

# One on One with Dr. Johnson Ouma, GALVmed's New R&D Director

In October 2021, GALVmed appointed Dr. Johnson Ouma as its new Executive Director in charge of Research & Development. Johnson, a seasoned researcher will play a leading role in shaping and delivering GALVmed's Research & Development strategy centred on sustainable technologies addressing animal health challenges facing small-scale livestock producers. He speaks to us about GALVmed's R&D strategy.

## How does GALVmed's mission fit into the bigger picture of global agricultural/development?

GALVmed works with partners to develop and roll out animal health solutions that contribute to improved lives and livelihoods of millions of smallholder livestock producers and their dependents. Improved animal health translates into improved livestock productivity and hence improved economic status (income) and availability of sufficient, healthy, and nutritious animal-source foods. The expected end outcome is alleviation of poverty, hunger, and malnutrition, thus directly contributing to the attainment of global development goals SDG 1 (ending poverty) and SDG 2 (zero hunger).

## You are coming in at a critical time when GALVmed is shaping its new strategy. What does GALVmed plan to do differently?

In developing the new R&D strategy, GALVmed dived deep to understand the needs of smallholder livestock producers (SSPs) by conducting a series of technical reviews, meeting key experts and interviewing veterinarians in sub-Saharan Africa and South Asia. Overall, these efforts led to the identification of specific technical and supply chain gaps in disease control which could be addressed through animal health product development. To address the identified gaps as part of strategy implementation, GALVmed will shift from product-oriented R&D to platform-oriented R&D. It envisaged that the focus on cross-cutting technologies will lead to development of products that meet demonstrated SSP needs and fill gaps in Animal Health Company (AHC) product portfolios, thus incentivising AHCs to invest in sustainable and profitable animal health product development and commercialization.

## Some would argue that small-scale livestock producers have often been overlooked by Big Pharma because they are seen as not profitable enough and are resource intensive as opposed to big/mechanised producers. As one who has interacted closely with small-scale production systems, what would you say to those who underestimate small-scale livestock producers?

Small-scale livestock producers (SSPs) in Low- and Middle-Income Countries (LMICs) are estimated to generate up to 40% of agricultural GDP. This is not a market segment to be ignored or underestimated. Having grown up in a smallholder farming system and based on my experience interacting with SSPs over the years, I have come to appreciate that SSPs are businessmen/women in their own right. SSPs are increasingly being more market-oriented and willing to take

calculated risks to make their farms profitable. What SSPs need and are willing to pay for are quality farm inputs that work for them in their settings, and the evidence that such solutions work. This is the value proposition that GALVmed endeavours to deliver to SSPs through targeted product development and commercialisation and by supporting establishment of localised manufacturing capabilities.

## As the new head of research and development for GALVmed, what is your plan for GALVmed's R&D work?

My plan for R&D work is anchored on the execution of GALVmed's 2030 strategy implementation plan with the view to develop animal health products that meet the identified disease control needs of smallholder livestock producers in sub-Saharan Africa and South Asia. This will be achieved by delivering on four strategic themes: 1) end-to-end product development, 2) use of current antigens with new technologies, 3) industry support for localised animal health product development technology platforms in LMICs and, 4) establishment and support of specialised manufacturing capabilities. Together with strategic initiatives in the commercial and the enabling environment domains, these four R&D themes will provide a systematic and comprehensive framework for impactful interventions across the animal health product development chain. To deliver on the strategic themes outlined above, we plan to enhance our collaboration with GALVmed's existing animal health industry partners, and to identify and establish new partnerships where necessary. Considering that human capital is the most critical resource of any organization, I plan to prioritise the strengthening of capacity of R&D team members to ensure alignment with product development needs.

## What does GALVmed aim to achieve by delivering on the four strategic R&D themes you mentioned earlier/above?

Our overarching aim in the new R&D strategy is to continue to support the development of efficacious and high-quality animal health products that address the critical gaps identified in SSP-focused disease control portfolios. Under theme 1 above, we aim to identify gaps and additional product needs to enhance SSP disease control capabilities through combination products (e.g., large ruminant reproductive multivalent vaccine) or enhanced product attributes. In theme 2, we aim to have a series of platform technologies that can express appropriate antigens that can eventually replace older vaccine technologies that suffer from lack of safety and efficacy. Under theme 3, we aim to strengthen local R&D product development and clinical capacity and registration of animal health products needed by SSPs in Africa. This will involve working closely with animal health industry partners in identifying and evaluating technical, production (manufacturability) and commercial feasibility of relevant disease control technologies. Such efforts are ongoing under the Transforming Animal Health Solutions and Services for Low-Middle Income Countries (TAHSSL) platform that brings together Clinglobal, GALVmed, and ILRI. But we intend to establish more platforms as the need arises. Lastly, under theme 4, GALVmed aims to improve the supply and supply security of quality and affordable animal health products that address SSP needs in specific geographies. To achieve this



*Small-scale livestock producers are increasingly market-oriented and seek inputs that work for them – Photo credit: GALVmed*

aim, we will partner with upstream antigen manufacturers such as Pirbright Institute's Veterinary Vaccine Manufacturing Innovation Centre (UK), and facilitate downstream active principle provision and customised antigen formulation, packaging and labelling.

**According to the GALVmed's website your intention is to work on the development of 25 products and product related technologies (processes or platforms that will increase access to products). These will comprise an approximate 50:50 mix of new and enhanced existing products and technologies. Which 3 products and technologies are you looking forward to improving?**

By 2023/24, we seek to develop up to six new high-impact vaccines that are suitable for widespread use by SSPs in sub-Saharan Africa and S. Asia. The focus will be on multivalent/combination vaccines. GALVmed will also assess novel vaccine delivery approaches to enhance the current portfolio of vaccines relevant to SSPs needs.

**In addition to the focus on current GALVmed priority diseases, does the R&D department plan to develop any new project/product pipelines that would help deliver more impactful disease control?**

Effective and sustainable on-farm disease control requires integration of various interventions. GALVmed has traditionally focused on the development of vaccines, diagnostics and

therapeutics that target its priority diseases, majority of which are viral and bacterial. In an effort to achieve more holistic and impactful disease control in the future, the R&D department plans to investigate the potential of investments in ecto- and endoparasites control.



### Johnson Ouma

Johnson Ouma is the Executive Director of Research & Development for GALVmed. He has over 25 years' experience in agricultural and public health research and product development. Prior to GALVmed, he was Chief Scientist and Founding Director of Africa Technical Research Centre (ATRC), a multicultural R&D Centre which he led for 10 years. He established and managed product development teams and partnerships, leading to successful development and commercialization of a portfolio of products for agriculture and public health. Johnson previously served as senior scientist and Deputy Centre Director with national agricultural research institutions KETRI and KARI (now KALRO) in Kenya for 17 years. He holds a master's degree in Veterinary Parasitology and Immunology, and a PhD in Entomology and Genetics.