ZOONOSES

One Health approach to exploring what drives zoonoses

A FOUR-YEAR research programme exploring factors that drive zoonotic disease transmission in Tanzania was launched last month as part of a workshop held in Arusha, Tanzania. The workshop was opened by Titus Kamani, Tanzania's minister for livestock and fisheries development, who trained as a veterinarian.

The Tanzanian programme includes four projects that are part of the Zoonoses and Emerging Livestock Systems (ZELS) initiative, a £20.5 million research and training programme supported by six UK funding agencies involving 11 projects in Africa and Asia (*VR*, November 22, 2014, vol 175, p 498). The 'Social, Economic and Environmental Drivers of Zoonoses in Tanzania' (SEEDZ) project is being led by Sarah Cleaveland and Jo Sharp of the University of Glasgow, and the multidisciplinary research team comprises animal and human health experts, anthropologists, geographers and economists from Tanzania, the UK, the USA and New Zealand.

'This study is unusual in that medical, veterinary and social scientists will be working together, collecting both quantitative data, such as that relating to infection dynamics, and qualitative data, such as that relating to behavioural change,' said Professor Cleaveland. 'The study will also emphasise interactions with farmers, consumers and policymakers to gain a broad understanding of different perspectives. By integrating our findings we aim to produce models that can help predict changes in disease risks as well as inform any policy shifts and institutional changes that might be required in the battle to reduce the burden of these zoonotic diseases.'

The SEEDZ team explains that Tanzania has been recognised as a high-priority country for endemic zoonotic diseases because many communities are highly dependent on livestock and a large proportion of its population is engaged in livestock keeping. The country is also experiencing major changes, including rapid urbanisation, intensification of livestock production systems, shifts in land use, increased influence of global market dynamics and the introduction of new technologies. The consequences of these changes on livestock-keeping practices and zoonotic disease risk are unknown and hard to evaluate. Further challenges for disease control are presented by extensive interactions between wildlife and livestock.

Titus Kamani (right), minister for livestock and fisheries development in Tanzania, discusses the SEEDZ project with Sarah Cleaveland and Dan Haydon. In the background (from left to right) are Rudovick Kazwala, Sayoki Mfinanga and Emanuel Swai

The project aims to explore how the changes affect urban, periurban and pastoral communities in northern Tanzania. Researchers hope to determine how the changes experienced are affecting people according to their different livestock-keeping practices and connections to an urban centre.

'This research will provide an in-depth case study for assessing the impact of urbanisation on zoonotic diseases,' said Joram Buza, who will be leading a team of SEEDZ researchers at the Nelson Mandela African Institution of Science and Technology in Tanzania. 'This is important because more than half of Africa's people are expected to live in cities by 2015. So, although the lessons of this research will have primary significance for Tanzania, we expect them to be relevant to other countries and regions too.'

Three other programmes funded by the ZELS were also launched at the workshop in Arusha. These were:

- 'Hazards Associated with Zoonotic Enteric Pathogens in Emerging Livestock Meat Pathways' (HAZEL), which aims to develop understanding of how zoonotic intestinal pathogens flow through the meat chain in Tanzania and to develop policies to improve food safety;
- 'Molecular Epidemiology of Brucellosis in Northern Tanzania', which aims to generate data and tools, and provide training and establish partnerships, to develop a brucellosis control programme in Tanzania; and
- 'Life on the Edge: Tackling Human African Trypanosomiasis (HAT) on the Edge of Wilderness Areas', which aims identify cost-effective and 'ecologically smart' strategies to control HAT.

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Notes