POLICY BRIEF

Investing in One Health

A concerted approach to address shared risks to humans, animals, and the environment

Health disasters like Ebola in West Africa, H5N1 Avian Influenza in Asia and Europe, and Zika virus in Latin America have significantly harmed both health and economies. Many of these countries afflicted by diseases of pandemic potential also face a persistent burden of endemic diseases such as rabies, Lassa virus, and brucellosis, and are challenged by bacteria increasingly resistant to antibiotics. Zoonotic diseases (transmitted between animals and humans) account for over a billion human cases and a million deaths annually. These disease threats compound poverty and obstruct development. Ecosystem alteration, climate change, and inadequate biosecurity are also disproportionately present in the developing world, and exacerbate existing and emergent disease risk.

Strong, environmentally considerate, public health systems are needed to prevent, reduce, and manage risks to humans, animals, and the environment and are critical to achieve the World Bank's twin goals of ending extreme poverty and boosting shared prosperity. The **One Health** concept recognizes these connections and promotes coordination to better understand and manage risks. This approach can help countries achieve progress on national and global priorities including poverty alleviation, economic growth, food security, health, and well-being, toward achievement of the Sustainable Development Goals (SDGs).

One Health: What It Is and Why It Matters

Public health challenges at the human-animal-environment interfaces are inherently multi-sectoral, and therefore warrant whole-of-society solutions.

The One Health concept recognizes the connections between humans, animals, and the environment and promotes coordination to better understand and manage risks. By improving understanding of animals and/or ecology, it informs risk management and can prevent disease threats. Its application can also reinforce other health objectives, such as maternal and child health, food and nutrition security, pollution management, and sanitation. *An increasing number of countries are taking measures to develop One Health coordination mechanisms to support multi-sectoral surveillance, laboratories, risk assessment, communication, and policy development activities.*

Humans, Animals, and the Environment: What Are the Connections?

- *Pandemic and epidemic threats:* Over 60% of infectious diseases in humans are of animal origin (e.g., Avian Influenza, Ebola, MERS-CoV, and Rift Valley fever viruses, even HIV/AIDS). Changes in land use, climate, food production, trade, and travel are among the drivers of disease emergence and spread.
- *Antimicrobial resistance:* There is evidence of adverse human health consequences due to resistant microorganisms resulting from nonhuman usage of antimicrobials, including in animal agriculture. Improper waste management from manufacturing and application may also enable environmental dissemination of residues and resistant strains.
- *Loss of ecosystem services:* Land degradation often results in loss of ecosystem services that support human health and agriculture (e.g., safe water and food, pest control, and disaster resilience).

In addition to direct health benefits, the economic argument for investing in One Health is compelling (see examples of multi-sectoral impacts in the figure on page 3). The West African Ebola outbreak, for example, resulted in a loss of 12% combined GDP growth in Guinea, Liberia, and Sierra Leone. Zoonoses frequently account for acute and persistent disruptions in education, routine health care, and livelihood generation.

While economic impacts are considerable, investments in capacity to mitigate risk are still very limited. One Health strategies are highly cost effective, not only for reducing pandemic and antimicrobial resistance risks, but also endemic diseases.

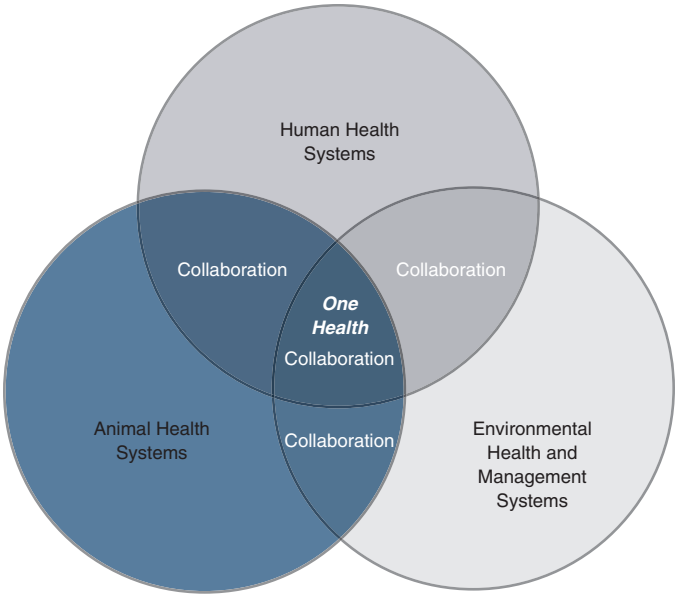
Annual investment of approximately US$1.9–3.4 billion to raise human and animal health system capacity in World Bank client countries is expected to return upwards of $30 billion per year in avoided losses.

This is a high return on investment even if only a portion of pandemics are prevented, while also generating gains for agricultural production and control of endemic diseases (World Bank 2012).

Similarly, assuming that just 50% of antimicrobial resistance (AMR) costs will be avoided by vigorous AMR containment efforts, between $10 trillion and $27 trillion could be saved between 2017–2050 in expected cumulative global benefits, far greater than the investment costs of $0.2 trillion (World Bank 2017a).

Strengthening public health systems at the human-animal-environment interface is necessary to protect health, agricultural production, and ecosystem services (ranging from food and nutrition security to disaster resilience and ecotourism)—all of which contribute to economic development and are critical foundations for growth.

One Health is integral to the success of multi-sectoral national action plans for health security and to address antimicrobial resistance and promote disaster risk reduction. It can optimize pandemic preparedness planning and enhance climate change vulnerability assessments.

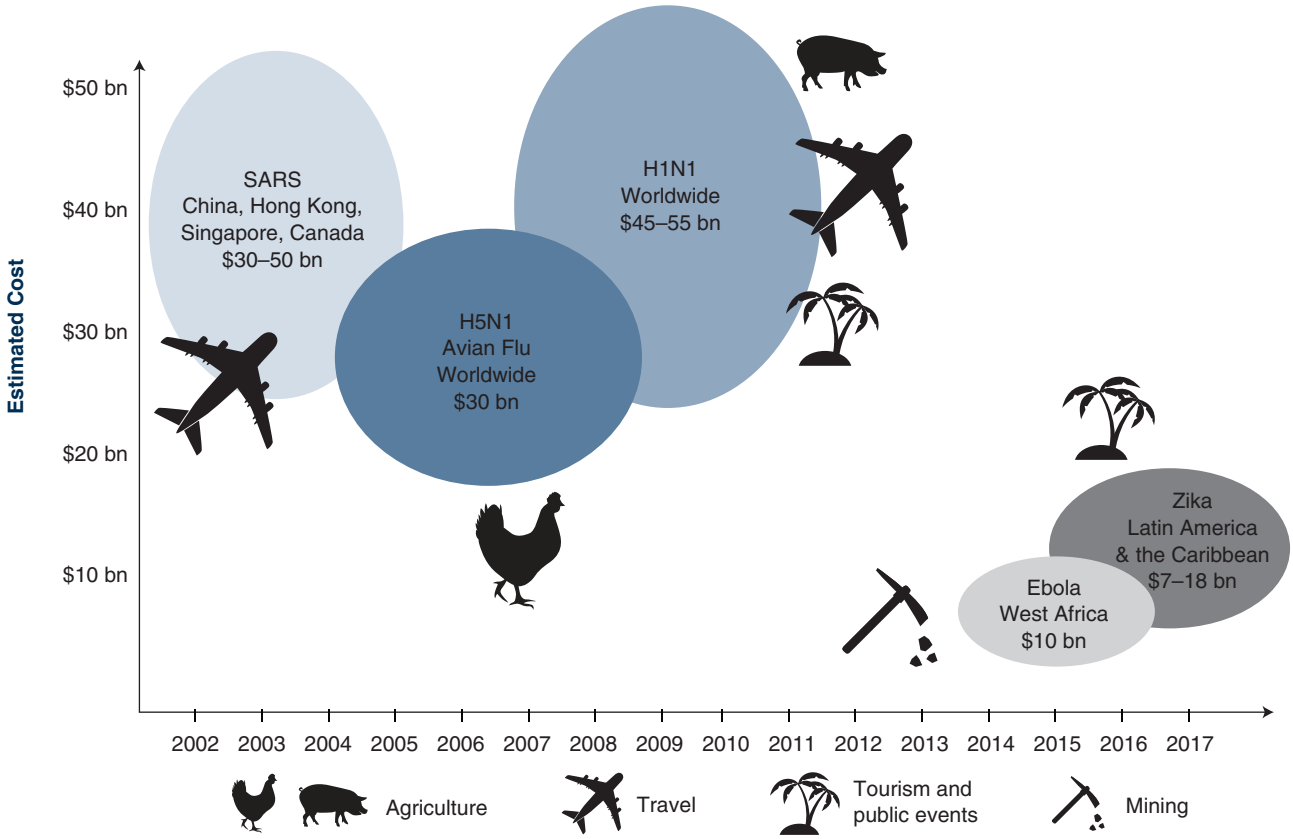


The One Health approach promotes synergies for progress on and balances possible trade-offs of the Sustainable Development Goals, and is endorsed by international agencies (e.g., the WHO-OIE-FAO tripartite agreement and recent decisions on health and biodiversity by the UN Biodiversity Convention that specifically recognize the value of One Health for mainstreaming biodiversity to help protect species and ecosystems).

How to Invest in One Health

Defining the scope, identifying entry points, and mapping stakeholders are key first steps to understanding relevant actors and identifying gaps to address hazards. Each sector has its own contributive tools and guidance resources; stronger multi-sector coordination can better harness existing efforts and generate knowledge that could otherwise not be yielded from single sectoral approaches. As public health systems are dynamic and require continuous feedback loops, implementation may occur at different stages based on resources and priorities, but should reinforce overall public health systems strengthening to reduce resource intensive responses.

Examples of Economic Impact of Infectious Disease Outbreaks



Figures are estimates and are presented as relative size. Based upon BioEra, World Bank, and UNDP data. Chart updated by EcoHealth Alliance.

Estimates represent medical and non-medical costs; icons depict highly affected industries.

The World Bank has worked for over a decade to promote and operationalize One Health approaches supported by country partners, technical institutions, international organizations, and development funders. The World Bank has established a considerable knowledge base on the topic, with reports and studies addressing various One Health dimensions such as 'People, Pathogens, and Our Planet', the 'Investing in Climate Change and Health' series, and the economic impacts of antimicrobial resistance. This analytical work has underpinned country operations like the Global Program for Avian Influenza and Human Pandemic Preparedness and Response (GPAI), and the Regional Disease Surveillance Systems Enhancement program (REDISSE).

An **Operational Framework for Strengthening Human, Animal and Environmental Public Health Systems at their Interface** ("One Health Operational Framework") now builds on this experience and provides guidance to help optimize One Health operations. Several lessons have emerged, some of which are summarized below.

Lessons for One Health Operations

- ***Starting points for One Health vary by context, disease, and objectives.*** Public health systems must be agile enough to address all hazards; to do this, countries need strong human, animal, environmental health/management systems and coordination between them to even determine which sectors are relevant to understand and manage risk.

- ***Strengthening institutional and governance mechanisms is critical for the sustainability of One Health approaches.*** Beyond project-related interventions, these underpin longer term planning capacity as well as ex-ante and ex-post monitoring and evaluation which are associated with policies and projects.
- ***One Health approaches should be built into project design from the onset.*** Engaging all relevant stakeholders early on helps optimize project success by developing a common understanding of issues and joint solutions to address them, anticipating risks, targeting key gaps and reducing duplication, and facilitating relevant coordination channels.
- ***Wildlife and environmental health services should be systematically included when considering*** national investments in public health systems.
- ***There is a growing body of operational experience and tools*** among the World Bank and key technical partners that provide solid grounds to develop sound One Health operations.
- ***Communication is a key priority for One Health approach understanding and implementation.*** Planning ahead for disease events and maintaining strong multi-sector coordination channels at all times helps ensure consistent and effective messaging to manage risk, enhance efficiency, and promote credibility of all sectors.

The Operational Framework for Strengthening Human, Animal and Environmental Public Health Systems at their Interface ("One Health Operational Framework")

The One Health Operational Framework supports a stepwise approach and provides a practical methodology for applying One Health in development operations. It outlines activities and interventions to target disease threats at the human-animal-environment interface, highlighting mechanisms for institutional and technical implementation to build more collaborative public health systems. It emphasizes elements that are critical to include in projects, including specific country requests for national priority issues. It presents steps and provides technical guidance for actions and capacity that can be taken at country levels along the *prevent-detect-respond-recover* spectrum.

The Framework also embeds One Health economic and development considerations into an applied approach to policy and lending and provides examples of successful One Health projects that can be borrowed from and replicated. It creates a platform for engagement amongst international organizations, development lending institutions, and national governments. Finally, the One Health Operational Framework encourages greater technical engagement and high-level political support to mainstream One Health considerations into development policy and lending.

Deadly infectious pandemics will mark humanity's future,
as they have shaped its past. Neither individual
governments nor the global community can entirely
prevent the emergence of infectious threats.
But we can be much better prepared."
(World Bank, 2017b)

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References: Jones, et al., 2008. *Nature*; Karesh, et al., 2012. *The Lancet*; World Bank, 2012. 'People, Pathogens and Our Planet: Volume II, the Economics of One Health'; World Bank, 2017a. 'Drug Resistant Infections: A Threat to Our Economic Future'; World Bank, IWG report, 2017b. From 'Panic and Neglect to Investing in Health Security: Financing Pandemic Preparedness at a National Level.'

The Framework is available online at: http://documents.worldbank.org/curated/en/703711517234402168/Operational-framework-for-strengthening-human-animal-and-environmental-public-health-systems-at-their-interface