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“Management of land use systems for enhanced food security:  
conflicts, controversies and resolutions”

## Enhancing Transdisciplinary Research on Food and Nutrition Security through Innovation Systems Perspective (ISP)

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### Abstract

Food and nutrition security challenges require new sustainable ways of knowledge generation, dissemination, implementation and adaptation. Transdisciplinary research approaches are often applied as appropriate means to address real-world problems by involving non-academic actors into the research process in order to integrate the local knowledge and to create ownership for suggested scientific solutions. Following an evolution of approaches to agricultural research for development which have mostly failed to effectively connect research and non-academic actors, the ISP attempts to learn from past failures and takes a comprehensive view of researchers, farmers, policymakers and other actors whose interactions could lead to successful innovation. In order to understand which actors need to be involved when, which linkages between them have to be strengthened and which institutional and context factors have to be supported to enable successful innovations, this article discerns different elements and stages of innovation processes. Adapting the ISP to the context of horticulture and particularly to the sub-sector of African indigenous vegetables (AIV), it aims to identify research and non-academic actors whose effective collaboration is relevant to improve food and nutrition security through innovation in Kenya. Centering on different actor groups, it analyses the conditions they face in carrying out their functions with regard to innovation in AIV sub-sector in West and Central Kenya. It also highlights determinants for successful innovation, i.e. positive as well as negative factors linked to the political and infrastructural context, the actors' capacities and their interactions. Building on a holistic assessment it discusses several aspects on how to optimise the innovation processes the multi-stakeholder interdisciplinary German-Kenyan research project HORTINLEA (Horticultural Learning for Improved Livelihood and Nutrition in East Africa) aims to support and participate in. The article concludes with recommendations in order to further enhance the practice of transdisciplinary research on food and nutrition security through ISP.

**Keywords:** African indigenous vegetables, food and nutrition security, horticulture, innovation system, Kenya, transdisciplinary research

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