

This Earth Day, let's celebrate the diversity in our food

The Ugandan government is fighting an outbreak of African armyworm, which can wipe out cereal crops. Uganda is a leading producer of maize and exports a significant amount of its annual output to countries including South Sudan, Kenya and the Democratic Republic of Congo.

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As you may have noticed from the influx of corporate environmental campaigns in your emails and social media feeds, 22 April is Earth Day. But rather than reiterating the need to preserve our planet's wildlife and ecosystems, we want to highlight the importance of protecting agricultural biodiversity – for our health and the planet's.

A homogeneous system

Some estimate that the number of edible plants on Earth could be as high as 200,000, about 7,000 of which have been cultivated and collected by humans over thousands of years. Yet today, we only consume 150 to 200 species, and over 60% of our calories come from just four crops: maize, wheat, rice and

potatoes.

Alongside limitations to the types of plants we eat, we have also lost a great deal of their genetic diversity. Just look at the example of maize. By the early 20th century, communities had thousands of local varieties that were adapted to their specific environmental conditions. This changed when scientists started to breed genetically uniform varieties to maximise yields in the 1920s. Today, 99% of maize grown in the US stems from hybrid seeds.

In total, the Food and Agriculture Organization estimates that up to 75% of plant genetic diversity in farming has vanished in the last century as a result of political, technological and economic factors, such as the expansion of industrial agriculture and the globalisation of food markets.

Lack of variety makes vulnerable

Unfortunately, putting all eggs in one genetic basket makes the whole system vulnerable to external threats. The banana industry, for example, almost collapsed around the 1950s when a fungus dubbed Panama 1 spread across farms and wiped out the main variety grown at the time. Our current favourite banana, the Cavendish, faces a similar threat.

Climate change is projected to put further pressure on supply chains. With each degree of warming, the global output of maize, wheat and rice could decrease by 10-25%. The high geographic concentration of agricultural activities – 60% of the world's production takes place in just five countries – isn't helpful either and increases the risk of disruptions when geopolitical conflicts occur.

What can be done?

Experts say that going back to growing many crop varieties would make the system more resilient and ensure we have enough food to feed a growing population. Agricultural biodiversity means always having some plants that are more resistant than others to threats such as drought or new pathogens, protecting the incomes of farmers and the agriculture sector as a whole.

Moving away from monocultures and the global homogenisation of diets towards more diverse, sustainable and local food systems would also help prevent soil degradation and boost the numbers of wild species while preserving cultural diversity and improving human health.

Whether it is buying seasonal heritage fruit and vegetables from local farms or growing some old varieties in our own gardens, we can all help to make our food systems a bit more diverse again.

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