



# Food Prices for Nutrition in Nigeria:

Tracking the cost and affordability of healthy diets

30 November 2021



Food Prices for  
Nutrition 



# Agenda

1. Welcome and Introduction from Dr. Rasaq Oyeleke
2. Overview of the Food Prices for Nutrition cost and affordability of a healthy diet metric
3. State-level results on the cost and affordability of healthy diets in Nigeria
4. Update on ongoing work on diet cost and affordability Nigeria
5. Q&A and Discussion

**Moderator:** Dr. Adeyinka Onabolu

# Monitoring the cost and affordability of healthy diets

Dr. Anna Herforth

Co-Director, Food Prices for Nutrition

30 November 2021

Food Prices for  
Nutrition 

<https://bit.ly/foodpricesfornutrition>



Photo Credit: IFPRI/Milo Mitchell, Abuja, 2015

# 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>

Food Prices for Nutrition 

## 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, Malawi 2018

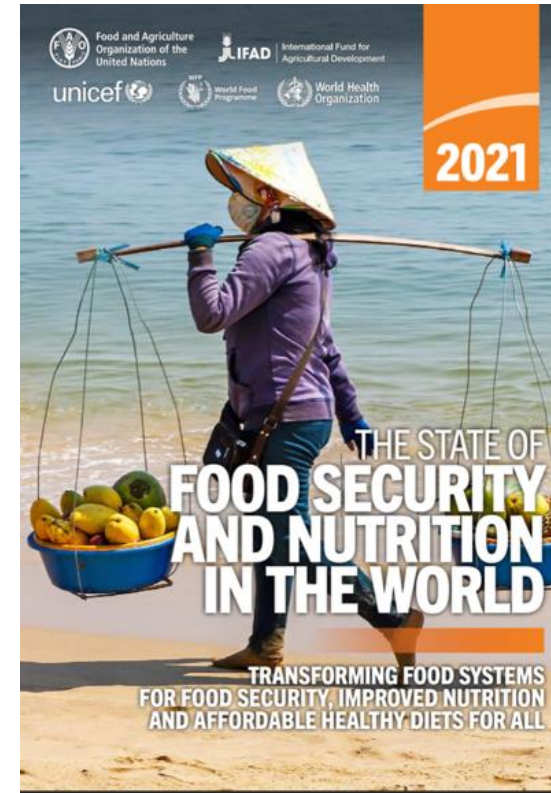
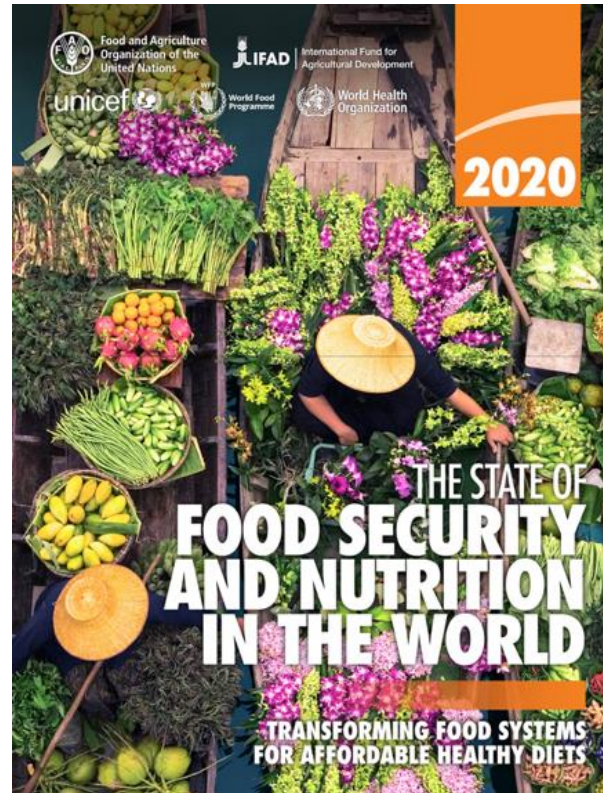
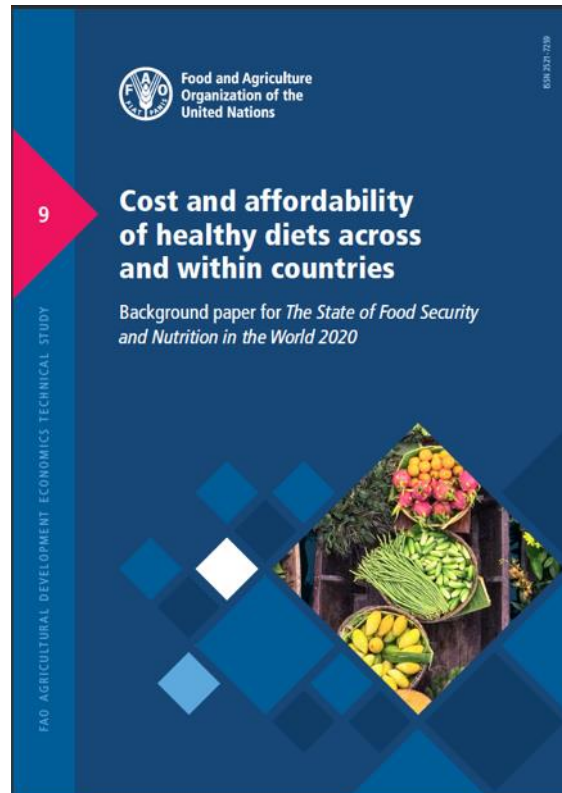
## Aim

- 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?



# 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 and 2021), joining other food security metrics



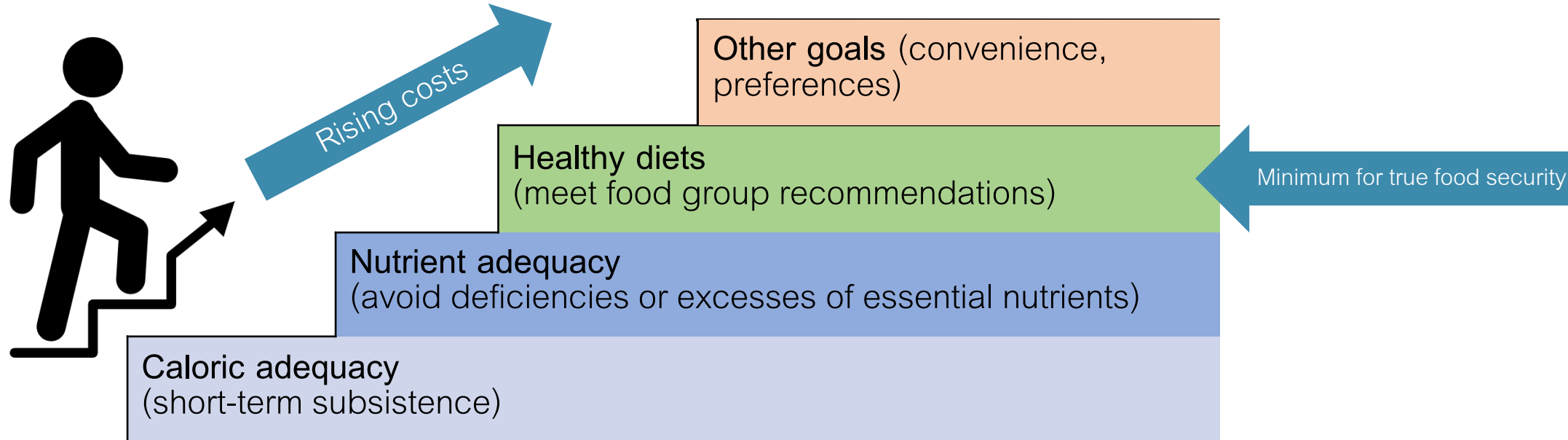
Source: Herforth *et al.*, 2020, FAO 2020, FAO 2021



# 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

## Least-cost diets

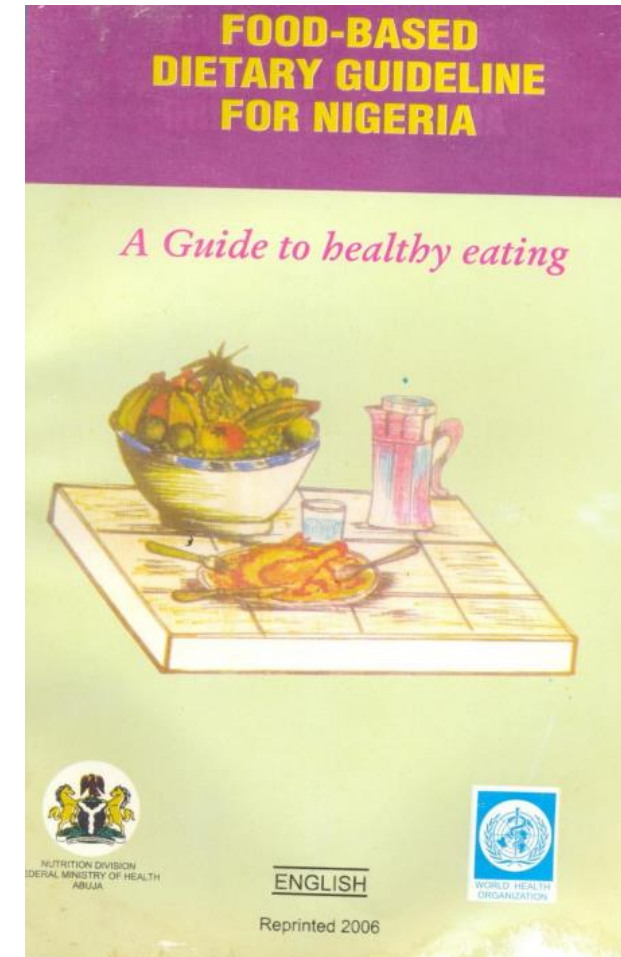
- Most affordable (cheapest, lowest cost) combination of foods that meet the criteria for each of the 3 diets
- No standard diet or “food basket”
  - Foods chosen depend on time and place; Seasonal or locally-available foods selected
- Least-cost diets provide a conservative estimate (lower bound) on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

# Sources of Food Price Data for the analysis

- Household survey data
  - 2018/19 Nigeria Living Standards Survey collected by NBS
  - One time point; not suitable for monitoring
- CPI monitoring data
  - Routinely collected by NBS
  - Purpose: monitoring inflation
- Both of these data sources have extensive food items and cover all states
- Additional data may be collected at more granular rural levels by other market information systems, such as by WFP (Fill the Nutrient Gap analysis in Nigeria)

# Calculating the cost of a healthy diet

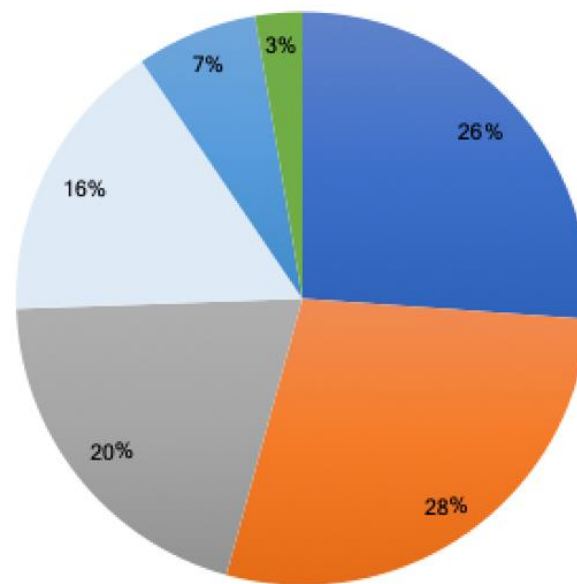
- Healthy diet is operationalized as a recommended diet, based on quantitative food-based dietary guidelines (FBDG)
- ~100 countries have FBDG; only some are quantitative
  - 2006 Nigerian FBDG does not specify number of servings, or serving sizes, needed for costing



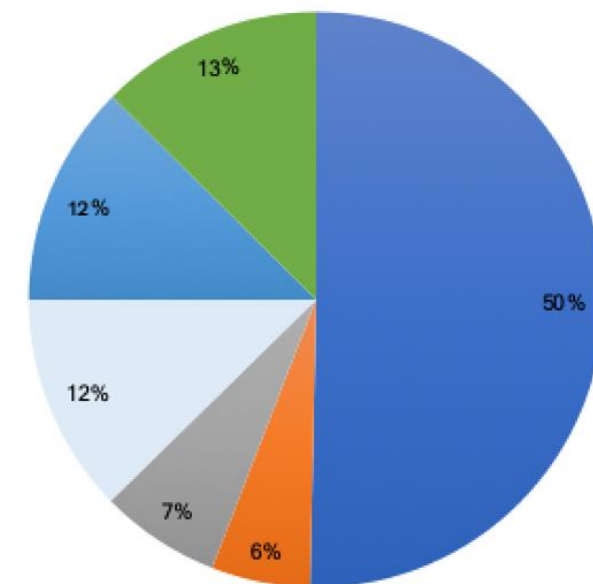
# Composition of the Healthy Diet Basket (average across FBDG)

Food group	Min number of food items selected	Average energy content (kcal)	Average gram content by reference food (g)
Starchy staples	2	1172	325
Vegetables	3	130	350
Fruits	2	158	250
Animal-source foods	2	287	200
Legumes, nuts & seeds	1	290	85
Oils and fats	1	292	33

Healthy diet basket (gram distribution)



Healthy diet basket (kcal distribution)



- Starchy staple
- Vegetable
- Fruit
- Animal source
- Legumes, nuts & seeds
- Oils

Source: Herforth et al., forthcoming. Methods and options to monitor the cost of a healthy diet globally. Rome, FAO.

# 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 lowest cost items (price/day) in each food group
5. Sum the cost for all food groups

## Cost of a Healthy Diet as a monitoring tool

- 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 systems
  - Support countries to routinely calculate metrics within their own data systems
- Moving beyond nutrients to look at healthy diet patterns
  - Other methods that focus on nutrients (Cost of the Diet, Fill the Nutrient Gap) are used to design specific interventions (e.g., fortification, supplementation)

## Affordability of a healthy diet

- **Affordability:** comparison of cost relative to a defined income standard
- Choice of income indicator depends on data availability
  - Food expenditures
  - Income
  - Wages
  - National or international poverty lines



Photo credit: KC Nwakalor/Bloomberg, Abuja, 2020



# Affordability of healthy diets in Nigeria

Daniel A. Mekonnen

November 30, 2021



# Team

- Daniel A. Mekonnen, Wageningen University and Research
- Olutayo Adeyemi, University of Ibadan, Nigeria
- Anna Herforth, Food Prices for Nutrition project
- Rachel Gilbert, Tufts University, Food Prices for Nutrition project
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- Thom Achterbosch, Wageningen University and Research
- Victor Ajieroh, Bill & Melinda Gates Foundation
- Adeyinka Onabolu, GAIN/FMARD

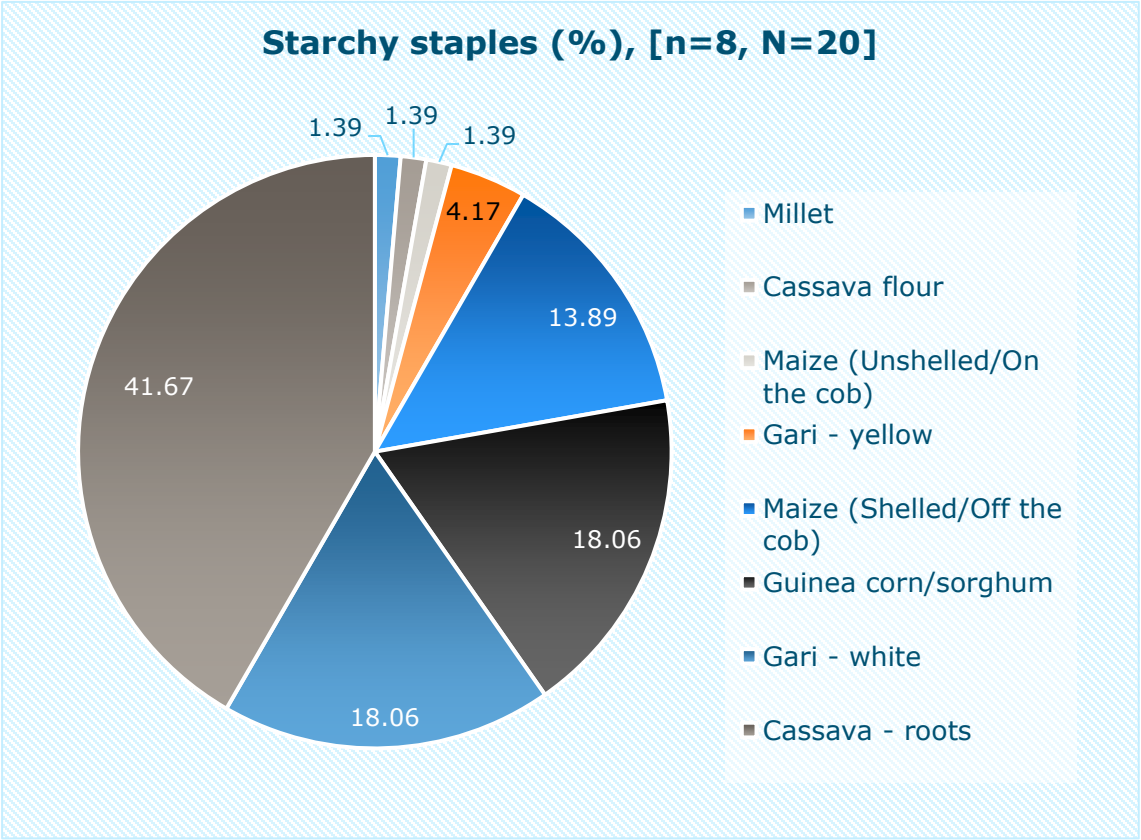
# Objectives

- To assess the cost and affordability of a healthy diet at States-level in Nigeria
  - Cost of healthy diet that meets calorie target of 2,329 kilocalorie
  - Affordability of healthy diet
    - In this study, we evaluate the cost of healthy diet with respect to household expenditures on food

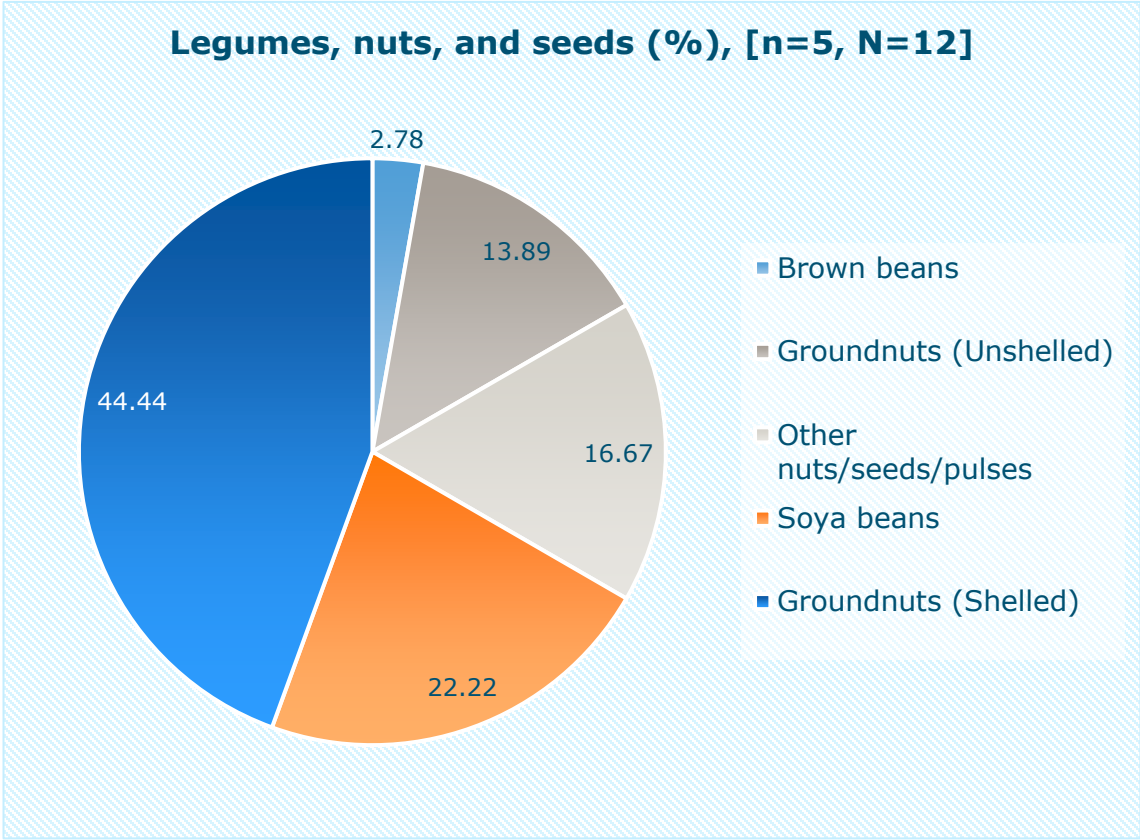
# Data

- Nigeria Living Standards Survey 2018/19
  - Representative at the national, zonal, and states level
    - 36 States + FCT (Abuja)
    - 60 enumeration areas (EA) per State
    - 10 households per EA
    - 22,110 households
      - ❖ Borno State excluded from the analysis due to higher level of non-response
  - Expenditure data: food consumption module, 110+ food items
  - Local retail food prices: community survey module, 2213 markets (one market per EA)
    - State-level median prices constructed

# Frequency of low-cost food item included in the healthy diet (1)

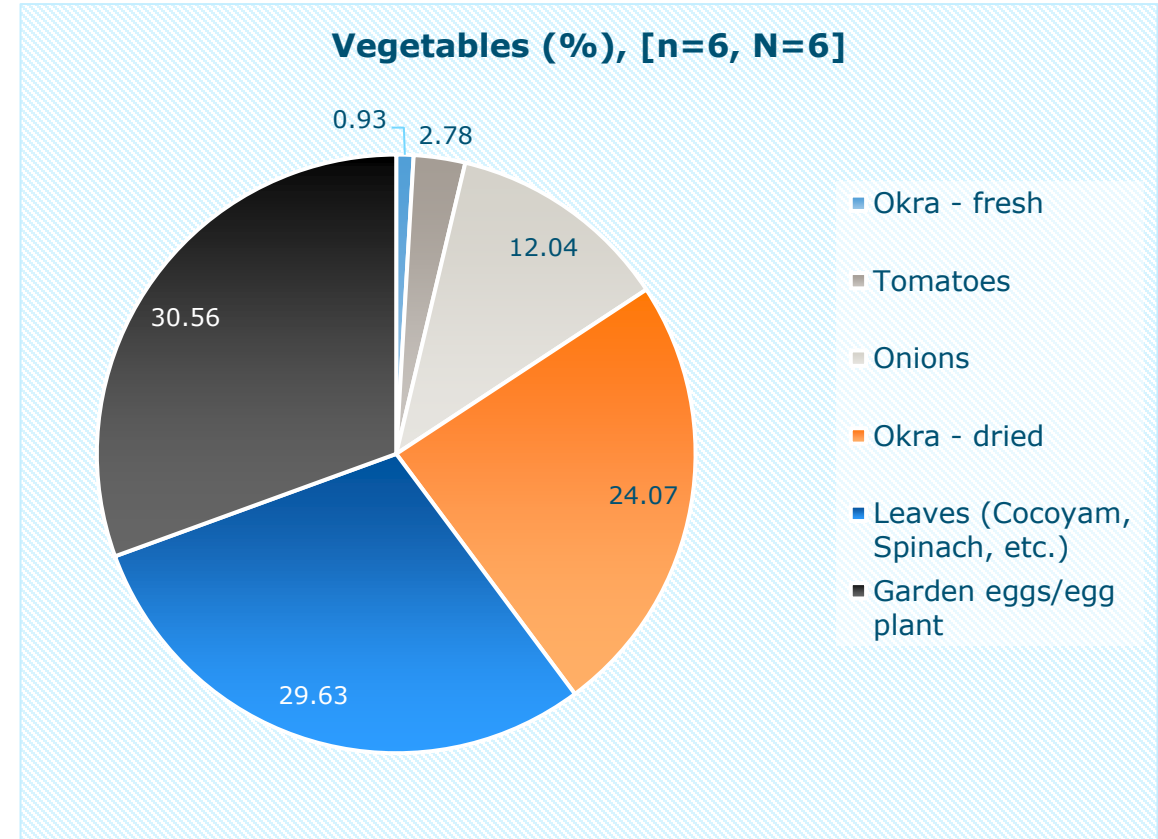
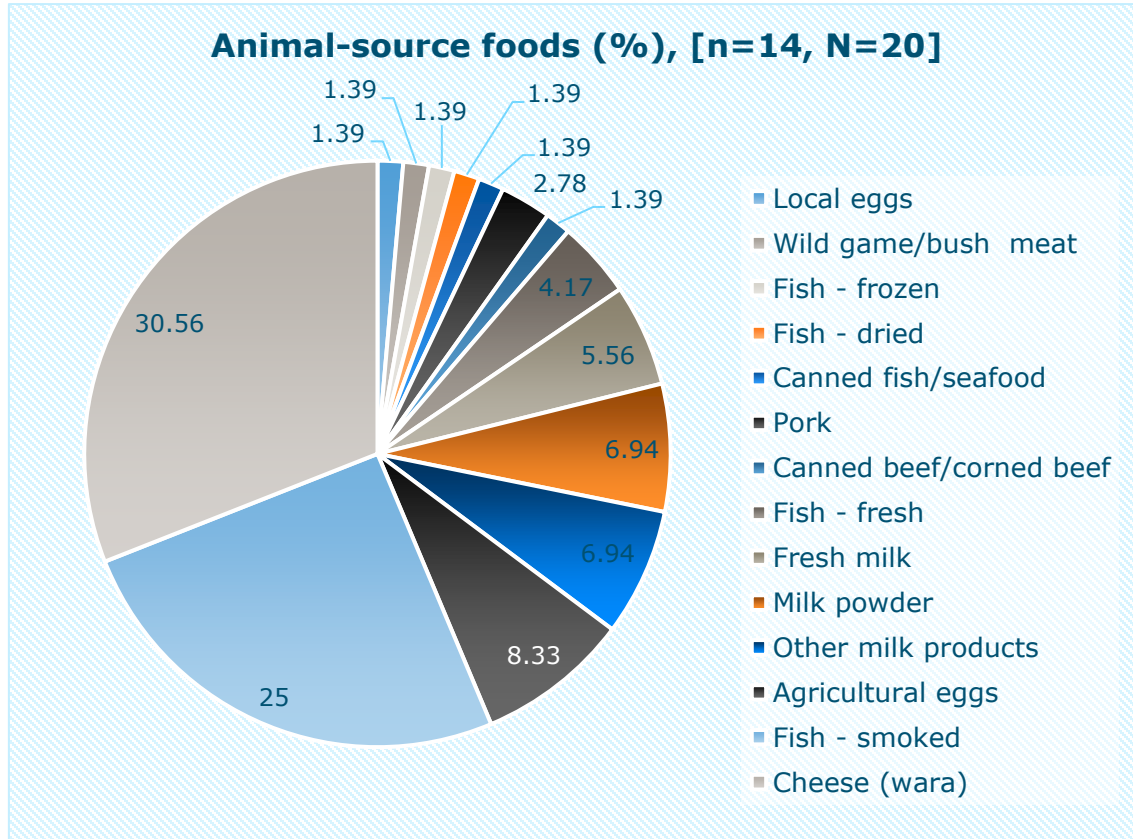


**Note:** The least-cost food items **did not include rice, wheat products, yam, millet (except in Imo)**



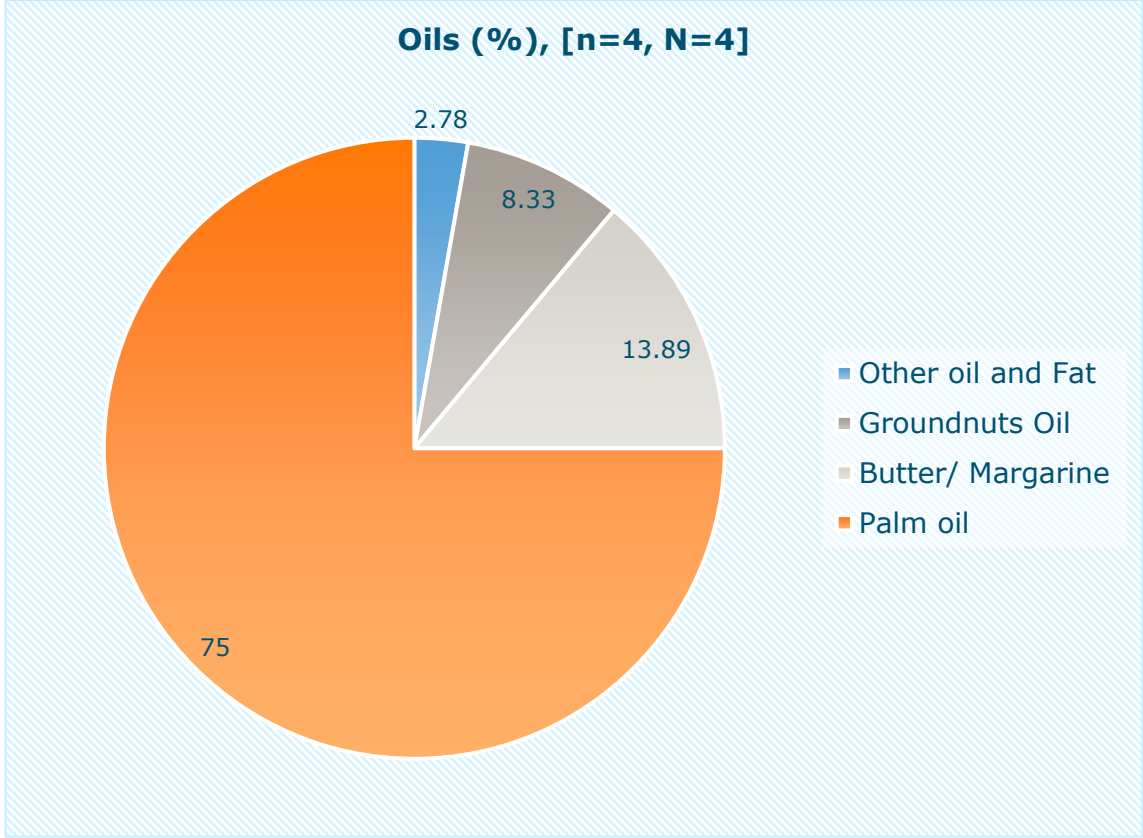
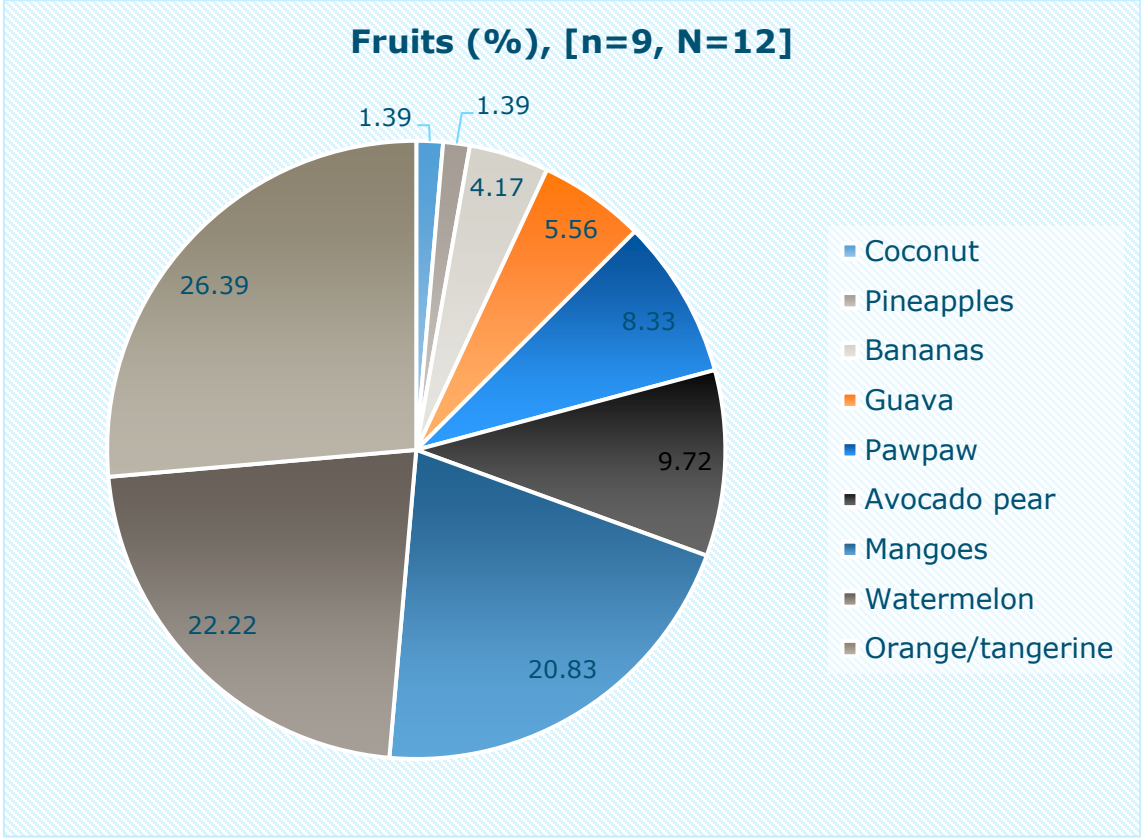
**Note:** The least-cost food items **did not include beans (except in Yobe)**

# Frequency of low-cost food item included in the healthy diet (2)



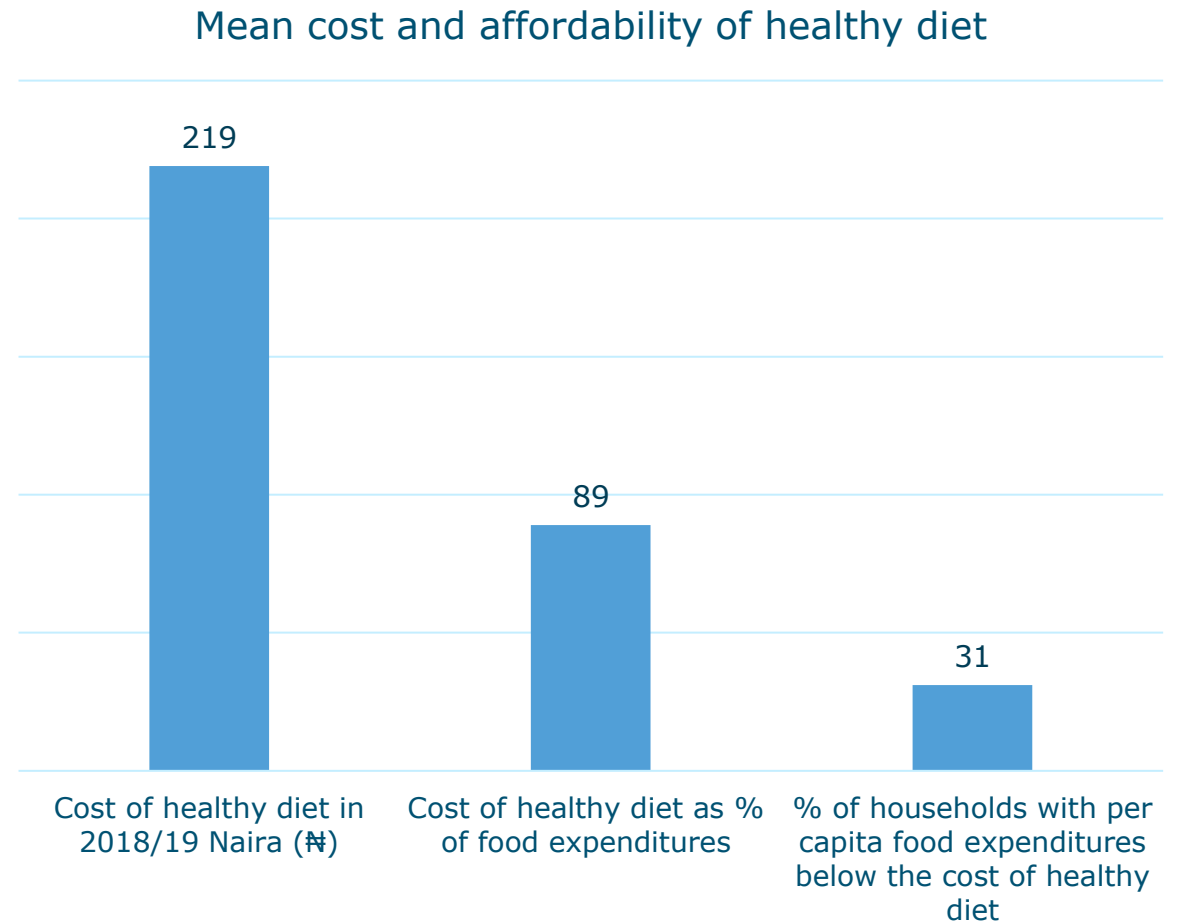
**Note:** The least-cost food items **did not include meat (except bush meat in Bayelsa)**

# Frequency of low-cost food item included in the healthy diet (3)



# Cost and affordability of healthy diet

- In 2018/19, the average cost of healthy diet in the country was 219 Naira per person per day
  - This is about 89% of the daily per capita food expenditures (national average)
  - About 31% of households in the country could not afford the cost of the healthy diet





## Cost of a healthy diet across States

□ The cost of a healthy diet varies across states from 127 to 291 Naira, with a median of ₦219.

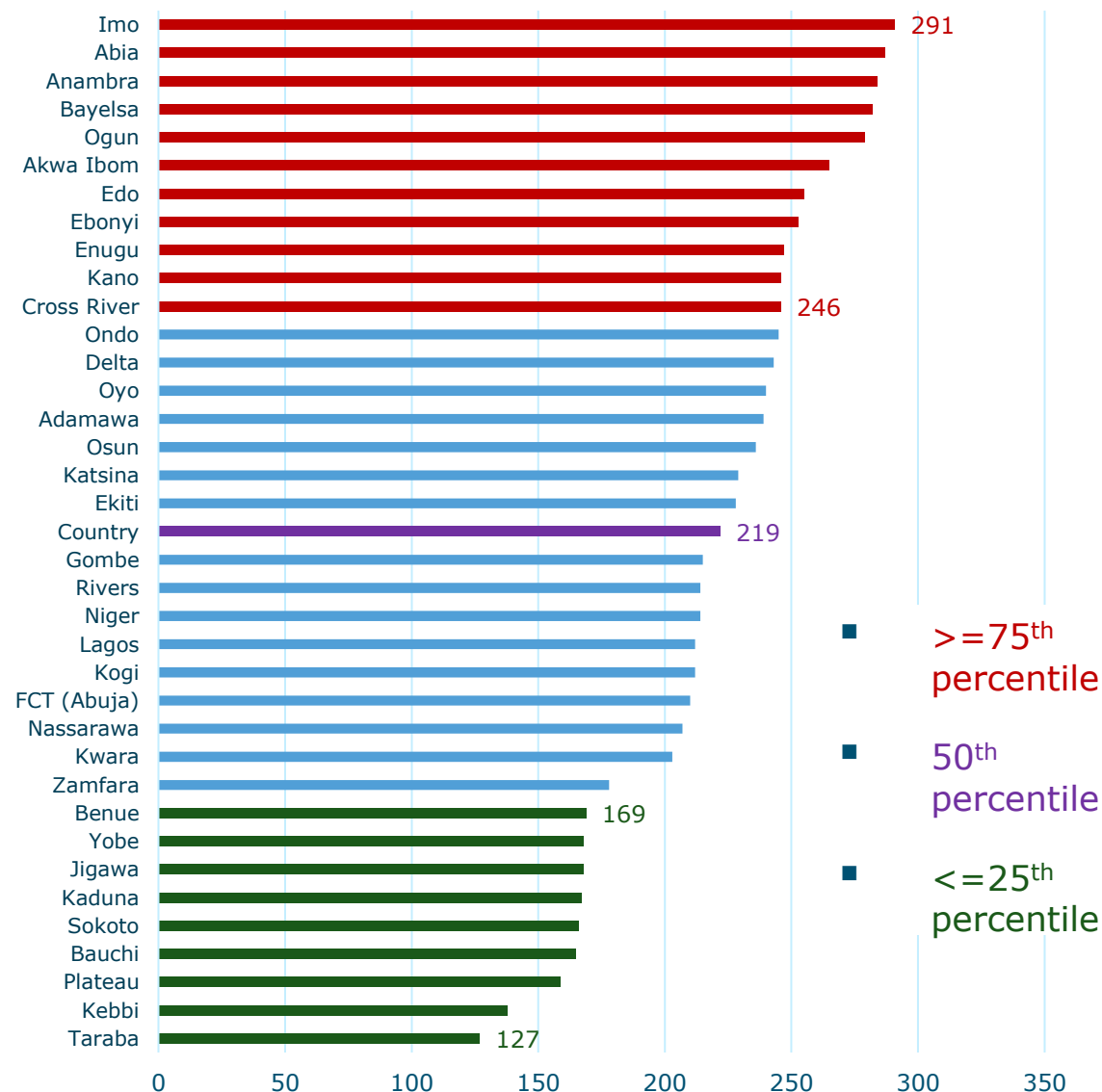
➤ Cost was above the 75<sup>th</sup> percentile in 11 States & below the 25<sup>th</sup> percentile in 9 States

■ States with the highest cost (₦ 282 - ₦ 291) are all in the South:

- Bayelsa (SS)
- Anambra (SE)
- Abia (SE)
- Imo (SE)

■ States with lowest cost (₦ 127 – ₦165) are all in the North:

- Taraba (NE)
- Kebbi (NW)
- Plateau (NC)
- Bauchi (NE)



## Affordability of a healthy diet across States

☐ Unaffordability: % of households with food exp. below the cost of healthy diet

■ **Ebonyi (with 77%)** ranks as the least-affordable and **Lagos (with 5%)** as most-affordable.

■ A healthy diet is relatively affordable in:

- Southern states:

- Lagos (SW)

- Oyo (SW)

- Ondo (SW)

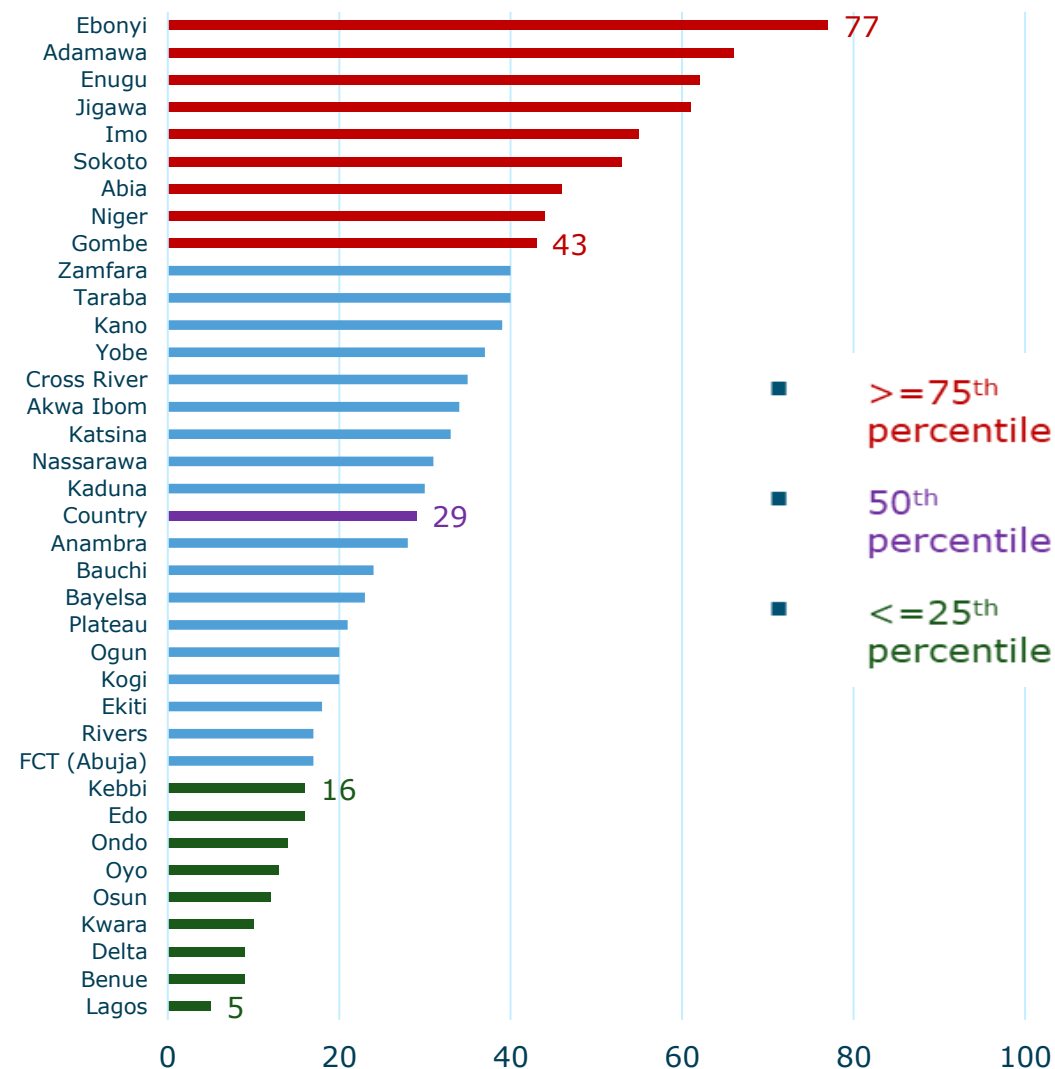
- Delta (SS)

- Northern states

- Benue (NC)

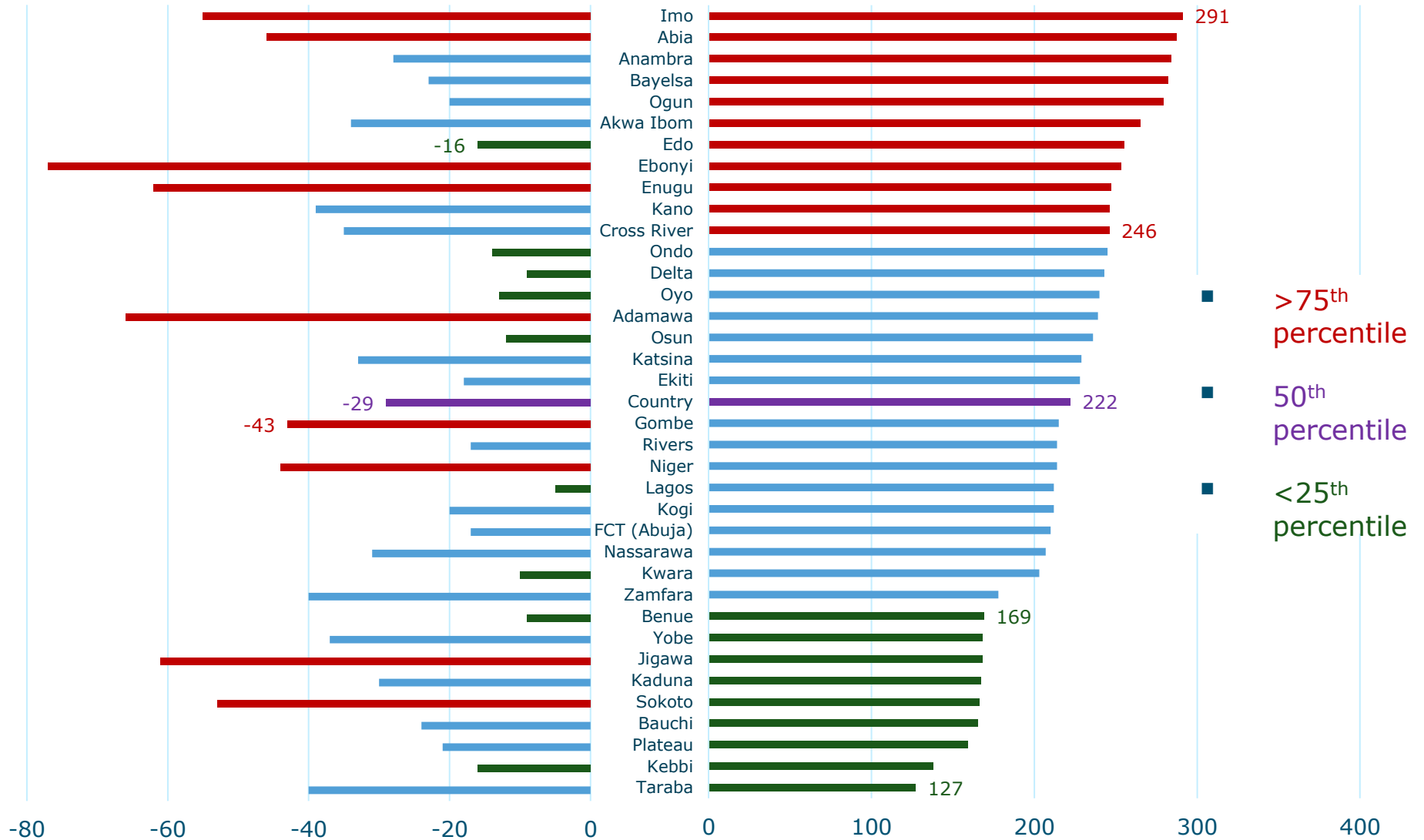
- Kwara (NC)

- Kebbi (NW)



# The cost and affordability of least-cost healthy diet across Nigerian States

- ❖ Lower food prices may not necessarily lead to higher affordability
- Cost in Jigawa and Sokoto was among the lowest ( $\leq 25^{\text{th}}$  percentile), but the share of hhs in these States who could not afford the cost was among the highest ( $\geq 75^{\text{th}}$  percentile)
- Cost in Edo was among the highest ( $\geq 75^{\text{th}}$  percentile), but the share of hhs in Edo who could not afford the cost was among the lowest ( $\leq 25^{\text{th}}$  percentile)



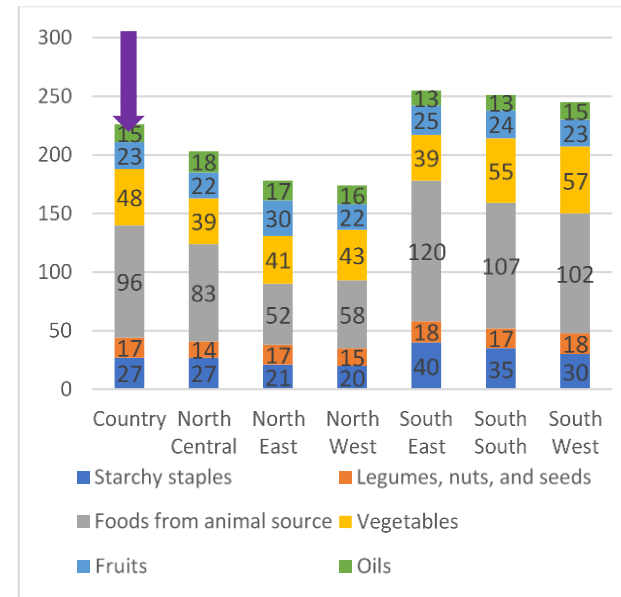
# The cost and affordability of healthy diet at geopolitical zones, by food group

## Figure A. Cost of animal source foods (ASF) was:

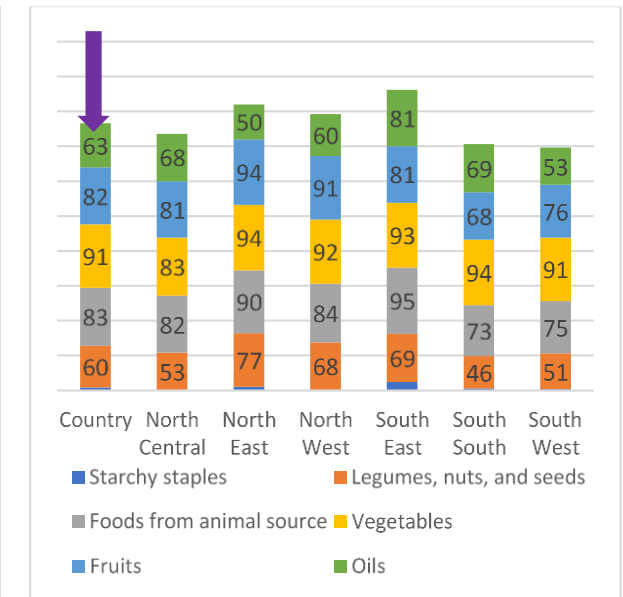
- 2x the cost of vegetables in NC & the southern zones
- >3x the cost of each of the remaining food groups across all zones
- ❖ Cost of healthy diet was higher in southern zones

## Figure B. Over 80% of households across all zones spent less on vegetables than the amount needed to meet recommendations

- The figure was similar for fruits, and animal source foods in the southern zones



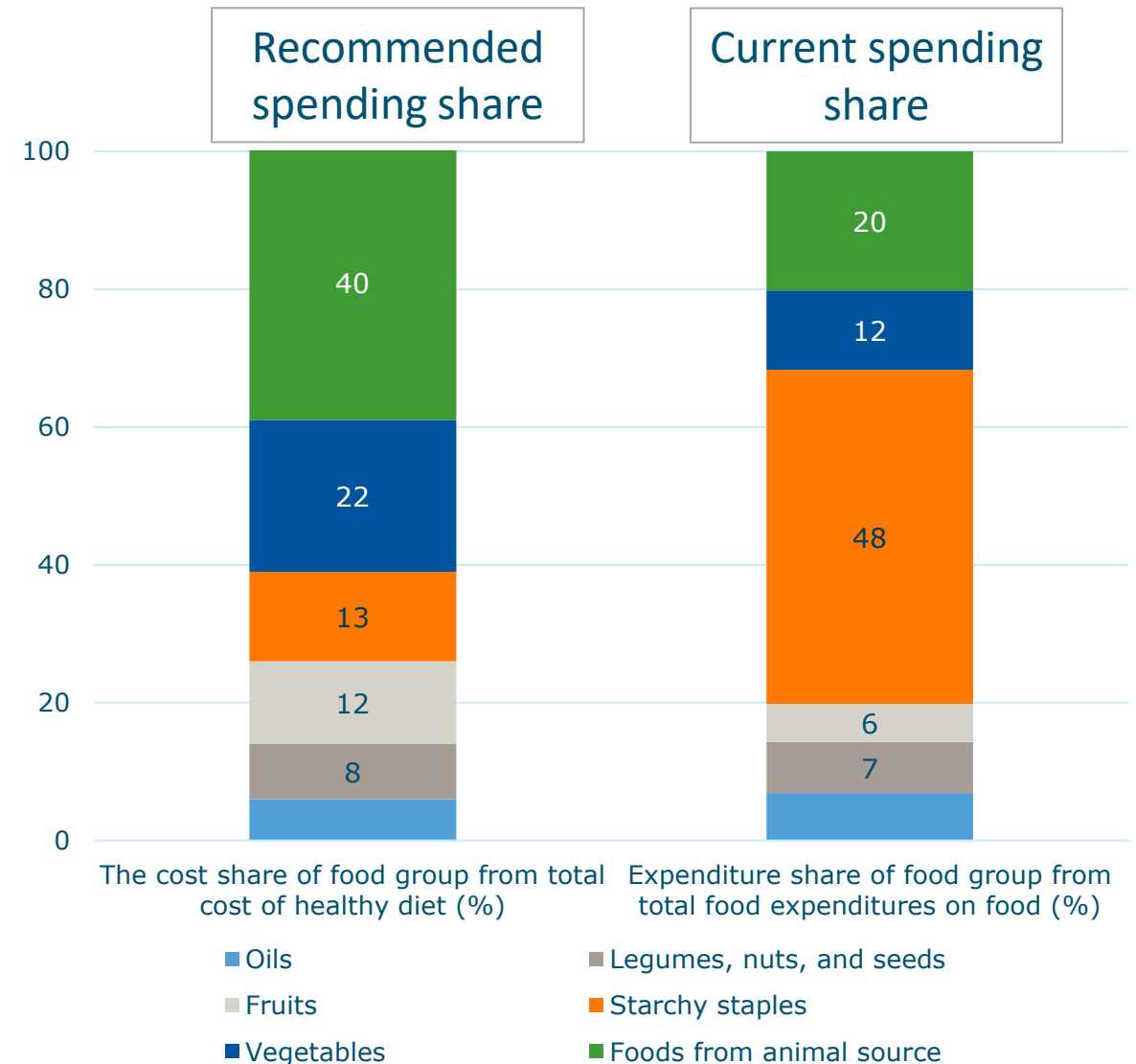
a. Median cost of healthy diet per food group at geopolitical zones



b. % households whose expenditures on food group is below the cost of healthy diet of that food group

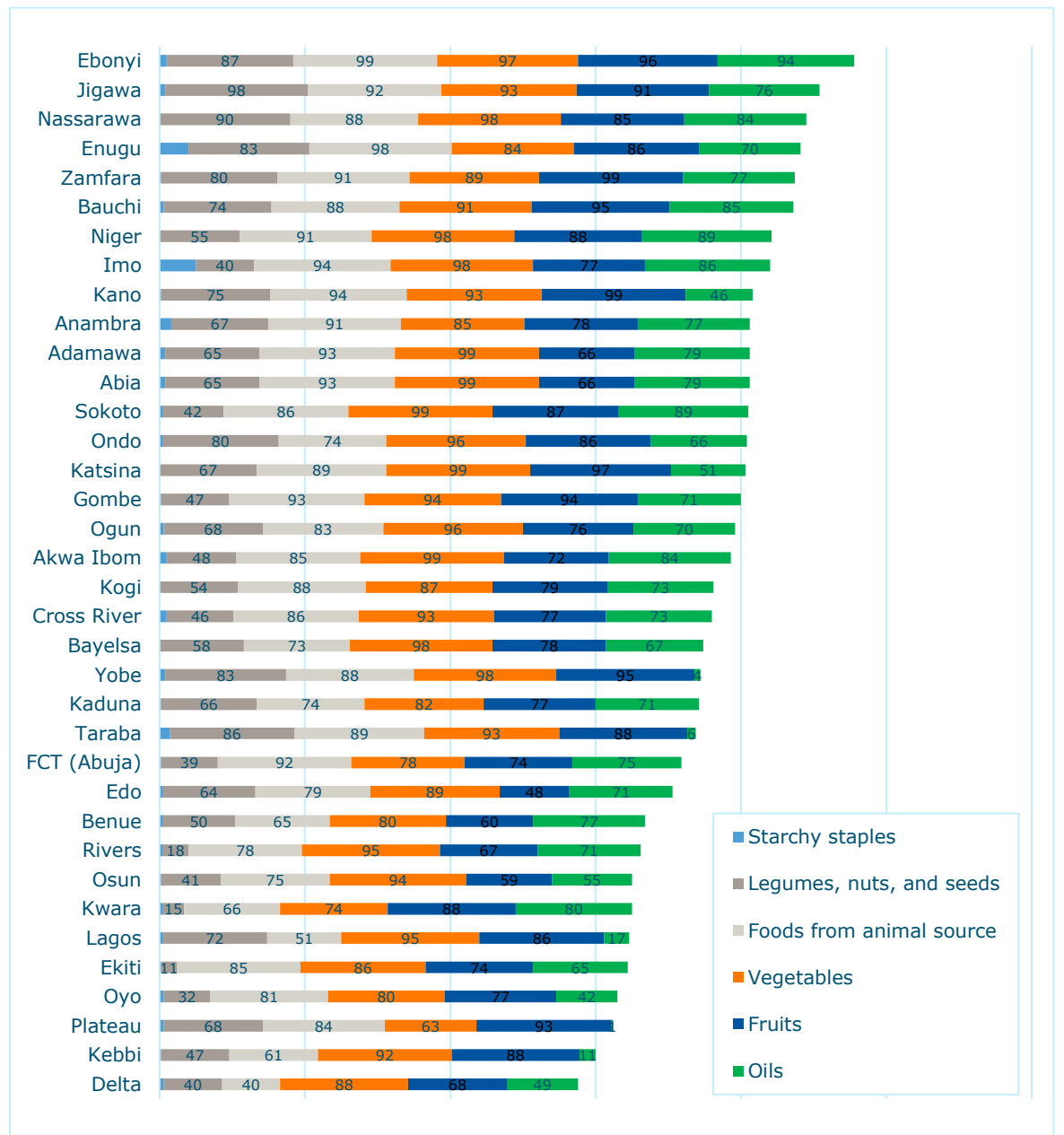
## Comparison of recommended spending- and current spending- shares of food group

- Except for starchy staples, share of current spending on each food group was below the corresponding share of spending needed to meet recommended quantities of each food group



## Affordability of food group across States

- Over 90% of households had expenditures below the expenses needed for recommended quantities:
  - Vegetables in about **two-third** of the States
  - ASF in about **one-third** of the States
  - Fruits in about **one-quarter** of the States for fruits
- Over 90% of HHs in each state had adequate (excessive) spending on starchy staples (exceptions: Imo, 80%; and Enugu, 75%)



# Summary

- ❖ About 31% percent of households in the country could not afford a healthy diet
- Cost of healthy diet was with the lowest in Northern states:
  - Taraba (NE), Kebbi (NW), Plateau (NC) and Bauchi (NE).
- Cost of healthy diet was with the highest in Southern states:
  - Bayelsa (SS), Anambra (SE), Abia (SE) and Imo (SE)
- A healthy diet was relatively affordable in:
  - Southern states: Lagos (SW), Oyo (SW), Ondo (SW), and Delta (SS)
  - Northern states: Benue (NC) and Kwara (NC).
- ❖ Lower food prices may not necessarily lead to higher affordability and vice versa
- Despite the relative affluence in southeastern states, the prevalence of unaffordability is highly problematic because of high prices:
  - at least 41% of households in Ebonyi, Abia, Imo, Enugu could not afford the healthy diet
- In northern states, the prices of recommended foods were in the low-to-mid ranges, yet the lack of affluence makes unaffordability highly problematic. (e.g., Jigawa (NW), Sokoto (NW) and Adawama (NE))

# Implications

- Policies and programs aiming to bring healthy diets within reach of the poor would require **sub-national level analysis** of the cost and affordability of healthier foods
- Having these metrics available within Nigeria's national food systems dashboard will **give decision-makers a realistic picture of state-level priorities for interventions**, and for **shaping food systems transformation** pathways towards healthier diets and mitigate drivers of malnutrition in times of crisis.
- A recurring monitoring with limited time intervals of this metric, and other relevant indicators, is essential for evidence-based policy making.





Thank you for  
your attention!

To explore  
the potential  
of nature to  
improve the  
quality of life



# Monitoring the Cost of a Healthy Diet in Nigeria

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# Overview of Presentation

- Approach and next steps
- Expected outcomes and outputs
- Anticipated uses of findings

## Next steps

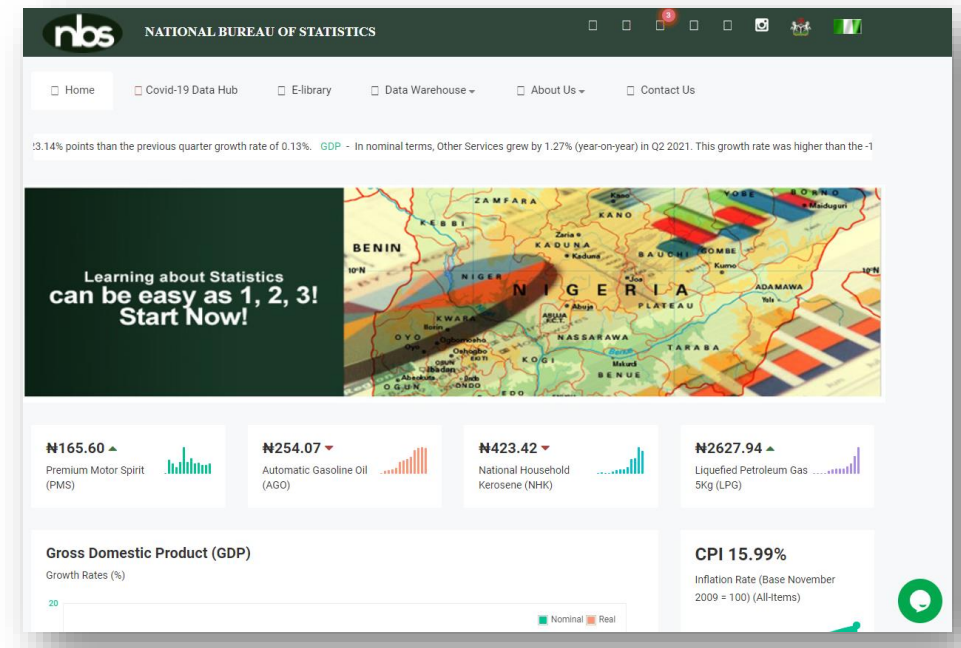
- Assess costs and affordability of a healthy diet using retail food price data from National Bureau of Statistics (NBS)
  - Collected monthly from >10,000 markets across Nigeria
  - Available for rural and urban areas in each of 36 states and Federal Capital Territory, Abuja



Photo Credit: IFPRI/Milo Mitchell, Abuja, 2015

# Approach

- Propose analysis of price data from January 2016 to September 2021
  - Analysis of income/expenditure data to determine affordability by state and other sociodemographic characteristics
- Institutional arrangements with NBS
  - Continuous routine (monthly) computation and reporting of cost of healthy diet
  - Across states and strata (rural/urban)



National Bureau of Statistics website, November 2021




## Outputs

- Disaggregated data on seasonal and state-level trends in the cost of a healthy diet
- Affordability of a healthy diet for different population groups in Nigeria

## Outcome

- Increased information for decision making, e.g.,
  - Agriculture
  - Trade
  - Social protection
  - Other policies or programmes to improve the food system for nutrition in Nigeria



# Anticipated Uses of Results & Monitoring Data



**Government:** Policymaking around food systems transformation, income and wages, trade, and social protection; early warning of food insecurity and malnutrition



**Development Partners/Civil Society:** Targeting of interventions and beneficiaries



**Private Sector:** Identifying business opportunities to address supply gaps



**Academia/Research:** Understanding drivers of healthy diets, food systems challenges, effects of policies and programmes

Questions?

Discussion

