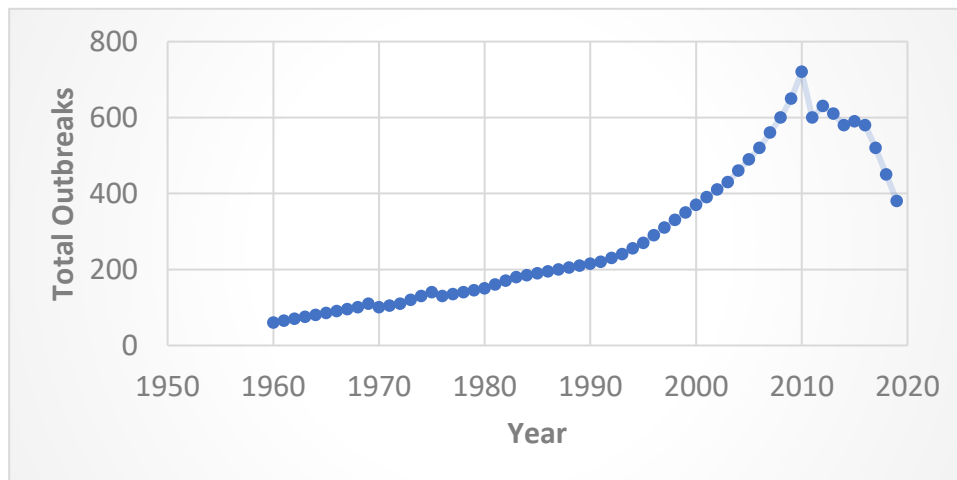


## The Problem

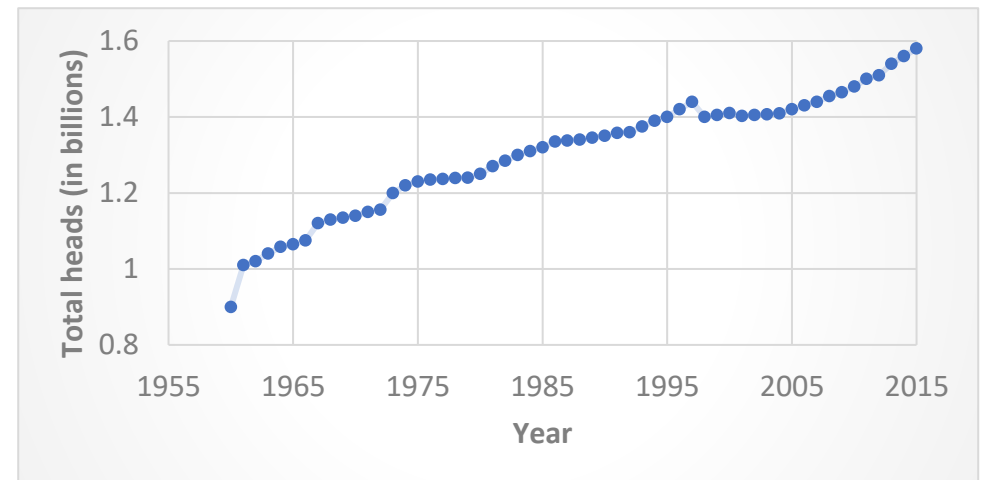
Livestock farming has expanded rapidly over recent decades, reshaping landscapes and ecosystems worldwide. Over the same period, human infectious disease outbreaks have increased. This raises a difficult but important question: could the way we produce food be contributing, indirectly, to risks to human health? A 2020 study sought to provide some context to this.<sup>1</sup>

## The Evidence

Using multi-country data and time-series analyses, the study examined the relationships between human infectious disease outbreaks, wildlife diversity, threatened species, and livestock numbers. Flexible statistical models were used to allow for non-linear relationships and to account for geographic clustering between neighbouring countries.



Number of **outbreaks of human infectious diseases from 1960 to 2019**. Approximate values digitised from Morand et al. 2020, Figure 3A (GIDEON data); outbreak counts are influenced by surveillance and reporting practices and should be interpreted with caution.



Number of **heads of cattle from 1960 to 2016**. Approximate values digitised from Morand et al. 2020, Figure 3C, (FAOSTAT data). Shown for illustrative purposes to highlight long-term trends.

## What the study found

Across countries, higher numbers of threatened wildlife species and larger cattle populations were associated with more recorded human infectious disease outbreaks. Over time, **increases in cattle numbers** were strongly associated with **rising biodiversity loss and outbreak counts**. The peak and subsequent decline in outbreaks may reflect changes in surveillance and reporting. These findings do not suggest that wildlife causes disease but instead point to **shared upstream pressures**: land-use change, habitat loss, and intensified animal farming that bring humans, livestock, and wildlife into closer contact. The focus here is on livestock-to-human transmission, with wildlife included only as an indicator of broader ecological disruption.

## Caveats and limitations

The authors note that disease surveillance varies widely between countries, and reporting bias cannot be excluded. Many factors influence outbreak risk, including healthcare infrastructure, population density, and climate. The results should therefore be interpreted as associations, not proof of causation.

## Author's Comments

This study adds to a growing body of evidence linking intensive animal agriculture, environmental degradation, and emerging infectious diseases. Reducing reliance on animal farming is often framed as an environmental or ethical choice. Increasingly, it may also be viewed as a preventative health measure. Dietary shifts that reduce pressure on ecosystems could play a small but meaningful role in lowering future infectious disease risk.

## References

1. Morand S. Emerging diseases, livestock expansion and biodiversity loss are positively related at global scale. Biol Conserv. 2020 Aug;248:108707. doi: 10.1016/j.biocon.2020.108707. Epub 2020 Jul 22. PMID: 32834060; PMCID: PMC7374155.