

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

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This paper presents the relatively new and important One Health perspective for addressing poverty and food security in Africa. The One Health approach, also referred to as Global One Health, emphasizes and deepens our understanding of the interaction dynamics between the hitherto largely separate domains of health, agriculture and ecology. Addressing such connections is not entirely new. Linkages between health and agriculture are addressed, for example, through studies on health effects of food intake, in absolute units, measured by caloric intake, and in compositional quality of diets, measured by deficiencies or excess. Linkages between agriculture and ecology are also on the agenda for longer, for example addressing sustainability of agroforestry practices or ecological control of pests affecting crops and livestock. The One Health approach addresses issues that cut across all three domains, and is most prominently relevant for zoonotic diseases. A zoonosis is an infectious disease caused by a pathogen that jumps from animals to humans. Such jumps typically happen in conditions where human activity involves close contact with animal hosts, which are often wild animals but often also involve domesticated animals, the livestock used for food and other purposes.

Interestingly, the authors of this paper mention zoonotic diseases throughout the paper but their main focus is not on zoonoses but on poverty alleviation and food security. As they say in the introduction, "[p]overty alleviation and food security are anchored on sustainable agricultural production, which demands an integrative and inclusive approach, such as, the *one health* [emphasis in original] approach." This quote characterises the paper very well, underlining its overall message but also revealing what the paper could do better. As already mentioned, arguing for an integrative and inclusive approach to agricultural issues is not entirely new. The key message of this paper - that the One Health approach is a particularly good approach for poverty alleviation and food security - therefore makes sense intuitively but nevertheless requires further explanation and case evidence to be convincing. What makes a One Health approach better than, for example, the agroecology approach that makes very similar claims about addressing poverty and food security? Particularly disappointing is the glimpse we get of various One Health initiatives, listed in a table¹, but no further information on how these initiatives address poverty and food security. It would be great if the authors could work out one or two of these initiatives as case studies to sustain their claim.

Another prominent element of the paper is the focus on Africa, justified by the relatively high occurrence of poverty and food insecurity. It remains somewhat unclear if and how the One Health approach addresses relative poverty and food insecurity. In other words, if the One Health approach would effectively improve agriculture, all farmers in all parts of the world would benefit and this could increase the overall availability of food but not the unequal distribution of food

availability. One can think of arguments that link the diversity of smallholder farming systems to biodiversity and reduced disease risks. In other words, disease risks increase in areas with fewer (sub-)species in high numbers and, vice versa, disease risk go down in areas with more (sub-)species in lower numbers. The latter is more prominent in areas with diverse smallholder farming systems, arguably more prominent in Africa. Making such farming systems more resilient for disease risks, of whatever sort, is indeed something that could receive more attention.