

## EU's farmers are forcing policy makers to take action

BRUSSELS — European policy makers have scaled back rules to protect nature, drawn up limits on the import of tariff-free Ukrainian grains and scrapped new legislation limiting pesticide use as farmers' protests resonate with voters ahead of elections.

From Poland to Portugal, farmers have won remarkable concessions in response to waves of street action, reshaping the European Union's (EU) green politics months ahead of European Parliament elections.

Environmental activists and analysts say the policy backsliding illustrates the considerable political influence of farmers as mainstream parties seek to impede the far right and nationalist parties' hunt for votes in rural areas.

Farmers again blockaded streets surrounding the European Union headquarters in Brussels last week, spraying manure to protest low incomes, cheap food imports and burdensome red tape. As they did so, the bloc's farming ministers backed a new set of changes to weaken green rules linked to the disbursement of tens of billions of euros in farming subsidies.

When the last European elections were held in 2019, the Greens made strong gains and climate activist Greta Thunberg was voted *Time Magazine's* Person of the Year.

"The elections in 2024 will be elections in the year of angry farmers," said Franc Bogovic, a Slovenian lawmaker in the European Parliament and himself a farmer.

The scramble to placate farmers has impacted key pillars of EU policy, pressuring the bloc over its Green Deal and free trade accords. — **Reuters**

# How tech is tackling crop pollination

TWO WELLS, Australia/MERU NATIONAL PARK, Kenya — In towering glasshouses at a tomato farm in South Australia, everything from the temperature to the ultraviolet radiation levels is tightly controlled. But despite the farm's scientific approach, pollinating the crops can still be hit or miss.

The Perfection Fresh farm in Two Wells currently relies on workers who zip between the rows of vines on trolleys, tapping strings tied to the frames to gently shake the plants so pollen drops onto the stigmas to ensure pollination — or so they hope.

"It is largely a manual process, and this is a challenge," said Troy Topp, general manager at Perfection Two Wells. "Eight years into this job, I'm still trying to find the most effective way to pollinate."

With about 190 million tons produced annually, tomatoes are among the world's most valuable crops, and are increasingly grown in protected environments as farmers face more extreme weather linked to climate change, pests and land shortages.

But pollination is a big challenge in covered environments such as glasshouses, where bees are not as effective, and mechanical methods such as tapping, brushing by hand, or using blowers and vibrating devices are labor-intensive and unreliable, growers say.

So Perfection Fresh, one of Australia's largest tomato producers, is trying out a new technology — drones.

Turbulence from the drones' propellers helps to maximise the vibration of the flower's reproductive parts and disperse the pollen — leading to higher crop yields.

"Drones can solve challenges with labor availability, and be quicker and more consistent. Together with pollination, the drones can also be used for crop forecasting and disease monitoring," Mr. Topp told the Thomson Reuters Foundation.

### ALTERNATIVE TO NATURE?

As nature losses grow and many species decline globally, some researchers are investigating whether tech solutions like drones could help fill the gap, and protect global food systems.

Agriculture is among the top users of drones worldwide.

Their growing use in pollination — both in covered farming and in fields — is driven by declines in bee populations because of warmer temperatures, pesticide use, diminishing habitats and other human impacts.

Honeybees struggle in covered environments because they can become disorientated, and in Australia, which has no native bumblebees, the need for different types of pollinators is even more pressing, said Katja Hogendoorn, a research fellow at the University of Adelaide.

"We can do a lot with technology, and drones are a viable option for pollination," said Ms. Hogendoorn, who studies native bees and pollination.

"We can't solve for every risk with technology, but if drones can be used for mitigating risk in pollination, why not," she said, warning that widespread drone use might allow the global horticultural industry to resume insecticide use.

But technology is often a poor replacement for the diverse benefits of natural systems, others warn.

Honeybees in Kenya, for instance, provide not just pollination services but an additional income from honey harvesting for farmers who increasingly lose crops to more extreme weather.

And in a country where human settlements are encroaching on traditional wildlife habitats — pushing elephants to raid and destroy farms, bees are being harnessed as "living fences" to protect crops by keeping the animals at bay.

"Drones cannot perform all the duties that the bees are doing in the environment, they can't compete to that level," said Newton

Simiyu, a project manager at the Born Free Foundation, the conservation charity that first developed the beehive fences.

### FARMERS TURN TO DRONES, AI

The trend towards data-based precision agriculture — such as the use of drones or other tools based on artificial intelligence (AI) — is driven by demographic changes, technological advances and climate change impacts on productivity, the Food and Agriculture Organization (FAO) says.

For Siddharth Jadhav, an engineer who researched drones in Singapore, their use in aerodynamically controlled pollination — using the drone's downward draft to enable pollen dispersal — is a logical application.

They are particularly suited for self-pollinating crops such as strawberries and tomatoes, said Mr. Jadhav, who is founder and chief executive of Singapore-based tech firm Polybee, which uses off-the-shelf mini drones and its own software applications.

To be effective, the technology needs to be "robust and scalable, and easy enough for farm workers to use with minimal training," Siddharth Jadhav said.

After promising experiments in vertical farms in Singapore, Australia's Hort Innovation — a horticulture non-profit — funded a year-long trial of Polybee's drones to pollinate strawberries and tomatoes in covered farms.

The trial, which concluded last year, showed "drones' effectiveness in pollinating tomatoes in glasshouses, setting the stage for further exploration and investment," said Brett Fifield, Hort Innovation's CEO.

After the trial at Perfection Fresh, two of Polybee's drones — named Maverick and Goose after characters from the *Top Gun* film — now cover 10 rows of tomatoes. A single battery charge lasts about 40 minutes, enough to cover two rows.

The drones, which measure about 38 cm (15 inches) diagonally, hover over the plants at a fixed speed, covering one side of the row first, and the other side on the return journey.

Their downward draft loosens the pollen more efficiently and consistently than blowers or tapping, Mr. Topp said. Reducing workers' interactions with the plants can also minimize the risk of disease, he added.

"We're not the first to try and solve pollination in glasshouses, but other methods have failed because they're challenging to use, or consume too much labor and time, and are not precise," said Mr. Jadhav, adding that the drones have also been tested to pollinate strawberries in Britain.

"Drones are an elegant way to solve the problem — you just program them, and it's a big risk off the table for growers who have so many other risks to deal with," he added.

### NOT ACCESSIBLE TO ALL

More than a third of the world's food production depends on bees. Yet bees and other pollinators are declining worldwide in abundance and diversity, according to the FAO, with rising temperatures and other climate change impacts linked to the decline.

That has made alternative pollination methods all the more urgent.

Besides Polybee, others that are experimenting with drones and robots for pollination include California-based Dropcopter that dispenses pollen in almond, apple and cherry orchards, and Harvard University's robobees that mimic the action of bees.

At Perfection Fresh the aim is to move fully to drone pollination and to use the drones' high-resolution cameras to gather data for yield forecasting with AI.

"Solving pollination is not enough. Forecasting yield helps farmers get better prices, and

also ensure better food security because accurate data is crucial for developing more resilient varieties," Mr. Jadhav said.

Because of these benefits, the technology is also relevant in poorer countries, though cost is a barrier.

"The technology is not accessible to all, just to large companies and investors. Therein lies a threat," said Ms. Hogendoorn.

Meanwhile, from Azerbaijan to Venezuela, attempts are underway to encourage beekeeping to preserve local bees — whose benefits to farmers sometimes go far beyond pollination.

### BENEFITS OF BEES

In the rural heartlands of central Kenya, farmers living on the edge of the Meru National Park are using honeybees to combat a decades-old problem — marauding elephants that wreak havoc on their crops, sometimes even causing villagers' deaths and prompting retaliations.

From 2000 to 2020, 1,160 elephants were killed with causes being attributed to either self-defense, or retaliatory killings, data from the ministry of tourism, wildlife and heritage shows.

But over the past year, a more harmonious solution appears to have emerged: rows of beehives are strung together on wires, forming a barrier around fields. When an elephant tries to breach the wire, it triggers the hives, sending the bees buzzing into action and prompting the elephants to flee.

"Now, the elephants keep their distance, and our crops are thriving," he said at his farm, located 320 km (200 miles) from the capital, Nairobi.

Conservationists from the Born Free Foundation, which began the initiative in January last year, say although the project is still in its initial stages, the results have been promising. — **Reuters**

## World Bank recommends spending 5% of GDP on climate projects

LOWER MIDDLE-INCOME countries like the Philippines will need to invest the equivalent of 5% of their gross domestic product (GDP) to address the ongoing climate crisis, according to the World Bank.

Ayhan Kose, Deputy Chief Economist of the World Bank Group and Director of the Prospects Group, said that accelerated investment would help address key challenges in emerging markets and developing economies (EMDEs), including education, health, human development

needs, digitalization, infrastructure, and economy.

"In low-income countries, just for climate, we need more than 8% of their GDP every year. For lower middle-income group, more than 5% of GDP," Mr. Kose told a media briefing at the World Bank Office in Taguig City on Wednesday.

"So, on the one hand, we have these very large investment needs. On the other hand, what we have seen, especially over the past decade, is a sustained slowdown in investment growth."

Inaction on climate change could reduce Philippine GDP by 13.6% by 2040, the bank said in 2022.

"Prior to the global financial crisis, investment growth in the emerging market developing economies averaged around 11%. Now, that number went down to 5%," Mr. Kose said.

The Philippines, one of the fastest growing markets in Southeast Asia, seeks to attain upper middle-income status by next year. The bank's own timeline is between 2025 and 2026.

More investment would help bolster growth, create more jobs, and increase per capita income and living standards, according to Mr. Kose.

He added that investment acceleration could offset challenges associated with climate, human development, poverty, and inequality. To meet investment targets, he urged leaders in EMDEs to reform trade processes, undertake fiscal consolidation, and spend efficiently.

"It is critical for emerging markets and developing countries like Philippines to have comprehensive policy packages in place

to accelerate investment growth," according to Mr. Kose.

He also cited the need for better monetary policy and the deepening of the financial sector to improve the investment climate. Countries must also reduce the cost of trade through agreements that facilitate cross-border trade.

"When they were implemented together, collectively, they translate into a much higher likelihood of sparking an investment acceleration," Mr. Kose said.

Gonzalo Varela, lead economist and program leader of the

Equitable Growth, Finance and Institutions Practice Group for Brunei, Malaysia, the Philippines, and Thailand, said more efficient spending and tax collection would help ensure fiscal consolidation.

Tax rates in the Philippines remain elevated compared to the region, singling out Vietnam, which has lower rates but higher tax collection.

The Bureau of Internal Revenue (BIR) failed to meet its P2.64-trillion full-year target as it collected only about P2.53 trillion last year. — **Beatriz Marie D. Cruz**

## Legislators urged by think tank to reimpose 5% mining royalty

THE Philippine Institute for Development Studies (PIDS) urged legislators to reinstate the 5% royalty on gross output of mineral products, citing the need to collect more revenue from miners.

"As it stands, the revenue from mining activities accruing to local and national counterparts seems inadequate. Further lowering taxation is counter-intuitive from aspirations related to social and environmental justice," Sonny N. Domingo, PIDS senior research fellow, and officer-in-charge of its research information department, said in a position paper.

Under House Bill (HB) No. 8937, which was approved last year, large-scale metallic mining operations inside mineral reservations will pay the government 4% of their gross output, lower than the current 5%.

The Department of Finance (DoF) also proposed to reinstate the 5% royalty for large-scale metallic mining operations inside mineral reservations.

Mr. Domingo also cited the need for value-adding activities like domestic processing of mineral ores. "The country has been losing billions from sub-optimal valuation/pricing of exported raw mineral ores," PIDS said.

The think tank noted that minerals like scandium, manganese, chromium, and aluminum oxide are undervalued in raw form.

Mr. Domingo also proposed to impose a 7.5% royalty on the export of unprocessed nickel and raw mineral ores, similar to rates in Western Australia.

"The imposition of an export tax on unprocessed mineral ores may catalyze or incentivize investment in local processing and value-adding industries," he said.

Meanwhile, PIDS noted that current mining laws do not account for small-scale miners, which mostly operate "extra-legally." He cited how gold is continuously sold onto the black market in the absence of government intervention.

"Taxation for small-scale gold mining can be levied at the milling or processing plants where gold is extracted from mined ores if taxation at the point of sale is not feasible," Mr. Domingo said.

The Bangko Sentral ng Pilipinas must also look into the creation of more buying centers for mining products, he said. It may consider having "appropriate buyer accreditation mechanisms to counter the ease and accessibility offered by informal markets to miners."

HB 8937 must also recognize distinctions for artisanal, small-scale, and large-scale mining operations, Mr. Domingo said.

The proposed Mining Fiscal Regime is among the administration's priority bills going up for approval this year. — **Beatriz Marie D. Cruz**

## Trade deficit in 2023 revised upward to \$52.59 billion

THE record trade deficit posted in 2023 has been revised upward to \$52.59 billion from the \$52.42 billion initially reported, the Philippine Statistics Authority said.

The value of merchandise exports in 2023 was revised upward to \$73.62 billion from \$73.52 billion previously.

Imports were also revised upward to \$126.21 billion from \$125.95 billion initially reported.

Last year's export and import performance missed the 3% and 4% full-year growth target set by the Development Budget Coordination Committee.

"Demand for exports dipped as global trade faced a challenging year with trade partners experiencing slower economic growth due to a host of issues such as high inflation, elevated borrowing costs and other geopolitical developments," ING Bank N.V. Manila Senior Economist Nicholas Antonio T. Mapa said in an e-mail.

Mr. Mapa also added that in the chip industry, lower value-added products have yet to benefit from the high value-added chip AI boom.

"We saw import slowdowns almost across the board with only consumer imports able to grow,

mirroring the strong domestic growth fueled by consumption. Energy imports were as expected as the dollar price of imports fell, but what was worrisome was the decline in both capital goods and raw materials, showing the likely negatively impacted investment outlays hindered by the current environment of elevated borrowing costs," Mr. Mapa added.

"We could see a potential flat year for trade with China possibly rebounding to offset slower demand from other trading partners in Europe and the US. Meanwhile, we will be keeping an eye on the US elections given its potential repercussions on global trade," Mr. Mapa noted.

The top commodity export was electronics products, which accounted for more than half of total exports, though declining 9.2% to \$41.90 billion last year.

The top import commodity was also electronics products, which declined 18.7% to \$26.64 billion in 2023.

The US was the top export destination last year, accounting for 15.7% of the total or \$11.54 billion. Exports to China accounted for a 14.8%, followed by Japan with 14.2%. — **Lourdes O. Pilar**

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