I went to Wuhan to investigate the origins of Covid. Here's what we can learn from Huanan market

We need to not only to tackle diseases before they spread but also to address the underlying conditions that produce them

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Even when it’s shuttered, as it was when I visited it in late January, the Huanan Seafood Market in Wuhan is an impressive microcosm of central China’s incredibly diverse food system.

As part of the WHO team of 10 scientists chosen for their range of expertise, I was in Wuhan to investigate one of the most pressing scientific mysteries of our time: the origin of the Covid-19 virus.

On visiting the market, it was clear this is a place where all forms of life collide. We learned that before the pandemic, 10,000 people a day would visit the 700 stalls of the crowded marketplace. Most of the food bought and sold at the market originated in China, but other food came from further afield, in Southeast Asia or even Chile, Iceland and Denmark.

While we have yet to pinpoint the precise origin of Covid-19 and the possibility of a lab leak is back in the spotlight, our study shed new light on what to do next, and the need to deepen our understanding of complex interactions between humans and the natural world.

For all the scrutiny falling again on the Wuhan Institute of Virology, it is settings like the Huanan Seafood Market that give us an idea about how health and food systems intersect. This offers critical insights ahead of the landmark UN Food Systems Summit this year, a global gathering to re-affirm and deepen the world's commitment to achieve the Sustainable Development Goals (SDGs) by 2030.

At the heart of these lessons is the need to unite two approaches to managing complex man-made systems.

The first, known as the One Health approach, can help us unravel the convoluted web of interactions between people, wild and domestic animals, agriculture and the environment. The second, known as the Food Systems approach, offers a way of thinking about the food system in its totality, taking into account all its elements and their interrelationships.

Together, these two approaches can help us not only understand what is happening with the current pandemic, but also how to prevent future outbreaks.

In the first instance, a One Health approach to food systems can help ensure the world is better prepared for future health emergencies.

For example, while building up sustainable agricultural systems, governments must take pre-emptive action to protect both people and food supplies by establishing smart, easy-to-implement surveillance mechanisms for early disease detection in livestock.
Spillover: the origins of Covid-19 and why the next pandemic may already have started

Forget patient zero. Pathogens with pandemic potential are constantly jumping from animals to humans, say experts.

Zoonotic spillover events, like the one which sparked the Sars-Cov-2 pandemic, are happening all the time but are seldom noticed. Read more

A key component to successful early detection is the training and education of those on the frontline of animal-source food systems, including farmers, livestock keepers and veterinarians.

But such initiatives will flounder unless they come with the means to actually do the work. They must be accompanied by quick, easy and non-punitive ways of reporting on potential disease outbreaks, otherwise, all the training in the world will not lead to adequate surveillance.

Second, governments and food and health authorities must have plans in place to respond to an animal disease outbreak once one is detected. Diseases do not need passports, so it is imperative that plans and agreements between countries are in place before pandemics strike. Health and food safety authorities have to engage in back-tracing and testing of wild animal farms based on supply chain analysis, not only within but among countries.

Finally, countries worldwide must continue to invest in new research and capacity development activities to allow authorities to respond effectively to existing and emerging threats. The great myth of the vaccine roll-out is that the vaccines were developed in months. In fact, much of the work to produce the vaccines was built upon more than 10 years of primary research on coronaviruses, many of which were first identified in animals. Without investments in this primary research, we would still be waiting for the vaccine.

When scientists were first grappling with the potential of a new pandemic in the aftermath of the MERS scare of 2012, a World Bank study estimated that each dollar invested in One Health approaches could generate five dollars’ worth of benefits, and that a global investment of US$25 billion over 10 years could generate benefits worth at least US$125 billion.

In retrospect, these turned out to be wild underestimates. By now, the huge cost implications of addressing and stopping pandemics are clear: the total economic cost of Covid-19 could reach $16 trillion,
according to one study, while the human cost – at three million lives and counting – is simply incalculable.

So as world leaders prepare to gather at the UN Food Systems Summit in September to launch bold new actions that deliver progress on all 17 Sustainable Development Goals, One Health interventions should be top of the agenda.

To improve our agricultural systems, we need new technologies and fairer access to markets, but also better surveillance tools, more international cooperation, and a much better understanding of the risks posed by our global agricultural system.

The promise of the One Health approach is not only to tackle diseases before they spread but also to address the underlying conditions that produce them. The promise of the Food System approach is that by addressing the full complexity of food systems, we can end hunger and provide good nutrition for all.

There are many lessons to draw from Wuhan, but for me, wandering the empty stalls at the Huanan market, one was especially clear: it is time to bring these two approaches under one roof, for the good of people, animals and the planet.

Hung Nguyen-Viet, co-leader of the Animal and Human Health Program at the International Livestock Research Institute (ILRI), and a member of the WHO expert mission to Wuhan

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