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## Nutrition, gender and social cohesion effects of commercialisation of African indigenous vegetables on smallholder farmers

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### Abstract

The interdisciplinary research project “Social Cohesion, Food & Health - Inclusive Food System Transitions” (IFST) aims at advancing research on food system transitions focusing in particular on interactions with social and societal issues. In the framework of the IFST project, our case study on the nutrition-sensitive value chains of African indigenous vegetables (AIVs) analysed the commercialisation of these crops in Kenya. Using household fixed-effects models, we find that smallholder farm households’ income increased significantly between 2016 and 2022 with AIV commercialisation. We analyse three potential trade-offs related to nutrition, resource sharing and solidarity, and women empowerment. We find that commercialisation did not negatively affect smallholders’ nutrition outcomes but did not improve them either. In terms of community solidarity and resource sharing, our results are ambiguous. While we find that sharing AIV for free decreased with commercialisation, we find no consistent and significant evidence that solidarity indicators changed over time with AIV commercialisation. We relate this to our finding from the FGDs that there is no unidirectional effect of commercialisation on solidarity, but rather multiple and sometimes opposing mechanisms at work. Lastly, we observe an economic empowerment of women that we relate to women’s individual and collective strategies as well as their retention of control over AIV marketing and profits. Yet, AIV commercialisation does not contribute to a redistribution of land rights or labor; instead, it increases women’s labour burden. Overall, with rather favourable social and economic effects for smallholder farmers, these emerging nutrition-sensitive value chain of AIV could be an important instrument to reduce hidden hunger in sub-Saharan Africa due to their high densities of important micronutrients. However, this potential is threatened by high food losses. We analysed the extent of quantitative as well as nutritional food losses along the AIV supply chain based on a comprehensive literature review. Our results suggest high food losses for various nutrients during production and marketing, but also a lack of detailed studies on nutritional losses for AIV in the supply chain.

**Keywords:** African underutilised vegetables, Kenya, micronutrients, smallholder farmers, supply chains