One Health: a concept led by Africa, with global benefits

Titus Mlengeya Kamani and others argue that Africa is well positioned and equipped to conduct and benefit from an integrated approach.
NMAIST opened its doors in 2010 – are nimble and unencumbered by history, and provide African-based research scientists novel opportunities for integrated research. For example, the science of One Health is now formally integrated as part of the Arusha NMAIST School of Life Sciences and Bioengineering curriculum.

Several examples of the benefits of a One Health approach have been demonstrated within an African context. For example, collaborative projects implementing joint livestock and child vaccination campaigns in pastoralist communities in Chad have resulted in economic savings for the Chadian public health and animal health Ministries and, importantly, improved vaccination coverage of children and women who would otherwise have no access to healthcare (Bechir and others 2004, Schelling and others 2007, Zinsstag and others 2012). Integrated human and animal zoonotic disease surveillance in Ethiopia has identified epidemiological links between bovine TB in humans and animals (Gumi and others 2012, Greter and others 2014). Shared human and veterinary laboratories to diagnose brucellosis in febrile patients in Mali have resulted in brucellosis being considered as a differential diagnosis for febrile illness (along with malaria and typhoid fever) in an area where raw milk consumption is still prevalent (Steinmann and others 2005, Zinsstag and others 2012). Such outputs of One Health programmes are normalising the practice of professionals from all relevant disciplines working together. In Tanzania, we have a long history of One Health integration across disciplines, with researchers from the Sokoine University of Agriculture, the National Institute of Medical Research and the Tanzania Wildlife Research Institute, having conducted joint programmes on bovine tuberculosis, brucellosis and rabies for over 20 years.

Another exciting new international development that will benefit the next generation of African scientists is the Alliance for Accelerating Excellence in Science in Africa (AESA), set up by funding from the Wellcome Trust, DFID and the Bill and Melinda Gates Foundation (Nordling, 2015). Historically, with a large proportion of Africa’s scientific research financed by funds coming from western Europe and America, its research agenda has been set by priorities from outside the continent. The development of this Africa-based platform, however, will finally enable international research funding to be based within Africa where Africans can manage it. This will enable African-based scientists to set their own research agendas that answer the questions that are of most significance to the continent.

For such programmes to become mainstream, added value above that achieved by human and animal sectors working alone must be demonstrated. A key component of this will be the development of synergistic international partnerships that fuse the technological potential of industrialised nations with the still more flexible research and political cultures present in Africa. Existing initiatives, such as the Zoonoses and Emerging Livestock Systems (ZELS) (a consortium of UK funders including DFID and the BBVSC) and the Africa One programme (funded by the Wellcome Trust), which bring together African-led multidisciplinary research teams from both East and West Africa to tackle some of the continent’s most complex health issues, are examples of how such partnerships can work.

With high rates of globalisation, urbanisation and fragmentation of wilderness areas, the emergence of novel diseases that affect humans and animals alike is set to increase. To understand and mitigate these disease problems, a One Health approach, that fosters closer cooperation between human, animal and ecological health, must become mainstream. The outcomes, such as the early detection of disease or the implementation of appropriate control measures, will potentially result in economic savings running into the billions.

The rich diversity of African landscapes and the variety of livestock-keeping practices, together with concerns such as increasing migration flows and food insecurity, mean that African institutions and African scientists are well positioned and equipped to conduct, and benefit from, this integrated research that is of clear importance to Africa. It is also African scientists and African policymakers who have the greatest opportunity and responsibility to take the leadership of One Health and develop the integrative institutional frameworks and research programmes needed to tackle these complex health problems. The world is looking to African researchers as world leaders to develop the emerging discipline of One Health, and the health of the global community will undoubtedly benefit from its effective implementation.

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Titus Mlengeya Kamani, Rudovick Kazwala, Sayoki Mfinanga, Dan Haydon, Julius Keyyu, Felix Lankester and Joram Buza

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