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FOOD SUFFICIENCY AND SECURITY

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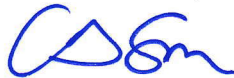
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FOREWORD

The Agricultural Indicators System (AIS) is one of the statistical indicator frameworks maintained by the Philippine Statistics Authority (PSA). AIS has twelve (12) modules which are updated and released annually. This is the fifth module entitled Food Sufficiency and Security. It provides information on self-sufficiency ratio and import dependency ratio of selected major agricultural commodities and data on rice and corn stocks. The reference years are 2014 to 2018.

The AIS hopes to cover more agricultural 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 AIS, in general, and this report, in particular.



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October 2019

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**FOOD
SUFFICIENCY
AND SECURITY**

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; 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 self-sufficiency ratio (SSR) of rice in 2018 declined to 86.17 percent from the 2017 ratio of 93.44 percent. This means that 86.17 percent of the total supply of rice was sourced from the domestic production. Likewise, corn registered a reduction in SSR to 88.43 percent in 2018 as compared with the 2017 ratio of 94.34 percent. The drop in the SSRs of both commodities was attributed to the decreasing local production while there was a large increase in importation. Meanwhile, adequacy in production was continuously reported for coconut and sugarcane. For coffee, production remained inadequate as its SSR in 2018 dropped to 29.04 percent due to the decline in the country's production, whereas imports were going up.

Continued self-sufficiency was achieved for fruits like calamansi, papaya and pomelo. Similarly, vegetables and root crops such as tomato, cabbage, eggplant, cassava and sweet potato maintained adequacies in production. Declines in the SSRs were noted in onion at 61.53 percent and in garlic at 9.02 percent in 2018. Production level of potato was still deficit as SSR declined to 83.41 percent in 2018. Self-sufficiency is still far to be realized for peanut and mungo which continuously exhibited downtrend in ratios corresponding to 24.66 percent and 48.96 percent. This resulted from the reduced share of the domestic production to the country's total supply but the share of imports was on the uptrend.

For livestock and poultry products, self-sufficiency was sustained for chevon and chicken egg. Moreover, the country was nearly self-sufficient for duck (dressed) at a ratio of 99.28 percent. However, declining SSRs were observed for beef at 60.99 percent, carabeef at 65.10 percent, pork at 86.09 percent and chicken (dressed) at 93.63 percent.

Adequacy in production was still maintained for fishery products such as milkfish, shrimps and prawns, crabs and oyster. Despite the decline in the SSR of crabs, it remained to record the highest at 128.65 percent in 2018. The 2018 SSRs of roundscad and tuna went down to 96.94 percent and 81.35 percent, respectively. Meanwhile, self-sufficiency was nearing to be attained for tilapia with a ratio of 99.97 percent in 2018 (Table 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.

The 2018 import dependency ratio (IDR) of rice increased to 13.83 percent from its 2017 ratio of 6.56 percent. This indicates that 13.83 percent of the country's supply of rice came from imports. Likewise, importation of corn went up as it recorded an IDR of 11.57 percent in 2018.

Increasing dependency on importation was noted for coffee, garlic, onion, peanut, and mongo. Correspondingly, these commodities posted IDRs at 70.99 percent, 90.98 percent, 38.51 percent, 75.34 percent and 51.05 percent in 2018. Minimal importation was registered for potato with IDR at 16.59 percent.

Continued importation was reported for livestock and poultry products. Higher and increasing IDRs in 2018 were registered for beef at 39.02 percent, carabeef at 34.90 percent, pork at 13.91 percent and chicken (dressed) at 6.39 percent. Dependency on imports was lesser for duck (dressed) which posted IDR at 0.72 percent.

Except for milkfish, all the reference fishery products exhibited dependency on importation. The highest and increasing IDRs were noted for tuna at 24.52 percent and shrimps and prawns at 10.11 percent in 2018. Importation of roundscad increased in 2018 and pushed up its IDR to 3.09 percent. On the other hand, lower and declining IDRs were recorded for tilapia at 0.03 percent, crabs at 0.08 percent and oyster at 0.03 percent (Table 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. Information on monthly stockholdings can guide policy makers on how much and whether to export or import rice or corn in the future.

In 2018, the biggest rice stocks inventory at 3.0 million metric tons was reported in the month of November. Of the total volume of rice stocks, 51.9 percent comprised the household stocks, 44.6 percent were held by commercial warehouses and the remaining 3.5 percent were kept in the National Food Authority (NFA) depositories. In the same year, the lowest volume of rice stocks at 1.17 million metric tons was still noted in September. Households and commercial stocks accounted for 52.2 percent and 38.2 percent, respectively, of the total rice stocks. About 9.6 percent were NFA stocks (Tables 3a and 3b).

The peak month of corn stocking in 2018 was recorded in August with a total inventory of 1.22 million metric tons. In this month, 94.3 percent of the total corn stocks were in commercial warehouses while the remaining 5.7 percent were stocks in the households. There were no reported corn stocks in NFA depositories for the month of August. Meanwhile, the lean month was noted in March with 0.28 million metric tons of corn stocks. Of this volume, 74.0 percent were in commercial holdings and 26.0 percent were in the households. NFA held less than 0.01 percent of the total corn stocks (Tables 4a and 4b).

Table 1.
Self-sufficiency ratio (SSR) of selected agricultural commodities,
Philippines, 2014-2018
(in percent)

COMMODITY	2014	2015	2016	2017	2018
Rice	91.95	88.93	95.01	93.44	86.17
Corn	93.12	91.35	89.96	94.34	88.43
Coconut	100.01	100.02	100.04	100.01	100.01
Sugarcane	100.00	100.00	100.00	100.00	100.00
Coffee	71.91	33.04	31.89	44.32	29.04
Calamansi	100.03	100.03	100.05	100.06	100.05
Papaya	103.05	101.07	100.99	101.37	102.16
Pomelo	100.15	100.15	99.99	100.00	100.00
Tomato	100.00	99.97	100.00	100.00	100.00
Garlic	23.30	12.96	11.03	10.34	9.02
Onion	96.10	84.48	47.65	84.61	61.53
Cabbage	100.00	100.00	100.00	100.00	100.00
Eggplant	100.00	100.00	100.00	100.00	100.00
Peanut	30.52	28.43	27.52	25.10	24.66
Mongo	52.85	52.23	52.15	49.23	48.96
Cassava	99.66	100.02	100.02	100.02	100.03
Sweet potato	100.00	100.00	100.00	100.00	100.01
Potato	94.70	85.54	85.23	85.31	83.41
Beef	70.00	70.83	67.27	64.30	60.99
Carabeef	68.04	66.26	68.52	67.34	65.10
Pork	89.39	89.78	89.36	87.52	86.09
Chevon	99.94	100.00	100.00	100.00	100.00
Chicken (dressed)	88.44	87.25	84.67	96.22	93.63
Duck (dressed)	98.82	99.09	99.23	99.41	99.28
Chicken egg	100.00	100.00	100.00	100.00	100.00
Milkfish	100.83	100.80	100.83	100.63	100.98
Roundscad	99.99	99.93	99.64	98.57	96.94
Tilapia	100.63	100.04	100.01	99.93	99.97
Tuna	90.99	81.61	83.91	83.57	81.35
Shrimps & Prawns	111.02	103.98	107.02	113.14	103.22
Crabs	124.12	120.97	127.82	139.97	128.65
Oyster	101.95	101.14	100.23	101.37	100.58

Source of basic data: Philippine Statistics Authority

$$SSR = \frac{\text{production}}{\text{production} + \text{import} - \text{export}} \times 100\%$$

Table 2.
Import dependency ratio (IDR) of selected agricultural commodities,
Philippines, 2014-2018
 (in percent)

COMMODITY	2014	2015	2016	2017	2018
Rice	8.06	11.07	4.99	6.56	13.83
Corn	6.89	8.65	10.04	5.66	11.57
Coconut	-	-	-	a/	a/
Sugarcane	-	-	-	a/	-
Coffee	28.10	66.96	68.12	55.68	70.99
Calamansi	-	-	-	-	-
Papaya	-	-	-	-	-
Pomelo	-	-	0.01	-	-
Tomato	a/	0.03	-	-	-
Garlic	76.93	87.14	89.08	89.66	90.98
Onion	4.27	15.95	52.59	15.64	38.51
Cabbage	-	-	a/	-	-
Eggplant	-	-	-	-	-
Peanut	69.51	71.64	72.48	75.05	75.34
Mongo	47.23	47.77	47.85	50.80	51.05
Cassava	0.41	-	a/	-	-
Sweet potato	-	a/	a/	a/	-
Potato	5.30	14.46	14.78	14.69	16.59
Beef	30.02	29.18	32.73	35.70	39.02
Carabeef	31.96	33.74	31.48	32.66	34.90
Pork	10.62	10.22	10.64	12.49	13.91
Chevon	0.06	-	-	-	-
Chicken (dressed)	12.17	13.00	15.48	3.97	6.39
Duck (dressed)	1.46	1.01	0.88	0.59	0.72
Chicken egg	-	-	-	-	-
Milkfish	0.03	0.03	a/	0.11	-
Roundscad	0.07	0.15	0.39	1.48	3.09
Tilapia	-	0.01	0.01	0.08	0.03
Tuna	14.50	22.52	21.19	22.48	24.52
Shrimps & Prawns	5.29	4.62	5.69	8.39	10.11
Crabs	0.16	0.05	0.42	0.25	0.08
Oyster	a/	0.03	0.02	0.04	0.03

Source of basic data: Philippine Statistics Authority

a/ - less than 0.01 percent

$$\text{IDR} = \frac{\text{import}}{\text{production} + \text{import} - \text{export}} \times 100\%$$

Table 3a.
Stocks of rice: Highest and lowest levels and percentage shares of
households, commercial warehouses and NFA, Philippines, 2014-2018

ITEM	2014	2015	2016	2017	2018
Highest					
Month	December	December	May	May	November
Quantity ('000 MT)	3,031.5	3,441.4	3,689.4	3,214.2	3,000.5
Percent share					
Households	51.7	47.8	40.0	46.4	51.9
Commercial	32.3	28.4	28.3	45.2	44.6
NFA	16.0	23.8	31.7	8.4	3.5
Lowest					
Month	September	September	September	September	September
Quantity ('000 MT)	1,488.7	1,955.5	1,775.8	1,422.8	1,168.0
Percent share					
Households	40.1	29.2	35.4	48.4	52.2
Commercial	29.5	29.7	29.4	47.0	38.2
NFA	30.4	41.1	35.2	4.6	9.6

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

Table 3b.
Total stock of rice by month, Philippines, 2014-2018
(in '000 metric tons)

MONTH	2014	2015	2016	2017	2018
January	2,125.5	2,662.1	3,198.8	2,765.1	2,289.7
February	2,003.8	2,350.6	2,942.8	2,296.3	1,795.8
March	1,784.8	2,265.5	2,674.2	2,176.2	1,697.4
April	2,182.5	2,542.7	3,359.0	2,675.6	2,182.7
May	2,520.2	3,167.3	3,689.4	3,214.2	2,909.5
June	2,306.2	3,019.4	3,235.3	2,572.9	2,361.0
July	2,025.0	2,568.2	2,733.6	2,347.9	1,990.8
August	1,721.8	2,244.4	2,103.2	2,028.0	1,520.8
September	1,488.7	1,955.5	1,775.8	1,422.8	1,168.0
October	1,805.3	2,196.2	2,286.6	1,935.9	1,589.9
November	2,952.7	3,107.3	3,302.3	2,958.7	3,000.5
December	3,031.5	3,441.4	3,339.0	2,849.4	2,718.5

Source of basic data: Philippine Statistics Authority

Table 4a.
Stocks of corn: Highest and lowest levels and percentage shares of
households, commercial warehouses and NFA, Philippines, 2014-2018

ITEM	2014	2015	2016	2017	2018
Highest					
Month	October	October	November	May	August
Quantity ('000 MT)	408.3	420.7	604.8	1,556.5	1,221.9
Percent share					
Households	69.2	43.4	30.2	6.6	5.7
Commercial	30.3	56.4	69.7	93.0	94.3
NFA	0.5	0.2	0.1	0.4	-
Lowest					
Month	July	January	July	January	March
Quantity ('000 MT)	161.8	184.0	215.9	382.1	278.3
Percent share					
Households	33.4	46.2	22.0	45.8	26.0
Commercial	63.0	52.9	77.8	53.9	74.0
NFA	3.6	0.9	0.2	0.3	a/

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

a/- less than 0.01 percent

Table 4b.
Total stock of corn by month, Philippines, 2014-2018
 (in '000 metric tons)

MONTH	2014	2015	2016	2017	2018
January	168.8	184.0	387.0	382.1	951.6
February	215.9	252.8	311.7	439.6	410.3
March	267.8	186.6	302.4	1,078.3	278.3
April	368.7	340.2	365.1	1,146.8	369.3
May	268.1	223.3	517.2	1,556.5	338.3
June	188.5	207.2	327.5	978.9	592.0
July	161.8	275.4	215.9	683.6	480.9
August	256.3	313.3	336.5	696.5	1,221.9
September	280.0	329.0	380.6	1,422.2	531.1
October	408.3	420.7	543.9	1,368.9	566.8
November	239.5	298.2	604.8	603.3	639.5
December	216.0	265.2	370.0	536.6	629.9

Source of basic data: Philippine Statistics Authority

MODULES OF THE AGRICULTURAL INDICATORS SYSTEM

1. Economic Growth: Agriculture
2. Agricultural Structure and Resources
3. Output and Productivity
4. Agricultural Exports and Imports
5. **Food Sufficiency and Security**
6. Food Consumption and Nutrition
7. Population and Labor Force
8. Redistribution of Land
9. Gender-based Indicators of Labor and Employment in Agriculture
10. Agricultural Credit
11. Prices and Marketing of Agricultural Commodities
12. Inputs



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