

Global imperative for early warning, early action system

ALEXANDER MÜLLER AND GULEID ARTAN

Extreme events borne of the climate crisis have risen at an alarmingly pace in recent times. Drought and heat stress afflict most continents, floods are submerging large parts of South Sudan and Pakistan and, in the past three years, desert locusts have ravaged Eastern Africa.

At just 1.2°C – the current rate of global warming – we are already witnessing the destruction of climate change. Never before has the need for early warning-early action systems been so pressing.

A recent analysis of the scientific linkages between climate change and pest and disease outbreaks by TMG Think Tank for Sustainability (TMG) and Igad's Climate Prediction and Applications Centre (ICPAC) shows that extreme weather events produce cascading effects, including changing the dynamics of pest populations and expansion.

For instance, abnormal cyclonic activity in arid areas can spur destructive pest outbreaks such as desert locusts. Aphids show increasing potential for migration and dispersal owing to winds and warmer winters, while heatwaves have fuelled wildfires and the decimation of food crops.

Ultimately, these extreme events hit the Global South the hardest, and threaten the food security of millions of people. Yet, today we are rich in new technologies that can predict most natural hazards,

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which go hand-in-hand with the design and operation of modern early warning systems. Artificial intelligence (AI) tools can improve our predictive capabilities enormously.

By utilising data from satellites and monitoring the planet's edaphology (especially soil moisture), scientists can look far into the future.

Take the example of droughts, the most destructive natural disaster, since they can endure for years – the Horn of Africa is about to experience its fifth consecutive failed rain season. Many variables govern drought occurrence and duration, including the interfaces between the atmosphere, ocean circulation, land, and their interactions.

These dynamics are too intricate to be captured by traditional computational models. But, with Big Data from satellite imagery, algorithms can untangle this complexity and generate robust predictions of drought, up to 12 months ahead.

Research by TMG and ICPAC also reveals that AI can excel in the prediction of desert locust outbreaks – perhaps the gravest of all transboundary pest threats. Scientists use AI to analyse edaphic variables such as soil texture and moisture (again, measured through satellites) and predict locust breeding grounds up to 70 days in advance with 90 percent probability.

In the absence of effective early warning-early action systems, the world will be increasingly confronted with catastrophes. Clearly, the benefits of early warning systems are manifold.

But, for the systems to succeed, they will need to be cast within a framework of an adaptive and responsive governance model. Climate emergency transcends borders and requires intergovernmental co-ordination and collaboration. Only by working together can we adapt to this crisis.

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Why development banks should reform their lending practices

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In the last week of September, emerging market (EM) bond fund outflows hit \$4.2 billion, according to JP Morgan, bringing this year's total to a record \$70 billion. The exodus, set off by a rising dollar, is heaping pressure on low-income countries.

The greenback's rise has been fuelled by interest-rate hikes by the Federal Reserve. Since March, the Fed has raised rates by three percentage points, prompting global investors to move their funds into US financial assets and away from (riskier) EM investments. While economists continue to wrangle over their US growth forecasts, this "flight to quality" has sent financial shockwaves across the developing world, already straining under elevated costs for food and fuel – typically priced in dollars. Attempts by EM policy makers to stem the dollar's rise have failed.

Central banks around the world have drained their dollar reserves at the fastest rate since 2008. To stem currency depreciation, they have also raised interest rates aggressively. In Argentina, for instance, policy makers raised rates to 75 percent last month. To little avail.

The MSCI Emerging Market Currency Index, which measures the total return of 25 emerging market currencies against the dollar, is down nearly 9 percent from January 1. The Egyptian pound has depreciated by 20 percent over the same period, according to Bloomberg data. In Ghana, the cedi has fallen by 41 percent.

On top of higher import costs, a plunging currency makes the servicing of dollar-denominated debt more expensive. This concern may seem abstract to people in advanced economies. In developing nations, however, the effects are painfully real.

As the dollar appreciates relative to other currencies, more domestic cur-

rency (in the form of tax revenues) has to be generated to service existing dollar debts. For low-income governments, budget cuts have to be implemented in the hope of avoiding sovereign default.

Currency depreciations have the power to strongarm authorities into reducing health and education spending, just to stay current on their debts. This leaves officials with a grim choice: either risk unleashing a full-blown debt crisis, or confiscate essential public services.

Given the painful costs of insolvency, governments tend to prioritise austerity over bankruptcy. Together with the oft-publicised effects of lost access to foreign investment, subdued growth and high unemployment, sovereign default also imposes severe social tolls.

Admittedly, more developed emerging markets like Brazil and India can issue bonds in their own currency to limit budget cutbacks. In most of the world's poor countries, however, financial markets are too shallow to support domestic lending. With no recourse to borrow from private creditors, public bodies like multilateral development banks usually step in to fill the gap. Indeed, almost 90 percent of low-income countries' funding takes the form of concessional, or non-commercial, loans from official lenders.

Even accounting for these favourable terms, financial pressures are beginning to build outside of well-known hot spots like Lebanon, Sri Lanka and Pakistan.

Given the exogenous trigger for capital outflows from developing countries this year, multilateral lenders need to be more innovative. Where possible, they should use their robust credit ratings to assume greater risk by lending to poor countries in domestic currencies.

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LAST WORD

Ai-Da Robot in the House

Ai-Da Robot is set to answer questions at the House of Lords during an inquiry into tech and creativity. It's a "real moment in history," creator Aidan Meller tells Sky News. Ai-Da is the world's first artist robot that has made headlines for her incredible paintings and sculptures — not least a portrait of the Queen to celebrate the Platinum Jubilee earlier in 2022. The robot was devised by Mr Meller, a specialist in modern and contemporary art, before being built in Cornwall by humanoid entertainment robot manufacturers Engineered Arts, and programmed internationally. Her capabilities were developed by PhD students and professors at the universities of Oxford and Birmingham. Using cameras in her eyes and unique algorithms, she can interpret what she sees.

Brutalised by gang of turkeys

In the Canadian province of British Columbia turkeys attacked a man and left him in a sorry state. By the time the authorities arrived at the scene, the victim had already received medical attention for his injuries, which included two broken hips, a broken finger and multiple lacerations. The man was found to have been attacked by a gang of turkeys who

were accompanied by a rooster. In a twist that many may have not been expecting, the birds in question are said to have been scheduled to receive the "death penalty for their crimes," according to Sergeant Barry Kennedy of the Royal Canadian Mounted Police (RCMP). It seems like species is not an issue when it comes to justice for the RCMP.