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REUTERS

Rich world has three ways to win over global South
By Hugo Dixon

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By: Graham Readfearn

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Population growth is not good for people or planet
By Nandita Bajaj (INTER PRESS SERVICE)

ST. PAUL, Minnesota: India's population has just reached 1.4 billion people, surpassing China as the world's most populous nation four years earlier than projected. Spurring this growth is a traditional patriarchal culture in which women's identity is constrained by the social expectation that they bear children.

THE STRAITS TIMES

Carbon removal forecast to take centre stage at upcoming UN climate change conference
By: Lynda Hong

SINGAPORE – Even as the United Arab Emirates (UAE), host of the upcoming United Nations climate change negotiations in Dubai, has called for the phasing out

of carbon emissions while maintaining the production of fossil fuels, a long-time observer of such talks predicts that carbon sequestration will take centre stage in December at the event.

THE WAHINGTON POST

Vietnam is going all-in on a climate-change resistant coffee bean
By Rebecca Tan and Nhung Nguyen

BAO LOC, Vietnam — For decades, the world of coffee has had one star: the arabica bean. It is “complex” and “deliciously refined,” according to companies such as Starbucks that have refused to use any other bean. It has engendered obsession among Java aficionados. But climate change, as it tends to do, is shifting fortunes.

ASSOCIATED PRESS (AP)

NYC skyscrapers turning to carbon capture to lessen climate change
By: Cathy Bussewitz

NEW YORK (AP) — From the outside, the residential high-rise on Manhattan's Upper West Side looks pretty much like any other luxury building: A doorman greets visitors in a spacious lobby adorned with tapestry and marble.

Yet just below in the basement is an unusual set of equipment that no other building in New York City — indeed few in the world — can claim. In an effort to drastically reduce the 30-story building's emissions, the owners have installed a maze of twisting pipes and tanks that collect carbon dioxide from the massive, gas-fired boilers in the basement before it goes to the chimney and is released into the air.

The goal is to stop that climate-warming gas from entering the atmosphere. And there's a dire need for reducing emissions from skyscrapers like these in such a vertical city. Buildings are by far the largest source of greenhouse gas emissions here, roughly two-thirds, according to the city buildings department.
New York state's buildings also emit more air pollution than any other state's.

So building owners must make dramatic cuts starting next year or face escalating fines under a new city law. About 50,000 structures — more than half the buildings in the city, are subject to Local Law 97. Other cities such as Boston and Denver followed suit with similar rules.

As a result, property managers are scrambling to change how their buildings operate. Some are installing carbon capture systems, which strip out carbon dioxide, direct it into tanks and prepare it for sale to other companies to make carbonated beverages, soap or concrete.

They see it as a way to meet emissions goals without having to relocate residents for extensive renovations. In this case, the carbon dioxide is sold to a concrete manufacturer in Brooklyn, where it's turned into a mineral and permanently embedded in concrete.

"We think the problem is reducing emissions as quickly as possible," said Brian Asparro, chief operating officer of CarbonQuest, which built the system. "Time is not on our side, and this type of solution can be installed quickly, cost-effectively and without a major disruption."

Yet critics, many of them representing environmental groups, say building managers should be going much further: They argue that to achieve meaningful reductions in emissions, buildings should be significantly upgraded and switched to renewable-powered electricity instead of continuing to burn fossil fuels. They also express concerns about the safety of storing large amounts of carbon dioxide, an asphyxiant, in a densely populated community.

“Carbon capture doesn’t actually reduce emissions; it seeks to put them somewhere else,” said Anthony Rogers-Wright, director of environmental justice at New York Lawyers for the Public Interest. “The emissions still exist. And we should be clear that the only way to reduce emissions ... is to stop emitting.”
It’s still unclear whether carbon capture technology will even be recognized by New York City as a qualifying emissions reduction; the city has yet to decide. Asparro and others are trying to persuade city officials to accept it.

CAPTURING THE CULPRIT
In the basement of the Upper West Side apartment building, two hulking 500-horsepower boilers rumble, burning natural gas and releasing carbon dioxide. The boilers, which are expected to last another 10 or 20 years, produce roughly half the building’s emissions, Asparro said.

The other half of the emissions that, in the city’s view, the building is responsible for, are those generated at the power plants where the building gets its electricity. The carbon capture system, Asparro said, is trapping about 60% of the boilers’ emissions. All told then, including the electricity to power the system, it’s reducing the building’s emissions by roughly 23%.

“Boilers like this are installed everywhere, in schools and hospitals around the world,” Asparro said. “It’s a really big challenge that buildings are facing in order to reduce emissions.”

The carbon dioxide and other gases are diverted from the chimney and piped into a room where a few parking spaces have been repurposed to house the carbon capture system. The gases flow over a special material that separates out the carbon dioxide. Then it’s compressed and cooled to minus-10 degrees Fahrenheit (minus-23 Celsius), turning it into liquid that’s then stored in tanks. That process takes energy, and capturing carbon dioxide does increase the building’s electricity use, but overall the system is still reducing the building’s emissions.

More pipes lead to spigots outside the building, where a truck pulls up once or twice a week to load up with liquefied CO2. The truck carries it through city streets and across a bridge to Brooklyn, where it’s sold to a concrete manufacturer.

Carbon capture technology has existed on an industrial scale for decades, used by oil and gas companies and some manufacturing plants to capture climate-warming carbon dioxide and either sell it, or use it to wrestle more oil from underground.

But now a handful of green tech companies and building owners are trying for the first time to deploy this technology on a much smaller scale on residential buildings. New York City’s law requires buildings exceeding 25,000 square feet to reduce emissions. In Minnesota, Radisson Blu Mall of America, a hotel, has installed a system that captures carbon dioxide that’s eventually used to make soap.

Building owners that can afford to pay for carbon capture equipment do receive some federal tax breaks for installing the systems. There are other incentives available to help update buildings, according to NYC Accelerator, a program that helps homeowners and property managers find ways to reduce emissions.

To reduce energy use, the apartment building also has computerized motors, fans and pumps, LED lighting and battery storage, said Josh London, senior vice president at Glenwood Management Corp., which manages the building. The company plans to install carbon capture systems in five other buildings this year.

Without action, similar high-rise buildings could face fines of nearly $1 million annually starting in 2030, Asparro estimated.

Nearly 70% of New York City's large buildings have steam boilers that run on natural gas or oil, according to NYC Accelerator. Many have heating systems more than a half-century old, and often they're under-maintained, said Luke Surowiec, director of building decarbonization at ICF, a consulting firm which manages NYC Accelerator.

"Our buildings are very old and inefficient, and that's the reality," Surowiec said. "There are a ton of opportunities that haven't been realized."

MINERALIZING INTO CONCRETE

Over in Brooklyn, the floor rattles and shakes as yellow machines churn at Glenwood Mason Supply Company Inc., a concrete maker unrelated to Glenwood Management Corp. Grey blocks rattle down a conveyor line under a din of metal gears and motors. Somehow, birds have moved in and fly between towering piles of blocks.

It's into this clamor that a truck delivers the liquefied carbon dioxide collected at the Manhattan apartment building. Then, using equipment provided by a company called CarbonCure, the liquid carbon dioxide is compressed and turned into a solid.

As concrete ingredients churn in a structure resembling a pizza oven, the carbon dioxide, now essentially dry ice, flows in like a mist. The carbon dioxide reacts with calcium ions in cement, one of the ingredients of concrete. This forms calcium carbonate, which becomes embedded in the concrete.

Once carbon dioxide is in that mineral state, it's secure and it won't be released unless it's heated to about 900 degrees Celsius (1652 degrees Fahrenheit), said Claire Nelson, a geochemist who specializes in carbon capture at Columbia Climate School.

"So unless a volcano erupts on top of your concrete building, that carbon is going to be there forever," Nelson said.

One main ingredient of concrete is cement, which contributes about 7% of all greenhouse gas emissions worldwide, according to a study by PBL Netherlands Environmental Assessment Agency.

Adding mineralized carbon dioxide to concrete can reduce its carbon footprint, though not by much. On average, concrete producers using CarbonCure technology reduce their carbon footprint by just 5% to 6%, said Robert Niven, CEO of CarbonCure, which works with 700 concrete producers in 30 countries.

Connie Cincotta, owner of Glenwood Mason, said her company takes other measures as well, for example to reduce the amount of cement in its concrete mix, by adding post-industrial glass that would have gone to landfills.

“If there’s any way we can get cement out of the mix, that’s helpful,” she said.

The company’s concrete blocks with mineralized CO2 have been used in buildings owned by Amazon and a Manhattan charter school, among others.

QUESTIONS REMAIN

Many environmental groups remain skeptical of carbon capture and instead favor investing in a transition to renewable energy. They also fear that it could be unsafe to store carbon dioxide, which in extreme concentrations can lead to suffocation, in a residential dwelling.

After a carbon dioxide pipeline ruptured in Satartia, Mississippi, in 2020, 45 people sought medical attention at local hospitals, including people who had been caught in a vapor cloud while driving, according to a report from the Pipeline and Hazardous Materials Safety Administration. People exposed to high concentrations of carbon dioxide, the report said, may experience rapid breathing, confusion, elevated blood pressure and increased arrhythmias. Extreme concentrations of carbon dioxide can lead to death by asphyxiation.

There’s also a risk of leaks, he said, if a truck transporting carbon dioxide were to get into an accident.

Proponents of carbon capture technology respond that there are safeguards to prevent such scenarios. The carbon capture technology installed in the Manhattan apartment, Asparro said, was permitted by multiple city agencies.

“We have carbon dioxide everywhere in cities,” he added. “Hospitals, restaurants, breweries — all utilizing carbon dioxide. And it’s being done in a fairly safe and manageable way.”

Nelson, the Columbia geochemist, who also started a carbon capture company, contends that having natural gas stored in basements is more dangerous than storing carbon dioxide, and many people accept those risks posed by natural gas.

The biggest challenge, proponents say, is scaling this and other solutions fast enough to make a difference in climate change.

That’s why proponents say many solutions should be deployed at once.

Back in Manhattan, powering the apartment building entirely with renewable electricity isn’t possible yet because the local utility doesn’t have enough renewable energy to sell to all New York customers, London said.

And “with solar, you need a bigger footprint than what we have in a building like this,” he added.

London said he wants to buy power from wind farms once it becomes more widely available.

But “that’s going to take a long while, so I don’t think we have the luxury of sitting,” he said. “We can reduce our emissions while we wait for that.”

CHANNEL NEWS ASIA

Singapore to host Prince William's Earthshot Prize ceremony supporting climate solutions
By: Firdaus Hamzah

SINGAPORE: A global environmental prize founded by Britain's Prince William will hold its third annual awards ceremony in Singapore on Nov 7.

The Earthshot Prize, founded in 2020, is aimed at supporting innovative projects to tackle climate change and protect the planet.

Five winners will each be awarded £1 million (S$1.67 million) to help them scale their environmental solutions. The finalists will be announced later this year.

Announcing the destination of the 2023 awards on Monday (May 15), Prince William said: "The Earthshot Prize is all about showing the world that solutions to some of the biggest environmental challenges we face are out there.

"After two years of discovering impactful ideas and innovations, I am delighted that The Earthshot Prize is travelling to Singapore, where the ground-breaking solutions of our 2023 Finalists will be celebrated."

The ceremony will feature performances by "world-renowned musicians and artists", said organisers in a media release.

They added that for the first time, the awards ceremony will be accompanied by a series of events as part of Earthshot Week.

Global leaders, businesses and investors will travel to Singapore to explore opportunities with the winners and finalists.

"Southeast Asia is one of the regions of the world most affected by climate change, but in the face of significant environmental challenges, it is also a hub for innovators, entrepreneurs, community leaders and problem solvers who are committed to restoring our planet," organisers added.

PHILIPPINE DAILY INQUIRER

Travelers' dilemma: Sustainability or better spending

By: Cristina Eloisa Baclig

MANILA, Philippines—Amid rising global inflation and the impact of climate change, travelers are forced to choose between cutting costs and making sustainable travel choices, research by an online travel company found.

Based on survey responses from 33,228 respondents across 35 countries and territories across the globe, travel company Booking.com noted in its Sustainable Travel Report 2023 that 74 percent recognized the urgency to make sustainable choices and save the planet for future generations.

"At a time of general global uncertainty, with the turbulence of climate change and the rising cost of living, traveling more sustainably continues to be front of mind for travelers," the report said.

Survey results also showed that 80 percent confirmed that traveling sustainably is crucial to them.

Filipinos value sustainable travels

Out of 1,007 respondents from the Philippines, 97 percent said they place great importance on sustainable travel.

In an effort to make conscious choices during vacations, 60 percent of Filipino respondents said they planned their sightseeing "so that they could walk, bike, or take public transport."

"This shift in behavior highlights the urgent action travelers are taking as they strive to make more sustainable choices to save the planet for future generations," said the report.

In 2021, independent research and analysis by Economist Impact, which was commissioned by travel company Airbnb, showed that the majority of Filipinos want to travel in ways that could create more positive and empowering experiences for the communities they visit.

Another research published in 2022 found that most Filipino travelers are committed to sustainability and take concrete steps to preserve nature. Among the top priorities of Filipinos when it comes to traveling sustainably included opting for environmentally friendly modes of transportation to minimize carbon emissions.

Cost influence conscious choices

While people across the globe are recognizing the urgency to act now and travel more sustainably, changes in economic weather in the past 12 months have pushed people to be more conscious and choose between sustainability and spending.

Around 76 percent of the total survey respondents said they want to travel more sustainably over the coming 12 months. However, 76 percent also believe that the global energy crisis and the rising cost of living are impacting their spending plans.

“For these people, sustainability and travel combined can seem non-urgent when they are worried about bills and the energy crisis,” the research said.

At least 49 percent of respondents believe more sustainable travel options are too expensive, and 43 percent said they would be willing to pay more for travel options.

Almost half of the respondents are seeking discounts and economic incentives to opt for eco-friendly options. Around 43 percent also said they “would be encouraged to travel more sustainably with reward points for making more sustainable choices that they could use for free extra perks or discounts through online travel booking sites.”

Intent to actions

“Despite existing barriers and the tightening of purse strings, it’s clear there’s a huge appetite for solutions, with two-thirds (59%) more determined to make more sustainable choices now than when they traveled a year ago,” said the Booking.com report.

In the past year, people said they have been converting intent into action by taking small sustainable steps at home, such as:

-using reusable shopping bags — 68 percent
-recycling waste — 64 percent
-carrying their own reusable water bottle — 58 percent
-reducing their usage of single-use plastic — 56 percent
-taking public transport or bicycle over car — 39 percent
-favoring small, independent shops — 39 percent
-eating an exclusively plant-based or vegetarian diet — 13 percent

Some have also said they have taken sustainable steps while on vacation these past 12 months. These include:

-turning off the lights and appliances at accommodations when they weren’t there — 77 percent
-turning the air conditioning off at accommodations when they weren’t there — 67 percent
-reusing the same towel multiple times — 60 percent
-using their own reusable water bottle — 55 percent
-recycling their garbage when traveling — 45 percent
-opting out of having their room cleaned daily — 40 percent

“The responsible traveler is switching up responsible travel in 2023 – and their every small step counts,” the research noted.

MANILA STANDARD

Offshore mining firms back PBBM climate call

By: Rio N. Araja

A group of deep-sea offshore mining organizations on Sunday backed President Ferdinand Marcos Jr.'s call to all members of the Association of Southeast Asian Nations on the urgent issues on worldwide critical minerals supply and concerns on climate justice.

The Offshore Mining Chamber of the Philippines Inc., led by Dr. Michael Raymond Aragon, said: "We fully support our President's timely call to all ASEAN nations to start enhancing regional cooperation to boost the supply of strategic industrial metals and mineral value chain in the Asia Pacific region because the future of clean energy is anchored on the crucial supply of critical minerals for mankind to achieve the clean energy transition goal needed in our common fight versus global climate change."

During the 42nd Summit of the ASEAN in Indonesia, the President said "recognizing that the cleaner energy future is anchored on the supply of critical minerals… ASEAN should start enhancing regional cooperation toward boosting the region's strategic industrial metal and mineral value chain."

Aragon said there is an impending shortage of critical green minerals that the world badly needs to transition to clean energy.

"We saw the wisdom in the President's appeal on the crucial supply of critical minerals for the green energy transition versus the global climate emergency that now threatens human extinction," he said.

The OMCPI advocates for a cleaner and greener offshore mining as a practical alternative to the land-based mining to develop a new blue economy industry that is beyond just fishing.

REUTERS

Rich world has three ways to win over global South

By Hugo Dixon

TINOS, Greece, May 15 (Reuters Breakingviews) - The Group of Seven rich countries needs a stronger pitch to non-aligned nations. A strategy based on peace, prosperity and protecting the planet could work. It would certainly be more effective than delivering lectures on democracy.

Leaders of the world's rich democracies, who gather later this week in Hiroshima, already have a lot on their plate dealing with Russia's invasion of Ukraine, higher inflation, and the rising challenge from China. Nevertheless Japan, which is hosting the summit, has made "outreach to the global South" one of the gathering's two priorities along with "upholding the international order based on the rule of law". This makes sense, partly because the topics are linked.

Many developing countries in Asia, Africa and Latin America have largely stayed on the sidelines during the Ukraine war, even if they initially condemned Russia's invasion. They are unlikely to impose sanctions on China following an invasion of Taiwan, let alone join any military action to defend the island. But if more developing countries spoke up to condemn violations of international law, the People's Republic might be more reluctant to contemplate aggression against Taipei.

Another reason to care about developing countries is that their actions will help determine whether the planet fries. If nations like India switch to a greener model of growth, climate change may not reach catastrophic levels. If not, the whole world will suffer. Even rich democracies in temperate regions will feel the consequences, mainly in the form of mass migration unlike anything they have yet experienced.

Non-aligned nations are also important economically. Many have grown rapidly and still have huge potential to develop. Countries like Brazil are sources of vital raw materials that will be needed to sustain a global green industrial revolution. Others, such as Nigeria, are still needed to produce hydrocarbons. Meanwhile the likes of Vietnam can help the developed world diversify its supply chains to reduce its dependence on China, which currently dominates key products such as batteries and solar panels.

THREE P'S

The rich democracies' goal should not be to pull the global South into their camp in advance of a possible clash with China. Rather it should be to ensure that non-aligned countries remain genuinely neutral, instead of aligning themselves with Beijing. There are three areas where the developed world could have something to offer. Call them the "three P's": peace, prosperity, and the planet.

Start with peace. When it comes to opposing military aggression, the United States has limited credibility because of its calamitous invasion of Iraq. The United Kingdom is also compromised, both because of its involvement in Iraq and its intervention in Libya, for which France shares responsibility.

Even so, rich countries could do more to confront aggression via the United Nations. This is sometimes hard given that both Russia and China can veto critical resolutions at the Security Council. But the United States and its allies could do more to empower the U.N. General Assembly, where all countries have a vote – and none has a veto.

When it comes to promoting prosperity, rich democracies are similarly vulnerable to accusations of double standards. The United States is the main culprit. Both President Joe Biden and his predecessor Donald Trump took measures to protect U.S. jobs at the expense of foreign trade, most recently via the climate-focused Inflation Reduction Act.

If the G7 nations want good relations with developing countries, the most important thing they can do is promote trade. This should include following through on promises to locate production in friendlier nations such as India to avoid overdependence on China. Promoting imports risks a backlash from voters at home. That's why rich countries also need ambitious policies to help those who lose out from globalisation.

Finally, there's protecting the planet. Rich democracies already have a range of initiatives to help developing nations go green fast. They have signed so-called Just Energy Transition Partnerships with countries such as Indonesia; promised a $600 billion infrastructure splurge to rival China's $1 trillion Belt and Road Initiative; and advocated further reform of multilateral development banks so that they do more to tackle issues such as climate change.

The snag is that the G7 hasn't articulated a joined-up vision of what it is seeking to achieve on climate change. Nor has it provided much hard cash. Given the continued failure of rich countries, especially the United States, to deliver an old promise to mobilise $100 billion a year for climate change in developing countries, nations in the global South are understandably sceptical. Wealthier countries now need to find creative ways of providing finance, even as domestic budgets are squeezed.

DEMOCRACY VS. AUTOCRACY

Joe Biden says the contest between democracies and autocracies is the defining challenge of our time. This is simplistic. It's true that the United States' key rivals – China and Russia – are autocracies while its core allies are all democracies. But many non-aligned nations are either autocracies such as Saudi Arabia, or imperfect democracies such as India.

The G7 needs to work with all of these countries to advance its priorities. Focusing on democracy irritates many of them. As one developing world observer told former U.S. Treasury Secretary Lawrence Summers: "When we're engaged with the Chinese, we get an airport. And when we're engaged with you guys, we get a lecture."

It would be better for the United States and its core allies to say that the defining challenge of our era is whether countries invade one another or stick to the rule of law.

This is not to say that rich democracies should ignore human rights abuses by friendly nations. They can work more closely to promote peace, prosperity and the protection of the planet with countries that share their values. But that's more a statement of fact than a lecture.

THE GUARDIAN

Oceans have been absorbing the world's extra heat. But there's a huge payback
By: Graham Readfearn

By the end of March, the surface temperature of the world's oceans was above anything seen in the 40 years that satellites have been measuring it.

Records were "headed off the charts" and, as the heat refused to fade for more than a month, the Earth marched into "uncharted territory", scientists said.

The temperature at the ocean's surface – like on land – is being pushed higher by global heating but can jump around from one year to the next as weather systems come and go.

But in the 2km below the surface, that variability is almost nowhere to be seen. The rising heat down there has been on a relentless climb for decades, thanks to burning fossil fuels.

"The heat-holding capacity of the ocean is mammoth," says Dr Paul Durack, a research scientist specialising in ocean measurements and modelling at the US Department of Energy's Lawrence Livermore National Laboratory.

"The ocean captures more than 90% of the imbalance of energy that we're creating because of anthropogenic climate change."

The ocean is much less reflective than the land and soaks up more of the direct energy from sunlight.

But as greenhouse gases trap more of the energy that's reflected back – allowing less to escape to space – the ocean tries to balance itself with the heat in the atmosphere above.

A technical chart in a chapter of the latest UN climate assessment laid out the unfathomable heat gain. Between 1971 and 2018, the ocean had gained 396 zettajoules of heat.

How much heat is that? Scientists have calculated it is the equivalent energy of more than 25bn Hiroshima atomic bombs. And that heat gain is accelerating.

A study in January found the ocean gained 10 ZJ more in 2022 than the year before – enough heat to boil 700m kettles every second.

Compared with the ocean, according to a study in January the atmosphere has held on to about 2% of the extra heat caused by global heating since 2006.

To understand what's happening below the ocean surface, out of sight of satellites, scientists look at a vast network of thousands of thermometers on buoys, ships, underwater gliders and permanent moorings.

Durack says it wasn't until the early 2000s that a view of the changes in the ocean – long-predicted by climate scientists – started to become clear as more and more data became available.

But scientists have been able to get a longer view going back many more decades by using climate models.

"When we look at the climate models and compare them with the observations, we get consistent results across that simulated Earth and the real Earth. They're all showing consistent warming."

Dr Bernadette Sloyan researches changes in the ocean at Australia's CSIRO government science agency and spends her days analysing ocean data.

"This is where the ocean is like a flywheel that drives our climate and that's all because of the amount of energy it takes to heat it up," she says.

"We have this constant talking between the ocean and the atmosphere that's driving our weather and, annually, that's our climate."

Sloyan says the ocean has acted like the planet's air conditioner, relentlessly absorbing extra heat.

"But that air conditioner isn't just passive. It is not a free service. Adding that heat has come with ocean acidification, rising sea levels and changes in the frequency of extreme weather."

The effectsof the extra heat are almost everywhere. As the ocean heats up, it expands, pushing up sea levels around the globe. Just over one-third of the rise in global sea levels is down to thermal expansion.

More heat means more marine heatwaves that have devastated marine ecosystems, causing bleaching on coral reefs and killing underwater plants that act like forests, providing habitats for marine life and acting as nurseries for fisheries.

Ocean heating could also radically alter marine food webs, with warmer conditions favouring smaller species and algae at the expense of the larger species that humans tend to eat.

In the deep ocean, where species have adapted to stable temperatures, scientists have said warming there in the coming decades could devastate marine life.

Around the tropics, where oceans are warmest, scientists have found species are already migrating towards the poles to find cooler waters. But with no other species able to take their place, this leaves behind waters stripped of marine life.

In places like the Mediterranean, where land blocks a route to cooler waters, Prof David Schoeman says many species will run out of ocean.

“Fish can’t just climb out of the water so they may have to go deeper,” says Schoeman of the University of the Sunshine Coast in Australia, who helped coordinate the latest UN climate assessment’s work on the ocean.

But if species go deeper to survive the heat, this could present another problem. Schoeman says near the surface waters easily mix with the air above to provide enough oxygen for marine life. But as deeper waters warm they hold less oxygen, potentially cutting off another survival option for some species.

Schoeman says much of the heat that has pushed surface temperatures to new highs in recent weeks is likely coming from below.

“Every year about 134 million atomic bombs of heat is being trapped by the ocean. It has kept global temperatures down and kept the land livable but we have to realise that energy hasn’t gone.”

The latest UN climate report says the warming of the ocean is likely to continue “until at least 2300” even if greenhouse gas emissions are low because of the “slow circulation of the deep ocean”.

Prof Matthew England, an oceanographer and climate scientist at the University of New South Wales, is on a video call and shows an image of the globe taken over the Pacific, where almost no land is visible.

“Remember the world is 70% covered by ocean. It should have been called Ocean, not Earth,” he says.

England says that simple physics means the ocean “has this huge ability to absorb heat and then hold on to it”.

England holds his arms out wide to show the size of one cubic metre of air. To heat that air by 1C, he says it takes about 2,000 joules. But to warm a cubic metre of ocean needs about 4,200,000 joules.

“By absorbing all this heat, the ocean lulls people into a false sense of security that climate change is progressing slowly.

“But there is a huge payback. It’s overwhelming when you start to go through all the negative impacts of a warming ocean.

“There’s sea level rise, coastal inundation, increased floods and drought cycles, bleached corals, intensification of cyclones, ecological impacts, melting of ice at higher latitudes in the coastal margins – that gives us a double whammy on sea level rise.

“The oceans have stored the problem,” says England. “But it’s coming back to bite us.”

THE MANILA TIMES

Population growth is not good for people or planet

By Nandita Bajaj (INTER PRESS SERVICE)

ST. PAUL, Minnesota: India's population has just reached 1.4 billion people, surpassing China as the world's most populous nation four years earlier than projected. Spurring this growth is a traditional patriarchal culture in which women's identity is constrained by the social expectation that they bear children.

Across the globe, pronatalist forces undermine women's autonomy and self-determination. Pronatalism is an underlying driver of the global population growing to 8 billion and counting, with 80 million added each year.

The new UNFPA State of World Population Report is wrong to dismiss "population anxiety" as groundless and assert that "population sizes are neither good nor bad." Population growth is not good for people or the planet, and anxiety is not an unwarranted response to how it affects us.

Population growth deepens social and economic inequality and has negative impacts on unemployment, housing costs, inflation, infrastructure, resource scarcity, pollution and well-being. It even fuels resource conflicts and wars.

It's also one of the key variables determining overall consumption and pollution levels, which are jeopardizing planetary life support systems on which we and Earth's remaining biodiversity depend.

Population growth is a significant factor in climate change, according to the Intergovernmental Panel on Climate Change. Over the past three decades, it has canceled out most climate gains from renewables and efficiency.

Going forward, population growth will be concentrated in the developing world. Dismissing its environmental impacts betrays an assumption that low-income populations in the Global South will stay that way.

This is false as well as unjust. Across the globe, the middle class is the fastest-growing segment of the population, projected to grow another billion to reach 5 billion by 2030. This will bring better living standards for a billion of today's poor. But we must recognize that it will also bring more peril to an already overburdened planet.

'Overshoot'
Beyond its impacts on GHG emissions and the climate, population growth also drives broader "overshoot," meaning that human demands are exceeding Earth's regenerative capacity.

Currently, we consume 75 percent more than the Earth can provide sustainably, resulting in unprecedented biodiversity loss and an extinction crisis, dwindling freshwater supplies, ocean acidification, expanding desertification, and resource scarcity.

Much of this damage comes from our global food systems, which are directly tied to population growth, and which have already transformed at least 40 percent of the planet's ice-free land area. They are the primary threat to 86 percent of endangered species.

Much of agriculture's negative impact is due to the Green Revolution, which is often invoked to inspire confidence that human ingenuity can solve the problems associated with population growth.

But the Green Revolution has posed wicked problems of its own, including deforestation, damaging soil health and the nutritional content of food, and agrochemical pollution. In the Global South, where these problems are especially acute, it has failed to improve health and well-being.

Similarly, faith in green technology, including the unfounded belief that renewable energy will somehow decouple growth from environmental damage, ignores real-world negative impacts which disproportionately affect poor people and frontline communities.

Scaling up massive clean energy infrastructure without working to downsize demand wreaks environmental devastation. So does mining toxic rare earth metals, dirty and dangerous work which is done in slave-like conditions by people in the Global South.

The UNFPA report displays this kind of misplaced faith in technology and human ingenuity. Such faith is rooted in a bias toward endless economic growth, propagated by those who have most benefited from the current economic system and who are already wealthy. It ignores the ecological unraveling of continued human expansionism, and the massive toll it takes on human well-being.

'Climate refugees'
According to the IPCC, the climate crisis will lead to increased death and illness from extreme weather and heat waves, growing agricultural losses, destruction of small island states, debilitating drought, declining freshwater supplies, and escalating losses of marine and terrestrial biodiversity.

Over a billion people are expected to be climate refugees by 2050.

From climate change, violence and conflict to decreased economic opportunity, population growth's impacts are felt most acutely by women, whose status in developing countries is already low, and by children, including those yet to be born. Unicef calls the outlook for a billion children in climate-vulnerable countries "unimaginably dire."

In a time when no government climate plans are on track to limit warming to 1.5 degrees Celsius, and we are witnessing a human-driven mass extinction event, dismissing the profound impacts of population growth is shockingly irresponsible.

The UNFPA makes this mistake. It seeks to champion reproductive rights, yet dismisses the importance of population growth, which is driven by patriarchal pronatalist forces that pressure women into obsolete gender roles and abrogate their rights.

Failure to make this connection between rights and growth is the report's most disappointing aspect.

Population deceleration and human rights go together; we need to advocate both. They are both achievable by the same set of human rights-based policies: universal education, women's empowerment, children's rights, and free, state-of-the-art family planning for all.

Truly advancing the causes of human rights and ecological sustainability requires humanity to shrink our population and our economies. It's our only chance to achieve a high standard of living for all while staying within planetary boundaries.

THE STRAITS TIMES

Carbon removal forecast to take centre stage at upcoming UN climate change conference

By: Lynda Hong

SINGAPORE – Even as the United Arab Emirates (UAE), host of the upcoming United Nations climate change negotiations in Dubai, has called for the phasing out of carbon emissions while maintaining the production of fossil fuels, a long-time observer of such talks predicts that carbon sequestration will take centre stage in December at the event.

Carbon sequestration – which refers to the process of capturing and storing atmospheric carbon dioxide (CO2) – to help avert global warming will be the focus of COP28, said Professor Robert Stavins at the inaugural Albert Winsemius Lecture at the Nanyang Technological University (NTU) last Tuesday.

“It means that there would be renewed attention, I think, to carbon capture and storage, carbon capture and utilisation, also direct carbon removal from the atmosphere which in the UAE is extensive, as well as geoengineering like solar radiation management.

“Now if that happens, it would be controversial,” added Prof Stavins, a Harvard environmental economist, who in the last 15 years has participated in global climate summits.

There have been deep divisions among nations over how to combat global warming ahead of the COP28 talks.

Some wealthy Western governments and climate-afflicted island nations are rallying to phase out fossil fuels, while resource-rich countries like the UAE have campaigned to continue drilling and mining of fossil fuels that have induced climate change.

But technologies for carbon capture, utilisation and storage (CCUS), which tackle CO2 emissions from power generation and industrial processes that are powered by fossil fuels or biomass, have seen slow progress, noted the International Energy Agency (IEA).

Globally, there are now 35 commercial capture facilities in operation, with none in Singapore.

The combined annual capture capacity of almost 45 million tonnes of CO2 is a mere fraction of the 36.8 billion tonnes produced by the world in 2022.

Plans are in place to develop more CCUS projects, added the IEA.

Since January 2020, more than 10 projects have been announced in Indonesia, Malaysia and Thailand with a total capture capacity of around 15 million tonnes of CO2 annually by 2030.

In the cost-benefit analysis on sequestering carbon naturally by planting trees in forestation efforts, Prof Stavins told The Straits Times: “While biological sequestration of carbon could be more cost-effective than other forms of emission mitigation in many cases, arable land for food production would be sacrificed as trees are planted instead, and this could gradually tip the balance towards increased cost.”

This is as the Ukraine war, now in its second year, has continued to maintain global food prices at levels higher than average, even after retreating from their record highs in early 2022, said the International Monetary Fund in a March report.

Companies are also increasingly using carbon credits to offset their emissions, while a country can reach its own emissions reduction targets by funding carbon projects in another country.

But there have been instances where some forest-based carbon projects were criticised for claiming averted emissions when there was no real threat of deforestation.

Having authored the second, third and fifth assessment reports on the Intergovernmental Panel on Climate Change, Prof Stavins highlighted the problem of the quality of carbon credits at a dialogue held at NTU last Wednesday.

“I am extremely sceptical of credits from the forestry sector, because we don’t know that we’re getting anything additional from it, because the comparison is made with a hypothetical of what would have happened otherwise. And that’s an unobserved and unobservable hypothetical. So that’s a problem.”

He cited the example of the European Union being a major purchaser of credits, largely from China and Brazil.

“The EU was therefore getting out of reducing emissions as they otherwise would have, because they had a credit. But it’s not clear that emissions reductions really took place beyond what would have been in those countries,” he said. “In other words, as a result of the credit, you actually had an increase in emissions. So that was very problematic.”

Singapore is home to a World Bank-backed carbon credit data sharing platform called Climate Action Data Trust that can address the issue of double counting, and help scale up carbon markets, among other objectives.

THE WAHINGTON POST

Vietnam is going all-in on a climate-change resistant coffee bean

By Rebecca Tan and Nhung Nguyen

BAO LOC, Vietnam — For decades, the world of coffee has had one star: the arabica bean. It is “complex” and “deliciously refined,” according to companies such as Starbucks that have refused to use any other bean. It has engendered obsession among Java aficionados. But climate change, as it tends to do, is shifting fortunes.

The sophisticated arabica is hypersensitive to fluctuations in temperatures and faces dim prospects in a warming world. Once spurned as its “ugly stepsister,” the bulkier robusta plant — so named because it grows robustly in tough conditions — is mounting its revenge.

Vietnam is responsible for more than half of the global robusta supply, government data shows, and it plays an increasingly vital role in efforts to rescue coffee from the effects of climate change. The robusta farmed here, on the rolling hills of Vietnam’s central highlands, is more resilient and has higher yields than virtually anywhere else, scientists say, with some varieties producing two or three times more beans than varieties in other parts of the world.

[This is the environmental cost of the food we eat]

“Arabica is no longer enough to satisfy appetites,” Nguyen Nam Hai, chair of Vietnam’s Coffee and Cocoa Association, said one recent afternoon in a Ho Chi Minh City neighborhood crowded with trendy coffee shops. “And Vietnamese robusta, everyone knows, is number one in the world.”

Much of the pivot to robusta is by necessity. In 2021, a severe frost in Brazil damaged up to 200,000 hectares (494,000 acres) worth of predominantly arabica coffee crops, leaving behind scars that may take years to heal. Back-to-back hurricanes have battered arabica coffee fields in Honduras, while unpredictable changes in rainfall have devastated coffee farmers in Colombia.

“Climate change has made many issues, mostly for the arabica-producing countries,” said Vanúsia Nogueira, executive director of the International Coffee Organization, a London-based intergovernmental association of coffee-producing countries.

Last year, low output from Brazil, the world’s biggest producer, helped to drive Vietnamese coffee exports to a record $4 billion, more than 30 percent higher than the year before, according to Vietnamese officials. More than 93 percent of the coffee Vietnam produces is robusta.

The robusta plant isn't insulated from the effects of climate change — it's sensitive to drought, for example — but agronomists generally agree that it has evolved to be more tolerant of temperature fluctuations than arabica. Significant research is being poured into robusta, widely understudied until recently.

In Bao Loc, a quiet agricultural town two hours from the tourist city of Dalat, Vietnamese and European researchers are experimenting with ways to replicate the phenotype of native robusta varieties that have proved exceptionally resilient to pests and heat.

Communities are "preparing," said Toi Nguyen, a local farmer. "Because the future of coffee," he added, "is here."

Using new farming and processing techniques, Nguyen, 48, has produced some of the first robusta coffee accepted by international judges as high-quality. His beans, which he sells for three times the market price of regular robusta, deliver brews with a clean taste and none of the bitter, rubbery flavor that have typically relegated robusta to instant coffee, he said. He's found fans in Vietnam, France and Japan, and is part of a small but buzzy movement to remake the reputation of robusta.

"Vietnam will play a significant role not only in producing robusta but in educating the rest of the world on how to do it," said Sahra Nguyen, the Vietnamese American founder of Nguyen Coffee Supply, which has pushed retailers such as Whole Foods and Blue Bottle Coffee to begin embracing the bean. Farmers and roasters in Vietnam are "the most educated and the most innovative" when it comes to robusta, Nguyen said by phone from Brooklyn. They've refined methods of processing it with natural substances like honey and pioneered ways of fermenting it in oxygen-free conditions to release new flavors.

Producers elsewhere are increasingly interested in learning these techniques, including in Latin America, where countries that have long focused on arabica are beginning to test their ability to grow robusta, said Nogueira of the International Coffee Organization.

Arabica still has its faithful — even in Vietnam, specialty coffee shops largely serve it, and many are proud to say they serve only arabica — but "more now, what people are realizing is they will need another option, in addition to the arabica, for the future," said Nogueira, who is Brazilian.

[How to make better coffee, whether pour-over, cold brew or Keurig]

In Bao Loc, this effort has arrived at the stumpy feet of a native variety of robusta that locals call the "green dwarf."

Its technical name is “Truong Son 5” after the farmer who first debuted it at a local pageant for coffee trees. Thick and stocky, it earned its nickname, locals said, because of its stubborn resistance to environmental threats, from parasites to coffee leaf rust, a fungus that has devastated farms in Central America.

The Vietnamese government recently approved TS5 as a specialized variety, worthy of being studied and replicated. And last year, the European Union greenlighted a project with the commodities trader ECOM Agroindustrial to examine how to graft rootstock from TS5 and other hardy varieties onto weaker robusta plants and, potentially, onto other coffee species.

The goal, said lead researcher Thuan Sarzynski, is to create a kind of “super coffee” that withstands all manner of climate threats. Apart from robusta, the project is experimenting with other species of coffee, including liberica, which has deep roots that make it hardy against drought. Liberica accounts for less than 2 percent of global production but has long been grown in small quantities in this part of Vietnam. Many local farmers have tried on their own to graft robusta onto liberica, and one of the project’s aims, Sarzynski said, is to study that process to see if it can produce a drought-resistant, high-yield coffee of the future.

One afternoon under the blazing sun, Nguyen Trung Than bent over a row of TS5 trees, nearly all of a consistent height and size. “Look,” said Than, the plants’ caretaker, as he held up a dense cluster of coffee cherries just beginning to bud. Come harvesting season, he explained, they would each produce as much as 30 kilograms (66 pounds) of coffee cherries, or about twice as much as some other varieties.

Vietnam’s central highlands are cooler than the rest of the country, but the start of the summer meant that temperatures were still climbing past 85 degrees. Than wiped his brow.

How did the green dwarves fare under the heat?

“Well,” he said, smiling proudly, “they’re not scared.”

Researchers are confident there are other varieties of robusta in Vietnam with qualities worth studying. But to protect them, experts say, farmers need to stop overtaxing their land in pursuit of more production, a difficult ask in a part of the country that has traditionally lagged in development and poverty reduction.

Decades of intense fertilizer use and monoculture — the cultivation of a single crop to maximize its production — have degraded growing conditions in the central

highlands, said Bui Dac Hao, a Vietnamese program manager for IDH, a nonprofit focused on sustainable trade. Coffee distributors are pushing smallholder farmers to cut back on their use of fertilizer and grow other plants — a method called intercropping — to avoid exhausting their land.

In 2018, IDH launched a pilot program in Di Linh, a district bordering Bao Loc, that gave farmers incentives to plant avocado, durian and other fruit trees on their plantations. “It took us a long time to convince them,” Hao said, but by last year, the percentage of farmers engaging in intercropping had jumped from 7 to 62 percent.

[The summer drought’s hefty toll on American crops]

Organic farming isn’t just good for the land; it’s good for the bean, said Toi Nguyen, the Bao Loc farmer. For the past five years, Nguyen has been restoring an old, exhausted coffee farm to a more natural state, introducing native trees and letting weeds and vines of black pepper crowd over the trunks of the coffee plants. Farming this way makes stronger robusta and eventually, Nguyen said, tastier coffee.

At his warehouse, he opened a sack of the past season’s cherries, colored dark red because, unlike most robusta farmers, he only picks ripened cherries. He scooped a handful to his nose.

“Smells like candy,” he said, his eyes crinkling.

The youngest child of rice farmers, Nguyen grew up in poverty and, not too long ago, made his living selling corn by the roadside, he recalled. His entrance into specialty coffee has been unexpected even to him. But he’s just getting started, he said.

“I want to go deeper, higher into quality,” Nguyen said, “I want to find the limit.”

In a few days, he was set to travel to Portland, Ore., where he would show off his beans at the largest coffee event in North America. He was nervous about the long flight and about talking to people because he spoke almost no English. But he wasn’t nervous at all, he said, about the coffee.

He tapped on his cup, swirling with the final dregs of a fresh brew. It spoke for itself, he said.

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