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Food and Nutrition Security Index 2024 for Laikipia County

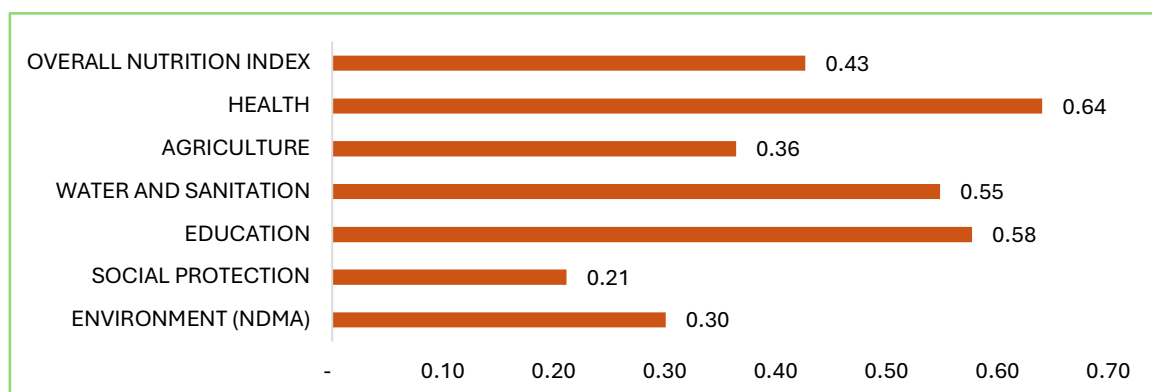
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Key Highlights

Improved food and nutrition security is not only a core development goal but also a critical pillar for achieving sustainable development. This policy brief provides an analysis of the County's food and nutrition security status and introduces the concept of a 'nutritious plate' as a guide to sustainable, health-promoting food choices.

Food and Nutrition Security Index (FNSI) is based on six pillars: health, agriculture, water and sanitation, education, environment (NDMA), and social protection. The scores range from zero to one, with zero indicating significantly low performance relative to the frontier county and one representing the frontier county. Laikipia County has an overall index score of 0.43. The health pillar has the highest score of 0.64, while the social protection pillar has the lowest score of 0.21 (Figure 1).

Figure 1: Laikipia overall FNSI and pillar performance (2024)



To improve food and nutrition security index scores, there is a need to:

- i. Promote dietary diversification, scale up food fortification initiatives, and enhance micronutrient supplementation programmes.
- ii. Enhance and diversify food production by supplying improved seeds and superior livestock breeds and strengthen agricultural extension services to promote more resilient and varied agricultural systems.
- iii. Prioritize expansion of water quality management and infrastructure to improve health and nutritional outcomes.
- iv. Provide cash transfers, food assistance, and targeted support to vulnerable populations, and promote resilience-building initiatives such as skills training and access to microfinance to enhance livelihoods.
- v. Prioritize strengthening early warning systems, increasing community resilience, enhancing infrastructure, and promoting sustainable agricultural practices.
- vi. Promote a nutritious plate with a variety of locally available foods, such as Irish potatoes, eggs, beans, ripe bananas, and cow milk, to encourage redirecting subsidies and related interventions toward crops that offer both nutritional and economic benefits.

Introduction

The Food and Nutrition Security Index (FNSI) is based on a comprehensive framework designed to harmonize nutrition indicators in Kenya. These indicators are essential for effective assessment, surveillance, and monitoring of nutrition across existing systems in a coordinated manner.

Table 1: Laikipia County background information

	County	National
County size	9,532.2km ²	582,646km ²
Arable land	1,998.7km ²	59,372km ²
Total population in 2019	518,560	47,564,296
Proportion of female population in 2019	49.9%	51.2%
Child mortality	6/1000	9/1000
Under-five stunting prevalence	12.6%	18%
Under-five wasting prevalence	2.6%	4.9%
Under-five underweight prevalence	6.6%	10.1%
Consumption of iron-rich foods among pregnant and lactating women	91.7%	90.2%
Access to basic drinking water service	69.7%	67.9%
Access to basic sanitation services	31.6%	40.9%
Prevalence of moderate or severe food insecurity in the population based on food insecurity scale	45.61%	59.8%
Proportion of women with minimum dietary diversity	63.6%	48.5%
Proportion of learners in the school meals programme	66.5%	20.0%

Data source: KPHC (2019); KDHS (2022)

Health Pillar

The health indicators were clustered into four groups: anthropometric, micronutrients deficiency, food consumption, and other health indicators. Laikipia County scored above average on this pillar with a score of 0.64.

Table 2: Anthropometric measures

Indicators		County index (2024)	National index (2024)
Overall anthropometric trends score		0.70	0.67
Under-five anthropometric measures	Stunting	0.87	0.67
	Underweight	0.89	0.71
	Wasting	0.77	0.77
	Overweight	0.45	0.53
Adolescent and adult anthropometric measures	Underweight (adolescent females)	0.60	0.62
	Underweight (adult females)	0.83	0.79
	Overweight (adult females)	0.44	0.57
	Underweight (adult males)	0.77	0.73
	Overweight (adult males)	0.66	0.67

Areas of Concern

- i. Moderate overweight rates among children.
- ii. Moderate underweight rates among adolescent females.
- iii. Below average performance in overweight rates among female adults.
- iv. Moderate overweight rates among adult males.

Policy Recommendations

- i. **Nutrition education programmes:** Develop and promote comprehensive nutrition education initiatives for children and caregivers.
- ii. **Access to healthy foods:** Improve access to affordable, nutritious food through community gardens, farmers' markets, and food assistance programmes.
- iii. **Targeted nutritional support:** Implement programmes that provide nutritional supplements and education specifically for adolescent females to address dietary deficiencies.

- iv. **Tackle adult obesity:** Launch campaigns promoting healthy eating and physical activity, improve access to fitness facilities, and offer dietary guidelines and nutrition counselling for weight management.

Table 3: Micronutrient deficiency

Indicators	County index (2024)	National index (2024)
Overall score	0.61	0.66
Household consumption of iodized salt	1.00	0.99
Consumption of iron-rich foods among children aged between six (6) and 23 months	0.00	0.36
Children aged 6–59 months who received vitamin A supplementation	0.85	0.70
Child micronutrient powder supplementation	0.00	0.24
Consumption of iron-folic acid supplements among pregnant and lactating women	0.87	0.81
Consumption of iron-rich foods among pregnant and lactating women	0.91	0.84

Areas of Concern

- i. Low consumption of iron-rich foods among children.
- ii. Low micronutrient supplementation among children.

Policy Recommendations

- i. **Strengthen food security programmes:** Enhance access to iron-rich foods through subsidized programmes and partnerships with local food producers, targeting low-income families and children aged 6-23 months.
- ii. **Promote nutrition education:** Implement community-based education on the importance of iron-rich foods and guide affordable sources, leveraging schools and health centres for outreach.
- iii. **Expand micronutrient supplementation:** Increase availability and distribution of micronutrient powders and supplements, integrating them into existing health programmes and targeting high-risk areas.

Table 4: Food consumption

Indicators	County index (2024)	National index (2024)
Overall score	0.86	0.67
Food consumption score	0.94	0.82
Minimum dietary diversity for women	0.75	0.48
Consumption of targeted foods	0.91	0.84
Individual consumption of 400g of fruits and vegetables per day	0.91	0.81
Consumption of vitamin A-rich foods	0.80	0.41

Area of Concern

Suboptimal dietary diversity among women.

Policy Recommendations

- i. **Enhance nutrition education programmes:** Implement educational campaigns focusing on the importance of dietary diversity and the benefits of consuming a variety of nutrient-rich foods, particularly for women and children.
- ii. **Support local food systems:** Strengthen local food systems for a stable supply of diverse and nutritious foods. This includes supporting small-scale farmers, improving market access, and developing infrastructure for food storage and distribution.

Table 5: Other health sector indicators

Indicators	County index (2024)	National index (2024)
Overall score	0.55	0.54
Early breastfeeding	0.85	0.62
Child deworming	0.84	0.65
Diarrhoea among under-five Children	0.61	0.55

Children under five years with diarrhoea and receiving oral rehydration solution (ORS) and Zinc	0.39	0.45
Low birth weight among newborns	0.42	0.73
Moderate or severe food insecurity based on the food insecurity experience scale	0.63	0.42
Mean coping strategy index	0.23	0.35
Households with latrines using improved sanitation facilities	0.39	0.57
Safely managed drinking water services	0.63	0.53

Areas of Concern

- i. Moderate cases of diarrhoea among children under five years.
- ii. Below average implementation of recommended interventions for the management of childhood diarrhoeal symptoms.
- iii. Below average performance in low birth weights among newborns.
- iv. Moderate food insecurity levels and low coping strategies for management of food insecurity.
- v. Below average utilization of improved sanitation facilities.
- vi. Moderate access to safely managed drinking water.

Policy Recommendations

- i. **Enhance health and sanitation interventions:** Strengthen immunization programmes for rotavirus and ensure the availability of Oral Rehydration Salts (ORS). Prioritize the construction and maintenance of latrines in low-income households with financial incentives and technical support.
- ii. **Expand social safety nets:** Scale up programmes such as cash transfers, food assistance, and school feeding initiatives to provide immediate relief and support for vulnerable households facing economic shocks and food insecurity.
- iii. **Promote agricultural development and community empowerment:** Invest in small-scale agriculture and climate-resilient practices by improving access to inputs and resources. Provide education and training on nutrition, sanitation, and income-generating activities to enhance community resilience and wellbeing.

Agriculture Pillar

This pillar encompasses agricultural practices that promote food and nutrition security in the county. These include agricultural production, land ownership, food consumption trends and dietary diversity, and food security indicators. The county score for this pillar was 0.36 indicating moderate performance. The specific scores for each indicator are presented below.

a) *Micronutrient consumption and dietary diversity*

The county and national dietary consumption patterns are presented in Table 6.

Table 6: Individual consumption and dietary diversity

Indicators	County Index (2024)	National Index (2024)
Overall score	0.71	0.62
Individual consumption of 400g of fruits and vegetables per day	0.91	0.81
Consumption of target foods	0.91	0.84
Minimum dietary diversity for women	0.75	0.48
Children consumption of vitamin A-rich foods	0.80	0.40
Consumption of iron-rich food among children aged 6-23 months	0.00	0.35
Consumption of iron-rich food for lactating women	0.91	0.83

Area of Concern

Low consumption of iron-rich foods among children.

Policy Recommendations

- i. **Enhance fortification and supplementation:** Fortify staple foods with iron and provide targeted vitamin A and iron supplements to children at risk of deficiency.
- ii. **Provide subsidies, incentives, and education:** Offer financial support to farmers for growing diverse fruits and vegetables, and retailers to lower consumer costs,

enhancing availability and affordability. Implement nutrition education programmes and campaigns in schools and promote iron-rich foods consumption.

b) Food security and land ownership

Table 7 provides insights into food security and land ownership at both the county and national levels.

Table 7: Food security and land ownership

Indicators	County (2024)	index	National (2024)	index
Overall score		0.35		0.40
Moderate or severe food insecurity in the population		0.63		0.42
Mean coping strategy index		0.23		0.35
Land ownership among women		0.20		0.43

Areas of Concern

- i. Moderate food insecurity levels and low coping mechanisms.
- ii. Low land ownership among women.

Policy Recommendations

- i. **Enhance local food production and access:** Provide subsidies and grants to local farmers to boost food production, support community gardens, and improve food assistance programmes such as food banks and meal initiatives to ensure adequate nutrition for vulnerable populations.
- ii. **Empower women in agriculture:** Strengthen laws for women’s land ownership and inheritance rights, simplify legal processes, and offer targeted financial support, such as low-interest loans, to help women purchase and develop land.

c) Agricultural produce

Table 8: Agricultural production volumes (by value chain)

Indicators	County index (2024)	National index (2024)
Overall score	0.07	0.16
Beans	0.05	0.21
Cattle	0.10	0.14
Goats	0.08	0.11
Maize	0.02	0.18
Potatoes	0.02	0.08
Poultry	0.15	0.28
Sheep	0.06	0.08

Area of Concern

Low crops and livestock production and diversification.

Policy Recommendations

- i. **Provide farmers with improved agricultural inputs and training:** This includes high-yielding, disease-resistant seeds and improved livestock breeds, along with training on modern farming techniques and pest/disease management for key crops and livestock.
- ii. **Improve market access and infrastructure:** Develop market infrastructure and support networks, such as cooperatives, to facilitate the sale of produce, while investing in essential resources like water sources and grazing lands.

Water and Sanitation Pillar

Ensuring reliable water, sanitation, and hygiene (WASH) services is crucial for preventing waterborne diseases such as diarrhoea and cholera, thereby reducing malnutrition and fostering healthier communities. Access to clean water and proper sanitation enhances food safety, minimizing contamination in both household consumption and agricultural practices, ultimately supporting better nutrition outcomes. The County score for this pillar was 0.55 indicating moderate performance. The specific scores for each indicator are presented in Table 9.

Table 9: WASH indicators

Indicators	County index (2024)	National index (2024)
Overall score	0.55	0.52
Access to basic drinking water service	0.63	0.53
Access to limited drinking water service	0.91	0.76
Access to safely managed drinking water	0.63	0.53
Access to improved sanitation facilities	0.33	0.51
Access to basic sanitation services	0.34	0.44
Access to improved sanitation facilities among households with latrines	0.39	0.57
Connections to piped water supply	0.57	0.30
Connections to the sewerage system	0.16	0.07
Average time to the source of drinking water	0.79	0.73
Average distance to the source of drinking water	0.74	0.71

Areas of Concern

- i. Moderate access to basic, safe, and managed drinking water services.
- ii. Below average access to basic sanitation services and improved sanitation facilities.
- iii. Moderate connections to piped water supply.
- iv. Low connections to sewerage infrastructure.
- v. Moderate distance to drinking water sources.

Policy Recommendations

- i. **Invest in water infrastructure:** Develop and maintain water supply systems and pipelines to ensure reliable access to clean water for all residents. Collaborate with local communities to prioritize investment in areas with the greatest need.
- ii. **Subsidize water connections:** Implement subsidy programmes to lower water connection costs for low-income households, improve access to safe drinking water, and reduce dependence on unsafe water sources.

- iii. **Upgrade sanitation facilities:** Enhance sanitation infrastructure, focusing on accessible toilets and wastewater treatment plants in underserved areas, while ensuring regular maintenance for sustainability and effectiveness.

Education Pillar

Education plays a vital role in food and nutrition security by equipping individuals with the knowledge and skills needed to make informed dietary choices and implement effective food production practices. This pillar focuses on indicators such as access to school meal programmes, educational attainment, and education attendance rates. The county score for the education pillar was 0.58 reflecting moderate performance. The specific scores for each indicator are presented in Table 10.

Table 10: Education indicators

Indicators	County index (2024)	National index (2024)
Overall score	0.58	0.52
Number of learners in the school meals programme	0.59	0.75
Percentage of learners in the school meals programme	0.28	0.71
Proportion of males with secondary education or higher	0.44	0.31
Proportion of females with secondary education or higher	0.50	0.34
Pre-primary school attendance rates	0.45	0.64
Primary school attendance rates	0.62	0.74
Secondary school attendance rates	0.03	0.50
Tertiary school attendance rates	0.03	0.25

Areas of Concern

- i. Moderate number of learners in school meal programmes.
- ii. Below average performance in pre-primary school attendance rates.
- iii. Moderate primary school attendance rates.
- iv. Low secondary and post-secondary education attainment within the population.
- v. Gender disparities in education with females demonstrating better performance in education attainment.

Policy Recommendations

- i. **Strengthen school meals and financial support:** Expand school meals programmes and offer financial incentives to families, to improve attendance and address food insecurity, particularly for low-income households.
- ii. **Promote gender equality in education:** Support scholarships and mentorships for girls, and provide vocational training for boys, ensuring equal educational opportunities for both genders.
- iii. **Enhance early childhood education:** Invest in infrastructure, teacher training, and financial support for families to improve pre-primary education access and quality.

Social Protection Pillar

Social protection programmes are crucial for ensuring food security and nutrition as they provide financial assistance and support to vulnerable populations. This pillar focused on access to cash transfers from both county and national governments. The County score for this pillar was 0.21, while the national average score for the pillar was 0.20.

Area of Concern

Low social protection coverage.

Policy Recommendations

- i. **Enhance cash transfers:** Increase cash transfers to cover basic and nutritional needs, and expand to more vulnerable groups, including the unemployed and elderly.
- ii. **Provide climate resilience training:** Offer programmes on climate adaptation techniques such as sustainable farming, water conservation, and drought-resistant crops.
- iii. **Leverage technology and community engagement:** Use digital platforms for service delivery and involve communities in designing social protection programmes to boost effectiveness.

Environment Pillar

Timely provision of climate early warning information and effective mitigation of climate variability impacts are crucial for disaster risk management, poverty alleviation, environmental protection, and sustainable development. The environment pillar serves as a foundation for addressing key challenges related to water scarcity, agricultural productivity, land degradation, and food security. The county score for this pillar was 0.30, indicating low performance (Table 11).

Table 11: Environment (disaster risk management) indicators

Indicators	County index (2024)	National index 2024
Overall score	0.36	0.43
Days water source expected to last	0.14	0.10
Household's trekking distance to water sources	1.00	0.85
Milk production (litres)	0.00	0.37
Household milk consumption (litres)	0.64	0.47
Mid-upper arm circumference	0.11	0.30
Terms of trade	0.80	0.48
Vegetation condition index	0.18	0.47
Reduced coping strategy index	0.14	0.55
Population in need of food assistance	1.00	0.31

Areas of Concern

- i. Unreliable water sources.
- ii. Low milk production and moderate household milk consumption.
- iii. Low children nutrition outcome as measured by the mid-upper arm circumference.
- iv. Low vegetation health condition.
- v. Low coping strategy in the management of food insecurity.
- vi. High population in need of food assistance.

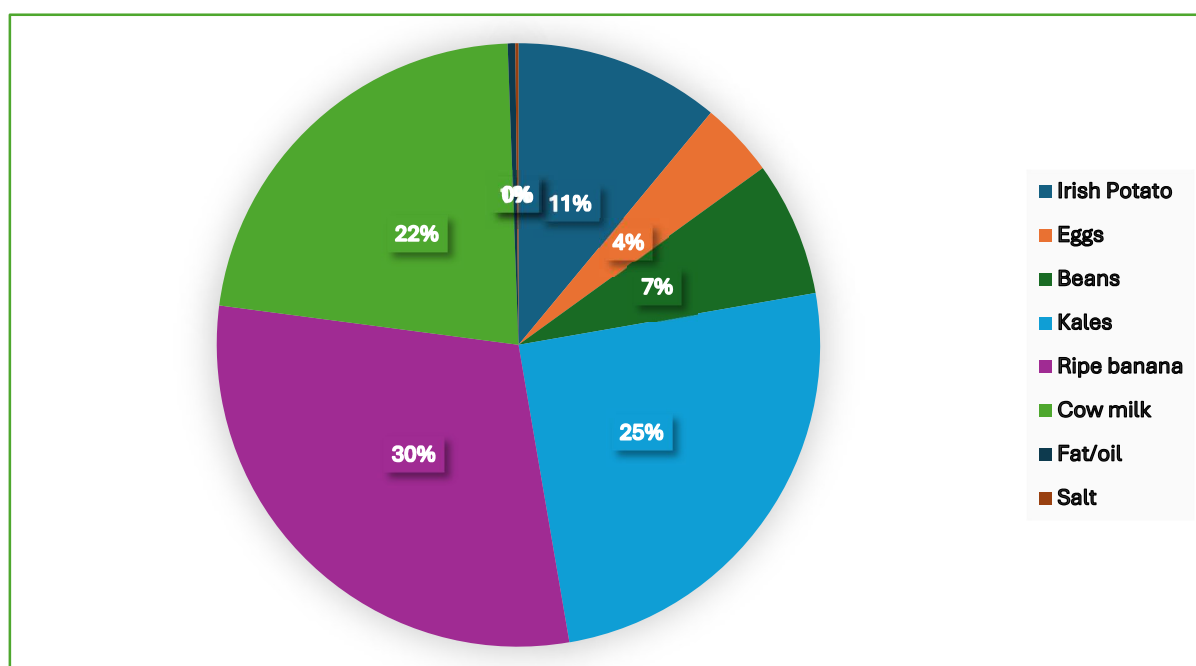
Policy Recommendations

- i. **Enhance nutritional and social protection programmes:** Implement supplementary feeding programmes, nutritional education, and cash transfers to support vulnerable populations. Expand income-generating activities to reduce reliance on harmful coping mechanisms.
- ii. **Boost drought resilience:** Invest in sustainable farming, water conservation, and drought-resistant crops, while improving early warning systems and drought preparedness plans.
- iii. **Support economic stability for farmers and pastoralists:** Strengthen market access, price stabilization, and financial services to improve the terms of trade and enhance economic resilience.

Laikipia County nutritious plate

The components of the nutritious plate were constructed using diet adequacy indicators listed in the Healthy Eating Index (HEI) (2021). The number of servings were adopted from the Kenya National Clinical Nutrition and Dietetics Reference Manual 2010 and nutrition equivalents were calculated using Nutri Survey 2007 software. The Recommended Daily Allowances (RDAs) are for an adult male and female in the county in a day.

Figure 1: County nutritious plate (Share of food category portion)



Source: Authors' compilation

The food exchanges presented in Table 12 provide alternative food sources that meet the same nutrient requirements. This represents food produced and consumed regularly in the county.

Table 12: Food exchanges

Carbohydrates	Protein	Vegetable	Fruit	Dairy
<ul style="list-style-type: none"> • Irish potato • Sorghum/maize ugali • White rice 	<ul style="list-style-type: none"> • Eggs • Mutton • Beef • Fresh beans 	<ul style="list-style-type: none"> • Spinach • Kales • Cabbage 	<ul style="list-style-type: none"> • Ripe banana • Avocado • Oranges 	<ul style="list-style-type: none"> • Cow milk • Goat milk

Source: Authors' compilation

Reference

Nyakundi et al., (2024), Status of Food and Nutrition Security in Kenya: An Implementation of the Framework for Harmonizing Nutrition Indicators. KIPPRA Discussion Paper.

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