

Seasonality as a construct in sustainability and food security discourse: the case of smallholder agricultural production in Kenya

Ndungu Nyokabi

Institute for Global Prosperity (IGP), University College London (UCL), United Kingdom and University of Edinburgh Business School, Edinburgh, United Kingdom

Lisette Phelan

Environmental Economics and Natural Resources group (ENR)
Department of Social Sciences, Wageningen University and Research (WUR), Netherlands

Henrietta L. Moore

Institute for Global Prosperity (IGP), University College London (UCL), United Kingdom

Introduction

- **Globalisation of food systems** has increased **consistent supply and year-round availability** of a variety of **fresh products**
- This **globalisation is associated with environmental costs**, e.g., food waste and miles, associated with production in heated greenhouses, processing, and long-distance transport to market
- Consumption of locally-produced, **seasonal food** has been advocated as a **radical lifestyle choice** and a **socio-politically** and **environmentally conscious decision** to engage in '**ethical eating**' that has positive environmental, health, economic and societal impacts.
- This **discourse fails to capture the nuanced contextual differences** between rich countries in **the Global North** and emerging economies in **the Global South**.

Research objective

- The objective of this study was to **contextualise the construct of seasonality** and its **role in shaping the sustainability and food security discourse** in emerging economies.
- We draw on a concrete **case study of smallholder agricultural production in Kenya**.
- We **explore how farm households cope with the seasonal nature of production and consumption**.
- We explore the **impact of seasonality on dietary diversity and nutritional outcomes**.

Methodology

- The research was undertaken in **seven counties in the Mau Narok-Cherogany complex: Narok, Bomet, Kericho, Nandi Hills, Uasin Gishu, Elgeyo Marakwet, Trans-Nzoia**
- Data was collected through :
 - **a modified Photovoice method**
 - **a recall questionnaire**
 - **focus group discussions**
- Data was analysed through a **thematic content analysis approach** using NVIVO

Results

- **Food availability is highly influenced** by prevailing **seasonal condition** - plenty and diverse foods available in rainy season and reduced food availability and diversity in the dry season

“Our weather conditions do not allow growth of fruits like oranges, there is also overdependence on one type of food [...] additionally change in agricultural production to sell the same food products during different seasons leads to a lot of surpluses which forces us to eat one type of food/meal repeatedly”*

- Photovoice participant, Nandi Hills

- In the lean season, **smallholder households depend on off-farm purchased food** which may reduce access to healthy and nutritious foods.
- Agricultural commercialisation has made **farmers focus on producing specific crops for the market** which **reduces the diversity of produce grown for household consumption.**

Results

- **Agricultural commercialisation** – a double-edged sword - **reduces farm crop/food diversity** but **extra income can be spent to access food from the market.**
- Farmers’ reliance on **expensive inputs** including pesticides and herbicides has led to the **disappearance of traditional vegetables** which are killed alongside the weeds. There is also a **food safety risk** due to imprudent use of chemicals.
- The **availability of off-farm income** is typically **less affected by seasonality than farm income** and therefore perceived as an effective mechanism to smooth food consumption, but not all households have access to off-farm income and purchase foods during the dry and lean seasons.
- **Agroforestry, perennial crops and regenerative practices** show potential to **bridge seasonality.**
- **Irrigation** enables farmers with access to water to **minimise the impacts of seasonality** by enabling production of food in the dry season when farm produce can be sold at high prices.







Discussion and conclusion

- **Seasonality is a construct** that is widely used in **framing the sustainability and food security discourse**.
- **Need a nuanced appreciation** for the **implications** and **limitations** of using a **complex, value-laden construct** that derives meaning from, and cannot be used without reference to, a given context.
- **Smallholder food choices** are still **impacted** by **seasonal differences** in climatic conditions which has on household nutrition and health.
- Current prevailing **conceptualisation of seasonal consumption** as an **aspirational lifestyle** and **dietary choice** should **be extended to better capture the lived experience of smallholder farmers** who are vulnerable to **food insecurity** and - despite producing food - consume a diet limited in its diversity.

Acknowledgements

We acknowledge the PROCOL-Africa citizen science team:

- Joel Kibet Bitok
- Joseph Kipngetich Kones
- Hellen Jepngetich Cheptoo
- Noah Kiplagat
- Andrew Kibet Yano
- Nelson Kirotych Bailengo
- Joseph Kimutai Cheptorus
- Thompson Kipkore Kiptum
- Chepngeno Selim
- Fredrick Keriasek
- Beatrice Kibelekenya
- Stephen Arap Tuwei
- Timothy Kipkeu Kiprutto
- Solomon Ole Ntaiya
- Evelyn Njau
- Wycliffe Guguni.



<https://www.procolkenya.com>

This work is dedicated to the memory of our late colleague, **Duncan Suter Kipkore**, a citizen scientist from Eldoret.