

# Philippines - Survey of Food Demand for Agricultural Commodities 2008-2009

**Bureau of Agricultural Statistics**

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## Overview

### Identification

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#### ID NUMBER

PHL-BAS-SFD-2008-2009-v2

### Version

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#### VERSION DESCRIPTION

v2: Raw data edited at the Central Office, not anonymized dataset for internal use.

#### PRODUCTION DATE

2009-08-31

#### NOTES

BAS follows the versioning of the dataset below:

- v0: Basic raw data, obtained from data entry (undited).
- v1: Raw data edited at the POCs, not anonymized data set for internal use only.
- v2: Raw data edited at the Central Office, not anonymized dataset for internal use.

## Overview

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#### ABSTRACT

In 1995, the aftermath of the rice crisis compelled the Bureau of Agricultural Statistics (BAS), as tasked by DA in collaboration with the NFA, to conduct a food consumption survey to generate per capita consumption data for the estimation of the total food requirements of the country. The BAS again, as a special assignment from the Department of Agriculture (DA), conducted four (4) survey rounds on food consumption from 1999 to 2000 to examine the extent of rice substitution. Since then, the BAS has programmed the conduct of the food consumption survey every five (5) years. Lack of funds, however, has always constrained the Bureau from undertaking new rounds of this statistical inquiry.

Given the top priority concern of the DA of maintaining food security in the country, there is really the compelling need to generate updated information on the emerging food demand of Filipinos for agricultural commodities. Data on demand for food items can significantly assist in understanding consumer behavior particularly those relating to food substitution and shift in tastes and preferences. These data can thus be very important inputs for policy making especially of the DA. For the National Food Authority (NFA), data on food demand can serve as critical basis for its price stabilization and buffer stocking functions. With the availability of these new information sets, the NFA can be more properly guided in making decisions on the appropriate volume of rice importation and its timing as well as on its domestic procurement and market injection operations.

The above-cited potential applications of the results of this survey are the major underpinnings for its immediate implementation.

The general objective of this statistical survey is to determine the Filipinos' current and emerging consumption patterns and habits with regard to rice, corn and other basic food items.

Specifically, the survey aims to:

- determine the present average per capita consumption of rice, corn and other basic agricultural food items;
- determine the emerging consumption patterns as well as the purchasing patterns of the Filipino households;
- study the current shift in consumer's preference including substitution of rice with other food commodities;

- provide inputs for the construction of demand functions and estimation of elasticities of demand for agricultural commodities; and,
- analyze the relationship of demographic and socio-economic factors on the food consumption patterns.

## KIND OF DATA

Sample survey data [ssd]

## UNITS OF ANALYSIS

Households

## Scope

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## NOTES

The scope of the SFD includes:

HOUSEHOLD CHARACTERISTICS such as household size, sex and age of household members, highest educational attainment, main occupation, income and socio-economic classification;

HOUSEHOLD FOOD CONSUMPTION AND BUYING PATTERNS such as quantity of household food consumption, price per local unit of food purchased and household usual buying frequency;

NUMBER OF EATERS include household members and guests;

HOUSEHOLD EATING HABITS such as eating inside and outside home, and members taking home food from outside or order food for delivery;

QUANTITY of rice / corn leftovers, wastage and consumption by animals; and,

HOUSEHOLD THAT SUBSTITUTES any food in place of rice.

## Coverage

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## GEOGRAPHIC COVERAGE

The Survey of Food Demand for Agricultural Commodities covers sample households in urban and rural barangays in 80 provinces, the Cities of Zambaonga and Davao, and the National Capital Region (NCR). The 80 provinces include Batanes and the newly created province of Dingat Island.

## GEOGRAPHIC UNIT

Province with rural - urban barangays disaggregation.

## UNIVERSE

All households

## Producers and Sponsors

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## PRIMARY INVESTIGATOR(S)

Name	Affiliation
Bureau of Agricultural Statistics	Department of Agriculture

## FUNDING

Name	Abbreviation	Role
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Department of Agriculture	DA	Funding source
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## OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
National Statistical Coordination Board		Survey clearance

## Metadata Production

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## METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Eduardo B. Sanguyo	EBS	Bureau of Agricultural Statistics	Documenter
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## DATE OF METADATA PRODUCTION

2010-03-24

## DDI DOCUMENT VERSION

Version 1.0 (March 2010)

## DDI DOCUMENT ID

DDI-PHL-BAS-SFD-2008-2009-v1.0

## Sampling

### Sampling Procedure

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#### Sampling Frame

The list of barangays counted in the 2007 Census of Population (POPCEN) serves as the sampling frame. Information on final population counts by barangay as of August 1, 2007 from the 2007 POPCEN has been released and is made part of the sampling frame. The 2007 POPCEN list is reconciled with the most updated geographic codes based on the Philippine Standard Geographic Classification (PSGC) as of March 31, 2008. Aside from the geographic codes and names of municipalities and barangays, the PSGC contains the urban-rural classification of the barangays as of 2000 and income classification of the cities and municipalities, which are equally important information needed in the development of the sampling frame. The income classifications of cities and municipalities are based on the Department of Finance Department Order No. 20-25 effective July 29, 2005.

The domain of the survey is the province, while for NCR, the domain is the whole region. The Cities of Zamboanga and Davao are considered as separate domains.

For 80 Provinces and the Cities of Zamboanga and Davao:

A two-stage sampling design is used with the barangay as the primary sampling unit (PSU) and the household as the secondary sampling unit (SSU). The barangays are first stratified according to their urban-rural classification, forming two strata: one for urban barangays and another for rural barangays. Thereafter, the total number of sample barangays in the province (=16) is allocated proportionately to the number of barangays in the stratum.

In the selection of the PSUs, the barangays are arrayed based on city / municipality income class. Systematic sampling is then employed in drawing the samples. This is done to ensure that barangays in high and low-income cities/municipalities are represented in the sample. Income class is factored in the sampling process on the assumption that it is associated with urbanization, which is one of the determinants of food consumption patterns among households.

Selection of SSUs within each PSU will be done during field data collection using systematic sampling through the right coverage technique, based on pre-assigned starting point (sp), random start (rs), and sampling interval (i).

For the National Capital Region (NCR):

A two-stage sampling procedure is, likewise, used with the barangay as PSU and the household as SSU. Like in the provinces, stratification is done at the PSU level. However, urban-rural classification is not considered since all the barangays are urban. Instead, the barangays are stratified by district, with all the municipalities and cities represented.

In each city/municipality, two (2) sample barangays are selected systematically from an ordered list of barangays based on barangay total population. This is done to ensure that barangays from large and small barangays in terms of population are represented in the sample.

The same procedure to be used in identifying the sample households in the provinces will be followed in the NCR. However, the sampling interval for urban barangays will be  $i=10$ .

The target sample size nationwide was 13,880 households.

### Deviations from Sample Design

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Out of 1,388 barangays covered by the survey, only 1,362 were covered in the first survey round because the province of Batanes was not covered due to bad weather condition. There were also barangays which were not covered because of peace and order problem, particularly, in Mindanao areas.

### Response Rate

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The response rate for August 2008, November 2008, February 2009, and May 2009 survey rounds were 97 percent, 98 percent, 93 percent and 94 percent, respectively.

## Weighting

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Weights were calculated for each of the sample households.

Sample weights for the household data were computed as products of the ratio of the number of sample households to the total number of households in the barangay and the ratio of the number of sample barangays to the total number of barangays in the province. The household weights were adjusted for non-response at the domain level. The household weight variable is called HHWEIGHT and is used with the household level data.

# Questionnaires

## Overview

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The questionnaire consisted of five (5) pages. It has eight (8) blocks, namely:

- A. Geographic Information - captures the geographic location of sample household
- B. Sample Household Identification - this block identifies the sample household
- C. Household Members Particulars - captures the demographic profile of household members
- D. Household Food Consumption and Buying Pattern - captures the food consumption and buying patterns of the household for the past week, which include:
  - 1 - Rice and rice-based products
  - 2 - Corn
  - 3 - Noodles
  - 4 - Bread
  - 5 - Rootcrops
  - 6 - Meat
  - 7 - Egg
  - 8 - Fish and marine products
  - 9 - Vegetables, Legumes and Condiments
  - 10 - Fruits
  - 11 - Fresh/pasteurized milk
- E. Number of Eaters - captures the physical count of household members and guests by type of meal in a day-by-day basis.
- F. Rice/Corn Leftovers, Wastage and Consumption By Animals - determine the quantity (in kilogram) of rice/corn leftovers, wastage and consumption by animals during the past seven days.
- G. Rice Substitution - aims to capture information on rice substitution during the past week.
- H. Data Collectors/Editors Particulars - where the names of contractual data collector, field supervisor, editor were found.

The questionnaire was written in English and had a combination of tabular and question type formats.

## Data Collection

### Data Collection Dates

Start	End	Cycle
2008-08-12	2008-08-22	August survey round
2008-11-11	2008-11-22	November survey round
2009-05-12	2009-05-22	Third and fourth survey rounds

### Time Periods

Start	End	Cycle
2008-08-05	2008-11-15	Past seven days from the date of collection
2008-08-05	2009-05-15	Past seven days from the date of collection
2008-08-05		Past seven days from the date of collection

### Data Collection Mode

Face-to-face [f2f]

### Data Collection Notes

Training was conducted to have a uniform understanding of the survey concepts and procedures. This is a step towards minimizing the errors committed during field operations. For this survey, several levels of training were conducted. The first level involved the Regional and Provincial Agricultural Statistics Officers while the succeeding levels involved the POC staffs who handled most of the field supervision works and the CDCs who conducted the face to face interview. A separate training of Central Office technical staff was conducted at the Central Office to assist in the field operations of selected provinces.

The field training included the following activities to maximize understanding of the survey concepts and procedures:

- Discussion of concepts and procedures;
- Dry run exercise in a non-sample barangay (this will enable the training participants to have a hands-on experience of the things discussed in the lectures);
- Clearing / discussion and addressing of issues and gray areas that came out during the dry-run exercise; and
- Discussion of consistency checks / editing procedures

During the first survey round, right coverage approach was adopted to locate the qualified sample households.

Right coverage is the fashion by which the data collector looks for qualified sample households along the existing path-structure in a barangay. The right coverage requires that at the landmark-starting point, the data collector's standing position is such that his/her right shoulder points to the main entrance of the starting point. He/She then moves on along this path, choosing households along the road or passage-way. A range of alleys or "eskinitas" along or intersecting main roads on the right side shall be penetrated in a serpentine manner. Extensions/Other areas to be covered must be adjacent to the original spot and must be penetrated in likewise manner.

A qualified sample household is a household with an available qualified respondent For this survey, a qualified respondent is a person who meets the following criteria:

- (a) responsible adult household member
- (b) knowledgeable of the household's food consumption as well as the consumption patterns of the household members
- (c) willing to provide reliable information for the study

The respondent may or may not be the household head.

The following landmark-starting points will be used in the application of the right coverage procedure. The pre-assigned starting point corresponding to each sample barangay, which is any one of the following, is indicated in the list of samples.

A - barangay hall

- B - school
- C - barangay chairperson's house
- D - church / chapel / mosque
- E - barangay secretary's house

If the pre-assigned starting point is not present in the barangay, the next in the list will be considered. If there are two schools in the barangay, say elementary and secondary schools, choose the elementary school as the starting point. Similarly, if more than one place of worship exists in the barangay, the order in which they are listed below will be followed.

- (a) Catholic church / chapel
- (b) Place of worship for Protestants and similar groups
- (c) Iglesia Ni Cristo chapel
- (d) Mosque

A random start (r) is likewise pre-drawn for each sample barangay. A sampling interval (i) of 10 for urban barangays and 5 for rural barangays will be followed in this survey. This is likewise contained in the list of sample barangays

The right coverage procedure along with the sp, rs and i will be applied in locating the sample households.

For instance, if  $sp=A$ ,  $r=4$  and  $i=5$ , the first potential sample household will be 4th household from the barangay hall. This household will be considered as sample if a qualified respondent is available during the data collector's first visit.

Otherwise, the data collector will locate the nearest household by right coverage, until he/she finds the qualified sample household. From this household, the data collector will proceed to the 5th household from the previous sample and determine if a qualified respondent is available. This process will continue until ten (10) qualified sample households in the barangay are covered.

To keep track of the path of enumeration and the basic identification of the sample households, filling up of call sheets will be done during fieldwork.

#### Steps to be Followed During Field Data Collection

1st - Fill up the identification portion of the questionnaires and call sheet before starting the enumeration work in the barangay. These information are contained in the list of samples.

2nd - Locate the sample barangay. Coordinate with the Barangay Chairperson or any Barangay Officer if the Barangay Chairperson is not around, to explain about the survey. Indicate on the call sheet the name of the Barangay Chairperson / Official.

3rd - Proceed to the starting point. Using right coverage, locate the first potential sample household which is the rth household from the starting point.

4th - Determine if a qualified respondent (may or may not be the household head) is available for interview (review definitions on page 3).

It is important that a good introduction about the survey is made in order to convince the respondent to supply the needed information, particularly on sensitive questions.

5th - Case 1: If the respondent qualifies for the survey, interview him/her using the questionnaire. After completing the interview, indicate on the call sheet the sample household serial number (HSN). For this survey, HSN refers to the sequence of households successfully enumerated.

Case 2: If no qualified respondent is available, or the potential respondent refuses to provide all the needed details for the survey, politely thank him/her, indicate findings on the call sheet, then proceed to the nearest household still following the right path. Repeat the screening process until a qualified sample household is enumerated

6th - Locate the next potential sample household which is the ith household from the previous sample.

7th - Repeat steps 4 to 6 step until ten qualified sample households in the sample barangay are covered.

The same sample households were interviewed in the succeeding survey rounds.

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## Data Collectors

Name	Abbreviation	Affiliation
Bureau of Agriculture Statistics	BAS	Department of Agriculture

## Supervision

The field supervision was done by the regular staff from the Provincial Operations Centers nationwide led by Provincial Agriculture Statistics Officers (PASO) and selected staff from the Central Office. Their tasks were to observe the data collectors, make follow up, do spot checking of interviewers, edit and back-check CDC work especially when incomplete or inconsistent entries were found in the data collector's work.

On the average, each supervisor supervised four (4) CDCs.

## Data Processing

### Data Editing

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Data editing took place at a number of stages which included:

- a) Manual editing and coding at the Provincial Operations Centers (POCs)
- b) Running of the error listing program at the POCs after the data entry operation
- c) Running of the error listing program at the Central Office before the output tables generation.
- d) Identification of inconsistent and unreasonable data done by analysts.
- e) Data list of samples with respect to the variables of concern, then, comparing the encoded data with the questionnaires.
- f) Correction of errors, if there's any, and then regeneration of data tables.

The error listing program was developed using the Census Survey Program (CSPPro).

### Other Processing

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A CSPPro-based data processing system was developed which includes:

- a. data capture (data entry program)
- b. data editing or error listing program
- c. data tabulation or output generation program (which generates 22 data tables)

## Data Appraisal

### **Estimates of Sampling Error**

Provincial level estimates -  $\pm 9\%$  to  $\pm 6.2\%$

Regional level estimates -  $\pm 5\%$  to  $\pm 3\%$

National level estimates -  $\pm 3\%$  to  $\pm 2\%$

### **Other forms of Data Appraisal**

A series of data quality tables and graphs are available to review the quality of the data and include the following:

- Average household size and percentage distribution of household members by sex
- Average age and percentage distribution of household members by age group
- Percentage distribution of household members by highest educational attainment
- Percentage distribution of household members by main occupation
- Percentage distribution of households by socio-economic class
- Percentage distribution of households by income group
- Percentage of household by source of food eaten
- Percentage of households by buying frequency, by commodity
- Percentage of households by type of food eaten
- Percentage of household members who eat meal at home
- Percentage of household members who eat meal outside
- Percentage of household members by reason for eating outside
- Percentage of household members by type of meal taken home/ taken home free/ order for delivery
- Percentage of households that serve meal to guests
- Estimated per capita consumption (per commodity)
- Percentage of households by type of food eaten in place of rice during meals
- Percentage of households by main reason for rice substitution
- Average quantity of rice and corn leftovers that was spoiled/wasted
- Average quantity of rice and corn leftovers that was fed to animals
- Average quantity of rice and corn that purposely cooked for pets/animals
- Estimated per capita consumption by socio-economic class
- Estimated per capita consumption by income group
- Estimated per capita consumption by household size
- Estimated per capita consumption by ratio of working members to total household size