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## Social Network Analysis of Stakeholder Groups Implementing Upgrading Strategies to Enhance Food Security in Rural Regions of Tanzania

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### Abstract

Improving food security is essential for most rural Tanzanian households where the nutritional status of the country's population is low. Given the challenges of rising food demand it is highly recommended to upgrade existing smallholder food systems against upcoming vulnerabilities. The aim of this study was to assess and apprehend the role of actors and the interlinkages among the upgrading strategy/ies (UPS) groups; to determine the relationship within these UPS group actors; to recognise the differences between the different UPS groups and other actors; and to define possible success factors for UPS group performance. The study was conducted in the framework of a multi-disciplinary Trans-SEC project in Tanzania, designed to enhance food security for rural poor households by employing food securing UPS along the food value chain. Our specific focus was on two UPS, namely a) tied ridges and fertiliser micro dosing b) maize sheller and millet thresher.

Research methods included individual interviews using the social network analysis tool Net-Map and focus group discussions. The Net-Map tool enabled visualising and understanding the power relations, interlinkages among the UPS groups, and stakeholder goals, all of which facilitate knowledge transfer and material flow. The results show that most UPS in the sub-humid region had slightly higher knowledge network densities in contrast to those in the semi-arid region. The knowledge, money and material flows were similar among different groups. Motivations for participating in a UPS group differ to some extent between UPS groups and all types of actors whereby enhancing food availability, more joy, more income, more knowledge and better social relations were most frequently mentioned. The results provide understanding of the different UPS stakeholder group's performances by showing attributes of stakeholders and then relating them to their goals and perceived influence. The results further provide the basis for future strategic planning to further enhance participation and up-scaling. This study suggests that improved performance along the food value chain is needed, investments in policies, capacity building for farmers and social learning in terms of collective action and collaboration. The study serves as a landmark for understanding stakeholders' roles and their influence in implementing upgrading strategies.

**Keywords:** Degree centrality, food value chain, motivations, Net-Map, stakeholders