



School meal programme models and food environments in semi-arid region, Kilifi County, Kenya

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1. Background

- School meal programmes are crucial for improving food and nutrition security and contributing to Sustainable Development Goals, particularly SDGs 2, 3, 4, and 5 (FAO & WFP, 2018).
- In climate-vulnerable, Arid and Semi-Arid Lands (ASALs), aligning these programmes with planet-friendly school meal principles is both urgent and understudied (Pastorino et al., 2024).

4. Results

Table 1: School Meal Programme (SMP) Models

SMP-Model	Implementing actors	Operational characteristics	School coverage n (%)	Geographical coverage
Government - funded	County Government	Centralised food procurement	48 (100)	Bamba, Sokoke, Ganze, Jaribuni
Donor supported	NGOs, Faith-Based Organisations	Centralised food procurement	14 (29)	Bamba & Sokoke
Parents-led	Parents	Parents funded	2 (4)	Sokoke
Garden-based	4K club, NGOs	Gardening supplement meal	5 (10)	Ganze & Jaribuni

Table 2: Food groups diversity in school meal programme models

SMP Model	Food groups				
	Legumes	Vegetables	Fruits	Cereals	Animal-sourced foods
Government funded	X	X	X	✓	X
Donor-supported	✓	X	X	✓	✓
Parent-led	✓	✓	X	✓	X
Garden-based	✓	✓	X	✓	X

Table 3: Alignment of planet-friendly school meal indicators with observed school meal practices

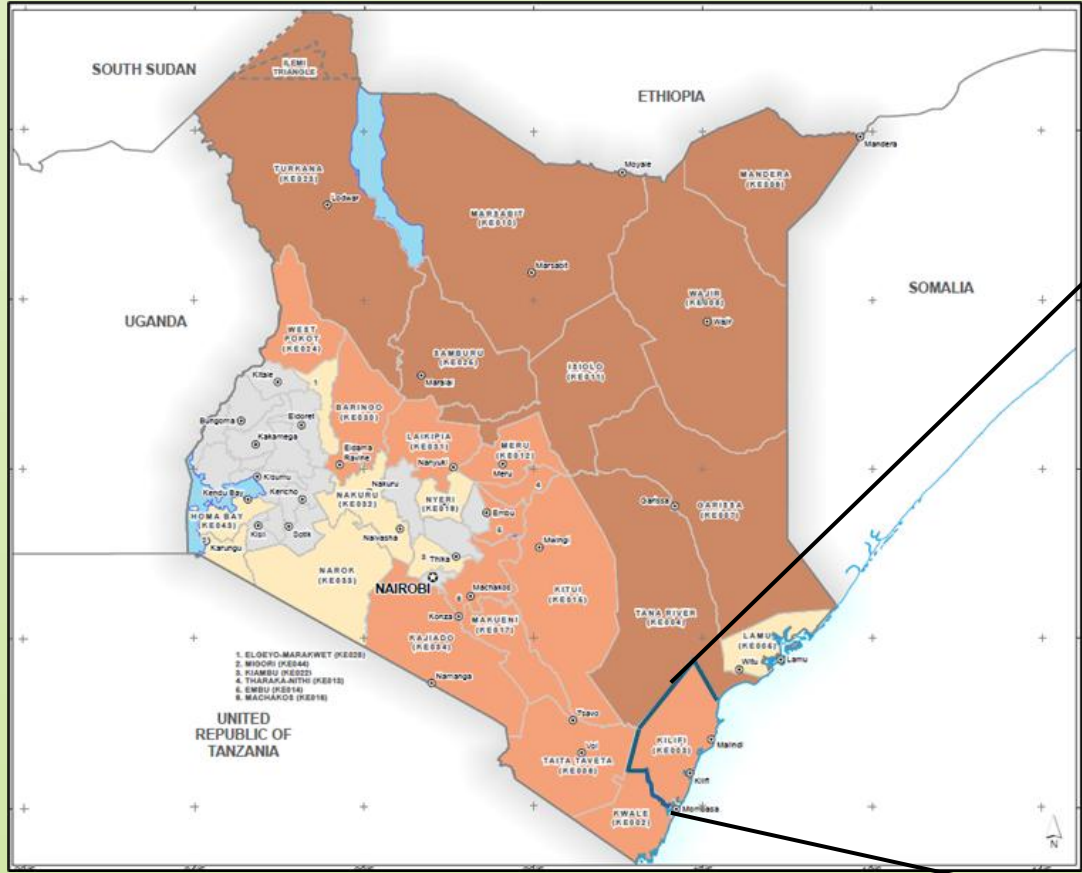
Planetary-friendly indicator domain	Source (FAO, 2026; WFP 2023)	SMP model observed practices				Alignment
		Government funded	Donor supported	Parent-led	Garden-based	
Plant-based foods	WFP	✓	✓	✓	✓	High
Diverse food groups	WFP	X	X	✓	✓	Moderate
Local procurement	WFP	X	X	✓	✓	Moderate
Clean cooking energy	WFP	X	X	X	X	Low
School gardens	WFP-FAO	✓	✓	✓	✓	High
Ultra processed food restriction	FAO	X	X	X	X	Low

2. Objectives

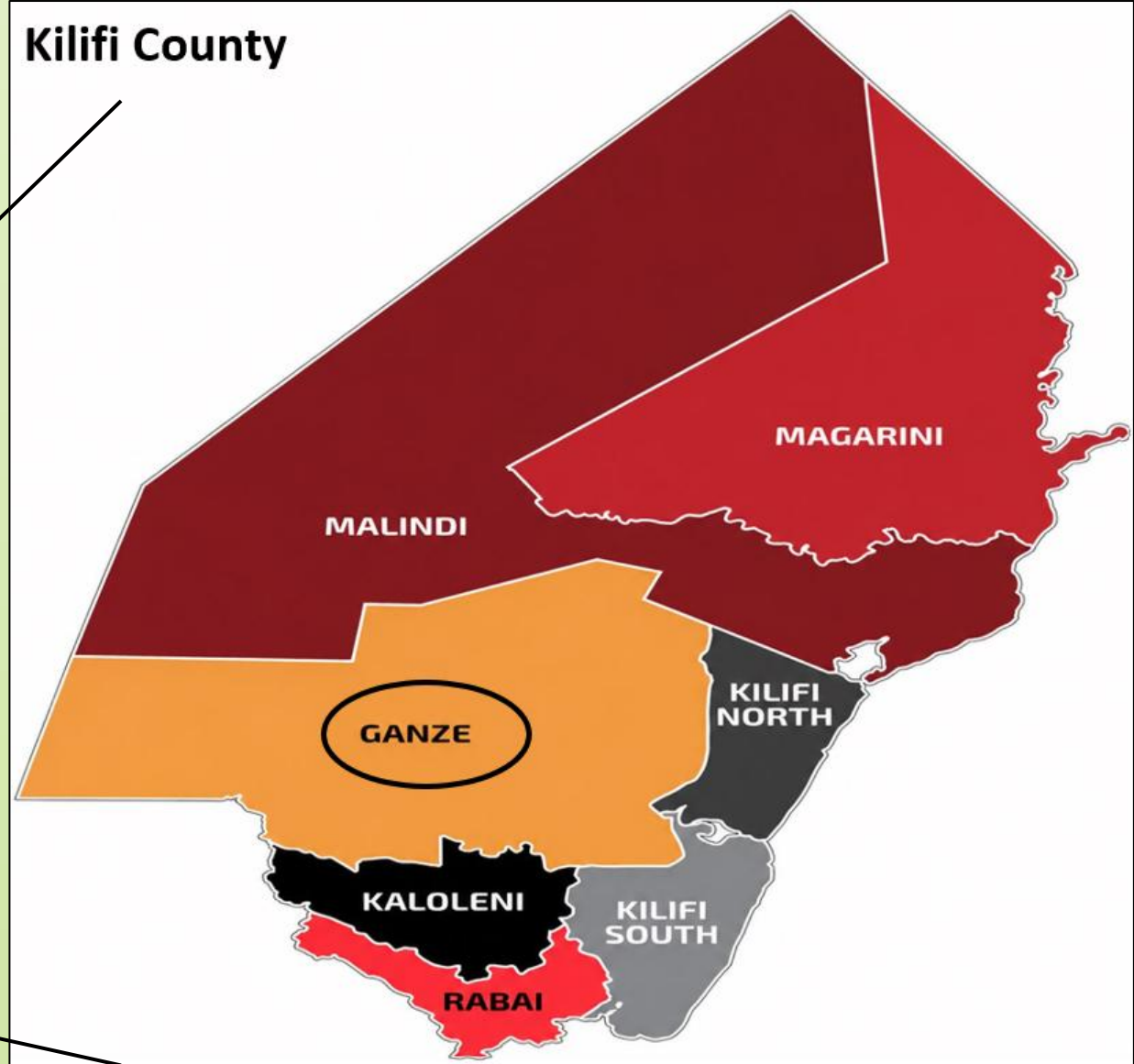
- (i) **Identify and compare school meal programme models**, focusing on implementing actors, procurement methods and the types of food served.
- (ii) **Characterise school food environments**, including prohibited foods and the presence of school gardens.
- (iii) **Assess the extent to which current practices align with planet-friendly school meal standards** in the semi-arid region of Kilifi County, Kenya.

3. Methodology

- Exploratory cross-sectional study, May-July 2025.
- 48 public primary schools selected across 4 wards in Ganze Sub-county.
- Purposive and random sampling.
- Structured questionnaire administered to headteachers and teachers responsible for school meal programmes.
- Descriptive statistics and comparative analysis to identify patterns across models and school food environments.

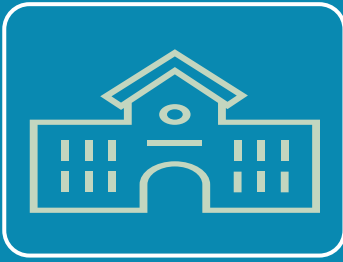


Map of Kenya © MapAction 2023



Map of Kilifi County © Labflow 2021

5. Conclusions



School meal programmes in Kilifi County's ASALs fall substantially short of planet-friendly standards.



None of the four school meal programme models meets planet-friendly standards for clean cooking energy or ultra-processed food restriction.



There is need for longitudinal and interventional research to understand which integrated strategies work best locally.

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(a) Sack gardening



(b) Vertical tower gardening



(c) Hanging containers



(d) In-ground gardening

Figure (a), (b), (c), (d): School garden production models © E.Chakacha 2025