Homegarden Food Production and Diet Composition in Rural Limpopo Province, South Africa

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Introduction

- In Limpopo province, South Africa, food insecurity remains a constant struggle for the rural population and micronutrient deficiency caused by unbalanced diets are widespread
- The theoretical construct of food security is a latent variable that can only be measured indirectly by the means of various proxy indicators which focus on a certain dimension (Fig.1)
- Dietary diversity scores (DDS) have recently gained a lot of popularity as an easily obtainable indicator of healthy diets
- Many rural South Africans cultivate homegardens in order to complement their food purchases
- In theory, homegardens carry the potential to improve food security by increasing the availability and accessibility to nutrient dense food items

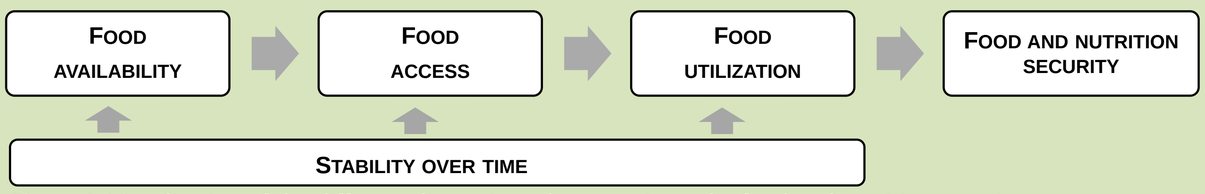

Figure 1: Visualization of the different dimensions that constitute the food and nutrition security concept

→ The overall study objective is to reveal further insights of the links between food security, diet quality and homegarden food production within the local context of rural Limpopo

Material and Methods

- Data collection between May and July 2017
- Study area: Mopani district, Limpopo province, South Africa
- Total of 130 rural households in six representative rural villages
- Purposeful sampling method
- Semi-structured questionnaire and homegarden visits (Fig. 2)
- Assessment of six different food security indicators, among them the Household Food Insecurity Access Scale (HFIAS) and Household Dietary Diversity scores (HDDS)
- Complete homegarden food plant inventory

Figure 2: Three homegardens found in the villages of Selwana, Mafarana and Lorraine (left to right) with different levels of management intensity and spatial arrangement.

Results

- Based on the HFIAS categorization, 40.8% of the studied households were severely food insecure
- Households frequently experienced anxiety over insufficient food provisioning and were unable to fulfill food preferences
- The average HDDS was 11.2 and homegarden food production accounted for 15.3% of households´ dietary diversity (Fig. 3)

Household Dietary Diversity Score	Mean	Standard deviation	Maximum value	Minimum value
HDDS (+HG)	11.2	2.7	16	6
HDDS (-HG)	9.5	2.5	16	4
Contribution of homegarden production to HDDS (%)	15.3	11.0	46.2	0.0

Figure 3: Contribution of homegarden food production to the household dietary diversity score (HDDS) of the 130 surveyed households. Contribution of homegarden production: (DDS(+HG)–DDS(–HG)/DDS(+HG))×100.

- Homegardens constituted a considerable source for leafy vegetables (67% of households obtained those from their garden), as well as for fruits and legumes (36% and 33%)
- Traditional Food plant species of superior nutritional content like spider plant (*Cleome gyandra* L.) and jute mallow (*Corcharus olitorius* L.) were commonly found in homegardens and thus positively influenced diet composition
- Access to a homegardens significantly increased the consumption frequency of fruits (Fig. 4)

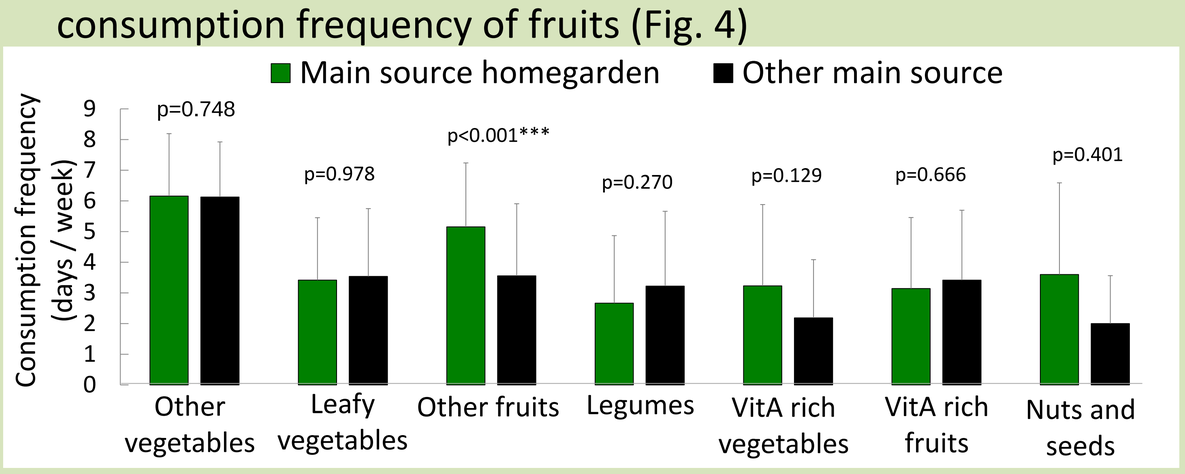

Figure 4: The average consumption frequencies of selected food groups. Green bars represent households which cited their homegarden as the main source for the corresponding food group; black bars represent households which obtained the food group from another source (field, purchased or other). Results marked with *** (P≤ 0.001) differ significantly according to the Mann-Whitney U-test.

Discussion

- Further evidence of the prevalence of food insecurity stresses the need for the formulation of solutions
- By providing mainly fruits and vegetables, homegardens contribute to food security but do not assure it
- Traditional food plants cultivated in homegardens might compensate for the otherwise low dietary diversity and supplement adequate nutrition

Conclusions

- The households´ access to preferred foods is constrained by a lack of financial resources
- Dietary diversity is rather low and monotonous diets might lead to malnutrition
- Homegardens provide a magnitude of nutrient-dense food items which cater to the nutrient requirements of the rural poor
- By increasing fruit consumption and conserving traditional food culture, homegarden food production favors healthy diets
- Governance institutions should initiate an encompassing program that allows homegardens to unfold their full potential