Rice and Corn Stocks in the Philippines

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Why Monitor Rice and Corn Stocks Situation?

1. National food security
2. Production policies
3. Possible import requirement and timing of importation
Stocks Inventory by Sector

- Household (PSA)
- Commercial (NFA)
- NFA depositories

Stock inventory
Palay and Corn Stocks Survey (PCSS1)
Objectives

- to generate estimate of current stock of rice and corn in farming and non-farming households;
- to serve as input in the analysis of the seasonal trends and variations in the supply of rice and corn;
- to serve as input for forecasting future supply, demand and prices of palay and corn; and
- to assist policy-makers in the formulation, implementation and administration of agricultural economic programs.
Concept and Definition

Type of Corn

1. White - corn that is used primarily for human consumption

2. Yellow - corn that is generally used as feed grain (includes all types of corn other than white).
**Ears of matured corn** - Corn in the cob that are harvested as they reach full maturity or at hard dough stage.

**Ears of green corn** - Young corn in the cob that are harvested on or before they reach full maturity. They are either at soft or hard dough stage (for boiling or broiling).

**Shelled corn** - Corn grains that have been removed from the cob.

**Corn Grits** - Milled corn grains where the outer covering and germs have been removed.
Household (HH) classification:

1. Farming household
   - refers to any household in which a member operates an agricultural land, either solely or jointly with other members, and the aggregate area operated by the operator-members of such household qualified to be called a farm.

2. Non-farming household
   - refers to household with no agricultural area or activity and is chosen through the right coverage approach.
Sampling Design

Two-stage stratified replicated sampling

Sub-sample of Palay and Corn Production Survey

One Replicate barangay (village)

Primary Sampling Unit (PSU) – Barangays (villages): 1,079

Secondary Sampling Unit (SSU) – Households: 15,286

Farming Households: 9,766

Non-farming Household: 5,520
The estimate of the total stock in the province is simply obtained by:

a. Get the average stock by household-
   dividing the total stock (by type) by the number of responding households
   under the farming and non-farming.

b. Multiply the average stock by the total number of farming and non-farming
   households (expansion factor).

c. Multiply the estimated palay stock to 65% to get the rice equivalent.

d. Divide the estimated corn grits stock by 68% to get the corn grain equivalent.

e. Add the estimated stocks held by the farming and non-farming households.
Data Collection

Frequency
- Monthly

Method
- Personal interview by Statistical Researcher
- Field operation: First 4 days of the reference month

Information Collected
- Palay/rice household stocks as of 6:00 AM of the first day of the reference month.
# Household Stocks

## Survey Form

**Republic of the Philippines**  
**Philippine Statistics Authority**  
**Quezon City**

**PALAY AND CORN STOCKS SURVEY (PCSS 1)**

<table>
<thead>
<tr>
<th>(Month)</th>
<th>Year</th>
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<tbody>
<tr>
<td>1</td>
<td>20</td>
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<table>
<thead>
<tr>
<th>PROVINCE:</th>
<th>MUNICIPALITY:</th>
<th>BARRANGAY:</th>
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<table>
<thead>
<tr>
<th>HOUSEHOLD CLASSIFICATION:</th>
<th>Farming</th>
<th>Non-Farming</th>
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</table>

### A. Quantity of Palay/Rice Stocks in the House as of 6:00 AM

<table>
<thead>
<tr>
<th>LN</th>
<th>NAME OF HOUSEHOLD HEAD</th>
<th>NAME OF RESPONDENT</th>
<th>RELATIONSHIP TO HOUSEHOLD HEAD</th>
<th>UNITS USED (Example: Sack)</th>
<th>NUMBER OF UNITS</th>
<th>WEIGHT (in kg)</th>
<th>FOR OFFICE USE ONLY (kg)</th>
<th>UNIT USED (Example: Sack)</th>
<th>NUMBER OF UNITS</th>
<th>WEIGHT (in kg)</th>
<th>FOR OFFICE USE ONLY (kg)</th>
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</table>

**TOTALS**

**IMPORTANT:**
- Report the quantity of palay (etc.) which is owned by the household and stored in the house or another house or non-commercial location (Rice/Corn Feed Mill).
- Do not include owned stocks which are stored in commercial warehouses.

**RELATIONSHIP TO HOUSEHOLD HEAD:**
1. Household Head
2. Spouse
3. Son/Daughter
4. Other head-of-household member of the household
## Household Stocks

### PCSS FORM 1A

#### Page 2

**B. QUANTITY OF SHELLED CORN/CORN GRITS STOCKS IN THE HOUSE AS OF 6:00 A.M.**

<table>
<thead>
<tr>
<th>LN</th>
<th>NAME OF HOUSEHOLD HEAD</th>
<th>CORN GRAIN**</th>
<th>CORN GRITS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>WHITE</td>
<td>WHITE</td>
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<tr>
<td></td>
<td></td>
<td>YELLOW</td>
<td>YELLOW</td>
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<td></td>
<td></td>
<td>LOCAL UNIT</td>
<td>LOCAL UNIT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT USED</th>
<th>NUMBER</th>
<th>WEIGHT (kg)</th>
<th>WEIGHT (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Sack</td>
<td></td>
<td>(4 x 5)</td>
<td>(12 x 12)</td>
</tr>
</tbody>
</table>

**Note:** Include ears of matured corn in shelled corn equivalent

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**CORN GRAIN - Ears of Matured Corn 2.971**

Enumerated by: __________________________
Date of Enumeration: ____________________

Edited by: __________________________
Date Edited: ________________________
Data Processing

- Manual editing and coding
- Data encoding
- Error listing/data verification
- Generation of Output tables
- Review of Output tables

- Decentralized data processing
- Census and Survey Processing System (CSPro 6.1)
Data Review and Validation

Review

- Check the consistency of reasons for the changes in the level of stocks reported

Validation

- Check consistency of the current level of estimates with the trends in production, prices, importation and data series on monthly stock inventory of households, commercial and NFA
- Calculate the implied per capita consumption if within the range of previous data on per capita
Republic of the Philippines
Philippine Statistics Authority

Output and Dissemination

Special Release

**Rice and Corn Stocks Inventory**

- Released 10th day after the reference month

**Rice and Corn Stocks Inventory**

- As of June 30, 2016, the total rice stock inventory was 3.24 million metric tons (Figure 1). This was 7.18 percent higher than the 3.00 million metric tons level in June 2015 and 2.21 percent lower than last month’s inventory level of 3.34 million metric tons (Table 1).
- Year-to-year rice stocks in the households and in NFA and processors increased by 0.40 percent and 0.29 percent, respectively.
- On the other hand, stocks in the commercial warehouses decreased by 0.28 percent (Table 1).
- This month’s rice stocks in all sectors were lower compared with their levels last month. Stocks in the households dropped by 2.04 percent; in commercial warehouses by 4.50 percent, and in NFA deposits by 0.40 percent (Table 1).
- Of this month’s total rice stock inventory, 36.16 percent were with the households, 30.74 percent in commercial warehouses, and 29.13 percent were in NFA deposits. The latter comprised 0.59 percent of imported rice.
- The total rice inventory for this month would last for 95 days. Stocks in the households would be sufficient for 54 days; stocks in NFA deposits for 23 days, and those in commercial warehouses for 29 days.
Good Practices

Management of Sampling Units

- Monitoring of samples status and outcome of the interview
- Documentation of response rate
- Updating of the list of agricultural households
Data Collection

- Conduct of training/orientation prior to the implementation of data collection
  - Mock interview
  - Dry run exercise
- Conduct of spot-checking and back-checking activities by the Provincial Office and Central Office staff

Data Processing

- Manual editing prior to data encoding to check completeness of entries and consistency with other data items in the questionnaire
- Computerized editing to capture invalid entries
Data Review and Analysis

Three levels of data review:
- Provincial level
- Regional level
- National level

Data Dissemination

- Subscription to the existing policies regarding the release of statistical reports.
Commercial Stock Survey (CSS)
What is Commercial Stock Survey (CSS)?

*Commercial Stock Survey (CSS)* - monitoring system adopted by National Food Authority (NFA) to generate estimates on *commercial rice, corn and stocks inventory* held by the commercial sector at the national, regional & provincial level.

Recognized as an official government statistics effective January 1980 by the National Economic and Development Authority (NEDA).
To determine the apparent grains stock inventory for rice and corn held by the commercial sector, which would serve as inputs vital to policy and decision-making in the government.

To obtain from NFA registered grains businessmen a realistic and reliable statistics being used as one of the indicators for food security purposes in the country.
Sampling Design

Stratified Systematic Sampling

1\textsuperscript{st} Level Stratification
- Retailers (R)
- Wholesaler (W)
- Combined Retailers/Wholesaler (C R/W)
- Warehousemen (Wh)

2\textsuperscript{nd} Level Stratification
- Big
- Medium
- Small

Sampling Rate

- \( R = 15\% \)
- \( W = 25\% \)
- \( C R/W = 25\% \)
- \( Wh = 100\% \)

Masterlist of NFA Registered Grains Businessmen
(93,399)

About 11,706 pre-determined sample respondents in 88 provinces nationwide
Data Collection

Frequency

• Monthly

Method

• Personal interview by the enumerators & the Agency’s field survey personnel (Provincial Enforcement & Investigation Officers)
• Every last two (2) working days of the current month and the first two (2) working days of the succeeding month

Information Collected

• Ending stock inventory of the current month
COMMERCIAL STOCK SURVEY QUESTIONNAIRE

I. SAMPLE IDENTIFICATION
A. Respondent’s Name: ____________________________
B. Signature: ____________________________
C. Name of Establishment: ____________________________
D. Province/City: ____________________________
E. Major Stratum: ____________________________
F. Sub-Stratum: ____________________________
G. Control No.: ____________________________
H. Name of Respondents Interviewed: ____________________________
I. Relation to Sample Respondent: ____________________________

II. ENUMERATORS IDENTIFICATION
A. Printed Name & Signature of Investigator: ____________________________
B. Date of Interview: ____________________________
C. Printed Name & Signature of Enumerator: ____________________________
D. Date of Interview: ____________________________

III. PROVINCIAL SUPERVISOR/EDITOR’S IDENTIFICATION
A. Printed Name of CSS Provincial Officer: ____________________________
B. Signature: ____________________________
C. Date Edited: ____________________________

IV. STOCKS AS OF ________________, 2010.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>VOLUME (in 50 kg bag)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PALAY</td>
<td></td>
</tr>
<tr>
<td>RICE</td>
<td></td>
</tr>
<tr>
<td>CORN GRITS</td>
<td></td>
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<tr>
<td>CORN GRAINS</td>
<td></td>
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<tr>
<td>OTHERS</td>
<td></td>
</tr>
</tbody>
</table>

V. SALES AND PURCHASES FROM (MONTH) TO (LAST DAY OF THE MONTH).

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>INFLOW (PURCHASES): VOLUME (in bags of 50 kg)</th>
<th>OUTFLOW (SALES): VOLUME (in bags of 50 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PALAY</td>
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<tr>
<td>RICE</td>
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<td>CORN GRITS</td>
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</table>

VI. PURCHASED STOCKS IN TRANSIT AS OF ____________

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PURCHASES (INFLOW): VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>PALAY</td>
<td></td>
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<tr>
<td>RICE</td>
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<td>CORN GRITS</td>
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<td>OTHERS</td>
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<td>SPECIFY</td>
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</tbody>
</table>

Ref./In: 2010 REVISED CSS MANUAL (Feb. 24, 2011)
**Data Processing**

**Summarization**
- Collation and summarization of gathered data by the provincial office
- Every 3rd to 4th working day of the month

**Submission**
- Preparation and submission of the final report by the NFA-provincial office personnel to NFA-Central Office
  - On or before 8th working day of the month

**Consolidation**
- Consolidation/Processing of all final reports submitted by provincial offices nationwide
  - Eighth (8th) day up to 18th day of each month

**Report**
- Preparation, finalization and submission of the CSS Final Report to the NFA Administrator
  - Nineteenth (19th) day up to the twenty first (21st) day of the month
Good Practices

- **Religious conduct of CSS by enumerators**
  - Respondents affix their signatures in the duly accomplished CSS questionnaires
  - Timely submission of Accomplished CSS questionnaires

- **Cooperation from grains businessmen-respondents in the provision of stock inventory data to enumerators/NFA delegated survey personnel.**
Identified Data Gaps

- List of grains businessmen contained in the Masterlist of NFA Registered Grains Businessmen not updated in some areas.

- Irregular conduct of field validation to verify and ensure the quality and accuracy of data collected.

- Complaints from enumerators on the high transportation cost incurred in the conduct of survey, thereby discouraging them to continue working for CSS.

Lack of manpower to generate the Masterlist

Budgetary constraint

Accuracy and reliability of data suffer due to constant re-hiring of enumerators
Areas for Improvement

NFA Masterlist of Registered Grains Businessman

- Requires regular updating due to the possible changes in their line of activity, capitalization, etc.

CSS Assessment/Validation

- Review, revisit and validate if field offices adopt the set of statistical methodology as indicated in CSS Implementing Guidelines

Review of the Existing CSS Implementing Guidelines

- Determine the need to modify some provisions to further improve the conduct of survey
NFA – Grains Businessmen Relationships

• Strengthen further linkage to attain a more realistic and factual data.

Budgetary Requirement

• Provision of transportation allowance for hired enumerators that will encourage them to continue working for CSS.