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FOOD CONSUMPTION AND NUTRITION

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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 and these are updated and released annually. This is the sixth module entitled Food Consumption and Nutrition. It provides information on per capita production, per capita net food disposable (NFD) and per capita calories, protein and fat supply of selected major agricultural commodities. The reference years are 2013 to 2017.

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 2018

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FOOD CONSUMPTION AND NUTRITION

Per Capita Production

Per capita production refers to the volume of production of a particular commodity available for each member of the population. Annual per capita production index provides information on the change in the per capita production of the commodity in a given year compared to a base year. It measures the capacity of the country's agriculture sector to produce food commodities in pace with the growth of the population.

In 2017, the annual per capita production of rice increased to 120.15 kilograms and it remained below the 2012 record. This was equivalent to production index of 98.33 percent which means that the 2017 per capita production of rice was 1.67 percentage points lower than the 2012 record. Similarly, annual corn production per person at 75.44 kilograms in 2017 recorded an index of 98.29 percent or 1.71 percentage points less than the base year's level. A continuous downtrend was noted for coconut and coffee with respective 2017 per capita production at 133.90 kilograms and 0.17 kilogram which were still lesser than the 2012 production levels. In contrast, sugarcane production rose to 279.13 kilograms per person in 2017 and exceeded the base year's record with an index of 102.06 percent.

Among the reference fruits, the 2017 per capita production level of pineapple at 25.46 kilograms went beyond its 2012 level. The corresponding production index was 102.49 percent. Meanwhile, per capita production estimates of banana, mango, calamansi, papaya and pomelo in 2017 continued to be lower than the 2012 records.

The per capita production of vegetables and rootcrops such as onion, eggplant, mongo and cassava were increasing and above the 2012 levels. Specifically, the per capita production of onion and mongo exhibited abrupt increases in 2017. Onion per capita production which rose to 1.76 kilograms in 2017, posted the biggest production index of 135.83 percent. On the other hand, the per capita production estimates of tomato, garlic, cabbage, peanut, sweet potato and potato in 2017 stayed below their base year's records. Their respective production levels per person in 2017 ranged from 0.07 kilogram to 5.12 kilograms.

In the case of livestock products, declining and lower than the base year production was exhibited by beef, carabeef and chevon, with per capita

production in 2017 at 1.49 kilograms, 0.81 kilogram and 0.43 kilogram, respectively. Meanwhile, the production of pork figured to 18.20 kilograms per person in 2017 and remained higher than the base year's record with an index of 105.57 percent. Among the poultry products, above the base year's per capita production levels were noted for chicken (dressed) at 12.81 kilograms and chicken egg at 4.69 kilograms in 2017. Correspondingly, production indices were 108.55 percent and 107.57 percent. Duck (dressed) production at 0.22 kilogram per person in 2017 indicated a drop in index to 84.50 percent.

For the fishery products, the per person production went up to 0.48 kilogram for crabs and to 0.23 kilogram for oyster in 2017 and surpassed the 2012 records. In contrast, per capita production of roundscad, and shrimps and prawns declined in 2017 and remained below their base year's records. Per capita production levels of milkfish, tilapia, and tuna were going up in 2017 but stayed below the 2012 production estimates (Table 1).

Daily Per Capita Net Food Disposable (NFD)

Net Food Disposable (NFD) refers to the volume of commodity available in its original (unprocessed) form for human consumption. Data on NFD are sourced from the Supply Utilization Accounts. It is the remaining balance after all the "use" parameters are taken into account. The daily net food disposable of a commodity of each member of the population measured through an index indicates the movement of food available for consumption in a specified year relative to a base year.

The daily per capita NFD of rice increased to 323.97 grams in 2017 but remained lower than the 2012 level. At an estimated index of 99.47 percent, it means that the quantity of rice available for consumption was 0.53 percentage point lower than the 2012 level. Likewise, the NFD of corn dropped to 40.97 grams per day and fell below its base year's level. It posted an index of 85.18 percent, or 14.82 percentage points lower than the 2012 record. The 2017 daily per capita NFD of coconut at 18.33 grams was still lesser than that in the base year. For coffee, the NFD dropped to 0.74 gram per person per day which was lower than the 2012 level. In contrast, the daily NFD of sugarcane had a remarkable increase to 7.64 grams per person and exceeded the 2012 record at an index of 101.73 percent in 2017.

Pineapple's NFD in 2017 went up to 28.44 grams, surpassing the base year's NFD. It posted an index of 100.11 percent or 0.11 percentage point higher than the base year's NFD. Meanwhile, the daily per capita NFDs were declining in banana, mango, calamansi and pomelo while increasing in papaya. Their NFDs in 2017 were maintained below their respective 2012 records.

In 2017, the daily per capita NFD levels of garlic, eggplant, peanut, mongo and cassava increased and were above their 2012 levels. Garlic had the biggest increment as per capita NFD leaped to 1.78 grams per day in 2017 from 0.44 gram per day in 2012. Its respective index was estimated at 403.64 percent or four times bigger than the base year's record. Despite the reduced NFDs of onion to 5.17 grams and potato to 2.68 grams in 2017, these still exceeded their 2012 records. Lower than the base year's records continued for tomato, cabbage and sweet potato.

For the livestock products, the daily per capita NFDs of beef and pork went up to 5.93 grams and 56.44 grams, respectively, in 2017 and remained above the base year's records. Correspondingly, NFD indices rose to 113.83 percent and 112.77 percent. Below the 2012 NFD was noted for carabeef and chevon. Poultry products such as chicken (dressed) and chicken egg registered NFDs in 2017 higher than the 2012 levels. In 2017, the daily per capita NFDs were 36.20 grams for chicken (dressed) and 11.83 grams for chicken egg. On the other hand, the daily NFD of duck (dressed) at 0.61 gram per person in 2017 was still below the 2012 record.

Among the fishery products, the 2017 daily per capita NFD of tuna at 12.00 grams was continuously above the base year's level. It posted an index of 118.24 percent or 18.24 percentage points higher than the 2012 NFD. The NFD of oyster inched up to 0.60 gram per day per person in 2017 and it exceeded the 2012 index by 3.45 percentage points. Below the 2012 NFD levels were noted for milkfish, roundscad, tilapia, shrimps and prawns, and crabs in 2017 (Table 2).

Per Capita Supply of Calories, Protein and Fat

Information on the nutrient equivalents of the different food intake measured on per capita per day basis will show the food items that contributed the highest content of calories, protein and fat.

Among the agricultural commodities under review, rice continued to be the major source of calories. In 2017, rice contributed 1,156.59 grams of calories per day per person. Corn contained 145.86 grams of daily per capita calories. Among the commercial crops, coconut supplied the biggest amount of calories at 33.73 grams per person. Only 2.29 grams of calories were sourced from sugarcane while less than 1.0 gram of calorie was obtained from coffee. In the case of fruits, banana provided the highest amount of calories at 68.22 grams followed by mango at 7.97 grams and pineapple at 7.39 grams. For vegetables and rootcrops, greater quantities of calories were contributed by sweet potato at 12.23 grams and peanut at 11.69 grams. About 7.98 grams and 6.34 grams of calories were sourced from cassava and mongo, respectively. For the livestock and poultry products, the biggest supply of calories in 2017 came from pork at 187.94 grams, chicken (dressed) at 89.42 grams and chicken egg at 70.27 grams. Fishery product such as tuna had the highest calorie content at 7.68 grams per person. Meanwhile, the calorie contents of milkfish, roundscad and tilapia ranged from 2.04 grams to 5.04 grams per person daily. Low supply of calories was provided by shrimps and prawns, crabs, and oyster with less than 1.0 gram per person (Table 3a).

In 2017, higher daily protein content at 24.30 grams per person was sourced from rice. Protein supply from corn was 3.89 grams per person. Other primary sources of protein were pork, chicken (dressed) and chicken egg with corresponding protein contents at 17.89 grams, 10.97 grams and 5.42 grams. Beef contained 2.19 grams of protein per person per day. Among the reference fishery products, tuna contributed more protein supply at 1.24 grams. Lesser quantities of protein were derived from other agricultural commodities (Table 3b).

In terms of daily per capita fat supply, rice contained 5.83 grams while corn had 1.76 grams in 2017. About 3.19 grams of fat were sourced from coconut. Pork was a major source of fat as it provided 12.16 grams per person per day. The fat contents of beef, chicken (dressed) and chicken egg corresponded to 1.28 grams, 4.20 grams and 4.94 grams. Other commodities contained less than 1.0 gram of fat (Table 3c).

Table 1.
Annual per capita production index of selected agricultural commodities, Philippines, 2013-2017
(2012=100)

COMMODITY	2012 PER CAPITA PRODUCTION (kg/annum)	INDICES (in percent)					2017 PER CAPITA PRODUCTION (kg/annum)
		2013	2014	2015	2016	2017	
Rice	122.20	100.50	101.64	95.64	91.38	98.33	120.15
Corn	76.75	97.89	101.38	96.46	91.10	98.29	75.44
Coconut	164.37	95.13	89.52	88.27	81.47	81.46	133.90
Sugarcane	273.50	91.54	91.63	82.54	79.22	102.06	279.13
Coffee	0.26	86.89	81.97	77.29	72.33	64.20	0.17
Banana	95.60	92.10	93.05	93.56	90.21	91.38	87.36
Pineapple	24.84	100.77	101.03	102.36	101.85	102.49	25.46
Mango	7.96	104.42	111.29	111.64	99.03	88.23	7.02
Calamansi	1.85	90.32	86.99	86.58	61.91	60.10	1.11
Papaya	1.71	99.13	101.15	99.48	92.10	93.17	1.59
Pomelo	0.32	96.57	95.00	93.88	88.29	82.18	0.26
Tomato	2.11	100.25	101.84	100.24	96.75	98.85	2.09
Garlic	0.09	100.27	98.66	112.42	79.27	80.95	0.07
Onion	1.29	105.64	157.56	137.88	91.76	135.83	1.76
Cabbage	1.31	99.12	97.85	94.55	91.04	89.14	1.17
Eggplant	2.20	102.01	102.87	104.43	103.95	105.01	2.31
Peanut	0.30	98.13	96.83	95.22	89.58	92.73	0.28
Mongo	0.34	98.45	95.96	98.72	98.31	100.44	0.34
Cassava	23.04	104.40	110.41	116.02	115.85	116.13	26.75
Sweet potato	5.36	100.44	97.18	98.54	95.75	95.61	5.12
Potato	1.24	96.76	96.28	94.16	91.30	90.50	1.12
Beef	1.54	100.01	99.42	99.86	99.53	96.44	1.49
Carabeef	0.87	97.42	96.83	94.57	94.76	93.07	0.81
Pork	17.25	100.20	99.50	102.09	105.70	105.57	18.20
Chevon	0.46	97.96	97.18	97.30	95.69	94.02	0.43
Chicken (dressed)	11.80	103.31	102.66	106.68	105.81	108.55	12.81
Duck (dressed)	0.26	100.05	98.82	95.29	88.98	84.50	0.22
Chicken egg	4.36	99.83	95.39	100.33	102.51	107.57	4.69
Milkfish	4.05	101.91	99.26	95.37	96.18	97.87	3.97
Roundscad	2.42	114.00	107.85	91.62	84.79	72.13	1.74
Tilapia	3.19	101.41	98.32	96.17	91.28	92.88	2.96
Tuna	5.30	100.76	104.72	104.03	93.02	97.31	5.16
Shrimps & Prawns	0.60	100.08	96.33	96.59	90.57	84.04	0.50
Crabs	0.45	96.85	99.01	94.26	99.39	105.93	0.48
Oyster	0.21	113.45	111.36	97.43	94.31	105.76	0.23

Source of basic data: Philippine Statistics Authority

Table 2.
Daily per capita net food disposable (NFD) index of selected agricultural commodities, Philippines, 2013-2017
(2012=100)

COMMODITY	2012 PER CAPITA NFD (grams/day)	INDICES (in percent) 2013	2014	2015	2016	2017	2017 PER CAPITA NFD (grams/day)
Rice	325.69	97.27	96.18	93.90	90.71	99.47	323.97
Corn	48.10	109.08	124.88	117.01	128.25	85.18	40.97
Coconut	22.49	95.02	89.55	88.22	81.24	81.50	18.33
Sugarcane	7.51	91.21	91.61	82.42	79.23	101.73	7.64
Coffee	1.12	83.04	51.79	105.36	102.68	66.07	0.74
Banana	128.90	80.34	77.15	105.25	101.85	88.21	113.70
Pineapple	28.41	96.62	97.50	107.64	94.02	100.11	28.44
Mango	20.00	106.05	111.35	112.90	99.75	88.50	17.70
Calamansi	4.77	90.15	86.79	86.79	62.05	59.75	2.85
Papaya	4.33	97.46	100.00	100.00	92.38	93.53	4.05
Pomelo	0.82	96.34	93.90	93.90	86.59	80.49	0.66
Tomato	4.49	100.67	102.45	100.67	97.10	99.21	4.45
Garlic	0.44	68.18	211.36	447.73	370.22	403.64	1.78
Onion	3.51	100.00	149.86	149.86	177.09	147.22	5.17
Cabbage	3.29	99.09	98.18	94.83	91.31	89.41	2.94
Eggplant	5.53	101.99	103.07	104.52	104.00	105.06	5.81
Peanut	2.14	76.64	112.62	119.16	116.26	131.98	2.82
Mongo	1.81	101.66	90.61	95.58	94.94	102.67	1.86
Cassava	6.30	105.71	111.27	116.19	116.01	116.24	7.32
Sweet potato	13.89	100.43	97.26	98.63	95.90	95.68	13.29
Potato	2.55	94.51	96.86	108.63	106.27	105.10	2.68
Beef	5.21	100.00	106.72	106.33	111.93	113.83	5.93
Carabeef	3.43	89.50	98.25	99.13	95.68	95.62	3.28
Pork	50.05	101.88	103.96	106.19	110.47	112.77	56.44
Chevon	1.23	100.00	100.00	100.00	97.47	95.77	1.18
Chicken (dressed)	35.21	102.24	106.59	112.27	114.76	102.82	36.20
Duck (dressed)	0.74	95.95	95.95	91.89	87.32	82.73	0.61
Chicken egg	11.01	99.82	95.28	100.27	102.38	107.44	11.83
Milkfish	7.18	101.11	98.47	94.57	95.51	97.52	7.00
Roundscad	4.30	113.95	108.37	91.86	85.35	73.95	3.18
Tilapia	8.47	99.65	97.64	96.34	91.38	93.07	7.88
Tuna	10.15	103.80	112.22	130.28	112.02	118.24	12.00
Shrimps & Prawns	1.62	93.21	86.42	93.21	84.57	74.69	1.21
Crabs	1.07	82.24	89.72	89.72	89.72	86.92	0.93
Oyster	0.58	113.79	108.62	94.83	94.83	103.45	0.60

Source of basic data: Philippine Statistics Authority

Table 3a.
Daily per capita calories supply of selected agricultural commodities, Philippines, 2013-2017
(in grams)

COMMODITY	2013	2014	2015	2016	2017
Rice	1,130.95	1,118.30	1,091.73	1,054.70	1,156.59
Corn	186.79	213.85	200.37	219.61	145.86
Coconut	39.32	37.06	36.51	33.62	33.73
Sugarcane	2.06	2.06	1.86	1.79	2.29
Coffee	0.44	0.27	0.55	0.54	0.35
Banana	62.14	59.67	81.40	78.77	68.22
Pineapple	7.14	7.20	7.95	6.94	7.39
Mango	9.54	10.02	10.16	8.98	7.97
Calamansi	1.12	1.08	1.08	0.77	0.74
Papaya	1.10	1.13	1.13	1.04	1.05
Pomelo	0.38	0.37	0.37	0.34	0.32
Tomato	0.77	0.78	0.77	0.74	0.76
Garlic	0.39	1.21	2.56	2.12	2.31
Onion	1.09	1.63	1.63	1.93	1.60
Cabbage	0.62	0.61	0.59	0.57	0.56
Eggplant	0.12	0.12	0.12	0.12	0.12
Peanut	6.79	9.98	10.56	10.30	11.69
Mongo	6.27	5.59	5.90	5.86	6.34
Cassava	7.26	7.64	7.98	7.97	7.98
Sweet potato	12.83	12.43	12.60	12.25	12.23
Potato	1.61	1.65	1.86	1.82	1.80
Beef	13.29	14.18	14.13	14.87	15.12
Carabeef	6.20	6.81	6.87	6.63	6.62
Pork	169.80	173.26	176.99	184.11	187.94
Chevon	2.95	2.95	2.95	2.88	2.83
Chicken (dressed)	88.92	92.70	97.64	99.81	89.42
Duck (dressed)	3.03	3.03	2.90	2.76	2.61
Chicken egg	65.28	62.31	65.58	66.96	70.27
Milkfish	4.65	4.52	4.35	4.39	4.48
Roundscad	3.14	2.98	2.53	2.35	2.04
Tilapia	5.40	5.29	5.22	4.95	5.04
Tuna	6.75	7.29	8.47	7.28	7.68
Shrimps & Prawns	0.71	0.66	0.71	0.64	0.57
Crabs	0.41	0.45	0.45	0.45	0.44
Oyster	0.47	0.45	0.39	0.39	0.43

Sources of basic data: Food and Agriculture Organization and Philippine Statistics Authority

Table 3b.
Daily per capita protein supply of selected agricultural commodities, Philippines, 2013-2017
(in grams)

COMMODITY	2013	2014	2015	2016	2017
Rice	23.76	23.49	22.94	22.16	24.30
Corn	4.98	5.71	5.35	5.86	3.89
Coconut	0.36	0.34	0.34	0.31	0.31
Sugarcane	0.01	0.01	0.01	0.01	0.02
Coffee	0.06	0.04	0.08	0.08	0.05
Banana	0.72	0.70	0.95	0.92	0.80
Pineapple	0.05	0.06	0.06	0.05	0.06
Mango	0.08	0.09	0.09	0.08	0.07
Calamansi	0.02	0.02	0.02	0.01	0.01
Papaya	0.02	0.02	0.02	0.02	0.02
Pomelo	0.00	0.00	0.00	0.00	0.00
Tomato	0.04	0.04	0.04	0.03	0.04
Garlic	0.04	0.11	0.24	0.20	0.21
Onion	0.04	0.06	0.06	0.07	0.06
Cabbage	0.03	0.03	0.03	0.03	0.03
Eggplant	0.05	0.05	0.05	0.05	0.05
Peanut	0.31	0.45	0.48	0.47	0.53
Mongo	0.41	0.36	0.38	0.38	0.41
Cassava	0.06	0.06	0.07	0.07	0.07
Sweet potato	0.10	0.09	0.10	0.09	0.09
Potato	0.04	0.04	0.04	0.04	0.04
Beef	1.92	2.05	2.04	2.15	2.19
Carabeef	0.68	0.75	0.75	0.73	0.73
Pork	16.16	16.49	16.85	17.53	17.89
Chevon	0.35	0.35	0.35	0.34	0.34
Chicken (dressed)	10.91	11.37	11.98	12.24	10.97
Duck (dressed)	0.19	0.19	0.18	0.17	0.17
Chicken egg	5.03	4.80	5.06	5.16	5.42
Milkfish	0.75	0.73	0.70	0.71	0.72
Roundscad	0.50	0.48	0.41	0.38	0.33
Tilapia	0.87	0.85	0.84	0.80	0.81
Tuna	1.09	1.17	1.36	1.17	1.24
Shrimps & Prawns	0.14	0.13	0.14	0.13	0.11
Crabs	0.08	0.09	0.09	0.09	0.09
Oyster	0.07	0.07	0.06	0.06	0.06

Sources of basic data: Food and Agriculture Organization and Philippine Statistics Authority

Table 3c.
Daily per capita fat supply of selected agricultural commodities, Philippines, 2013-2017
(in grams)

COMMODITY	2013	2014	2015	2016	2017
Rice	5.70	5.64	5.50	5.32	5.83
Corn	2.26	2.58	2.42	2.65	1.76
Coconut	3.72	3.50	3.45	3.18	3.19
Sugarcane	0.00	0.00	0.00	0.00	0.00
Coffee	0.00	0.00	0.00	0.00	0.00
Banana	0.31	0.30	0.41	0.39	0.34
Pineapple	0.05	0.06	0.06	0.05	0.06
Mango	0.04	0.04	0.05	0.04	0.04
Calamansi	0.01	0.01	0.01	0.01	0.01
Papaya	0.00	0.00	0.00	0.00	0.00
Pomelo	0.00	0.00	0.00	0.00	0.00
Tomato	0.01	0.01	0.01	0.01	0.01
Garlic	0.00	0.00	0.01	0.01	0.01
Onion	0.01	0.01	0.01	0.01	0.01
Cabbage	0.00	0.00	0.00	0.00	0.00
Eggplant	0.56	0.57	0.58	0.58	0.58
Peanut	0.59	0.87	0.92	0.89	1.01
Mongo	0.03	0.03	0.03	0.03	0.03
Cassava	0.01	0.01	0.01	0.01	0.01
Sweet potato	0.03	0.03	0.03	0.03	0.03
Potato	0.00	0.00	0.00	0.00	0.00
Beef	1.12	1.20	1.19	1.25	1.28
Carabeef	0.29	0.32	0.32	0.31	0.31
Pork	10.98	11.21	11.45	11.91	12.16
Chevon	0.16	0.16	0.16	0.15	0.15
Chicken (dressed)	4.18	4.35	4.59	4.69	4.20
Duck (dressed)	0.23	0.23	0.22	0.21	0.20
Chicken egg	4.59	4.38	4.61	4.71	4.94
Milkfish	0.16	0.16	0.15	0.15	0.15
Roundscad	0.11	0.10	0.09	0.08	0.07
Tilapia	0.19	0.18	0.18	0.17	0.17
Tuna	0.23	0.25	0.29	0.25	0.26
Shrimps & Prawns	0.01	0.01	0.01	0.01	0.01
Crabs	0.00	0.00	0.00	0.00	0.00
Oyster	0.01	0.01	0.01	0.01	0.01

Sources of basic data: Food and Agriculture Organization and Philippine Statistics Authority

MODULES OF THE AGRICULTURAL INDICATORS SYSTEM

1. Output and Productivity
2. Agricultural Structure and Resources
3. Economic Growth: Agriculture
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. Prices and Marketing of Agricultural Commodities
11. Agricultural Credit
12. Inputs

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