

Food price analysis for the Africa FERN:

Food prices for nutrition and
healthier food environments

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Food Prices for
Nutrition 



Photo Credit: IFPRI, 2008

Aims of this session

- Introduce Food Prices for Nutrition project, approach, and metrics
- Provide examples from African countries
- Comparison of INFORMAS and Food Prices for Nutrition approaches
- Discussion

The Food Prices for Nutrition project

Project purpose: Scale up monitoring and analysis of food prices, to guide agricultural production and food markets for improved nutrition

Support use of new metrics in high-priority countries

Build a global system to monitor change in food prices for nutrition

Analyze change in cost and affordability of healthy diets

Actively disseminate data and results on food prices, diet costs, and affordability



Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy



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<https://bit.ly/FoodPricesforNutrition>

This work began with partners in Ghana and Tanzania

- Building on previous projects to develop the price indices and diet cost metrics
 - 2015-2017: Indicators of Affordability for Nutritious Diets in Africa (IANDA)
 - 2017-2020 Changing Access to Nutritious Diets in Africa and South Asia (CANDASA)



Motivation

- As we strive for food security, healthy diets are still out of reach for many (~3 billion)
- Healthy diets must be accessible: **available** and **affordable**
- Must monitor what we want to achieve: are we able to deliver affordable, healthy diets at each time and place?



Photo: Binita Subedi, Kasungu market, 2018

Aims

- If you went to the market, how much would it cost to obtain nutritious food to meet dietary needs?
- How many people can afford that cost?



Photos: W. A. Masters (Ethiopia, Tanzania, Ghana, Morocco) and S. Kaiyatsa (Malawi)

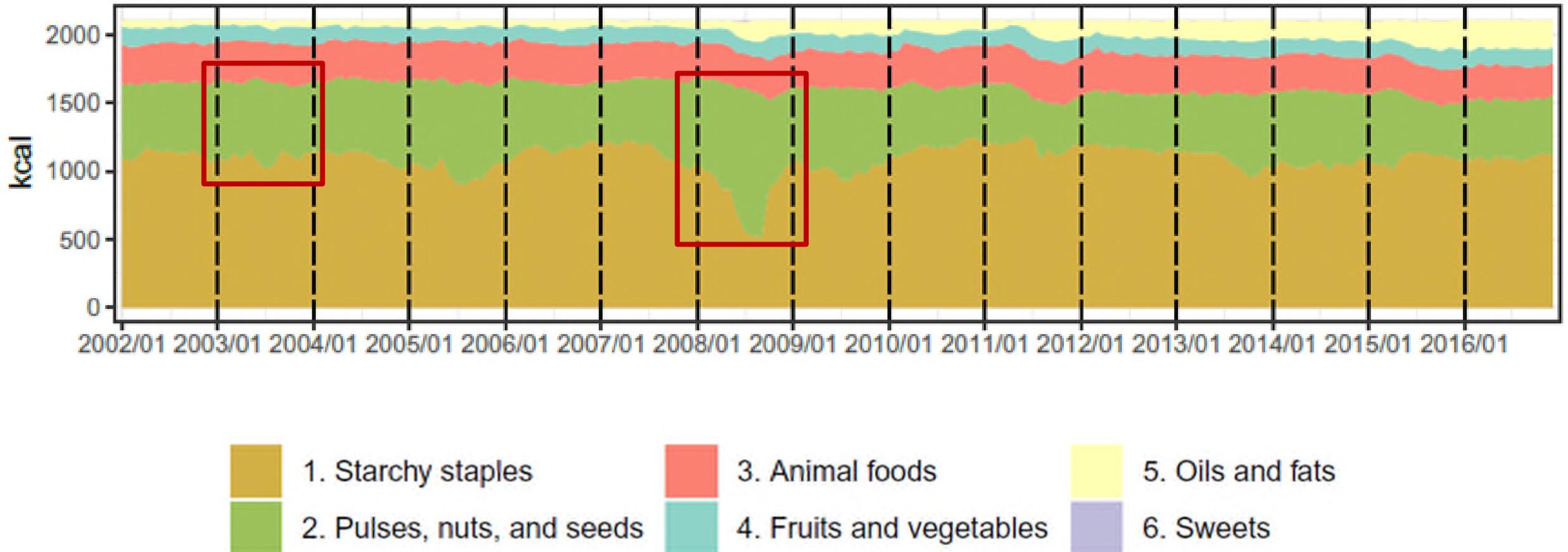
We estimate three least-cost diets

- **“Energy sufficient diet” - Cost of Calorie Adequacy (CoCA)**
 - Minimum cost to meet energy requirements using the least expensive, available starchy staple food in each country
 - Often mistaken as a measure of food security
- **“Nutrient adequate diet” - Cost of Nutrient Adequacy (CoNA)**
 - Minimum cost to meet energy and nutrient requirements (23 macro and micro-nutrients, with upper & lower bounds)
 - Requires linear programming to meet cost and nutrient constraints
- **“Healthy diet” - Cost of Healthy (Recommended) Diet (CoRD)**
 - Minimum cost to meet food-based dietary guidelines (FBDG), based on food group recommendations
 - Behaviorally realistic way to meet nutrient needs and other needs (proportionality, norms, protection of health against NCDs)

Least-cost diets

- Most affordable (cheapest, lowest cost) combination of foods that meet the criteria of each of the 3 diets
- Affordability of the least-cost healthy diet as a measure of food access
 - Necessary but insufficient for food security
- No standard diet or “food basket”
 - Foods chosen depend on time and place; Seasonal or locally-available foods selected

Composition of the least-cost diet in Ethiopia



Source: Bai, Naumova, and Masters, 2020

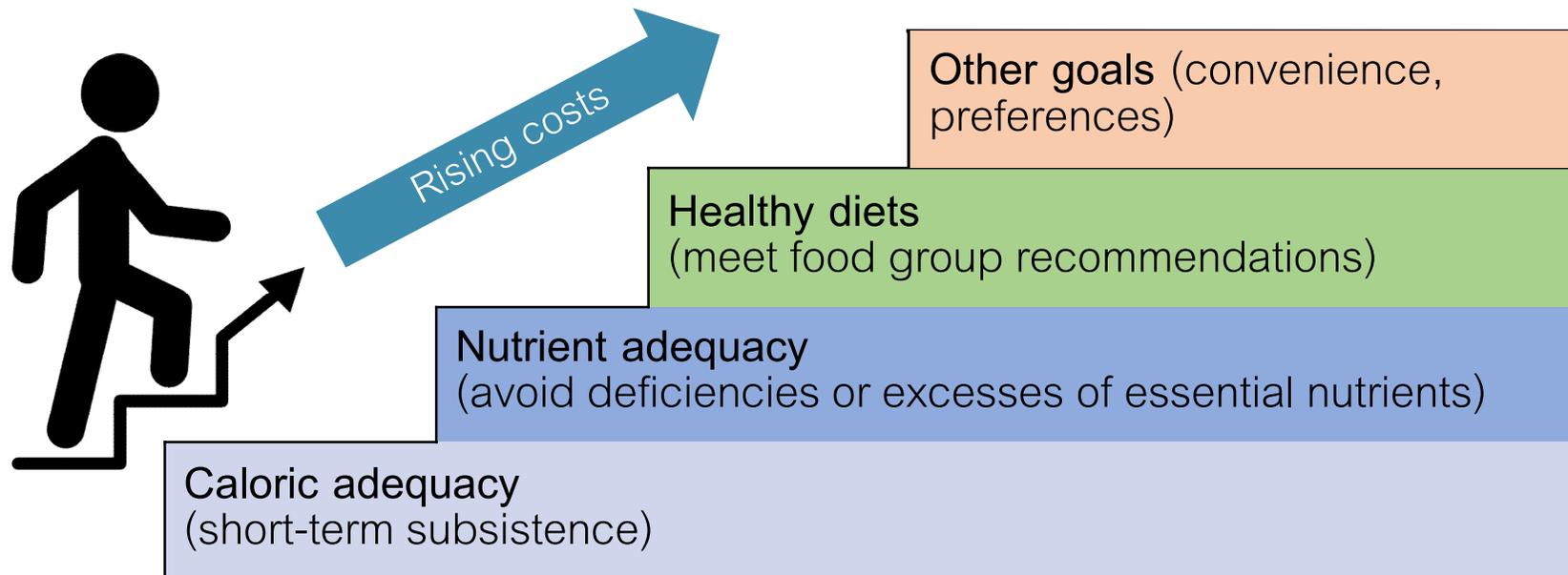
Least-cost diets

- Most affordable (cheapest, lowest cost) combination of foods that meet the criteria of each of the 3 diets
- Affordability of the least-cost healthy diet can be used a measure of food access
 - Necessary but insufficient for food security
- No standard diet or “food basket”
 - Foods chosen depend on time and place; Seasonal or locally-available foods selected
- Least-cost diets provide a conservative estimate (lower bound) on the cost per day
 - Preferences or convenience would add to the cost

Diet costs prevent many people from reaching healthier diets

If all diets are affordable, food prices are one of many influences on food choice.

When healthy diets are unaffordable, food prices are an insurmountable barrier to improved diet quality.



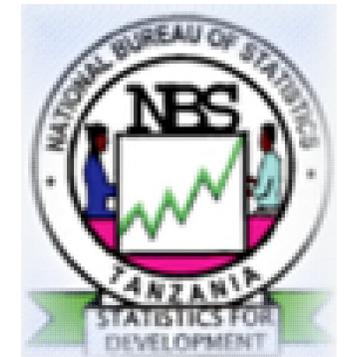
Source: Food Prices for Nutrition, October 2020

Existing retail food price data

- Market information systems (MIS)
 - Collected by agri-food agencies
 - Farm-gate, wholesale, or retail prices of basic commodities
- Early warning systems (EWS)
 - Guide food aid & emergency interventions
 - Prices of staple or basic foods, at markets in vulnerable areas
- Consumer Price Index (CPI)
 - Collected by national statistical organizations, used to monitor inflation
 - Prices of frequently consumed products, collected monthly in various markets



SONAGESS, Burkina Faso



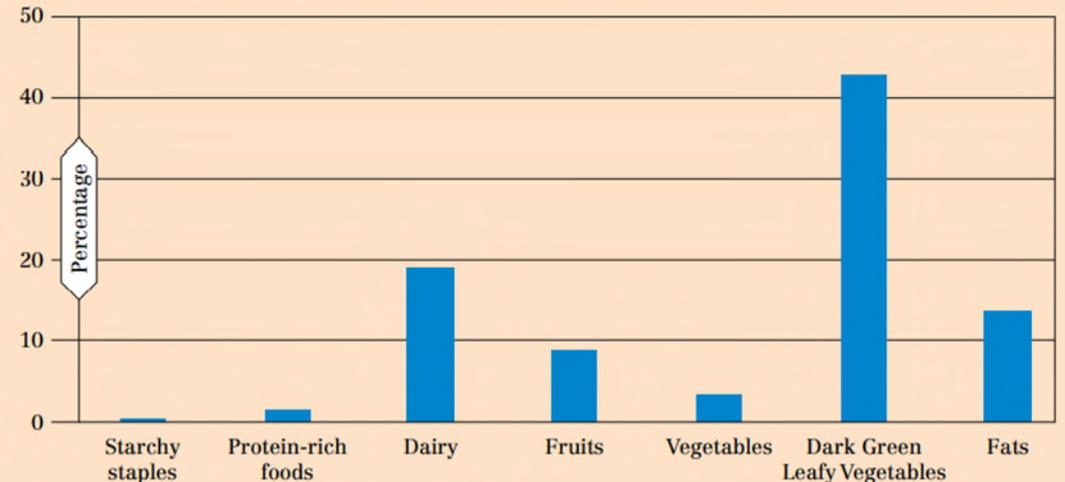
NBS, Tanzania

Less emphasis on processed foods and supermarket prices

Expanding food lists and looking at food availability

- Notice where and when food groups are missing, unavailable or too expensive
 - Guide investments in foods where market opportunities exist
- During the IANDA project, Ghana's Ministry of Food and Agriculture (MoFA) piloted and implemented an expanded list of foods in their monitoring system

◆ **FIGURE 19** Frequency of missing price observations for each food group in Ghana



Note: Data shown are the percent of districts with zero price observations for any item in each food group.

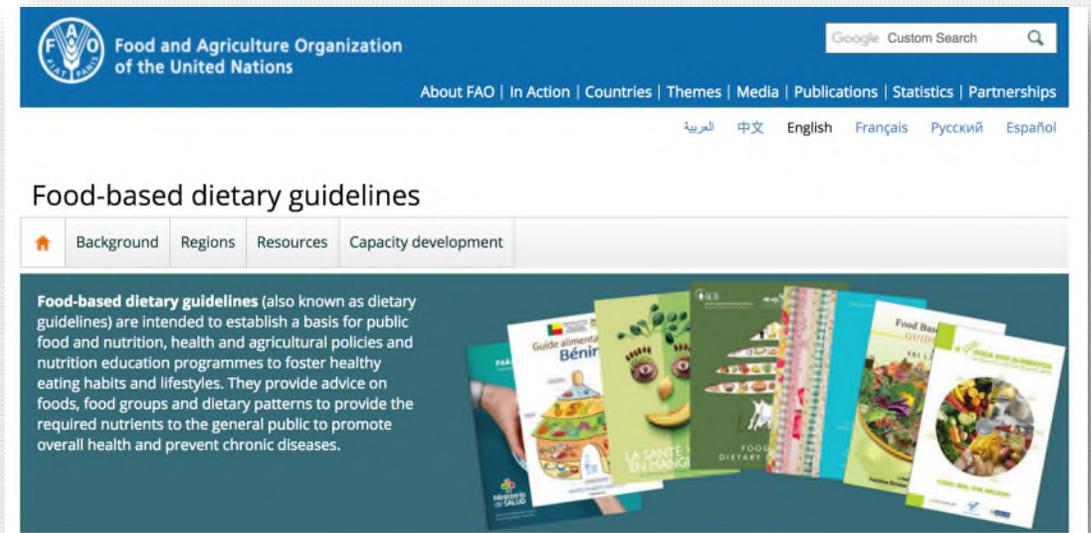
Source: Authors' elaboration and the Ministry of Food and Agriculture (Ghana).

We estimate three least-cost diets

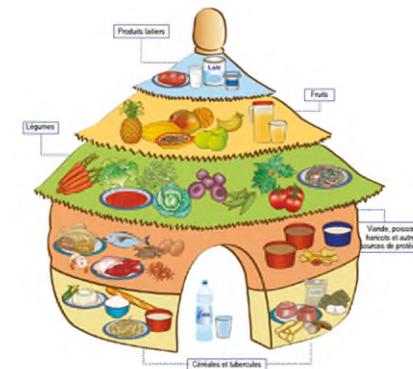
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Calculating the cost of a healthy diet

- Healthy diet is operationalized as a recommended diet, based on quantitative food-based dietary guidelines (FBDG)
- ~100 countries have FBDG; FAO maintains FBDG repository
 - Only some are quantitative



India



Benin



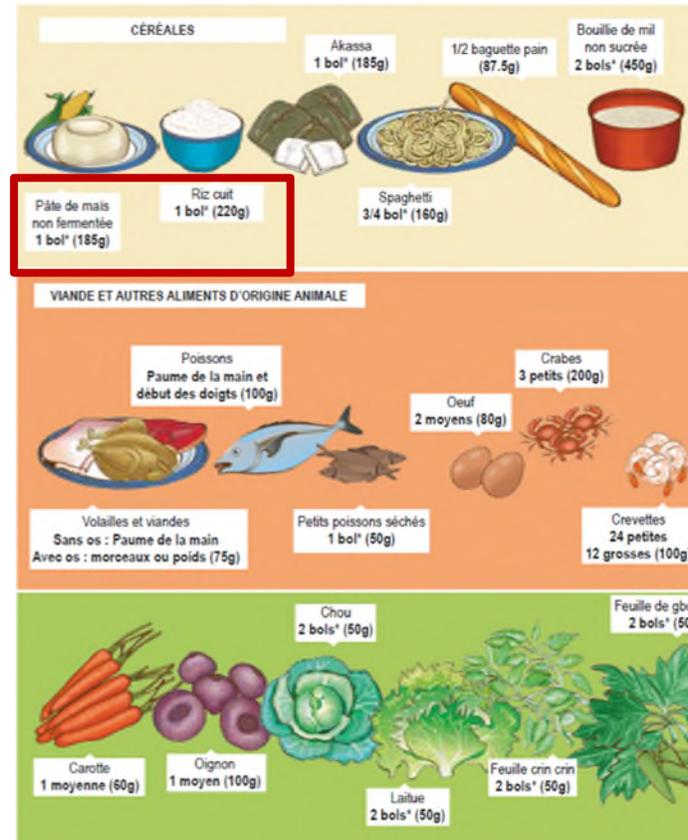
Vietnam

Example: Benin food-based dietary guidelines

PORTIONS À CONSOMMER PAR JOUR

Groupe d'aliments	Enfants		Adolescents		Adultes				
	2-3 ans	4-8 ans	9-13 ans	14-18 ans	19 ans et plus				
	Filles et Garçons		Filles ²	Garçons	Femmes ²	Hommes	Femmes ² allaitantes	Femmes ² enceintes	
Céréales et tubercules	2 à 3	2 à 4	4 à 5	4 à 6	5 à 7	3 à 5	4 à 6	5 à 6	4 à 6
Viande, poisson, haricots et autres aliments riches en protéines	1	1 à 2	1 à 2	2 à 3	2 à 3	2 à 3	2 à 3	2 à 3	2 à 3
Légumes et sauces à base de légumes	2 à 3	3 à 5	4 à 5	4 à 6	5 à 6	4 à 6	4 à 6	4 à 6	4 à 6
Fruits	1	1 à 3	2 à 3	2 à 3	2 à 3	2 à 3	2 à 3	2 à 3	2 à 3
Produits laitiers ¹	1	1	1	1 à 2	2	1 à 2	1 à 2	1 à 2	1 à 2

UNE PORTION CORRESPOND À



- Food groups
- Number of portions per day
- Grams per portion

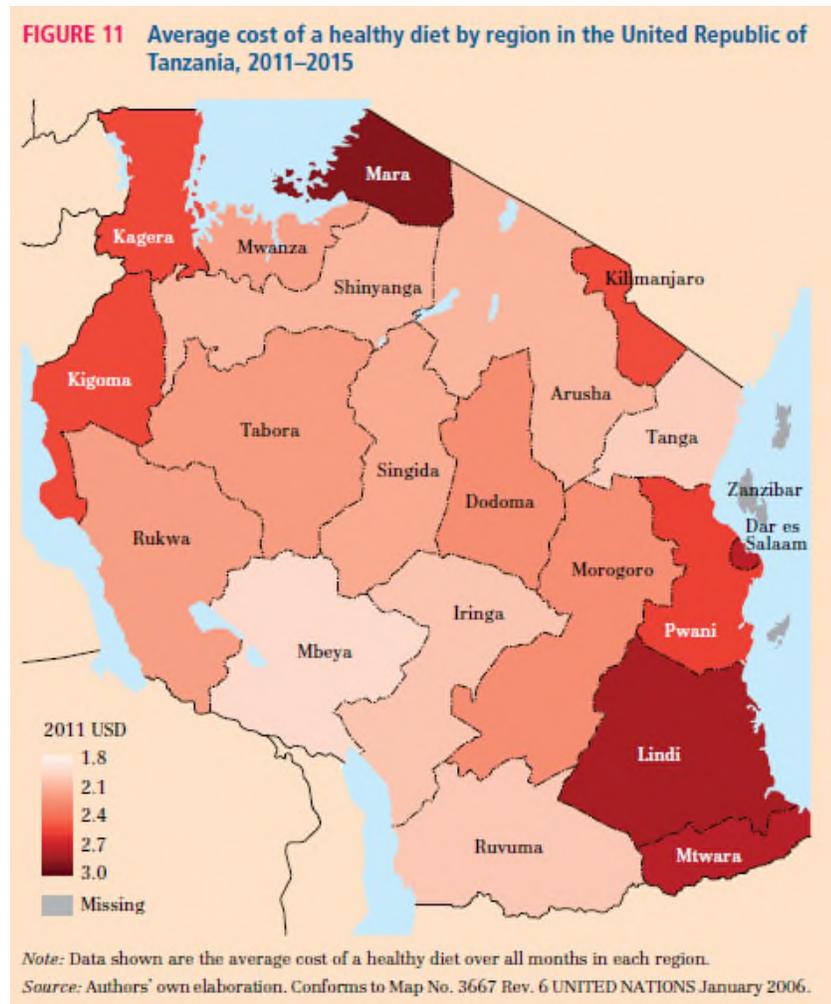
¹ Pour le calcium, consommer aussi des poissons fumés-séchés, crevettes fumées-séchées et carapace de crabe.

² Les femmes en âge de procréer prendront des suppléments de fer et d'acide folique conformément aux instructions du personnel de santé, car leurs besoins sont difficiles à combler avec l'alimentation seule.

Steps to calculate the cost of a healthy diet

1. Categorize each food in food price list according to the **food groups** in the **selected dietary guideline**
2. Remove items not required for a healthy diet (e.g., sweets) and duplicate items
3. Calculate **price per day** for each item
4. Take the average of the 1-3 lowest cost items (price/day) in each food group
5. Sum the cost for all food groups

Regional variation in the cost of a healthy diet in Tanzania



- High regional variation in the cost of healthy diets
- Diets in the higher cost regions ~35% more expensive than the average cost in the southwest
- Vegetable prices driving high costs – contribute about a third of total diet cost in these areas

Affordability of diets

- Poverty lines
 - National
 - International (US \$1.90)
- Food expenditures
- Income
- Wages
 - Compared to unskilled wages in Ethiopia, India

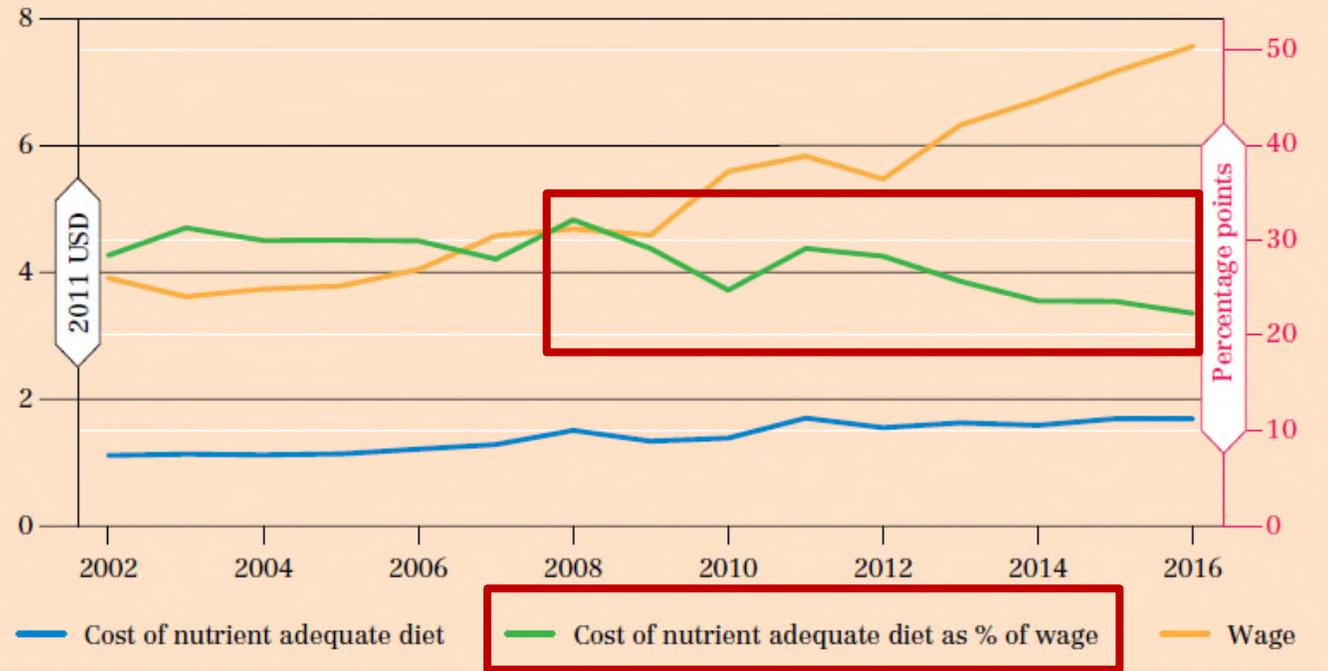


Photo (CC): skuarua

Affordability of relative to wages in Ethiopia

- Daily wage data
- Cost as a percentage of wages decreased
- Affordability improved due to wage increases, rather than less expensive food

► **FIGURE 15** Cost of a nutrient adequate diet and wages in Ethiopia, 2002–2016



Note: Data shown are the average national level for cost of nutrient adequate diet and wages on the left axis, and cost of nutrient adequate diet as a percentage of daily wages on the right axis.

Source: Bachewe *et al.*, 2019.

How diet costs can enter policy dialogue around food environments

- Food-group specific price spikes or unavailability may motivate investment in agriculture, infrastructure, or trade
- Can highlight specific needs for social protection
 - Homestead food production as well as cash transfers
 - Seasonal price spikes
- Design of regionally specific programs
- Poverty lines and social safety net programs

How does Food Prices for Nutrition differ from other initiatives?

- Emphasis on monitoring
 - Cost of a healthy diet does not rely on linear programming → relative ease of computation
- Focus on leveraging the abundance of data already collected in existing national and international monitoring systems
 - Support countries to calculate metrics within their own data systems
- Moving beyond nutrients to look at healthy diet patterns
 - Other initiatives have focused on cost of nutrient needs (WFP, “Cost of the Diet”)
- Least-cost diets versus current diets



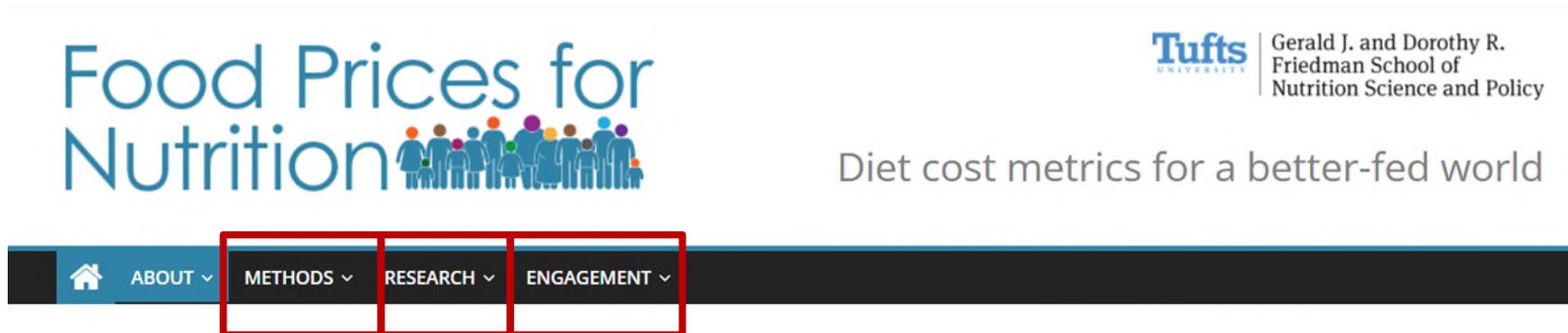
	INFORMAS	Food Prices for Nutrition
Starting point	Obesity/NCDs	Food security and food access
Focus	Individual foods, meals, whole diets	Whole diets; food groups
Metrics used	Various; Gap between healthy diet and current diets	Cost of the least-cost diets; cost contribution of each food group; affordability
Level of analysis	Reference household (including reference household of 1)	Reference individual
Data sources	Provides guidance on data collection; use of some existing food price data	No new data collection; leverage existing food price data
Unhealthy foods	Foods approach categorizes by healthfulness and level of processing	No specific categorization of “unhealthy” foods, but foods not required by FBDG are removed (e.g., sweets)

Complementary approaches

- Easy-to-calculate metrics with existing data needed for monitoring
- In-depth analyses needed to guide interventions and behavior change
- Least-cost diets can serve as a benchmark; understanding access to healthy diets as a measure of food security

Thoughts?

bit.ly/FoodPricesforNutrition



About

- Team

Many policies and programs aim to bring healthier diets within reach, but lack standardized data about the cost and affordability of nutritious foods at each time and place. The **Food Prices for Nutrition** project is a four-year, \$3 million effort (Oct. 2020 – Sept. 2024) to equip governments and development agencies with accurate, updated metrics to monitor diet costs and affordability to inform agricultural and food systems interventions. This work is funded by the Bill & Melinda Gates Foundation and UKAid from the Foreign, Commonwealth and Development Office (FCDO) as INV-016158.

Food Prices for Nutrition aims to scale up use of diet cost metrics developed by two previous projects, Changing Access to Nutritious Diets in Africa and South Asia (CANDASA, 2017-20) and Indicators of Affordability for Nutritious Diets in Africa (IANDA, 2015-17). This work has been widely disseminated in peer-reviewed journal articles and dialogue with international agencies and national governments. Our work provided the diet cost and affordability estimates presented in the UN agencies' SOFI 2020 and SOFI 2021 reports, and is now included in the suite of food security indicators monitored globally, most notably in references to the three billion people who

Links

For the latest on project activities, check out twitter posts about [#FoodPricesForNutrition](#)

To learn more about our previous phase of work visit us at <https://sites.tufts.edu/candasa/>

Contact

Please contact Julia Matteson, Project Coordinator, at julia.matteson@tufts.edu for questions.

Provide feedback on our work or website with [this form](#).

Methods: Information on the metrics and resources to calculate them

Research: Read our work

Engagement: View country webinars and join food price user groups

Contact us or email me directly Rachel.gilbert@tufts.edu

Discussion

Opportunities to use food prices in
your country or organization?

What is needed? Next steps?

Questions?



Thank you to our donors

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BILL & MELINDA
GATES *foundation*



Foreign, Commonwealth
& Development Office

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3. Herforth, Anna, Yan Bai, Aishwarya Venkat, Kristi Mahrt, Alissa Ebel, and William A Masters. *Cost and Affordability of Healthy Diets across and within Countries: Background Paper for The State of Food Security and Nutrition in the World 2020*. FAO Agricultural Development Economics Technical Study, No. 9. Rome, Italy: Food & Agriculture Org., 2020. <http://www.fao.org/documents/card/en/c/cb2431en/>.