

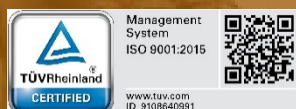


REPUBLIC OF THE PHILIPPINES

PHILIPPINE STATISTICS AUTHORITY

# CARABAO SITUATION REPORT

January-December 2021



PHOTOS: ALCACHUPAS, M. (10 April 2015, Occidental Mindoro). Carabao on Farm with caracalf. ©  
RAMOS, H. (25 March 2015, Batanes). Carabao on Hill. ©  
OCBEÑA, S. (2015, Nueva Ecija). Carabao on Farm. ©  
<https://www.flicker.com/photos/edimages/1392167103>



REPUBLIC OF THE PHILIPPINES

PHILIPPINE STATISTICS AUTHORITY

# **CARABAO SITUATION REPORT**

**January-December 2021**



**REPUBLIC OF THE PHILIPPINES**

**HIS EXCELLENCY  
PRESIDENT RODRIGO ROA DUTERTE**



**PHILIPPINE STATISTICS AUTHORITY**

**DENNIS S. MAPA, Ph.D.  
Undersecretary  
National Statistician and Civil Registrar General**

**ISSN-2546-0625**

Copyright © 2022 by Philippine Statistics Authority  
PSA Complex, East Avenue, Diliman,  
Quezon City, Philippines

## **FOREWORD**

The Carabao Situation Report presents the industry situation in terms of volume and value of production, number of heads slaughtered in slaughterhouses, volume and value of carabao imports and monthly average farmgate prices.

The Philippine Statistics Authority (PSA) disseminates the Carabao Situation Report annually, with previous year as the reference period. The report serves as a ready reference for various clients and stakeholders of PSA in the agriculture sector.

The PSA would appreciate comments and suggestions from our data users and readers for further improvement of this report.

**DENNIS S. MAPA, Ph.D.**

Undersecretary

National Statistician and Civil Registrar General

Quezon City, Philippines  
June 2022



## TABLE OF CONTENTS

	Page
Foreword	iii
Standard Symbols, Unit of Measure, Initials, and Acronyms	vi
Highlights	1
1. Volume of Production	1
2. Prices	4
3. Value of Production	4
4. Imports	4
Technical Notes	
<b>Figure</b>	
1 Volume of Carabao Production (in '000 mt, liveweight) and Annual Growth Rate, Philippines January-December 2019-2021 <sup>P</sup>	1
2 Volume of Carabao Production (in '000 heads) and Annual Growth Rate Philippines, January-December 2019-2021 <sup>P</sup>	1
3 Volume of Production of Top 10 Carabao-Producing Provinces, Philippines, January-December 2021 <sup>P</sup>	2
4 Thematic Map of Volume of Carabao Production (by province) Philippines: January-December 2021 <sup>P</sup>	3
5 Average Farmgate Prices of Carabao for Slaughter (backyard) Philippines: January-December 2019 <sup>r</sup> -2021 <sup>P</sup>	4
<b>Table</b>	
1 Volume of Carabao Production by Quarter, Philippines: 2019-2021 <sup>P</sup>	6
2 Volume of Carabao Production by Region, Philippines: 2019-2021 <sup>P</sup>	6
3 Volume of Carabao Production (in metric tons, liveweight) by Province, Philippines: 2019-2021 <sup>P</sup>	7
4 Volume of Carabao Production (in heads) by Province Philippines: 2019-2021 <sup>P</sup>	10
5 Monthly Average Farmgate Prices of Carabao for Slaughter (backyard), Philippines: 2019 <sup>r</sup> -2021 <sup>P</sup>	13
6 Value of Carabao Production at Current and Constant Prices by Quarter, Philippines: 2019 <sup>r</sup> -2021 <sup>P</sup>	13
7 Volume and Value of Carabeef Imports by Quarter Philippines: 2019-2021 <sup>P</sup>	14
8 Number of Carabao Slaughtered in Slaughterhouses by Quarter and Region, Philippines: 2020-2021 <sup>P</sup>	15
9 Inventory of Carabao by Farm Type and Region Philippines: as of 01 January and 01 July 2020-2021 <sup>P</sup>	16

## Standard Symbols, Unit of Measure, Initials, and Acronyms

..	data not applicable
*	data included in Zamboanga del Sur
**	data included in Davao del Sur
p	preliminary
r	revised
kg	Kilogram
mt	Metric ton
'000	Thousand
Q1	First Quarter (January-March)
Q2	Second Quarter (April-June)
Q3	Third Quarter (July-September)
Q4	Fourth Quarter (October-December)
Sem1	First Semester (January-June)
Sem2	Second Semester (July-December)
PhP	Philippine Peso
USD	US dollar
CIF	Cost, Insurance and Freight
NCR	National Capital Region
CAR	Cordillera Administrative Region
CALABARZON	Cavite, Laguna, Batangas, Rizal, Quezon
MIMAROPA Region	Occidental Mindoro, Oriental Mindoro, Marinduque, Romblon, Palawan
SOCCSKSARGEN	South Cotabato, Cotabato, Sultan Kudarat, Sarangani, General Santos City
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao



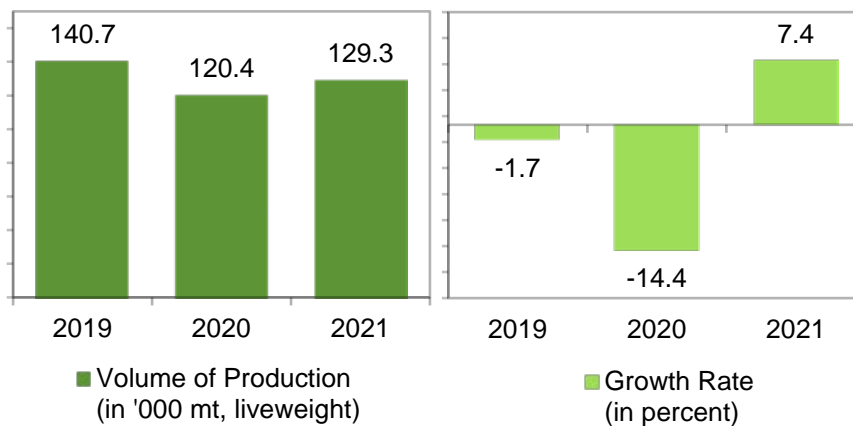
## HIGHLIGHTS

### 1. Volume of Production

#### a. National Liveweight

The January to December 2021 total carabao production was estimated at 129.34 thousand metric tons, liveweight. This was 7.4 percent higher than the previous year's output of 120.41 thousand metric tons, liveweight. (Figure 1 and Table 1)

Figure 1. Volume of Carabao Production (in '000 mt, livewieght) and Annual Growth Rate, Philippines January-December 2019-2021<sup>P</sup>

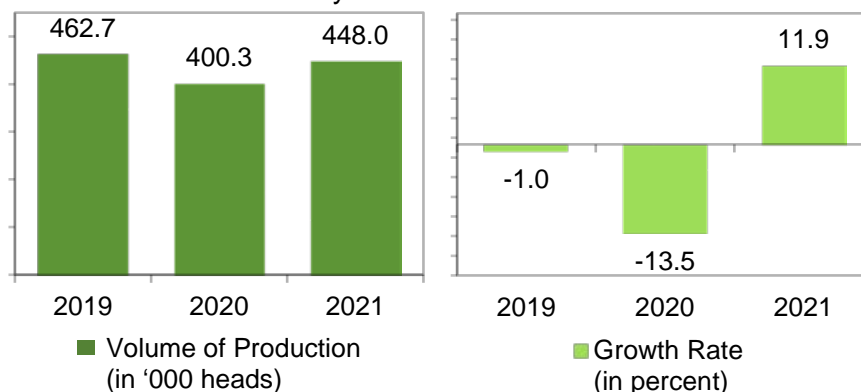


<sup>P</sup>- preliminary  
Source: Philippine Statistics Authority

#### Number of Heads

In 2021, the total volume of carabao production was estimated at 448.04 thousand heads. This was 11.9 percent higher than the previous year's record of 400.28 thousand heads. (Figure 2 and Table 2)

Figure 2. Volume of Carabao Production (in '000 heads) and Annual Growth Rate, Philippines January-December 2019-2021<sup>P</sup>

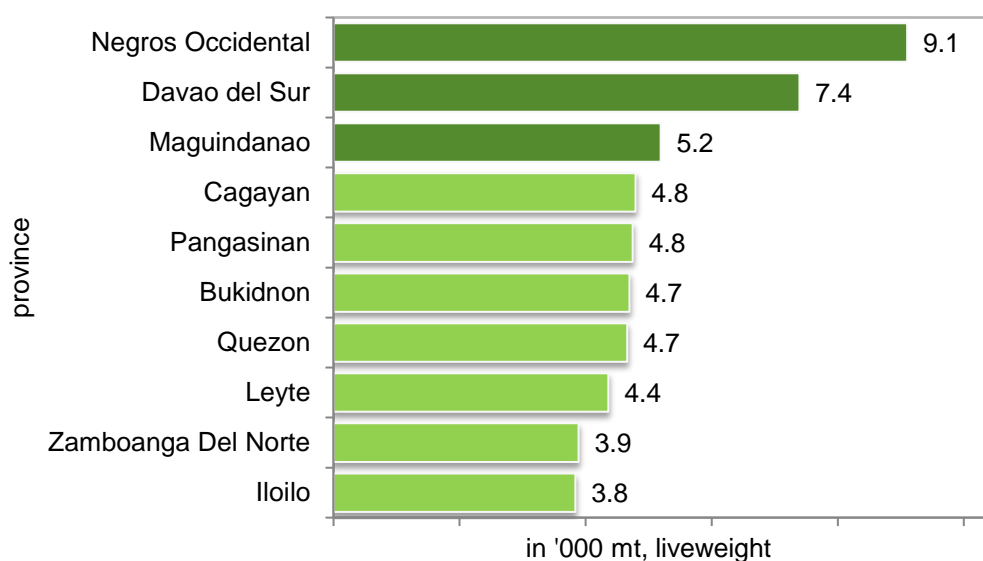


<sup>P</sup>- preliminary  
Source: Philippine Statistics Authority

## b. Provincial

Among the provinces, Negros Occidental was the highest producer of carabao in 2021 with a production of 9.10 thousand metric tons, liveweight or 7.0 percent of the country's total carabao production. This was followed by Davao Del Sur and Maguindanao with corresponding productions of 7.39 thousand metric tons, liveweight and 5.19 thousand metric tons, liveweight. Completing the top 10 producing provinces were Cagayan, Pangasinan, Bukidnon, Quezon, Leyte, Zamboanga Del Norte, and Iloilo. These provinces accounted for 40.7 percent of the country's total carabao production. (Figure 3 and Table 3)

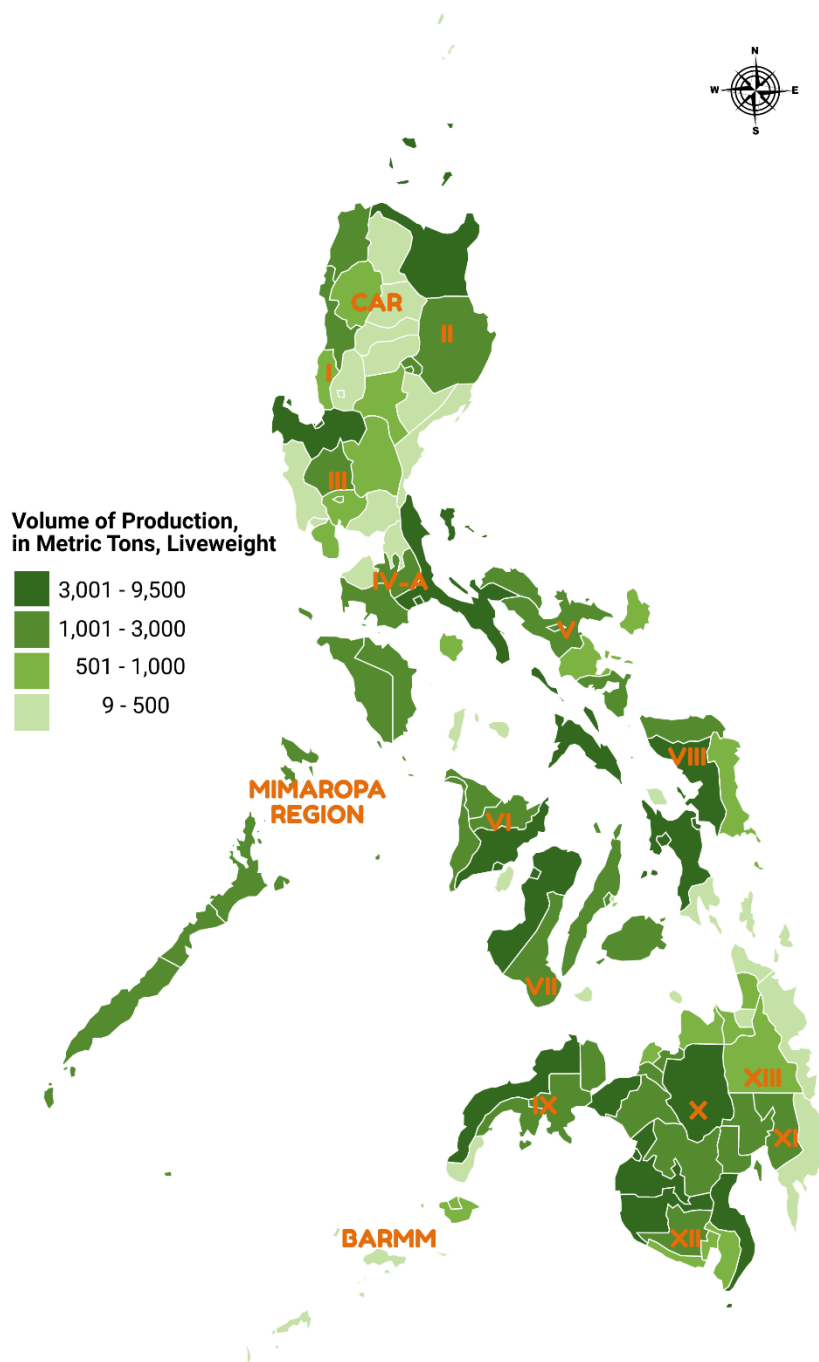
Figure 3. Volume of Production of Top 10 Carabao-Producing Provinces  
Philippines: January-December 2021<sup>P</sup>



<sup>P</sup> - preliminary

Source: Philippine Statistics Authority

Figure 4. Thematic Map of Volume of Carabao Production (by province)  
 Philippines: January-December 2021<sup>P</sup>



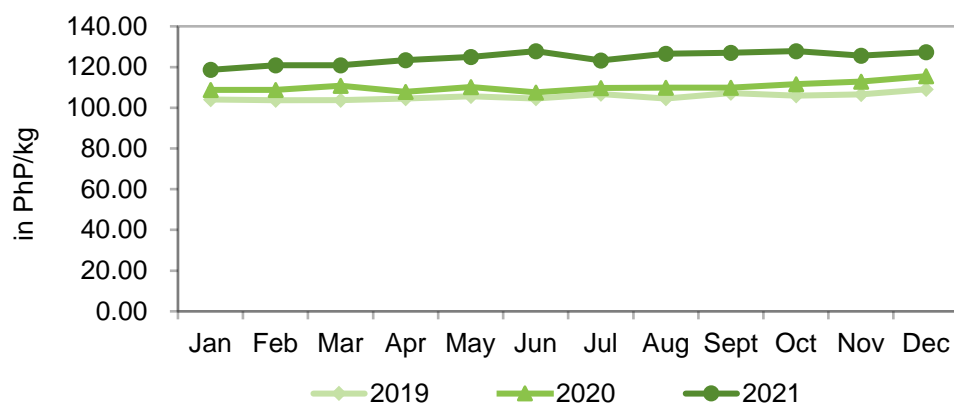
<sup>P</sup>- preliminary  
 Source: Philippine Statistics Authority

## 2. Prices

In 2021, the average farmgate price of carabao for slaughter was quoted at PhP 124.51 per kilogram, liveweight. This was 12.9 percent higher than the previous year's average farmgate price of PhP 110.28 per kilogram, liveweight.

During the reference year, the highest farmgate price was recorded in October at PhP 127.84 per kilogram, liveweight, while the lowest was in January at PhP 118.61 per kilogram, liveweight. (Figure 5 and Table 5)

Figure 5. Average Farmgate Prices of Carabao for Slaughter (backyard), Philippines: January-December 2019<sup>r</sup>-2021<sup>p</sup>



<sup>r</sup> - revised

<sup>p</sup> - preliminary

Source: Philippine Statistics Authority

## 3. Value of Production

The January to December 2021 gross value of carabao production at current prices was PhP 16.16 billion or 22.1 percent higher than the previous year's gross record of PhP 13.23 billion.

At constant prices, the gross value of carabao production expanded to PhP 12.33 billion. This was higher than the previous year's earnings of PhP 11.48 billion earnings in 2020. (Table 6)

## 4. Imports

The total volume of imported carabeef in 2021 was 43.20 thousand metric tons. This was 38.8 percent higher than the previous year's level of 31.14 thousand metric tons.

The total value of imported carabeef in 2021 increased by 53.2 percent, from USD 90.88 million in 2020 to USD 139.23 million in 2021. The highest was reported during April to June of 2021 at USD 50.09 million. (Table 7)

# **STATISTICAL TABLE**

Table 1. Volume of Carabao Production by Quarter, Philippines: 2019-2021<sup>P</sup>

Quarter	Volume of Production (in '000 metric tons, liveweight)			Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>Annual</b>	<b>140.66</b>	<b>120.41</b>	<b>129.34</b>	<b>-14.4</b>	<b>7.4</b>
January-March	30.40	29.80	27.30	-2.0	-8.4
April-June	37.67	27.67	34.93	-26.5	26.2
July-September	30.05	27.74	29.87	-7.7	7.7
October-December	42.54	35.19	37.24	-17.3	5.8

<sup>P</sup>- preliminary

Note: Details may not add up to total due to rounding. Growth Rates may yield different results when computed manually due to rounding.

Source: Philippine Statistics Authority

Table 2. Volume of Carabao Production by Region, Philippines: 2019-2021<sup>P</sup>

REGION	Volume of Production (in '000 heads)			Annual Growth Rate (in percent)		Percent Share
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>	2021 <sup>P</sup>
<b>PHILIPPINES</b>	<b>462.72</b>	<b>400.28</b>	<b>448.04</b>	<b>-13.5</b>	<b>11.9</b>	<b>100.0</b>
CAR	10.19	9.55	9.32	-6.2	-2.5	2.1
I - Ilocos Region	26.93	23.75	28.24	-11.8	18.9	6.3
II - Cagayan Valley	35.63	33.28	31.71	-6.6	-4.7	7.1
III - Central Luzon	21.74	18.93	18.49	-12.9	-2.3	4.1
IVA – CALABARZON	28.75	26.43	30.45	-8.1	15.2	6.8
MIMAROPA Region	16.55	16.40	20.56	-0.9	25.4	4.6
V - Bicol Region	27.47	25.41	29.70	-7.5	16.9	6.6
VI - Western Visayas	67.55	55.96	60.78	-17.2	8.6	13.6
VII - Central Visayas	23.10	14.91	22.42	-35.5	50.4	5.0
VIII - Eastern Visayas	38.01	30.35	38.08	-20.2	25.5	8.5
IX - Zamboanga Peninsula	31.96	30.27	31.09	-5.3	2.7	6.9
X - Northern Mindanao	27.11	23.83	34.01	-12.1	42.7	7.6
XI - Davao Region	39.54	31.04	33.09	-21.5	6.6	7.4
XII – SOCCSKSARGEN	31.65	28.10	27.65	-11.2	-1.6	6.2
XIII – Caraga	7.96	7.66	5.59	-3.8	-27.0	1.2
BARMM	28.59	24.42	26.88	-14.6	10.1	6.0

<sup>P</sup>- preliminary

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

Source: Philippine Statistics Authority

Table 3. Volume of Carabao Production (in metric tons, liveweight) by Province  
Philippines: 2019-2021<sup>P</sup>

Region/Province	Production			Annual Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>Philippines</b>	<b>140,661</b>	<b>120,410</b>	<b>129,345</b>	<b>-14.4</b>	<b>7.4</b>
<b>CAR</b>	<b>2,850</b>	<b>2,641</b>	<b>2,553</b>	<b>-7.3</b>	<b>-3.3</b>
Abra	973	982	889	1.0	-9.5
Apayao	476	473	442	-0.7	-6.6
Benguet	375	358	369	-4.7	3.2
Ifugao	509	473	467	-7.0	-1.2
Kalinga	391	299	330	-23.5	10.2
Mountain Province	126	56	57	-55.4	1.3
<b>I - Ilocos Region</b>	<b>8,587</b>	<b>7,479</b>	<b>8,473</b>	<b>-12.9</b>	<b>13.3</b>
Ilocos Norte	1,221	1,078	1,517	-11.8	40.8
Ilocos Sur	930	877	1,381	-5.7	57.4
La Union	1,112	703	828	-36.8	17.8
Pangasinan	5,323	4,821	4,747	-9.4	-1.5
<b>II - Cagayan Valley</b>	<b>9,281</b>	<b>8,725</b>	<b>8,359</b>	<b>-6.0</b>	<b>-4.2</b>
Batanes	22	17	23	-19.6	30.9
Cagayan	5,350	4,920	4,793	-8.0	-2.6
Isabela	2,837	2,630	2,442	-7.3	-7.1
Nueva Vizcaya	637	789	716	23.9	-9.2
Quirino	435	369	385	-15.2	4.2
<b>III - Central Luzon</b>	<b>5,846</b>	<b>5,082</b>	<b>4,931</b>	<b>-13.1</b>	<b>-3.0</b>
Aurora	344	174	186	-49.5	6.8
Bataan	601	610	622	1.5	1.8
Bulacan	445	372	339	-16.5	-8.9
Nueva Ecija	1,025	651	585	-36.5	-10.2
Pampanga	1,108	1,005	902	-9.2	-10.3
Tarlac	2,008	1,960	1,994	-2.4	1.7
Zambales	315	309	305	-1.8	-1.5
<b>IVA - CALABARZON</b>	<b>7,945</b>	<b>7,762</b>	<b>9,133</b>	<b>-2.3</b>	<b>17.7</b>
Batangas	1,115	835	1,614	-25.1	93.3
Cavite	245	190	171	-22.4	-10.4
Laguna	2,089	1,933	2,277	-7.5	17.8
Quezon	4,034	4,403	4,657	9.1	5.8
Rizal	462	401	414	-13.2	3.1
<b>MIMAROPA Region</b>	<b>4,916</b>	<b>4,778</b>	<b>5,703</b>	<b>-2.8</b>	<b>19.4</b>
Marinduque	949	872	568	-8.1	-34.9
Occidental Mindoro	607	343	1,573	-43.6	359.3
Oriental Mindoro	1,681	1,882	1,192	11.9	-36.7
Palawan	1,356	1,395	2,113	2.8	51.5
Romblon	322	287	258	-11.0	-10.2

Table 3. -- Continued

Region/Province	Production			Annual Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>V - Bicol Region</b>	<b>8,511</b>	<b>7,754</b>	<b>8,095</b>	<b>-8.9</b>	<b>4.4</b>
Albay	1,090	926	991	-15.0	6.9
Camarines Norte	1,075	1,098	1,148	2.2	4.6
Camarines Sur	1,251	1,089	1,171	-12.9	7.5
Catanduanes	509	531	552	4.2	4.1
Masbate	3,254	3,018	3,114	-7.2	3.2
Sorsogon	1,333	1,092	1,119	-18.1	2.5
<b>VI - Western Visayas</b>	<b>21,245</b>	<b>16,899</b>	<b>17,223</b>	<b>-20.5</b>	<b>1.9</b>
Aklan	1,245	1,019	1,006	-18.1	-1.3
Antique	1,101	909	1,129	-17.4	24.2
Capiz	2,657	2,096	2,027	-21.1	-3.3
Guimaras	210	127	123	-39.9	-3.1
Iloilo	6,015	4,382	3,838	-27.1	-12.4
Negros Occidental	10,018	8,366	9,101	-16.5	8.8
<b>VII - Central Visayas</b>	<b>7,818</b>	<b>4,802</b>	<b>6,316</b>	<b>-38.6</b>	<b>31.5</b>
Bohol	2,792	1,605	2,410	-42.5	50.1
Cebu	2,159	775	1,629	-64.1	110.2
Negros Oriental	2,855	2,413	2,272	-15.5	-5.8
Siquijor	12	9	5	-28.9	-42.7
<b>VIII - Eastern Visayas</b>	<b>11,604</b>	<b>9,209</b>	<b>10,811</b>	<b>-20.6</b>	<b>17.4</b>
Biliran	254	144	257	-43.2	77.9
Eastern Samar	1,010	767	861	-24.1	12.3
Leyte	5,699	4,994	4,360	-12.4	-12.7
Northern Samar	2,462	1,432	1,757	-41.8	22.7
Samar	1,795	1,579	3,178	-12.0	101.3
Southern Leyte	384	293	398	-23.7	35.9
<b>IX - Zamboanga Peninsula</b>	<b>8,104</b>	<b>7,628</b>	<b>7,842</b>	<b>-5.9</b>	<b>2.8</b>
Zamboanga del Norte	4,245	3,928	3,890	-7.5	-1.0
Zamboanga del Sur	2,578	2,355	2,866	-8.6	21.7
Zamboanga City	472	460	*	-2.6	*
Zamboanga Sibugay	809	885	1,086	9.3	22.7
<b>X - Northern Mindanao</b>	<b>9,648</b>	<b>8,575</b>	<b>9,836</b>	<b>-11.1</b>	<b>14.7</b>
Bukidnon	4,167	3,760	4,694	-9.8	24.8
Camiguin	122	25	111	-79.5	345.8
Lanao del Norte	3,126	2,787	3,165	-10.8	13.6
Misamis Occidental	1,088	1,202	1,213	10.4	1.0
Misamis Oriental	1,145	802	653	-30.0	-18.6

Continued



Table 3. -- Concluded

Region/Province	Production			Annual Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>XI - Davao Region</b>	<b>13,033</b>	<b>10,179</b>	<b>11,307</b>	<b>-21.9</b>	<b>11.1</b>
Davao de Oro	1,370	1,331	1,316	-2.8	-1.1
Davao del Norte	2,035	1,880	1,923	-7.6	2.3
Davao del Sur	5,035	3,478	7,393	-30.9	112.5
Davao City	3,089	2,828	**	-8.4	**
Davao Occidental	293	313	328	6.8	4.7
Davao Oriental	1,212	349	348	-71.2	-0.1
<b>XII - SOCCSKSARGEN</b>	<b>10,454</b>	<b>9,462</b>	<b>9,125</b>	<b>-9.5</b>	<b>-3.6</b>
Cotabato	2,967	2,412	2,536	-18.7	5.1
Sarangani	1,357	1,403	656	3.3	-53.2
South Cotabato	2,749	2,307	2,546	-16.1	10.4
Sultan Kudarat	3,380	3,340	3,387	-1.2	1.4
<b>XIII – Caraga</b>	<b>2,473</b>	<b>2,370</b>	<b>1,694</b>	<b>-4.2</b>	<b>-28.5</b>
Agusan del Norte	466	510	542	9.5	6.2
Agusan del Sur	1,017	1,012	734	-0.5	-27.5
Surigao del Norte	516	369	102	-28.6	-72.3
Surigao del Sur	459	468	305	1.9	-34.8
Dinagat Islands	15	11	10	-28.6	-5.7
<b>BARMM</b>	<b>8,346</b>	<b>7,066</b>	<b>7,943</b>	<b>-15.3</b>	<b>12.4</b>
Basilan	648	563	731	-13.1	29.8
Lanao del Sur	2,611	1,814	1,935	-30.5	6.7
Maguindanao	5,046	4,644	5,190	-8.0	11.8
Sulu	10	10	10	-4.3	5.0
Tawi-tawi	30	35	75	13.9	117.4

<sup>P</sup>- preliminary

\* - data included in Zamboanga del Sur

\*\* - data included in Davao del Sur

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

Source: Philippine Statistics Authority

Table 4. Volume of Carabao Production (in heads) by Province  
Philippines: 2019-2021<sup>P</sup>

Region/Province	Production			Annual Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>Philippines</b>	<b>462,722</b>	<b>400,276</b>	<b>448,044</b>	<b>-13.5</b>	<b>11.9</b>
<b>CAR</b>	<b>10,185</b>	<b>9,554</b>	<b>9,316</b>	<b>-6.2</b>	<b>-2.5</b>
Abra	3,890	3,929	3,554	1.0	-9.5
Apayao	1,741	1,791	1,638	2.9	-8.5
Benguet	1,220	1,118	1,143	-8.4	2.2
Ifugao	1,647	1,530	1,556	-7.1	1.7
Kalinga	1,328	1,026	1,263	-22.7	23.1
Mountain Province	359	160	162	-55.4	1.3
<b>I - Ilocos Region</b>	<b>26,930</b>	<b>23,745</b>	<b>28,240</b>	<b>-11.8</b>	<b>18.9</b>
Ilocos Norte	4,369	3,630	4,646	-16.9	28.0
Ilocos Sur	3,352	3,113	4,711	-7.1	51.3
La Union	3,995	2,577	3,040	-35.5	18.0
Pangasinan	15,214	14,425	15,843	-5.2	9.8
<b>II - Cagayan Valley</b>	<b>35,632</b>	<b>33,283</b>	<b>31,706</b>	<b>-6.6</b>	<b>-4.7</b>
Batanes	80	66	86	-17.5	30.3
Cagayan	20,372	18,714	17,958	-8.1	-4.0
Isabela	11,436	10,422	9,703	-8.9	-6.9
Nueva Vizcaya	2,200	2,720	2,515	23.6	-7.5
Quirino	1,544	1,361	1,444	-11.9	6.1
<b>III - Central Luzon</b>	<b>21,738</b>	<b>18,926</b>	<b>18,488</b>	<b>-12.9</b>	<b>-2.3</b>
Aurora	1,249	649	882	-48.0	35.9
Bataan	1,922	1,993	1,982	3.7	-0.6
Bulacan	1,470	1,225	1,134	-16.7	-7.4
Nueva Ecija	3,501	2,054	2,055	-41.3	0.0
Pampanga	4,009	3,632	3,009	-9.4	-17.2
Tarlac	8,031	7,844	7,883	-2.3	0.5
Zambales	1,556	1,529	1,543	-1.7	0.9
<b>IVA - CALABARZON</b>	<b>28,754</b>	<b>26,425</b>	<b>30,446</b>	<b>-8.1</b>	<b>15.2</b>
Batangas	3,863	2,859	5,657	-26.0	97.9
Cavite	791	614	552	-22.4	-10.1
Laguna	8,169	7,105	7,582	-13.0	6.7
Quezon	14,447	14,510	15,186	0.4	4.7
Rizal	1,484	1,337	1,469	-9.9	9.9
<b>MIMAROPA Region</b>	<b>16,551</b>	<b>16,396</b>	<b>20,555</b>	<b>-0.9</b>	<b>25.4</b>
Marinduque	3,244	2,965	2,666	-8.6	-10.1
Occidental Mindoro	1,824	1,038	5,275	-43.1	408.2
Oriental Mindoro	5,811	6,720	4,625	15.6	-31.2
Palawan	4,521	4,649	7,069	2.8	52.1
Romblon	1,151	1,024	920	-11.0	-10.2

Table 4. -- Continued

Region/Province	Production			Annual Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>V - Bicol Region</b>	<b>27,473</b>	<b>25,412</b>	<b>29,703</b>	<b>-7.5</b>	<b>16.9</b>
Albay	4,031	3,600	3,492	-10.7	-3.0
Camarines Norte	3,225	3,337	3,759	3.5	12.6
Camarines Sur	4,254	3,710	4,097	-12.8	10.4
Catanduanes	2,525	2,634	3,365	4.3	27.8
Masbate	9,707	9,011	11,373	-7.2	26.2
Sorsogon	3,731	3,120	3,617	-16.4	15.9
<b>VI - Western Visayas</b>	<b>67,553</b>	<b>55,955</b>	<b>60,776</b>	<b>-17.2</b>	<b>8.6</b>
Aklan	4,376	3,597	3,532	-17.8	-1.8
Antique	3,714	3,266	4,033	-12.1	23.5
Capiz	8,858	7,856	7,605	-11.3	-3.2
Guimaras	747	506	426	-32.3	-15.8
Iloilo	20,824	16,826	14,980	-19.2	-11.0
Negros Occidental	29,034	23,904	30,200	-17.7	26.3
<b>VII - Central Visayas</b>	<b>23,098</b>	<b>14,906</b>	<b>22,422</b>	<b>-35.5</b>	<b>50.4</b>
Bohol	8,721	5,752	9,894	-34.0	72.0
Cebu	6,444	2,313	4,863	-64.1	110.2
Negros Oriental	7,895	6,814	7,650	-13.7	12.3
Siquijor	38	27	15	-28.9	-44.4
<b>VIII - Eastern Visayas</b>	<b>38,011</b>	<b>30,348</b>	<b>38,082</b>	<b>-20.2</b>	<b>25.5</b>
Biliran	906	515	969	-43.2	88.2
Eastern Samar	3,368	2,317	2,668	-31.2	15.1
Leyte	17,733	16,011	14,603	-9.7	-8.8
Northern Samar	8,282	4,828	6,901	-41.7	42.9
Samar	6,140	5,447	11,028	-11.3	102.5
Southern Leyte	1,582	1,230	1,913	-22.3	55.5
<b>IX - Zamboanga Peninsula</b>	<b>31,956</b>	<b>30,274</b>	<b>31,091</b>	<b>-5.3</b>	<b>2.7</b>
Zamboanga del Norte	15,745	14,565	15,189	-7.5	4.3
Zamboanga del Sur	10,315	9,706	11,608	-5.9	19.6
Zamboanga City	2,292	2,229	*	-2.7	*
Zamboanga Sibugay	3,604	3,774	4,294	4.7	13.8
<b>X - Northern Mindanao</b>	<b>27,108</b>	<b>23,828</b>	<b>34,012</b>	<b>-12.1</b>	<b>42.7</b>
Bukidnon	11,903	10,748	19,696	-9.7	83.3
Camiguin	405	83	370	-79.5	345.8
Lanao del Norte	8,477	7,283	8,274	-14.1	13.6
Misamis Occidental	3,185	3,516	3,665	10.4	4.2
Misamis Oriental	3,138	2,198	2,007	-30.0	-8.7

Continued

Table 4. -- Concluded

Region/Province	Production			Annual Growth Rate (in percent)	
	2019	2020	2021 <sup>P</sup>	2020	2021 <sup>P</sup>
<b>XI - Davao Region</b>	<b>39,535</b>	<b>31,043</b>	<b>33,090</b>	<b>-21.5</b>	<b>6.6</b>
Davao de Oro	4,125	4,003	4,113	-3.0	2.7
Davao del Norte	5,813	5,371	5,374	-7.6	0.1
Davao del Sur	14,385	9,938	20,437	-30.9	105.6
Davao City	9,948	9,167	**	-7.9	**
Davao Occidental	1,077	1,223	1,416	13.6	15.8
Davao Oriental	4,187	1,341	1,750	-68.0	30.5
<b>XII - SOCCSKSARGEN</b>	<b>31,646</b>	<b>28,102</b>	<b>27,651</b>	<b>-11.2</b>	<b>-1.6</b>
Cotabato	9,271	7,536	7,926	-18.7	5.2
Sarangani	4,176	4,308	2,016	3.2	-53.2
South Cotabato	7,853	6,590	7,992	-16.1	21.3
Sultan Kudarat	10,346	9,668	9,717	-6.6	0.5
<b>XIII – Caraga</b>	<b>7,964</b>	<b>7,661</b>	<b>5,589</b>	<b>-3.8</b>	<b>-27.0</b>
Agusan del Norte	1,508	1,650	1,780	9.4	7.9
Agusan del Sur	3,125	3,129	2,291	0.1	-26.8
Surigao del Norte	1,784	1,322	507	-25.9	-61.6
Surigao del Sur	1,498	1,525	978	1.8	-35.9
Dinagat Islands	49	35	33	-28.6	-5.7
<b>BARMM</b>	<b>28,588</b>	<b>24,418</b>	<b>26,877</b>	<b>-14.6</b>	<b>10.1</b>
Basilan	3,241	2,737	3,657	-15.6	33.6
Lanao del Sur	7,578	5,315	5,912	-29.9	11.2
Maguindanao	17,629	16,210	17,017	-8.0	5.0
Sulu	45	41	41	-8.9	0.0
Tawi-Tawi	95	115	250	21.1	117.4

<sup>P</sup>- preliminary

\* - data included in Zamboanga del Sur

\*\* - data included in Davao del Sur

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

Source: Philippine Statistics Authority

Table 5. Average Farmgate Prices of Carabao for Slaughter (backyard)  
by Month, Philippines: 2019<sup>r</sup>-2021<sup>p</sup>

Month	Average Farmgate Price (PhP per kilogram, liveweight)			Growth Rate (in percent)	
	2019 <sup>r</sup>	2020 <sup>r</sup>	2021 <sup>p</sup>	2020 <sup>r</sup>	2021 <sup>p</sup>
<b>Annual Average</b>	<b>105.53</b>	<b>110.28</b>	<b>124.51</b>	<b>4.5</b>	<b>12.9</b>
January	104.06	108.77	118.61	4.5	9.0
February	103.69	108.72	120.87	4.9	11.2
March	103.76	110.80	120.91	6.8	9.1
April	104.59	107.89	123.38	3.2	14.4
May	105.70	110.25	124.93	4.3	13.3
June	104.55	107.57	127.80	2.9	18.8
July	106.69	109.74	123.25	2.9	12.3
August	104.56	109.90	126.52	5.1	15.1
September	107.26	109.85	126.97	2.4	15.6
October	105.88	111.56	127.84	5.4	14.6
November	106.56	112.82	125.65	5.9	11.4
December	109.07	115.49	127.38	5.9	10.3

<sup>r</sup>- revised

<sup>p</sup>- preliminary

Note: Annual averages and growth rates may yield different results when computed manually due to rounding.

Source: Price Statistics Division, Philippine Statistics Authority (PSD, PSA)

Table 6. Value of Carabao Production at Current and Constant Prices  
by Quarter, Philippines: 2019<sup>r</sup>-2021<sup>p</sup>

Quarter	Value of Production (in million pesos)			Growth Rate (in percent)	
	2019 <sup>r</sup>	2020 <sup>r</sup>	2021 <sup>p</sup>	2020 <sup>r</sup>	2021 <sup>p</sup>
<b>Current Prices</b>					
<b>Annual</b>	<b>13,993</b>	<b>13,231</b>	<b>16,155</b>	<b>-5.4</b>	<b>22.1</b>
January-March	2,963	3,245	3,278	9.5	1.0
April-June	3,693	2,994	4,386	-18.9	46.5
July-September	3,003	3,029	3,755	0.9	24.0
October-December	4,334	3,963	4,736	-8.6	19.5
<b>Constant Prices (2018=100)</b>					
<b>Annual</b>	<b>13,413</b>	<b>11,482</b>	<b>12,332</b>	<b>-14.4</b>	<b>7.4</b>
January-March	2,829	2,774	2,541	-1.9	-8.4
April-June	3,506	2,575	3,251	-26.6	26.3
July-September	2,898	2,675	2,881	-7.7	7.7
October-December	4,180	3,458	3,659	-17.3	5.8

<sup>r</sup>- revised

<sup>p</sup>- preliminary

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

Source: Agricultural Accounts Division, Philippine Statistics Authority (AAD, PSA)

Table 7. Volume and Value of Carabeef Imports by Quarter, Philippines: 2019-2021<sup>P</sup>

Quarter	Volume and Value of Carabeef Imports (in metric tons, and in CIF '000 USD)			Growth Rate (in percent)	
	2019	2020 <sup>r</sup>	2021 <sup>P</sup>	2020 <sup>r</sup>	2021 <sup>P</sup>
<b>Volume</b> (in metric tons)					
<b>Annual</b>	<b>32,569.96</b>	<b>31,135.00</b>	<b>43,204.88</b>	<b>-4.4</b>	<b>38.8</b>
January-March	8,622.64	10,525.83	10,751.96	22.1	2.1
April-June	10,864.40	1,175.41	15,428.95	-89.2	1,212.6
July-September	6,110.40	11,262.74	12,096.00	84.3	7.4
October-December	6,972.52	8,171.02	4,927.98	17.2	-39.7
<b>Value</b> (in CIF '000 USD)					
<b>Annual</b>	<b>91,958.30</b>	<b>90,884.00</b>	<b>139,230.75</b>	<b>-1.2</b>	<b>53.2</b>
January-March	24,984.40	29,568.08	31,719.93	18.3	7.3
April-June	30,282.40	3,326.06	50,092.74	-89.0	1,406.1
July-September	17,128.20	33,930.46	42,059.98	98.1	24.0
October-December	19,563.30	24,059.40	15,358.11	23.0	-36.2

<sup>r</sup>- revised

<sup>P</sup>- preliminary

CIF - Cost, Insurance and Freight

Note: Details may not add up to total due to rounding. Growth Rates may yield different results when computed manually due to rounding.

Source: Trade Statistics Division, Philippine Statistics Authority (TSD, PSA)

Table 8. Number of Carabao Slaughtered in Slaughterhouses  
by Quarter and Region, Philippines: 2020-2021<sup>P</sup>  
(in number of heads)

Region	2020						
	Q1	Q2	Sem1	Q3	Q4	Sem2	Annual
<b>Philippines</b>	<b>58,675</b>	<b>31,806</b>	<b>90,481</b>	<b>41,690</b>	<b>56,990</b>	<b>98,680</b>	<b>189,161</b>
NCR	8,942	3,917	12,859	6,721	9,348	16,069	28,928
CAR	233	177	410	217	404	621	1,031
I - Ilocos Region	6,011	2,661	8,672	4,447	6,217	10,664	19,336
II - Cagayan Valley	4,350	3,163	7,513	3,532	4,387	7,919	15,432
III - Central Luzon	4,370	2,815	7,185	3,256	4,623	7,879	15,064
IVA - CALABARZON	4,970	1,834	6,804	3,514	5,273	8,787	15,591
MIMAROPA Region	237	167	404	300	357	657	1,061
V - Bicol Region	1,384	823	2,207	1,264	1,520	2,784	4,991
VI - Western Visayas	12,740	7,557	20,297	7,982	11,413	19,395	39,692
VII - Central Visayas	2,646	532	3,178	669	1,866	2,535	5,713
VIII - Eastern Visayas	3,306	2,444	5,750	2,441	2,708	5,149	10,899
IX-Zamboanga Peninsula	2,294	1,259	3,553	1,580	2,365	3,945	7,498
X - Northern Mindanao	967	686	1,653	762	820	1,582	3,235
XI - Davao Region	3,003	701	3,704	1,871	2,179	4,050	7,754
XII - SOCCSKSARGEN	1,869	1,070	2,939	1,356	1,880	3,236	6,175
XIII - Caraga	706	1,475	2,181	1,213	1,040	2,253	4,434
BARMM	647	525	1,172	565	590	1,155	2,327
Region	2021 <sup>P</sup>						
	Q1	Q2	Sem1	Q3	Q4	Sem2	Annual
<b>Philippines</b>	<b>57,876</b>	<b>58,719</b>	<b>116,595</b>	<b>54,998</b>	<b>63,034</b>	<b>118,032</b>	<b>234,627</b>
NCR	10,004	8,380	18,384	6,130	8,659	14,789	33,173
CAR	474	409	883	459	467	926	1,809
I - Ilocos Region	5,876	5,565	11,441	5,111	5,874	10,985	22,426
II - Cagayan Valley	4,020	4,528	8,548	3,970	4,302	8,272	16,820
III - Central Luzon	4,388	4,031	8,419	4,628	4,810	9,438	17,857
IVA - CALABARZON	5,663	5,924	11,587	5,489	6,761	12,250	23,837
MIMAROPA Region	420	298	718	351	431	782	1,500
V - Bicol Region	1,923	1,775	3,698	1,659	1,712	3,371	7,069
VI - Western Visayas	11,225	11,516	22,741	11,371	12,377	23,748	46,489
VII - Central Visayas	1,586	2,010	3,596	1,882	2,391	4,273	7,869
VIII - Eastern Visayas	3,461	4,113	7,574	4,202	4,491	8,693	16,267
IX-Zamboanga Peninsula	1,985	1,891	3,876	1,829	2,138	3,967	7,843
X - Northern Mindanao	846	920	1,766	844	1,060	1,904	3,670
XI - Davao Region	2,076	3,042	5,118	2,558	2,700	5,258	10,376
XII - SOCCSKSARGEN	2,123	2,134	4,257	2,353	2,536	4,889	9,146
XIII - Caraga	1,041	1,431	2,472	1,471	1,584	3,055	5,527
BARMM	765	752	1,517	691	741	1,432	2,949

<sup>P</sup>- preliminary

Source: Philippine Statistics Authority

Table 9. Inventory of Carabao by Farm Type and Region, Philippines  
As of 01 January and 01 July 2020-2021<sup>P</sup>

Region/Farm Type	Inventory (in number of heads)			
	2020		2021 <sup>P</sup>	
	01 Jan	01 Jul	01 Jan	01 Jul
<b>Total</b>				
<b>Philippines</b>	<b>2,865,715</b>	<b>2,897,764</b>	<b>2,849,006</b>	<b>2,846,879</b>
CAR	88,036	91,506	78,336	79,094
I - Ilocos Region	178,438	185,670	184,469	179,354
II - Cagayan Valley	220,592	218,836	216,474	215,807
III - Central Luzon	232,243	227,713	236,699	234,993
IVA – CALABARZON	178,901	183,475	179,938	182,316
MIMAROPA Region	135,011	136,667	112,063	112,108
V - Bicol Region	316,528	322,397	325,063	323,797
VI - Western Visayas	293,017	292,775	291,549	289,287
VII - Central Visayas	195,119	202,373	206,862	209,315
VIII - Eastern Visayas	206,248	208,011	207,924	207,042
IX - Zamboanga Peninsula	146,813	147,396	145,001	143,440
X - Northern Mindanao	127,284	129,084	132,280	130,723
XI - Davao Region	143,922	142,703	144,405	141,974
XII – SOCCSKSARGEN	199,895	200,623	201,549	200,743
XIII – Caraga	80,749	80,436	80,332	80,566
BARMM	122,919	128,099	106,062	116,320
<b>Backyard</b>				
<b>Philippines</b>	<b>2,855,087</b>	<b>2,887,754</b>	<b>2,839,361</b>	<b>2,837,583</b>
CAR	87,720	91,286	78,022	78,747
I - Ilocos Region	177,933	185,161	184,032	178,890
II - Cagayan Valley	217,680	215,925	213,526	212,892
III - Central Luzon	229,296	224,918	233,795	232,094
IVA – CALABARZON	178,286	182,863	179,747	182,141
MIMAROPA Region	134,719	136,375	111,970	112,010
V - Bicol Region	316,067	321,913	324,631	323,521
VI - Western Visayas	292,688	292,469	291,270	289,010
VII - Central Visayas	194,581	201,902	206,360	208,783
VIII - Eastern Visayas	205,808	207,753	207,518	206,846
IX - Zamboanga Peninsula	146,683	147,275	144,833	143,286
X - Northern Mindanao	126,689	128,701	131,869	130,329
XI - Davao Region	143,627	142,402	144,182	141,748
XII – SOCCSKSARGEN	199,701	200,345	201,259	200,439
XIII – Caraga	80,690	80,367	80,285	80,527
BARMM	122,919	128,099	106,062	116,320

Continued



Table 9. -- Concluded

Region/Farm Type	Inventory (in number of heads)			
	2020		2021 <sup>P</sup>	
	01 Jan	01 Jul	01 Jan	01 Jul
<b>Commercial</b>				
<b>Philippines</b>	<b>10,628</b>	<b>10,010</b>	<b>9,645</b>	<b>9,296</b>
CAR	316	220	314	347
I - Ilocos Region	505	509	437	464
II - Cagayan Valley	2,912	2,911	2,948	2,915
III - Central Luzon	2,947	2,795	2,904	2,899
IVA – CALABARZON	615	612	191	175
MIMAROPA Region	292	292	93	98
V - Bicol Region	461	484	432	276
VI - Western Visayas	329	306	279	277
VII - Central Visayas	538	471	502	532
VIII - Eastern Visayas	440	258	406	196
IX - Zamboanga Peninsula	130	121	168	154
X - Northern Mindanao	595	383	411	394
XI - Davao Region	295	301	223	226
XII – SOCCSKSARGEN	194	278	290	304
XIII – Caraga	59	69	47	39
BARMM	..	..	..	..

<sup>P</sup>- preliminary

(..) - data not applicable

Source: Philippine Statistics Authority

# **TECHNICAL NOTES**

## TECHNICAL NOTES

### I. Introduction

The Carabao Situation Report presents the industry situation in terms of volume and value of production, monthly average farmgate and retail prices, and volume and value of pork imports. 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 2021, the number of sample households covered was 22,144 from 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 commercial farm/establishment level. There were 141 sample carabao commercial farms/establishments covered in 2021.

Both surveys are conducted every quarter in all provinces. Moreover, the commodities covered in the surveys include: cattle; carabao; swine; and goat for livestock, while chicken; chicken eggs; duck; and duck eggs for poultry.

The data on the number of carabaos slaughtered in slaughterhouses were sourced from the Compilation of Data from Slaughterhouses and Poultry Dressing Plants (CDSPDP), an administrative-based activity of the PSA. This activity covers 1,278 licensed to operate meat establishments (LTOMEs) and Locally Registered Meat Establishments (LRMEs) nationwide. This is undertaken in coordination with the National Meat Inspection Service (NMIS) and the Local Government Units (LGUs).

### II. Data Collection

#### A. Backyard Livestock and Poultry Survey

##### 1. Data collection procedure

The schedule of field data collection is every first seven (7) days of the month after the reference quarter. However, the data collection for the fourth quarter is done one (1) month earlier to comply with the Philippine System of National Accounts (PSNA) calendar. The data collection is 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 Central Office, and Field Offices, including SRs, is conducted to ensure uniform understanding of concepts and proper implementation of survey procedures. Field and manual editing of the accomplished questionnaires is 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 breeders that gave birth
- d. Number of born live
- e. Number of acquired animals
- f. Slaughtered in the household
- g. Sold live for slaughter and for other purposes
- h. Disposition by areas of destination
- i. Average liveweight
- j. Average farmgate price
- k. Number of deaths/losses and cause/reason
- l. Milk production indicators

## **B. Commercial Livestock and Poultry Survey**

### **1. Data collection procedure**

The schedule of field data collection is during the last ten (10) days of the quarter. However, the data collection for the fourth quarter is done one (1) month earlier to comply with the Philippine System of National Accounts (PSNA) calendar. The data collection is 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 Central Office and Field Office personnel, including SRs, is conducted to ensure that the procedures and concepts of the survey are understood and properly implemented. Field and manual editing of the accomplished questionnaires is done to ensure completeness, consistency and reasonableness of the information gathered.

### **2. Survey Questionnaire**

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

The data items included in the survey are as follows:

- a. Type of Operation/Purpose
- b. Inventory
- c. Number of breeders that gave birth
- d. Number of born live
- e. Number of acquired animals
- f. Slaughtered in the farm/establishment
- g. Sold live for slaughter and for other purposes
- h. Disposition by areas of destination
- i. Average liveweight
- j. Average farmgate price
- k. Number of deaths/losses and cause/reason
- l. Milk production indicator

## **C. Compilation of Data from Slaughterhouses and Poultry Dressing Plants**

### **1. Data collection procedure**

The schedule of field data collection is during first ten (10) days of the month and is undertaken by regular Provincial Statistics Office (PSO) personnel. The

data is obtained from the administrative records of National Meat Inspection Service (NMIS) and Locally Registered Meat Establishment (LRME) supervised by the Local Government Unit (LGUs).

## 2. Collection Forms

The collection forms used in CDSPDP consists of two (2) forms, namely CDSPDP Form 1a (Livestock) and CDSPDP Form 1b (Poultry). These forms aim to gather information on the number of livestock and poultry commodities slaughtered/dressed in slaughterhouses/poultry dressing plants.

The data items included in the forms are as follows:

- a. Number of Heads/Birds
- b. Total Carcass/Dressed weight

## 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 structured form- 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:

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

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

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

Where:

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

$w_{1i}$  = 1<sup>st</sup> stage weight

$w_{2ij}$  = 2<sup>nd</sup> 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)

The status applicable for eligible households are:

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

The status applicable for not eligible households are:

- Resides outside the barangay;
- Unknown in the locality;
- Deceased (No other member 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 2010 Livestock Population Survey (LPS). It is updated quarterly based on the results of visit of the sample farms/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. For Certainty Stratum (Complete Enumeration)

The total estimate for the province is obtained by aggregating the responses of commercial farms/establishments in the province using the following formula:

$$\hat{Y} = \sum_{i=1}^N y_i$$

where:

$\hat{Y}$  = estimated total for the province

$N$  = total number of farms in province p'

$y_i$  = survey data (inventory, production, etc.) for establishment i

#### b. For Non-certainty Stratum (Sampling)

##### b.1 Sampling weights

##### a. Base Weights

The base weights 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

##### b. Adjustment Factor

The adjustment factor is given as follows:

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

$A_h$  = 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)



$$X_{1hi} \text{ (Eligible)} = \begin{cases} 1, & \text{if result of final visit is 1a, 1b, 2a, 3a, and 3b} \\ 0, & \text{otherwise} \end{cases}$$

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

#### Result of Final Visit

Code 1a (Interview Completed - Operational)

Code 1b (Interview Completed – Temporarily closed)

Code 2a (Not interviewed – Temporarily closed)

Code 3a (Non-response – Refused to give data)

Code 3b (Non-response – Cannot be contacted/Not accessible/  
Temporarily away)

#### c. 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.2 Estimation by Stratum

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

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

$\hat{Y}_h$  = 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

#### c. Estimation of Total

##### c.1 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 p<sup>th</sup> 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

## c.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.

## IV. Concepts and Definitions of Terms

**Commercial farm** – a farm or establishment that raises livestock animals. Moreover, it must satisfy at least one of the following criteria:

1. Tending at least 21 heads of adult and zero head of young;
2. Tending at least 41 heads of young animals; or
3. Tending at least 10 heads of adult and 22 heads of young.

All livestock and poultry raisers that did not satisfy the above criteria were considered as **Backyard Farm**.

**Farmgate price** refers to the price received by raisers for their produce at the location of farm. Thus, marketing costs such as transport and other marketing costs (if any) incurred in selling the produce is not included in the farmgate prices. The 2019 to 2021 farmgate prices included in this annual release were based on the revised method of computation by the Price Statistics Division of the PSA.

**Imports** refer to the number of meat products originating from foreign country. The data on meat importation data are compiled by the Trade Statistics Division (TSD) of PSA from the copies of Import Entry and Internal Revenue Declaration collected from the Bureau of Customs (BOC).

**Inventory** refers to the actual number of carabao, in heads, present in the farm as of a specific reference date.

**Licensed to Operate Meat Establishment (LTOME)** refers to premises/facilities where food animals are slaughtered for human consumption. These were then referred as accredited slaughterhouses and poultry dressing plants.

**Locally Registered Meat Establishment (LRME)** refers to slaughterhouses, meat processing plants, Poultry Dressing Plants, meat cutting plants, and cold storages that are allowed to operate by the city/municipal government but are not accredited by the NMIS.

**Slaughterhouses (SH)** are premises that are approved and registered by the NMIS and LGUs in which food animals are slaughtered for human consumption.

**Value at constant price** refers to the valuation of transactions, wherein the influence of price change from base year to the current year has been removed.

**Value at current price** refers to the value based on prices during the reference year; nominal year.

**Value of production** refers to the value of the animal with reference to its farmgate price. It is derived by multiplying the volume of production by its farmgate price.

**Volume of production** refers to the number of tended/raised animals disposed for slaughter including animals shipped-out for slaughter (in “head/bird” and in “liveweight equivalent”).

## V. Dissemination of Results and Revision

The PSA disseminates the Carabao Situation Report annually, with previous year as the reference period. This report is uploaded in the PSA Website.

The data on volume of production and inventory is released 45 days after the reference quarter.

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.

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

## VI. Contact Information

Marisol T. Fallarme  
Chief Statistical Specialist  
Livestock and Poultry Statistics Division  
Economic Sector Statistics Service  
Sectoral Statistics Office  
Philippine Statistics Authority  
Email Address: m.fallarme@psa.gov.ph

For data request, you may contact the:

**Knowledge Management and Communications Division**

Telephone: (632) 8462-6600 loc. 839

Email Address: info@psa.gov.ph



# **CARABAO SITUATION REPORT**

**PHILIPPINE STATISTICS AUTHORITY**

**DENNIS S. MAPA, Ph.D.**

National Statistician and Civil Registrar General

**DIVINA GRACIA L. DEL PRADO**

Assistant National Statistician  
Economic Sector Statistics Service

## **LIVESTOCK AND POULTRY STATISTICS DIVISION**

**MARISOL T. FALLARME**

Chief Statistical Specialist

**PRECIOUS S. JACINTO**

Supervising Statistical Specialist

**DEMOSTHENES N. MISTAL**

Senior Statistical Specialist

**MICHELLE D. GUSTILO**

Statistical Specialist II

**ISRAEL D. TAYABEN**

Statistical Analyst

For Inquiries:

## PHILIPPINE STATISTICS AUTHORITY

PSA Complex, East Avenue Diliman, Quezon City, Philippines 1101

Tel. No. +63(2) 84626600 loc. 822 • Telefax No. +63(2) 84626600 loc. 839

Email address: [info@psa.gov.ph](mailto:info@psa.gov.ph) • [kmcd.staff@psa.gov.ph](mailto:kmcd.staff@psa.gov.ph)



Visit us at  
[www.psa.gov.ph](http://www.psa.gov.ph)



Like us on Facebook  
[/PSAgovph](https://www.facebook.com/PSAgovph)



Follow us on Twitter  
[@PSAgovph](https://twitter.com/PSAgovph)