ISSN-2012-0435

REPUBLIC OF THE PHILIPPINES
PHILIPPINE STATISTICS AUTHORITY

BAGONG PILIPINAS

Agriculture and Fisheries Indicators System

2018-2022

Sufficiency of Selected Agriculture and Fishery Commodities

The **Agriculture and Fisheries Indicators System (AFIS)**
is an annual publication prepared by the Agricultural Accounts Division of the
PHILIPPINE STATISTICS AUTHORITY (PSA)

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Published by the
Philippine Statistics Authority
PSA Complex, East Avenue
Diliman, Quezon City
Philippines 1101

October 2023

The **Agriculture and Fisheries Indicators System Report**
is available in electronic format (PDF).

FOREWORD

The Agriculture and Fisheries Indicators System (AFIS) is one of the statistical indicator frameworks maintained by the Philippine Statistics Authority (PSA). It contains nine modules which are updated and released annually. These modular reports provide measures for assessing socio-economic changes in the agriculture and fisheries sector, characterizing the agrarian structure of the economy, and situating agriculture and fisheries in the national economy.

This is the seventh module entitled Sufficiency of Selected Agriculture and Fishery Commodities. This module presents statistics on self-sufficiency ratio and import dependency ratio of selected agriculture and fishery commodities, and data on rice and corn stocks. The reference years are 2018 to 2022.

The AFIS aims to cover more agriculture and fisheries development indicators to support the information needs of our data users. We encourage the readers to give their comments and suggestions on the improvement of the AFIS, in general, and this report.

For:

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Deputy National Statistician
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Quezon City, Philippines
October 2023

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TECHNICAL NOTES

The module on Sufficiency of Selected Agriculture and Fishery Commodities was based on the review and assessment done through the Food and Agriculture Organization-Philippine Statistics Authority (FAO-PSA) Project on Strengthening of Agricultural Statistics through the Review and Assessment of the Agricultural Indicators System (AIS) and Supply Utilization Accounts (SUA). The project aimed to review, assess, and enhance the Agricultural Indicators System through the identification of additional relevant indicators crucial for policy making in the agriculture and fisheries sector.

This module is supplemented with statistics on self-sufficiency ratio and import dependency ratio of selected agriculture and fisheries commodities, and data on rice and corn stocks.

A. Sources of Basic Data

The basic data is sourced from the SUA for Selected Agriculture and Fishery Commodities compiled by the PSA. The SUA provides a framework for the physical accounting of agriculture and fishery commodities.

Data on rice and corn stocks are generated from the Rice and Corn Stocks Survey (RCSS: Households, and RCSS: Commercial) of the PSA, while Government stocks are obtained from the National Food Authority.

B. Concepts and Definition of Terms

Self-Sufficiency Ratio (SSR) – shows the magnitude of production in relation to domestic utilization. It indicates the extent to which a country relies on its own production resources i.e., the higher the ratio, the greater the self-sufficiency. A ratio of less than 100 percent indicates inadequacy of food production to cope with the demand of the population; equal to 100 percent indicates that food production capacity of the sector is just enough to support the food needs of the population; and a ratio of greater than 100 percent indicates that domestic production is more than enough to support the domestic requirements.

Import Dependency Ratio (IDR) – indicates how much of the available domestic food supply comes from imports. The complement of this ratio to 100 would represent that part of the domestic food supply that has been produced in the country itself. The higher ratio implies greater dependency on importation.

Stock – refers to supply stored for future use. The country's rice and corn stocks inventory are generated from three sectors, namely: household, commercial, and government stocks (NFA).

Percent Shares of Households, Commercial, and NFA – indicate the biggest/least source of rice and corn stocks in a given period.

C. Methodology

Self-Sufficiency Ratio (SSR)

$$SSR = \left[\frac{Production}{Production + Import - Export} \right] \times 100$$

Import Dependency Ratio (IDR)

$$IDR = \left[\frac{Import - Export}{Production + Import - Export} \right] \times 100$$

Percent Shares of Households, Commercial, and NFA

$$\%\ Share\ of\ Stocks\ by\ Sector\ to\ Total\ Stocks = \left[\frac{Stocks\ by\ Sector}{Total\ Stocks} \right] \times 100$$

Sufficiency of Selected Agriculture and Fishery Commodities

Self-Sufficiency Ratio

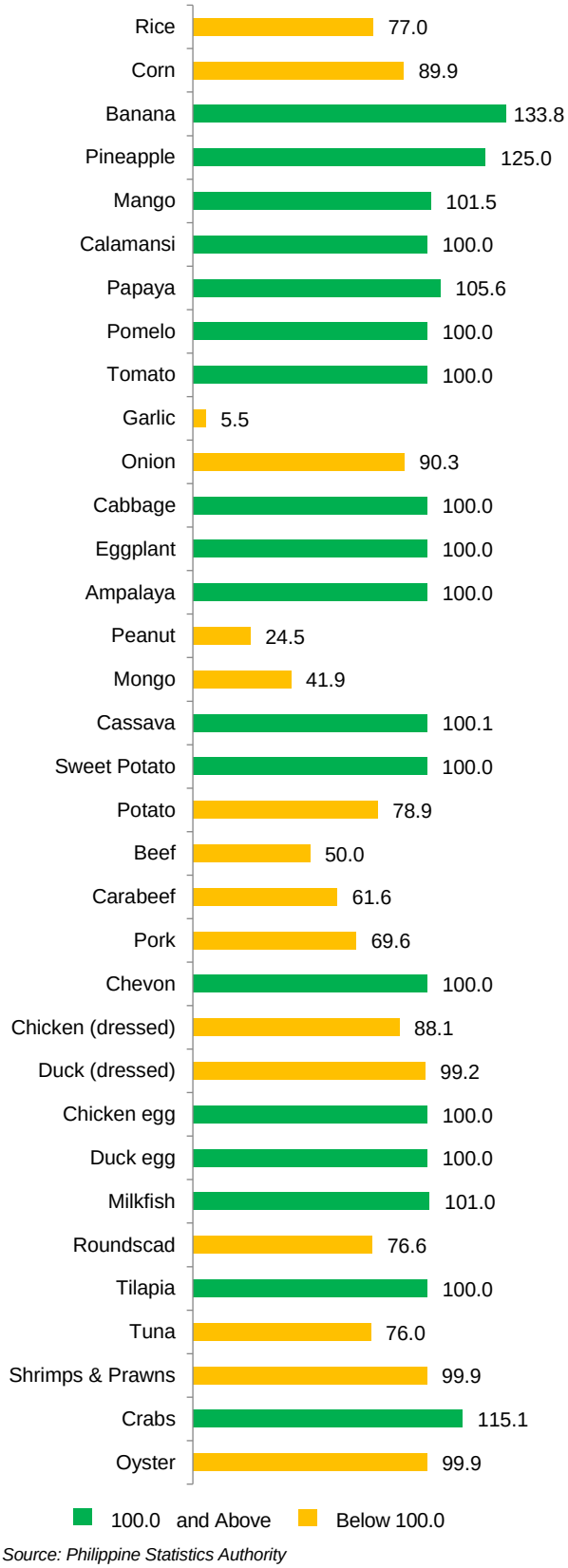
Self-sufficiency ratio (SSR) shows the magnitude of production in relation to domestic utilization. It is the extent to which a country's supply of commodities is derived from its own domestic production. A ratio of less than 100 percent indicates inadequacy of food production to cope with the demand of the population; equal to 100 percent indicates that food production capacity of the sector is just enough to support the food needs of the population; and a ratio of greater than 100 percent indicates that domestic production is more than enough to support the domestic requirements. The higher the ratio, the greater the self-sufficiency.

The country's SSR of rice was registered at 77.0 percent in 2022, lower from the previous year's ratio of 81.5 percent. This indicates that 77.0 percent of the total supply of rice came from the country's domestic production. Similarly, the SSR of corn in 2022 was down to 89.9 percent from the 2021 ratio of 94.8 percent.

Among the reference fruits, banana registered the highest SSR in 2022 at 133.8 percent, followed by pineapple with SSR of 125.0 percent.

For vegetables and rootcrops, continued sufficiency in production was maintained for tomato, cabbage, eggplant, ampalaya, and sweet potato with ratios of 100.0 percent each. Cassava also exhibited sufficiency with SSR of 100.1 percent. In contrast, the production levels of garlic, peanut, and potato remained inadequate in 2022 with lower SSRs corresponding to 5.5 percent, 24.5 percent, and 78.9 percent. Mongo recorded a 41.9 percent SSR in 2022. SSR of onion reached 90.3 percent in 2022 from the 68.2 percent ratio in 2021.

Figure 1. Self-Sufficiency Ratio of Selected Agriculture and Fishery Commodities, Philippines, 2022
(in percent)



Source: Philippine Statistics Authority

In the case of livestock commodities, declining SSRs were noted for beef at 50.0 percent, carabeef at 61.6 percent, and pork at 69.6 percent. Chevon, on the other hand, exhibited continuous sufficiency in production with its SSR of 100.0 percent. For poultry, chicken (dressed) and duck (dressed) registered lower SSRs compared with their previous year's records of 88.1 percent and 99.2 percent, respectively. Meanwhile, chicken egg and duck egg maintained sufficiency in production with their SSRs of 100.0 percent.

In 2022, self-sufficiency was achieved for fishery commodities such as milkfish, tilapia, and crabs. SSR for oyster and shrimps and prawns reached 99.9 percent in 2022. Meanwhile, SSRs for roundscad at 76.6 percent and tuna at 76.0 percent were recorded in 2022. (Table 1 and Figure 1)

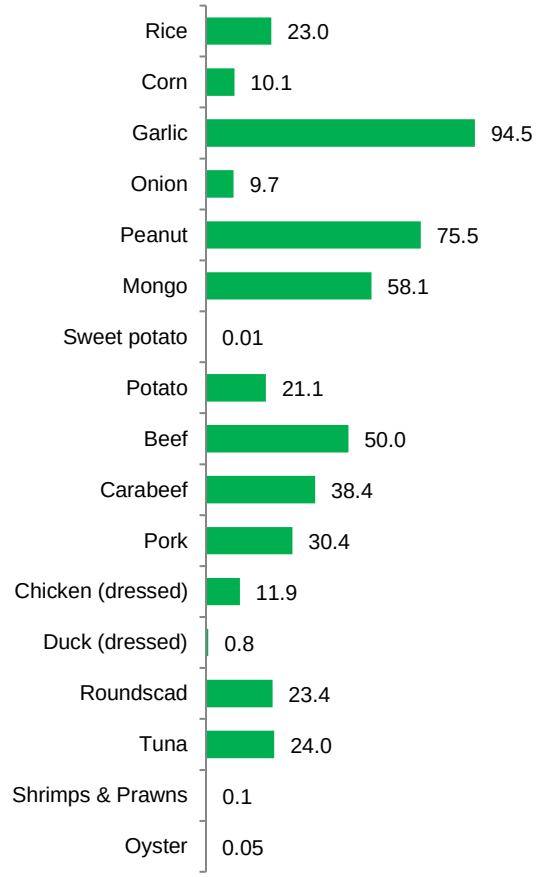
Import Dependency Ratio

Import dependency ratio (IDR) indicates the extent to which a country's supply of commodities came from imports. A high ratio implies greater dependency on importation.

In 2022, the IDR of rice was recorded at 23.0 percent, which was higher than the previous year's ratio of 18.5 percent. This means that 23.0 percent of the country's supply of rice came from imports. An increase in the IDR in 2022 was also observed in corn at 10.1 percent from the 5.2 percent computed IDR in 2021.

Among the reference crops, dependency on importation of garlic, peanut, and potato increased annually in 2022. Garlic remained to record the highest IDR of 94.5 percent in 2022, followed by peanut with IDR of 75.5 percent. Meanwhile, dependency on imports was lower for onion at 9.7 percent and sweet potato at 0.01 percent.

Figure 2. Import Dependency Ratio of Selected Agriculture and Fishery Commodities, Philippines, 2022
(in percent)



Source: Philippine Statistics Authority

Dependency on importation continued for all livestock and poultry products except for chicken egg and duck egg. Higher IDR was reported for beef, which went up to 50.0 percent in 2022 from 46.3 percent in 2021. Likewise, importation of carabeef and pork increased with IDRs of 38.4 percent and 30.4 percent, respectively. Chicken (dressed) and duck (dressed) registered IDRs corresponding to 11.9 percent and 0.8 percent.

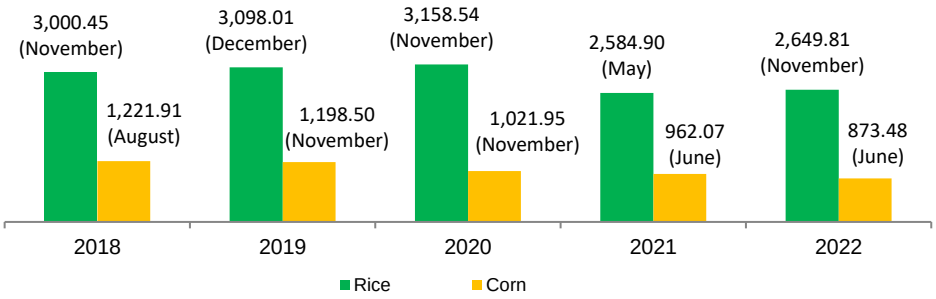
For fisheries, the registered IDRs of roundscad and tuna were lower at 23.4 percent and 24.0 percent, respectively, compared with their derived IDRs in 2021. Meanwhile, less

importation was reported for shrimps and prawns, and oyster with IDRs of less than one percent each. (Table 2 and Figure 2)

Cereals Stocks

Information on supply condition is vital to be able to maintain food balance. The occurrence of typhoons and other calamities as well as volatile grains market structures necessitate the need to monitor stocks situation of the staple grains. This is to ensure supply and demand equilibrium, access, and price stability.

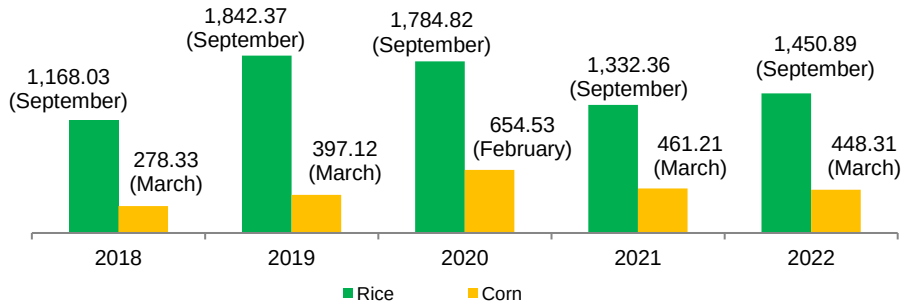
Figure 3. Cereals Inventory Levels During Peak Months of Stocking, 2018 to 2022
(in thousand metric tons)



Sources: Philippine Statistics Authority and National Food Authority

The highest volume of rice stocks in the Philippines for 2022 was noted in the month of November with a volume of 2.65 million metric tons. From the total rice inventory, about 56.3 percent came from the household sector, 39.2 percent from the commercial sector, and 4.5 percent from the depositories of the National Food Authority (NFA). On the other hand, the month of September was reported to have the lowest volume of rice stocks at 1.45 million metric tons. Of this rice stocks, 49.0 percent came from the household sector, 43.3 percent from commercial sector, and the remaining 7.7 percent was accounted for NFA depositories. (Tables 3a and 3b, and Figures 3 and 4)

Figure 4. Cereals Inventory Levels During Lean Months of Stocking, 2018 to 2022
(in thousand metric tons)



Sources: Philippine Statistics Authority and National Food Authority

In 2022, June was the peak month of stocking corn with a total volume of 0.87 million metric tons. Of the total corn stocks inventory, 91.7 percent came from the commercial sector, while 8.3 percent were from the household sector. On the other hand, the lowest volume of corn stocks was reported in the month of March at 0.45 million metric tons. Of the total volume, the commercial sector comprised the biggest share at 73.6 percent, while the household sector shared 26.4 percent. (Tables 4a and 4b, and Figures 3 and 4)

STATISTICAL TABLES

Table 1. Self-Sufficiency Ratio of Selected Agriculture and Fishery Commodities, Philippines: 2018 to 2022
(in percent)

Commodity	2018	2019	2020	2021	2022
Rice	86.2	79.8	85.0	81.5	77.0
Corn	88.4	94.6	91.4	94.8	89.9
Banana	150.2	192.6	172.6	137.4	133.8
Pineapple	116.8	129.8	128.2	123.9	125.0
Mango	101.9	102.0	101.5	101.4	101.5
Calamansi	100.1	100.1	100.1	100.0	100.0
Papaya	102.2	103.5	104.1	103.9	105.6
Pomelo	100.0	100.0	100.0	100.0	100.0
Tomato	100.0	100.0	100.0	100.0	100.0
Garlic	8.7	7.9	7.1	5.9	5.5
Onion	61.5	90.5	72.4	68.2	90.3
Cabbage	100.0	100.0	100.0	99.9	100.0
Eggplant	100.0	100.0	100.0	100.0	100.0
Ampalaya	100.0	100.0	100.0	100.0	100.0
Peanut	24.7	25.0	30.1	28.5	24.5
Mongo	49.0	50.0	47.5	41.9	41.9
Cassava	100.0	100.0	100.1	100.1	100.1
Sweet Potato	100.0	100.1	100.1	100.0	100.0
Potato	83.4	81.9	81.0	80.0	78.9
Beef	61.0	59.7	58.6	53.7	50.0
Carabeef	65.1	71.7	69.4	63.7	61.6
Pork	86.1	87.1	91.0	74.3	69.6
Chevon	100.0	100.0	100.0	100.0	100.0
Chicken (dressed)	93.6	92.9	92.9	89.0	88.1
Duck (dressed)	99.3	99.5	99.7	100.0	99.2
Chicken egg	100.0	100.0	100.0	100.0	100.0
Duck egg	100.0	100.0	100.0	100.0	100.0
Milkfish	101.0	101.4	101.3	101.4	101.0
Roundscad	96.9	78.1	89.4	74.9	76.6
Tilapia	100.0	100.0	100.0	99.9	100.0
Tuna	81.4	76.5	79.5	70.1	76.0
Shrimps & Prawns	103.2	103.7	101.9	103.5	99.9
Crabs	128.7	116.7	106.4	109.9	115.1
Oyster	100.6	100.1	100.0	100.0	99.9

Source of basic data: Philippine Statistics Authority

Table 2. Import Dependency Ratio of Selected Agriculture and Fishery Commodities, Philippines: 2018 to 2022
(in percent)

Commodity	2018	2019	2020	2021	2022
Rice	13.8	20.2	15.0	18.5	23.0
Corn	11.6	5.4	8.6	5.2	10.1
Garlic	91.3	92.1	92.9	94.1	94.5
Onion	38.5	9.5	27.6	31.8	9.7
Cabbage				0.1	
Peanut	75.3	75.0	69.9	71.5	75.5
Mongo	51.0	50.0	52.5	58.1	58.1
Sweet potato					0.01
Potato	16.6	18.1	19.0	20.0	21.1
Beef	39.0	40.3	41.4	46.3	50.0
Carabeef	34.9	28.3	30.6	36.3	38.4
Pork	13.9	12.9	9.0	25.7	30.4
Chicken (dressed)	6.4	7.1	7.1	11.0	11.9
Duck (dressed)	0.7	0.5	0.3	0.02	0.8
Roundscad	3.1	21.9	10.6	25.1	23.4
Tilapia	0.03	0.02	0.005	0.06	
Tuna	18.6	23.5	20.5	29.9	24.0
Shrimps & Prawns					0.1
Oyster					0.05

- Blank cell indicates no report
Source of basic data: Philippine Statistics Authority

Table 3a. Stocks of Rice: Highest and Lowest Levels and Percentage Shares of Households, Commercial, and NFA to Total, Philippines: 2018 to 2022

Item	2018	2019	2020[r]	2021	2022
Highest					
Month	November	December	November	May	November
Quantity (in thousand metric tons)	3,000.45	3,098.01	3,158.54	2,584.90	2,649.81
Percent share					
Households	51.9	51.9	57.3	55.1	56.3
Commercial	44.6	32.6	30.5	35.5	39.2
NFA	3.5	15.5	12.2	9.3	4.5
Lowest					
Month	September	September	September	September	September
Quantity (in thousand metric tons)	1,168.03	1,842.37	1,784.82	1,332.36	1,450.89
Percent share					
Households	52.2	36.5	47.5	47.9	49.0
Commercial	38.2	41.2	41.7	40.8	43.3
NFA	9.5	22.2	10.8	11.3	7.7

Note: Percent shares may yield different results when computed manually due to rounding.

r - Revised

Sources of basic data: Philippine Statistics Authority and National Food Authority

Table 3b. Total Stock of Rice by Month, Philippines: 2018 to 2022
(in thousand metric tons)

Month	2018	2019	2020	2021	2022
January	2,289.65	2,550.70	2,675.04	2,332.00	1,859.45
February	1,795.78	2,141.23	2,375.50	2,193.10	1,609.25
March	1,697.37	2,221.42	2,178.64	2,080.10	1,632.51
April	2,182.67	2,629.03	2,367.87	2,444.31	2,506.13
May	2,909.46	2,947.42	2,779.03	2,584.90	2,279.96
June	2,360.98	2,598.34	2,395.94	2,530.82	2,090.62
July	1,990.82	2,625.25	2,104.76	2,177.68	2,034.57
August	1,520.76	2,133.84	1,786.25	1,578.31	1,633.36
September	1,168.03	1,842.37	1,784.82	1,332.36	1,450.89
October	1,589.89	2,279.73	2,641.08	1,954.72	2,081.84
November	3,000.45	2,962.46	3,158.54	2,418.43	2,649.81
December	2,718.48	3,098.01	2,766.40	2,377.85	2,534.59

Source: Philippine Statistics Authority

Table 4a. Stocks of Corn: Highest and Lowest Levels and Percentage Shares of Households and Commercial to Total, Philippines: 2018 to 2022

Item	2018	2019	2020	2021	2022
Highest					
Month	August	November	November	June	June
Quantity (in thousand metric tons)	1,221.91	1,198.50	1,021.95	962.07	873.48
Percent share					
Households	5.7	18.6	33.9	14.5	8.3
Commercial	94.3	81.4	66.1	85.5	91.7
Lowest					
Month	March	March	February	March	March
Quantity (in thousand metric tons)	278.33	397.12	654.53	461.21	448.31
Percent share					
Households	26.0	28.3	23.4	43.6	26.4
Commercial	74.0	71.7	76.6	56.4	73.6

Note: Percent shares may yield different results when computed manually due to rounding.

Source of basic data: Philippine Statistics Authority

Table 4b. Total Stock of Corn by Month, Philippines: 2018 to 2022
(in thousand metric tons)

Month	2018	2019	2020	2021	2022
January	951.60	676.13	812.00	914.07	507.15
February	410.33	781.52	654.53	599.69	472.57
March	278.33	397.12	793.28	461.21	448.31
April	369.34	614.00	736.07	713.68	777.37
May	338.31	829.11	839.45	826.68	779.79
June	592.01	859.77	905.52	962.07	873.48
July	480.86	822.70	741.66	924.25	746.92
August	1,221.91	724.08	732.18	707.65	704.46
September	531.07	768.66	797.37	560.61	561.70
October	566.83	1,095.92	985.54	513.93	720.60
November	639.52	1,198.50	1,021.95	554.68	603.67
December	629.91	794.87	960.95	562.84	454.03

Source: Philippine Statistics Authority

MODULES OF THE AGRICULTURE AND FISHERIES INDICATORS SYSTEM

1. Government Support in Agriculture and Fisheries
2. Economic Growth: Agriculture and Fisheriess
3. Output and Productivity
4. Agriculture Resources
5. Exports and Imports: Agriculture and Fisheries
6. Availability and Nutrient Yields of Selected Agriculture and Fishery Commodities
7. **Sufficiency of Selected Agriculture and Fishery Commodities**
8. Prices and Marketing of Selected Agriculture and Fishery Commodities
9. Employment and Wages in Agriculture and Fisheries

AGRICULTURE AND FISHERIES INDICATORS SYSTEM
SUFFICIENCY OF SELECTED AGRICULTURE AND FISHERY COMMODITIES
PHILIPPINE STATISTICS AUTHORITY

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