



Tropentag, September 15-17, 2021, hybrid conference

“Towards shifting paradigms in agriculture  
for a healthy and sustainable future”

## Enhancing Rural households' Food Security through Diversification: A Food System Analysis in Tanzania

MWANGA RONALD<sup>1</sup>, MILLION SELESHI<sup>2</sup>, STEFAN SIEBER<sup>3</sup>, CONSTANCE RYBAK<sup>4</sup>

<sup>1</sup>*Humboldt University Berlin, Faculty of Life Sciences, Germany*

<sup>2</sup>*Himaraya University, Rural Development and Agricultural Extension,*

<sup>3</sup>*Leibniz Centre for Agric. Landscape Res. (ZALF), Sustainable Land Use in Developing Countries (Sus-LAND), Germany*

<sup>4</sup>*Leibniz Centre for Agric. Landscape Res. (ZALF), Inst. of Socio-Economics, Germany*

### Abstract

Inadequate access to nutritionally rich food is a global challenge with particular salience in developing countries. Thus, sustainable food-based approaches are vital for reducing malnutrition due to insufficient dietary intakes and nutrient-deficient diets. The diversification of diets through increased production and utilisation of underexploited but nutrient-dense crops like indigenous vegetables (IVs) and legumes is an ideal way to reduce hidden hunger and food insecurity, especially, among the vulnerable and lower-income rural population. This paper analyses the potential of crop diversification to enhance food security in rural households using an integrated food system analytical framework. The effect of diversified on-farm production, including the inclusion of IVs and legumes in farm systems, on nutrition outcomes is analysed using Household Dietary Diversity Score (HDDS) as a proxy. The study uses cross-sectional data collected from 667 rural households by the Vegi-Leg Project based in Lindi region, Tanzania. Employing an Order logit model, it identifies the effect of production diversification (indigenous vegetables and pigeon peas) on household food security status and other determinants of food security. The results indicated that the mean HDDS was 8.29 while the production diversity was 3.07. The order logit regression model result reveals that production diversity positively affects HDDS ( $p < 0.05$ ). The result also shows that HDDS is negatively influenced by age of household head ( $p < 0.01$ ), while positively influence by sex of household head ( $p < 0.05$ ), indigenous vegetable production ( $p < 0.1$ ), and districts ( $p < 0.01$ ). Therefore, the uptake of resilient agro-biodiversity enhancing crops like pigeon pea and IVs should be promoted and considered as a strategy to ensure sustainable food and nutritional security, especially in low-income rural households.

**Keywords:** Food security, Households Dietary Diversity Score (HDDS), Production Diversification