

SPECIAL RELEASE

Rice and Corn Stocks Inventory, 01 June 2023

Date of Release: 18 September 2023

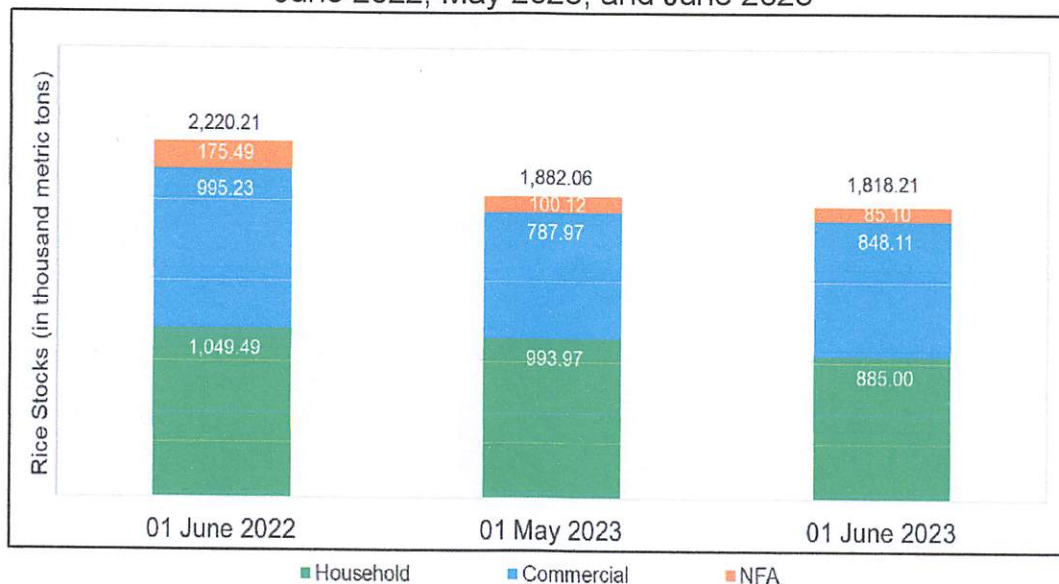
Reference No. 2023-SSO-152

RICE

The total rice stocks inventory as of 01 June 2023 was estimated at 1.82 million metric tons. This indicates an annual decline of -18.1 percent from the 2.22 million metric tons level in the same period of 2022.

Month-on-month, the volume of rice stocks inventory recorded a decrease of -3.4 percent from the previous month's inventory level of 1.88 million metric tons. (Figure 1 and Table 1)

Figure 1. Inventory of Rice Stocks, Philippines
June 2022, May 2023, and June 2023



Sources: Philippine Statistics Authority, Rice and Corn Stocks Survey: Household (RCSS:H) and Rice and Corn Stocks Survey: Commercial (RCSS:C) National Food Authority (NFA), NFA Grains Situation Report

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In comparison to the same period of the previous year, annual decrements were noted in the rice stocks inventories as 01 June 2023 in the NFA depositories by -51.5 percent, in the household sector by -15.7 percent, and in the commercial sector by -14.8 percent.

Relative to the previous month's inventory level, rice stocks in the NFA depositories and household sector registered a monthly decrease of -15.0 percent and -11.0 percent, respectively. On the other hand, a month-on-month increment of 7.6 percent was noted in the rice stocks from commercial sector.

As of 01 June 2023, about 48.7 percent of the total rice stocks were from the households, 46.6 percent were from the commercial sector, and 4.7 percent were from NFA depositories. (Table 1)

Table 1. Level and Percent Change of Rice Stocks by Sector
Philippines: June 2022, May 2023, and June 2023

| SECTOR | Percent share to total stocks | Stocks, in thousand metric tons | | | Percentage Change | |
|--------------|-------------------------------|---------------------------------|-------------|--------------|-------------------|----------------|
| | | 01 June 2022 | 01 May 2023 | 01 June 2023 | Year-on-Year | Month-on-Month |
| TOTAL STOCKS | 100.0 | 2,220.21 | 1,882.06 | 1,818.21 | -18.1 | -3.4 |
| Household | 48.7 | 1,049.49 | 993.97 | 885.00 | -15.7 | -11.0 |
| Commercial | 46.6 | 995.23 | 787.97 | 848.11 | -14.8 | 7.6 |
| NFA | 4.7 | 175.49 | 100.12 | 85.10 | -51.5 | -15.0 |

Sources: Philippine Statistics Authority, Rice and Corn Stocks Survey: Household (RCSS:H) and Rice and Corn Stocks Survey: Commercial (RCSS:C)
National Food Authority (NFA), NFA Grains Situation Report

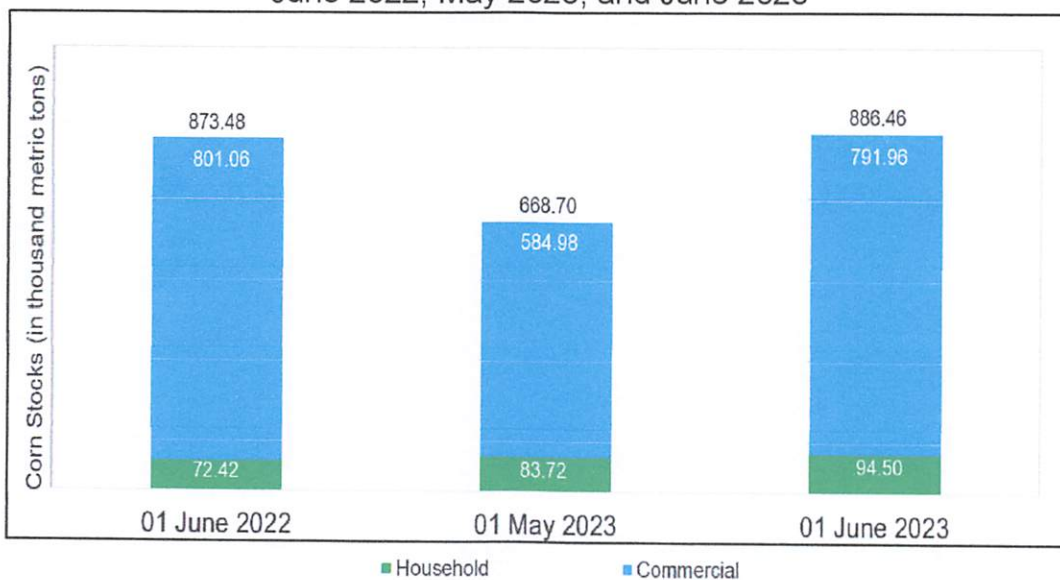
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CORN

The country's total corn stocks inventory for this month was recorded at 886.46 thousand metric tons. This represents an increment of 1.5 percent from the 873.48 thousand metric tons level in the same period of 2022.

Compared with the previous month's corn stocks inventory level of 668.70 thousand metric tons, corn stocks as of 01 June 2023 registered an increase of 32.6 percent. (Figure 2 and Table 2)

Figure 2. Inventory of Corn Stocks, Philippines
June 2022, May 2023, and June 2023



Sources: Philippine Statistics Authority, Rice and Corn Stocks Survey: Household (RCSS:H) and Rice and Corn Stocks Survey: Commercial (RCSS:C)

Relative to the corn stocks in the same month of the previous year, corn inventory in the household sector increased by 30.5 percent, while corn stocks from commercial sector recorded an annual decline of -1.1 percent.

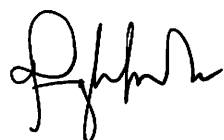
Compared with the previous month's inventory level, corn stocks from commercial and household sectors as of 01 June 2023 exhibited monthly growth of 35.4 percent and 12.9 percent, respectively.

Of the total corn stocks inventory for this month, 89.3 percent came from the commercial sector, while 10.7 percent from the household. (Table 2)

Table 2. Level and Percent Change of Corn Stocks by Sector
Philippines: June 2022, May 2023, and June 2023

| SECTOR | Percent share to total stocks | Stocks, in thousand metric tons | | | Percentage Change | |
|--------------|-------------------------------|---------------------------------|-------------|--------------|-------------------|----------------|
| | | 01 June 2022 | 01 May 2023 | 01 June 2023 | Year-on-Year | Month-on-Month |
| TOTAL STOCKS | 100.0 | 873.48 | 668.70 | 886.46 | 1.5 | 32.6 |
| Household | 10.7 | 72.42 | 83.72 | 94.50 | 30.5 | 12.9 |
| Commercial | 89.3 | 801.06 | 584.98 | 791.96 | -1.1 | 35.4 |

Sources: Philippine Statistics Authority, Rice and Corn Stocks Survey: Household (RCSS:H) and Rice and Corn Stocks Survey: Commercial (RCSS:C)



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TECHNICAL NOTES

I. Introduction

The Special Release on Rice and Corn Stocks Inventory presents the rice and corn stocks inventories from the household, commercial, and government sectors. It serves as input to the estimation and compilation of the national accounts. Moreover, the rice and corn stocks information support the data needs of planners, policy and decision makers, and other stakeholders of the Philippine Statistics Authority (PSA) in the agriculture sectors.

The total rice and corn stocks inventories are generated from the two surveys conducted by PSA, namely, Rice and Corn Stocks Survey: Household (RCSS:H), and Rice and Corn Stocks Survey: Commercial (RCSS:C); and administrative data from National Food Authority for the government stocks.

The RCSS:H aims to generate the rice and corn stocks inventories for the household sector at the national and regional levels. This covered 10,918 sample farming households and 6,660 sample non-farming households. Likewise, the RCSS:C generates rice and corn stocks inventories for the commercial sector at the national level. This covered 6,821 sample establishments engaged in rice and/or corn trading.

The RCSS:H and RCSS:C are conducted monthly in all provinces including the National Capital Region.

II. Data Collection

A. Rice and Corn Stocks Survey: Household

1. Data collection procedure

Data collection involves the gathering of data through face-to-face paper and pencil interview by hired Statistical Researchers (SRs) during the first four days of the reference month. Prior to data collection, the Provincial Statistical Offices (PSOs) are required to conduct training/briefing of SRs for the RCSS:H for the uniform



understanding of concepts used and operational procedures that are implemented during the data collection and processing. This should be conducted on the scheduled dates. Field editing and manual verification of survey returns were done to ensure completeness and consistency of the data gathered.

2. Survey Questionnaire

The RCSS:H Questionnaire is a two-page questionnaire composed of six blocks, which gathers information on the quantity of palay/rice stocks and corn grain/grits stocks in the household as of 6:00 AM on the first day of the reference month.

The data items included in the survey questionnaire are as follows:

1. Stocks information on Palay
2. Stocks information on Rice
3. Stocks information on Corn Grain
 - 3.1. White
 - 3.2. Yellow
4. Stocks information on Corn Grits
 - 4.1. White
 - 4.2. Yellow

B. Rice and Corn Stocks Survey: Commercial

1. Data collection procedure

Data collection involves the gathering of data through face-to-face paper and pencil interview by hired SRs during the first four days of the reference month. Prior to data collection, the PSOs are required to conduct training/briefing of SRs for the RCSS:C for the uniform understanding of concepts used and operational procedures that are implemented during the data collection and processing. This should be conducted on the scheduled dates. Field editing and manual verification of survey returns were done to ensure completeness and consistency of the data gathered.

Corn stocks held by commercial livestock and poultry producers, and corn mixed in feeds stocks are excluded in the survey.

2. Survey Questionnaire

The RCSS:C Questionnaire is a two-page questionnaire composed of six blocks, which gathers information on the quantity of palay/rice stocks and corn grain/grits stocks in the establishment as of 6:00 AM on the first day of the reference month.

The data items included in the survey questionnaire are as follows:

1. Stocks information on Palay
2. Stocks information on Rice
3. Stocks information on Corn Grain
 - 3.1. White
 - 3.2. Yellow
4. Stocks information on Corn Grits
 - 4.1. White
 - 4.2. Yellow

III. Sampling Design

A. Rice and Corn Stocks Survey: Household

1. Sampling Frame

The RCSS:H farming households, being a sub-sample of Palay Production Survey (PPS) and Corn Production Survey (CPS), uses the 2012 Census of Agriculture and Fisheries (CAF) and the 2017 Listing of Farm Households (LFH) as sampling frames. Moreover, the sampling frame for RCSS:H non-farming households is the 2020 Census of Population and Housing (CPH).

2. Sample Selection

The RCSS:H farming households are sub-samples of the PPS and CPS. In these surveys, the primary sampling units (PSUs) are the palay/corn producing barangays and the secondary sampling units (SSUs) are the palay/corn farming households. The PSUs and SSUs for RCSS:H are selected using systematic sampling.

For the RCSS:H non-farming households, the PSUs are the non-farming barangays and the SSUs are the non-farming

households. The PSUs and SSUs are selected using simple random sampling.

3. Estimation Procedure

a. Base Weights

The base weights for farming/non-farming households is given as follows:

$$w_i = \frac{N}{n}$$

Where:

- w_i = base weight of household i
- N = total number of farming/non-farming households in the province
- n = total number of sample farming/non-farming households in the province

b. Adjustment Factor

Cases of unit non-response will be considered when adjusting the weight. The adjustment factor formula is given as follows:

$$AF_p = \left(\frac{\sum_{i=1}^a w_i E_i}{\sum_{i=1}^a w_i R_i} \right)$$

Where:

- AF_p = adjustment factor for province p
- a = total number of sample households in domain p
- w_i = base weight of household i
- E_i = eligibility status of household i (1 if eligible, 0 otherwise)
- R_i = responding status of household i (1 if eligible, 0 otherwise)

c. Final Weights

The final weight formula is given as follows:

$$w'_i = w_i \times AF_p$$

Where:

- W'_i = final weight of household i
- w_i = base weight of household i
- AF_p = adjustment factor for province p

Additional adjustments will also be performed to ensure that the final weighted estimates match the known population size.

Estimation for the Province

The provincial rice or corn stocks are estimated as follows:

$$\hat{Y} = \left(\frac{N_f}{n_f} \sum_{i=1}^{n_f} y_i \right) + \left(\frac{N_g}{n_g} \sum_{j=1}^{n_g} y_j \right)$$

Where:

- \hat{Y} = total rice/corn stocks in the province
- y_i = total rice/corn stocks from the i^{th} sample rice and corn farming household in the province
- N_f = estimated number of farming households in the province based on the ratio of farming households from the 2020 CPH
- n_f = total number of sample palay and corn farming households in the province
- y_j = total rice/corn stocks from the j^{th} sample non-farming household in the province
- N_g = estimated number of non-farming households in the province based on the ratio of non-farming households from the 2020 CPH
- n_g = total number of sample non-farming households in the province

Note: The quantity of palay stocks will be converted to rice and corn grits to corn grain by using the conversion rates below:

rice equivalent = palay stock x 0.654

corn grain equivalent = corn grits stock / 0.68

Estimation for the Regional and National Rice and Corn Stocks

The regional rice and corn stocks estimates are obtained by aggregating the estimates of the provinces within the region, while the national rice and corn stock estimates are derived by adding all the estimates obtained in each region.

B. Rice and Corn Stocks Survey: Commercial

1. Sampling Frame

The establishments engaged in rice and/or corn trading in selected sectors of the 2021 List of Establishment (LE) serves as the sampling frame.

2. Sample Selection

The RCSS:C employs probability proportional to size systematic sampling. The establishments are stratified based on their province. Moreover, the elementary units are the establishments engaged in rice and/or corn trading from the 2021 LE. The probability of an establishment being selected in the sample is proportional to its total employment – the size measure used.

3. Estimation Procedure

a. Base Weights

The base weight is given as follows:

$$w_i = \frac{X}{aX_i}$$

Where:

- w_i = base weight of establishment i
- X = total employment of the province
- a = number of sample establishments in the province
- X_i = total employment of establishment i

b. Adjustment Factor

Cases of unit non-response will be considered when adjusting the weight. The adjustment factor formula is given as follows:

$$AF_p = \frac{\sum_{i=1}^a w_i E_i}{\sum_{i=1}^a w_i R_i}$$

Where:

- AF_p = adjustment factor for province p
- a = total number of sample establishments in domain p
- w_i = base weight of establishment i
- E_i = eligibility status of establishment i (1 if eligible, 0 otherwise)
- R_i = responding status of establishment i (1 if eligible, 0 otherwise)

c. Final Weights

The final weight formula is given as follows:

$$w'_i = w_i \times AF_p$$

Where:

- w'_i = final weight of establishment i
- w_i = base weight of establishment i
- AF_p = adjustment factor for province p

Estimation for the Province

Estimation of the rice and corn stocks at the province is done using the formula below:

$$\hat{Y}_{tp} = \sum_{i=1}^a w'_i y_i + \sum_{k=1}^b z_k$$

Where:

- \hat{Y}_{tp} = estimated total for province p at period t
- y_i = quantity of palay/rice or corn stocks for establishment i
- z_k = quantity of palay/rice or corn stocks for certainty establishment k
- w'_i = final weight of establishment i
- a = the total number of sample establishment in province p
- b = the total number of certainty sample establishment in province p

Estimation for the Regional and National Rice and Corn Stocks

The regional rice and corn stocks estimates are obtained by aggregating the estimates of the provinces within the region, while the national rice and corn stock estimates are derived by adding all the estimates obtained in each region.

IV. Concepts and Definitions of Terms

Palay - local term for unhulled rice; also known as paddy or rough rice; scientifically called *Oryza sativa* Linn.

Rice - kernels obtained after removal of hull bran.

White Corn - are corn used primarily for human consumption.

Yellow Corn - are corn generally used as feed grain which 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, either at soft or hard dough stage (for boiling or broiling).

Corn Grain/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.

A. RCSS: Household

Household - a person or group of persons who sleep under the same dwelling unit and usually have a common arrangement in the preparation and consumption of food. The household members may not necessarily be related by ties of kinship, although they are usually relatives. In some instances, more than one household may occupy the same dwelling unit.

Farming household - 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 qualifies to be called a farm.

Non-farming household - any household that does not operate an agricultural land. This definition applies only for this survey (RCSS:H).

Stocks - supply of rice and corn stored for future use. This includes quantity of rice and corn kept by the household which are stored in the house or another house or farm houses.

B. RCSS: Commercial

Establishment - is an economic unit which engages under a single ownership or control, i.e., under a single entity, in one or predominantly one kind of economic activity at a single fixed physical location.

Sample Establishment - refers to an establishment engaged in rice and/or corn trading listed in the Frame Maintenance Form (FMF) and will be interviewed for the survey during the reference period.

Total Employment - refers to the total numbers of persons who work in or for the establishment at the time of visit. This includes paid employees, working owners, unpaid workers, and all employees who work full-time or part-time including seasonal workers. Included also are persons on short term leave such as those on sick, vacation or annual leaves, and on strike. Excluded from the count of total employment are consultants, home workers, workers receiving pure commission only, workers on indefinite leave, silent or inactive partners, and members of cooperative who are not involved in the operation of the cooperative.

Paid employees are persons who work in or for the establishment receiving regular pay from the establishment. This includes full-time or part-time workers including seasonal workers, apprentices and learners, employees on sick or maternity leave and on paid vacation or holiday, employees working away from the establishment, employees paid by under control of the establishments, and employees on strike.

Working owners refer to owners who are actively engaged in the management of the establishment but do not receive regular pay.

Unpaid employees refer to those who work in the establishment without regular pay for at least one-third of the normal working time of an establishment.

Bookkeeper - is a person whose job is to keep records of the financial affairs of a business.

Hired Manager - refers to a person who is hired to supervise the day-to-day activities of the establishment owned by another establishment or by a juridical person.

Business Name - refers to the name used to identify a commercial product or service, under which a business firm operates. It distinguishes one establishment's products and services from those of its competitors and helps to establish its identity in the marketplace.

Registered Name - refers to the name of the establishment as registered with the Security and Exchange Commission (SEC), Cooperative Development Authority (CDA), or Department of Trade and Industry (DTI).

Business Address - refers to the actual physical location of the establishment. It should contain the building number/street name, building name/floor/unit number, and subdivision/purok/sitio.

Sector - is an area of the economy in which businesses share the same or related business activity, product, or service.

V. Dissemination of Results

The outputs generated from the RCSS:H are the rice and corn stocks inventory as of the first day of the reference month. Together with stocks from commercial and government sectors, it is disseminated through Special Release of Rice and Corn Stocks Inventory posted on the PSA website and statistical tables posted on the OpenSTAT database every 10th day after the reference month.

These outputs are publicly available at the PSA and OpenSTAT website:

a. Special Releases:

- <https://psa.gov.ph/products-and-services/publications/Crops>

b. Statistical Tables:

- https://openstat.psa.gov.ph/PXWeb/pxweb/en/DB/DB_2E_CS/0032E4ECNV0.px/?rxid=bdf9d8da-96f1-4100-ae09-18cb3eaeb313

VI. Citation

Philippine Statistics Authority. (May 2023). *Technical Notes on the 2023 Rice and Corn Stocks Survey: Household (RCSS:H), and Rice and Corn Stocks Survey: Commercial (RCSS:C)*.

<https://psa.gov.ph/statistics/technical-notes/176772>

VII. Contact Information

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