



Tropentag, September 20-22, 2023, hybrid conference
“Competing pathways for equitable food systems transformation:
Trade-offs and synergies”

Trade-offs and synergies amongst competing pathways for sustainable agricultural transformation in Africa

MARCUS GIESE¹, JULIET KARIUKI¹, LUTTA ALPHAYO², MARIA OGUCHE¹, KATRIN WINKLER¹

¹*University of Hohenheim, Inst. of Agric. Sci. in the Tropics (Hans-Ruthenberg-Institute), Germany*

²*University of Nairobi, Kenya*

Abstract

Challenges facing agriculture are pervasive. Land, water and soil degradation, climate change and biodiversity losses are of global concern especially because their impacts are always unequally distributed. The interactions between these challenges have given rise to paradigm shifts in support of integrated approaches for achieving sustainable and resilient food systems. However, ongoing debate abounds regarding how to increase productivity while minimising trade-offs that undermine the natural and socio-economic resources required for agriculture to survive and thrive. In Africa, increasing population and changing consumption patterns have led to growing food and land demands. Consequently, the continent is witnessing the emergence, permanence and disappearance of competing concepts to address the difficulties facing agricultural production. It is within this context of contestation that the DAAD Agriculture Alumni Training Network organised travelling workshops in Kenya and Germany. The focus was on highly topical issues, namely, ‘Paradigm shifts in Agricultural Systems towards Sustainable Land-use’; ‘Integrating Systems for Sustainable Agricultural Transformation’ and ‘Tradition meets digitalisation – a new dream team for sustainable land use?’. The aim was to explore and analyse the complementarities and constraints of adopting competing concepts from the perspective of various stakeholders. There was merit in applying integrated vis a vis conventional approaches, such as agroecology which increased biodiversity and, in some instances, agricultural productivity. The adoption of digital approaches was considered promising particularly for monitoring soil health and seasonal forecasting. The combination of indigenous knowledge for crop and livestock production was deemed ideal for ensuring that social and agricultural outcomes were equitably met. This was, especially with respect to holistic rangeland management which exhibited synergies between livestock production, wildlife, and humans. However, trade-offs were associated with the increased labour required to adopt agroecological approaches, the resource-based conflicts related to planned grazing management with cultural landscapes, especially during periods of drought and in some instances, the neglect of animal welfare with respect to meeting increased local demand for meat products. Overall, the outcomes of applying integrated approaches whilst minimising trade-offs were shaped by barriers often beyond the farm, therefore complimentary institutional efforts across scales to enhance synergies and build systemwide resilience are required.

Keywords: Agroecology, paradigm shifts, synergies, trade-offs

Contact Address: Juliet Kariuki, University of Hohenheim, Inst. of Agric. Sci. in the Tropics (Hans-Ruthenberg-Institute), Stuttgart, Germany, e-mail: j.kariuki@uni-hohenheim.de