

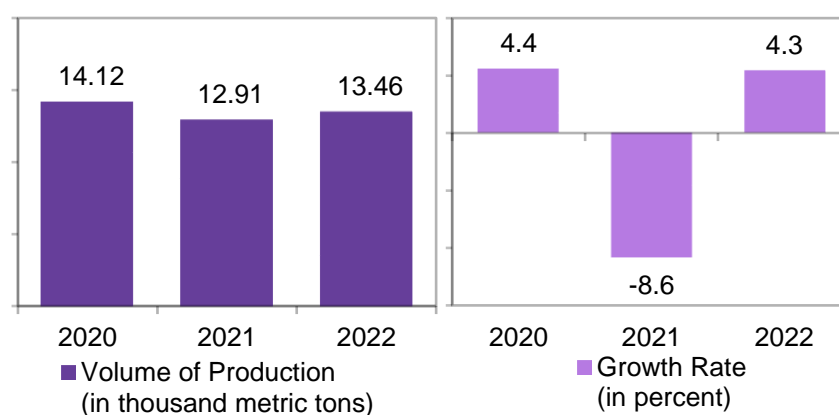
SPECIAL RELEASE

DUCK EGG SITUATION REPORT October to December 2022

Date of Release: 21 February 2023

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Figure 1. Volume and Annual Growth Rate of Duck Egg Production, Philippines October to December 2020-2022^P



^P - preliminary

Source: Philippine Statistics Authority, Backyard Livestock and Poultry Survey (BLPS), and Commercial Livestock and Poultry Survey (CLPS)

Total duck egg production from October to December 2022 was estimated at 13.46 thousand metric tons. This indicates an annual growth of 4.3 percent compared with its previous year's same quarter output of 12.91 thousand metric tons. Moreover, the October to December 2022 duck egg production showed an improvement from the -8.6 percent reduction in the same quarter of 2021. (Figure 1 and Table 1)

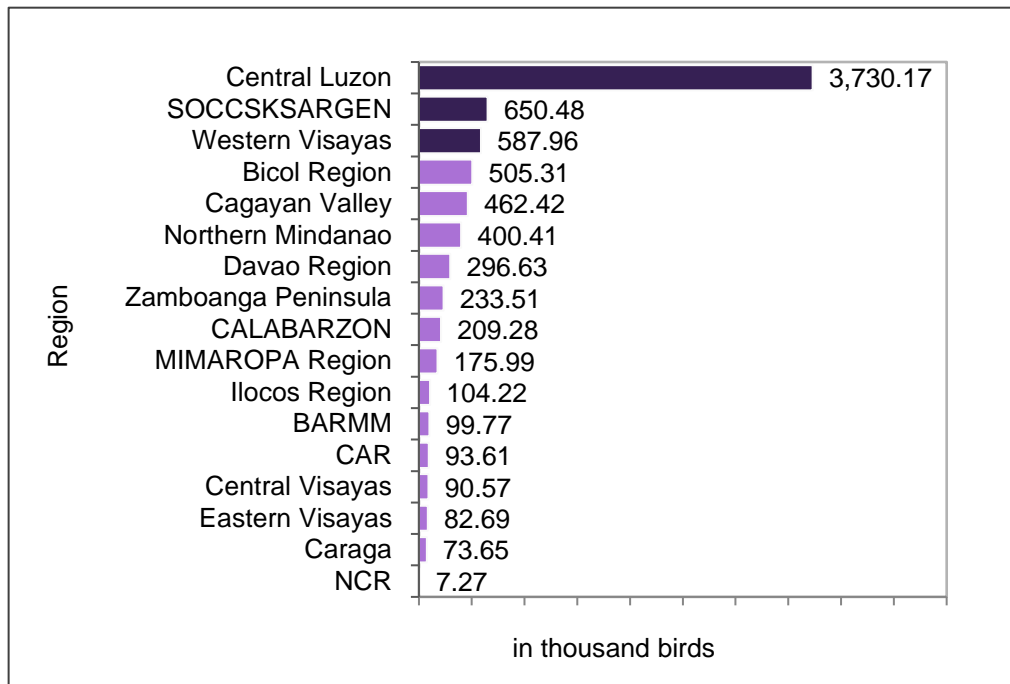
The top five regions with the highest volume of duck egg production during the period were the following:

- Central Luzon, 7.29 thousand metric tons;
- Northern Mindanao, 1.47 thousand metric tons;
- Western Visayas, 1.06 thousand metric tons;
- SOCCSKSARGEN, 0.68 thousand metric tons; and
- CALABARZON, 0.66 thousand metric tons.

These regions accounted for 82.9 percent share to the country's total duck egg production during the quarter.

In comparison to their output in the same quarter of 2021, six regions posted increases in production during the period. In terms of level, Central Luzon reported the highest increase of 1.35 thousand metric tons, from 5.94 thousand metric tons in the same quarter of the previous year to 7.29 thousand metric tons this quarter. (Table 1)

Figure 2. Distribution of Duck Laying Flock Inventory by Region
Philippines: as of 31 December 2022^P



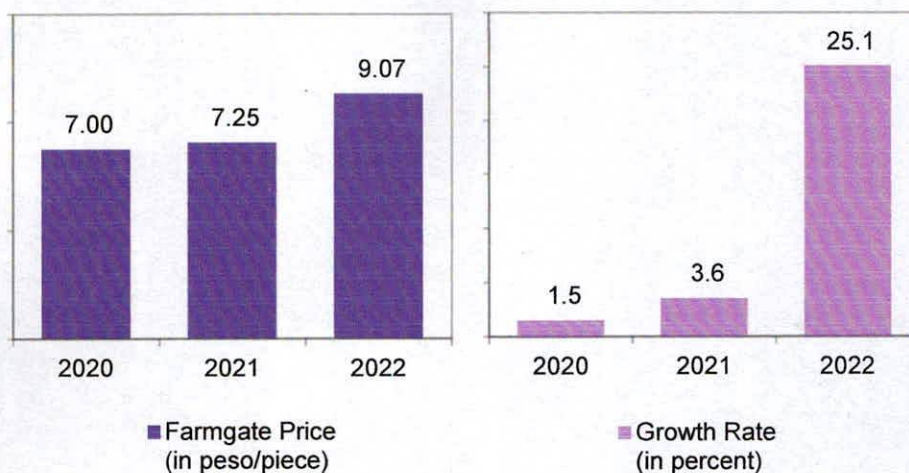
^P - preliminary

Source: Philippine Statistics Authority, BLPS, and CLPS

The country's total duck laying flock inventory increased to 7,803.92 thousand birds as of 31 December 2022. It significantly increased by 20.7 percent from 6,463.63 thousand birds in the same period of the previous year.

Central Luzon recorded the highest laying flock population of 3,730.17 thousand birds as of 31 December 2022. This was followed by SOCCSKSARGEN and Western Visayas with corresponding inventories of 650.48 thousand birds and 587.96 thousand birds. These three regions shared 63.6 percent to the country's total duck laying flock population. (Figure 2 and Table 2)

Figure 3. Average Farmgate Price and Annual Growth Rate of Farmgate Price of Duck Egg, Philippines October to December 2020-2022^P



The average farmgate price of duck egg was quoted at PhP 9.07 per piece for this quarter. This was 25.1 percent higher than the previous year's same quarter price of PhP 7.25 per piece. (Figure 3 and Table 3)

During the quarter, the highest farmgate price was recorded in December at PhP 9.19 per piece, while the lowest was quoted in October at PhP 8.98 per piece. (Table 3)

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STATISTICAL TABLES

Table 1. Volume of Duck Egg Production by Region, Philippines
October-December 2020-2022^P

Region	Production (in metric ton)			Annual Growth Rate (in percent)		Percent Share
	2020	2021	2022 ^P	2021	2022 ^P	2022 ^P
Philippines	14,122	12,907	13,459	-8.6	4.3	100.0
NCR	a/	b/
CAR	89	95	94	7.0	-1.3	0.7
I - Ilocos Region	200	240	232	20.3	-3.7	1.7
II - Cagayan Valley	452	476	502	5.4	5.3	3.7
III - Central Luzon	6,586	5,937	7,285	-9.9	22.7	54.1
IVA - CALABARZON	995	914	658	-8.1	-28.0	4.9
MIMAROPA Region	115	169	177	46.6	4.6	1.3
V - Bicol Region	118	198	132	68.3	-33.3	1.0
VI - Western Visayas	1,619	1,199	1,057	-26.0	-11.8	7.9
VII - Central Visayas	58	38	44	-34.4	14.1	0.3
VIII - Eastern Visayas	48	71	85	47.1	20.6	0.6
IX - Zamboanga Peninsula	796	409	404	-48.7	-1.1	3.0
X - Northern Mindanao	1,522	1,769	1,470	16.2	-16.9	10.9
XI - Davao Region	333	328	311	-1.5	-5.2	2.3
XII - SOCCSKSARGEN	819	726	681	-11.3	-6.2	5.1
XIII - Caraga	171	120	105	-29.7	-12.3	0.8
BARMM	201	217	221	8.2	1.9	1.6

^P - preliminary

.. - data not applicable

a/ - less than 1 metric ton

b/ - less than 0.01 percent

Note: Details may not add up to total due to rounding. Growth rate and percent share may yield different results when computed manually due to rounding.

Source: Philippine Statistics Authority, Backyard Livestock and Poultry Survey, and Commercial Livestock and Poultry Survey

Table 2. Inventory of Duck Laying Flock by Region, Philippines
As of 31 December 2020-2022^P

Region	Inventory (in number of birds)			Annual Growth Rate (in percent)		Percent Share
	2020	2021 ^r	2022 ^P	2021 ^r	2022 ^P	2022 ^P
Philippines	7,053,539	6,463,632	7,803,923	-8.0	20.7	100.0
NCR	..	624	7,268	..	1064.7	0.1
CAR	67,146	89,284	93,606	33.0	4.8	1.2
I - Ilocos Region	148,325	129,652	104,224	-12.6	-19.6	1.3
II - Cagayan Valley	305,284	321,449	462,420	5.3	43.9	5.9
III - Central Luzon	3,321,208	2,837,940	3,730,172	-14.6	31.4	47.8
IVA - CALABARZON	298,542	275,664	209,284	-7.7	-24.1	2.7
MIMAROPA Region	198,508	126,520	175,994	-36.3	39.1	2.3
V - Bicol Region	341,300	341,803	505,309	0.1	47.8	6.5
VI - Western Visayas	679,009	604,998	587,955	-10.9	-2.8	7.5
VII - Central Visayas	53,363	56,093	90,569	5.1	61.5	1.2
VIII - Eastern Visayas	61,396	60,201	82,685	-1.9	37.3	1.1
IX - Zamboanga Peninsula	156,020	121,345	233,508	-22.2	92.4	3.0
X - Northern Mindanao	557,888	471,750	400,407	-10.8	-15.1	5.1
XI - Davao Region	135,167	321,108	296,626	137.6	-7.6	3.8
XII – SOCCSKSARGEN	600,381	583,336	650,477	-2.8	11.5	8.3
XIII - Caraga	67,227	58,702	73,650	-12.7	25.5	0.9
BARMM	62,775	63,163	99,769	0.6	58.0	1.3

^r – revised

^P – preliminary

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

Source: Philippine Statistics Authority, Backyard Livestock and Poultry Survey, and Commercial Livestock and Poultry Survey

Table 3. Monthly Average Farmgate Price of Duck Egg
Philippines: October-December 2020-2022^P

Month	Average Farmgate Price (PhP per piece)			Annual Growth Rate (in percent)	
	2020	2021	2022 ^P	2021	2022 ^P
Average	7.00	7.25	9.07	3.6	25.1
October	6.58	7.01	8.98	6.5	28.1
November	6.81	7.30	9.03	7.2	23.7
December	7.61	7.44	9.19	-2.2	23.5

^P - preliminary

Note: Growth rate may yield different results when computed manually due to rounding.

Source: Philippine Statistics Authority, 2020-2021 Farm Price Survey, and 2022 Commercial Livestock and Poultry Survey

TECHNICAL NOTES

I. Introduction

The Duck Egg Situation Report presents the industry situation in terms of volume of production, inventory, and monthly average farmgate prices. It serves as a ready reference for the various clients and stakeholders of the Philippine Statistics Authority (PSA) in the agriculture sector.

The data for this report were collected by PSA through the two surveys, namely, Backyard Livestock and Poultry Survey (BLPS) and the Commercial Livestock and Poultry Survey (CLPS).

The BLPS aims to generate estimates on the supply and disposition of livestock and poultry commodities at the household level. In Q4 2022, the number of sample households covered was 21,501 from the 1,145 sample barangays nationwide. On the other hand, the CLPS seeks to generate estimates on the supply and disposition of livestock and poultry commodities from the sample establishments. There were 408 duck sample establishments covered in 2022.

Both surveys are conducted quarterly in all provinces including National Capital Region. Moreover, the commodities covered in the surveys include: cattle, carabao, swine, goat, chicken, duck, and other animals raised/tended by households and establishments.

II. Data Collection

A. Backyard Livestock and Poultry Survey

1. Data collection procedure

The field data collection for fourth quarter 2022 was conducted from 01 to 07 December 2022. The data collection was undertaken by hired Statistical Researchers (SRs) and is done through face-to-face interview with qualified respondents of the sample households. Prior to data collection, training of selected staff from Field Offices, including SRs, was conducted to ensure uniform understanding of concepts and proper implementation of survey procedures. Field and manual editing of the accomplished questionnaires was done to ensure completeness, consistency, and reasonableness of the information gathered.

2. Survey Questionnaire

The BLPS Questionnaire is a thirteen-page form composed of 16 blocks that aims to gather information on the basic characteristics and operations of the household.

The data items included in the survey are as follows:

- a. Type of Operation/Purpose
- b. Inventory
- c. Number of hatched live
- d. Number of acquired animal

- e. Dressed in the household/farm
- f. Sold live for dressing and for other purposes
- g. Disposition by areas of destination
- h. Average liveweight
- i. Average farmgate price
- j. Number of deaths/losses and cause/reason
- k. Egg production
- l. Egg disposition

B. Commercial Livestock and Poultry Survey

1. Data collection procedure

The schedule of field data collection was during the last ten (10) days of November 2022. The data collection was undertaken by hired Statistical Researchers (SRs) and is done through a face-to-face interview with qualified respondents of the farm/establishment. Prior to data collection, training of Field Office personnel, including SRs, was conducted to ensure that the procedures and concepts of the survey are understood and properly implemented. Field and manual editing of the accomplished questionnaires was done to ensure completeness, consistency, and reasonableness of the information gathered.

2. Survey Questionnaire

The CLPS Duck Survey Questionnaire is a two-page questionnaire that aims to gather necessary information on supply and disposition of duck commercial farms/establishment.

The data items included in the survey are as follows:

- a. Type of Operation/Purpose
- b. Inventory
- c. Number of hatched live
- d. Number of acquired animals
- e. Dressed in the farm/establishment
- f. Sold live for dressing and for other purposes
- g. Disposition by areas of destination
- h. Average liveweight
- i. Average farmgate price
- j. Number of deaths/losses and cause/reason
- k. Egg production
- l. Egg disposition

III. Sampling Design

A. Backyard Livestock and Poultry Survey

1. Sampling Frame

The BLPS sampling frame is based on the results of the 2017 Listing of Farm Household (LFH) and 2012 Census of Agriculture and Fisheries (CAF). For barangays not covered in the 2017 LFH, the list of households was taken from the 2012 CAF. The sampling frame is updated quarterly based on the status of

the sampled households using the structured Frame Maintenance Form (FMF) submitted by the PSOs every quarter.

2. Sample Selection Procedure

The BLPS uses two-stage sampling design. The first stage is the selection of barangays using probability proportional to size where the measure of size is the total animal inventory. The number of sample barangays is based on a target coefficient of variation of five (5) percent. The sample barangays are the same for all quarters of 2022.

The second stage is the selection of sample households that are engaged in livestock and poultry raising in the sampled barangays using systematic sampling.

The number of sample households per selected barangay is 20 but this could be less if the selected barangay has less than 20 households. The sample households per quarter are independent.

3. Estimation Procedure

a. Sampling Weights

a.1. Base Weight

The base weight is computed as follows:

$$w_{1i} = \begin{cases} \frac{\sum_{i=1}^A X_i - X_{certain}}{a'X_i} & , \text{if non - certainty brgy} \\ 1 & , \text{if certainty brgy} \end{cases}$$

$$w_{2ij} = \begin{cases} \frac{N_i}{n_i} & , \text{if household has at most 3 operators} \\ \frac{N_i}{n_i} \times \frac{M_{ij}}{m_{ij}} & , \text{if household has greater than 3 operators} \end{cases}$$

$$w_{ij} = w_{1i} \times w_{2ij}$$

Where:

w_{ij} = base weight of household j in barangay i

w_{1i} = 1st stage weight

w_{2ij} = 2nd stage weight

A = total number of barangays in the domain

a = barangay sample size in the domain

a' = non-certainty barangay sample size in the domain; equal to a if there are no certainty barangays

$X_{certain}$ = total animal inventory of all certainty barangays

X_i = size measure of barangay i

N_i = total number of households in barangay i

n_i = number of sample households in barangay i

M_{ij} = total number of operators in household j in barangay i

m_{ij} = number of sample operators in household j in barangay i
 i = subscript for barangay
 j = subscript for household

a.2. Adjustment Factor

The adjustment factor formula is given as follows:

$$A_p = \frac{\sum_{i=1}^a \sum_{j=1}^{n_i} w_{ij} X_{1ij}}{\sum_{i=1}^a \sum_{j=1}^{n_i} w_{ij} X_{2ij}}$$

Where:

A_p = adjustment factor for domain p

X_{1ij} = eligible status of household j in barangay i (1 if eligible,
0 otherwise)

X_{2ij} = responding status of household j in barangay i (1 if eligible,
0 otherwise)

Eligible households are the following:

- Interview completed;
- Refused to be interviewed without replacement;
- Temporarily away/Not at home without replacement; and
- HH temporarily not accessible without replacement.

Ineligible households are the following:

- Resides outside the barangay;
- Unknown in the locality; and
- Deceased (No other livestock and poultry operator in the household).

a.3. Final Weights

The final weights formula is given as follows:

$$w'_{ij} = w_{ij} \times A_p$$

Where:

w'_{ij} = final weights for domain p

w_{ij} = base weight of household j in barangay i

A_p = adjustment factor for domain p

b. Estimation of Total

b.1. Estimation of Provincial Total

Estimation of domain total is done per animal type and the formula is given as follows:

$$\hat{Y}_{qp} = \sum_{i=1}^a \sum_{j=1}^{n_i} w'_{ij} y_{ij}$$

Where:

\hat{Y}_{qp} = estimated total for domain p at quarter q

y_{ij} = survey data (inventory, production, etc.) for household j in barangay i

b.2. Estimation of Regional and National Total

The regional estimates are obtained by aggregating the estimates of the provinces within the region, while the national estimate is derived by adding all the regional estimates.

B. Commercial Livestock and Poultry Survey

1. Sampling Frame

The CLPS frame is based on the results of the 2021 Updating of the List of Establishments (ULE). It is updated quarterly based on the results of visit of the sample establishments using the Frame Maintenance Form (FMF).

2. Sample Selection Procedure

The CLPS uses a stratified sampling design with the maximum farm/housing capacity as stratification variable. Stratum boundaries are obtained using Dalenius-Hodges method. Sample size is determined using Neyman procedure with a target coefficient of variation of five percent (5%). A minimum of five (5) samples are taken when the population for the stratum is greater than or equal to five (5). For stratum with population less than five (5), all farms will be enumerated. The number of strata per province ranges from two (2) to four (4) depending on the homogeneity of the stratification variable.

Complete Enumeration (CE) is applied for provinces with less than 25 commercial farms/establishments, otherwise, stratified sampling design is used.

3. Estimation Procedure

a. Sampling weights

a.1. Base Weight

The base weight for CLPS is computed by animal type and province. The formula for base weights is given as follows:

$$w_h = w_{hi} = \left(\frac{N_h}{n_h} \right)$$

w_{hi} = weight of commercial farm/establishment i in stratum h

N_h = total number of establishments in stratum h

n_h = number of sample establishments in stratum h

a.2. Adjustment Factor

The adjustment factor is given as follows:

$$A_h = \frac{\sum_{i=1}^{n_h} w_{hi} X_{1hi}}{\sum_{i=1}^{n_h} w_{hi} X_{2hi}}$$

Where:

A_h = adjustment factor at stratum h

w_{hi} = base weight of establishment i at stratum h

n_h = number of sample establishments in stratum h

X_{1hi} = eligible status of sample establishment i at stratum h
(1 if eligible, 0 otherwise)

X_{2hi} = responding status of sample establishment i at stratum h
(1 if responding, 0 otherwise)

$$X_{1hi} \text{ (Eligible)} = \begin{cases} 1, & \text{if result of final visit is 1, 5, 6 and 7} \\ 0, & \text{otherwise} \end{cases}$$

$$X_{2hi} \text{ (Responding)} = \begin{cases} 1, & \text{if result of final visit is 1} \\ 0, & \text{otherwise} \end{cases}$$

Eligible establishments are the following:

- Operational
- Refusal
- Cannot be contacted/Not accessible/Temporarily away

Ineligible establishments are the following:

- Temporarily Stopped Operation
- Permanently Closed/Stopped Operation
- Shifted Farm Operation
- Cannot Be Located
- Not yet in operation
- Duplicate
- Out-of-scope – Recreation
- Out-of-scope – Change Sector
- Out-of-scope – Main Office/Ancillary Unit

a.3. Final Weights

The final weight formula is given as follows:

$$w'_{hi} = w_{hi} \times A_h$$

w'_{hi} = final weight of establishment i at stratum h

w_{hi} = base weight of establishment i at stratum h

A_h = Adjustment factor

b. Estimation

b.1. Estimation by Stratum

Each stratum yields an independent estimate. The formula to be used is given as follows:

$$\hat{Y}_h = \sum_{i=1}^{n_h} w'_{hi} y_{hi}$$

Where:

\hat{Y}_h = estimated total for stratum h of the province

w'_{hi} = final weight of establishments i at stratum h

n_h = no. of sample establishments in stratum h

y_{hi} = survey data (inventory, production, etc.) for establishment i in stratum h

b.2. Estimation of Provincial Total

The total estimate for the province is obtained by simply aggregating all the expanded stratum estimates in the province. Hence, the statement of the total for the pth province is given by:

$$\hat{Y} = \sum_{h=1}^L \hat{Y}_h$$

Where:

\hat{Y} = estimated total for the province

\hat{Y}_h = estimated total for stratum h of the province

L = total number of strata

b.3. Estimation of Regional and National Total

The regional estimates are obtained by aggregating the estimates of the provinces within the region, while the national estimate is derived by adding all the regional estimates.

IV. Concepts and Definitions of Terms

Farmgate price refers to the price received by raisers for their produce at the location of farm. Thus, the marketing costs, such as the transport and other marketing costs (if any) incurred in selling the produce, are not included in the farmgate prices.

Inventory refers to the actual number of duck laying flock present in the farm as of a specific reference date.

Volume of production refers to the volume of duck egg disposed from locally-raised duck including those duck eggs which were shipped out to other regions/provinces.

V. Dissemination of Results and Revision

The PSA disseminates the Duck Egg Situation Report quarterly and is uploaded in the PSA Website.

The livestock and poultry statistics follows the revision policy as stipulated in the PSA Board Resolution No. 1, Series of 2017-119 approving the revision of quarterly estimates on agricultural production, prices, and related statistics to be limited to the immediately preceding quarter and for the past three years with quarterly breakdown to be done only during May of the current year.

VI. Citation

This presents how the Technical Notes will be cited by users in their research works. It contains the following information:

1. Philippine Statistics Authority
2. Date of Publication/Release of the Technical Note
3. Title of the Technical Notes
4. Link to the Technical Notes

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