

## Economic Benefits of a One Health approach

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Most “one health” advocates understand intuitively there are economic and public health benefits to approaching zoonotic disease occurrences as both a human and animal health issue. The World Bank has funded health projects that address zoonotic disease outbreaks and analyzed the economic costs and benefits of comprehensive and complementary strategies to reduce the incidence of selected zoonotic diseases. Their findings support the idea that integrated surveillance and control, community education, building laboratory capacity that supports both animal and human diagnosis, and cross training and collaboration of community-based health workers, improve public health outcomes.

Additionally, financial support of these activities provide excellent returns on investment.<sup>1</sup>

Bureaucratic and institutional barriers to “one health” strategies can be difficult to eliminate. It is sometimes the case, however, that control of a disease within an animal reservoir population effectively disrupts infection transmission and significantly reduces the occurrence of disease in humans and other susceptible species. One example is controlling the spread of brucellosis from dairy animals by vaccinating them, breaking the chain of transmission to humans. Although the dairy animals are not the only species affected by brucellosis (some wildlife species are also susceptible and transmit the disease to domestic animals during interactions in uncontrolled environments), dairy animals are most often the proximate cause of transmission to humans by the consumption of contaminated milk. In many parts of the developing world, the burden of human disease is quite onerous because milk is an important source of protein and micronutrients. While human brucellosis infection is generally not fatal, it does cause long-term chronic and debilitating disease. Reduction of the incidence of brucellosis in dairy animals also improves dairy animal production and food security of human populations who are dependent on them. Other downstream health effects may include lower medical costs due to disease prevention and better labor productivity because the population is not burdened by illness.

The effective control of any infectious disease requires data, epidemiological expertise, and diagnostic/laboratory resources. Building the human and animal laboratory capacity to conduct effective surveillance, accurately diagnose disease, and analyze epidemiological data to develop countermeasures, are essential components of effective infectious disease control. While there will probably be significant costs associated with the initial deployment of diagnostic and analytic resources and capabilities, the economic benefits of lower health costs, improved human economic productivity from a reduction in days of work lost due to illness, reduced disease transmission among animals, and more comprehensive health information to support optimal health policy choices for humans and animals, are quantifiable benefits.

Many countries face human and animal health resource deficits in communities far from population centers. Economies of scale may be achieved if health laboratory facilities are designed to serve human and animal disease diagnostic needs. Also, close proximity of laboratory facilities can reduce delays in obtaining test results because the need to transport test samples to distant laboratories will be eliminated. In addition to cost savings from prevention or treatment of infectious disease in humans and animals, animal productivity can be improved by measures to reduce or prevent disease transmission between animals, especially between domestic animals and wildlife. Collaboration

between health professionals responsible for human and animal health on zoonotic disease surveillance can also produce economic and health benefits for communities.

The health of the animals that share our environment is inextricably connected to our own. The spread of infectious zoonotic diseases not only causes immediate consequences of sickness in both humans and animals, but also causes secondary effects of lost labor and agricultural animal productivity. Concrete economic benefits can be gained when infectious zoonotic diseases are prevented or the incidence of disease is reduced. The costs of building health capacity are simply wise investments that will pay health dividends into the future.

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<sup>i</sup> The World Bank, Report No: ICR00003260, Implementation Completion and Results Report on a The European Commission Avian and Human Influenza Trust Fund (EC-AHI) – TF012273 in the Amount of US \$10.00 Million Equivalent to the Government of Nepal for a Zoonoses Control Project (P130089), September 15, 2014