



Tropentag, September 14-16, 2022, hybrid conference

“Can agroecological farming feed the world?  
Farmers’ and academia’s views”

## Are vegetables or fruits out of reach in Turkana county, Kenya?

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### Abstract

**Background:** The food environment as an element of food systems, is the context in which people select, acquire, prepare, and consume food. Food environment is thus a determinant of diet quality and nutritional outcomes because people mainly consume what is within their physical and economic reach.

**Method:** In ten randomly selected Community Units in Turkana (semi-arid/arid), informal and formal food vendors were geocoded and mapped using the Produce-Color-Diversity Tool. It generates a score (max=6) counting the numbers of “colours” of fruits and vegetables sold by the vendors to get a general understanding of the antioxidants and micronutrients present, which are associated with colour. Twenty households were selected based on their apparent knowledge of the community’s food environment for in-depth interviews.

**Results:** Out of the 384 geocoded vendors in the food and drink sectors only 44 % offered fruits and vegetables. Most of them were retailers or kiosk type vendors (39 %), followed by roadside vendors (30 %), restaurants (12 %), mobile vendors (8 %), open-air-markets (4 %), street hawkers (4 %) and supermarkets (2 %). In general, rural areas recorded fewer vendors in all categories. Roadside vendors and supermarkets were more likely to offer a wide range of fruits and vegetables with a colour-tool-diversity-score (CTDS) of 3.8 and 4, respectively. Most of the roadside vendors were female vendors (92 %). They showed a lower variety in rural areas compared to Lodwar town which was the preferred marketplace to go to because of its diversity at affordable prices. The perceived distance to the preferred marketplace (most frequently visited by members of the household to purchase food) ranged from 16 up to 210 minutes.

**Conclusion:** Without access to vegetables and fruits a diverse diet is not possible which is associated with a high risk for malnutrition. In the study area vegetable and fruit production is limited due to water scarcity. At the same time the poverty level in Turkana is high and associated with high levels of food insecurity. The limited opportunities to purchase vegetables and fruits in the surveyed region calls for public health measures to enhance the market availability of fruits and vegetables at affordable prices.

**Keywords:** Dietary diversity, food security, fruits and vegetables, Kenya, Turkana