

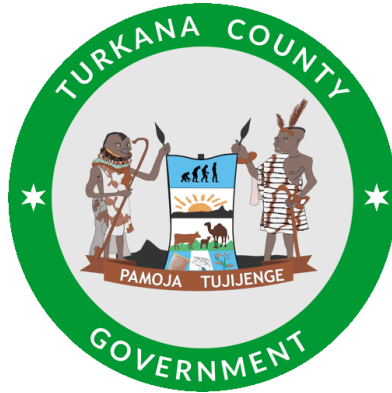


Food-Based Recommendations to Improve Dietary Adequacy of Women Living in Pastoral and Agro-pastoral Zones of Turkana County, Kenya

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In partnership with:



Introduction

Kenya

- Energy supply/capita <2250kcal/day
- Basic diet insufficient in diversity and quality => Micronutrient deficiencies

Turkana County

- Arid and semi-arid (ASAL) County in North-West of Kenya
- low rainfall, high T, land productivity, infrastructure, remoteness, market isolation,...
- Main livelihood- nomadic pastoralism
- Women of reproductive age- higher nutritional needs, chronic poverty, heavy workloads, short reproductive cycles
- 89% of HHs severely food insecure, only 20% of women meeting MDDS-W; 1/3 HHs rely on food aid



Rationale

Huge context variations exist

- Types of foods available => consumption patterns

Research gap

Food consumption surveys found inadequacies in certain population groups, but

- Is this due to suboptimal use of locally available foods or constraints related to availability of nutrient dense foods?
- What types, quantities and combinations of foods contribute to optimal nutrition?

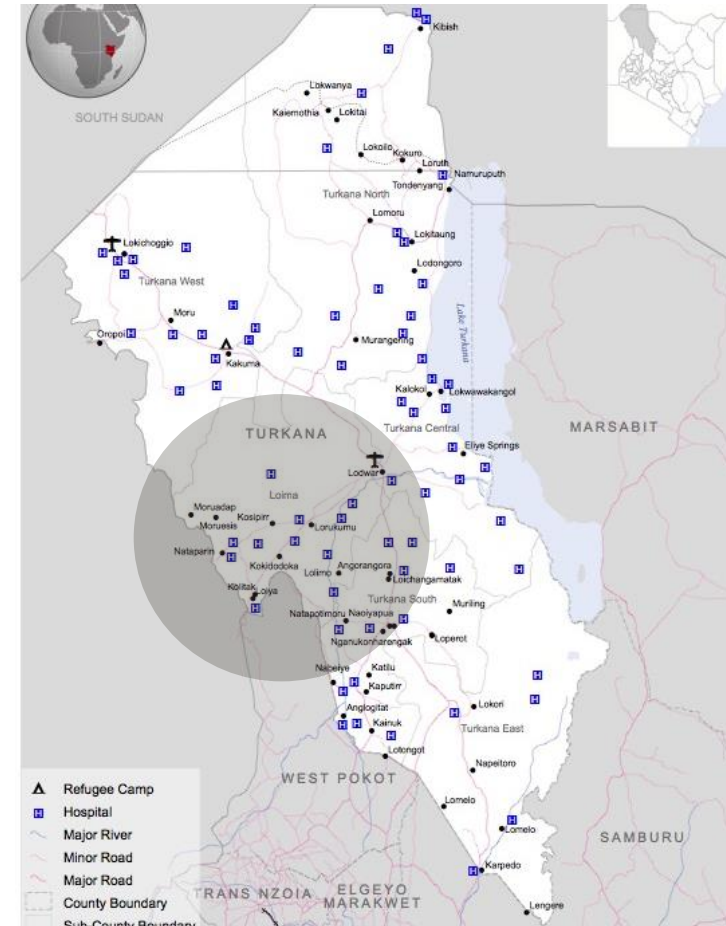
Food-based recommendations (FBRs)

- Formulated in the context of local diets
- Achieve macro and micronutrient adequacy, enhance sustainability of food systems and promote healthy eating
- complement nutrient supplementation and food fortification strategies

Objectives

1. To identify the contribution of different foods and food groups to nutrient intake.
2. To compare dietary intake of women living in pastoral and agro-pastoral livelihood zones.
3. Formulate food based recommendations (FBRs) using locally available foods.

Study area



Methods

Study design : Stratified cross-sectional design (3 villages in pastoral and 3 in agro-pastoral livelihood zones)

Sample : Random, 240 women aged 15 -49 years

Data collection tools : Multiple-pass quantitative 24-hour recalls on two non-consecutive days

Analysis

- Lucille food intake software (Ghent University)- food intake data
- SPSS- foods (quantities, % of consumers), food groups (10), nutrients (protein, carbohydrate, fat, iron, folate, calcium and vitamin A)
 - Comparisons: pastoral and agro-pastoral

Diet modeling in optifood

LP tool - FBRs in the context of local constraints:

- Target group:
 - women of childbearing age
- List of food items and serving sizes
 - based on 24h recalls, median serving size/day;
- Food (sub) group constraints
 - lowest, average and highest servings/week based on the 5th, 50th, and 95th percentiles
- Basis for FBRs -foods contributing $\geq 5\%$ of each nutrient

Two optimized diets generated in Optifood

- a) Food pattern optimized (FP) diet: minimal deviations from average food pattern.
- b) Non-food pattern optimized (NFP) diet: allowed for deviations from the actual average food pattern

For each nutrient:

- i. maximized diet- best-case scenario
- ii. minimized diet- worst-case scenario

Maximized diet- basis for identifying absolute and partial problem nutrients

Results

Foods

- Zones comparable
- 40 food items
- Low variety
- Limited choice
- 5 foods: >50% of women
 - vegetable oil
 - table sugar
 - dry maize
 - maize flour
 - Beans
- (salt and tea leaves)

Food groups

- Zones comparable
- 4 food groups: >50% of women
 - Fats and oils
 - Added sugars
 - Grain and grain products
 - Legumes
- Low dietary diversity
- Micronutrient inadequacies

Plant-based diet

- Zones comparable
- Median energy intake 1715kcal
- Staple-based diet
- High constraints for animal-based foods
- 60% energy- grain and grain products
- <15% energy- fats and oils

Median intake of nutrients/day vs RNIs

Nutrient	Units	Median intake/day		RNI value/day
		Pastoral zone	Agro- pastoral zone	
Food energy	kcal/day	1715	1715	2271
Protein	g/day	39	38	41.5
Fat	g/day	45	52	75.7
Calcium	mg/day	229	220	1000
Folate	µg Dietary Folate Equivalents/day	141	161	400
Vitamin A RAE	µg Retinol Activity Equivalents/day	322	541	500
Iron (5% bioavailability)	mg/day	11	11	58.8

RNI- Recommended Nutrient Intake

Food group patterns (servings/week) for NFP diets in the two zones

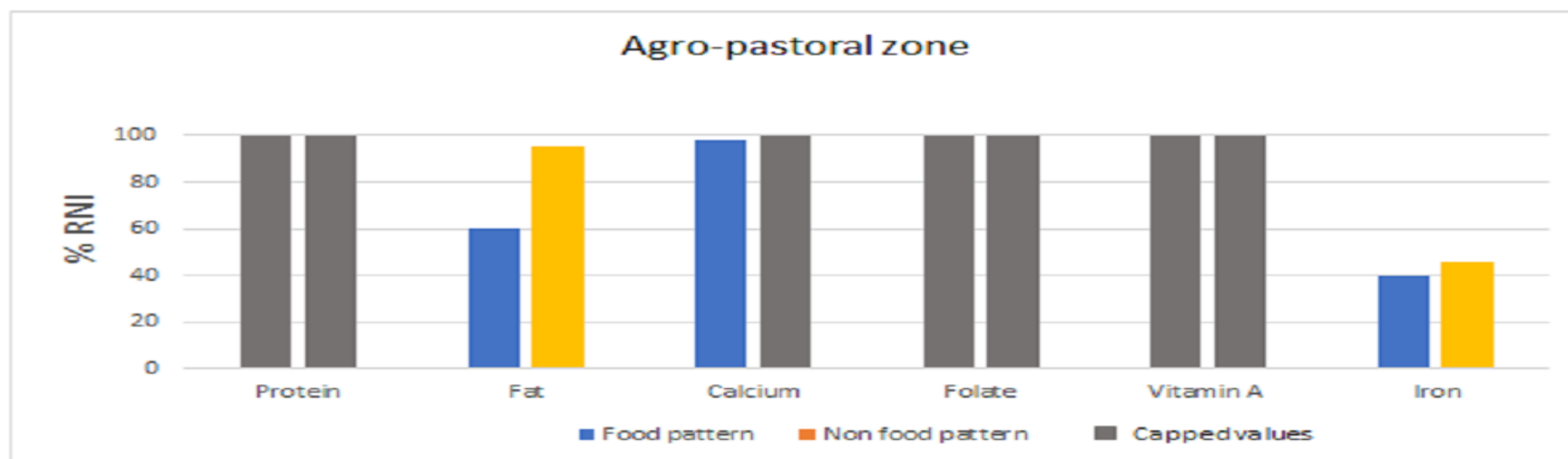
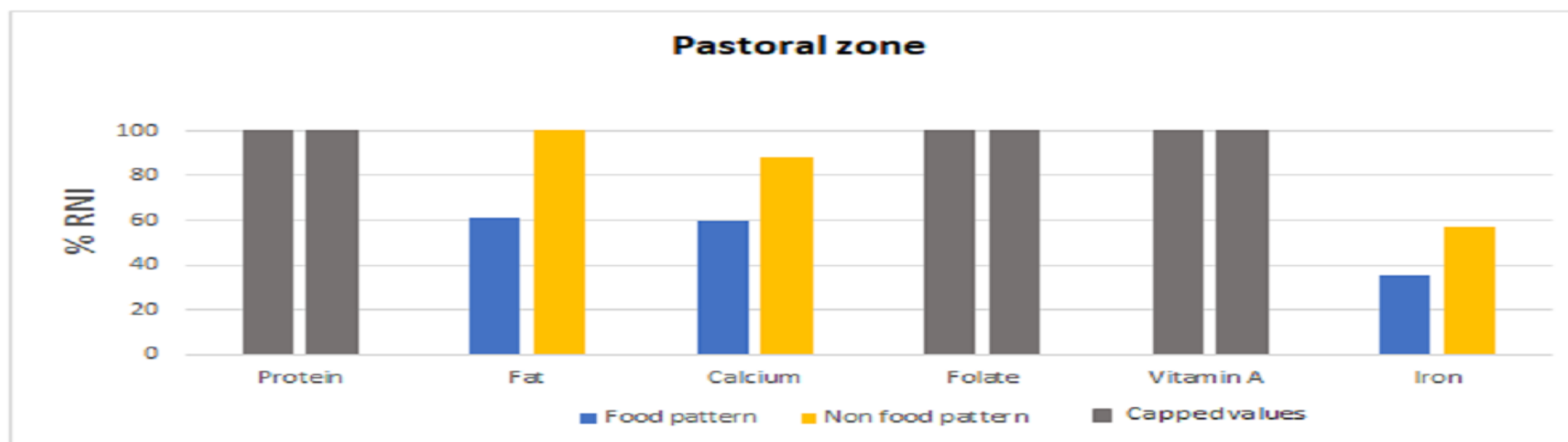
Group	Pastoral zone		Agro-pastoral zone	
	Median (current pattern)	NFP diet	Median (current pattern)	NFP diet
Fruits	1	2	1	1
Added sugars	7	0	7	0
Vegetables	14	28	14	21
Dairy products	7	14	7	21
Added fats	7	14	7	14
Bakery & breakfast cereals	1	1	1	0
Starchy roots	1	0	1	0
Meat, fish & eggs	1	7	1	7
Grains & grain products	14	14	14	19
Legumes, nuts & seeds	3	14	4	14

Recommendations

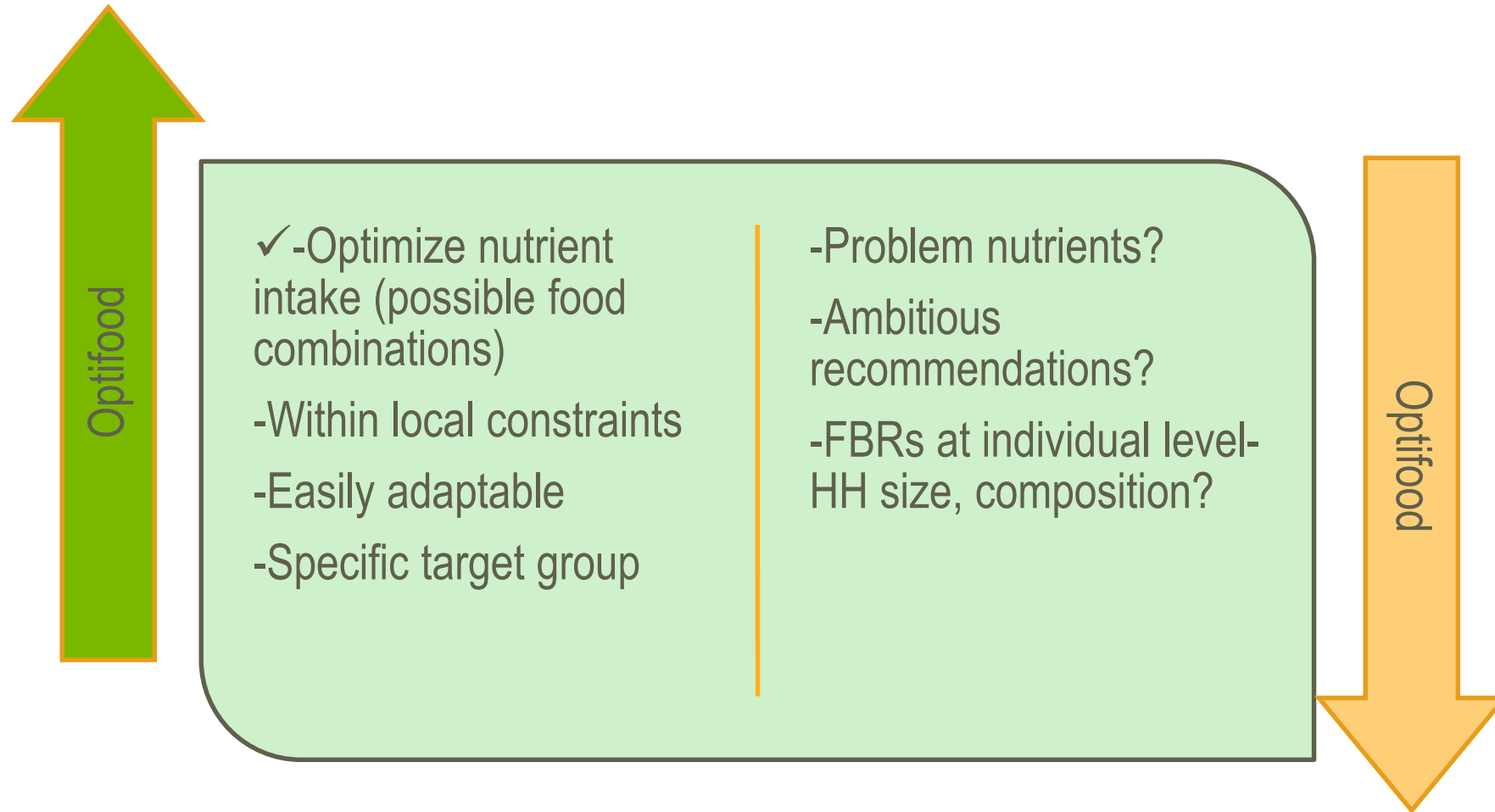
- FBRs comparable in both zones; based on NFP diets
- Daily FBRs for fruits not feasible (local constraints)

Food group	Servings per day	
	Pastoral zone	Agro-pastoral zone
Vegetables	4 servings	3 servings
Dairy and dairy products	2 servings	3 servings
Fats and oils	2 servings	2 servings
Meat, fish and eggs	1-2servings	1serving
Grains and grain products	2 servings	2-3 servings
Legumes, nuts and seeds	2 servings	2 servings

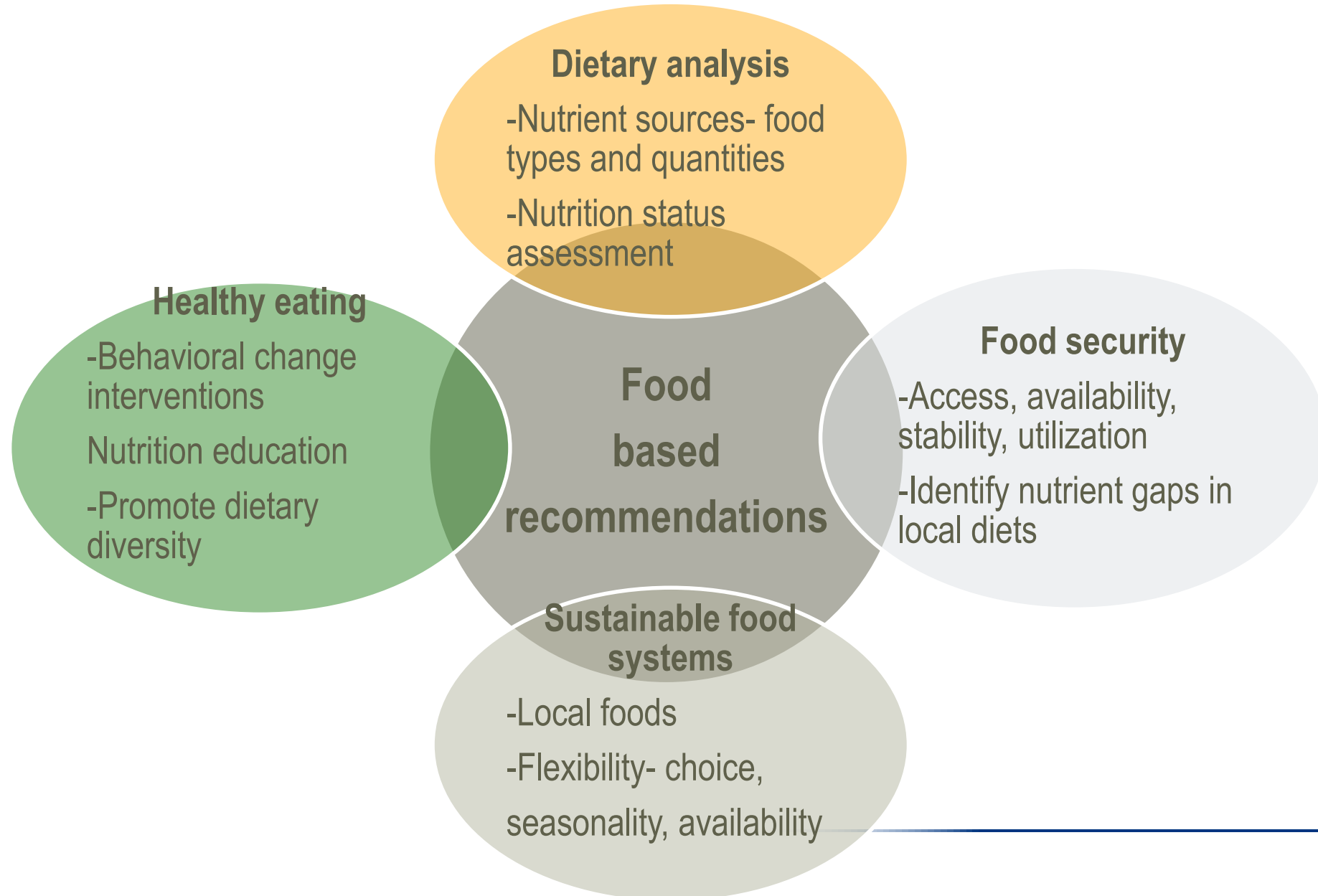
Problem nutrients



The optifood tools



Relevance for agriculture – nutrition – health pathways



Thank you

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