

One Health: Connecting Humans, Animals and the Environment

Video Transcript

Other fields of One Health application

[Esther Schelling]: One Health not only applies to human and animal health but can also be applied to plant health. Imagine women in a remote village in Uganda. They also have issues with plant health if the corn is not growing well or if insects eat up the vegetables. On market day, they go to town and sell the products. This is also the time when they may seek antenatal care. Integrated health centres could be conceived in a way that they have several desks. Next to the health centre could be a plant doctor, explaining what could be done about poor-growing corn and insects in the vegetable garden. A veterinary pharmacist could also provide them with drugs against worms of their sheep. Studies are ongoing in Sierra Leone and Uganda seeking to identify what village people need for better care of their plants, their animals, and themselves.

[Jakob Zinsstag]: Uganda has also game parks, and wildlife is suspected to harbour brucellosis and transmit it to cattle grazing in close proximity to wild ruminants. But also cattle can transmit diseases to wildlife, like bovine tuberculosis in the Kruger National Park in South Africa. The problem is that bovine tuberculosis does not stop in wild ruminants. When they are eaten by lions, the lions themselves get infected with bovine tuberculosis and eventually die.

The World Conservation Union has recognised that sustainable conservation of wildlife can only be achieved if human and domestic livestock population surrounding conservation areas are in good health and don't represent a risk for wildlife in the park. The term 'One World, One Health' was coined and even trademarked. The main guiding issues summarising sustainable wildlife conservation are known as the 'Manhattan Principles'.

[Esther Schelling]: Antimicrobial resistance is a growing problem worldwide. There is ongoing, mutual accusation between public and animal health on inadequate use of antibiotics in livestock production and hospitals. We know today that the origin of antimicrobial resistance is not well understood. We clearly need a systemic investigation in human health, animal production, but also the environment water, sewage, crop production, and many other areas. The Canadian Integrated Programme for Antimicrobial Resistance Surveillance investigates such problems in an integrated way and saves financial and human resources from working together between sectors. The CIPARS example shows also the limits of One Health, because we have to include clearly also environment and ecosystems. In this way, we engage in ecosystem approaches to health also called 'ecohealth'.

[Jakob Zinsstag]: Antimicrobial resistance surveillance points to broader considerations beyond One Health, called 'health in social-ecological systems'. Another good example requiring such systemic thinking are emerging infectious diseases, like Ebola.

We know quite well the dramatic events that led to over 25,000 cases from human-to-human Ebola transmission in West Africa between the end of 2013 and 2015, but we know very little about how the first cases occurred. Currently, fruit-eating bats are suspected of carrying the Ebola virus, but this is not very well ascertained. Other wildlife, like monkeys, cannot be reservoir hosts, because they die too quickly. So how did the virus jump the species barrier between animals and humans? Is it because large parts of forests are burned for palm oil? Fruit bats' habitats would be disturbed, and people picking palm fruit would be close

to the bats hanging in the trees? We don't know. But we know that we have to consider the social-ecological system in an integrated way to find out.

[Esther Schelling]: So you see, there are many other areas where integrated One Health and Ecosystem Health approaches are needed to improve health care and prevent infectious diseases.