



The changing landscape for health research in Africa: The focus of the Southern African Centre for Infectious Diseases and Surveillance

Authors:

Mark M. Rweyemamu¹
Esron D. Karimuribo¹
Leonard E.G. Mboera²

Affiliations:

¹Southern African Centre
for Infectious Disease
Surveillance, Sokoine
University of Agriculture,
Tanzania

²National Institute for
Medical Research, Dar es
Salaam, Tanzania

Correspondence to:

Mark Rweyemamu

Email:

mark.rweyemamu@
btinternet.com

Postal address:

PO Box 3019, Chuo Kikuu,
Morogoro, Tanzania

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Note:

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In April 2013, the Southern African Centre for Infectious Diseases and Surveillance (SACIDS) (see <http://www.sacids.org>) joined forces with the Tanzania National Institute for Medical Research to convene the Second One Health Conference in Africa, held in Arusha, Tanzania, with the overarching theme of 'The changing landscape for health research in Africa'.

Whilst this reflection covered both communicable and non-communicable diseases, the greater emphasis was on infectious or communicable diseases. This reflects the impact of these diseases on human health, well-being and economic development in Africa (Mboera *et al.* 2014; Rweyemamu, Otim-Nape & Serwadda 2006; Rweyemamu *et al.* 2012). The heavy burden of infectious diseases of humans and animals in Africa falls into two categories, namely, (1) exposure to internally or externally generated emerging or re-emerging diseases and (2) the continuing occurrence of major epidemic diseases in an endemic state in Africa.

It has been reported that about 60% of all infectious pathogens in humans originate from animals, although many of these have completely adapted to their new host and no longer require a non-human animal host for persistence. It is also known that between 60% and 75% of new or emerging infectious diseases of humans in the last half century have originated from animals, of which perhaps 71% of these were of wildlife origin. The drivers of many emerging diseases are mostly related to human behaviour and actions, socio-economic (e.g. globalisation of travel and trade), environmental and ecological factors (Jones *et al.* 2008; Lightfoot, Rweyemamu & Heymann 2013; Rweyemamu *et al.* 2006; Taylor *et al.* 2001).

The continuing endemic settings of major infectious diseases in Africa constitute a high risk for health and livelihoods and future marginalisation of Africa through trade restrictions and socio-political impacts (Rweyemamu *et al.* 2012; Waage *et al.* 2010). In Africa, 72% of the disease burden is attributable to poverty, interactions between socio-economic opportunities and the health of animals, people and ecosystems, compared to 27% in the rest of the world. Another important aspect of health in Africa is climate change and variability, which is reported to have affected Africa more heavily than most other parts of the world. Generally, vulnerability of individuals and communities to infectious diseases is influenced by multiple factors (environmental, economic and socio-ecological) in addition to host and causative agent factors (Food and Agriculture Organization of the United Nations [FAO] 2013; McMichael & Woodruff 2004; Ndiyoi *et al.* 2006; World Health Organization 2011).

Accordingly, there is an increasing consensus that because of their holistic nature, One Health [OH] and/or EcoHealth approaches are particularly appropriate for the risk management of infectious diseases in Africa (Charron 2012; Mboera *et al.* 2014; Rweyemamu *et al.* 2013; Zingstagg *et al.* 2011). Furthermore, the World Bank and several independent authors have shown that these approaches are cost-effective (Grace 2014; Rushton 2012; World Bank 2012).

In pursuance of the same goal in Africa, SACIDS has developed a broad-based, OH-driven approach to infectious diseases in sub-Saharan Africa through its vision of:

A sub-Saharan African society protected from devastating infectious diseases affecting the health of humans, animals, i.e. both terrestrial and aquatic, and ecosystems, thereby promoting livelihoods, socio-economic development including market access and the environment. (SACIDS n.d.)

The *modus operandi* of SACIDS is that of a virtual centre which links African academic and research institutions that deal with infectious diseases of humans and animals in smart partnership with centres of research excellence in industrialised countries and international research centres.

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SACIDS has adopted the community of practice (CoP) approach for both its research capacity development programme and its collaboratively themed research programme (Rweyemamu *et al.* 2012, 2013). Following an internal review and development of a new business plan to 2020, the programme of SACIDS now revolves around the following six themes or CoPs, (1) emerging and vector-borne diseases, (2) bacterial zoonoses including food-borne diseases and anti-microbial resistance, (3) viral diseases of food security importance, (4) cross-cutting OH sciences, (5) OH training (short-courses, annual OH summer schools and OH-based MSc courses) and (6) research management and an OH forum, including conferences.

Whilst the first three themes are disease-category based, themes four and five help SACIDS to develop a broad-based approach, which includes socio-economics, socio-anthropology, environment, ecosystems, EcoHealth, OH-based and information communication and technology driven approaches to disease surveillance, health systems and policy, poverty focus and an examination of such issues as the interaction between agriculture and health (Karimuribo *et al.* 2012; Kayunze *et al.* 2014; Mboera *et al.* 2014; Mwabukusi *et al.* 2014; Rweyemamu *et al.* 2013). That is the SACIDS approach to the changing landscape for health research in Africa, as it strives to evolve into a regional One Health forum and research platform in Africa (theme six).

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Competing interests

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

Authors' contributions

M.M.R. (Sokoine University of Agriculture) produced the first draft of the manuscript, building on shared vision by the three authors, who have all been involved in the organisation of the One Health conference. M.M.R. also undertook the primary literature review. E.D.K. (Sokoine University of Agriculture) and L.E.G.M. (National Institute for Medical Research) reviewed the text and improved it with additional references and all the three authors agreed upon the final version.

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