Developing the Cost and Affordability of a Healthy Diet indicator and national applications

May 18, 2023

Anna Herforth
Co-Director, Food Prices for Nutrition

#FoodPricesforNutrition
sites.tufts.edu/foodpricesfornutrition
worldbank.org/foodpricesfornutrition
fao.org/faostat/en/#data/CAHD/
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 tools and results on food prices, diet costs, and affordability
Funded by:

Bill & Melinda Gates Foundation

Foreign, Commonwealth & Development Office

In collaboration with:

International Food Policy Research Institute (IFPRI)

Tufts University

Friedman School of Nutrition Science and Policy

THE WORLD BANK

• **William Masters**, Principal Investigator
• **Anna Herforth**, Co-Director
• **Julia Matteson**, Project Administrator
• **Rachel Gilbert**, Graduate researcher
• **Elena Martinez**, Graduate researcher
• **Jessica Wallingford**, Graduate researcher
• **Leah Costlow**, Graduate researcher
• **Aishwarya Venkat**, Graduate researcher
• **Kristina Sokourenko**, Consultant

• **Nada Hamadeh**, Manager, Development Data Group
• **Marko Rissanen**, Senior Statistician
• **Yan Bai**, Economist

• **Derek Headey**, Senior Research Fellow
• **Kalle Hirvonen**, Senior Research Fellow
• **Lieven Huybregts**, Senior Research Fellow
• **Keith Wiebe**, Senior Research Fellow
• **Will Martin**, Senior Research Fellow
• **Kristi Mahrt**, Senior Research Analyst
• **Harold Alderman**, Senior Research Fellow
• **Kalyani Raghunathan**, Research Fellow
• **Timothy Sulser**, Senior Research Fellow
Vision: Food price measurement to match this aspiration

Food security is...
when all people, at all times, have physical and economic access to sufficient, safe, nutritious food to meet dietary needs and food preferences for an active and healthy life.

- World Food Summit, 1996
Cost and Affordability of a Healthy Diet: indicators to understand food access

Used in the UN State of Food Security and Nutrition in the World (2020, 2021, 2022), joining other food security metrics


Data are available in FAOSTAT and World Bank DataBank


https://www.worldbank.org/foodpricesfornutrition
What is a healthy diet?

• We build on food-based dietary guidelines (FBDG) represent:
  • a realistic way for regular people to select nutrient-adequate diets
  • diets that protect health against NCDs
  • diets that are dignified and culturally appropriate

In nations where FBDG have been elaborated, they are the official policy standard for what constitutes dietary needs

• social safety nets and nutrition education based on FBDG

Aim

If you went to an average market in any country, how much would it cost to obtain a diet that satisfies dietary guidelines?

How many people could not afford this cost?
Benin’s quantitative food-based dietary guidelines

- Food groups
- Number of portions per day
- Grams or calories per portion
Healthy Diet Basket reflects the commonalities across guidelines in terms of food group proportions.

About ¼ starchy staples by volume

About ½ fruits and vegetables by volume

About ¼ protein-rich foods by volume

Source: Herforth et al. 2022
Healthy Diet Basket

A global standard set of criteria that represents commonalities across most national food based dietary guidelines, created for the purpose of calculating and comparing the cost and affordability of healthy diets across countries.

Source: Herforth et al. 2022
What is a least-cost healthy diet?

- Food group proportions stay constant \((\text{share of kcal})\)
- Food items are substitutable

- Within food groups, what are the cheapest items?
  - The answer varies by season and market.

Least-cost diets set a lower bound.

Taste, preferences, and convenience add to the cost, and would raise the number of people who cannot afford the diet.
Healthy diets, by any definition, cost more than the extreme poverty line.

Source: Herforth et al. 2022

Healthy Diet Basket $3.54 in 2020

52% of income poverty line of $2.15

Source: Herforth et al. 2022
Least-cost diets following the HDB have about the same environmental footprint as the EAT-Lancet diet.

Source: Herforth, Bai, and Masters, in preparation
How many people cannot afford healthy diets?

In low-income countries, people spend an average of 52% of expenditures on food

- Calculated from national accounts data compiled by the World Bank ICP

So, we compare the cost of each diet to 52% of income

- Using World Bank estimated 2018 income distributions across 164 countries

Incidentally:

- $3.54 is 52% of the $6.85 international poverty line
Around **3 billion** people could not afford a healthy diet in 2020

*Hover over interactive chart to see country data*

Map source: Food Prices for Nutrition DataHub  

Cost of a Healthy Diet can be calculated in two ways

**National**: adherence to national FBDG

- Meets specific countries’ guidelines, to achieve **policy coherence** within countries.
- Purpose is to inform, “What actions in the food system and agriculture need to be taken to improve access to healthy diets, as defined by our own national FBDG?”

**Global**: Healthy Diet Basket

- Meets commonalities among national guidelines, to **enable global comparability**.
- Used for annual updates to *The State of Food Security and Nutrition in the World* reports, as a standard of “access to nutritious food to meet dietary needs.”
Food price data

• For global analysis, we have used the World Bank’s International Comparison Program (ICP) dataset from 2017
  • Unique dataset of retail prices
  • Global and regional lists for 2017 include 680 foods & non-alcoholic beverages in 173 countries

• Can use other retail food price data
  • Consumer Price Index data
  • Market information system data
National and global CoAHD comparison

Three differences:

• The dietary standard
  The cost of national FBDG and HDB have small differences, as we have seen

• The % of income spent on food
  In many countries the actual % of income spend on food is different than 52%

• The data used
  Overall, national data are likely to result in lower costs
Support the regular calculation of CoAHD in countries, using data already collected by national institutions.
Began with partners in Tanzania and Ghana

- 2016: Kickoff meeting
- 2016 MoFA piloted longer food list
  - Institutionalized since July 2017
- 2017, 2018 meetings in Accra -> intention to monitor
- 2022 series of online meetings
- 2023 – in-person training of MoFA focal points; GSS involved on affordability side
Better Information for decision-making for Nutrition Impact

• **MoFA** can use these indicators for decision-making toward a more nutritious food system
  • Could see where, and when, nutritious diets are too expensive
  • MoFA-SRID is continuing to roll out the expanded food list nationwide

• **Ghana Statistical Service** is exploring reporting the new indicators as national statistics
FOOD BASED DIETARY GUIDELINES

Released Feb 2023

• Implementing the use of Ghana FBDG to find the lowest cost in the market of a diet that meets the recommendations.
Ethiopia

- **Institutional partners**
  - Ethiopian Public Health Institute (EPHI)
  - Ethiopian Statistical Service (ESS)

- **Workshops:**
  - Virtual training, June 2022
  - In-person training, April 2023

- **Published work:**
  - Monthly bulletin to be published by EPHI and ESS (in progress)
Malawi

• Institutional partners:
  • National Statistical Office (NSO)
  • Currently analyzing food price data from CPI to calculate CoHD

• Workshops: Upcoming
  • ANH Academy Learning Lab in Lilongwe, June 26, 2023
  • Stakeholder workshop in Lilongwe, July 3, 2023

• Published work:
  • Schneider, K., L. Christiaensen, P.J. Webb & W.A. Masters (2022), Assessing the affordability of nutrient-adequate diets, American Journal of Agricultural Economics, e12334.
Pakistan

- Institutional partners:
  - Pakistan Bureau of Statistics (PBS)
  - FAO Pakistan

- Workshops:
  - Virtual training, February 2022
  - Technical Committee meetings (2)

- Work in progress:
  - Pakistan national State of Food and Nutrition Security report (POFI)

- Published work (World Bank)
Nigeria

• Institutional partners:
  • National Bureau of Statistics (NBS)
  • Federal Ministry of Agriculture and Rural Development (FMARD)
  • Global Alliance for Improved Nutrition (GAIN)
  • Wageningen University

• Workshops:
  • Preliminary Stakeholder Meeting on Monitoring Nutrition-Sensitive Food Systems Transformation in Nigeria, Aug 2022
  • Focal points appoints by NBS, Feb 2023
  • Current: Monthly data from 2016 to 2021 is being analyzed; next will work with NBS focal points to systematize analysis in NBS

• Published work:
Mapping the indicator on the Nigeria Food Systems Dashboard

- Nigeria state-level Food Systems Dashboard (NFSD): tool for ensuring the availability of data to inform current and future agri-food systems policy
  - Cost and Affordability of Healthy Diet indicators were the only food environment indicators for which data is already available
  - crucial linkages between agricultural production data and food security and nutrition outcome data

- Governor’s Scorecard
Software tools and templates for calculation

<table>
<thead>
<tr>
<th>INSTRUCTIONS</th>
<th>Visual protocol on how to use the technical assistance tools for calculating the Cost of a Healthy Diet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXCEL WORKBOOK</td>
<td>Excel Workbook to calculate the Cost of a Healthy Diet.</td>
</tr>
<tr>
<td>EXCEL FOOD INFORMATION DATABASE</td>
<td>Excel database of food item information for 400+ common items found in national statistical organization price datasets. Intended to support the food matching step in the Excel Workbook.</td>
</tr>
<tr>
<td>STATA CODE</td>
<td>Stata .do file to calculate the Cost of a Healthy Diet. Imports data from the Excel Workbook and generates output files in a newly created folder named StataResults.</td>
</tr>
<tr>
<td>STATA PSEUDODATA</td>
<td>Stata .dta file of example retail food price data that can be used to practice calculating the Cost of a Healthy Diet using Stata. Models file structure users must generate for their own data.</td>
</tr>
</tbody>
</table>

https://sites.tufts.edu/foodpricesfornutrition/tools/