



Seasonal variations in food and nutrient intake among infants and young children in rural Tanzania

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Introduction



Poor infant feeding



Inadequate food intake



Agriculture and season



Poor nutrition status

Aim:
Explore the relationships between food consumption data, nutrient intake, and nutritional outcomes during pre and post-harvest seasons

Tanzania

30%

Stunting

12%

Underweight

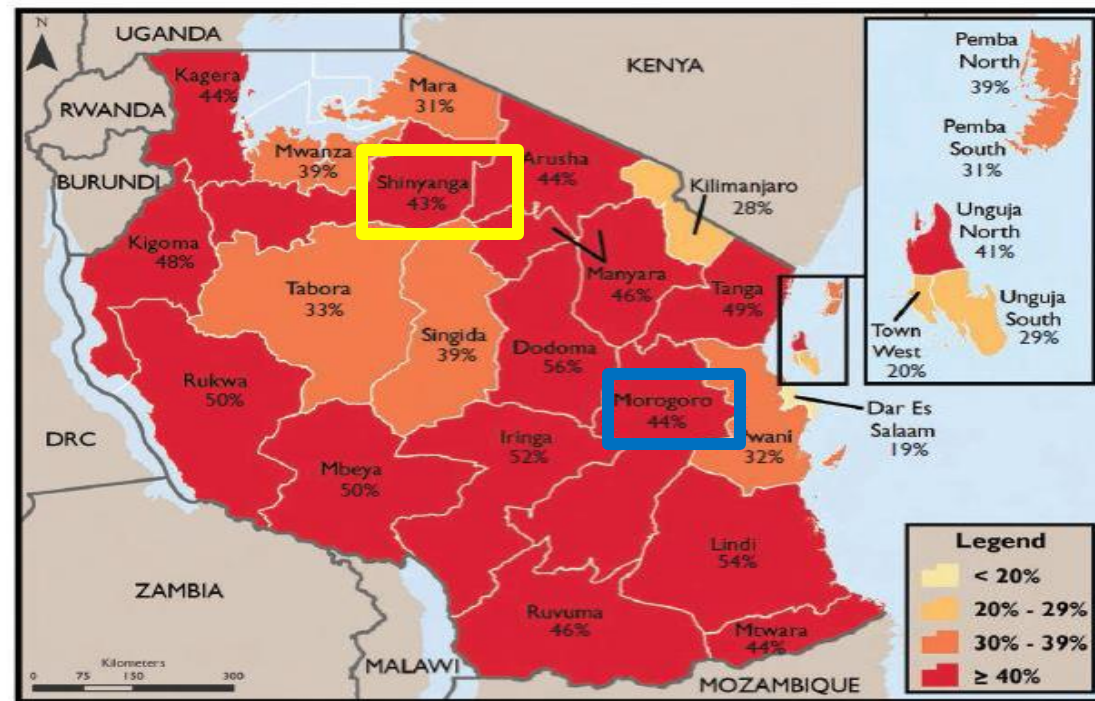
3%

Wasting

Methods/approach

Stunting in Children

Percent of children under age five who are stunted (too short for their age)



Kishapu
(Shinyanga)

277

Mvomero
(Morogoro)

277

Random sampling

110 HH children < 2 years

110

110

Household level

- Demographics
- Farming systems
- Food Security (HFIAS)
- Household economy
- Food and care practices
- Health status


Individual level(Nutrition)

- Child characteristics
- Mother and pregnancy
- Feeding practices
- Health and care practices
- Dietary intake and diversity-24 hrs recall
- Anthropometrics
- Iron status

Methods/approach

- AgriDiet Project
- Study sites: Morogoro and Shinyanga regions
- Participants: Mothers with infants <24 months
- Study design: semi-longitudinal covering pre-harvest and post-harvest seasons
- Methods: household interviews and measurements
- Data: Demographics, anthropometrics, and haemoglobin concentrations
- The semi-quantitative 24-hour dietary recalls assessed the amount and type of foods consumed by children pre-and post-harvest.
- Types of foods consumed were categorized into 18 food groups using the nutrient composition and the Tanzania Food Composition database categories

Nutrients and food consumption analysis of 6 months+



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12% Carbs

18% Protein

73% Fat

109 Calories per 100g

Food Labeling

Label values per 100g

Total Portions: 2

	PER 100g		PER 100g		PER 100g
Energetic	110	8%	154	8%	
Fat	9g	12%	12.6g	18%	
of which saturated	4g	20%	5.6g	28%	
Carbohydrate	3g	1%	4.2g	2%	
of which sugars	3g	2%	4.2g	6%	

MOCKUP

Total weight: 200g

Weight after cooking: 200

Weight loss %: 0

Total portions: 2

Shelf Life

Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam - Tanzania
and
Tanzania Food and Nutrition Centre (TFNC), Dar es Salaam - Tanzania
and
Harvard School of Public Health (HSPH), Boston, USA

TANZANIA FOOD
COMPOSITION TABLES

Compiled by:
Zohra Lukwago AND Ellen Hertmark
Tanzania: Lukwago, Vincent Kaseya,
Gibson Njoroge, William Fadhil
November 2008

Key findings

Nutrients Intakes from Complementary Meals

Nutrient Intake

- Energy Intake was low during pre-harvest but Increased post-harvest
- Diets were low in Fat, Ca, Fe, Zinc, Vitamin A, D and B12 content in both seasons

Older infants

- High Carb, Protein, Fat intake at post-harvest
- High B Vitamin intake post-harvest
- High Energy intake post-harvest; Lower Pre-harvest

Nutrients Vs Nutrition status

- Vitamin A was positively associated with WAZ and WLZ
- Thiamine was positively associated with WAZ
- Iron was positively associated with Hb

Key findings cont...

Amount Consumed from Food Groups by season

	PRE –HARVEST		POST-HARVEST		
Food groups	%cons	Median (g)	%cons	Median (g)	P
Cereal and cereal products	5	26	8	16	–
Cereal local dishes	100	278	100	302	0.003
Roots, Tubers and Banana	0.6	36	1	124	–
Roots, Tubers, Banana local dishes	5	88	17	132	0.18
Pulses, nuts and seeds	17	9	18	10	0.34
Pulses, nuts, seeds local dishes	26	38	45	70	0.09
Meat, poultry and fish	0.6	24	5	25	–
Meat, poultry fish local dishes	13	43	34	72	0.75
Milk and milk products	17	150	12	141	0.15
Fruits and Fruit Juice	17	38	16	77	0.01
Vegetable local dishes	53	62	58	76	0.08



Key findings....

Commonly consumed Food groups per seasons

Cereal local dishes, vegetables local dishes, pulse nuts and seeds in both seasons

Low consumption of foods from meats, poultry (including eggs) and fish; milk and milk products and fruits in both seasons.

Limited variety of foods groups in both seasons

Sardine commonly consumed among the ASF, ripe banana and tamarind fruits were the most commonly consumed fruits .

Key findings....

Food groups consumption vs. Nutrition Status

Milk and milk products were positively associated with LAZ

Meat, poultry and fish based local dishes were positively associated with WAZ

Pulses, nuts and seeds based local dishes were positively associated with WLZ

Significance

- Inadequate intakes of nutrients (fat, Ca, Fe, Zinc, and vitamins A, D, and B12 in both seasons).
- Low Intakes of ASF vs poor nutrition in both seasons.
- Dietary energy intake increased during postharvest → increased food availability.
- **Fact:** Even during postharvest households displayed a small change in dietary diversity across farming seasons.
- Future researches → focus on how local cultural practices influence household eating behaviour, even when a diverse set of foods are available.
- Designing nutrition-sensitive agricultural interventions → availability of energy-rich, nutrient-dense, and diverse foods throughout the year.
- Strengthening the nexus between Nutrition sensitive and Nutrition specific interventions → targeting pre-harvest seasons for vulnerable households with pregnant mothers and children <5 years

Promoting fruits consumption among young children in agricultural households



Thank You



Email

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Website

	Food groups	Commonly consumed foods
1	Cereal and Cereal products	Biscuits, White bread
2	Cereal local dishes	Maize porridge and Mixed flour porridge (Maize millet Sorghum and groundnuts), Maize ugali, Rice and African Doughnut
3	Roots, Tubers and Banana	Boiled sweet potato and banana (plantain)
4	Roots, Tubers and Banana local dishes	Sun-dried sweet potatoes, potatoes cooked dishes
5	Pulses, Nuts and Seeds	Groundnuts
6	Pulses, Nuts and Seeds-based dishes	Kidney beans relish, vegetables relish with groundnuts
7	Meat, Poultry (including eggs) and Fish	Small dried fish and poultry
8	Meat, Poultry (including eggs) and Fish local dishes	Small dried fish relish
9	Milk and Milk products	Whole cow's milk and fermented milk
10	Oils and Fat	Cooking oil
11	Fruits and Fruit Juice	Ripe banana and Tamarind fruit
12	Vegetable-other	Tomatoes
13	Vegetable local dishes	Green leafy vegetables relish, Okra relish
14	Sugars	Sugars
15	Salt	Salt
16	Sugar Sweetened beverages	Fruit flavoured drink, concentrated Artificial juices
17	Teas	Tea without milk, with sugar
18	Local Broths	Small dried fish broth with oil and Kidney bean broth