



Tropentag, September 17-19, 2013, Stuttgart-Hohenheim
“Agricultural development within the rural-urban continuum”

Linking Agriculture and Nutrition: Dietary Diversity of Women and Children in Different Agro-Ecological Zones of Western Kenya

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Abstract

The diversity of diets is crucial particularly in the developing world where diets consist mainly of starchy staples and lack nutrient rich foods. To improve dietary diversity and quality, the role of agrobiodiversity in nutrition and health needs to be better understood. The objective of this study was to assess the possible relationship between dietary diversity and on-farm agrobiodiversity in rural Western Kenya. A nutrition survey was conducted involving 596 randomly selected mothers with children aged 6–23 month in six different agro-ecological zones (AEZs). Semi-structured questionnaires were used to assess socio-economic factors and food intake. A wealth indicator and dietary diversity scores (DDS) were compiled for the household (HDDS), women (WDDS) and children (CDDS) according to FAO guidelines (2011). Anthropometric measurements of women and children were taken. Farm richness (crop species) was counted for a sub-sample of 60 farms during the short rainy season. The CDDS (mean=3.7) was below the minimum for an adequate diet of four food groups per day for 45 % of children; HDDS (mean=6.8) and WDDS (mean=4.2) were rather low for the study population. Stunting was typical for the study area with 20 % of children being moderately stunted and 10 % severely, while 9 % of mothers were underweight, 13 % overweight and 5 % obese. Both the HDDS ($p < 0.001$) and WDDS ($p = 0.038$) differed significantly between AEZs with the transitional lower-midland 4 (LM4) zone having the highest values for HDDS and WDDS being highest in both LM4 and semi-humid LM3. Also farm richness (mean=16 crop species/farm) differed significantly between AEZs ($p = 0.033$) with the highest richness in LM3. All three DDS were not correlated with farm richness, yet, significantly correlated to the wealth index of a household (all $ps < 0.001$). In summary, a low diversity in individual diets in Western Kenya is present within lower wealth households. While there is a trend for women's diets being more diverse in areas of high on-farm crop richness, on-farm crop diversity might be less crucial for dietary diversity than other food sources such as animal source foods and market foods in order to achieve a diverse and healthy diet for all household members.

Keywords: Agro-ecological zones, agrobiodiversity, dietary diversity score, Kenya