Food and Agriculture Organization of the United Nations

World Health Organization

World Organisation for Animal Health

FINANCIAL AND ECONOMIC RETURNS TO INVESTING IN ONE HEALTH
EVIDENCE AND FUTURE DIRECTIONS

FAO INVESTMENT CENTRE

INVESTMENT BRIEF

By demonstrating its cross-sectoral benefits and economic value, this brief highlights the case for investing in One Health. It also highlights the institutional and financing mechanisms needed to scale sustainable, cost-effective interventions, from the community and national levels to the global level.

One Health is an integrated approach that aims to sustainably balance and optimize the health of people, animals, plants and ecosystems. It promotes coordinated actions across sectors, disciplines and communities to foster well-being and tackle health and environmental threats, while addressing the collective need for clean water, energy and air, safe and nutritious food, climate change action and sustainable development. While investments often target sectoral outcomes (e.g. in human or animal health, separately), investing in One Health focuses on maximizing co-benefits across human, animal, plant and environmental health and minimizing unintended, negative consequences. Central to this definition is taking One Health from theory to practice, as highlighted by the 4Cs: communication, coordination, collaboration and capacity building (One Health High Level Expert Panel, 2022).

This brief is intended for decision makers within government ministries and agencies, One Health practitioners, and funding and financial partners to discuss the benefits of integrating a One Health approach into health-related activities. It presents the rationale for investing in the One Health approach, highlights barriers and opportunities to mobilize greater investment, reviews current evidence and knowledge gaps on financial and economic returns, and summarizes methodological considerations. The analysis supports the rationale underpinning the One Health Joint Plan of Action (OH JPA) (FAO, UNEP, WHO and WOAH, 2022), which provides a blueprint for scaling investments.

With the technical support of:

cirad
AGRICULTURAL RESEARCH FOR DEVELOPMENT

The case for investing in One Health

One Health covers a wide range of initiatives to prevent, prepare and respond to health threats and promote balanced health outcomes across humans, animals, plants and the environment. Threats traditionally span infectious diseases (including zoonoses and foodborne diseases), antimicrobial resistance (AMR) and food safety. However, arguably the most pressing global challenges of climate change, biodiversity loss, pollution, food insecurity and socioeconomic vulnerabilities demand integrated approaches like One Health, which address their interconnected nature and enable more effective prevention and mitigation where isolated strategies are insufficient.

Putting a One Health approach into action came to the fore following the devastating COVID-19 pandemic and renewed attention to global health threats at the human-animal-ecosystem interface. These recent events have highlighted the urgent need for prevention, preparedness and response from an interdisciplinary perspective. While the One Health approach is increasingly recognized for its potential to deliver large-scale impact, enhance efficiency and generate co-benefits beyond sectoral initiatives, investments are still limited. One key barrier is the lack of robust empirical evidence to quantify returns on investment and integrative benefits, leaving significant gaps that hinder larger-scale financing and systematic implementation. Investments that favour the 4Cs of the One Health approach across sectors are expected to deliver cost-effective and more balanced outcomes across health domains, effectively adding more value compared to single-sector or disconnected approaches. Greater impact can be realized by coordinating policies that support the health of humans, plants, animals and the environment, along with targeted resource allocation, and collaborative implementation modalities. For example, antibiotic resistance is a global problem that cannot be solved by a single sector or discipline, as resistant bacteria and resistance genes can spread between and within animal, human and plant populations and through soil, air and water. Coordinated actions that align agricultural as well as animal and human medical antibiotic use regulations can improve stewardship practices, reduce environmental contamination and slow resistance development. This requires communication and collaboration among ministries of health, agriculture and environment for coherent solutions across different sectors; for example, in the form of integrated risk assessments and surveillance systems or jointly established targets and reporting. Capacity building can equip veterinarians, farmers, healthcare providers and pharmacists with the knowledge they need to use antibiotics responsibly and prudently to preserve them for future generations. Therefore, investing in One Health requires decision-making that prioritizes long-term benefits and the cost effectiveness of prevention over short-term, reactive and siloed measures (Bernstein *et al.*, 2022; World Bank and FAO, 2022).

BOX 1

The cost of health threats

The cost of health threats runs into billions and trillions of US dollars annually. In 2010, the World Bank estimated that zoonotic diseases had resulted in over USD 20 billion in direct economic losses worldwide over the preceding decade, along with an additional USD 200 billion in indirect costs (World Bank, 2010). More recently, the International Monetary Fund's (IMF) World Economic Outlook estimated the cumulative output loss from the COVID-19 pandemic from January 2022 through 2024 to be USD 13.8 trillion (Agarval & Gopinath, 2022), while the World Bank has projected a possible loss of 3.8 percent of global annual gross domestic product by 2050 caused by AMR (Jonas, O. B. *et al.*, 2017). Other health threat costs include a human productivity loss of around USD 95 billion per year from unsafe food (Jaffee *et al.*, 2019), obesity (Shekar and Popkin, 2019), the negative effects of food systems (such as land degradation, greenhouse gas emissions, and biodiversity loss) (van Nieuwkoop, 2019), and neglected tropical and vector borne diseases. Each year, plant diseases and invasive insects cost the global economy around USD 220 billion and USD 70 billion, respectively (FAO, 2021). Environmental degradation reduces ecosystem services, undermines resource availability, and alters disease dynamics, which also heavily contribute to the economic burden of health threats. These health threats can benefit from the One Health approach due to their multifactorial, complex and interconnected nature. Similarly, recent estimates of the costs of pandemic prevention guided by One Health principles range from USD 10.3 billion to USD 11.5 billion per year (compared to the projected output loss of USD 13.8 trillion) and include core areas of veterinary services, on-farm biosecurity for high-risk zoonotic diseases, and the reduction of deforestation and forest fragmentation (Berthe, F. C. J. *et al.*, 2022). Prevention costs are less than 1 percent of the cost of responding to the COVID-19 pandemic in a single year, using 2020 estimates (Berthe, F. C. J. *et al.*, 2022).

Barriers and opportunities for investing in One Health

Sectors relevant to the One Health approach tend to have delineated structures with mechanisms of management, budgeting, reporting, accountability and economic and financial analysis. Institutional incentives and coordination mechanisms that allow staff to work collaboratively across sectors are often limited. Isolated investments in individual sectors may be insufficient and fall short of comprehensively addressing interconnected health challenges that require collaborative and integrative solutions. This can inadvertently lead to trade-offs or unintended, negative consequences in other parts of the system or, in the long term, undermine the holistic goals of One Health. Thus, barriers to and opportunities for investment in One Health need to be considered for mainstreaming its principles and methods.

There is a need to move away from competition with other organizations and within departments and ministries to a more collaborative model – a process that can be facilitated by understanding the relevant political economy, operationalizing the 4Cs and building private-public partnerships. Strong principles of information sharing and transparent communication should be implemented so that everyone has relevant knowledge, and information imbalances can be reduced. The barriers that prevent holistic financing need to be overcome for investments in a more sustainable, healthy future for all while achieving the benefits of using a One Health approach.

BOX 2

Improved efficiencies and co-benefits of investing in One Health

The broader benefits of investing in One Health, such as global health security, food security, promoting equity and biodiversity conservation – all critical One Health goals – are well recognized but often not valued. Investing in One Health generates improved efficiencies from shared infrastructure and service provision, avoiding duplications and intervening in systems where effectiveness and cost savings relate to common operations. For example, an integrated national AMR programme that includes regulation of antibiotic use in humans, animals, aquaculture and agriculture, and monitors residues and resistance across the system for joint decision-making and effective mitigation, can generate multiple benefits. By retaining treatment efficacy of antimicrobials, it can create benefits for public health (reduced infectious disease burden and healthcare costs) as well as animal health (improved welfare and productivity, decreased losses and expenditures). Further, decreased pharmaceutical pollution of soil and water systems creates benefits for the environment, while also creating lower resistance reservoirs and reducing contamination of food products and animal feeds, thereby contributing to safer food and feed systems.

NOTE: For every USD invested in a mixed policy intervention package, a global net return of between USD 10.9 and USD 14.2 is expected (2035 and 2050 scenarios respectively). (One Health Global Leaders Group on AMR, 2024).

Barriers to investment

- Sectoral budgeting and reporting do not incentivize cross-sectoral coordination.
- Sectoral trade-offs complicate and hinder integrated decision-making.
- The initial high transaction costs of cross-sector coordination decrease efficiency in the short term, including, but not limited to: i) time and effort to build trust in stakeholder networks and communication; ii) labour and time needed to establish new governance or coordination mechanisms; iii) changes to data or work systems while ensuring interoperability; iv) coordination of stakeholder meetings and related logistics; and v) changes to infrastructure, such as linking laboratories.
- The complexity of the health problems One Health is tackling and the associated difficulties of evaluating the effectiveness and efficiency of One Health may discourage investors.
- One Health can generate intangible benefits that are hard to measure. Decision makers may prioritize more tangible and politically rewarding initiatives, influenced by public and budgetary pressures. Some intangible benefits include: i) preservation of beautiful landscapes and ecosystems; ii) efficient and trustworthy human networks and communication leading to community engagement and partnerships; iii) empowerment and social cohesion through transparency and inclusiveness; and iv) agency of diverse populations.
- Different ways of working create reluctance to establish One Health coordination mechanisms by governments and organizations due to perceived complexities and resource demands.
- Investing in disease prevention (using the One Health approach) often lacks immediate visibility or may not be evident because an event did not end up occurring (for example, a disease outbreak) and, therefore, could not be measured.

Opportunities to strengthen investment

- Enhanced evidence increases political commitment and momentum in terms of understanding, tools and frameworks for implementing One Health. For example, integrated data platforms and cross-sectoral surveillance systems generate better information on disease occurrence and inform decisions for more targeted or timely mitigation measures.
- Leveraging knowledge and lessons learned creates an opportunity to raise awareness of the One Health value proposition. Internationally connected knowledge hubs, such as the One Health Knowledge Nexus, with associated communities of practice, allow the discussion of best practices, elaboration and sharing of case studies, and learning from others in diverse contexts.
- Win-win scenarios in terms of collaborative activities, aligned and increased co-benefits of interventions, and joint results create positive incentives that reward multisector collaboration, as they demonstrate measurable value addition for participating sectors.
- Collaborative governance mechanisms provide opportunities to harmonize activities, projects and programmes, with cross-sectoral units, committees and working groups facilitating joint efforts through shared mandates, funding and incentives.
- Recognizing public goods and positive externalities strengthens the investment case for One Health by highlighting its long-term value as a cost-effective and sustainable solution to interconnected global health challenges. This requires that economic models and investment cases consider multiple outcomes and quantify the long-term and societal returns, thereby providing an accurate picture of the value of the investment when using the One Health approach.

BOX 3

The One Health Joint Plan of Action (OH JPA): A blueprint for investments

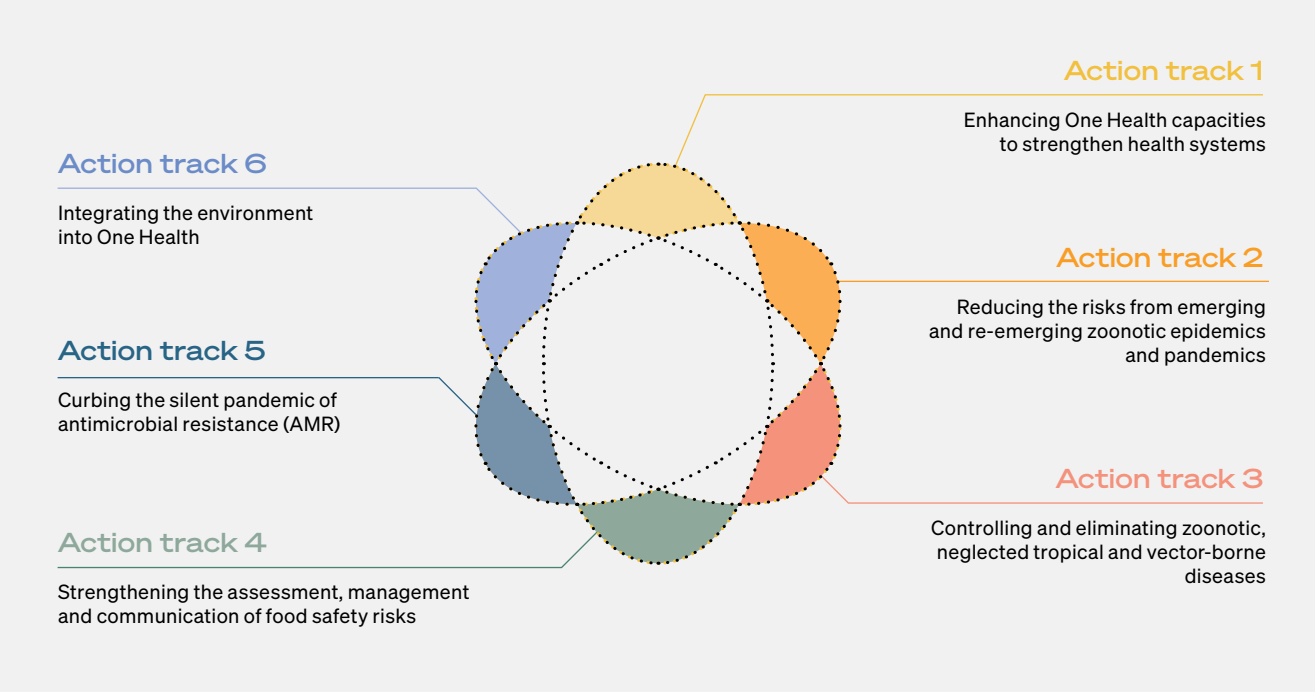
The OH JPA 2022–2026 is the first framework to guide the global implementation of the One Health approach. Developed jointly by the Quadripartite, a collaborative partnership on One Health between the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO), and the World Organisation for Animal Health (WOAH), it guides design, implementation and monitoring at global, regional and national levels. The main purpose of the OH JPA is to promote and support coordinated actions across the health of humans, animals, plants and the environment. It can also be used as a blueprint for One Health investment.

The OH JPA is organized along six interdependent action tracks (Figure 1). Collectively, they contribute to achieving sustainable health and food systems, reduced global health threats, and improved ecosystem management.

Under the OH JPA, the Quadripartite organizations collectively and individually offer to support countries and stakeholders to design, enhance and implement One Health. These include providing global strategic direction for One Health implementation, supporting countries to align national One Health strategies with international standards and priorities, developing technical tools and joint assessments, building capacity and coordination platforms, sharing data and providing integrated surveillance support, and mobilizing resources and advocacy.

Figure 1

The six action tracks of the One Health Joint Plan of Action (OH JPA)



SOURCE: FAO, UNEP, WHO, and WOAH. 2022. *One Health Joint Plan of Action (2022–2026). Working together for the health of humans, animals, plants and the environment.* Rome. https://doi.org/10.4060/cc2289en

Evidence on the financial and economic value of One Health

To further support the economic value of the One Health approach, background information for this brief was collected via a systematic literature review (Auplish, A., *et al.*, 2024), an international online survey, expert knowledge elicitation, and critical analysis. Of the 97 studies included in the literature review, 80 percent reported a positive economic value or return on One Health initiatives. But most studies involved only two sectors (83 percent), and there was a dearth of analyses that looked at the effects of working in a One Health way (e.g. by making use of the 4Cs) across human, animal, plant and environmental sectors. The most frequent OH JPA action track covered was the control of endemic zoonotic diseases, vector borne diseases and neglected tropical diseases (Action track 3). The international online survey gathered information on the value of One Health, from the perspective of how leaders and coordinators of existing One Health initiatives use financial or economic evidence for their decision-making. The main benefits perceived were reduced costs (for example, of disease prevention and preparedness), optimization of resources, and non-monetary benefits such as reduced disease prevalence and reduced ecological impact. Because quantitative economic evidence is a necessary but not always sufficient condition for decision-making, the following case studies illustrate and contextualize evidence in practical applications.

CASE 1 ONE HEALTH AND PANDEMIC PREPAREDNESS

The COVID-19 pandemic underscored the urgency of translating One Health into action. Historically, investment in pandemic prevention was limited because benefits were largely invisible. Yet prevention is a global public good (Berthe, F. C. J. *et al.*, 2022). Annual costs for One Health-centred prevention are estimated at USD 10.3 to 11.5 billion, including USD 2.1 billion for veterinary services, USD 5 billion for farm biosecurity, and USD 3.2 to 4.4 billion to reduce deforestation in high-risk countries – less than 1 percent of the cost of the 2020 pandemic response.

Prevention reduces risk, limits costly responses and generates co-benefits such as lower CO_2 emissions, improved food safety and security, climate adaptation and stronger health systems. The World Bank-hosted Pandemic Fund has already raised USD 2 billion from 27 contributors to strengthen prevention, preparedness and response capacities globally, with a focus on low- and middle-income countries.

CASE 2 ONE HEALTH ECONOMIC MODEL FOR PROPOSED PROTECTED AREAS IN LIBERIA

Proposed protected areas (PPAs) in Liberia are vital for biodiversity but face pressure from deforestation and mining. Under the Conservation Works activity, a One Health economic model was developed for three PPAs – Cestos Senkwehn, Krahn Bassa and Grand Kru River Gee – covering around 500 000 hectares and nearly 70 000 community members within five kilometres of their boundaries. The model compared management and enforcement costs, sustainable livelihood investments and forgone logging revenue with benefits from ecosystem services (e.g. carbon sequestration), sustainable tourism and conservation-compatible livelihoods.

Health and societal benefits included reduced zoonotic disease risk, safer drinking water, access to medicinal plants, and mental health gains from nature. Two deforestation scenarios were analysed: 0.3 percent annual loss (normal) and 0.003 percent (conservative). The 10-year net present value of this investment was estimated at USD 21.6 billion under normal deforestation and USD 137 million under conservative deforestation. Costs and benefits were disaggregated by local and government stakeholders to assess equity impacts.

The model is being refined through consultation with government partners and can integrate further variables as data become available. The findings demonstrate the relevance of One Health approaches when considering ecosystem protection measures, including outcomes readily missed in single-sector economic evaluations (Conservation Works, 2024).

CASE 3 PUBLIC-PRIVATE CO-CREATION OF SUSTAINABLE AND SCALABLE POLICY REFORMS IN EGYPT

In Egypt, an estimated 39 million dead broiler carcasses are disposed of annually in canals and the Nile, despite legislation prohibiting this practice. To address pollution that threatens ecosystems and human health, FAO applied a public-private co-creation approach, enabling farmers to compost carcasses into fertilizer. The method is technically simple, requires minimal investment and reduces the need for public monitoring. Farmers build and manage compost bins and benefit from technical and business advice from extension officers, without additional funding from FAO or the government.

The strategy increased farmers' profits by 1.4 percent annually. At scale, this translates into USD 45.9 million in direct farmer profits each year, alongside indirect benefits such as improved crop productivity, reduced fertilizer subsidies and lower environmental and public health risks. This case demonstrates the cost-effectiveness of integrated One Health solutions developed collaboratively with existing resources (FAO, 2023).

CASE 4 EXPANDED ONE HEALTH WORK IN INDONESIA

From 2016 to 2019, FAO, in partnership with Indonesian government ministries and funded by USAID (USD 404 665), expanded the One Health work to improve intersectoral coordination for zoonotic disease management, particularly rabies, across four pilot districts. The programme implemented integrated bite case management, sharing suspected rabid animal bite data between public health, animal health and wildlife sectors to trigger rapid investigations, improve response times and reduce infection risk.

The initiative generated a benefit-cost ratio of USD 6.56–14.35, meaning that for every USD 1 invested, USD 6.56 to 14.35 were generated in economic benefits annually. These gains primarily stemmed from reduced post-exposure prophylaxis costs and more effective rabies control via dog vaccination and public education campaigns. In public health terms, this translated into 65.3 to 142.8 Disability Adjusted Life Years averted, underlining both the cost-effectiveness and the life-saving impact of the One Health approach, and providing strong evidence to support its scale-up across Indonesia (FAO ECTAD Indonesia, 2020).

Attracting more funding and financing for One Health

Given the multifactorial, multilayered and interdependent nature of One Health initiatives, financing for One Health requires a multistakeholder endeavour, where national governments play a crucial role in mobilizing domestic resources, in addition to those of international investments. These sources include multilateral development banks, philanthropic organizations and private sector actors, alongside more traditional development partners and bilateral aid.

To secure multistakeholder and cross-sectoral investments, key decision makers in governments, including the ministries of finance, health, agriculture and environment, need information on the return on investment for One Health to direct national budget lines and expenditures. A better use of public resources and private sector investments also requires a fuller understanding of the expected returns. International investors may support One Health investments due to a heightened awareness of the global interconnectedness of health threats, particularly in the wake of COVID-19.

Emerging infectious diseases, AMR and potential future pandemics underscore the need for more resilient and integrated health systems that allow for de-risking investments. While the levels of finance (available to countries as loans) and funding (through official development assistance or philanthropy) have increased in response to the COVID-19 pandemic, particularly in the realm of pandemic prevention, preparedness and response, greater evidence is required to show the full returns. Sustaining these gains calls for rigorous economic analysis of investments, backed by strong monitoring, evaluation and return on investment modelling, to demonstrate value for money and secure long-term, scalable One Health financing.

This is particularly pertinent when governments and international partners face multiple challenges, growing debt and competing demands for budgets in view of climate change, food insecurity, population growth, migration and conflicts, which all require immediate attention and substantial resources. International aid, which has traditionally underpinned much of the external financing for strengthening health systems in low- and middle-income countries, is being significantly reduced, placing additional pressure on countries. The path forward requires embedding One Health priorities into national investment plans, tapping domestic resources, leveraging multilateral development banks, bilateral donors (particularly for fragile states or lower income countries that may already be highly indebted), and leveraging new mechanisms, such as the Pandemic Fund. Sustaining investor engagement depends on continued national and global advocacy and support for governments in translating One Health priorities into actionable, cost-calculated, prioritized investment plans with clear evidence of the return on investment to attract and align funding. Greater attention also needs to be focused on the role of public-private partnerships and blended finance, such as for key value chains like livestock, where mitigating the risks to global health is critical, be it through vaccine use, personal protective equipment measures, integrated surveillance or disease control. All such value chains require an incentive-driven approach for sustainable action, including start-up finance, readily accessible de-risking technical expertise, and conducive government policies.

Moving forward, sustained advocacy anchored in solid evidence is essential to prove the effectiveness of One Health and to secure continued political commitment and investment, as demonstrated by the G7 and G20 declarations that mobilized additional financing.

Making investment decisions

As global recognition of the value of the One Health approach continues to grow, so too does the body of evidence that supports it. Many studies have already demonstrated the benefits of One Health initiatives, particularly in areas such as zoonotic disease prevention. These studies provide a strong foundation for identifying "good value investments" and serve as important reference points for current and future initiatives. There is now a valuable opportunity to build on this momentum by expanding research to include a broader range of One Health topics and ensuring stronger integration across all relevant sectors. Emphasizing the critical importance of implementing the 4Cs and investigating if the integrated approach adds value compared to an isolated way of working will enhance the quality and relevance of future evidence.

Moreover, addressing cost and benefit distribution across sectors, such as when agricultural or veterinary services bear the costs while public health systems or the broader economy reap the benefits, can improve investment planning and foster greater cross-sectoral support. For instance, vaccinating dogs against rabies or improving hygiene in food processing yield both significant public health and economic gains.

Finally, advancing methods to measure and value non-monetary benefits, such as environmental protection and social well-being, will help to more fully capture the impact of using the One Health approach. Incorporating these dimensions into future economic evaluations will ensure more comprehensive and better-informed decision-making.

BOX 4

One Health for pandemic prevention, agrifood systems resilience, and ecosystem health in Central Asia

Agricultural and livestock sector growth in Central Asia, coupled with poor health and biosecurity practices and increasing animal movements, heightens the risk of zoonotic disease and food system vulnerabilities. Poor sanitary and phytosanitary standards, inadequate disease surveillance and weak cross-border coordination further exacerbate these risks, threatening regional trade and public health.

The indiscriminate use of antimicrobials is intensifying AMR. While ecosystem degradation and biodiversity loss amplify these challenges by increasing interactions between livestock and wildlife, adopting a One Health approach is critical. The World Bank's multiphase One Health for pandemic prevention food systems resilience and ecosystem health in Central Asia programme will strengthen the capacity to prevent, detect and respond to priority zoonotic diseases, AMR and food safety issues in Central Asia through a regional One Health approach.

In Phase 1, the programme will be implemented in Kyrgyzstan and Tajikistan, with an investment of USD 67.03 million from the International Development Association credit (USD 60 million), the Health Emergency and Response grant (USD 3.45 million) and the Pandemic Fund Grant (USD 3.58 million). The costs include expenses to build surveillance capacity for zoonoses and pandemic prevention and response, to improve the laboratory network, to build human resource capacity, and to increase communication and regional coordination. The monetized benefits include reduced animal production loss, gains in regional trade of animal products from disease-free areas, public health treatment savings due to reduced prevalence of brucellosis and echinococcosis, and preserved wildlife biodiversity from the surveillance of other zoonoses (e.g. rabies).

Where additional evidence is needed

1 Global scale studies are often too abstract for policymakers to apply; conduct smaller-scale, localized studies or on-the-ground research for more context-specific data.

- Many studies or reports focus on modelling operationalization of One Health at a global scale. While these studies are informative, global figures might be too abstract to motivate investment decisions for policymakers.
- Smaller-scale and pilot One Health initiatives that take place at the county/province/state level would provide more useful context-specific data and evidence-based results for decision makers.
- If smaller-scale studies or initiatives demonstrate good value or promise, similar One Health approaches could then be scaled up.

2 Close the evidence gap through deeper studies comparing One Health with conventional sectoral approaches, especially regarding its value addition and return on investment.

- The survey highlighted a strong demand among decision makers for concrete evidence on the added value of a One Health approach compared to conventional policy options using sectoral approaches.
- However, a gap remains in the evidence base regarding how a deep use of One Health (e.g. strong integration of activities in the policy cycle with a systems lens, use of leverage points and joint decision-making) adds value and its return on investment beyond traditional methods, underlining the need to address this discrepancy.
- Both the survey and the literature review underscored the importance of measuring the value of One Health initiatives but also acknowledged the challenge in making direct comparisons with the status quo.

3 Translate general benefits into practical country-level outcomes through better examination of integrated monetary and non-monetary effects.

- The translation from the general, well-known benefits of One Health to the practical, country-oriented benefits for initiatives remains a challenge.
- Wider studies that look at the effects in more than two sectors and integrated non-monetary and monetary aspects using a broad societal conceptualization are still rare.
- While the World Bank recently released a report assessing the economic costs associated with pandemic prevention using a One Health approach, the need for additional One Health economic evaluations, more standardized approaches and appropriate data collection mechanisms were highlighted as gaps or weaknesses (Berthe, F. C. J. *et al.*, 2022).

To address these gaps, additional One Health economic and financial analyses need to be conducted based on context-specific data that can inform decision-making in a targeted way. Using an appropriate One Health conceptualization combined with standardized methods for evaluating both monetary and non-monetary aspects will provide a more comprehensive understanding of One Health's value (Quadripartite-powered CoP ROI OH, 2025).

Filling knowledge gaps and opportunities for leveraging greater One Health investments

More extensive economic and financial analysis can help policymakers demonstrate the added value of One Health investments compared to traditional, sector-specific approaches. The critical question is whether a One Health initiative delivers measurable cross-sectoral benefits through improved coordination, communication, collaboration and capacity building.

The following actions can help justify cross-sectoral One Health investments, prioritize cost-effective interventions and support sustainable, scalable outcomes:

- Analyse the current context, define initiative goals, and establish the scope of the assessment to capture relevant costs and benefits across sectors.
- Recognize that One Health interventions often mitigate risks and enhance system resilience, with benefits that may accrue over the medium to long term.
- Include both direct and indirect benefits, such as public health improvements, environmental gains and broader economic and social returns.
- Map the distribution of costs and benefits among stakeholders, as inequitable allocation can reduce overall efficiency and uptake.
- Engage stakeholders throughout to validate assumptions, refine priorities and ensure actionable insights for investment decisions.

Joined up funding and financing

Funding and financing for One Health initiatives typically flow through sector-specific ministries, international partners or multilateral development banks, resulting in fragmented and competitive streams (Caffier *et al.,* 2025). This siloed approach undermines collaboration and the practical application of the 4Cs. To maximize impact, One Health projects should demonstrate how the 4Cs will be operationalized and measured, and how resources will manage and incentivize joint working.

Establish firm coordination mechanisms

Countries are encouraged to establish a high-level, cross-sectoral coordination mechanism – such as a national One Health steering committee, task force or platform – formally institutionalized under the office of the prime minister or president, or at a ministerial level, ideally with rotating leadership among relevant ministries. Experiences from Bangladesh, Rwanda and Thailand, for example, show that such arrangements secure political backing, sustain inter-ministerial collaboration and create the foundation to strategically align resources across human, animal, plant and environment health sectors (Shyaka, A. *et al., 2024* ; Chowdhury, S. *et al., 2026*; Tangwangvivat, R. *et al., 2024*). They can also facilitate joint budgeting, shared accountability and long-term sustainability of One Health initiatives.

Engage and link up all forms of financing

A One Health approach requires a shift in funding and financing paradigms. Pooled or programmatic funding mechanisms can reduce competition between sectors, address unequal cost–benefit distribution, and allow governments to support initiatives without restricting resources to a single ministry. Global examples, such as the Pandemic Fund, show that pooled funds foster partnerships, co-investment and co-financing.

To engage the private sector, funding should de-risk value chains – for example, start-up costs for vaccine development or adoption of biosecurity measures – while blended finance from domestic, international and private sources would help spread risk and leverage public goods benefits. Demonstrating cross-sectoral and transdisciplinary implementation is critical, and financing must align with national priorities, risk factors and existing programmes. Government buy-in is essential to ensure sustainability.

Main takeaways

- Unlike traditional sectoral investments, One Health maximizes co-benefits across human, animal, plant and environmental health while minimizing unintended, harmful consequences.
- Recent global health and environmental crises underscore the urgency of strengthening One Health. However, while One Health initiatives can enhance prevention and efficiencies and generate co-benefits, investments remain limited, partly due to challenges in demonstrating financial and economic returns.
- Expanding research across diverse One Health topics and ensuring strong cross-sectoral integration will strengthen the evidence base and the investment case.
- Recognizing public goods and positive externalities that can be generated through cross-sectoral working highlights the long-term, added value of One Health and the importance of shared benefits across sectors. Quantifying non-monetary benefits – such as environmental protection, food safety and social well-being – is essential to capture the full impact of One Health initiatives.
- Addressing how costs and benefits are distributed among sectors improves planning, fosters collaboration and encourages shared accountability, e.g. through rabies vaccination or improved food hygiene interventions.
- Pooled, programmatic, or blended funding mechanisms – domestic, international and private – are critical to mobilizing sustainable and more flexible One Health investments.
- Sustained advocacy, evidence-based planning and alignment of national and global funding, supported by public-private partnerships and institutionalized coordination mechanisms, are key to maintaining investor confidence and scaling impact.

Acknowledgements

The work was conducted collaboratively by the Food and Agriculture Organization of the United Nations (FAO), the French Agricultural Research Centre for International Development (CIRAD), the United Nations Environment Programme (UNEP), the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH). This brief was prepared collectively by Barbara Häsler, Aashima Auplish and Abubakar Suleiman (FAO), under the leadership of Keith Sumption, Ekaterina Krivonos Gonzalez and Thanawat Tiensin (FAO) with inputs from Eleanor Raj, Katrin Taylor, Katinka de Balogh, Danny Sheath (FAO), Yoeri Booijink, Marisa Peyre (CIRAD), Salman Hussain, Pushpam Kumar (UNEP), Sinaia Netanyahu (WHO, European Center for Environment and Health), and Chadia Wannous (WOAH). The brief was subjected to a quality assurance process of reviews by all authors as well as independent internal reviewers (Preeti Ahuja, Leandro Bullor, Ceren Gurkan, Wafaa El Khoury, Atisha Kumar, Simplice Nouala Fonkou, John Preissing, Nuno Santos, Jane Kronner and Julian Vallet from the FAO Investment Centre) and external reviewers (Olga Jonas in personal capacity and colleagues from the UK Foreign, Commonwealth and Development Office). The preparation of this brief was supported by the FAO Investment Centre's Innovation and Knowledge for Investment programme (IK4I). The authors acknowledge survey participants for their responses and (One Health) economic experts for sharing their experience and helping to identify and describe case studies (specifically Ugo Pica Ciamarra, Amira Abdel Nabi and Giacomo Branca from FAO, Catherine Machalaba on behalf of the Conservation Works activity, and the FAO ECTAD Indonesia team).

References

Agarval, R. & Gopinath, G. 2022. Seven Finance & Trade Lessons from COVID-19 for Future Pandemics. In: *IMF Working Papers*, No. 2022/097. [Accessed on 05 June 2026]. https://www.imf.org/en/publications/wp/issues/2022/05/20/seven-finance-trade-lessons-from-covid-19-for-future-pandemics-517755

Auplish, A., Raj, E., Booijink, Y., De Balogh, K., Peyre, M., Taylor, K., Sumption, K. & Häsler, B. 2024. Current evidence of the economic value of One Health initiatives: A systematic literature review. *One Health*, 18: 100755. [Cited 20 January 2025]. https://doi.org/10.1016/j.onehlt.2024.100755

Bernstein, A.S., Ando, A.W., Loch-Temzelides, T., Vale, M.M., Li, B.V., Li, H., Busch, J. *et al.* 2022. The costs and benefits of primary prevention of zoonotic pandemics. *Science Advances*, 8(5): eabl4183. https://doi.org/10.1126/sciadv.abl4183

Berthe, Franck Cesar Jean; Bali, Sulzhan Rameshwari; Batmanian, Garo J. 2022. *Putting Pandemics Behind Us: Investing in One Health to Reduce Risks of Emerging Infectious Diseases* (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/099530010212241754

Caffier, C., Berthe, F. & Peyre, M.I. 2025. One Health: a widely endorsed but difficult-to-fund approach. In: *One health atlas*. Roger François (ed.), Olive Marie-Marie (ed.), Peyre Marie-Isabelle (ed.), Pfeiffer Dirk (ed.), Zinsstag Jakob (ed.). Versailles: Ed. Quae, 132-133. ISBN 978-2-7592-4027-2. https://doi.org/10.35690/978-2-7592-4027-2

Chowdhury, S., Giasuddin, M., Rahman, S., Talukdar, F., Chowdhury, M.N.U., Gupta, S.D., Ghosh, S. *et al.* 2026. Adoption and implementation of one health in Bangladesh: Governance structures, system strengths, challenges and future directions. In: *One Health*, 22: 101408. https://doi.org/10.1016/j.onehlt.2026.101408

Conservation Works. (2024). *The One Health Economic Case for Conservation: Evaluating the Costs and Benefits of Protected Areas in Liberia*. Report by Bailey A, Cybulska L, Prist P, Bugni V, Goll US, Kerwillain S, Olatunji E, Jackson N, Crawley W, Poultolnor J, Philips J, Narayana M, Desmond J, Machalaba C.

FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia. 2020. *The Economic Case to Scale-up Zoonoses Prevention and Control in Indonesia Using the One Health Approach*. FAO ECTAD Indonesia Policy Brief #02.

FAO. 2021. *Scientific review of the impact of climate change on plant pests: A global challenge to prevent and mitigate plant-pest risks in agriculture, forestry and ecosystems.* Rome. http://www.fao.org/3/cb4769en/cb4769en.pdf

FAO. 2023. *Africa Sustainable Livestock 2050 – Pilot intervention: Safe disposal of daily poultry mortality in broiler farms through composting, Egypt*. Cairo. https://openknowledge.fao.org/items/3d1a5a92-dd6a-4d9b-9afa-67b3982cfd86

FAO, UNEP, WHO & WOAH. 2022. One Health joint plan of action (2022–2026): working together for the health of humans, animals, plants and the environment. Rome. https://doi.org/10.4060/cc2289en

Jaffee, S., Spencer, H., Unnevehr, L., Grace, D. & Cassou, E. 2019. *The safe food imperative: Accelerating progress in low-and middle-income countries.* Agriculture and food series. Washington, DC. World Bank. https://openknowledge.worldbank.org/entities/publication/83a34062-c6c8-5edf-857c-62a643c16bb8

Jonas, Olga B.; Irwin, Alec; Berthe, Franck Cesar Jean; Le Gall, Francois G.; Marquez, Patricio Vicente. 2017. *Drug-resistant infections : a threat to our economic future* (Vol. 2 of 2): final report (English). HNP/Agriculture Global Antimicrobial Resistance Initiative Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/323311493396993758

One Health Global Leaders Group on AMR. 2024. Annex to the GLG report: *Estimating the return on investment from tackling antimicrobial resistance using a package of One Health interventions.* Position paper. [Accessed on 4 June 2026]. https://amrleaders.org/resources/m/item/annex-to-the-glg-report

One Health High-Level Expert Panel (OHHLEP), Adisasmito WB, Almuhairi S, Behravesh CB, Bilivogui P, Bukachi SA, *et al.* (2022) One Health: A new definition for a sustainable and healthy future. *PLoS Pathog* 18(6): e1010537. https://doi.org/10.1371/journal.ppat.1010537

Quadripartite-powered Community of Practice on the Return on Investment for One Health and One Health Investment Planning. 2025. Investing in One Health: a framework to demonstrate its added value and return on investment. In: *One health atlas.* Roger François (ed.), Olive Marie-Marie (ed.), Peyre Marie-Isabelle (ed.), Pfeiffer Dirk (ed.), Zinsstag Jakob (ed.). Versailles: Ed. Quae, 132-133. ISBN 978-2-7592-4027-2. https://doi.org/10.35690/978-2-7592-4027-2

Shekar, M. & Popkin, B. 2019. Obesity health and economic consequences of an impending global challenge. Washington DC: World Bank. *Human Development Perspectives.*

Shyaka, A., Igihozo, G., Tegli, M., Ntiyaduhanye, E., Ndizeye, E., Umuhoza, A., Knight-Jones, T. & Richards, S. 2024. Rwanda One Health Achievements and Challenges: The Final Push Toward Policy Implementation. *One Health Cases:* ohcs20240010. https://doi.org/10.1079/onehealthcases.2024.0010

Tangwangvivat, R., Rungsitiyakorn, R., Hoonaukit, C., Na Nan, S., Hooker, K.R., Bhunyakitikorn, W., Phiancharoen, C. ***et al.*** 2024. Collective activities of the Thai Coordinating Unit for One Health (CUOH): Past activities and future directions. *One Health*, 18: 100728. https://doi.org/10.1016/j.onehlt.2024.100728

Van Nieuwkoop, M. 2019. Do the costs of the global food system outweigh its monetary value? *World Bank blogs.* https://blogs.worldbank.org/voices/do-costs-global-food-system-outweigh-its-monetary-value

World Bank, 2010. *People, pathogens, and our planet : Volume one: towards a one health approach for controlling zoonotic diseases* (English). Washington, DC: World Bank. http://documents.worldbank.org/curated/en/214701468338937565

World Bank & FAO. 2022. *Reducing Pandemic Risks at Source: Wildlife, Environment and One Health Foundations in East and South Asia.* Washington, DC: World Bank. http://hdl.handle.net/10986/37327 License: CC BY 3.0 IGO

World Bank & FAO. 2025. *One Health for Pandemic Prevention Food Systems Resilience and Ecosystem Health in Central Asia.* Unpublished/ personal communication Giacomo Branca.

Abbreviations

4Cs	communication, coordination, collaboration and capacity building
AMR	antimicrobial resistance
CIRAD	French Agricultural Research Centre for International Development
FAO	Food and Agriculture Organization of the United Nations
IK4I	Innovation and Knowledge for Investment programme
IMF	International Monetary Fund
OH JPA	One Health Joint Plan of Action
PPA	proposed protected area
UNEP	United Nations Environment Programme
WHO	World Health Organization
WOAH	World Organisation for Animal Health

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and the World Organization for Animal Health (WOAH) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Required citation: FAO, WHO & WOAH. 2026. *Financial and economic returns to investing in One Health – Evidence and future directions.* Investment Brief. Rome, FAO.

Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence

© FAO, WHO and WOAH, 2026
CD8447EN/1/06.26