



SPECIAL RELEASE

Rice and Corn Stocks Inventory, 01 January 2023

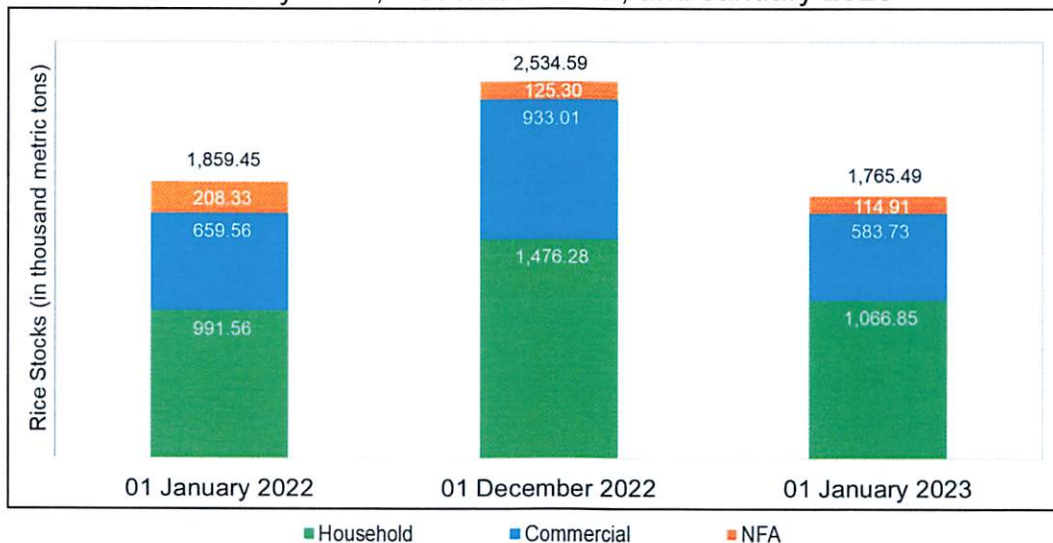
Date of Release: 31 March 2023
Reference No. 2023-SSO-039

RICE

As of 01 January 2023, the total rice stocks inventory was estimated at 1.77 million metric tons. Relative to the same period of the previous year's inventory level of 1.86 million metric tons, a decline of about -5.1 percent was recorded.

The total rice stocks inventory as of 01 January 2023 recorded a decrease of -30.3 percent from the previous month's record of 2.53 million metric tons. (Figure 1 and Table 1)

Figure 1. Inventory of Rice Stocks, Philippines
January 2022, December 2022, and January 2023



Note: Details may not add up to total due to rounding.

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



Management System
ISO 9001:2015
www.tuv.com
ID 9108640591



Rice stocks in the households grew by 7.6 percent as of 01 January 2023, with reference to the January 2022 stocks inventory level. However, both stocks in commercial sector and NFA depositories registered declines of -11.5 percent and -44.8 percent, respectively.

This month's rice stock levels in all sectors diminished compared with the previous month's reports. Stocks levels in the households and commercial sector exhibited double-digit month-on-month declines of -27.7 percent and -37.4 percent, respectively. Moreover, rice stocks in NFA depositories contracted by -8.3 percent.

Of the stocks level as of 01 January 2023, 60.4 percent were from the households, 33.1 percent from the commercial sector, and 6.5 percent from the NFA depositories. (Table 1)

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

SECTOR	Percent share to total stocks	Stocks, in thousand metric tons			Percentage Change	
		01 January 2022	01 December 2022	01 January 2023	Year-on-Year	Month-on-Month
TOTAL STOCKS	100.0	1,859.45	2,534.59	1,765.49	-5.1	-30.3
Household	60.4	991.56	1,476.28	1,066.85	7.6	-27.7
Commercial	33.1	659.56	933.01	583.73	-11.5	-37.4
NFA	6.5	208.33	125.30	114.91	-44.8	-8.3

Note: Details may not add up to total due to rounding.

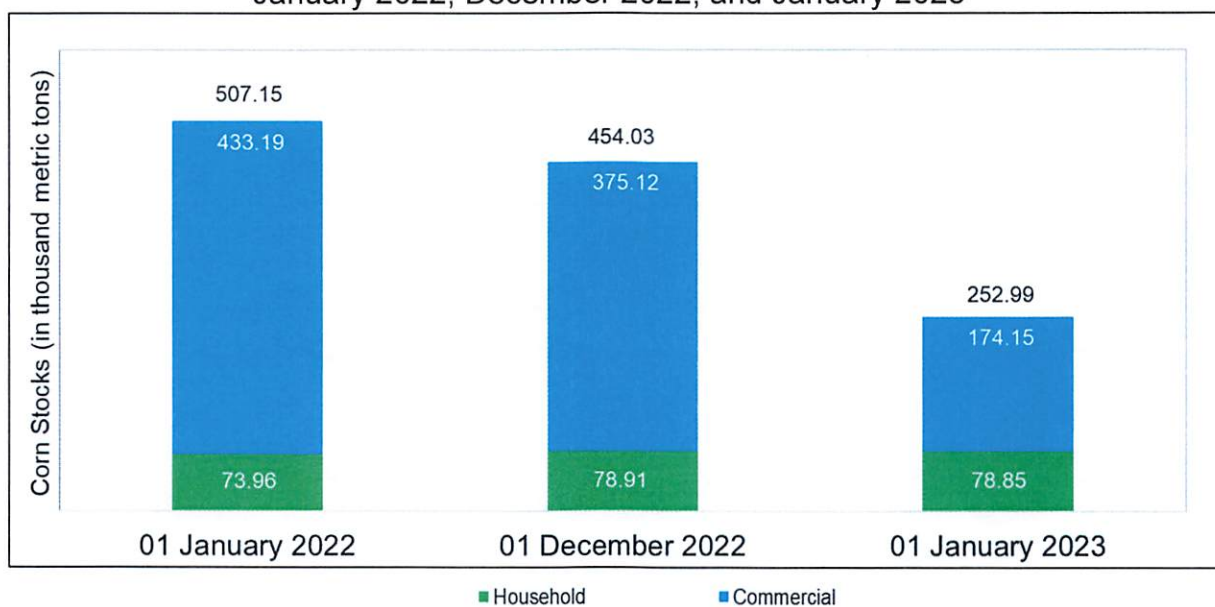
Sources: Philippine Statistics Authority, Rice and Corn Stocks Survey: Household (RCSS:H) and Rice and Corn Stocks Survey: Commercial (RCSS:C)
National Food Authority (NFA), NFA Grains Situation Report

CORN

The total corn stocks inventory was estimated at 252.99 thousand metric tons as of 01 January 2023. This indicates a decrease of -50.1 percent compared with the previous year's same period level of 507.15 thousand metric tons.

As of 01 January 2023, the corn stocks inventory recorded a decrement of -44.3 percent from the previous month's level of 454.03 thousand metric tons. (Figure 2 and Table 2)

Figure 2. Inventory of Corn Stocks, Philippines
January 2022, December 2022, and January 2023



Note: Details may not add up to total due to rounding.

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

Compared with their respective levels in the previous year, corn stocks in the households increased by 6.6 percent, while stocks from the commercial sector exhibited a reduction of -59.8 percent.

In comparison with the previous month's inventory level, this month's corn stocks recorded a decrement of -0.1 percent in the households. Likewise, stocks in the commercial sector registered a decline of -53.6 percent.

The total corn stocks as of 01 January 2023 was comprised of 31.2 percent from the households and 68.8 percent from commercial sector. (Table 2)

**Table 2. Level and Percent Change of Corn Stocks by Sector
Philippines: January 2022, December 2022, and January 2023**

SECTOR	Percent share to total stocks	Stocks, in thousand metric tons			Percentage Change	
		01 January 2022	01 December 2022	01 January 2023	Year-on- Year	Month-on- Month
TOTAL STOCKS	100.0	507.15	454.03	252.99	-50.1	-44.3
Household	31.2	73.96	78.91	78.85	6.6	-0.1
Commercial	68.8	433.19	375.12	174.15	-59.8	-53.6

Note: Details may not add up to total due to rounding.

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



DIVINA GRACIA L. DEL PRADO, Ph.D.
(Assistant National Statistician)
Officer-in-Charge, Deputy National Statistician
Sectoral Statistics Office



RCL/RQV

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 (4) 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 (6) blocks which gathers information on the quantity of palay/rice stocks and corn grain/grits stocks in the household as of 6:00AM 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 (4) 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 (6) blocks which gathers information on the quantity of palay/rice stocks and corn grain/grits stocks in the establishment as of 6:00AM 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 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. 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:

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

Where:

AF_p = adjustment factor for province p

α = total number of sample households in domain p

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:

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. Weights

The base weight is given as follows:

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

Where:

w_i = base weight of establishment i

a = number of sample establishments in the province

X_i = total employment of establishment i

X = total employment of 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:

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

Where:

AF_p = adjustment factor for province p

a = total number of sample establishments in domain p

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

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: Household

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 1st 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 which is posted in the PSA website and statistical tables which are posted in 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

Former Bureau of Agricultural Statistics. (March 2013). Metadata for National Agricultural Statistics in the Philippines.

Philippine Statistics Authority Board Resolution No. 02 Series of 2021 on Approving and Adopting the Modifications in the System of Designated Statistics (11 May 2021).

VII. Contact Information

REYNALDO Q. VALLESTEROS JR.

(Supervising Statistical Specialist)

Officer-in-Charge

Crops Statistics Division

Economic Sector Statistics Service

Sectoral Statistics Office

Philippine Statistics Authority

Email address: r.vallesteros@psa.gov.ph

For data requests, you may contact the:

Knowledge Management and Communications Division

Telephone: (632) 8462-6600 loc 839

Email address: info@psa.gov.ph