



The evolution of One Health research

Background

One Health (OH) has been increasingly recognized as an integrated, unifying approach for optimising the health of people, animals, plants, and ecosystems. To guide the design and coordination of global, regional, and national OH initiatives, the UN Quadripartite for One Health has developed the One Health Joint Plan of Action (2022–2026) (OH JPA), covering six priority areas or action tracks (ATs).

However, it was not clear whether OH research had correspondingly evolved from the traditional focus on zoonoses to encompass other areas within today's broader definition of One Health. Understanding the global trends in research and how these align with the JPA will help funders and policymakers to better advocate for and support OH implementation.

Key points

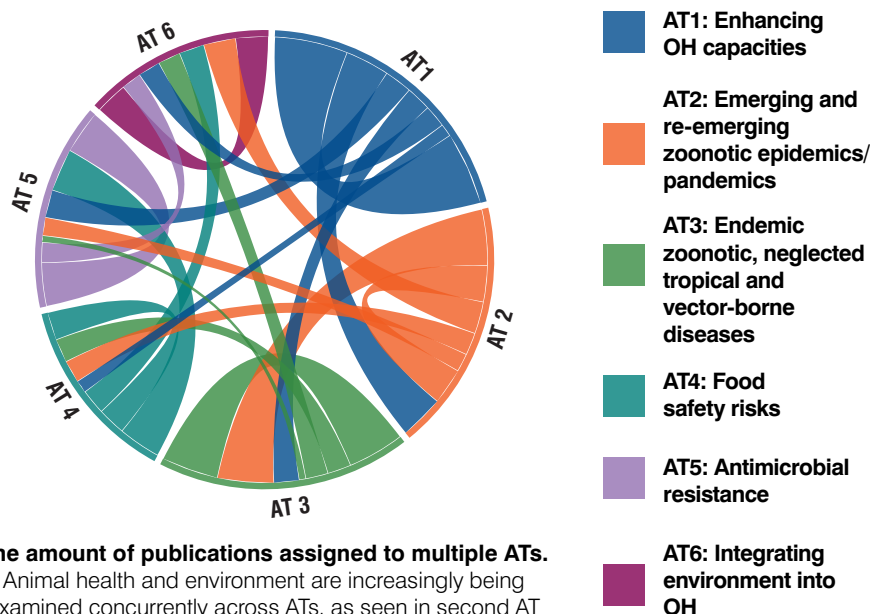
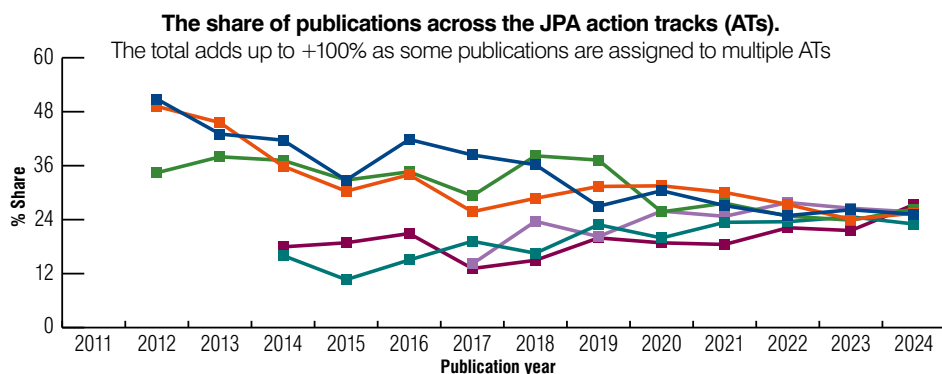
From an analysis of research literature, the study finds:

- The volume of research labelled 'One Health' increased globally over the past decade, exceeding 200 for the first time in 2017, growing exponentially to 1300+ in 2023. This trend may be due to efforts to mitigate disease outbreaks such as COVID-19, Zika, and Ebola, and the increased labelling of research as 'One Health' as the term rose to prominence during COVID-19.
- The share of publications across the JPA ATs has shifted from being largely focused on ATs 1–3 to more balanced proportions (each AT covered in 20–30% of publications).
 - While AT 6 has lagged behind for most of this period, most recent data suggests that this may have caught up or even surpassed that of other ATs, indicating the increasing importance of integrating the environment in OH research. However, more years of observation would be needed to confirm this shift in trend.
- Animal health and environment are increasingly being examined concurrently across ATs.
- Despite the high impact of pesticides and mycotoxins on food safety and trade; and the impact of biodiversity and land-use change on ecosystem health and zoonotic outbreaks, these topics have had 10- to 100-fold less OH research output compared to zoonoses or antimicrobial resistance.

This evidence brief is based on a bibliometric analysis of 6168 publications from 2010 to 2024, guided by the Joint Plan of Action (JPA), where One Health appeared in the title or abstract. Topic modelling was used to map publications against the six JPA action tracks. This brief covers trends in One Health research topics, while a second brief from the same study covers One Health research collaborations.

This evidence brief contributes to a One Health research roadmap, produced by the One Health Hub with support from UK International Development.

- This may be partly due to researchers identifying their approaches under other labels such as Planetary or Eco Health (e.g., of the 106,295 publications on pesticides identified, 81 are labelled One Health, while 1015 are labelled Planetary/EcoHealth)
- Recognition of mycotoxins and pesticide risks as OH issues could be further hampered by JPA AT 4 (food safety) being framed entirely around foodborne diseases, while AT6 mentions plants but does not explicitly flag plant health issues such as mycotoxins and pesticide risks, which also impact human and animal health.
- Genetics research was split largely across ATs 4 and 5, reflecting the link between antimicrobial resistance and food safety.



The amount of publications assigned to multiple ATs.
Animal health and environment are increasingly being examined concurrently across ATs, as seen in second AT allocations showing relatively even distribution. The width of each band between two ATs reflects the relative number of publications covering both tracks.

Recommendations

► **Researchers:** Consider designing health studies using a OH approach to strengthen the evidence on the link between human and animal health, and the environment and agriculture. This would narrow the OH research gaps on pesticides, mycotoxins, biodiversity and land-use change, which currently are not often labelled OH.

► **Funders:** Dedicate resources towards OH research on integrating the environment, covering topics such as climate, biodiversity, and land-use change. Similarly, consider including research on the health effects of mycotoxins and pesticides within OH. Heightened attention to such topics would send a positive signal about the importance of OH to the research community.

► **Policymakers:** Align terminologies, tools, frameworks, and governance structures to reflect the broadening scope of OH. This will provide high-level guidance to researchers and funders on this broader scope, helping them to design their studies and programmes to incorporate critical issues that may have been under-represented as OH.

Conclusion

One Health research has been growing exponentially while broadening scope over the last decade. Environment is increasingly being integrated within OH research, but certain topics such as mycotoxins, pesticides, and land-use change would also benefit from a OH approach. Addressing these gaps would aid the effectiveness of OH implementation. Researchers, funders, and policymakers will all have a role to play in achieving this.

Reference: Szomszor, M. *et al.* A bibliometric analysis of One Health research, guided by the Joint Plan of Action, 2010–2024. CABI One Health. 4:1, 0032 (2025). <https://doi.org/10.1079/cabionehealth.2025.0032>.

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