

## Review of: "Improving agriculture and food security in Africa: Can the one health approach be the answer?"

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Potential competing interests: No potential competing interests to declare.

This paper provides a comprehensive review of the challenges of agricultural production and food security in Africa. The topic is interesting and relevant not only to Africa but essential to achieve the sustainability development goals (Zero Hunger). This well-written review highlights holistic and integrative approaches such as the "One Health Approach", summarizes initiatives in various African countries, and provides specific strategies and recommendations to facilitate the application of the one health approach.

This paper would benefit from some reorganization and restructuring of the material. For example, clearly stating the objectives and methods of the review from the beginning as well as highlighting the intellectual contribution of the paper (e.g., How is this paper different from other authors that have reviewed the One health approach in Africa). This information is not evident in the Introduction and Abstract.

It would also be beneficial to better explain the "One Health Approach" from the beginning (e.g., When did the concept appear in the literature and why this approach is more suitable than other interdisciplinary approaches or frameworks). Additionally, including specific examples of other researchers applying the one health approach and their strategies for achieving food security would strengthen the importance and feasibility of such approach (e.g., Was the approach effective when implemented? What where the specific limitations of the study?)

The authors mention how essential macro and micronutrients are for short term and long-term health, and correctly point out: "Limited research attention has been paid to nutrition-specific, health-based approaches aimed at improving food systems and livelihood-based interventions". It would be useful to include the most common macronutrient and micronutrient deficiencies in Africa and the percentage of the population with undernourishment and malnutrition in order to highlight how important this problem is. Additionally, cite and summarize limited research that focus on improving nutrition, food systems, and human wellbeing.

Finally, the authors mention the sustainable development goals and the challenges with nutrition and food security. I would recommend bringing the "SDG – Zero Hunger" back to the conclusion and highlight how the One Health Approach can help attain this goal.

Suggested literature:

Atukunda, P., Eide, W. B., Kardel, K. R., Iversen, P. O., & Westerberg, A. C. (2021). Unlocking the potential for



achievement of the UN Sustainable Development Goal 2–'Zero Hunger'–in Africa: targets, strategies, synergies and challenges. *Food & Nutrition Research*, *65*.

Coker, R., Rushton, J., Mounier-Jack, S., Karimuribo, E., Lutumba, P., Kambarage, D., ... & Rweyemamu, M. (2011). Towards a conceptual framework to support one-health research for policy on emerging zoonoses. *The Lancet infectious diseases*, *11*(4), 326-331.

FAO, IFAD, UNICEF, WFP and WHO. (2021). The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all. Rome, FAO.

Kihara, J., Bolo, P., Kinyua, M., Rurinda, J., & Piikki, K. (2020). Micronutrient deficiencies in African soils and the human nutritional nexus: opportunities with staple crops. *Environmental Geochemistry and Health*, *42*, 3015-3033.

Lerner, H., & Berg, C. (2017). A comparison of three holistic approaches to health: one health, ecohealth, and planetary health. *Frontiers in veterinary science*, *4*, 163.

Lombi, E., Donner, E., Dusinska, M., & Wickson, F. (2019). A One Health approach to managing the applications and implications of nanotechnologies in agriculture. *Nature Nanotechnology*, *14*(6), 523-531.

Mackenzie, J. S., & Jeggo, M. (2019). The One Health approach—Why is it so important?. *Tropical medicine and infectious disease*, 4(2), 88.

Rwego, I. B., Babalobi, O. O., Musotsi, P., Nzietchueng, S., Tiambo, C. K., Kabasa, J. D., ... & Pelican, K. (2016). One Health capacity building in sub-Saharan Africa. *Infection ecology & epidemiology*, *6*(1), 34032.