-7 with a clear impact of overfishing coupled with the possible effect of climate change causing the decrease of the species that were abundant two decades ago.

A study conducted by Oceana revealed sardine production has changed over the last decade. Due to this "Sagip Sardinas," a nationwide campaign to promote the sustainable production of sardines was launched by Oceana Philippines and the Department of Agriculture-Bureau of Fisheries and Aquatic Resources in the Bicol Region and Visayas late last month to put in place a National Sardine Management Framework Plan (NSMFP).

The target is to come up with a science-based NSMFP by October for implementation next year. The NSMFP will serve as the country's first sardine fisheries roadmap.

The Philippine Statistics Authority (PSA) Fisheries Situation Report noted a 13.5 percent reduction in the volume of production of tunsoy (dried fish), one of the major species with reported declines for the first quarter of 2022.

The PSA also reported a decline in all captured fisheries for the first quarter of 2022 from 973,622.41 metric tons (MT) a year ago, fisheries production volume in both commercial and municipal fisheries dipped to 971,500.80 MT from January to March this year.

The government attributed this to rising fuel costs and has also contributed to its push for fish importation.

In Bicol, the provinces of Masbate, Sorsogon, and Camarines Sur are still among the top 10 producers of sardines.

The Bicol Region provides the second-highest production of tamban and tunsoy, next to the Zamboanga Peninsula based on the 2019 PSA Report on the annual production of sardines.

There are 20 sardine species that were found in FMA-7, which were lawlaw, alubaybay, tamban and tunsoy. Currently, there is only one cannery in Bicol and some LGUs do not allow sardine fishers to trade with larger canneries.

Based on Oceana's assessment, the dwindling sardine stock was particularly noted in Balatan, Camarines Sur; Pio Duran, Albay; Monreal, Ticao Island; and the main station for fishing vessel operations in Bulan, Sorsogon.

In a study done by Oceana on the conditions of sardine stocks in FMA-7 fishing grounds off Bicol and Samar from February 2020 to March 2021, it was revealed that "sardine stocks are overfished."

The fishing grounds in the Philippines were Quezon, Bicol, Northern Samar, the Visayan Sea, Northern Sulu Sea, South Sulu Sea and Palawan.

Threatened species

Climate change and overfishing are fast catching up with these highly resilient species. "Even the fishes in canned sardines are getting smaller and smaller, a sign there is a problem," Gloria Estenzo Ramos, vice president of Oceana Philippines, said.

[Climate change threatens local fish species](#)

By: Rhaydz Barcia

Third of a series

WHILE there is no sardine-supply shortage yet, the government and Oceana Philippines are moving to protect and conserve sardines to ensure that they will not go extinct, an official of the Department of Agriculture-Bureau of Fisheries and Aquatic Resources said.

According to the international advocacy group, there is a need to enhance existing policies to prevent overfishing, allow fish stocks to repopulate, and replenish the country's fishing grounds.

Chemical engineer Dominic Careo, health and safety officer of Office of the City Environment and Natural Resources and Healthy Oceans and Clean Cities Initiative project coordinator of Legazpi City, explained that small fish species are affected by the rising sea temperature following anthropogenic activity.

Anthropogenic refers to changes in the environment caused directly or indirectly by human activity. Careo, also a professor at Bicol University College of Sciences in Legazpi, affirmed fisherman Romeo de Luna's claim that the sea is warming due to climate change.

He said that greenhouse gases (GHGs) are the primary contributor to rising temperatures as they trap the heat in the atmosphere.

Greenhouse gases are naturally occurring gases found in the earth's atmosphere that have the ability to absorb heat and bounce back heat to Earth to keep the planet warm. But too much GHG in the atmosphere can cause temperature rise which results in global warming. The greenhouse effect and the gases responsible for trapping heat at the surface of the earth are the greenhouse gases, he explained.

When asked how climate change and warming oceans contributed to the depletion of fish species, Careo explained that the ocean is the biggest carbon sink as it absorbs and sequesters GHGs like carbon dioxide from human activities.

"This carbon dioxide when dissolved in the seas causes lower pH (hydrogen ion concentration) that causes acidity. If climate change and rising sea temperatures continue, it will negatively affect the reproduction of up to 60 percent of all fish species in the future because of the so-called GHGs, as the surface of the earth including oceans, absorbs the heat in large quantities. This will affect the fish species sensitive to temperature rise, specifically the small fish," Careo said.

The warming ocean, according to Careo, will also affect the coral reefs through coral bleaching. When the coral reefs are destroyed, the spawning ground of the fish to reproduce is affected. That's why their population is depleting in the long run, he said.

"Since sardines are one of the species vulnerable to changes in sea temperature, chances are they will no longer grow. One of the indicators of the warming seas is the migration of fishes into the deeper portion of the ocean with cooler temperatures," Careo said.

He added that the fish and aquatic organisms need the so-called dissolved oxygen in the water to survive and to grow to full size. When the sea surface temperature is hotter, the dissolved oxygen is thinner as this escapes to the atmosphere.

"Thinner or lesser dissolved oxygen means it threatens the survival of the smaller fish like sardines as they could no longer reach the fuller size due to lack of oxygen. This is the effect of climate change. Our ocean is getting warmer as it absorbs a large percentage of heat and the excessive heat and energy warms the ocean that leads to ocean acidification. As the ocean becomes more acidic, it will be impacted by small fishes and even go extinct," he explained.

He said saving small fish species under the warming ocean is critical for the future of protein and nutritional requirements of the Filipino people.

"Sea-surface temperature and thermal stress in the Coral Triangle over the past two decades" study in 2009 by scientists E.L. Peñaflor, W.J. Skirving, A.E. Strong, S.F. Heron, and L.T. David said that the Indo-Pacific includes countries such as the Philippines, Indonesia and Papua New Guinea are home to more than 500 species of corals.

Studies have also shown that the waters around Indonesia and the Philippines possess the highest reef fish endemic species and that the Philippines is also considered the global center of marine fish biodiversity.

Reports have shown, however, that species diversity and abundance in many parts of this region have been greatly threatened by both man-made and natural stresses.

The "IndoMalay-Philippines Archipelago" (Carpenter and Springer 2005) has become one of the most important target areas in marine biodiversity research. Studies highlighted the alarming decline in coral cover in this region, including the effect of increasing sea surface temperature (SST) over recent years.

The effect of SST increase has a wide range of effects on the marine ecosystem. Studies have shown that warm temperature anomalies have led to a reduction in primary production and a decrease in fish catch.

Higher levels of thermal stress were observed in 1996-2006 as compared to 1985-1995. The dramatic increase in the levels of thermal stress during the 1996-2006 period may have been linked to the Pacific decadal oscillation (PDO) reversal in the late 1990s.

The PDO refers to the interdecadal (*2-3 decades) oscillation of Pacific Ocean temperatures between warm and cold phases. Further analysis was performed on the data from the five years with the highest percentages of reef pixels with DHW C 4: 1996, 1998, 1999, 2000 and 2005.

These years are concurrent with the La Niña events except 2005, which is an ENSO-neutral year. 2005 is currently the warmest year on record based on global temperature averages. Similarly, the level of thermal stress has been observed to indicate significant bleaching in corals.

The year 1998, when a very strong La Niña occurred, again stands out with the highest number of clusters showing bleaching-level stress. This further supports the occurrence of widespread bleaching in many parts of the CT in 1998. Noticeably, clusters 5 and 6 in the northernmost Philippines are the most impacted during the very strong La Niñas. Bicol lawmakers, for their part, filed a bill for the protection of Ticao-Burias Pass seascape in the region.

'Ticao-Burias Pass seascape must be a marine protected area'

By Rhaydz B. Barcia

Last of a series

TO protect the Philippines' second biggest seascape, former Albay Third District representative now Ligao City Mayor Fernando Gonzalez filed a bill declaring the Ticao-Burias Pass as a protected seascape. The move was supported by two other lawmakers from Bicol representing areas covering the vital inland seas of the region.

Representatives Ma. Vida Bravo and Evelyn Escudero of the first districts of Masbate and Sorsogon have co-authored the bill seeking the declaration of Ticao-Burias Pass as

a marine protected area (MPA) under the National Integrated Protected Areas System Act.

Bravo's representation covers six municipalities — San Fernando, San Jacinto, Monreal, Batuan of Ticao Island, and Claveria and San Pascual of Burias Island, all along the two waters; while the Sorsogon towns of Donsol, Pilar and Castilla that sit along the northern coastline of Ticao Pass belong to Escudero's district.

Gonzalez's district covering the Albay west coast localities of Libon, Oas, Pioduran, and Jovellar shares maritime boundaries with the two Burias Island towns.

Gonzalez's move is to save the Burias-Ticao Pass to be declared an MPA or a protected seascape to save and preserve its great marine diversity threatened by unabated illegal activities and climate change impact by protecting corals.

These waters are home to Tamban locally called "lawlaw" (sardines) whale sharks, manta rays, dugong (sea cow), and various kinds of sea turtles, and later discovered to be a habitat of the globally rare megamouth shark (*Megachasma pelagios*) — which are all considered endangered marine species.

The entire seascape covers an area of 414,244 hectares serving as a fishing ground for a total population of 93,943 coastal villagers, 41.4 percent of them languishing in poverty as reported last year by the National Statistics Coordination Board of the Philippine Statistics Authority.

The primary concern of the coalition is the huge fishing ground covering Ticao-Burias Pass rich coastal resources threatened by human pressures, including overexploitation, illegal, unreported, and unregulated fishing, as well as unsustainable aquaculture practices, marine pollution, habitat destruction, climate change, and ocean acidification.

Protected seascapes, Gonzalez explained, are among sites of national significance characterized by the harmonious interaction of man and ocean while providing opportunities for the public as showcases for climate change adaptation measures to combat the effect of global warming.

Rep. Fernando Cabredo on the other hand said that coastal communities have inevitable growth of population which require more fish requirement consumption and fishing activities.

"To provide alternative livelihood, aside from fishing, we provide alternative sources of living through tourism, mangrove reforestation, and agriculture as alternative sources," the lawmaker said.

Restore Philippines' fish stocks

Oceana Philippines said there is a compelling urgency for stakeholders to work together to sustainably manage this commercially important and cheap protein source for many Filipinos.

To help restore the fish stocks, there is a need to protect the municipal water, which hosts the coral reefs, seagrass, and mangroves — the shelter and spawning ground of fish that should be protected as mandated by the existing fisheries and environmental laws.

Oceana gives unsolicited advice to the Marcos administration — stop fish importation, prosecute commercial fishers encroaching municipal waters, and implement the management plan for participatory and science-based fisheries management in Fisheries Management Areas, a policy reform under FAO 263 which delineated the country's fisheries into 12 areas and which if fully implemented will rebuild Philippines fisheries.

The country's marine resources should be prioritized as an integral source of nutrition for the Filipino people, but these continue to degrade because of a lack of political will to fully implement the fisheries laws and the reforms initiated by the decision-makers.

The strict implementation of the Fisheries Code, as amended, mandates the protection of the 15-kilometer municipal waters from commercial fishing operations. Oceana believes that by adopting a science-based strategy, local sardines will continue to thrive, support other marine wildlife and feed the world at the same time.

Editor's Note: This story was produced with the support of DW Akademie, German Federal Foreign Office in cooperation with the Climate Change Commission of the Philippines. Rhaydz Barcia is a journalism fellow of DW Akademie (Deutsche Welle), Federal Republic of Germany, and Climate Change Commission of the Philippines under the framework project "Covering the Climate: Qualification of environmental journalists in the Philippines."

[\[Opinion\] Racing against time](#)

By Ambassador Carlos Salinas

THERE is something about approaching the end of the year that heightens our concern for the future, but more intensely now that that future is being threatened by the climate crisis.

Member states of the International Maritime Organization (IMO) recently met to discuss and come to an agreement on ways to speed up the shipping industry's climate mitigation efforts. The need for binding commitments is more urgent than ever. The Intergovernmental Panel on Climate Change (IPCC) 2022 report has warned that only the most drastic cuts in carbon emissions would help prevent an environmental disaster.

UN Secretary-General Antonio Guterres, upon reading the report, stated that "IPCC Working Group 1 Report is a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable: greenhouse gas emissions from fossil fuel burning and deforestation are choking our planet and putting billions of people at immediate risk."

Many shipowners have already invested in lower-carbon liquified natural gas-powered ships. But alternative fuel development is still in the early stages.

Back in 2018, the target was a 50-percent reduction in shipping's greenhouse gas emissions by 2050, with the aim to phase out emissions in line with the 1.5 degrees Celsius target of the Paris Climate Agreement.

But climate scientists now declare that 1.5 C of warming is the maximum level that would make us avoid dangerous climate tipping points. IMO revisions that would respond to this advice are expected in mid-2023, but not all proposals from member states give assurance that we can achieve the necessary reductions. The issue is compounded by the differences in opinions of major industry stakeholders on how the industry should decarbonize.

The International Chamber of Shipping is calling for the industry to reach "net zero carbon emissions" by 2050. This is likewise being pushed at the Marine Environment Protection Committee 79 (MEPC 79), where climate-vulnerable countries urged the committee to adopt a zero-emissions-by-2050 position, a shift from the current target of cutting emissions by half by 2050.

MEPC 79 discussions indicate that lowering emissions for the industry entails shifting to greener alternatives, placing a levy on carbon emissions from ships, and the energy efficiency of ships — all efforts to reduce carbon emissions in accordance with the Paris Agreement global average temperature goal limit of 1.5 C.

About 90 percent of the world's cargo is transported by ships, making the shipping industry responsible for nearly 3 percent of global greenhouse gas emissions.

Not to be overlooked is the plight of the seafarers — the acknowledged "daily problem solvers of the sea." They need to be reskilled, said the International Transport Workers' Federation in a presentation at the MEPC.

With the possible introduction of new fuels, some of which are considered highly dangerous, workers would need to be skilled in fuel handling and safety measures.

This is one of the new crucial skills that seafarers need to develop in facing new challenges.

We are therefore reassured to know that President Ferdinand Marcos Jr. pledged that his administration will do everything to equip our seafarers with these new skills, and enhance existing skills "to prevent job losses among Filipino seafarers."

The President pledged in a meeting with global leaders from various groups representing seafarers, shipowners, and other maritime employers during his foreign policy tour in Brussels.

President Marcos also ordered a whole government approach to ensure that industry issues, the main one being crew's education, training, and certification, are addressed to avert the disqualification of Filipino seafarers. The Philippines is one of the major suppliers of maritime labor globally, a labor source so critical that one delegate described it as "too big to fail."

We can build a better future when we know what we are up against, and what we can do to transcend it. When we do, we can now look at Christmas as a time of hope.

The story of Christmas offers the hope of salvation for all humanity. And throughout the holiday season, we all try to behave with an extra measure of generosity, kindness, and joy, not just to one another, not just to family and friends and people we care about now, but to those who will come after us and inherit the world that we shall build.

Merry Christmas!

[Zero waste advocates call for systems change](#)

Instead of just pausing on environmentally damaging practices, the Global Alliance for Incinerator Alternatives (GAIA) Asia Pacific is using the strength of the movement to celebrate International Zero Waste Month this January.

Leveraging its wide international network, GAIA boldly takes the lead to put genuine zero waste work into action despite the many false narratives, fed by corporations, international financing institutions and other governing bodies. Through science-based and proven solutions to waste, the alliance works on the premise that zero waste opens opportunities to address bigger climate challenges. Zero waste is climate action, and the Zero Waste Month with its theme, "Zero Waste for Zero Emission," hopes to show just that.

GAIA and its members line up initiatives to educate and spark conversations about waste management solutions from gatherings and forging alliances to film festivals and more. Through a showcase of results-backed learning from experts and experienced individuals from around the world, the alliance aims to send the message that zero waste is one of the critical ways to achieve zero emissions, waste-to-energy incineration is a false solution and a step backward, and that zero waste systems ensure just transition for all.

International Zero Waste Month is made possible through the generous support of the Plastic Solutions Fund in partnership with the following media outlets: Advocates (Philippines), Bandung Bergerak (Indonesia), Business Ecology (China), The Business Post (Bangladesh), The Manila Times (Philippines), Pressenza (Global), Sunrise Today (Pakistan), The Recombobulator Lab (Global) and Republic Asia.

Zero Waste Month celebrations have originated in the Philippines since 2012 when youth leaders issued a Zero Waste Youth Manifesto.

PHILIPPINE CANADIAN INQUIRER

[ASEAN biodiversity conservation efforts need global support](#)

By Maritz Moaje/PNA

MANILA –The efforts of the ASEAN Centre for Biodiversity (ACB) in fighting climate change have been recognized by no less than President Ferdinand R. Marcos Jr.

In a press statement on Tuesday, ACB executive director, Dr. Theresa Mundita Lim, said it was crucial that Marcos himself underscored their roles in conserving biodiversity, particularly in preserving the rich natural heritage of the region through the ASEAN Heritage Parks (AHP).

Marcos called on EU member countries and the rest of the world to act together to fight the effects of climate change and to ensure sustainable development at the opening ceremony of the Association of Southeast Asian Nations-European Union (ASEAN-EU) Commemorative Summit in Brussels, Belgium on Dec. 14,

“We are currently losing huge chunks of our natural resources at a rate difficult to repair and impossible to replenish in our lifetime. The ACB’s work is vital in preserving and growing ASEAN’s rich natural heritage which serves as a main pillar of our culture and our economy,” Marcos said in his speech.

Lim said the ACB and EU’s long-standing partnership has supported the AHP and other nature conservation initiatives in the region to address biodiversity loss, improve community livelihoods, and increase resilience against climate change and future pandemics.

“As we recalibrate our gears and navigate towards these new and realistic targets, the ASEAN will need all the support that we can get from our national governments and our international partners to achieve these goals. We are indeed grateful for the strong support from our host country, the Philippines, in our regional conservation efforts,” Lim said.

The ACB’s headquarters is located in Los Baños,Laguna.

Established in 2005 as ASEAN’s response to the challenge of biodiversity loss, it is an intergovernmental organization that facilitates cooperation and coordination among the 10 member-states and with regional and international organizations.

Marcos said that as the coordinator of the ASEAN-EU Dialogue on GreenTech and Innovation Mapping until 2024, the Philippines would pursue collaboration and coordination with the EU to meet the aim of facilitating green technology transfer and cooperation between the two regions.

The EU-backed Biodiversity Conservation and Management of Protected Areas in the ASEAN Project provides the AHPs and protected areas with support for capacity development, monitoring and law-enforcement technology, and communication, education, and public awareness, among others.

Lim said Marcos' call for stronger ASEAN-EU cooperation is timely as biodiversity targets for the next decades are being agreed upon and finalized at the ongoing UN Biodiversity Conference in Montreal, Canada to advance regional goals and priorities for the conservation and sustainable use of the region's rich natural resources.

During the 19th ASEAN-India Summit held in Phnom Penh, Cambodia in November, Marcos likewise pitched the need to curb biodiversity loss to mitigate the destructive effects and impacts of climate change.

Conservation.org noted that the Philippines hosts one of the greatest concentrations of wildlife species in the world with at least 20,000 which cannot be found elsewhere.

PHILIPPINE NEWS AGENCY

[Invest more in fight vs. climate change](#)

By Joe Zaldarriaga

The Philippines' location near the Northwestern Pacific Basin -- the most active tropical cyclone basin in the world -- puts the Philippines as one of the countries in the world that are prone to natural disasters.

The Philippines' location near the Northwestern Pacific Basin -- the most active tropical cyclone basin in the world -- puts the Philippines as one of the countries in the world that are prone to natural disasters.

In fact, the World Bank Group estimated that some 60 percent of the country's land area and 74 percent of the population of the Philippines are prone to natural disasters which are projected to further intensify amid climate change. A recent study by the Institute for Economics and Peace also believed that the Philippines is a country most at risk from the climate crisis.

Every year, we suffer from an average of 20 typhoons, eight of which make landfall and are usually devastating.

To combat climate change, the Philippine government has submitted its nationally determined contribution to the United Nations Framework Convention on Climate Change. The charter covers the country's sustainable plans and programs for reducing greenhouse gas emissions and signifies a commitment to help meet the Paris Agreement's goal of limiting global temperature rise, ultimately achieving net zero.

The local business community has also put active measures in place, incorporating sustainability within their operations. Among these is the Manila Electric Company, the country's largest electric distribution utility.

Over the past few years, Meralco has already been laying the groundwork for progressive changes in its energy sourcing, investments, and adoption of sustainable technologies. This includes targeting 3,000 megawatts of renewable energy capacity, by sourcing 1,500 megawatts of renewable energy (RE) over the next five years while also building another 1,500 MW of clean energy by 2027 through its power generation arm, Meralco PowerGen.

Outside power, Meralco has also been pushing for the development of a cleaner transportation industry with the use of electric vehicles. In 2020, Meralco launched its Green Mobility program to reduce GHG emissions by gradually replacing the gas-fueled vehicles in its fleet with those powered by electricity.

As of this writing, Meralco's Metro Manila business centers and sector offices are already 100 percent electrified. It targets to electrify 25 percent of its entire vehicle fleet by 2030.

Through its social development arm One Meralco Foundation, Meralco also embarked on a plan to protect and preserve Philippine forests and watersheds through its target to plant and nurture 5 million trees by 2025.

Because of these efforts, Meralco was recognized for its outstanding sustainability performance by none other than UK-based global sustainability index provider FTSE Russel.

Government agencies and other companies are also marching towards their own sustainability and net zero agenda. The Department of Energy has already set an objective to hit 50 percent of RE power generation by 2040 and imposed a moratorium on the construction of new coal-fired power plants in 2020.

In the transportation sector, there are already mandates for biodiesel and bioethanol utilization and targets for EV penetration.

While these are remarkable initiatives, there are opportunities to take the agenda against climate change even further. The Philippines must ramp up its sustainable initiatives and programs for the country to hit its goal of reducing GHG emissions. A firmer sustainable commitment would engage more businesses to invest in the country in clean energy projects.

Secondly, the government should encourage and incentivize local banks to finance green programs, to make funds available to fight climate change.

Lastly, ramping up the national budget to fight climate change is a must. Solid government support will always serve as the backbone of any initiative for the betterment of the country, and will only be achieved if we ramp up investments and closely coordinate with industry stakeholders.

THE PHILIPPINE STAR

[UN: Philippines leads in developing migration governance system](#)

By Pia Lee-Brago

MANILA, Philippines — With over six million overseas Filipinos and nearly two million migrant workers seeking temporary employment, the United Nations (UN) said the Philippines has been leading a system that places migrants' human rights at the center.

The UN made the statement as its network on migration in the Philippines marked International Migrants Day, wherein it reaffirmed its commitment to work with the government in promoting the objectives of the Global Compact for Safe, Orderly and Regular Migration (GCM).

“As a GCM champion country, the government has taken concrete steps to actualize and codify the compact, which led to the establishment of the Department of Migrant Workers,” Gustavo Gonzalez, UN Philippines resident coordinator and chairman of the UN migration network in the Philippines, said.

“Multiple stakeholders are working with the government to carry out the national action plans on gender-responsive return and sustainable reintegration and on fair and ethical recruitment,” he said.

Another key facet of human mobility in the Philippines is climate change, to which the country remains acutely vulnerable, Gonzales said.

“Greater attention and efforts are necessary to address the varied dimensions of the climate crisis – whether slow onset or disasters – on displacement and labor migration. Leveraging man mobility as a positive adaptation strategy can strengthen climate resilience,” he added.

Gonzalez said the GCM commitments could only be achieved if human mobility is translated into adequate policies and included in national budgets, development plans and action through a whole-of-government and whole-of-society approach.

The new UN Cooperation Framework with the Philippines will reflect the UN's collective support to the government in accelerating the implementation of GCM objectives, the 2030 Agenda for Sustainable Development and the 25-year vision of the Filipino people AmBisyon Natin 2040.

Gonzales said UN Network on Migration would continue to offer coherent and UN system-wide support to strengthen the collective commitment, promote safe migration and address adverse drivers.

CCC IN THE NEWS

PHILIPPINE DAILY INQUIRER

[Carbon insetting: Capturing and storing GHG emissions to mitigate climate change](#)

A new report by the UN Environment Program (UNEP) emphasized the need for the world to reduce 45% of emissions within the next eight years in order to limit global warming to 1.5 degrees Celsius by 2030. Transformational change across industries, governments, and society as a whole is key to making this a reality.

However, rampant deforestation doesn't help this situation as trees that absorb carbon dioxide and regulate climate are being cut down. In the Philippines, data shows that over the last 100 years, around 10 million hectares of forests were lost due overexploitation, extensive agricultural and infrastructure expansion, and the growing impacts of climate change. As of 2020, the country's forest cover is at 7.226 million hectares or 24.2% of the total land area, far from the ideal percentage of forest cover for tropical countries which is 54%.

There is no pathway to 1.5°C without a near immediate halt to deforestation and significant restoration of forests and natural ecosystems.

Carbon offsetting vs. insetting

One of the primary drivers of deforestation and the loss and degradation of habitat and biodiversity is agriculture. As such, stakeholders linked to agricultural and food value chains are uniquely placed to generate change and take action towards reversing these trends in the landscapes where they produce and/or source from.

One thing that food and beverage companies can do is to initiate reforestation efforts e.g. tree planting and growing efforts within their own sourcing landscape.

Reforestation programs can be classified into two broad categories: offsetting and insetting. With carbon offsetting projects, companies plant trees in a location/s different from where their greenhouse gas (GHG) emissions originate and unrelated to their value chain to compensate for their climate impact.

On the other hand, companies with carbon insetting projects apply, for example, agroforestry principles and take a forest restoration approach by reforesting areas within

their own supply chains and immediate surroundings where their raw materials are grown and harvested to remove GHG from the atmosphere.

Lanao del Sur Reforestation Project

Fulfilling its role as Kasambuhay ng Kalikasan (partner of the planet), Nestlé has launched the Lanao del Sur Reforestation Project in partnership with One Tree Planted and EcoPlanet Bamboo as part of its carbon insetting efforts. This aims to plant and grow 2.5 million native bamboo seedlings and 1.2 million indigenous forest trees across 5,000 hectares in Lanao del Sur by 2024. The project aims to sequester an estimated 4.1 million tons of CO₂e over a 10-year period.

This reforestation effort supports Nestlé's goal to plant and grow 200 million trees by 2030. It also forms part of the company's plan to scale up actions in regenerative agriculture and deploy natural climate solutions to absorb greenhouse gases and contribute to achieving Nestlé's Net-Zero target by 2050.

"We are restoring the natural landscape from both the bamboo side as well as indigenous trees to help bring the forest back," said Sam Wilde, VP of Forestry EcoPlanet.

At the same time, Nestlé continues to help farmers plant coffee trees in Sultan Kudarat province also in Mindanao and train them in the basics of regenerative agriculture. These activities are part of the Nescafé Plan, a long-term program to assist smallholder coffee farmers in growing yields and incomes, and eventually become agripreneurs attaining a quality of life beyond subsistence.

Climate Change Commission Vice Chairperson and Executive Director Robert E.A. Borje said: "By accelerating and consolidating reforestation actions, Nestlé will contribute to the Philippines' sustainable development objectives through the protection and management of our environment and national resources."

"Two thirds of the world's emissions come from the very activity that gives us food – agriculture. Clearly, regenerative agriculture and reforestation are courses of action we must take to help achieve net zero GHG emissions," said Nestlé Philippines SVP and Corporate Affairs Head Jose Uy III.

- **END** -