



Introduction to a Special Issue: Regional Food and Nutritional Security in Tanzania – Methods, Tools and Applications

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The first group of papers from the Trans-SEC project in Tanzania was published in the December 2017 issue of *Food Security* (pp. 1143–1322). This second group of 10 papers is prefaced by a paper in which the constraints to adoption of agricultural innovations are identified, overcome and out- and upscaled. The thematically-clustered group of papers focus on (I) frame conditions and driver analysis; (II) participation of stakeholders and implementation to improve all related processes for achieving adoption of agricultural interventions; and (III) specific topics for improving upscaling and dissemination of agricultural innovations.

1 Frame conditions and driver analysis

- **Drivers of rural-urban migration related to food security** are analysed by Duda et al. They focus on specific characteristics of rural farm households in a comparative regional approach. Using logistic regression, they investigate when migration worsens food security and in which situations food security may increase. The level of food security status is expressed as a propensity score, assessing access, availability, and stability of food supply.
- **The policy impact on food security using an import tariff for edible oil** is analysed by Mgeni et al. The tariff, as an instrument to increase domestic production of edible oil, is analysed using a Policy Analysis Matrix (PAM). Based on the results, the authors discuss preferred incentives for increasing the competitiveness of Tanzanian oil producers in contrast to imposing import tariffs.
- **Outgrower schemes as an alternative to smallholder agriculture** are often proposed to safeguard food security

and development. In this regard, Büntrup et al. discuss its strengths and weaknesses as well as policy requirements that, on the one hand, provide opportunities and, on the other, minimize risks for socially acceptable systems. Among other matters, the need to foster policies that attract and steer nucleus-outgrower schemes are discussed in the context of its possibilities.

- **The link between value chains and household food security** is analysed by Hermann et al. A specific driver analysis with focus on market linkages and their impact on agricultural income and related food security is a key scope of the investigation. Descriptive and econometric methods illustrate the advantage of market linkages related to higher income levels, but state limitations to generalizable results at household levels.
- **Urban-rural linkages** are evident in food security and must be well defined in order to respond appropriately. Wenban-Smith et al. (2016 already published in this journal and therefore not in this issue) discuss rapid urbanisation in Tanzania to 2030, the Sustainable Development Goals horizon, seeking to identify the challenges it poses for food security. Given that rural regions interplay with urban regions, a holistic consideration of both areas is needed to define food security issues.

2 Participation and implementation

- **Participative ex-ante assessment for improved requirement planning at community level** is essential for adequate implementation of upgrading strategies. Uckert et al. systematically evaluate upgrading strategies at the community level. Implementation requirements are assessed against low, medium, and high suitability. High requirements are case-based, especially with regard to local knowledge and education (human capital). These assessments help support implementation and improve the planning of interventions.

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- **Participatory problem analysis with attention to gender and wealth** is conducted by Ngwenya et al. The authors specifically discuss the exclusion of comparatively poorer farmers in typical agricultural research projects for development. The analysis reveals the perspectives of low-income households, which suffer the most from inter-connected problems across their crop activity systems. Both a lack of labour and restrictions of time available to women were found; these should be considered in future projects.
- **System perspectives are linked with user perspectives** to identify adoption barriers to food security innovations by Kuntosch and König. The authors discuss innovation processes using innovation examples as upgrading strategies and relate them to specific barriers to adoption. Constraints to national or regional systems are analysed and, based on these findings, an analytical framework is developed.

3 Specific innovation topics for up-scaling

- **Dry soil planting of maize as an adaptation strategy** is analysed by Lana et al. The authors focus on semi-arid regions and discuss options to cope with unreliable and irregular weather. The proposed methods are tested in order to safeguard targeted yields. Most promising simulation results in the frame of climate scenarios are calculated by a crop model. The adaptation strategy “dry soil planting” is a feasible and valid technique, especially for semi-arid regions.
- **Key factors influencing the food security of smallholder farmers with special attention to cassava** are analysed by Reincke et al. The main findings consist of supporting or threatening factors that drive food security in smallholder farmer households. A mixed approach to household survey data, qualitative semi-structured interviews, and regression models assess three food security components: food availability, food access, and food utilization.
- **Efficiency scenarios of charcoal production and consumption** are analysed by Hoffmann et al. and examine predicted energy demands related to population growth. The potential for improving efficiency in charcoal production and efficiency of cooking stoves is evaluated using scenario analysis. The improvement in charcoal production and the dissemination of efficient stoves is discussed in the context of mitigating the overall demand for charcoal that will otherwise double by 2030.

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Reference

- Wenban-Smith, H., Fasse, A., & Grote, U. (2016). Food security in Tanzania: The challenge of rapid urbanisation. *Food Security*, 8, 973–984.



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