

Development of a Food & Nutrient Coding Database for the Nigerian Food Consumption & Nutrition Survey

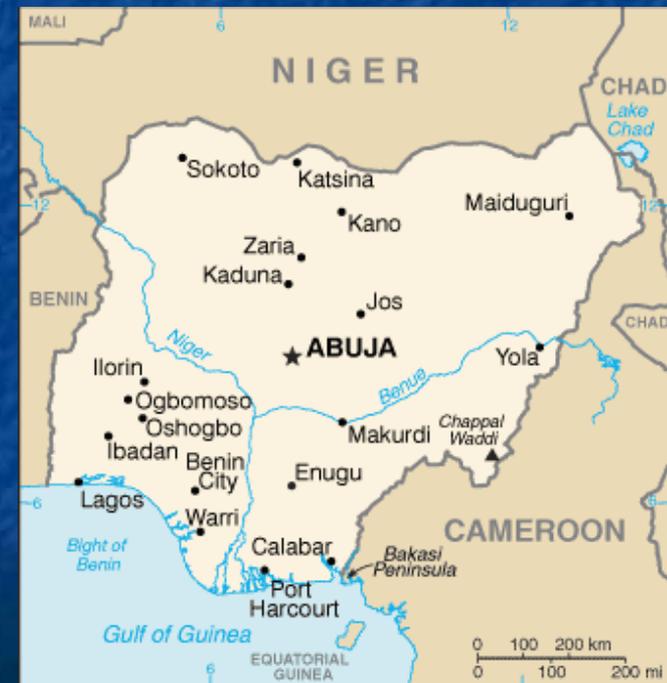
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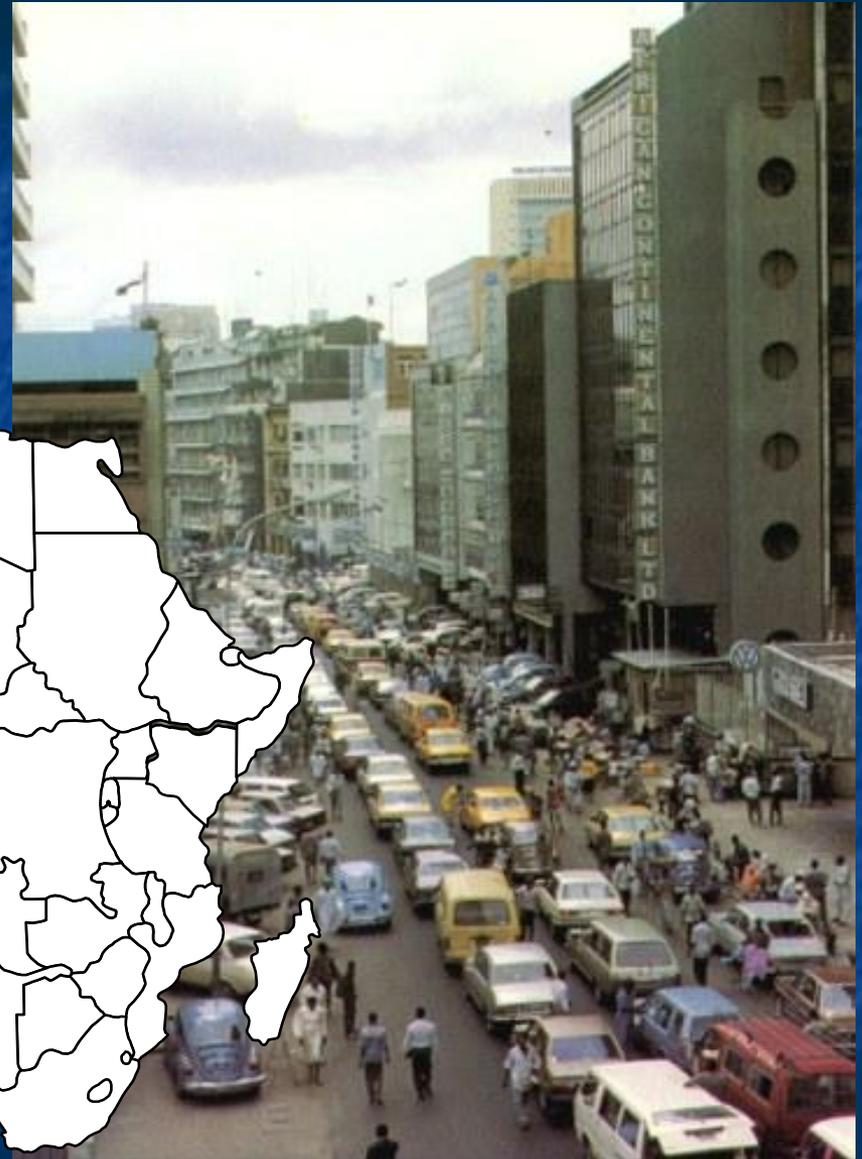
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Nigeria

- Nigeria has 130+ million people
- Most populous country in Africa



Nigeria

- 250 pure ethnic groups
- Coastline, agricultural land, industrial & commercial activities
- Africa's energy giant – oil & gas
- 60% of people in food crops
- 2 seasons – rainy & dry
- Tropical to sub-tropical temperatures



Background

- IITA collected food records in a national survey of pregnant women, mothers & children in 2001
- Survey data entered into a database program
- In 2002, IITA chose Food Intake Analysis System (FIAS) to enter & analyze food intake data
- IITA came to UTSPH for FIAS training



Background

- During training IITA realized the food components needed for FIAS analysis did not exist
- IITA decided to develop a food & nutrient coding database
 - Include ingredients specific in Nigeria
 - Create recipes specific to Nigeria
- UTSPH agreed to
 - Guide food, nutrient and recipe database development
 - Re-structure & migrate survey data into FIAS format
 - Conduct nutrient analysis & assist with quality control

Food Intake Analysis System - FIAS

- Data entry & nutrient analysis of dietary recalls & records
- USDA Food & Nutrient Database – CSFII
- Public use version of SURVEYNET
- 60 food components
- Recipe modifications & development



Developed Reference Database

- Selected 214 foods from USDA reference database to match typical Nigerian foods

- Beef
- Water
- Apple
- Etc.



Nigerian Market



Added Foods to the FIAS Database



Tuwo masara (corn paste)

- Created 117 foods that did not exist in USDA data for Nigerian diet
- Created 14 new foods to add as modifications of USDA foods (different measures)
- Total of 131 new foods were added

Measure Tools & Gram Weights

- Added 359 measure descriptions to USDA foods
- Added 164 Nigerian specific measure descriptions





Complete Nutrient Profiles

- Energy
- Protein
- Carbohydrate
- Total fat
- Dietary fiber
- Moisture
- Iron
- Zinc
- Calcium
- Phosphorus
- Vitamin A
- Carotene
- Thiamine
- Riboflavin

- **422 Nigerian recipes**
- **Recipes were kitchen tested to obtain weights before & after cooking**



Survey Data Review

- 75,000+ foods
- 10,453 subjects
- Reviewed each line to determine if it was a food or a recipe ingredient



Otong soup/paste

Assigned Food Codes

- Every unique food reported in the survey was assigned a code to match to a food in the new database
 - 85 USDA foods
 - 223 Nigerian foods & recipes
 - 308 total unique foods
- For ingredients in recipes
 - 87 Nigerian foods used
 - 137 USDA foods used

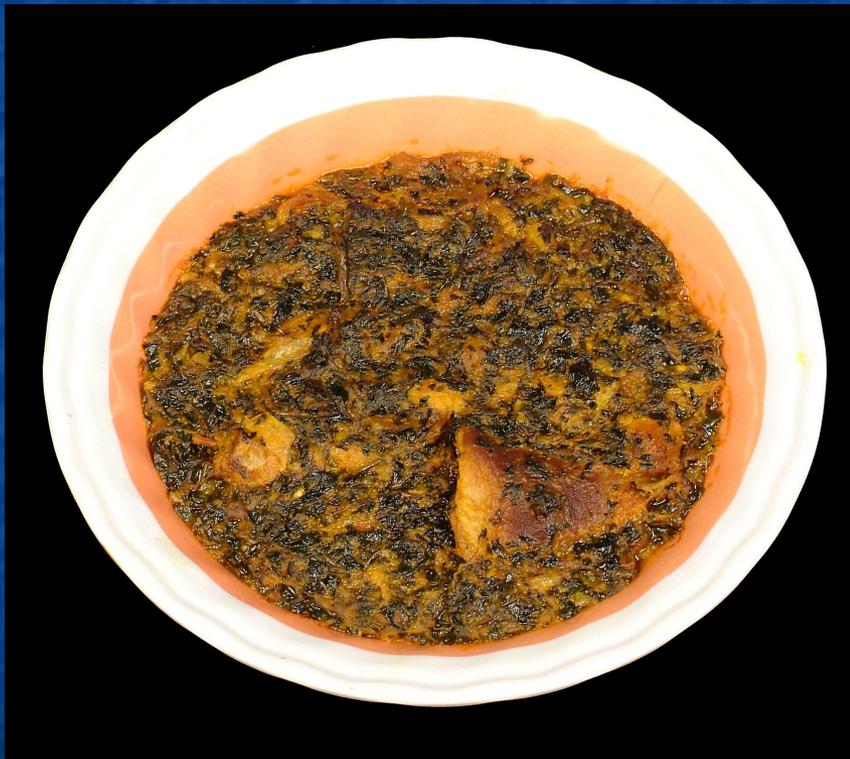


Puff puff (snack)

Reviewed Gram Weights

- Each food measure or weight reported in the survey reviewed to determine if it was compatible with the measures in FIAS
- Gram weights for measures differed by state
- Each state supervisor had entered a weight specific to what they had on the record
- State specific gram weights were accepted

Data Conversion & Nutrient Analysis



Bitter leaf soup/paste

- Data fields matched to FIAS
- Nutrients per food
- Nutrients per day
- % contribution of foods to selected nutrients

Summary

- USDA foods can be used & modified to facilitate international nutrition research
- Standardization of food & recipe development databases allows between country comparisons
- Standardization of collection methods & nutrient analysis programs prior to survey is advised
- Edit the actual databases used by FIAS to exclude USDA foods & nutrients not needed
- Nigerian recipes will be refined & used for future Nigerian nutrition surveys