



2019

Compendium of Bicol Region Environment Statistics



PHILIPPINE STATISTICS AUTHORITY
REGION V - BICOL

MESSAGE

A sustainable environment is a foundation for development. It is our strategy for development to ensure ecological integrity, clean and healthy environment. Environmental statistics provide the strong basis for decision making and policy implementation that support this development strategy.

With the initiative of the Philippine Statistics Authority Regional Statistical Service Office 5, the Bicol Region is the first region in the Philippines to complete a sub-national compilation of environment statistics that is anchored on the United Nations Framework for the Development of Environment Statistics 2013. The completion of the 2019 Compendium of Bicol Region Environment Statistics (CBRES) is a by-product of series of workshops, consultations, and coordination with source agencies. It provides information for planning, policy, program and project formulation especially for the environment

and environment-related issues. The CBRES will provide information about the environment and the main factors that influence the environment and also on important changes in the environment over time and across locations. It will also serve as reference to improve knowledge on environment and will provide high quality statistical information for the general public and specific user groups to support evidence-based policy decisions.

As the chairperson of the Regional Statistics Committee, I recognize the contributions of our partner agencies and resource agencies. Their support and cooperation resulted to the successful completion of the 2019 CBRES. I recognize as well the team effort of the PSA 5 led by RD Cynthia L. Perdiz. My appreciation for all your hard work.

Let this compendium be our companion as we plan for a livable environment that we could bequeath to the future generation.

Mabalos saindo gabos!




AGNES E. TOLENTINO, CESO III

Chairperson, RSC V

Regional Director, NEDA V



TABLE OF CONTENTS

		<i>Page</i>
Component 1	Environmental Conditions and Quality	1-1
Component 2	Environmental Resources and Their Use	2-1
Component 3	Residuals	3-1
Component 4	Extreme Events and Disasters	4-1
Component 5	Human Settlements and Environmental Health	5-1
Component 6	Environment Protection, Management and Engagement	6-1

Component One

Environmental Condition and Quality

COMPONENT ONE

ENVIRONMENTAL CONDITIONS AND QUALITY

The environment provides goods and services essential to human being. The human sub-system uses the environment for habitat, to obtain important physical resources and as recipient or sink for various residuals. Human societies, as well as their production and consumption patterns, affect the quality and condition of the environment, its natural processes and its capacity to provide goods and services (*UN FDES, 2013*). The changing environment, in turn, affects humans in different ways over time. Hence, Environmental Conditions and Quality is central to the Framework for the Development of Environment Statistics (FDES) including five other components which were established based on their relationship with Component One.

This component covers statistics on the physical, biological, and chemical characteristics of the environment and their changes over time. These are strongly interrelated fundamental background conditions that determine the types, extent, conditions, and health of ecosystems. Environmental condition refers to a measure of the condition of the environment relative to a requirement or threshold of one or more species or to any human need or purpose.

Statistics gathered for Component One are useful in compiling environmental accounts as described in the System of Environmental Economic-Accounting (SEEA). Particularly, Component One is closely related to the SEEA Experimental Ecosystem Accounts (SEEA-EEA). The SEEA-EEA is a companion to the SEEA Central Framework which extends the accounting to the measurement of flows of services to society that ecosystems provide, as well as to the measurement of ecosystem capital in terms of the capacity and changes in ecosystems providing those services in physical terms. It describes the valuation of ecosystems in so far as it is consistent with the market valuation principles of the System of National Accounts (*SEEA-CF, 2012*).

In addition to its links with the SEEA, statistics collected for Component One are inputs to the indicators in monitoring the Sustainable development Goals (SDGs). These include the following: Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture; Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; Goal 13: Take urgent action to combat climate change and its impacts; Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development; and Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse (*Sustainable Development Knowledge Platform*).

Component One consists of three sub-components, namely: Physical Conditions; Land Cover, ecosystems and Biodiversity; and Environmental Quality.

1.1 Physical Conditions

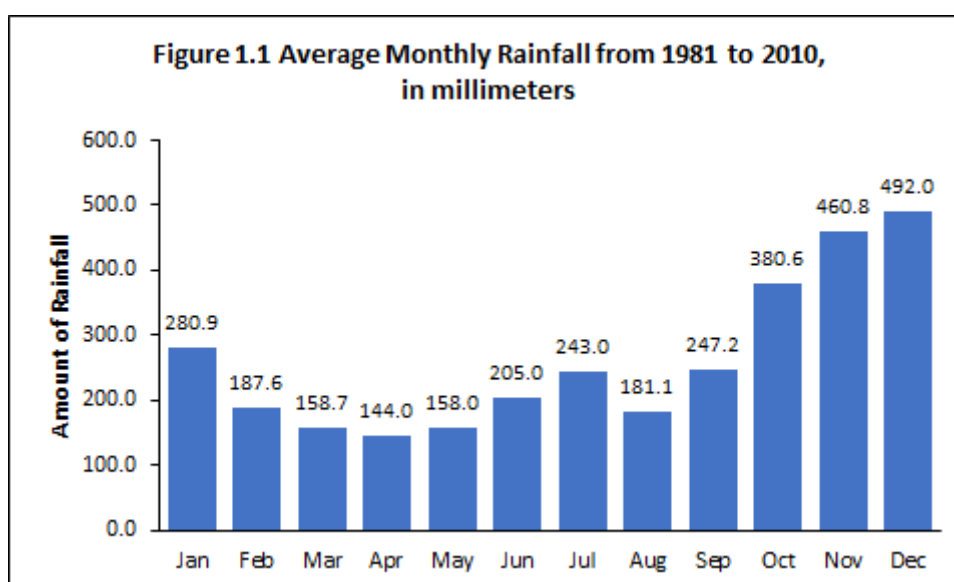
This sub-component aims to capture the physical aspect of the environment and focuses on statistics on the meteorological, hydrographical, geological and geographical conditions and soil characteristics. Compilation of this subcomponent is important as it can assist in determining the scope and influences on the environmental resources of the region. Furthermore, these statistics provide baseline information that may aid the government in assessing the need for and the effectiveness of environment-related policies.

Physical Conditions is linked to the SEEA Ecosystem Condition. For the 2029 CBRES, the Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA) and the Department of Environment and Natural Resources (DENR) were the main sources of data.

1.1.1 Atmosphere, Climate and Weather

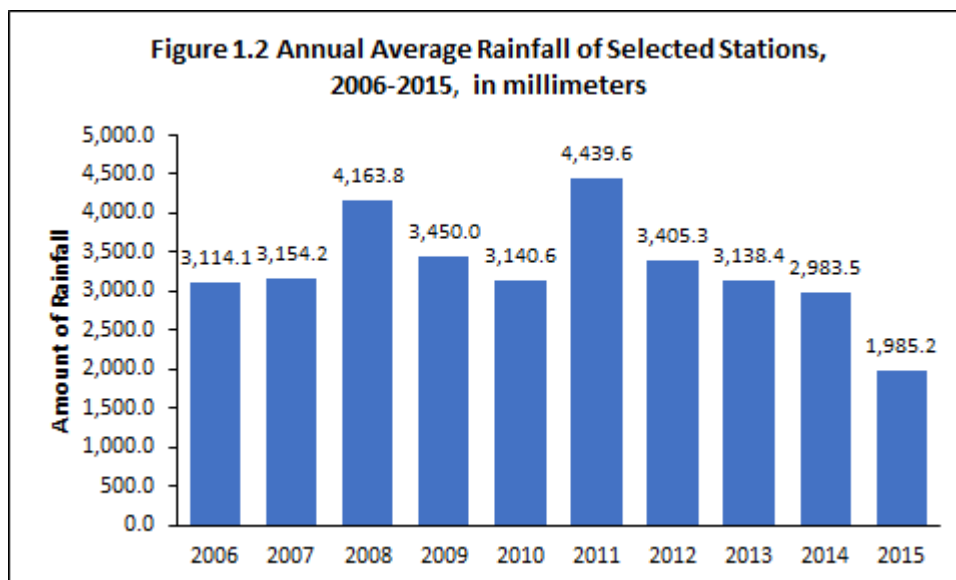
This topic covers data on atmospheric, climatic, and weather conditions across territories and over time. Weather describes the atmosphere's behavior over a short period of time while climate is determined by long term weather conditions, both of which are recorded through monitoring stations. Information about the atmosphere, climate, and weather is important to understand the conditions and trends to explain other phenomena such as ecosystem change, biodiversity and living conditions, among others.

In general, the Philippine climate has two seasons; rainy season, which lasts from June to December and dry season, from January to May. From 1981 to 2010, the average amount of rainfall ranged from 181 to 492 millimeters per month during the rainy season; and at 144 to 281 millimeters per month during the dry season in Bicol Region. In Figure 1.1, the average amount of rainfall changes throughout the year, with months February to May, observed as relatively lower. Moreover, the month of December had the highest recorded average amount of rainfall (492.0 mm), while the month of April had the lowest average (144.0 mm).



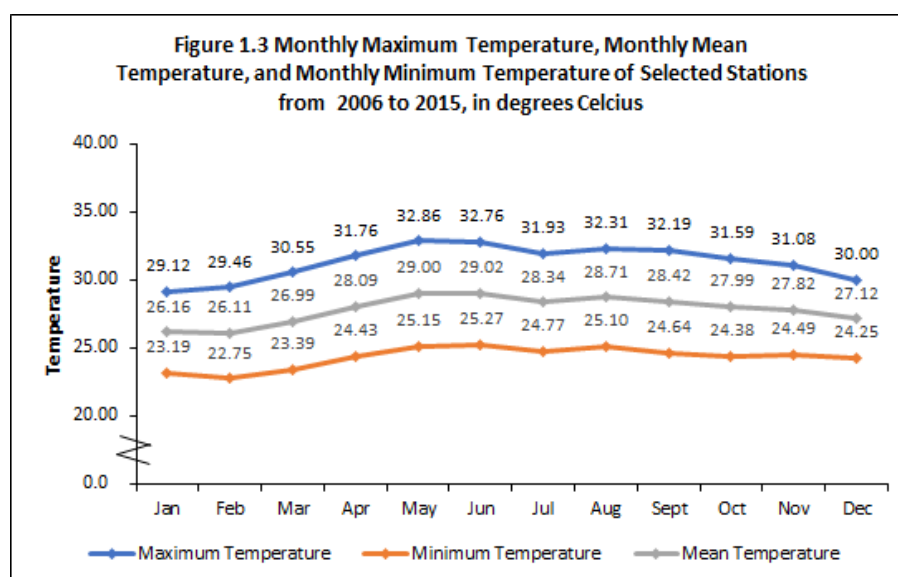
Source: *Philippine Atmospheric, Geophysical and Astronomical Services Administration*

The rainfall distribution throughout Bicol Region varies depending on the direction of the moisture-bearing winds and the location of the mountain systems (PAGASA). Based on Figure 1.2, the annual average amount of rainfall fluctuated from 2006 to 2010 while decreasing from 2011 to 2015. The year 2011 had the highest recorded average of 4,440 millimeters while the year 2015 had the lowest average at 1,985 millimeters.



Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration

In Figure 1.3, the maximum, mean, and minimum temperatures follow the same trend, i.e. increasing from January to May; and decreasing from June to December. However, there were increases in the trend in August and September. Overall, the minimum temperature recorded was 22.75 °C while the maximum was 32.86 °C. The coolest month was recorded in February with an average of 26.11 °C, while the warmest month was June with an average temperature of 29.02 °C.



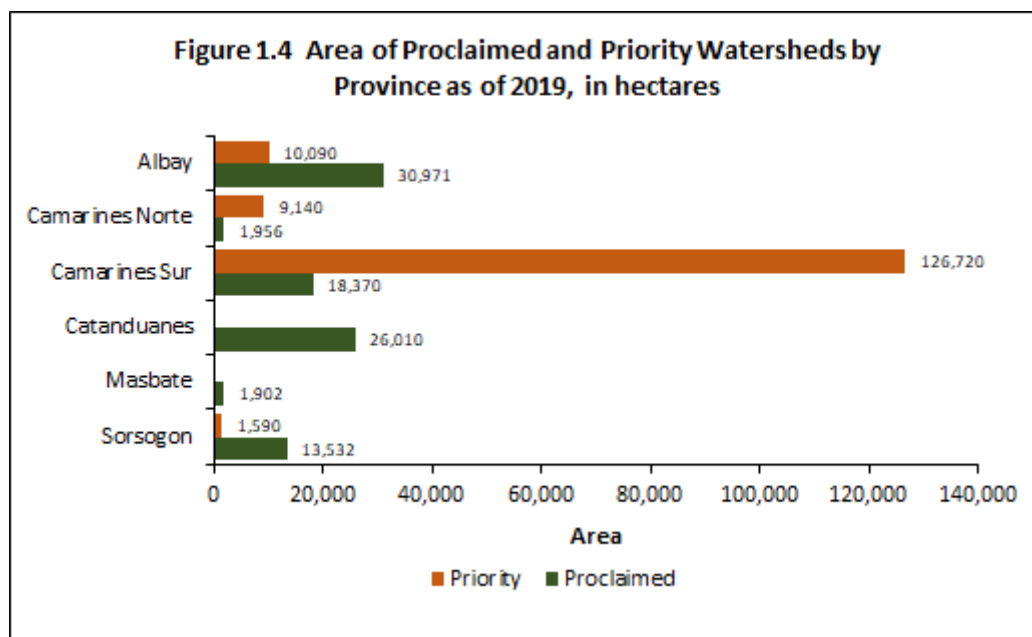
Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration

1.1.2 Hydrographical characteristics

Hydrographical characteristics include information on the location, extent and characteristics of lakes, rivers, streams, artificial reservoirs, watersheds, seas, and aquifers. This information is compiled to serve as basis for understanding water and flows of water.

The core indicator for this topic replates to the description of main watersheds. Data compiled for 2019 CBRES include area of proclaimed and priority watersheds in the region. Proclaimed watersheds are those that were specifically designated for various purposes such as domestic water supply, irrigation, and power generation (*Forest management Bureau, DENR*). On the other hand, priority watersheds, also known as critical watersheds, are those where essential functions are already critically impaired or are likely to be critically impaired thus needing immediate rehabilitation (*Basics of Watershed Management, Mekong Watersheds Information*).

As of 2019, Albay has the largest share in the total area of proclaimed watersheds in the region, while Masbate has the least share with 1,902 hectares of proclaimed watershed. Camarines Sur, has the largest share in the total area of priority watersheds while Catanduanes and Masbate have no determined priority watersheds.

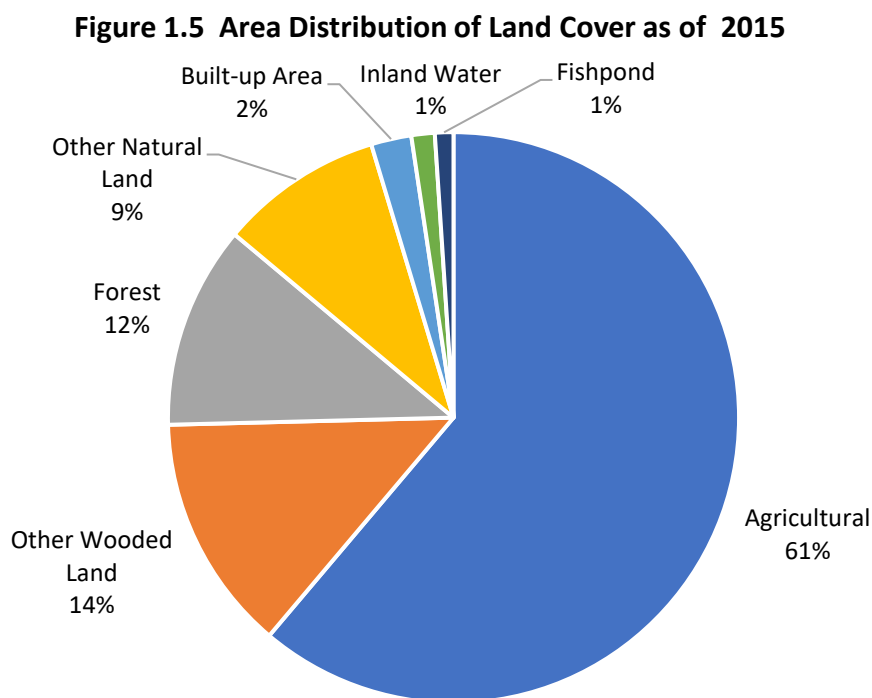


Source: Department of Environment and Natural Resources, Region V

1.2 Land Cover, Ecosystems, and Biodiversity

This sub-component organizes the interrelated environment statistics on land cover, ecosystems, and biodiversity, as well as their recordable changes over time and across locations. Land cover, as defined by the Food and Agriculture Organization (FAO), is the observed (bio)physical cover of the earth's surface. It is one of the indicators of ecosystem type. Ecosystems are community of organisms which have interacting and interdependent relationship. Biodiversity, a measure of ecosystem health, is the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part, including diversity within species, between species and ecosystems. Biodiversity is a fundamental characteristic of ecosystems, while variability among ecosystems is a fundamental driver of biodiversity.

Statistics for this sub-component are linked to the SEEA Ecosystem Extent, Condition and Biodiversity. For the 2019 CBRES compilation, NAMRIA, DENR, specifically the Biodiversity Management Bureau (BMB) and the Environment Management Bureau (EMB) were the main sources of data.



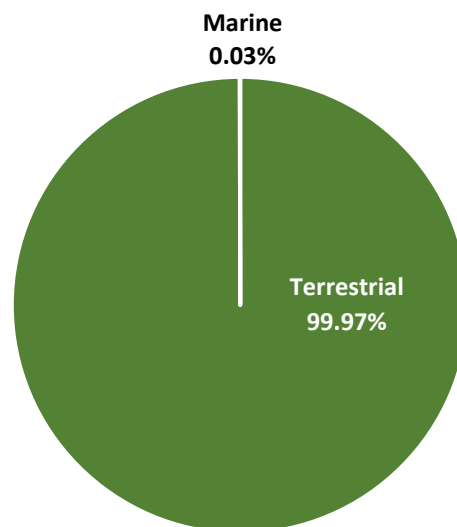
Source: *National Mapping and Resource Information Authority (NAMRIA)*

1.2.1 Ecosystems and Biodiversity

Statistics related to ecosystems and biodiversity are critical given the increasing understanding of the role that ecosystems play in human well-being and the evidence of biodiversity loss across the planet. Maintaining biodiversity and ecosystem health is necessary to preserve the genetic and ecosystem inheritance of the region, as well as its ecological productivity. This also protects, subsequently, the productivity of ecosystems for the use of the economy and society, which depend heavily on the diversity of ecological systems for human livelihoods (e.g., production, distribution and consumption).

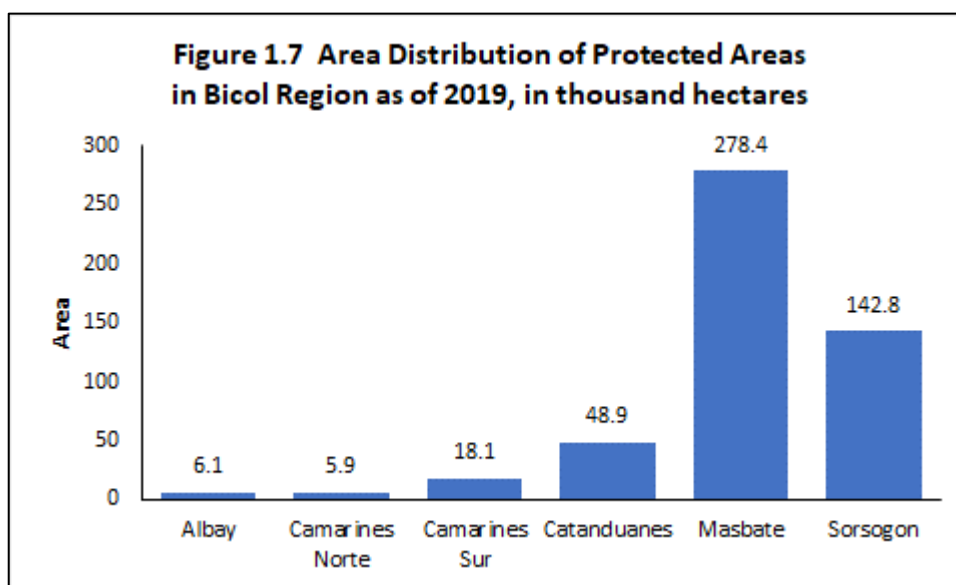
In Figure 1.6, protected areas under the National Integrated Protected Areas System (NIPAS) in the terrestrial ecosystem share the most area (99.97%) than those in the marine ecosystem (0.03%). Out of the 13 protected areas, 11 areas are in the terrestrial ecosystem comprising about 496 thousand hectares. On the other hand, marine ecosystem has only one protected area with an area of about 148 hectares.

Figure 1.6 Area Distribution of Protected Areas under NIPAS by Ecosystem Type as of 2019



Source: *Department of Environment and Natural Resources, Region V*

As of 2019, Masbate has the largest share in the total area of proclaimed protected areas (PA) in the region with around 278.4 thousand hectares. However, in terms of the number of proclaimed protected areas in the region, Camarines Sur has the most, with seven proclaimed PAs. On the other hand, Camarines Norte has the least number, with only one PA and also has the smallest share in the total area with only 5.9 thousand hectares.

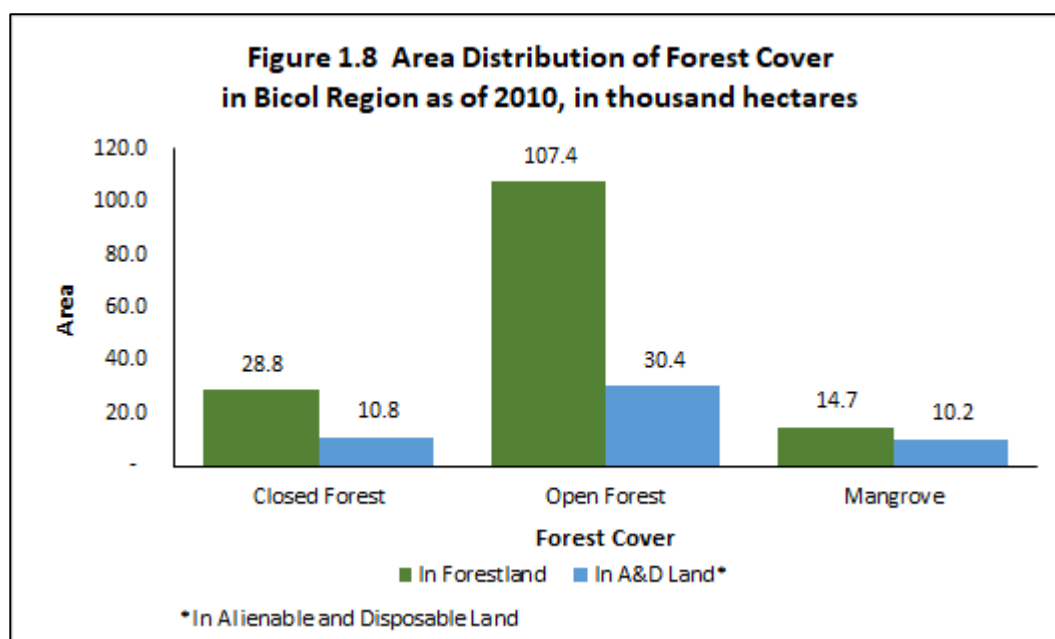


Source: Department of Environment and Natural Resources, Region V

1.2.2 Forests

Forests provide livelihoods for millions of people around the world. They offer timber, food, shelter, fuel, and medicinal products, and also perform significant ecosystem functions such as hydrological regulation, soil protection and biodiversity protection, and act as carbon sinks. The core statistic under this topic is the total forest area.

In Figure 1.8, open forest comprises 68.1% of the total forest area in the region. It has a total area of 137.8 thousand hectares wherein 77.9% is in forestland and the remaining 22.1% is in alienable and disposable (A&D) land. Closed forest has a total area of 39.6 thousand hectares or 19.6% of the total forest area. Majority of the forest area is in forestland rather than in A&D land. More so, mangrove forest has the least area of about 24.9 thousand hectares or 12.3% of the total area in the country.



Source: National Mapping and Resource Information Authority (NAMRIA)

1.3 Environmental Quality

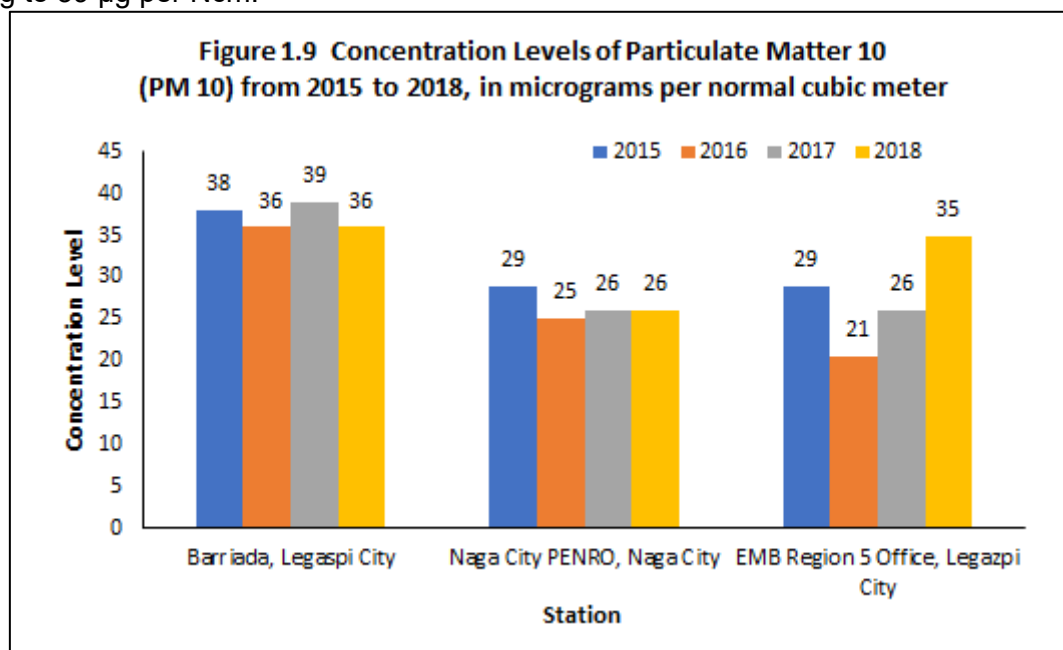
Environmental quality deals with the concentration of pollutants in the environment which results from combined and cumulative impacts of human and natural processes. Statistics on environmental quality are important in monitoring pollution impacts to human sub-system and ecosystems.

For the 2019 CBRES, the Environmental Management Bureau of DENR was the main source of data.

1.3.1 Air Quality

Concentration of air pollutants, suspended solid particles, and other gases are the statistics compiled for this sub-component. Air quality is measured by monitoring stations which are located mostly near the major sources of pollution. Compilation of these statistics is important to assess the effects of air quality to human and ecosystem health.

All three stations did not exceed 60 microgram per Normal cubic meter ($\mu\text{g}/\text{Ncm}$), which is the annual average for the National Ambient Air Quality Guideline Value (NAAQV) for particulate matter 10 (PM_{10}). The station located in Barriada, Legazpi City exhibited a higher concentration of particulate matter than the other two monitoring stations, which ranges from 36 μg to 39 μg per Ncm.

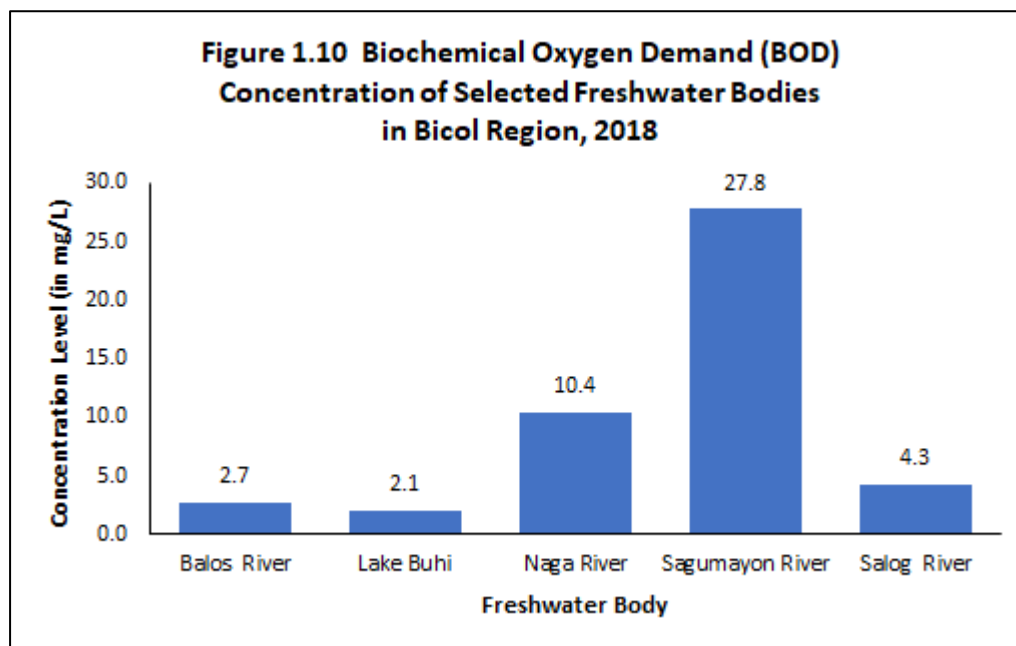


Source: Department of Environment and Natural Resources, Environmental Management Bureau

1.3.2 Freshwater Quality

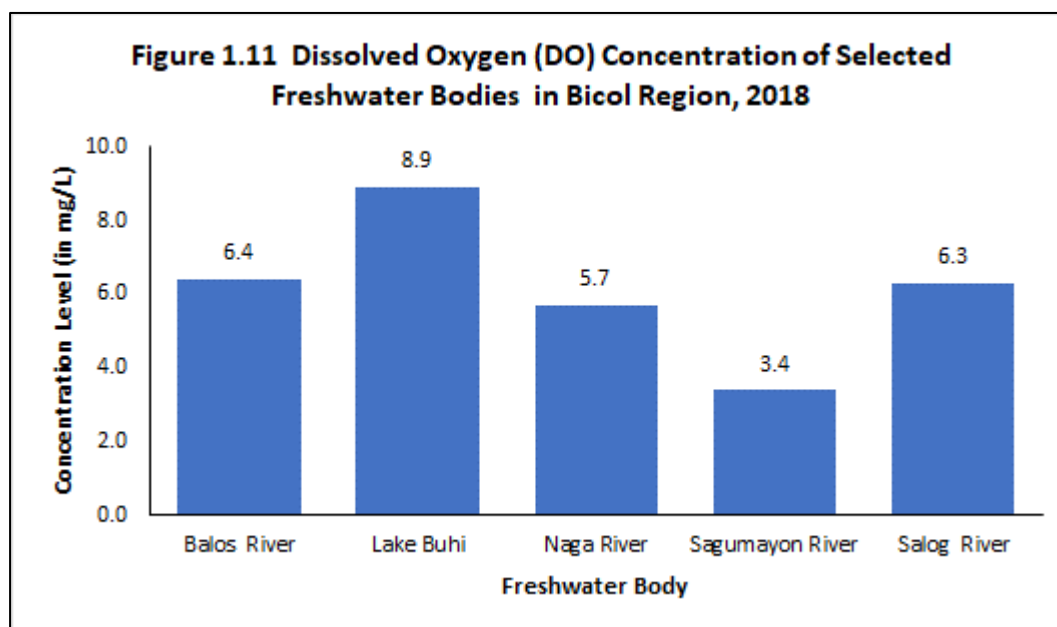
The quality of freshwater can be described based on the concentrations of nutrients, organic matter, pathogens and contaminants in surface and ground water. Compiling statistics on freshwater quality will be useful for identifying pollutants present in specific locations as well as determining if the quality conforms to the standards.

In the Philippines, the DENR released Department Administrative Order (DAO) No. 1990-34 containing the water classifications (see Annex) and water quality criteria for freshwater and marine water bodies. Accordingly, biochemical oxygen demand (BOD) level for class AA freshwater bodies should be less than one milligram per liter (mg/L) to pass the minimum conditions necessary to assure the suitability of water for its designated use or classification. Also, BOD level should be less than five mg/L for classes A and B, less than seven mg/L for class C, and less than 10 mg/L for class D. Out of five selected freshwater bodies in the region in 2018, three water bodies or 60% passed the said criteria while two water bodies or 40% failed, wherein both are class C.



Source: Department of Environment and Natural Resources, Environmental Management Bureau

On the other hand, dissolved oxygen (DO) level should be greater than five mg/L for classes AA, A, B, and C while greater than three mg/L for class D. In Figure 1.11, four out of five water bodies or 80% passed while only one freshwater body failed.



Source: Department of Environment and Natural Resources, Environmental Management Bureau

Table 1.1
CLIMATOLOGICAL NORMALS OF PRECIPITATION BY MONTH AND BY
MONITORING STATION
1981 to 2010
(Amount of rainfall in millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Amount of Rainfall	266.3	180.1	150.4	131.3	138.5
Number of Rainy Days	22	15	13	10	12
Legazpi City, Albay					
Amount of Rainfall	311.7	236.4	193.8	171.2	186.6
Number of Rainy Days	21	15	17	15	15
Masbate, Masbate					
Amount of Rainfall	169.3	101.8	86.9	54.1	118
Number of Rainy Days	16	12	11	7	9
Virac Radar, Catanduanes					
Amount of Rainfall	409.5	270.5	215.9	215.2	197.2
Number of Rainy Days	24	17	18	16	16
Virac Synop, Catanduanes					
Amount of Rainfall	247.9	149.2	146.4	148.3	149.9
Number of Rainy Days	17	13	14	13	13

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
183.9	237.1	165.4	257.9	496.3	542.9	588.4
14	16	15	17	23	25	25
230.5	259.8	222.5	285.9	333	480.3	520.2
17	20	18	19	21	23	23
155.7	227	178.1	212.6	233	254.9	258.9
14	18	17	18	18	18	20
234.5	249.6	177.1	244.1	447	575.8	640.6
16	17	14	17	22	25	26
220.5	241.6	162.5	235.3	393.7	450	451.8
14	17	13	16	21	22	22

Table 1.2
CLIMATOLOGICAL NORMALS OF TEMPERATURE BY MONTH AND BY
MONITORING STATION
1981 to 2010
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.6	29.1	30.1	31.6	32.8
Minimum Temperature	23.5	23.3	23.9	24.9	25.2
Mean Temperature	26.0	26.2	27.0	28.3	29.0
Legazpi City, Albay					
Maximum Temperature	28.8	29.3	30.2	31.6	32.4
Minimum Temperature	23.2	23.2	23.8	24.7	25.3
Mean Temperature	26.0	26.3	27.0	28.8	28.9
Masbate, Masbate					
Maximum Temperature	30.4	31.1	32.2	33.5	34.0
Minimum Temperature	23.3	23.3	23.9	25.0	25.7
Mean Temperature	26.9	27.2	28.1	29.3	29.8
Virac Radar, Catanduanes					
Maximum Temperature	26.5	27.1	27.8	29.0	30.0
Minimum Temperature	21.2	21.2	22.0	22.8	23.5
Mean Temperature	23.8	24.1	24.9	25.9	26.8
Virac Synop, Catanduanes					
Maximum Temperature	29.0	29.5	30.4	31.4	32.1
Minimum Temperature	22.1	21.9	22.3	23.1	24.0
Mean Temperature	25.5	25.7	26.3	27.2	28.0

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration

Jun	Jul	Aug	Sept	Oct	Nov	Dec
32.8	32.0	32.2	31.8	30.8	30.1	28.8
25.1	24.8	24.9	24.5	24.4	24.6	24.0
28.9	28.4	28.6	28.1	27.6	27.3	26.4
32.2	31.5	31.5	31.4	31.0	30.2	29.1
25.1	24.7	24.8	24.5	24.2	24.2	23.7
28.6	28.1	28.2	28.0	27.6	27.2	26.4
33.4	32.6	32.6	32.6	32.4	31.7	30.7
25.6	25.1	25.1	25.0	24.8	24.6	23.8
29.5	28.8	28.9	28.8	28.6	28.1	27.3
30.0	29.4	29.8	29.8	29.2	28.2	27.1
23.7	23.3	23.4	23.4	23.2	22.8	21.8
26.9	26.4	26.6	26.6	26.2	25.5	24.4
32.0	31.5	31.8	31.6	30.9	30.3	29.4
24.2	23.9	24.0	23.7	23.4	23.2	22.6
28.1	27.7	27.9	27.7	27.2	26.7	26.0

Table 1.3.1
ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION
2006
(In millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	317.5	239.7	182.9	8.3	92.2
Legazpi City, Albay	453.2	364.9	330.6	151.5	239.2
Masbate, Masbate	202.8	75.7	217.5	40.5	307.0
Virac Synop, Catanduanes	466.2	254.3	222.4	113.2	133.0

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.2
ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION
2007
(In millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	243.8	103.1	58.2	30.9	139.2
Legazpi City, Albay	345.4	16.5	233.6	105.2	268.0
Masbate, Masbate	297.3	59.0	50.9	9.8	165.1
Virac Synop, Catanduanes	217.1	73.1	196.6	106.4	246.1

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.1**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2006****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
164.9	335.1	204.2	305.4	392.1	316.4	564.3	3123.0
232.8	135.1	238.1	445.5	197.0	689.6	520.5	3998.0
79.9	282.2	184.0	246.7	111.7	107.0	311.7	2166.7
352.8	254.6	181.0	226.4	233.8	406.4	324.6	3168.7

Table 1.3.2**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2007****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
230.0	153.4	100.6	186.9	529.0	871.2	987.8	3634.1
90.6	171.8	217.0	531.2	450.7	579.1	599.1	3608.2
68.8	159.1	140.8	302.3	134.8	336.1	144.8	1868.8
155.5	115.6	230.6	133.4	833.0	958.0	240.4	3505.8

Table 1.3.3**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION****2008****(In millimeters)**

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	483.0	1006.6	309.9	164.0	172.6
Legazpi City, Albay	323.0	1082.0	287.8	516.8	423.7
Masbate, Masbate	264.8	325.2	39.1	128.6	314.0
Virac Synop, Catanduanes	399.9	607.8	237.4	385.6	202.0

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.4**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION****2009****(In millimeters)**

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	315.7	275.8	177.9	746.4	546.1
Legazpi City, Albay	275.1	418.8	282.2	466.0	602.8
Masbate, Masbate	232.5	138.9	43.5	274.2	259.7
Virac Synop, Catanduanes	544.0	280.1	216.5	580.9	532.6

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.3**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2008****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
142.3	193.9	163.4	317.5	405.2	717.5	1338.1	5414.0
144.8	261.9	246.9	297.0	256.2	440.6	502.7	4783.4
200.9	143.8	203.1	152.6	99.7	74.9	477.9	2424.6
285.4	97.2	172.8	426.6	200.6	421.1	596.7	4033.1

Table 1.3.4**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2009****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
155.9	305.3	182.8	364.6	495.1	421.5	116.7	4103.8
263.3	256.7	178.3	244.1	391.8	384.3	150.1	3913.5
186.6	188.8	122.5	260.7	170.3	152.2	82.8	2112.7
143.3	238.9	123.3	173.7	489.0	231.7	115.8	3669.8

Table 1.3.5
ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION
2010
(In millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	297.2	24.4	130.2	41.1	52.6
Legazpi City, Albay	209.3	30.4	86.5	145.3	50.5
Masbate, Masbate	186.4	12.0	30.5	10.2	56.8
Virac Synop, Catanduanes	217.1	46.5	78.2	109.9	20.1

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.6
ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION
2011
(In millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	386.3	616.9	424.7	81.2	607.6
Legazpi City, Albay	701.2	80.5	496.6	119.1	371.3
Masbate, Masbate	494.2	83.1	431.8	84.3	408.8
Virac Synop, Catanduanes	480.4	112.7	386.6	60.4	526.4

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.5**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2010****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
326.5	551.7	293.2	365.3	546.7	887.9	1186.3	4703.1
80.1	183.3	223.5	249.4	316.4	423.4	1047.0	3045.1
53.3	258.5	212.2	121.3	248.6	130.1	238.6	1558.5
86.5	383.4	289.8	407.3	494.8	358.4	763.7	3255.7

Table 1.3.6**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2011****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
155.3	593.9	129.3	365.0	362.0	713.0	657.7	5092.9
538.8	722.8	293.9	337.2	257.6	541.5	739.3	5199.8
198.5	271.3	107.0	139.3	141.5	222.4	270.3	2852.5
351.4	592.5	185.8	349.8	227.9	802.4	536.8	4613.1

Table 1.3.7**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION****2012****(In millimeters)**

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	781.7	439.0	497.0	145.1	171.1
Legazpi City, Albay	444.5	724.2	614.3	106.5	219.5
Masbate, Masbate	163.2	179.0	245.5	20.8	85.4
Virac Synop, Catanduanes	573.9	342.7	399.0	126.6	56.8

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.8**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION****2013****(In millimeters)**

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	254.4	216.3	113.8	16.4	77.2
Legazpi City, Albay	439.5	283.5	198.1	49.8	113.9
Masbate, Masbate	206.3	195.8	93.8	2.8	111.0
Virac Synop, Catanduanes	238.4	183.4	175.2	59.8	242.8

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.7**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2012****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
121.2	346.3	68.2	300.9	393.4	246.4	323.2	3833.5
182.9	488.8	78.0	205.1	450.1	433.9	581.2	4529.0
149.4	268.4	60.6	248.0	240.4	115.7	210.7	1987.1
96.4	257.4	25.8	435.2	213.2	298.9	445.5	3271.4

Table 1.3.8**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2013****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
258.3	330.5	227.9	111.0	376.0	712.5	670.1	3364.4
286.8	344.3	310.1	248.0	171.2	658.0	452.6	3555.8
420.0	224.0	155.3	186.2	179.1	238.2	189.1	2201.6
302.0	348.4	282.3	114.0	283.0	589.6	613.0	3431.9

Table 1.3.9
ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION
2014
(In millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	149.8	77.5	74.6	53.0	21.4
Legazpi City, Albay	114.3	47.8	322.3	120.5	32.6
Masbate, Masbate	213.9	42.1	80.7	64.2	T
Virac Synop, Catanduanes	98.6	28.6	140.8	107.0	39.3

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.10
ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION
2015
(In millimeters)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte	393.9	182.5	69.1	124.0	82.3
Legazpi City, Albay	403.5	135.7	150.1	74.5	89.2
Masbate, Masbate	178.2	17.6	39.5	31.4	0.5
Virac Synop, Catanduanes	252.4	228.4	122.8	156.4	92.4

Note: T = means trace, measured rainfall is less than 0.1 mm.

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Table 1.3.9**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2014****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
115.1	330.6	278.9	560.0	541.8	393.7	729.5	3325.9
156.1	443.1	264.1	342.0	303.9	324.4	825.1	3296.2
178.5	365.7	131.6	296.2	244.0	140.3	606.7	2363.9
260.0	321.5	105.1	622.1	335.3	273.9	615.6	2947.8

Table 1.3.10**ANNUAL AMOUNT OF RAINFALL BY MONTH AND BY SELECTED STATION (cont.)****2015****(In millimeters)**

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
151.2	163.6	104.0	172.0	313.8	289.5	...	2045.9
307.7	203.6	169.8	238.3	245.5	436.5	...	2454.4
134.8	141.6	147.2	132.8	95.4	91.2	264.0	1274.2
104.7	102.2	168.1	...	365.6	234.3	339.1	2166.4

Table 1.4.1
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2006
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.8	29.2	30.5	31.9	32.6
Minimum Temperature	24.5	24.9	24.9	25.9	25.8
Mean Temperature	26.7	27.1	27.7	28.9	29.2
Legazpi City, Albay					
Maximum Temperature	28.8	29.3	30.2	31.1	31.4
Minimum Temperature	24.0	24.3	24.7	25.2	26.0
Mean Temperature	26.4	26.8	27.5	28.2	28.7
Masbate, Masbate					
Maximum Temperature	30.2	31.2	32.0	33.1	32.7
Minimum Temperature	24.2	24.6	24.7	25.5	25.7
Mean Temperature	27.2	27.9	28.4	29.3	29.2
Virac Synop, Catanduanes					
Maximum Temperature	29.4	29.5	30.6	31.6	32.0
Minimum Temperature	23.2	23.4	23.0	23.4	24.6
Mean Temperature	26.3	26.5	26.8	27.5	28.3

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
33.3	31.5	31.9	32.0	30.1	31.0	29.3
25.5	25.6	25.3	24.9	24.5	25.5	24.7
29.4	28.6	28.6	28.5	27.3	28.3	27.0
32.3	30.7	30.4	31.0	30.6	30.9	29.6
25.8	25.8	25.5	25.3	24.6	25.4	25.0
29.1	28.3	28.0	28.2	27.6	28.2	27.3
33.4	32.0	32.3	32.3	32.2	32.6	30.8
25.9	25.6	25.3	25.5	25.0	25.4	24.7
29.7	28.8	28.8	28.9	28.6	29.0	27.8
32.2	31.9	31.8	32.0	30.3	31.0	29.8
24.6	25.4	24.7	24.2	23.6	23.7	23.8
28.4	28.7	28.3	28.1	27.0	27.4	26.8

Table 1.4.2
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2007
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	29.0	29.4	30.6	32.2	32.6
Minimum Temperature	24.4	24.0	24.1	26.1	25.8
Mean Temperature	26.7	26.7	27.4	29.2	29.2
Legazpi City, Albay					
Maximum Temperature	28.9	29.8	29.9	31.2	32.2
Minimum Temperature	24.2	24.6	24.6	25.9	25.9
Mean Temperature	26.6	27.2	27.3	28.6	29.1
Masbate, Masbate					
Maximum Temperature	30.2	31.5	31.8	34.0	34.2
Minimum Temperature	24.2	24.1	24.6	25.9	26.0
Mean Temperature	27.2	27.8	28.2	30.0	30.1
Virac Synop, Catanduanes					
Maximum Temperature	29.5	29.7	30.2	31.3	32.2
Minimum Temperature	22.9	22.4	22.5	23.6	24.3
Mean Temperature	26.2	26.1	26.4	27.5	28.3

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
32.8	32.3	32.0	31.8	30.7	29.9	29.0
25.6	25.8	25.5	25.3	25.4	24.5	24.7
29.2	29.1	28.8	28.6	28.1	27.2	26.9
32.2	31.9	31.4	30.3	30.4	29.2	29.5
26.3	25.6	25.5	25.2	25.3	24.6	25.1
29.3	28.8	28.5	27.8	27.9	26.9	27.3
34.0	33.1	32.5	32.2	32.0	30.5	31.4
26.1	25.6	25.2	25.2	25.3	24.9	24.9
30.1	29.4	28.9	28.7	28.7	27.7	28.2
31.9	31.8	31.4	31.5	30.5	29.5	30.4
24.8	24.5	24.4	24.6	24.1	23.7	23.5
28.4	28.2	27.9	28.1	27.3	26.6	27.0

Table 1.4.3
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2008
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	29.2	28.2	29.6	31.6	31.5
Minimum Temperature	24.3	23.6	24.2	25.7	24.9
Mean Temperature	26.8	25.9	26.9	28.7	28.2
Legazpi City, Albay					
Maximum Temperature	28.9	27.8	29.8	30.6	31.1
Minimum Temperature	24.2	23.6	24.3	25.2	24.9
Mean Temperature	26.6	25.7	27.1	27.9	28.0
Masbate, Masbate					
Maximum Temperature	30.4	29.2	31.7	32.4	32.2
Minimum Temperature	23.9	23.8	24.9	25.6	25.3
Mean Temperature	27.2	26.5	28.3	29.0	28.8
Virac Synop, Catanduanes					
Maximum Temperature	29.3	28.3	29.8	30.8	31.6
Minimum Temperature	22.9	22.5	23.2	24.0	24.3
Mean Temperature	26.1	25.4	26.5	27.4	28.0

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
32.5	32.0	31.9	32.0	31.6	30.7	28.7
25.2	25.3	24.9	25.1	25.2	25.4	24.5
28.9	28.7	28.4	28.6	28.4	28.1	26.6
31.5	31.4	31.0	31.1	31.1	30.7	28.9
25.2	25.0	24.8	25.3	25.2	25.2	24.3
28.4	28.2	27.9	28.2	28.2	28.0	26.6
32.1	32.5	32.0	32.2	32.7	32.7	30.5
25.6	25.5	25.0	25.4	25.6	25.5	24.2
28.9	29.0	28.5	28.8	29.2	29.1	27.4
31.6	31.7	31.1	31.3	31.0	30.8	29.0
24.3	24.4	24.3	24.4	24.2	24.3	23.4
28.0	28.1	27.7	27.9	27.6	27.6	26.2

Table 1.4.4
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2009
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	27.7	29.6	30.7	30.9	30.5
Minimum Temperature	23.4	24.7	24.8	25.4	25.4
Mean Temperature	25.6	27.2	27.8	28.2	28.0
Legazpi City, Albay					
Maximum Temperature	27.9	29.6	30.7	31.1	30.8
Minimum Temperature	23.6	24.7	24.9	25.4	25.6
Mean Temperature	25.8	27.2	27.8	28.3	28.2
Masbate, Masbate					
Maximum Temperature	29.1	30.6	32.3	32.6	32.1
Minimum Temperature	23.9	24.3	24.6	25.1	25.4
Mean Temperature	26.5	27.5	28.5	28.9	28.8
Virac Synop, Catanduanes					
Maximum Temperature	27.6	29.8	30.9	31.1	31.1
Minimum Temperature	22.6	23.6	23.1	23.8	24.1
Mean Temperature	25.1	26.7	27.0	27.5	27.6

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
31.7	31.5	31.4	31.0	30.5	30.3	28.9
25.5	25.2	25.5	25.3	25.0	25.6	24.6
28.6	28.4	28.5	28.2	27.8	28.0	26.8
31.4	31.2	31.6	30.5	30.7	30.5	29.2
25.6	25.5	26.0	25.4	24.9	25.1	24.2
28.5	28.4	28.8	28.0	27.8	27.8	26.7
32.5	32.2	32.6	31.3	31.9	31.6	30.5
25.7	25.6	25.8	25.3	25.3	25.1	24.2
29.1	28.9	29.2	28.3	28.6	28.4	27.4
31.7	31.8	32.2	31.5	31.3	30.6	29.2
24.6	24.5	25.0	24.7	24.3	24.0	22.8
28.2	28.2	28.6	28.1	27.8	27.3	26.0

Table 1.4.5
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2010
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.3	29.8	30.5	31.8	34.2
Minimum Temperature	24.0	23.3	25.1	26.1	26.3
Mean Temperature	26.2	26.6	27.8	29.0	30.3
Legazpi City, Albay					
Maximum Temperature	28.7	30.2	30.9	31.7	33.6
Minimum Temperature	23.8	23.6	25.2	25.8	26.7
Mean Temperature	26.3	26.9	28.1	28.8	30.2
Masbate, Masbate					
Maximum Temperature	29.5	31.9	32.8	33.7	34.3
Minimum Temperature	23.8	23.8	24.9	25.4	26.4
Mean Temperature	26.7	27.9	28.9	29.6	30.4
Virac Synop, Catanduanes					
Maximum Temperature	28.8	30.2	30.8	31.5	32.3
Minimum Temperature	22.9	21.6	23.2	23.6	24.9
Mean Temperature	25.9	25.9	27.0	27.6	28.6

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
33.7	31.7	31.5	32.0	30.6	29.9	29.3
25.9	24.8	25.3	25.0	25.1	24.8	24.4
29.8	28.3	28.4	28.5	27.9	27.4	26.9
33.9	32.5	31.8	32.2	31.2	30.7	29.6
26.5	25.6	25.3	24.3	23.9	23.6	23.1
30.2	29.1	28.6	28.3	27.6	27.2	26.4
34.1	32.8	32.1	33.0	32.1	32.3	31.1
26.4	25.6	25.2	25.6	25.5	25.1	24.7
30.3	29.2	28.7	29.3	28.8	28.7	27.9
33.2	31.3	31.4	31.4	31.2	30.5	29.9
25.7	24.5	24.4	24.1	24.1	23.7	23.7
29.5	27.9	27.9	27.8	27.7	27.1	26.8

Table 1.4.6
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2011
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.9	28.9	28.9	30.4	31.3
Minimum Temperature	23.9	24.0	24.6	24.8	25.7
Mean Temperature	26.4	26.5	26.8	27.6	28.5
Legazpi City, Albay					
Maximum Temperature	28.3	30.0	28.7	30.8	31.2
Minimum Temperature	22.1	22.4	23.0	22.6	23.6
Mean Temperature	25.2	26.2	25.9	26.7	27.4
Masbate, Masbate					
Maximum Temperature	29.0	31.0	29.6	31.8	31.8
Minimum Temperature	23.9	24.1	24.2	24.2	25.0
Mean Temperature	26.5	27.6	26.9	28.0	28.4
Virac Synop, Catanduanes					
Maximum Temperature	28.4	29.6	29.4	30.2	30.9
Minimum Temperature	22.8	22.4	23.4	22.7	24.2
Mean Temperature	25.6	26.0	26.4	26.5	27.6

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
31.4	31.6	31.9	32.0	31.1	29.9	29.0
25.5	25.2	25.7	25.0	24.9	25.0	24.4
28.5	28.4	28.8	28.5	28.0	27.5	26.7
31.4	30.9	31.3	31.5	31.3	30.3	29.5
23.4	22.9	22.8	23.1	22.1	21.9	21.2
27.4	26.9	27.1	27.3	26.7	26.1	25.4
31.7	31.8	32.3	33.0	32.5	32.1	31.0
25.1	25.0	25.5	25.5	25.3	25.0	24.6
28.4	28.4	28.9	29.3	28.9	28.6	27.8
31.1	31.5	31.7	32.6	30.9	30.1	29.8
24.6	24.3	24.7	24.7	24.2	24.0	23.6
27.9	27.9	28.2	28.7	27.6	27.1	26.7

Table 1.4.7
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2012
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.8	29.2	30.0	31.6	33.2
Minimum Temperature	23.9	23.8	24.5	24.6	24.6
Mean Temperature	26.4	26.5	27.3	28.1	28.9
Legazpi City, Albay					
Maximum Temperature	29.5	29.3	29.8	31.6	32.9
Minimum Temperature	21.3	20.8	21.1	22.3	24.3
Mean Temperature	25.4	25.1	25.5	26.9	28.6
Masbate, Masbate					
Maximum Temperature	31.2	31.1	32.0	32.7	33.8
Minimum Temperature	24.3	24.1	24.5	25.1	25.5
Mean Temperature	27.8	27.6	28.3	28.9	29.7
Virac Synop, Catanduanes					
Maximum Temperature	29.4	29.3	30.0	31.3	32.3
Minimum Temperature	23.4	23.4	23.8	23.5	24.8
Mean Temperature	26.4	26.4	26.9	27.4	28.6

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
33.0	31.6	32.5	31.2	30.3	30.7	30.0
24.9	24.8	24.9	24.2	24.1	24.9	24.4
29.0	28.2	28.7	27.7	27.2	27.8	27.2
31.5	30.9	31.5	31.2	30.5	30.5	30.2
24.5	24.2	24.5	24.1	23.5	23.9	23.5
28.0	27.5	28.0	27.6	27.0	27.2	26.9
32.5	31.2	32.6	31.7	31.5	32.0	30.8
25.3	24.8	25.3	24.7	24.4	24.5	24.1
28.9	28.0	29.0	28.2	28.0	28.3	27.5
32.1	31.1	32.2	31.7	31.2	30.5	29.9
25.1	24.3	25.0	24.7	24.0	23.6	23.7
28.6	27.7	28.6	28.2	27.6	27.1	26.8

Table 1.4.8
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2013
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.4	29.5	30.7	32.9	33.7
Minimum Temperature	23.7	24.0	23.5	23.7	24.5
Mean Temperature	26.1	26.8	27.1	28.3	29.1
Legazpi City, Albay					
Maximum Temperature	28.9	29.8	30.5	32.5	33.6
Minimum Temperature	23.1	23.7	23.7	24.4	25.1
Mean Temperature	26.0	26.8	27.1	28.5	29.4
Masbate, Masbate					
Maximum Temperature	29.8	30.6	31.3	33.3	33.4
Minimum Temperature	23.4	23.6	24.1	25.5	26.0
Mean Temperature	26.6	27.1	27.7	29.4	29.7
Virac Synop, Catanduanes					
Maximum Temperature	28.9	29.6	30.3	31.4	32.2
Minimum Temperature	23.1	23.5	23.3	24.0	24.7
Mean Temperature	26.0	26.6	26.8	27.7	28.5

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
32.8	31.3	31.3	31.4	30.3	29.7	28.9
23.4	23.7	24.8	24.6	24.0	24.6	24.1
28.1	27.5	28.1	28.0	27.2	27.2	26.5
33.0	32.4	31.5	31.4	31.2	30.3	29.7
24.5	24.2	24.2	24.6	23.7	24.1	24.1
28.8	28.3	27.9	28.0	27.5	27.2	26.9
31.7	31.5	31.6	32.1	31.4	31.7	31.1
25.2	24.9	24.8	25.0	24.5	24.7	24.6
28.5	28.2	28.2	28.6	28.0	28.2	27.9
31.9	31.1	31.6	31.9	31.3	30.2	29.7
25.0	24.5	24.8	24.8	24.0	24.0	23.8
28.5	27.8	28.2	28.4	27.7	27.1	26.8

Table 1.4.9
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2014
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	27.5	28.6	29.5	31.0	33.9
Minimum Temperature	22.3	22.0	23.3	25.0	25.6
Mean Temperature	24.9	25.3	26.4	28.0	29.8
Legazpi City, Albay					
Maximum Temperature	27.6	29.6	30.0	31.3	33.4
Minimum Temperature	22.4	22.2	23.7	24.8	26.5
Mean Temperature	25.0	25.9	26.9	28.1	30.0
Masbate, Masbate					
Maximum Temperature	28.5	30.4	31.4	31.6	34.0
Minimum Temperature	23.0	23.1	23.7	24.7	26.1
Mean Temperature	25.8	26.8	27.6	28.2	30.1
Virac Synop, Catanduanes					
Maximum Temperature	27.7	29.3	30.2	30.7	32.7
Minimum Temperature	22.0	21.4	22.4	23.0	24.4
Mean Temperature	24.9	25.4	26.3	26.9	28.6

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
34.0	31.8	32.2	30.8	30.4	29.8	28.8
25.5	25.2	24.6	23.5	24.2	24.5	23.9
29.8	28.5	28.4	27.2	27.3	27.2	26.4
33.5	31.1	32.3	30.8	30.6	30.7	28.6
26.2	25.5	25.4	25.0	24.7	24.8	24.6
29.9	28.3	28.9	27.9	27.7	27.8	26.6
33.3	31.4	32.6	31.6	31.6	31.9	30.0
25.9	25.0	25.2	24.9	24.8	24.7	23.5
29.6	28.2	28.9	28.3	28.2	28.3	26.8
33.2	31.2	32.5	31.7	31.0	30.4	29.6
25.0	24.6	24.1	24.0	23.7	23.3	23.1
29.1	27.9	28.3	27.9	27.4	26.9	26.4

Table 1.4.10
ANNUAL TEMPERATURE DATA BY MONTH AND BY SELECTED STATION
2015
(In degrees Celsius)

Monitoring Station	Jan	Feb	Mar	Apr	May
Daet, Camarines Norte					
Maximum Temperature	28.2	28.3	29.9	31.0	32.8
Minimum Temperature	22.3	21.7	22.9	23.5	23.2
Mean Temperature	25.3	25.0	26.4	27.3	28.0
Legazpi City, Albay					
Maximum Temperature	28.5	28.8	29.9	31.4	32.4
Minimum Temperature	23.5	23.3	24.0	25.1	25.8
Mean Temperature	26.0	26.1	27.0	28.3	29.1
Masbate, Masbate					
Maximum Temperature	29.7	30.9	31.9	32.6	33.7
Minimum Temperature	22.3	22.3	22.9	24.3	25.2
Mean Temperature	26.0	26.6	27.4	28.5	29.5
Virac Synop, Catanduanes					
Maximum Temperature	28.7	28.7	30.0	30.8	31.7
Minimum Temperature	22.2	21.5	22.0	23.2	23.8
Mean Temperature	25.5	25.1	26.0	27.0	27.8

Source: Philippine Atmospheric, Geophysical and Astronomical Services Administration,
Department of Science and Technology

Jun	Jul	Aug	Sept	Oct	Nov	Dec
32.6	31.7	32.1	32.0	31.2	30.9	...
23.9	23.7	23.9	23.0	24.3	24.8	...
28.3	27.7	28.0	27.5	27.8	27.9	...
32.4	31.3	31.9	32.4	31.3	30.9	30.0
25.9	25.6	25.5	25.3	25.3	25.3	24.8
29.2	28.5	28.7	28.9	28.3	28.1	27.4
33.9	32.1	32.4	32.7	32.4	32.6	31.0
25.2	24.6	24.5	24.6	24.7	24.1	23.3
29.6	28.4	28.5	28.7	28.6	28.4	27.2
32.4	32.1	32.7	...	32.1	30.9	29.9
24.5	24.6	24.8	...	24.4	23.3	23.3
28.5	28.4	28.8	...	28.3	27.1	26.6

Table 1.5
LIST OF PROCLAIMED WATERSHEDS
As of 2015
(Area in hectares)

Region	Location		Total Count	Area	Proclamation	
	Province	City/Municipality			No.	Date
Philippines			146	2,675,687		
V - Bicol Region			14	98,756		
Jose Panganiban Watershed Forest Reserve	Camarines Norte	Jose Panganiban		1,160	1,151	1998-Jan-09
Diwata Watershed Forest Reserve	Masbate	San Fernando		350	370	1994-May-02
Matang-Tubig Watershed Forest Reserve	Masbate	Monreal		1,305	368	1994-May-02
Tugbo Watershed Forest Reserve	Masbate	Mobo, Masbate		247	369	1994-May-02
Mt. Masaraga Watershed Forest Reserve	Albay	Polangui, Oas, Ligao, Tabaco		810	84	1992-Oct-27
Magallanes and Juban Watershed Forest Reserve	Sorsogon	Magallanes, Juban		1,032	108	1992-Nov-23
Abasig-Matogdon-Mananap Watershed Forest Reserve	Camarines Norte	Labo, San Lorenzo Ruiz and San Vicente		5,545	836	1991-Nov-18
Catanduanes Watershed Forest Reserve	Catanduanes	Virac, Bato, San Miguel, Pandan, Calolbon, Baras		26,010	123	1987-Jun-23
Bacon Manito Watershed Geothermal Reservation	Albay and Sorsogon	Bacon, Manito		25,000	2036-A Amended by EO 837	1980-Nov-11 1982-Oct-14
Tiwi Watershed Reservation	Albay	Malinao and Tiwi		17,661	739	1970-Aug-14
Buhi-Barit Watershed Reservation	Camarines Sur	Buhi, Sangay and Iriga		18,370	573	1969-Jun-26
Capalonga Watershed Forest Reserve	Camarines Norte	Capalonga		752	128	1966-Nov-25
Dahican Watershed Forest Reserve	Camarines Norte	Mambulao		44	592	1933-Jun-23
Lagonoy Watershed Forest Reserve	Camarines Sur	Lagonoy		470	500	1932-Sept-26

Source: Department of Environment and Natural Resources

Table 1.6
LIST OF PRIORITY WATERSHEDS
As of 2013
(Area in hectares)

Name of Watershed	No. of Watershed	Watershed Area	Location (Province)	River Basin	National Irrigation	Number of River	NIS Service
Philippines	143	4,326,439				163	479,170
V - Bicol Region	15	147,540				16	18,334
Ponso Watershed		10,090	Albay	Bicol RB	Hibiga RIS	1	420
Basay River Watershed		...	Albay	Bicol RB	Mahaba RIS	1	566
Nasisi River Watershed		...	Albay	Bicol RB	Nasisi RIS	1	780
Bublusan Watershed		...	Albay	Bicol RB	Ogsong RIS	1	180
Buhi-Iriga River Watershed		41,350	Camarines Sur, Albay	Bicol RB	Buhi-Lalo RIS, Lake Buhi RIS	2	4,984
Nabua River Watershed		19,500	Camarines Sur	Bicol RB	Barit (Rida) RIS	1	2,224
Daet River Watershed		6,320	Camarines Norte	Basud RB	Daet RIS	1	
Talisay River Watershed		2,820	Camarines Norte	Talisay RB	Talisay RIS	1	2,603
Sipocot-Pulantuna		54,200	Camarines Sur	Bicol RB	Libmanan-Cabusao RIS	1	2,195
Pili River Watershed		2,680	Camarines Sur	Bicol RB	Pili RIS	1	250
Tigman River Watershed		8,990	Camarines Sur	Bicol RB	THIRIS Tigman Dam	1	3,542
Hinagyanan River		...		Bicol RB	THIRIS Hinagyanan	1	
Inainigan/Inarihan Watershed		...		Bicol RB	THIRIS Inarihan Dam	1	
Sabang River Watershed		...	Sorsogon	Sabang RB	San Francisco RIS	1	
Tubugan River Watershed		1,590	Sorsogon	Tubugan RB	San Ramon RIS	1	590

Source : Department of Environment and Natural Resources, Forest Management Bureau

Table 1.7
LAND COVER CLASSIFICATIONS
2010
(In hectares)

Region/Province	Forest			Other Wooded Land		
	Closed	Open	Mangrove	Fallow	Shrubs	Wooded Grassland
Philippines	1,934,032	4,595,154	310,531	7,247	3,355,180	3,829,046
V - Bicol Region	39,646	143,416	24,953	110	187,297	102,873
Albay	11,196	29,831	1,072	0	9,354	4,660
Camarines Norte	9,466	15,079	3,559	0	42,013	32,403
Camarines Sur	8,221	45,861	7,264	0	58,076	10,759
Catanduanes	10,763	32,249	1,995	0	56,618	2,063
Masbate	0	140	6,638	0	18,926	51,656
Sorsogon	0	20,256	4,425	110	2,309	1,332

Notes:

2010 Land cover data was generated from the interpretation of 10m resolution ALOS/AVNIR and SPOT satellite imageries taken from 2007 to 2011 with ground validation.

Administrative boundary was based from NAMRIA data.

Land cover classification was based from FAO 2009

International Standard and aggregated into 14 categories.

Source : National Mapping and Resource Information Authority (NAMRIA)

Agricultural		Fishpond	Built up Area	Other Natural Land			Inland Water	Grand Total
Annual Crop	Perennial Crop			Barren Land	Grassland	Marshland		
6,275,993	6,168,360	244,968	692,079	97,303	1,431,342	131,499	481,421	29,554,156
322,077	718,325	17,571	32,262	9,551	119,370	421	17,903	1,735,776
47,247	115,421	502	10,286	2,963	6,634	337	1,892	241,396
22,303	72,335	4,245	5,531	596	2,855	0	1,893	212,279
123,546	235,165	2,498	8,346	189	22,139	40	9,277	531,381
9,262	26,451	307	1,709	198	3,191	0	1,330	146,137
97,548	127,628	7,099	2,327	4,983	80,973	44	1,454	399,415
22,171	141,326	2,919	4,063	621	3,579	0	2,057	205,169

Table 1.8
AREA OF ECOSYSTEMS BY LAND COVER TYPE
(In hectares)

Area of Ecosystems (Protected Areas)	Land Cover Categories					
	Annual Crop	Built-up	Closed Forest	Fallow	Fishpond	Grassland
PHILIPPINES	352,944.9	31,998.5	697,018.5	1,579.2	9,703.3	224,255.4
Bicol Region	1,275.4	72.4	14,862.8	3.2	1,726.3	1,900.2
Abasig-Matogdon Mananap Natural Biotic Area	0.0	7.8	4,081.5	0.0	0.0	0.0
Basin Island	378.0	0.0	0.0	0.0	0.0	0.0
Bicol Natural Park	218.8	1.4	745.4	0.0	0.0	5.8
Bongsalay Natural Park	0.2	1.3	0.0	0.0	10.4	4.3
Bulusan Volcano Natural Park	0.0	0.0	0.0	3.2	0.0	0.0
Capalonga Watershed Forest Reserve	0.0	0.0	0.0	0.0	0.0	0.0
Caramoan National Park	12.3	0.0	0.0	0.0	0.0	0.4
Catanduanes Watershed Forest Reserve	0.0	3.9	7,108.6	0.0	0.0	9.1
Chico Island Wildlife Sanctuary	0.0	0.0	0.0	0.0	0.0	0.0
Dahican Watershed Forest Reserve	0.0	0.0	0.0	0.0	0.0	0.6
Island of Basot and Quinalaang	9.0	23.1	0.0	0.0	9.0	1,211.4
Island of Dampalit	5.9	0.0	0.0	0.0	0.0	0.0

Land Cover Categories								
Inland Water	Mangrove Forest	Marshland/ Swamp	Open Forest	Open/ Barren	Perennial Crop	Shrubs	Wooded grassland	Total
110,223.6	100,830.7	30,996.3	1,642,258.8	9,895.9	400,828.4	645,472.6	525,959.0	4,783,965.0
782.0	5,768.8	0.0	36,095.2	991.2	6,710.8	23,278.8	672.4	94,139.5
0.0	0.0	0.0	0.0	0.0	678.8	689.0	461.2	5,918.3
2.8	28.6	0.0	0.0	0.0	99.5	0.0	0.0	509.0
41.4	0.0	0.0	364.3	0.0	500.7	3,534.5	54.1	5,466.3
0.5	203.3	0.0	0.0	4.3	28.1	0.5	1.9	254.8
31.1	0.0	0.0	2,769.1	135.2	702.4	0.0	0.7	3,641.6
0.0	0.0	0.0	0.0	0.0	355.0	0.0	3.9	358.9
5.1	25.0	0.0	66.7	1.0	5.2	230.8	0.0	346.5
182.5	0.0	0.0	24,904.9	0.6	229.5	16,485.0	0.0	48,924.1
0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	6.5
0.0	0.0	0.0	0.0	0.0	13.9	26.7	1.0	42.2
10.8	171.4	0.0	0.0	3.2	1,798.2	0.0	89.7	3,325.6
0.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	16.2

Table 1.8
AREA OF ECOSYSTEMS BY LAND COVER TYPE
(In hectares)

Area of Ecosystems (Protected Areas)	Land Cover Categories					
	Annual Crop	Built-up	Closed Forest	Fallow	Fishpond	Grassland
Island of Guinauycan, Naro, Chico and Pobre	0.0	0.0	0.0	0.0	0.0	0.0
Island of Majaba and Napayuan	381.4	0.0	0.0	0.0	0.0	0.0
Lagonoy Natural Biotic Area	0.0	0.0	0.0	0.0	0.0	0.0
Mangrove Areas from Del Pilar River to Palita Island, Bo. Salvacion and Dahican	13.3	6.4	0.0	0.0	725.1	0.0
Mt Mayon Natural Park	58.2	0.0	0.0	0.0	0.0	542.1
Mt. Isarog Natural Park	90.4	0.0	2,927.2	0.0	0.0	72.6
Malabugot Protected Landscape & Seascape	0.0	0.0	0.0	0.0	0.0	0.0
Malaquing River to Mabunga River, Cueva Point to Kimartinez Point, Kabugao Point to Kabalog Andang Point (Mangrove)	77.5	2.5	0.0	0.0	30.7	0.0
Naro Island Wildlife Sanctuary	0.0	0.0	0.0	0.0	0.0	0.0
Pigbucan Point to Paron Point Mangrove	1.6	3.7	0.0	0.0	1.6	0.0
Putiao River to Malbog River, Getumbro pt. to Prieto Diaz, Panuntingan Pt. to Tagdon River, Sinagbatan Bay to Mantay Pt.	28.2	22.3	0.0	0.0	830.6	1.1
Tanglar point to Bicol river up to the islands of Lahay, Locsuhin, Haponan, Quinabungan, Lamit and Batan	0.4	0.0	0.0	0.0	118.9	52.8

Note: Data is based on 2010 Land Cover Map
Source: Biodiversity Management Bureau

Land Cover Categories								
Inland Water	Mangrove Forest	Marshland/ Swamp	Open Forest	Open/ Barren	Perennial Crop	Shrubs	Wooded grassland	Total
0.0	35.6	0.0	0.0	0.0	82.0	0.0	0.0	117.6
0.0	48.2	0.0	0.0	1.4	0.0	0.0	0.0	431.1
0.2	0.0	0.0	18.2	0.0	305.4	119.8	0.0	443.6
137.4	791.5	0.0	0.0	6.8	448.9	48.7	30.1	2,208.3
91.5	0.0	0.0	2,497.7	832.3	343.3	961.9	0.0	5,327.2
0.4	0.0	0.0	5,474.4	0.0	356.0	1,169.9	0.0	10,090.9
0.0	16.4	0.0	0.0	0.0	123.5	0.0	0.0	139.9
10.5	404.6	0.0	0.0	3.1	75.2	3.4	28.0	635.5
0.0	24.4	0.0	0.0	0.0	2.9	0.0	0.0	27.3
10.2	117.3	0.0	0.0	0.0	4.0	0.0	1.0	139.4
96.1	1,379.5	0.0	0.0	3.2	366.1	2.0	0.0	2,729.1
161.7	2,512.9	0.0	0.0	0.0	185.9	6.5	0.7	3,039.8

Table 1.9
LIST AND STATUS OF PROTECTED AREAS IN THE PHILIPPINES
As of 2012
(Area in hectares)

Region	Name of Reserve	Location	Issuances		Total	Area	Remarks
			Proc./R.A.	Date			
Philippines					241		
V - Bicol Region					25		
	Mt. Isarog Natural Park	Naga City, Calabanga,	Proc. 214	2002-Jun-20		10,112.35	
	Bicol Natural Park	Basud and Daet,	Proc. 43	2000-Dec-29		5,201.00	
	Bulusan Volcano	Casiguran, Barcelona,	Proc. 421	2000-Nov-27		3,672.00	
	Mayon Volcano Natural Park	Daraga, Albay, Camalig,	Proc. 413	2000-Nov-21		5,775.70	
	Bongsanglay Natural Park	Batuan, Masbate	Proc. 319	2000-May-31		244.72	
	Naro Island Wildlife	Cawayan, Masbate	Proc. 317	2000-May-31		109.98	
	Abasig-Matogdon	Labo, San Lorenzo Ruiz	Proc. 318	2000-May-31		5,420.12	
	Lagonoy Natural Biotic	Lagonoy, Camarines Sur	Proc. 297	2000-Apr-24		444.60	
	Chico Island Wildlife	Cawayan, Masbate	Proc. 272	2000-Apr-23		7.77	
	Malabungot Protected	Garchitorena, Camarines Sur	Proc. 288	2000-Apr-23		120.62	
	Catanduanes Watershed	Virac, Bato, San Miguel,	Proc. 123	1987-Jun-23		26,010.00	
	Island of Basot, Quinalaang,	Camarines Sur	Proc. 2151	1981-Dec-29		185.38	For dis-establishment
	Islands of Guinauyan,	Asia Gulf in Masbate	Proc. 2151	1981-Dec-29		23.25	For dis-establishment
	Island of Majaba and	Sibuyan Sea, Masbate	Proc. 2151	1981-Dec-29		18.00	For dis-establishment
	Island of Dampalit*	Samar Sea in Masbate	Proc. 2151	1981-Dec-29		...	
	Mangrove areas from Del Norte	Camarines Norte	Proc. 2152	1981-Dec-29		...	
	Tanglar Point to Bicol River Mangroves along the banks of Looc	Camarines Sur	Proc. 2152	1981-Dec-29		...	

Table 1.9
LIST AND STATUS OF PROTECTED AREAS IN THE PHILIPPINES
As of 2012
(Area in hectares)

Region	Name of Reserve	Location	Issuances		Total	Area	Remarks
			Proc./R.A.	Date			
	Pigbucan to Paron Point*	Manito, Albay	Proc. 2152	1981-Dec-29		...	
	Putiao River to Malbog River Getumbro Point up to the Municipality of Malaquing	Sorsogon	Proc. 2152	1981-Dec-29		...	
	River up to Mabung River, Cueva Point up to Kimartines Basin Island*	Burias Island (near Burias Island)	Proc. 2152	1981-Dec-29		...	
	Capalonga Watershed Forest Reserve*	Capalonga, Camarines Norte	Proc. 128	1966-Nov-25		752.00	For dis-establishment
	Caramoan National Park*	Caramoan, Camarines Sur	Proc. 291	1938-Jul-20		347.00	
	Libmanan Caves National Park*	Libmanan, Camarines Sur	Proc. 654	1934-Feb-06		19.40	For dis-establishment
	Dahican Watershed Forest Reserve*	Mambulao, Camarines Norte	Proc. 592	1933-Jun-23		44.00	For dis-establishment

Source : Department of Environment and Natural Resources, Biodiversity Management Bureau

Table 1.10
LIST OF PROCLAIMED PROTECTED AREAS
UNDER THE NATIONAL INTEGRATED PROTECTED AREAS SYSTEM (NIPAS)
As of May 9, 2012
(Area in hectares)

Region	No. of Protected Areas	Name of Protected Area	Location	Protected Area	Buffer Zone
Philippines	113			3,569,092.8	223,843.5
V - Bicol Region	10			31,108.9	0.0
		Mt. Isarog Natural Park	Naga, Calabanaga, Tinambac, Goa,	10,112.4	
		Bulusan Volcano Natural Park	Casiguran, Barcelona, Irosin	3,672.0	
		Mayon Volcano Natural Park	Ligao, Guinobatan, Camalig, Damaga,	5,775.7	
		Naro Island Wildlife Sanctuary	Cawayan, Masbate	110.0	
		Abasig-Matogdon Mananap Natural Park	San Vicente, San Lorenzo Ruiz, and	5,420.1	
		Bongsalay Natural Park	Batuan, Masbate	244.7	
		Bicol Natural Park	Basud and Daet, Camarines Norte ;	5,201.0	
		Lagonoy Natural Biotic Area	Lagonoy, Camarines Sur	444.6	
		Chico Island Wildlife Sanctuary	Cawayan, Masbate	7.8	
		Malabungot Protected	Garchitorena, Camarines Sur	120.6	

Source : Department of Environment and Natural Resources, Biodiversity Management Bureau

Terrestrial		Marine		Proclamation	
Protected Area	Buffer Zone	Protected Area	Buffer Zone	Number	Date
2,197,009.9	203,330.2	1,372,083.0	20,513.3		
30,988.2	0.0	120.6	0.0		
10,112.4	214	2002-Jun-20
3,672.0	421	2000-Nov-27
5,775.7	413	2000-Nov-21
110.0	317	2000-May-31
5,420.1	318	2000-May-31
244.7	319	2000-May-31
5,201.0	43	2000-Dec-29
444.6	297	2000-Apr-24
7.8	272	2000-Apr-23
	...	120.6		288	2000-Apr-23

Table 1.11
SUMMARY OF PROCLAIMED PROTECTED AREAS BY REGION PER ECOSYSTEM TYPE
As of December 2015
(In hectares)

Region	Grand Total		
	No.	Protected Area	Buffer Zone
Philippines	113	3,569,093	223,844
V - Bicol Region	10	31,108.9	0.0

Source: Department of Environment and Natural Resources, Biodiversity Management Bureau

Table 1.12
FOREST COVER OF THE BICOL REGION
2010
(In hectares)

Region Province	Closed Forest		Open Forest	
	In Forestland	In A&D Land*	In Forestland	In A&D Land*
Philippines	1,817,173.0	116,874.6	4,079,932.8	515,258.1
V - Bicol Region	28,803.7	10,842.0	107,422.1	30,403.7
Albay	4,735.7	6,460.6	10,412.4	12,715.9
Camarines Norte	8,599.9	865.9	11,249.4	3,829.8
Camarines Sur	7,239.6	981.0	43,819.6	2,027.8
Catanduanes	8,228.6	2,534.5	28,248.1	4,000.8
Masbate	0.0	0.0	31.4	108.5
Sorsogon	0.0	0.0	13,661.3	7,721.0

* In A&D Land means In Alienable and Disposable Land

Source: National Mapping and Resource Information Authority (NAMRIA)

Terrestrial			Marine		
No.	Protected Area	Buffer Zone	No.	Protected Area	Buffer Zone
84	2,197,010	203,330	29	1,372,083	20,513
9	30,988.2	0.0	1	120.6	0.0

Mangrove		Total	
In Forestland	In A&D Land*	In Forestland	In A&D Land*
203,590.6	107,002.5	6,100,696.4	739,135.2
14,730.5	10,242.4	150,956.3	51,488.2
479.4	612.5	15,627.5	19,789.0
2,644.5	914.6	22,493.8	5,610.3
3,491.8	3,772.2	54,551.0	6,781.0
700.1	1,295.1	37,176.8	7,830.4
4,531.4	2,106.5	4,562.8	2,215.0
2,883.2	1,541.5	16,544.5	9,262.5

Table 1.13
CONCENTRATION LEVELS OF PARTICULATE MATTER 10 (PM10)
2012 to 2018
(In micrograms per normal cubic meter)

Region	Station	2012	2013	2014	2015	2016	2017	2018
V - Bicol Region								
	Barraida, Legaspi City	...	32	39	38	36.06	39	36
	Naga City PENRO, Naga	...	...	...	29	25.04	26	26
	EMB Region 5 Office,	...	...	...	29	20.535	26	35

Note: National Ambient Air Quality Guideline Value (NAAQGV): Annual - 60 µg/Ncm

Source: Department of Environment and Natural Resources, Environment Management Bureau

Table 1.14
CONCENTRATION LEVELS OF PARTICULATE MATTER 2.5 (PM2.5)
2015
(In micrograms per normal cubic meter)

Region	Station	Annual Geometric Mean			
		2015	2016	2017	2018
V - Bicol Region					
	Naga City PENRO, Naga City	18	14	17	...
	EMB Region 5 Office, Regional	...	10	13	...

Source: Department of Environment and Natural Resources, Environment Management Bureau

Table 1.15
ANNUAL BIOCHEMICAL OXYGEN DEMAND (BOD)
CONCENTRATION OF SELECTED FRESHWATER BODIES
2006 to 2018
(In milligrams per liter)

Region	Water Body	Class*	2006	2007	2008	2009
V - Bicol Region						
	Anayan River	C	3.0	3.9	2.8	2.9
	Balos River	B	...	...	1.4	...
	Lake Buhi	B	1.8	...	...	...
	Naga River	C	...	...	...	...
	Sagumayon River	C	...	10.2	6.9	17.0
	Salog River	C	...	...	...	2.7

* See Annex

Table 1.16
ANNUAL DISSOLVED OXYGEN (DO) CONCENTRATION OF SELECTED FRESHWATER BODIES
OF SELECTED FRESHWATER BODIES
2006 to 2018
(In milligrams per liter)

Region	Water Body	Class*	2006	2007	2008	2009
V - Bicol Region						
	Anayan River	C	6.7	5.9	...	6.3
	Balos River	B	...	...	7.3	7.3
	Lake Buhi	B	8.6	...	...	...
	Naga River	C	...	...	6.5	...
	Sagumayon River	C	...	4.3	4.3	3.8
	Salog River	C	...	...	...	6.9

* See Annex

2010	2011	2012	2013	2014	2015	2016	2017	2018
4.0
2.0	3.6	2.0	2.1	2.7
...	...	1.6	1.2	1.1	2.5	2.4	2.2	2.1
...	70.4	6.2	7.6	4.6	10.4
23.0	14.4	15.6	11.8	23.8	22.6	22.2	29.0	27.8
4.0	5.3	3.6	4.0	4.3

2010	2011	2012	2013	2014	2015	2016	2017	2018
5.1
7.2	7.1	7.0	7.1	6.4
...	...	7.3	8.8	8.7	7.1	7.2	9.2	8.9
...	4.6	6.5	9.8	6.4	5.7
3.1	4.5	6.4	3.5	3.5	3.8	4.1	3.3	3.4
6.6	6.0	5.8	5.6	6.3

**ANNEX.
CLASSIFICATION OF WATER BODIES**

Classification	Beneficial Use
Fresh Surface Waters (rivers, lakes, reservoir, etc.)	
Class AA	Public Water Supply Class I. This class is intended primarily for waters having watershed which are uninhabited and otherwise protected and which require only approved disinfection in order to meet the National Standards for Drinking Water (NSDW) of the Philippines.
Class A	Public Water Supply Class II. For sources of water supply that will require complete treatment (coagulation, sedimentation, filtration and disinfection) in order to meet the NSDW.
Class B	Recreational Water Class I. For primary contact recreation such as bathing, swimming, skin diving, etc. (particularly those designated for tourism purposes).
Class C	1) Fishery Water for the propagation and growth of fish and other aquatic resources; 2) Recreational Water Class II. (Boatings, etc.); 3) Industrial Water Supply Class I. For manufacturing processes after treatment.
Class D	1) For agriculture, irrigation, livestock watering, etc.; 2) Industrial Water Supply Class II. (e.g. cooling, etc.); 3) Other inland waters, by their quality, belonging to this classification
Coastal and Marine Waters	
Class SA	1) Waters suitable for the propagation, survival and harvesting of shellfish for commercial purposes; 2) Tourist zones and national marine parks and reserves established under Presidential Proclamation No. 1801; existing laws and/or declared as such by appropriate agency; 3) Coral reef parks and reserves designated by laws and concerned authorities.
Class SB	1) Recreational Water Class I. Areas regularly used by the public for bathing, swimming, skin diving, etc.; 2) Fishery Water Class I. Spawning areas for <i>Chanos chanos</i> or "Bangus" and similar species.
Class SC	1) Recreational Water Class II. (e.g. boating, etc.) 2) Fishery Water Class II. Commercial and sustenance fishing
Class SD	3) Marshy and/or mangrove areas declared as fish and wildlife sanctuaries 1) Industrial Water Supply Class II. (e.g. cooling, etc.) 2) Other coastal and marine waters, by their quality, belonging to this classification

Source: Department of Environment and Natural Resources, DENR Administrative Order

Component Two

Environment Resources and their Use

COMPONENT TWO

ENVIRONMENTAL RESOURCES AND THEIR USE

Environmental resources are defined as “the naturally living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity”³. In this light, Component 2: “Environmental Resources and Their Use” focuses on the stocks and changes in stocks of these resources brought about by human activities. Statistics under this component are mostly concerned with the monitoring of the availability, consumption and use of environmental resources.

Component 2 is deeply connected to the Physical Flow and Asset Accounts of the System of Environmental-Economic Accounting (SEEA) 2012 Central Framework. These accounts aid policymaking on the consumption and use of environmental resources. The main goal of the flow accounts is to record the physical amount of resources from the environment, within the economy and back to the environment. Asset accounts, on the other hand, are used to monitor the stocks of environmental resources and the changes in these stocks due to natural regeneration, extraction, reappraisals, reclassification and catastrophes. A number of the statistics compiled in this component, particularly those that concern the stocks and the extraction and use of resources, are essential in compiling these accounts.

This component also contains statistics needed to derive indicators necessary in monitoring the achievement of the Sustainable Development Goals (SDGs). Most of the core indicators recommended under the component are anchored on issues like food security (SDG 2), availability of clean water (SDG 6), sufficiency of energy (SDG 7), and maintenance of life on water and land (SDGs 14 and 15, respectively). Forests are also given emphasis for their numerous benefits—provision of resources and mitigation of global warming (SDG 13). Overall, these statistics are linked to the end goals of responsible consumption (SDG 12), sustainable growth (SDG 8), and innovation (SDG 9).

There are six subcomponents in Component 2, as stated in the FDES. These are mineral resources, energy resources, land, soil resources, biological resources and water resources. However, only two of these subcomponents were covered in this compendium. Details covering the compilation of these statistics are detailed per subcomponent below.

2.1 Mineral Resources

Minerals are defined as the “elements or compounds composed of a concentration of naturally occurring solid, liquid, or gaseous materials in or on the earth’s crust”⁴. These include metals like gold, silver and aluminum, and non-metals like precious gems, sand, and clay. By definition, coal and petroleum resources are also considered as non-metallic minerals, but due to their capacity to provide energy, they are included in Energy Resources.

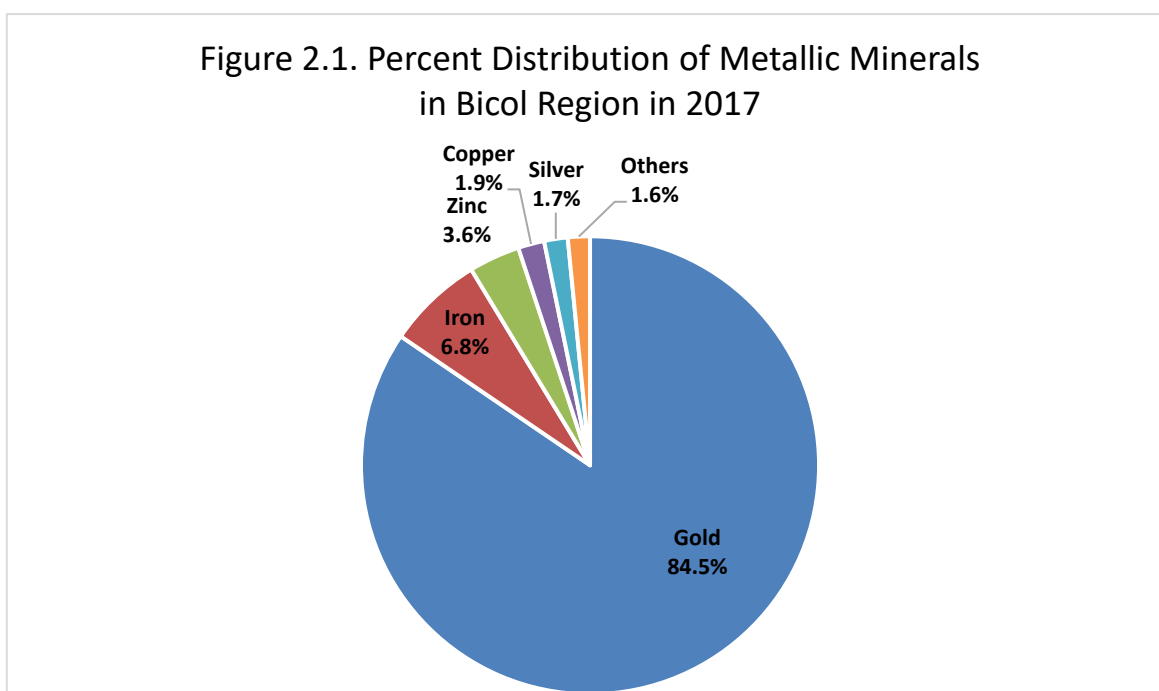
Mineral resources do not regenerate on any human timescale, and thus are considered nonrenewable. This implies that the rate at which they are extracted is also the rate of their depletion, and points to the concern on the monitoring of the availability and extraction of these resources. FDES 2013 recommends that the stocks of commercially recoverable mineral resources and the levels of extraction for each resource be recorded.

2.1.1 Metallic and Non-metallic Mineral Resources/Reserves

The Mines and Geosciences Bureau provided the Mineral Resource/Reserve Inventory as of 2017 and Volume of Mineral Production for 2004 to 2018 for the core statistics under this topic.

The Metallic Mineral Resource/Reserve Inventory shows the amount of reserves of seven metallic minerals, with gold and iron having the largest and second largest shares at 263 million metric tons and 21 million metric tons, or 84.5 percent and 6.8 percent of the total amount of reserves, respectively.

Zinc, Copper and silver also comprise 3.6 percent, 1.9 percent and 1.7 percent of the total amount of metallic reserves, respectively. Other metallic minerals that can also be found in the region are nickel and chromite.



Source: Mines and Geosciences Bureau

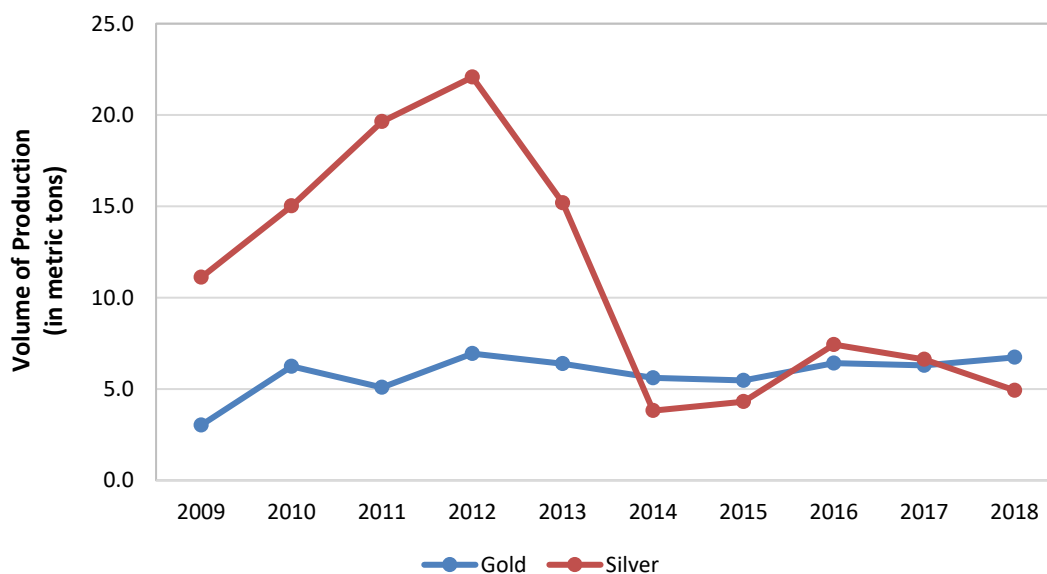
Meanwhile, ten non-metallic minerals were recorded under the Non-Metallic Resource/Reserve Inventory. Limestones are the most abundant, with over 2.2 billion metric tons of total resource and 122 million metric tons of total reserve.

2.1.2 Mineral Production

Figure 2.3 shows the production levels of precious metals gold and silver from 2009 to 2018. From 2009 to 2013, silver production exceeds that of gold. However, silver production dropped in 2014 and gold production has been greater than silver in 2014, 2015 and 2018. Among the other metallic products, the most produced is iron ore with production amounting to more than 104 thousand metric tons in 2013.

Sand and gravel production, the most produced non-metallic mineral, grew by almost 4 million cubic meters in a span of ten years from 2009. Limestone, the second most produced non-metallic mineral, grew to 380 thousand metric tons in 2018 from 315 thousand metric tons in 2009.

Figure 2.2. Production of Gold and Silver in Bicol Region from 2009 to 2018



Source: Mines and Geosciences Bureau

2.2 Biological resources

Biological resources consist of animals, plants, fungi and bacteria. They are essential to humans as they provide food and other factors of production. Unlike mineral and energy resources, these resources regenerate depletion occurs when the level of harvest exceeds the rate of natural regeneration.

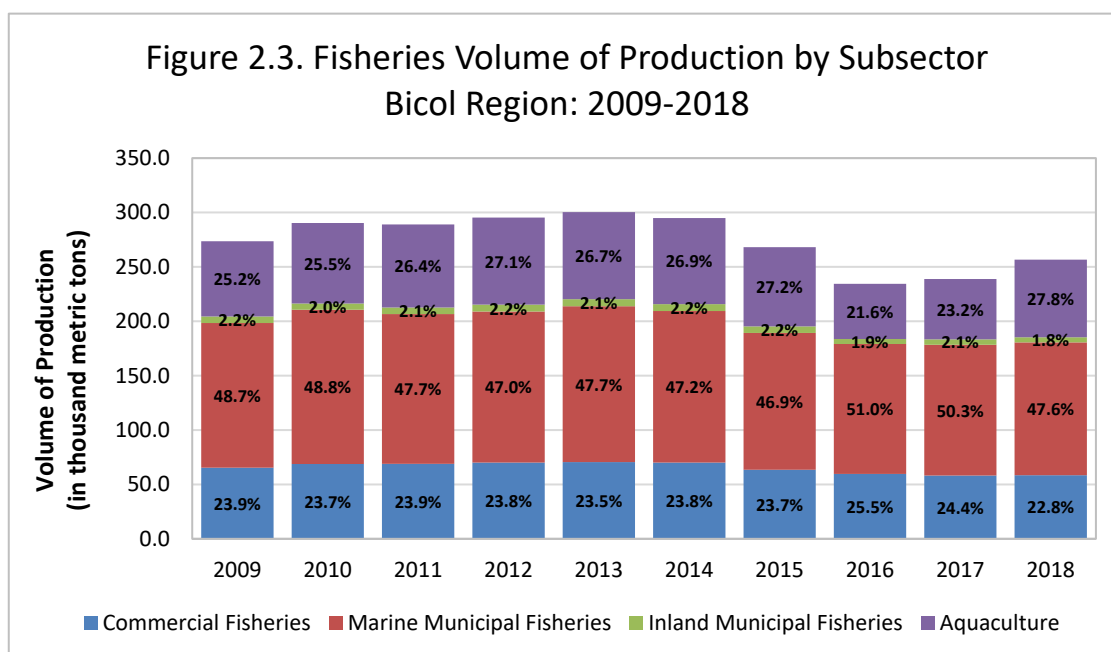
This subcomponent is comprised of statistics on natural and cultivated biological resources. This is further subdivided into five topics according to the FDES 2013: timber resources, aquatic resources, crops, livestock and other non-cultivated biological resources. Data for the core indicator under timber resources is not yet available, and there are no core statistics needed to be compiled under “other non-cultivated biological resources”. The data for the seven core statistics compiled for this subcomponent are sourced from the Philippine Statistics Authority (PSA).

2.2.1 Aquatic resources

The core statistics under this topic includes the levels of fish capture production and aquaculture production. The data includes levels of production of different species of fish, crustaceans, molluscs and aquatic plants, and are disaggregated by region and province. Statistics on fish capture production are divided into three: commercial fisheries, inland municipal fisheries, and marine municipal fisheries. Commercial and municipal fishing differs in the capacity of fishing vessels or boats used. Commercial fishing is the catching of fish using boats with a capacity of three (3) gross tons, either for trade, business or profit beyond subsistence, or sports. Municipal fishing utilizes fishing vessels with three (3) gross tons or less of capacity. Aquaculture production, on the other hand, is presented according to the type of environment (brackish water, freshwater or marine water); and type of facility (ponds, pens, cages, or reservoirs). Oyster, mussel, and seaweed farming is also included under Aquaculture. Statistics on fish capture and aquaculture production are provided by the Philippine Statistics Authority.

Figure 2.6 shows that total fish production peaked in 2013 with around 300 thousand metric tons of fish and aquatic produce. However, it decreased from thereon, settling at over 234 thousand metric tons in 2016 and bounced back to over 257 thousand metric tons in 2018. Fish capture declined after 2013, decreasing from around 220 thousand metric tons to over 183 thousand metric tons in 2017.

Aquaculture provides for around a quarter of the supplies of fish and other aquatic resources in the country. Seaweed production was at its highest in 2012, reaching a level of around 62 thousand metric tons; and a lowest recorded level of over 34 thousand metric tons in 2016.



Source: Philippine Statistics Authority

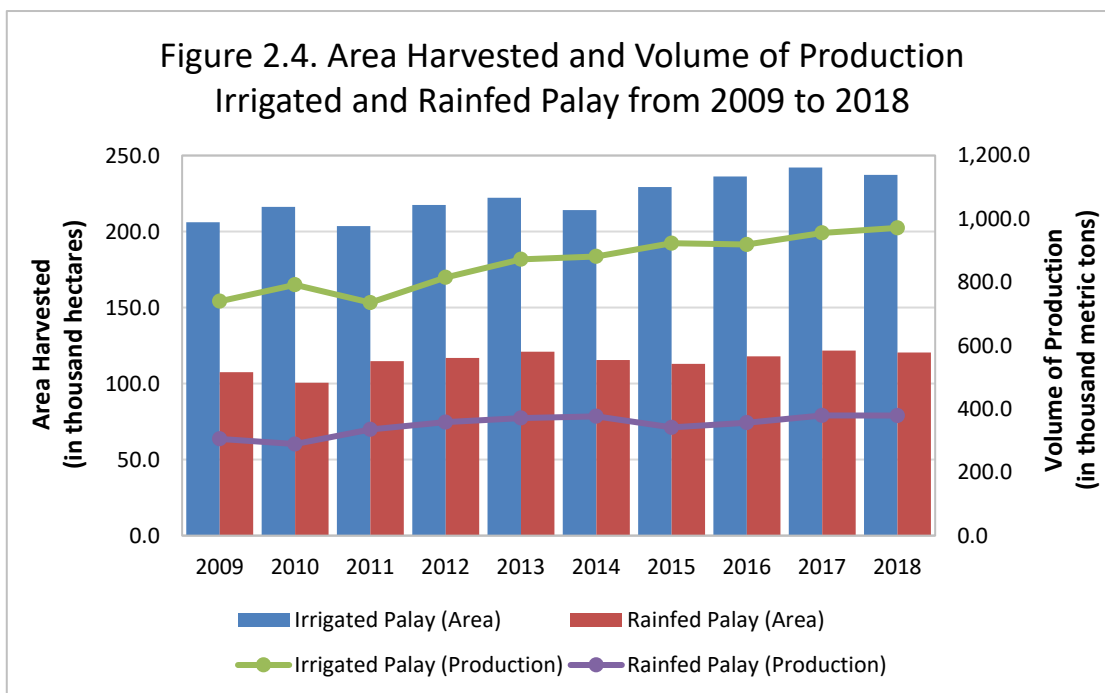
2.2.2 Crops

Four core statistics are compiled for Component 2 under this topic. These are: amount produced, area planted, area harvested and amount used of inorganic fertilizers. Statistics for area harvest and area produced are not differentiated and are compiled in the same table. The amount used of inorganic fertilizers is presented in two ways: by area applied and harvested, and the amount applied by grade. Data on the amount used of natural fertilizers and pesticides are not available.

The amount of production and area planted/harvested covers palay, corn and 66 other crops. Statistics on the volume of production and area planted/harvested for palay and corn are also presented for irrigated palay, rainfed palay, white corn and yellow corn. The most recent collected statistics on the use of inorganic fertilizers includes up to 2014 only. The area applied and harvested with inorganic fertilizers area also available for palay and corn only.

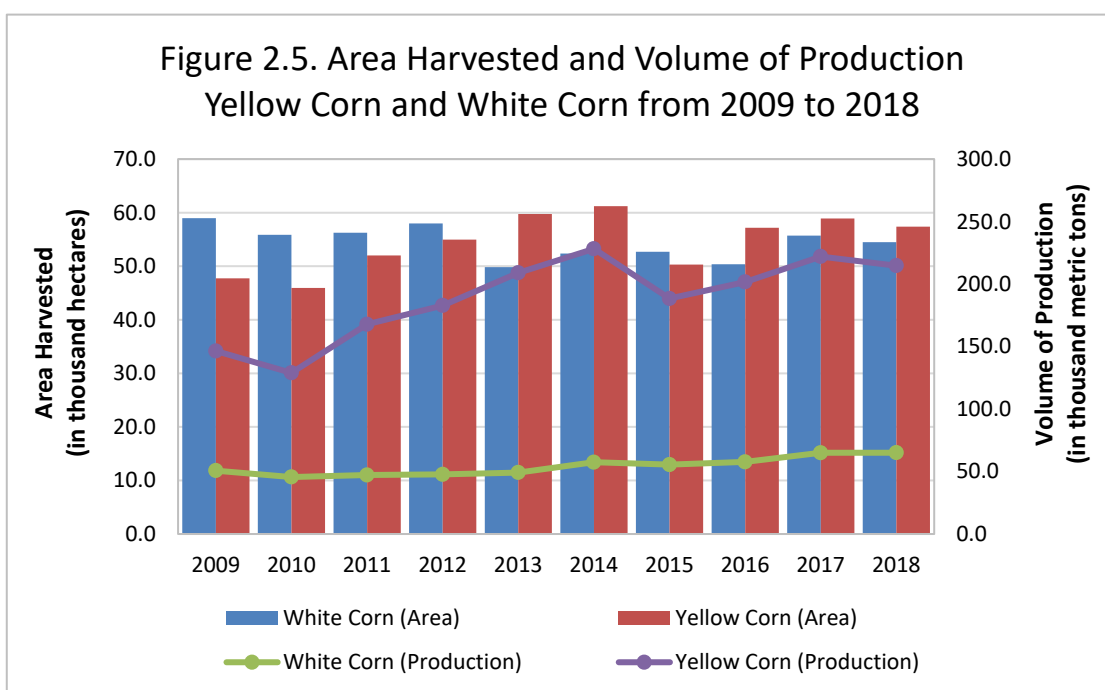
Total palay production amounted to 1.4 million metric tons in 2018, or a 304.9 thousand metric tons increase from its level ten years before. Area harvested of palay increased by around 44.1 thousand hectares from 313.6 thousand in 2009 to about 357.7 thousand hectares in 2018. Area harvested with corn increased by 5.2 thousand hectares in a span of ten years from 2009. Likewise, corn production increased by more than 82.6 thousand metric tons in the same span of time.

The area of harvested irrigated and rainfed palay are shown in Figure 2.7. Land with irrigated palay is double that of rainfed palay area harvested. However, production of irrigated palay is more than twice bigger than production of rainfed palay. Over ten years starting 2009, the land used for irrigated palay grew by 31 thousand hectares, while land used for rainfed palay increased by almost 13 thousand hectares. Production of irrigated palay, meanwhile, increased by 31.3 percent or 231.6 thousand metric tons in the ten-year span. Rainfed palay production grew by 24 percent or 73.4 thousand metric tons from 2006 to 2015.



Source: Philippine Statistics Authority

As shown in Figure 2.8, area used for white corn decreased to about 54.5 thousand hectares in 2018 from almost 59 thousand hectares in 2009. Nonetheless white corn production increased by about 14.3 thousand metric tons in the same span of time. Area harvested with yellow corn has increased by 20 percent over ten years from 47.7 thousand hectares in 2009, while yellow corn production grew by almost 47 percent from a level of 146.4 thousand metric tons in 2009.



Source: Philippine Statistics Authority

Data shows a significant shift to coconut planting in 2010, as area harvested grew by almost five thousand hectares. Abaca harvested area grew until 2014 and remained steady for two years, but declined in the next year and settled at 43 thousand hectares in 2018. Area harvested with cassava declined by 6.5 percent to about 21 thousand hectares in 2018 from almost 23 thousand hectares in 2009. Banana plantation declined by 547 hectares from 2013 to 2016 but increased in the subsequent years. Harvested area of sweet potato displayed a steady decline, decreasing by 12.5 percent to 17 hectares in 2018 from 20 hectares in 2009.

Coconut and sugarcane are the largest produced crops in terms of volume, with production amounting to 1.2 million metric tons and 224 thousand metric tons respectively, in 2018. Pineapple production grew to 151 thousand metric tons in 2018 from 110 thousand metric tons in 2009. On the other hand, cassava production exhibited production decline by 24 percent to 87 thousand metric tons in 2018 from 115 thousand metric tons of produce in 2009.

The area harvested applied with inorganic fertilizers for palay steadily grew from 2006 to 2013. However, it declined in 2014, dropping by about 14 thousand hectares from a level of 343 thousand hectares in the previous year. The area harvested applied with inorganic fertilizers for corn grew from 2005 to 2009 but declined by five thousand hectares in the next year. It picked up in 2011 and grew to about 114 thousand hectares in 2014.

The grades of inorganic fertilizers listed in Tables 2.9.1 and 2.9.2 are Urea, Ammosul, Ammophos, Complete and Others. The data shows that average use of inorganic fertilizers decreased in the ten-year period from 2005 to 2014, with Urea and Complete fertilizers being the most and second most applied type of fertilizers for both palay and corn.

2.2.3 Livestock

Livestock, as defined in the FDES 2013, are animals raised by humans for commercial purposes, consumption or labor. Data for the only core statistic in this topic is collected from the Livestock Inventory as of January 1 of the indicated year. The species covered consist of cattle, carabao, hog, goat, chicken and duck. The statistics are also classified according to farm type (i.e., commercial or backyard), except for chicken, which is categorized into broilers, layers and native chicken.

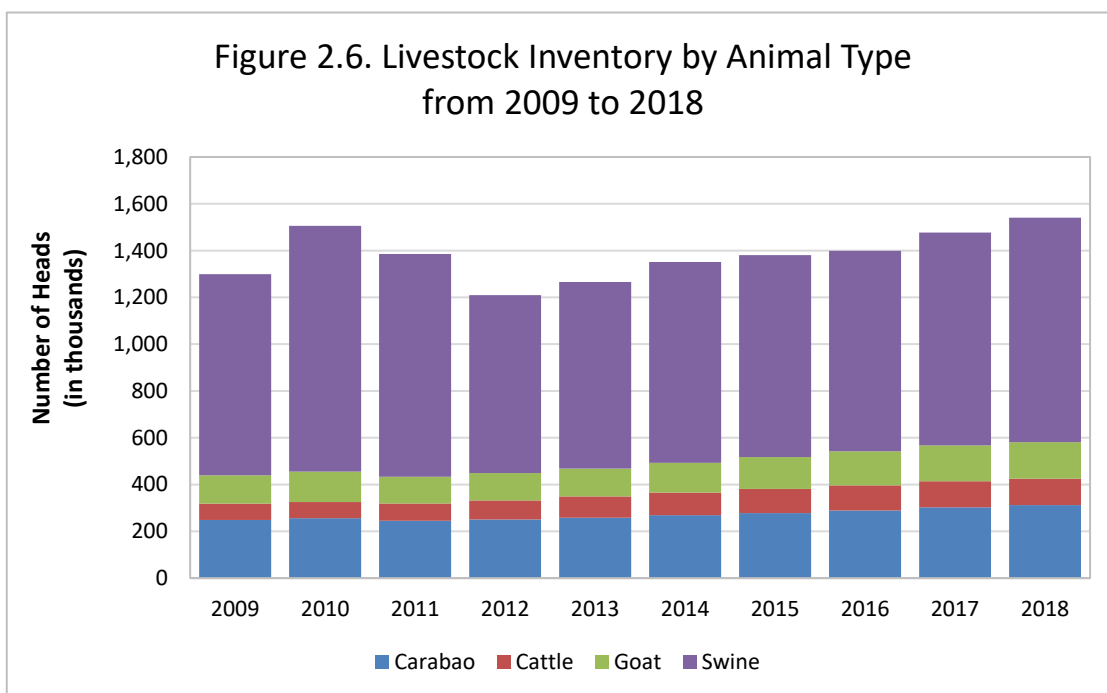
For four-legged animals, commercial farms are those that satisfy one of the following: a) at least 21 adults and zero young; b) at least 41 heads of young animals; c) at least 10 heads of adults and 22 heads of young animals. For poultry, a commercial farm should satisfy any of the following criteria: a) 500 layers or 1,000 broilers; b) 100 layers and 100 broilers, if raised in combination; c) 100 heads of ducks regardless of age. Backyard farms refer to those that do not fall in the category of commercial farming.

Figure 2.9 shows the inventories of carabao, cattle, goat and swine from 2009 to 2018. As seen in the figure, the inventories reached a peak at 1.5 million heads in 2010 before declining in the next two years. It then displayed a steady growth from 1.3 million heads in 2013 to 1.5 million heads in 2018.

Overall, swine comprise the biggest share of livestock as 959 thousand heads were counted as of January 1, 2018, with 84 percent raised in backyards and 16 percent raised in commercial farms. On the other hand, cattle had the least number with 113 thousand heads, most of which are in backyard farms (70 percent). Similarly, almost all the carabaos (99.7 percent) and goats (99.5 percent) are raised in backyard farms.

Ducks are mostly raised in backyard farms; with the largest number recorded in 2018 at over 421 thousand ducks. Total duck inventory was also highest in 2018 with 523 thousand ducks, 80 percent of which were raised in backyard farms and 20 percent in commercial farms.

Chicken inventory rose to 10.4 million in 2018 from 6.5 million in 2009. Native chicken makes up the largest share in the inventory, peaking at 5.7 million heads in 2010. This however, declined to 4.0 million in 2013 then steadily grew to 5.4 million heads in 2018. Broiler inventory increased by 3.6 million heads from 2009 to 2018 while layers decreased by 287 thousand heads in the same time span.



Source: Philippine Statistics Authority

Table 2.1.1
METALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE BICOL REGION

Region	Silver		Gold	
	Volume (grams)	Average Grade (g/t)	Volume (tons)	Average Grade (g/t)
Philippines	24,302,205.0	12.8	4,456,778,775.2	0.9
V	14,021,193.0	7.8	124,047,334.0	2.1

- no available data

Based on the 2015 inventory and other data gathered up to June 2016

Data used are mixed resources and reserves. This inventory is NOT exclusively Reserve nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.2
NONMETALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE PHILIPPINES

Region	Aggregates	Asbestos	Bentonite	Clay
Philippines	1,329,919,051.2	5,000.0	1,869,813.5	61,760,118.3
V	19,629,520.0	-	320,000.0	38,416,530.0

- no available data

Based on the 2015 inventory and other data gathered up to June 2016

Data used are mixed resources and reserves. This inventory is NOT exclusively Reserve nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.3
SUMMARY OF METALLIC RESOURCE/RESERVE INVENTORY IN BICOL REGION

Region	Silver		Gold	
	Weight (in metric tons)	Average Grade (g/t)	Weight (in metric tons)	Average Grade (g/t)
V	5,161,193.0	4.4	262,735,211.0	1.4

Notes: "V" volume means there is no available data.

* Based on the 2017 inventory and other data gathered up to June 2018.

* Some data used are mixed resources and reserves due to the previous MGB Form 29-19.

This inventory is NOT exclusively Reserves nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.4
NONMETALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE PHILIPPINES

Region	Aggregates		Bentonite	
	Total Resource (in metric tons)	Total Reserve (in metric tons)	Total Resource (in metric tons)	Total Reserve (in metric tons)
V	19,629,520.0	-	320,000.0	-

Note: * "V" volume means there is no available data.

* Based on the 2017 inventory and other data gathered up to June 2018.

* Some data used are mixed resources and reserves due to the previous MGB Form 29-19.

This inventory is NOT exclusively Reserve nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.1 (continued)

METALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE BICOL REGION

Region	Aluminum (Bauxite)		Chromite	
	Volume (tons)	Average Grade (%Al ₂ O ₃)	Volume (tons)	Average Grade (%Cr ₂ O ₃)
Philippines	117,600,000.0	42.2	79,005,367.1	8.5
V	-	-	2,339,890.0	21.7

- no available data

Based on the 2015 inventory and other data gathered up to June 2016

Data used are mixed resources and reserves. This inventory is NOT exclusively Reserve nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.2 (continued)

NONMETALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE PHILIPPINES

Region	Diatoma-ceous Earth	Feldspar	Guano	Gypsum
Philippines	910,600.0	21,600,280.0	500.0	358,900.0
V	758,600.0	-	-	11,000.0

- no available data

Based on the 2015 inventory and other data gathered up to June 2016

Data used are mixed resources and reserves. This inventory is NOT exclusively Reserve nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.3 (continued)

SUMMARY OF METALLIC RESOURCE/RESERVE INVENTORY IN BICOL REGION

Region	Chromite		Copper	
	Weight (in metric tons)	Average Grade (% Cr ₂ O ₃)	Weight (in metric tons)	Average Grade (% Cu)
V	2,339,890.0	21.7	5,755,890.0	0.9

Notes: "-" volume means there is no available data.

* Based on the 2017 inventory and other data gathered up to June 2018.

Source: Mines and Geosciences Bureau

Table 2.1.4 (continued)

NONMETALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE PHILIPPINES

Region	Clay		Diatomaceous Earth	
	Total Resource (in metric tons)	Total Reserve (in metric tons)	Total Resource (in metric tons)	Total Reserve (in metric tons)
V	257,433,100.0	73,112,648.0	758,600.0	-

Note: "-" volume means there is no available data.

* Based on the 2017 inventory and other data gathered up to June 2018.

Source: Mines and Geosciences Bureau

Copper		Iron		Iron (Associated with Nickel)	
Volume (tons)	Average Grade (%Cu)	Volume (tons)	Average Grade (%Fe)	Volume (tons)	Average Grade (%Fe)
7,384,211,953.0	0.9	959,130,025.7	8.2	792,584,935.4	37.1
14,615,890.0	1.5	21,134,280.0	33.2	-	-

ISAG	Limestone	Magnesite	Marbleized Limestone	Magnesite	Perlite
3,737,331.1	30,744,597,358.3	79,072,940.0	1,061,495,540.0	1,120,000,000.0	8,040,237.8
	1,979,769,050.0	-	16,442,310.0	-	8,040,237.8

Based on the 2015 inventory and other data gathered up to June 2016

Source: Mines and Geosciences Bureau

Iron		Nickel		Nickel	
Weight (in metric tons)	Average Grade (% Fe)	Weight (in metric tons)	Average Grade (% Ni)	Weight (in metric tons)	Average Grade (% Zn)
21,134,280.0	33.2	2,500,000.0	0.6	11,217,248.0	2.7

Gypsum		Limestone		Marbleized Limestone	
Total Resource (in metric tons)	Total Reserve (in metric tons)	Total Resource (in metric tons)	Total Reserve (in metric tons)	Total Resource (in metric tons)	Total Reserve (in metric tons)
11,000.0	-	2,242,922,342.0	122,454,888.0	16,442,310.0	-

Table 2.1.1 (continued)

METALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE BICOL REGION

Region	Manganese		Nickel	
	Volume (tons)	Average Grade (%Mn)	Volume (tons)	Average Grade (%Ni)
Philippines	248,500.0	44.3	1,522,267,861.0	1.1
V	-	-	2,500,000.0	0.6

- no available data

Based on the 2015 inventory and other data gathered up to June 2016

Data used are mixed resources and reserves. This inventory is NOT exclusively Reserve nor Resources.

Source: Mines and Geosciences Bureau

Table 2.1.2 (continued)

NONMETALLIC MINERALS RESOURCE/RESERVE INVENTORY OF THE PHILIPPINES

Region	Pozzolan	Rock Phosphate	Shale	Silica
Philippines	185,500,908.0	171,500.0	2,400,938,212.2	1,434,571,073.4
V	-	-	-	8,229,031.0

- no available data

Based on the 2015 inventory and other data gathered up to June 2016

Data used are mixed

Source: Mines and Geosciences Bureau

Table 2.1.3 (continued)

SUMMARY OF METALLIC RESOURCE/RESERVE INVENTORY IN BICOL REGION

Region	Perlite		Silica	
	Total Resource (in metric tons)	Total Reserve (in metric tons)	Total Resource (in metric tons)	Total Reserve (in metric tons)
V	7,963,693.8	-	8,229,031.0	-

Notes: "-" volume means there is no available data.

* Based on the 2017 inventory and other data gathered up to June 2018.

Source: Mines and Geosciences Bureau

Zinc	
Volume (tons)	Average Grade (%Zn)
11,552,933.0	2.7
11,217,248.0	2.7

Sulfur	Talc	Zeolite
40,055,864.0	254,400.0	1,326,981.0
22,998,500.0	-	-

Sulfur	
Total Resource (in metric tons)	Total Reserve (in metric tons)
22,998,500.0	-

**Table 2.1.1
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018**

MINERAL COMMODITY	UNIT USED	2004		2005	
		QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
METALLIC					
Gold - CN	KG	9	6,229,562	-	-
Gold - MASBATE	KG	-	-	-	-
Gold (by-prod.of Copper)	KG	-	-	160	129,028,375
TOTAL GOLD	KG	9	6,229,562	160	129,028,375
Silver-CN	KG	1	11,205		
Silver-Masbate	KG				
Silver(by prod.of Copper)	KG			489	6,121,814
TOTAL SILVER	KG	1	11,205	489	6,121,814
Chromite	MT	-	-	-	-
Metallurgical Chromite	MT	-	-	-	-
Copper Concentrate	DMT	-	-	-	-
Iron Ore	MT	-	-	-	-
Magnetite Sand	cu.m.				
Mine Tailings / Gold ore	MT				
Sulphide mineral (from iron waste)	MT	2,400	960,000		
Zinc Concentrate	DMT				
TOTAL OTHER METALLIC			960,000		-
TOTAL METALLIC			7,200,767		135,150,189

2006		2007		2008	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
11	10,428,869	14	14,771,669	18	18,736,504
		58	18,971,952	70	72,093,127
11	10,428,869	73	33,743,620	88	90,829,631
3	47,227	26	445,788	18	653,870
		316	5,764,975	1,054	11,631,572
3	47,227	342	6,210,763	1,072	12,285,441
595	59,618			68	75,000
360	1,080,000				
		8,842	572,426,728	4,268	116,061,118
20,000	8,000,000			12,568	5,027,200
2,000	1,000,000	2,000	1,000,000		
		15,925	750,338,499	3,584	39,489,575
	10,139,618		1,323,765,226		160,652,892
	20,615,714		1,363,719,609		263,767,964

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	2009		2010	
	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
METALLIC				
Gold - CN	25	30886665		
Gold - MASBATE	2286	3581100967	5536	9775851618
Gold (by-prod.of Copper)	715	812327317	705	1290473523
TOTAL GOLD	3026	4424314949	6241	11066325141
Silver-CN	52	1061951		
Silver-Masbate	1537	39717571	4635	139231524
Silver(by prod.of Copper)	9527	162027702	10386	285682020
TOTAL SILVER	11116	202807223	15021	424913544
Chromite				
Metallurgical Chromite				
Copper Concentrate	26617	1026329940	26465	1529421536
Iron Ore			78880	49192000
Magnetite Sand				
Mine Tailings / Gold ore			788	315200
Sulphide mineral (from iron waste)				
Zinc Concentrate	21676	424249542	19819	502634953
TOTAL OTHER METALLIC		1450579482		2081563689
TOTAL METALLIC		6077701655		13572802374

2011		2012		2013	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
22	40,026,964				
4,191	8,900,662,315	5,949	13,418,662,379	5,500	10,518,224,761
874	1,786,907,233	991	2,128,424,996	885	1,710,453,812
5,087	10,727,596,511	6,940	15,547,087,375	6,385	12,228,678,573
17	617,637				
3,398	164,410,843	4,514	190,659,126	4,213	137,592,836
16,221	610,098,474	17,559	552,106,554	10,975	303,298,482
19,636	775,126,954	22,073	742,765,680	15,188	440,891,318
37,465	2,928,654,366	38,213	1,547,378,216	44,221	1,512,180,869
152,260	133,921,600	65,660	26,264,000	104,210	41,684,000
6,605	2,642,000	11,795	4,718,000	8,159	2,831,760
31,337	808,187,278	27,872	670,914,209	27,383	662,925,248
	3,873,405,244		2,249,274,425		2,219,621,878
	15,376,128,709		18,539,127,480		14,889,191,769

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	2014		2015	
	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
METALLIC				
Gold - CN				
Gold - MASBATE	5,608	10,092,461,736	5,470	9,169,501,497
Gold (by-prod.of Copper)	-	-	-	-
TOTAL GOLD	5,608	10,092,461,736	5,470	9,169,501,497
Silver-CN				
Silver-Masbate	3,818	103,411,808	4,309	97,906,341
Silver(by prod.of Copper)	-	-	-	-
TOTAL SILVER	3,818	103,411,808	4,309	97,906,341
Chromite				
Metallurgical Chromite				
Copper Concentrate	-	-	-	-
Iron Ore				
Magnetite Sand				
Mine Tailngs / Gold ore				
Sulphide mineral (from iron waste)				
Zinc Concentrate	-	-	-	-
TOTAL OTHER METALLIC		-		-
TOTAL METALLIC		10,195,873,544		9,267,407,838

2016		2017		2018	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
6,414	13,566,213,132	6,295	12,813,835,255	6,734	14,452,717,430
-	-	-	-	-	-
6,414	13,566,213,132	6,295	12,813,835,255	6,734	14,452,717,430
7,430	198,128,951	6,623	183,184,967	4,925	130,928,882
-	-	-	-	-	-
7,430	198,128,951	6,623	183,184,967	4,925	130,928,882
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
	13,764,342,084		12,997,020,221		14,583,646,311

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	UNIT USED	2004		2005	
		QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
NON-METALLIC:					
Aggregate	cu.m.	2,200	60,672	3,000	98,500
Armor Rock	cu.m.				
Ball Clay	MT	3,698	1,187,984	11,483	2,276,950
Ball Quartz	MT	-	-	300	120,000
Bentonite	MT	3,000	400,000	750	100,000
Boulder	cu.m.	11,095	567,506	20,575	615,125
Clay (White Clay)	MT	4,206	954,003	2,943	1,177,200
Decorative Stone (Aaral/ Selected stone)	cu.m.	600	374,000	1,014	2,408,710
Diatomaceous Earth	MT	948	379,200	1,605	642,800
Filling Materials (Earthfill)	cu.m.	20,000	596,723	15,480	448,556
Feldspar	MT	-	-	-	-
Guano	MT	-	-	-	-
Kaolin Clay	MT	3,240	1,296,000	4,475	1,790,000
Limestone	MT	242,281	28,782,942	365,488	16,385,785

2006		2007		2008	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
9,500	321,750	29,300	982,394	11,513	372,333
6,890	4,966,625	7,250	2,103,300	8,508	3,666,280
-	-	-	-	-	-
3,750	505,000	3,750	500,000	3,300	440,600
9,750	430,279	19,447	832,595	23,740	1,082,648
13,360	3,994,000	3,080	1,232,000		
450	183,833	991	1,036,000	114	151,000
112	44,800	288	115,200	16	6,400
33,070	1,577,919	28,244	1,461,076	33,284	2,151,214
-	-	-	-	-	-
60	11,500	-	-	62	92,075
80	32,000	3,900	5,801,800	13,380	5,352,000
288,588	10,378,594	457,364	11,757,720	378,000	9,660,000

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	2009		2010	
	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
NON-METALLIC:				
Aggregate	3,950	136,125	950	34,742
Armor Rock				
Ball Clay	8,841	3,780,745	5,994	2,403,500
Ball Quartz	-	-	-	-
Bentonite	2,250	300,000	3,000	400,000
Boulder	28,428	1,240,389	14,114	633,621
Clay (White Clay)	6,400	9,468,800	9,980	3,992,000
Decorative Stone (Aaral/ Selected stone)	107	30,000	231	636,475
Diatomaceous Earth	233	93,200	640	256,000
Filling Materials (Earthfill)	35,329	3,453,954	71,299	3,441,445
Feldspar	50	20,000		
Guano	-	-	378	378,000
Kaolin Clay	5,945	2,378,000		
Limestone	315,000	8,050,000	270,000	6,900,000

2011		2012		2013	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
3,300	117,583	11,500	391,155	1,750	60,875
3,062	991,420	1,376	287,000	448	252,000
-	-	-	-	-	-
3,150	281,200	2,250	51,313	3,150	417,000
21,272	912,277	26,100	1,252,676	20,450	887,561
7,000	2,800,000	12,500	5,000,000	14,820	6,048,000
349	336,000	455	660,500	258	1,060,000
200	80,000	120	48,000	420	168,000
89,604	5,295,953	89,053	3,962,359	118,739	4,944,046
-	-	-	-	-	-
539	340,150	-	-	-	-
-	-	-	-	-	-
360,000	9,200,000	351,000	8,970,000	441,000	11,270,000

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	2014		2015	
	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
NON-METALLIC:	-	-		
Aggregate	7,150	242,375	2,900	100,250
Armor Rock				
Ball Clay				
Ball Quartz	-	-		
Bentonite	3,150	418,800	3,150	418,000
Boulder	51,297	2,235,322	87,900	3,945,156
Clay (White Clay)				
Decorative Stone (Aaral/ Selected stone)	-	-	-	-
Diatomaceous Earth	-	-		
Filling Materials (Earthfill)	168,618	5,751,459	219,136	7,941,103
Feldspar	-	-		
Guano	-	-	-	-
Kaolin Clay	-	-		
Limestone	494,640	12,640,800	612,000	15,640,000

2016		2017		2018	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
5,400	182,813	18,950	1,439,150	22,050	3,234,826
				11,400	1,661,288
3,300	439,600	5,250	409,090	3,900	663,000
163,100	6,990,686	350,260	37,306,839	546,050	79,618,102
		7,340	2,860,000	13,000	5,200,000
-	-	-	-	-	-
331,854	12,289,916	365,739	29,512,482	481,169	58,493,667
-	-	-	-	-	-
540,000	13,800,000	546,486	14,099,264	380,418	24,987,240

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	UNIT USED	2004		2005	
		QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
NON-METALLIC:					
Marble	MT	-	-	-	-
Pebbles	cu.m.	200	50,000	405	137,900
Perlite	MT	6,231	1,157,347	15,936	3,274,850
Pumice/Pumicites	MT	2,036	769,000	613	333,550
Rock Phosphate	cu.m.	-	-	-	-
Shale Clay	MT	46,810	468,100	27,208	272,075
Silica Sand	MT	186	74,400	20	8,000
Silica Quartz	MT	-	-	-	-
Sand & Gravel	cu.m.	187,686	9,868,200	315,227	24,377,108
White Sand	cu.m.	1,300	39,350	18,800	558,100
Woodstone & greenslate	MT	-	-	-	-
Zeolite	MT	-	-	-	-
TOTAL NON-METALLIC			47,025,427		55,025,209
GRAND TOTAL			54,226,193		190,175,398

NOTES: Conversion factor

Silica Sand= 1.4 sp. gravity; Pumice=0.80 sp. Gravity; Guano/Zeolite= 1.2 sp. gravity; Decorative Stone/ Pebbles (1 cu.m. = 1.9 MT); White Clay reclassified as Clay

Selected stone and Aaral stone reclassified as decorative stone. To convert cu.m to MT, multiply by sp. gravity

2006		2007		2008	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
-	-	-	-	-	-
594	146,475	84	64,000	50	11,833
20,154	4,177,323	43,044	14,277,020	30,166	6,253,700
835	412,975	369	238,140	565	227,750
-	-	-	-	-	-
31,220	312,200	12,690	126,900	16,640	166,400
60	24,000	380	152,000	886	354,400
-	-	-	-	20	8,000
218,725	13,604,912	337,315	17,854,140	268,224	19,296,529
7,900	235,344	16,000	477,000	9,000	262,500
-	-	-	-	-	-
-	-	222	37,000	92	18,400
	41,359,529		59,048,285		49,574,062
	61,975,243		1,422,767,894		313,342,027

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	2009		2010	
	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
NON-METALLIC:				
Marble	-	-	-	-
Pebbles	61	13,600	-	-
Perlite	14,674	8,004,500	26,369	18,045,464
Pumice/Pumicites	792	277,200	2,252	1,331,660
Rock Phosphate	-	-	24	2,400
Shale Clay	14,100	150,900	8,170	81,700
Silica Sand	930	372,000	220	88,000
Silica Quartz	20	8,000		
Sand & Gravel	335,734	19,370,319	264,049	13,038,031
White Sand	7,000	208,500	13,000	388,500
Woodstone & greenslate	234	127,000	998	499,000
Zeolite	-	-	-	-
TOTAL NON-METALLIC		57,483,232		52,550,538
GRAND TOTAL		6,135,184,887		13,625,352,912

2011		2012		2013	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
-	-	260	104,000	-	-
200	20,000	300	30,000	-	-
22,785	11,801,970	32,100	16,375,367	11,695	7,428,449
3,324	2,459,040	3,954	2,025,280	1,695	1,356,160
16,040	160,400	11,040	110,400	830	8,300
		12,500	5,000,000		
313,106	17,044,713	413,466	20,926,556	509,693	29,438,540
9,000	268,500	8,000	240,000	4,000	120,000
-	-	-	-	-	-
-	-	-	-	-	-
	52,109,205		65,434,606		63,458,931
	15,428,237,914		18,604,562,085		14,952,650,700

Table 2.1.1 (continued)
MINERAL PRODUCTION IN BICOL REGION
2004 TO 2018

MINERAL COMMODITY	2014		2015	
	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
NON-METALLIC:	-	-		
Marble	-	-		
Pebbles	-	-	-	-
Perlite	25,956	16,334,208	15,831	9,891,700
Pumice/Pumicites	2,657	2,200,000	2,364	1,891,200
Rock Phosphate				
Shale Clay	1,720	17,200	6,340	63,400
Silica Sand				
Silica Quartz				
Sand & Gravel	743,383	47,003,887	921,162	59,115,943
White Sand	30,400	901,800	47,000	1,391,500
Woodstone & greenslate	-	-		
Zeolite	-	-	-	-
TOTAL NON-METALLIC		87,745,851		100,398,251
GRAND TOTAL		10,283,619,395		9,367,806,089

2016		2017		2018	
QTY	VALUE (Pesos)	QTY	VALUE (Pesos)	QTY	VALUE (Pesos)
				2,000	800,000
-	-	-	-	-	-
14,461	5,712,472	34,349	11,278,745	9,697	4,593,859
10,616	2,392,800	35,024	3,619,200	2,496	1,996,600
				936	93,600
		340	68,000	21,600	2,205,000
1,632,588	100,098,565	2,840,769	271,533,410	4,310,317	601,433,901
27,800	824,100	20,100	1,658,622		
-	-	-	-	-	-
	142,730,951		373,784,802		784,981,082
	13,907,073,034		13,370,805,024		15,368,627,394

Table 2.4.1
COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Acetes (Alamang)										
Philippines	4,744	3,128	3,773	3,090	1,465	1,608	1,301	2,874	428	441
Bicol Region	10	3	..	..	..	..	6	3	2	13
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	6	2	..	..
Camarines Sur	10	3	..	..	..	..	..	1	2	13
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2
INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Carp										
Philippines	12,811	12,242	13,872	14,689	15,372	15,606	14,427	13,070	13,301	14,659
Bicol Region	1,307	1,265	1,348	1,446	1,417	1,359	1,400	1,087	1,113	957
Albay	137	126	131	160	184	155	297	296	187	169
Camarines Norte	1	1	1	..	..	..	..	11	6	24
Camarines Sur	1,159	1,129	1,208	1,275	1,214	1,183	1,077	746	884	716
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	10	9	8	12	19	22	26	34	36	48

. Data not available .. No reported data Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3
MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Acetes (Alamang)										
PHILIPPINES	7,047	8,737	10,931	10,246	8,019	11,798	10,835	6,546	8,379	8,966
BICOL REGION	816	1,804	1,717	1,943	1,811	1,746	1,683	1,237	1,796	1,660
Albay	..	..	..	..	..	..	79	84	86	85
Camarines Norte	85	1	0	1	1	2	40	38	691	488
Camarines Sur	711	1,802	1,714	1,937	1,801	1,738	1,564	1,108	1,013	1,074
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	0	..	..	..	..	..	..	..	..	..
Sorsogon	19	2	2	6	9	6	1	9	6	13

. Data not available .. No reported data Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Anchovies (Dilis)										
Philippines	26,310	27,579	27,040	27,150	23,680	24,160	20,614	18,520	16,638	14,503
Bicol Region	8,062	8,419	8,519	9,382	9,637	9,790	8,566	7,478	6,928	5,844
Albay	845	883	945	866	899	923	916	882	904	818
Camarines Norte	301	305	270	276	288	285	120	34	65	95
Camarines Sur	2,867	2,787	2,768	2,756	2,602	2,428	2,034	1,812	1,611	1,380
Catanduanes	..	..	..	..	6	7	7	7	4	4
Masbate	3,843	4,223	4,285	5,201	5,541	5,755	5,117	4,469	4,159	3,320
Sorsogon	206	221	251	284	301	391	372	273	184	226

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Catfish (Hito)										
Philippines	5,685	5,137	5,491	5,768	6,202	6,211	6,263	5,735	5,670	5,815
Bicol Region	168	159	159	175	181	185	74	132	205	162
Albay	114	107	105	116	127	130	43	45	41	51
Camarines Norte	10	9	9	8	5	6	6	4	4	17
Camarines Sur	23	16	17	19	14	12	8	56	135	66
Catanduanes	..	0	0	1	1	1	1	1	1	0
Masbate	10	12	15	21	23	25	14	24	22	23
Sorsogon	12	13	12	11	11	11	2	2	3	4

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Anchovies (Dilis)										
PHILIPPINES	55,531	52,605	48,827	44,015	44,745	47,695	43,393	37,240	33,536	34,221
BICOL REGION	8,853	11,787	11,730	12,755	13,596	13,808	11,928	10,125	8,204	6,589
Albay	919	948	899	839	911	962	872	849	883	814
Camarines Norte	1,135	1,181	1,180	1,480	1,614	1,644	641	584	547	477
Camarines Sur	3,444	6,196	6,348	6,376	6,246	6,118	5,956	4,864	3,381	2,835
Catanduanes	271	292	322	319	341	308	266	210	197	179
Masbate	2,824	2,931	2,768	3,354	3,946	4,249	3,633	3,163	2,815	1,754
Sorsogon	260	238	215	387	539	527	561	455	381	530

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Big-eyed Scad (Matangbaka)										
Philippines	39,933	44,643	42,693	42,796	47,117	44,830	42,995	46,240	41,773	41,369
Bicol Region	1,315	1,493	1,575	1,638	2,157	2,188	2,099	2,033	1,927	1,541
Albay	355	420	457	489	501	520	537	523	565	524
Camarines Norte	234	272	262	270	303	308	506	526	421	260
Camarines Sur	626	737	811	824	793	814	741	631	570	494
Catanduanes	5	17	14	14	14	14	11	11	8	6
Masbate	37	8	..	..	441	307	290	335	362	246
Sorsogon	59	39	31	42	106	226	14	7	1	12

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Catfish (Kanduli)										
Philippines	1,905	1,973	1,900	1,875	1,909	1,847	1,953	1,768	2,244	1,831
Bicol Region	11	7	8	8	7	5	3	3	3	0
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	1	1	0
Camarines Sur	10	7	8	8	7	5	3	2	2	..
Catanduanes	..	..	..	..	..	..	..	..	..	0
Masbate	1	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Big-eyed scad (Matangbaka)										
PHILIPPINES	67,402	76,879	76,517	72,059	69,944	71,552	73,753	66,587	67,430	69,556
BICOL REGION	3,244	3,841	3,879	3,662	4,842	5,153	6,113	6,424	6,663	6,912
Albay	136	336	442	482	510	529	480	477	540	518
Camarines Norte	1,359	1,507	1,471	901	1,077	1,077	2,360	2,111	1,365	1,183
Camarines Sur	613	702	710	788	807	813	776	734	650	590
Catanduanes	468	466	466	358	345	293	252	223	205	177
Masbate	548	780	752	899	1,660	2,020	1,957	2,611	3,692	4,201
Sorsogon	119	49	40	234	444	421	288	267	212	242

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Bigeye Tuna (Tambakol/Bariles)										
Philippines	3,701	8,575	6,022	7,889	6,887	6,188	5,258	7,721	18,981	21,932
Bicol Region	250	435	491	507	486	516	546	649	754	730
Albay	246	435	491	504	480	496	488	487	537	512
Camarines Norte	..	..	..	..	..	..	52	137	57	72
Camarines Sur	..	..	..	..	..	..	..	18	17	18
Catanduanes	..	..	..	3	6	6	6	7	7	7
Masbate	3	..	..	..	..	..	..	..	135	122
Sorsogon	1	..	..	..	..	13	..	..	2	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (contir)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Climbing perch (Martiniko)										
Philippines	2,321	2,022	2,566	2,308	2,307	2,393	2,169	2,068	2,072	2,001
Bicol Region	16	14	16	15	12	9	4	14	93	59
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	16	14	16	14	11	8	3	14	93	59
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	0	1	1	1	1	1	1	0	0	0

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Bigeye tuna (Tambakol/Bariles)										
PHILIPPINES	2,034	3,070	3,591	4,568	4,962	4,973	5,614	7,506	8,666	9,202
BICOL REGION	131	237	472	640	994	1,190	1,699	1,718	1,974	1,919
Albay	28	55	181	244	306	316	286	282	335	318
Camarines Nort	25	45	31	23	27	27	448	628	621	341
Camarines Sur	38	29	28	22	19	21	17	66	314	240
Catanduanes	14	66	147	203	305	290	261	222	234	224
Masbate	10	30	33	80	254	462	452	468	394	693
Sorsogon	16	12	51	67	85	73	234	52	77	104

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Blue Crab (Alimasag)										
Philippines	1,748	1,581	1,350	1,104	1,065	1,178	815	1,109	1,393	1,240
Bicol Region	168	147	128	86	115	132	47	49	54	61
Albay	13	19	30	47	79	100	33	38	46	53
Camarines Norte	26	28	25	26	30	28	9	..	..	..
Camarines Sur	15	11	9	9	2	..	1	11	8	8
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	102	82	63	..	..	..	..	..	..	..
Sorsogon	12	7	..	4	4	4	5	0	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Eel (Igat)										
Philippines	835	719	867	1,149	2,489	2,377	1,876	1,615	1,718	1,604
Bicol Region	62	64	76	101	75	79	34	23	69	47
Albay	16	19	27	36	28	27	9	11	42	20
Camarines Norte	16	19	19	31	17	21	18	8	2	5
Camarines Sur	11	8	8	9	6	4	3	1	23	20
Catanduanes	1	1	2	2	2	3	3	3	1	1
Masbate	8	7	10	12	9	11	2	..	..	..
Sorsogon	11	10	11	11	12	13	0	0	1	1

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Blue crab (Alimasag)										
PHILIPPINES	28,272	28,170	27,923	24,963	25,107	26,075	25,126	27,218	29,432	32,242
BICOL REGION	4,073	5,210	4,784	4,080	4,811	4,989	5,540	5,735	5,989	6,105
Albay	82	149	174	267	296	311	280	302	289	270
Camarines Norte	405	510	478	528	629	676	618	444	426	434
Camarines Sur	658	1,377	1,163	1,166	1,160	1,152	1,098	907	765	638
Catanduanes	223	195	164	128	134	108	89	69	54	49
Masbate	2,217	2,357	2,079	1,352	1,258	1,349	1,105	1,209	1,771	1,835
Sorsogon	488	622	726	638	1,334	1,393	2,351	2,805	2,684	2,879

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Caesio (Dalagang-bukid)										
Philippines	5,494	6,840	5,467	7,058	5,819	5,144	6,169	4,276	4,086	3,284
Bicol Region	110	104	189	263	284	296	259	230	241	201
Albay	..	10	68	128	172	196	190	187	200	168
Camarines Norte	18	18	17	19	19	27	18	..	..	..
Camarines Sur	88	76	104	116	92	74	51	43	41	29
Catanduanes	..	..	..	..	..	..	..	..	..	0
Masbate	4	..	..	..	..	..	..	..	..	4
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Freshwater Goby (Biya)										
Philippines	5,906	5,619	5,611	5,412	5,334	5,676	3,988	3,279	3,030	2,892
Bicol Region	43	36	31	28	20	14	9	26	14	0
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	42	36	31	28	20	14	9	26	13	..
Catanduanes	1	0	0	0	..	..	..	0	1	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Caesio (Dalagang-bukid)										
PHILIPPINES	15,046	17,295	15,790	15,457	15,765	14,731	13,371	13,621	13,350	12,271
BICOL REGION	1,310	1,268	1,268	1,427	1,434	1,448	1,128	1,269	971	1,124
Albay	11	24	45	133	203	247	240	250	267	280
Camarines Norte	527	518	469	540	581	611	278	187	126	102
Camarines Sur	96	106	108	105	105	114	105	203	141	80
Catanduanes	17	29	16	39	46	46	45	44	59	54
Masbate	653	590	628	607	491	431	460	584	364	604
Sorsogon	5	1	2	3	9	..	0	..	14	4

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Cavalla (Talakitok)										
Philippines	5,743	8,229	7,361	6,210	5,949	5,749	5,636	4,701	3,633	3,432
Bicol Region	331	334	335	356	319	205	187	146	132	151
Albay	98	105	120	128	106	..	75	58	65	72
Camarines Norte	97	115	103	109	112	118	44	19	5	18
Camarines Sur	99	84	88	97	76	61	41	47	41	39
Catanduanes	34	29	24	23	25	26	23	21	16	14
Masbate	3	..	..	..	..	..	..	..	5	8
Sorsogon	..	..	..	..	..	..	4	1	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Gourami										
Philippines	6,352	6,153	7,272	6,608	6,840	6,431	5,666	4,286	4,176	4,033
Bicol Region	34	39	52	84	100	109	93	50	55	46
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	0
Camarines Sur	19	16	15	14	11	6	3	8	3	..
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	16	24	37	71	89	102	90	42	52	46
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Cavalla (Talakitok)										
PHILIPPINES	22,290	24,480	24,888	25,459	23,818	22,283	23,267	20,374	20,375	20,227
BICOL REGION	2,137	2,289	2,312	2,452	2,531	2,112	1,571	1,556	1,449	1,279
Albay	95	154	208	286	350	112	143	147	188	173
Camarines Norte	650	709	680	992	1,043	1,022	487	505	210	100
Camarines Sur	269	295	297	288	275	285	268	255	272	248
Catanduanes	920	829	757	592	591	443	346	286	261	218
Masbate	174	187	187	144	100	68	63	173	301	287
Sorsogon	29	115	182	151	172	182	264	190	217	254

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Crevalle (Salay-salay)										
Philippines	13,138	12,065	10,689	10,185	9,952	9,791	11,178	13,511	8,231	6,040
Bicol Region	430	459	492	511	521	460	291	749	662	258
Albay	113	116	157	168	181	113	120	121	129	115
Camarines Norte	77	95	87	89	99	99	32	137	40	16
Camarines Sur	92	90	90	106	96	96	83	88	95	79
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	116	152	158	148	124	115	56	402	398	49
Sorsogon	33	7	..	..	20	37	0	..	0	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Milkfish (Bangus)										
Philippines	9,347	8,487	5,718	4,601	4,717	11,746	8,313	4,567	5,260	4,988
Bicol Region	28	25	27	29	21	16	11	0	2	..
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	0	2	..
Camarines Sur	28	25	27	29	21	16	11	..	..	..
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Crevalle (Salay-salay)										
PHILIPPINES	29,840	31,433	27,174	27,594	27,320	26,055	24,119	21,803	21,136	22,219
BICOL REGION	6,132	6,099	6,005	7,227	6,743	6,960	5,403	5,598	5,557	4,520
Albay	194	366	471	428	417	282	357	374	359	342
Camarines Norte	598	693	661	936	965	962	378	365	159	94
Camarines Sur	417	256	314	306	251	256	241	220	387	373
Catanduanes	141	215	230	220	224	223	178	153	145	132
Masbate	4,617	4,438	4,223	5,053	4,569	4,860	3,857	3,873	4,213	3,220
Sorsogon	166	132	106	285	317	376	393	613	294	359

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Eastern Little Tuna (Bonito)										
Philippines	34,635	23,103	21,495	21,650	22,179	20,985	20,184	21,228	20,439	21,362
Bicol Region	588	641	550	579	442	440	429	429	454	781
Albay	582	639	550	579	442	440	429	427	451	415
Camarines Norte	..	..	..	..	..	..	..	..	0	0
Camarines Sur	..	..	..	..	..	..	..	2	2	..
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	6	2	..	..	..	..	..	..	..	365
Sorsogon	0	1	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Mudfish (Dalag)										
Philippines	10,470	9,906	10,678	10,703	10,865	11,199	11,754	8,829	9,512	9,666
Bicol Region	216	201	209	245	252	257	221	235	385	344
Albay	119	106	108	124	135	137	117	88	76	79
Camarines Norte	28	29	32	43	34	38	36	17	9	21
Camarines Sur	36	31	29	30	26	20	12	71	243	192
Catanduanes	..	..	..	..	..	..	..	0	0	..
Masbate	18	20	26	34	37	40	51	53	47	42
Sorsogon	15	15	15	13	20	21	6	6	10	10

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Eastern little tuna (Bonito)										
PHILIPPINES	15,339	15,134	14,908	14,156	13,922	14,529	14,487	15,691	16,651	15,631
BICOL REGION	999	1,023	955	1,158	1,392	1,451	1,165	833	754	807
Albay	196	152	172	268	253	281	256	260	237	229
Camarines Norte	190	198	186	34	67	72	2	8	19	14
Camarines Sur	376	282	268	256	240	221	208	170	129	65
Catanduanes	60	144	95	125	136	110	85	71	77	82
Masbate	176	246	234	473	695	767	615	324	292	418
Sorsogon	..	..	..	3	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Fimbriated Sardines (Tunsoy)										
Philippines	75,608	55,176	51,670	48,441	47,780	53,285	43,114	39,343	42,062	45,131
Bicol Region	17,171	17,816	17,471	17,419	16,922	16,165	14,813	14,007	15,235	21,495
Albay	643	860	737	845	636	636	598	582	622	555
Camarines Norte	396	400	374	383	396	399	233	181	239	213
Camarines Sur	8,951	9,959	10,093	9,892	9,639	9,406	8,265	7,000	6,294	5,435
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	2,710	2,848	2,832	2,832	2,993	2,949	2,604	2,019	2,182	2,223
Sorsogon	4,471	3,749	3,435	3,467	3,259	2,774	3,112	4,226	5,898	13,070

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Mullet (Kapak)										
Philippines	910	950	803	792	877	882	956	931	1,132	1,414
Bicol Region	5	4	5	6	6	7	7	7	11	5
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	4	3	4	5	4	5	5	4	9	4
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	1	1	1	1	2	2	2	2	2	1
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	0	0

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Fimbriated sardines (Tunsoy)										
PHILIPPINES	61,957	52,839	47,124	47,088	41,356	39,985	40,728	37,243	37,360	42,446
BICOL REGION	19,321	13,473	10,487	10,107	9,603	9,516	9,078	8,305	9,792	17,935
Albay	386	316	253	305	336	367	320	368	397	351
Camarines Norte	449	512	500	564	631	611	619	734	243	160
Camarines Sur	1,398	1,845	2,030	2,030	2,121	2,151	2,094	1,768	1,229	1,029
Catanduanes	15	107	110	94	97	92	72	56	50	47
Masbate	1,651	1,407	1,326	1,615	1,893	2,039	1,557	1,059	1,055	1,313
Sorsogon	15,422	9,285	6,269	5,499	4,525	4,257	4,416	4,320	6,818	15,034

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Flying Fish (Bolador)										
Philippines	6,923	6,261	4,546	3,725	3,038	2,401	2,937	3,034	2,212	2,874
Bicol Region	155	143	182	275	271	266	343	207	81	71
Albay	..	..	0	2	1	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	5	3	..
Camarines Sur	45	33	29	33	28	25	18	7	6	5
Catanduanes	..	..	..	..	..	..	..	4	4	4
Masbate	6	..	..	..	..	..	..	3	4	..
Sorsogon	105	110	152	239	241	241	325	188	64	63

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Mullet (Ludong)										
Philippines	49	63	51	43	36	46	30	85	27	50
Bicol Region	2
Albay
Camarines Norte	2
Camarines Sur
Catanduanes
Masbate
Sorsogon

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Flying fish (Bolador)										
PHILIPPINES	19,623	19,626	18,614	18,218	17,491	16,989	15,517	14,192	12,997	12,814
BICOL REGION	3,500	2,980	3,003	2,942	2,718	2,968	2,203	1,915	1,689	1,392
Albay	52	134	165	156	46	..	3	9	22	19
Camarines Norte	161	167	152	86	91	98	15	6	21	32
Camarines Sur	37	86	97	97	92	91	81	134	49	40
Catanduanes	1,003	283	233	225	221	203	162	143	129	148
Masbate	2,148	2,110	2,081	2,076	1,968	2,288	1,682	1,452	1,453	1,116
Sorsogon	100	200	275	302	300	288	261	172	16	36

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Frigate Tuna (Tulingan)										
Philippines	81,493	80,622	70,462	72,573	73,647	74,974	78,860	77,098	65,201	57,955
Bicol Region	3,854	3,642	3,578	3,656	4,015	4,235	3,906	3,546	3,560	3,144
Albay	640	712	715	807	1,106	1,248	1,219	1,199	1,239	1,121
Camarines Norte	271	285	275	281	303	311	352	213	255	265
Camarines Sur	1,989	2,151	2,264	2,248	2,217	2,270	2,187	1,880	1,743	1,607
Catanduanes	96	55	54	52	55	58	53	54	52	47
Masbate	743	380	242	223	154	133	26	165	216	64
Sorsogon	115	59	28	45	181	213	69	34	55	39

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Sardines (Tawilis)										
Philippines	1,414	1,077	941	757	480	649	1,274	901	1,356	934
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Frigate tuna (Tulingan)										
PHILIPPINES	70,845	68,945	62,167	59,119	60,590	59,121	58,825	56,789	56,874	53,961
BICOL REGION	6,289	6,461	6,224	7,106	8,598	8,764	7,982	8,597	7,559	7,891
Albay	597	642	604	682	883	984	943	937	891	863
Camarines Norte	1,955	2,093	1,877	1,660	1,791	1,778	1,861	1,446	1,323	1,249
Camarines Sur	1,090	1,218	1,355	1,312	1,362	1,409	1,401	1,312	1,136	838
Catanduanes	1,010	917	893	703	746	635	464	410	430	412
Masbate	1,337	1,407	1,365	2,226	3,262	3,198	2,875	4,168	3,373	4,157
Sorsogon	300	184	130	522	554	760	439	323	406	372

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Goatfish (Saramulyete)										
Philippines	10,387	10,882	9,682	8,453	8,337	7,368	6,248	4,870	4,509	5,187
Bicol Region	463	557	575	530	559	540	205	358	370	308
Albay	..	..	..	1	1	..	..	..	1	10
Camarines Norte	239	303	299	291	309	314	40	143	199	177
Camarines Sur	186	198	215	238	222	198	165	194	164	108
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	37	56	62	..	..	..	..	22	5	13
Sorsogon	..	..	..	..	26	29	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Silver perch (Ayungin)										
Philippines	2,287	2,193	2,257	2,197	2,317	2,165	1,921	1,888	1,438	1,408
Bicol Region	130	128	130	146	141	135	112	47	91	107
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	130	128	130	146	141	135	112	47	91	107
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Goatfish (Saramulyete)										
PHILIPPINES	18,749	19,310	20,707	19,635	19,416	20,012	20,400	21,425	21,919	19,809
BICOL REGION	1,258	1,843	1,954	2,227	2,272	2,245	2,094	2,494	3,460	3,210
Albay	60	96	132	95	50	..	14	9	7	24
Camarines Norte	164	276	251	134	164	172	105	114	87	61
Camarines Sur	156	148	147	189	192	204	193	156	117	113
Catanduanes	36	86	78	34	33	21	20	12	15	14
Masbate	777	1,108	1,274	1,673	1,707	1,690	1,615	2,070	2,817	2,878
Sorsogon	65	128	71	102	124	157	147	132	417	120

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Grouper (Lapu-lapu)										
Philippines	2,973	2,969	2,605	2,234	2,149	2,138	2,051	2,150	1,628	1,298
Bicol Region	54	45	61	83	196	200	181	167	184	175
Albay	..	3	26	50	169	173	155	156	168	152
Camarines Norte	18	20	17	19	22	22	17	0	0	1
Camarines Sur	..	..	..	..	..	..	..	2	8	3
Catanduanes	33	22	17	13	6	6	5	5	4	3
Masbate	3	..	..	..	..	..	..	5	5	16
Sorsogon	0	..	..	..	..	..	5	0	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Spade Fish (Kitang)										
Philippines	246	207	198	228	192	201	216	116	152	112
Bicol Region	2	..	0
Albay
Camarines Norte	2	..	0
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Grouper (Lapu-lapu)										
PHILIPPINES	15,605	16,920	16,820	18,016	16,971	16,786	16,759	15,558	15,642	16,374
BICOL REGION	1,462	1,680	1,710	1,629	1,956	1,853	1,403	1,341	1,359	1,373
Albay	67	143	205	267	315	291	270	282	303	277
Camarines Norte	611	796	784	750	1,085	1,086	756	536	523	517
Camarines Sur	153	138	141	121	105	83	70	114	133	135
Catanduanes	539	545	522	414	379	297	221	190	175	163
Masbate	74	51	53	61	55	80	81	214	221	273
Sorsogon	18	8	4	17	17	17	6	4	4	8

. Data not available Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Hairtail (Espada)										
Philippines	7,169	7,259	6,655	4,697	4,590	4,250	4,332	5,435	4,189	3,510
Bicol Region	323	329	334	323	208	183	171	131	185	220
Albay	51	29	37	41	9	..	7	23	46	42
Camarines Norte	..	..	..	..	..	..	8	3	2	3
Camarines Sur	240	261	253	231	191	174	155	98	136	158
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	30	39	44	51	8	9	..	6	1	17
Sorsogon	3	..	..	..	..	..	0	0	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Starry Boby (Dulong)										
Philippines	129	118	130	165	208	252	259	348	331	369
Bicol Region	1	1	1	1	0	0	1	1	1	1
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	1	1	1	1	0	0	1	1	1	1
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Hairtail (Espada)										
PHILIPPINES	10,292	9,451	9,965	10,552	11,457	10,917	13,211	10,630	11,915	10,044
BICOL REGION	799	1,649	1,681	1,179	1,107	989	1,694	602	1,528	1,090
Albay	16	68	67	39	32	..	7	10	60	55
Camarines Norte	74	97	93	99	110	100	751	40	811	409
Camarines Sur	122	463	417	456	434	426	394	218	254	184
Catanduanes	54	11	8	27	32	32	35	28	29	24
Masbate	312	374	401	383	333	314	445	251	302	363
Sorsogon	222	636	695	175	165	116	64	54	72	55

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Indian Mackerel (Alumahan)										
Philippines	36,568	43,152	37,029	36,269	41,206	36,908	32,144	23,933	22,721	20,071
Bicol Region	2,349	2,599	2,653	2,496	2,402	2,436	2,385	1,997	1,804	1,571
Albay	678	752	728	735	678	687	702	690	709	642
Camarines Norte	227	259	254	251	268	277	329	239	191	117
Camarines Sur	1,077	1,279	1,393	1,394	1,392	1,390	1,309	1,047	866	750
Catanduanes	..	17	20	17	22	22	21	21	14	13
Masbate	291	256	245	91	..	..	..	..	23	49
Sorsogon	75	37	14	8	43	61	25	0	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Tarpon (Buan Buan)										
Philippines	252	205	224	197	160	136	105	106	90	64
Bicol Region	0	0	0	1
Albay
Camarines Norte	0	1
Camarines Sur
Catanduanes
Masbate
Sorsogon	0	0	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Indian mackerel (Alumahan)										
PHILIPPINES	49,317	48,705	47,283	42,530	44,040	41,330	41,936	39,387	37,351	35,703
BICOL REGION	10,121	8,769	9,317	8,549	8,638	8,101	7,554	7,136	6,888	6,225
Albay	802	667	649	639	537	575	545	572	553	497
Camarines Norte	1,623	1,844	1,703	1,415	1,469	1,479	972	506	368	319
Camarines Sur	4,183	2,555	2,942	2,891	2,770	2,770	2,659	2,111	1,069	885
Catanduanes	97	162	277	283	335	312	265	218	174	164
Masbate	3,155	3,446	3,630	3,097	3,170	2,749	2,892	3,440	4,393	3,977
Sorsogon	261	96	117	223	357	216	222	291	331	383

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Bali sardinela (Tamban)										
Philippines	260,378	265,811	167,014	175,160	158,841	190,390	217,758	205,986	170,395	193,836
Bicol Region	5,936	6,726	6,947	7,598	7,027	6,974	5,802	5,160	5,297	4,863
Albay	1,124	1,074	1,078	1,108	906	920	913	873	917	864
Camarines Norte	646	685	664	652	679	674	222	268	227	150
Camarines Sur	1,672	1,404	1,471	1,432	1,334	1,273	1,099	1,004	1,046	931
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	2,184	3,197	3,285	4,063	3,848	3,776	3,568	3,015	3,107	2,918
Sorsogon	310	365	450	343	260	330	..	1	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Tilapia										
Philippines	43,463	44,896	45,784	47,439	48,938	54,180	50,474	41,677	43,240	44,071
Bicol Region	3,304	3,092	3,304	3,445	3,575	3,648	3,603	2,706	2,753	2,782
Albay	1,102	951	1,009	1,008	1,135	1,189	1,205	1,120	1,179	1,232
Camarines Norte	87	93	110	116	159	167	194	94	66	94
Camarines Sur	2,071	2,002	2,133	2,255	2,204	2,204	2,077	1,347	1,367	1,315
Catanduanes	1	2	2	3	4	5	5	6	3	3
Masbate	22	23	29	41	43	51	96	99	87	79
Sorsogon	21	22	20	22	29	32	27	41	51	60

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Bali sardinela (Tamban)										
PHILIPPINES	63,751	68,219	65,893	70,898	70,394	65,706	72,896	74,487	71,083	65,299
BICOL REGION	8,086	9,005	9,856	10,400	8,228	6,490	5,634	4,272	3,912	4,042
Albay	494	430	469	427	463	507	479	497	507	505
Camarines Norte	527	556	526	544	574	550	335	522	399	387
Camarines Sur	376	790	757	767	764	777	747	656	709	625
Catanduanes	1,214	682	529	353	334	219	169	145	136	112
Masbate	5,270	6,462	7,488	8,181	5,937	4,212	3,803	2,435	2,101	2,375
Sorsogon	204	86	86	128	156	225	101	16	61	38

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Indo-Pacific Mackerel (Hasa-hasa)										
Philippines	21,674	23,392	22,208	16,710	14,420	12,814	12,401	13,471	11,894	10,615
Bicol Region	423	477	548	473	355	351	246	442	267	173
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	43	43	40	45	49	53	5	168	..	10
Camarines Sur	118	149	186	166	146	146	134	35	23	16
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	257	275	317	252	137	118	97	232	243	134
Sorsogon	5	10	5	10	22	35	10	8	1	14

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Big Head Carp										
Philippines	8,839	9,994	10,926	12,119	13,086	16,629	16,262	1,592	2,814	3,012
Bicol Region	10	14	41
Albay	10	14	21
Camarines Norte
Camarines Sur	1	20
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Indo-pacific mackerel (Hasa-hasa)										
PHILIPPINES	27,805	32,316	33,092	29,862	28,760	26,788	26,480	24,868	23,624	20,538
BICOL REGION	2,343	5,184	5,368	4,429	4,343	4,484	3,979	4,368	4,720	3,668
Albay	58	116	156	176	112	146	119	138	164	161
Camarines Norte	25	20	11	2	3	6	17	12	3	13
Camarines Sur	294	161	184	188	159	160	145	153	138	127
Catanduanes	56	110	61	49	42	37	30	20	21	31
Masbate	736	1,160	1,325	3,082	3,072	3,248	3,129	3,681	3,989	3,052
Sorsogon	1,174	3,617	3,630	932	955	888	539	364	404	283

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Mullet (Kapak)										
Philippines	1,647	1,714	1,565	1,100	792	700	572	454	203	317
Bicol Region	168	124	145	119	76	69	60	57	40	54
Albay	..	..	..	1	1	..	..	..	..	..
Camarines Norte	3	3	3	4	4	8	7	10	..	15
Camarines Sur	163	121	137	114	71	61	53	47	40	33
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	2	..	5	..	..	..	..	..	..	6
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Other Fishes										
Philippines	3,929	4,252	4,331	5,184	5,871	6,015	8,721	6,090	6,005	6,568
Bicol Region	..	4	..	..	..	..	..	10	9	1
Albay	..	4	..	..	..	..	..	..	..	..
Camarines Norte	10	9	1
Camarines Sur
Catanduanes	1
Masbate
Sorsogon

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Mullet (Kapak)										
PHILIPPINES	11,116	12,547	12,318	12,726	11,513	11,542	11,487	11,951	12,153	12,432
BICOL REGION	1,364	2,387	2,074	1,646	1,554	1,466	1,101	1,158	1,011	827
Albay	64	57	91	64	22	..	..	..	..	..
Camarines Norte	216	308	275	398	379	378	112	46	22	22
Camarines Sur	756	1,123	809	815	820	818	759	727	791	671
Catanduanes	70	40	27	35	46	40	33	19	18	10
Masbate	78	80	89	136	108	111	63	334	89	106
Sorsogon	180	779	783	197	179	120	135	31	90	19

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Parrot Fish (Loro)										
Philippines	903	1,395	823	805	763	636	703	627	649	603
Bicol Region	79	80	82	78	82	79	22	..	6	9
Albay	..	..	..	1	1	..	..	..	6	5
Camarines Norte	76	80	82	77	81	79	20	..	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	4
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	3	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	2	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Blue Crab (Alimasag)										
Philippines	259	279	224	287	210	317	310	289	503	447
Bicol Region	..	..	..	..	..	..	..	..	..	..
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Parrot fish (Loro)										
PHILIPPINES	14,080	15,009	14,343	14,518	14,867	14,467	14,213	13,555	13,549	12,613
BICOL REGION	1,079	855	1,024	682	852	784	661	499	451	456
Albay	41	42	45	44	17	..	..	2	8	5
Camarines Norte	369	413	391	320	398	398	325	220	24	5
Camarines Sur	20	30	27	24	20	19	16	16	33	56
Catanduanes	52	81	42	68	78	75	78	59	44	25
Masbate	338	286	271	208	230	157	85	62	237	306
Sorsogon	259	4	249	17	109	135	156	140	104	59

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Porgies (Pargo)										
Philippines	3,866	5,182	4,515	4,009	3,640	3,118	2,269	1,112	1,710	1,414
Bicol Region	5	15	14	30	26	21	15	11	269	251
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	0	..
Camarines Sur	2	15	14	30	26	21	15	11	10	8
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	3	..	..	..	..	..	..	..	258	242
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Endeavor prawn (Suahe)										
Philippines	1,105	1,015	992	864	709	782	759	819	748	676
Bicol Region	..	..	..	..	..	..	..	0	..	0
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	0	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	..	..	..	..	..	..	..	..	..	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Porgies (Pargo)										
PHILIPPINES	9,631	8,853	9,304	10,870	9,055	8,878	7,980	8,695	7,971	8,330
BICOL REGION	1,350	1,237	1,159	925	822	551	586	636	466	470
Albay	..	36	33	56	21	..	34	19	10	10
Camarines Norte	773	689	653	409	433	362	367	288	37	12
Camarines Sur	88	73	74	67	59	56	45	30	18	10
Catanduanes	..	..	..	..	..	..	..	3	6	20
Masbate	488	439	400	390	306	133	140	297	395	419
Sorsogon	..	..	..	2	2	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Round Herring (Tulis)										
Philippines	4,101	3,650	3,176	1,553	1,466	1,551	999	1,000	797	698
Bicol Region	321	351	384	319	373	546	166	96	42	33
Albay	50	50	67	30	30	45	..	..	7	7
Camarines Norte	111	155	160	147	148	143	..	..	..	3
Camarines Sur	157	145	156	142	115	67	24	27	34	23
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	3	..	..	..	81	291	141	69	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Freshwater Crab (Talangka)										
Philippines	712	665	1,025	850	764	850	923	712	635	917
Bicol Region	156	148	117	105	99	81	56	25	124	43
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	155	148	117	104	98	80	55	24	123	43
Catanduanes	0	0	0	1	1	1	1	1	0	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Round herring (Tulis)										
PHILIPPINES	6,513	6,528	7,554	5,633	5,842	5,147	4,814	6,891	5,270	4,199
BICOL REGION	179	233	244	380	626	1,201	1,403	1,478	921	1,171
Albay	21	77	73	177	203	198	177	175	171	172
Camarines Norte	20	20	7	0	0	1	4	4	4	2
Camarines Sur	99	124	128	127	119	130	120	82	122	114
Catanduanes	..	12	31	12	21	20	17	13	16	9
Masbate	38	..	5	64	284	852	1,085	1,204	609	875
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Roundscad (Galunggong)										
Philippines	171,629	194,671	172,499	167,153	200,394	197,090	164,443	156,187	126,533	120,365
Bicol Region	15,346	17,107	17,045	16,738	17,238	17,257	17,017	15,726	13,069	10,683
Albay	984	1,002	1,058	1,117	1,155	1,258	1,223	1,196	1,216	1,112
Camarines Norte	1,251	1,324	1,287	1,313	1,345	1,366	2,125	2,808	1,467	758
Camarines Sur	10,892	12,374	12,442	12,613	12,448	12,488	11,949	9,895	8,419	7,294
Catanduanes	72	53	51	47	49	49	46	44	31	29
Masbate	1,963	2,187	2,089	1,466	1,950	1,821	1,615	1,717	1,909	1,474
Sorsogon	184	166	116	182	292	274	59	66	28	16

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Freshwater Shrimp (Hipon)										
Philippines	5,010	4,933	5,072	5,264	5,398	5,411	5,193	3,117	2,964	3,374
Bicol Region	172	152	138	129	109	83	63	101	51	32
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	12	14	17	23	27	28	29	13	1	0
Camarines Sur	158	136	119	103	79	52	30	84	45	23
Catanduanes	0	1	1	2	2	2	2	3	1	1
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	1	1	1	1	1	1	2	2	4	7

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Roundscad (Galunggong)										
PHILIPPINES	72,037	73,556	67,072	66,329	70,415	63,508	60,659	55,589	56,544	50,942
BICOL REGION	7,147	7,436	7,624	8,398	10,674	10,027	8,166	6,988	7,010	6,137
Albay	933	923	997	808	730	910	906	879	832	801
Camarines Norte	1,782	1,875	1,793	2,556	2,597	2,520	2,024	1,914	1,940	1,558
Camarines Sur	1,884	1,209	1,401	1,383	1,366	1,404	1,306	1,233	1,125	800
Catanduanes	224	390	391	397	445	388	284	244	228	184
Masbate	1,976	2,684	2,752	2,810	4,901	3,966	3,061	2,252	2,510	2,349
Sorsogon	348	355	291	444	635	839	586	467	375	446

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Siganid (Samaral)										
Philippines	2,087	1,495	1,167	1,403	2,130	1,842	1,692	1,420	1,888	1,448
Bicol Region	213	218	218	216	186	136	21	4	12	28
Albay	..	..	..	1	1	..	..	..	5	4
Camarines Norte	23	28	26	27	28	29	..	..	..	17
Camarines Sur	185	182	181	188	157	107	20	4	5	4
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	5	..	11	..	..	..	..	..	3	3
Sorsogon	..	8	..	..	..	..	2	0	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Lobster (Ulang)										
Philippines	1,544	1,400	1,616	1,475	1,664	1,673	1,480	1,297	1,144	1,311
Bicol Region	..	..	..	..	..	..	..	..	..	..
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Siganid (Samaral)										
PHILIPPINES	24,407	24,387	24,533	24,652	25,114	24,585	23,827	22,254	21,758	22,180
BICOL REGION	4,008	3,667	3,950	3,878	3,855	3,640	3,774	3,016	2,657	1,999
Albay	148	115	85	50	24	..	156	153	119	138
Camarines Norte	747	770	725	819	827	728	596	386	226	63
Camarines Sur	1,820	1,659	1,926	1,958	1,917	2,015	1,939	1,337	1,288	1,021
Catanduanes	496	363	415	304	254	184	146	110	106	96
Masbate	205	256	320	382	456	454	369	502	480	251
Sorsogon	593	504	478	365	377	258	568	528	438	431

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Skipjack (Gulyasan)										
Philippines	201,263	177,698	147,979	165,105	171,261	194,583	199,153	189,612	217,701	229,349
Bicol Region	695	766	691	652	617	394	337	378	394	723
Albay	394	435	383	299	290	36	129	131	192	183
Camarines Norte	176	193	186	191	202	213	114	193	150	480
Camarines Sur	60	61	75	66	59	53	45	20	26	35
Catanduanes	..	..	..	3	9	9	7	7	8	8
Masbate	3	..	..	..	..	..	..	..	..	..
Sorsogon	62	76	46	93	58	83	43	27	18	17

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Mud Crab (Alimango)										
Philippines	788	821	896	987	888	1,046	897	989	898	909
Bicol Region	40	44	56	64	94	101	112	53	1	1
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	40	44	56	64	94	101	112	53	1	1
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	..	..	..	..	..	..	0	0	..	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Skipjack (Gulyasan)										
PHILIPPINES	50,262	50,481	49,404	41,355	40,968	39,270	34,392	30,497	29,893	29,026
BICOL REGION	2,577	2,819	2,503	3,566	4,091	3,446	2,233	2,121	2,102	1,506
Albay	391	539	281	227	41	..	3	55	115	106
Camarines Norte	1,372	1,390	1,326	1,225	1,534	1,429	1,348	1,382	1,216	809
Camarines Sur	438	533	513	474	486	498	471	348	364	293
Catanduanes	103	263	308	389	490	456	312	255	251	179
Masbate	137	76	75	32	159	120	1	12	4	88
Sorsogon	136	18	..	1,219	1,382	943	98	69	154	31

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Slipmouth (Sapsap)										
Philippines	21,544	20,309	19,534	17,673	15,052	14,793	13,637	14,901	12,794	10,619
Bicol Region	1,883	1,863	1,912	1,802	1,927	1,780	1,693	2,051	2,293	1,841
Albay	..	2	62	80	162	172	162	168	178	171
Camarines Norte	247	255	252	220	241	244	149	189	302	244
Camarines Sur	1,038	903	916	920	827	653	488	358	348	286
Catanduanes	..	..	..	..	..	..	..	..	..	..
Masbate	598	703	682	582	697	689	878	1,336	1,464	1,141
Sorsogon	..	..	..	..	..	23	16	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Tiger Prawn										
Philippines	248	129	141	122	123	130	107	115	89	104
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Slipmouth (Sapsap)										
PHILIPPINES	39,355	43,829	41,609	39,286	35,738	35,820	34,468	33,722	34,460	37,332
BICOL REGION	7,301	9,827	9,603	7,903	7,170	7,177	6,692	6,787	7,670	8,847
Albay	99	173	250	242	280	294	272	267	246	232
Camarines Norte	1,098	1,307	1,243	2,562	2,175	2,154	1,256	1,521	1,467	1,262
Camarines Sur	561	680	674	621	581	563	514	489	621	629
Catanduanes	216	186	91	75	63	24	23	17	23	22
Masbate	2,387	3,116	3,177	2,707	2,309	2,339	2,157	2,595	3,033	4,436
Sorsogon	2,939	4,363	4,169	1,697	1,762	1,803	2,470	1,898	2,280	2,266

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Snapper (Maya-Maya)										
Philippines	2,547	2,942	3,746	2,515	2,334	1,790	1,660	1,502	2,051	1,532
Bicol Region	58	53	78	75	65	40	41	44	200	118
Albay	..	1	21	30	53	30	31	35	48	42
Camarines Norte	33	35	38	32	7	8	6	1	3	0
Camarines Sur	21	17	16	11	4	..	..	0	2	2
Catanduanes	..	..	3	2	2	2	..	..	..	0
Masbate	4	..	..	..	..	..	..	8	147	74
Sorsogon	1	..	..	..	..	..	4	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
White Shrimp (Hitong Puti)										
Philippines	925	703	665	632	463	416	504	440	490	447
Bicol Region	25	15	8	7	3	0	1	1	0	0
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	25	15	8	6	3	..	..	..	..	..
Catanduanes	0	0	0	0	0	0	1	1	0	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Snapper (Maya-maya)										
PHILIPPINES	17,119	18,289	18,520	17,703	18,123	16,707	15,525	14,313	14,887	12,833
BICOL REGION	1,587	1,391	1,414	2,006	2,397	2,421	1,582	1,757	1,700	1,671
Albay	125	145	208	269	305	317	291	307	293	281
Camarines Norte	576	576	536	967	1,289	1,318	502	549	533	643
Camarines Sur	335	410	410	412	409	423	389	352	322	244
Catanduanes	173	186	182	177	162	141	120	95	89	80
Masbate	145	54	53	49	65	46	56	186	266	246
Sorsogon	234	20	24	131	169	175	225	269	198	178

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Spanish Mackerel (Tanigue)										
Philippines	4,503	5,178	4,502	4,912	5,600	5,287	5,318	5,787	4,587	4,350
Bicol Region	181	200	217	346	465	609	506	544	571	511
Albay	64	89	118	195	304	449	427	424	443	408
Camarines Norte	41	42	36	87	96	96	25	65	57	27
Camarines Sur	37	24	22	20	15	13	11	27	45	43
Catanduanes	37	39	41	37	39	38	31	28	25	22
Masbate	2	..	..	..	..	..	..	0	0	10
Sorsogon	..	7	..	6	11	15	13	0	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Other Crustaceans										
Philippines	260	195	243	179	197	169	247	278	487	832
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Spanish mackerel (Tanigue)										
PHILIPPINES	12,689	13,813	13,905	12,510	13,309	11,627	12,046	12,045	12,451	12,329
BICOL REGION	1,759	2,206	2,233	1,863	2,190	1,889	1,707	1,274	1,419	1,401
Albay	159	226	313	278	347	428	392	388	397	362
Camarines Norte	566	653	600	568	840	815	771	247	245	284
Camarines Sur	85	133	140	118	111	114	108	194	261	195
Catanduanes	500	722	717	716	757	410	323	264	226	176
Masbate	388	328	317	101	42	43	57	179	283	378
Sorsogon	62	145	146	83	94	79	57	3	7	6

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Squid (Pusit)										
Philippines	12,919	14,403	13,333	13,489	14,520	12,536	12,230	11,945	11,063	11,238
Bicol Region	796	907	888	866	978	975	865	688	699	572
Albay	253	273	276	283	308	324	297	290	312	266
Camarines Norte	222	324	309	329	372	383	361	267	256	155
Camarines Sur	119	110	126	122	103	96	74	52	37	23
Catanduanes	..	..	..	1	..	..	..	..	..	..
Masbate	187	189	171	127	133	125	128	79	94	128
Sorsogon	15	11	6	4	61	47	5	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Clams (Kabibi)										
Philippines	801	1,273	1,623	2,435	1,828	1,698	1,156	687	674	923
Bicol Region	108	105	107	116	101	92	71	8	4	56
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	108	105	107	116	101	92	71	8	4	56
Catanduanes	..	..	..	..	..	..	0	0	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Squid (Pusit)										
PHILIPPINES	48,193	41,554	43,508	41,389	42,663	43,157	40,719	40,174	38,847	36,089
BICOL REGION	3,292	3,737	3,522	3,334	3,585	3,819	3,208	3,098	3,463	3,573
Albay	280	247	237	191	213	228	205	235	228	206
Camarines Norte	866	1,101	1,011	1,106	1,435	1,509	1,103	831	665	598
Camarines Sur	212	259	226	231	217	219	201	211	275	250
Catanduanes	53	118	130	121	119	106	87	66	78	89
Masbate	1,797	1,960	1,869	1,459	1,274	1,428	1,249	1,220	1,742	1,977
Sorsogon	85	52	49	227	325	329	362	536	476	454

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Threadfin Bream (Bisugo)										
Philippines	15,434	14,468	15,383	14,441	11,507	8,477	8,320	6,473	6,506	4,919
Bicol Region	599	567	628	621	598	548	495	492	528	347
Albay	..	..	1	35	37	..	1	2	2	1
Camarines Norte	121	158	161	137	153	150	160	210	255	170
Camarines Sur	468	408	466	449	409	365	313	231	209	124
Catanduanes	..	..	..	..	..	..	..	..	..	0
Masbate	11	..	..	..	..	..	..	49	63	52
Sorsogon	..	..	..	..	..	32	21	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Freshwater Clams (Tulya)										
Philippines	3,064	3,210	3,342	3,231	3,266	3,236	3,568	3,447	3,205	3,687
Bicol Region	0	0	1	1	1	1	1	1	0	0
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	0	0	1	1	1	1	1	1	0	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Threadfin bream (Bisugo)										
PHILIPPINES	31,804	31,359	32,695	31,896	30,589	30,299	30,847	33,210	33,092	31,425
BICOL REGION	1,770	2,038	2,044	1,961	2,177	2,200	2,443	3,854	4,285	4,438
Albay	97	155	180	238	196	207	194	202	191	171
Camarines Norte	936	1,037	1,013	809	878	737	895	760	730	727
Camarines Sur	179	151	151	152	141	149	134	156	182	199
Catanduanes	65	89	90	62	67	59	45	33	35	32
Masbate	443	586	600	633	808	960	1,081	2,598	3,009	3,135
Sorsogon	50	21	11	67	87	87	94	107	139	175

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Yellowfin Tuna (Tambakol/Bariles)										
Philippines	91,440	85,352	68,625	79,509	83,394	94,256	102,400	67,917	70,242	59,913
Bicol Region	1,100	921	880	921	886	932	691	752	827	833
Albay	829	697	667	670	623	627	596	595	747	699
Camarines Norte	159	153	138	185	194	195	33	86	6	53
Camarines Sur	25	18	21	18	16	16	12	16	13	30
Catanduanes	70	49	51	47	52	53	50	50	50	46
Masbate	2	..	..	..	..	..	..	..	..	..
Sorsogon	15	4	4	1	1	42	0	5	11	4

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Oyster (Talaba)										
Philippines	1,487	1,283	1,796	1,397	1,764	1,441	908	1,319	795	759
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Yellowfin tuna (Tambakol/Bariles)										
PHILIPPINES	60,997	61,924	54,389	45,757	46,750	45,671	40,987	35,120	36,678	34,524
BICOL REGION	3,299	3,113	2,550	3,693	4,005	3,476	2,139	1,710	1,640	1,860
Albay	521	434	267	250	288	298	263	263	289	298
Camarines Norte	1,061	1,243	864	1,080	1,109	1,110	714	475	382	505
Camarines Sur	1,163	791	733	668	645	649	596	479	412	377
Catanduanes	367	533	551	626	672	565	485	417	457	451
Masbate	144	108	134	118	347	120	..	17	21	202
Sorsogon	44	4	1	950	944	734	81	60	78	27

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.1 (continued)

COMMERCIAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (continued)
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Others										
Philippines	81,441	82,380	78,213	73,257	76,636	66,400	57,230	62,512	51,146	45,595
Bicol Region	1,902	1,249	1,164	1,215	1,135	1,332	1,020	1,028	1,151	941
Albay	244	190	185	187	206	223	24	40	127	120
Camarines Norte	59	32	31	..	..	..	221	312	253	104
Camarines Sur	1,057	625	569	522	440	330	279	288	286	210
Catanduanes	25	34	38	38	52	54	53	53	53	47
Masbate	347	177	145	280	152	184	116	140	180	132
Sorsogon	169	192	196	189	285	541	327	196	252	328

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Shell (Kuhol)										
Philippines	486	371	339	362	390	379	347	245	185	149
Bicol Region	56	49	49	50	43	39	30	..	0	0
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	56	49	49	50	43	39	30	..	..	..
Catanduanes	..	..	..	..	..	..	..	..	0	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.3 (continued)

MARINE MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Others										
PHILIPPINES	180,977	187,870	177,580	164,367	153,125	141,394	139,112	147,760	136,878	136,094
BICOL REGION	15,536	16,231	15,050	14,607	13,680	12,904	12,259	11,583	11,068	9,977
Albay	347	127	138	141	168	140	114	120	197	204
Camarines Norte	141	107	66	..	..	..	976	489	378	216
Camarines Sur	6,261	4,476	3,377	2,824	2,313	2,110	1,920	1,993	1,907	1,795
Catanduanes	2,221	2,373	2,320	2,014	2,104	1,603	1,383	1,159	1,033	868
Masbate	4,859	5,324	5,029	2,915	2,415	2,298	1,545	1,751	1,656	1,011
Sorsogon	1,707	3,825	4,119	6,712	6,680	6,752	6,321	6,072	5,897	5,882

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (*contir*
2009 to 2018
(In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Snail (Suso)										
Philippines	53,385	53,362	54,559	55,210	55,200	51,765	50,835	47,603	46,741	43,240
Bicol Region	164	154	153	156	146	136	110	27	7	8
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	164	154	153	156	145	135	109	26	6	8
Catanduanes	..	0	0	0	1	1	1	1	1	0
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.4.2 (continued)

INLAND MUNICIPAL FISHERIES: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION (*contir.*
2009 to 2018
 (In metric tons)

	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Other Molluscs										
Philippines	1,500	1,399	1,544	1,890	1,204	908	877	682	743	934
Bicol Region	1	0	..	..	..	..	..	..	..	..
Albay	..	..	..	..	..	..	..	..	..	..
Camarines Norte	..	..	..	..	..	..	..	..	..	..
Camarines Sur	..	..	..	..	..	..	..	..	..	..
Catanduanes	1	0	..	..	..	..	..	..	..	..
Masbate	..	..	..	..	..	..	..	..	..	..
Sorsogon	..	..	..	..	..	..	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

Table 2.5.1
AQUACULTURE IN BRACKISHWATER FISHPOND: VOLUME OF PRODUCTION
BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Milkfish				
Philippines	219,977.2	218,066.5	224,934.1	231,044.2
Bicol Region	3,743.6	4,194.6	4,619.8	4,926.6
Albay	756.8	782.7	782.6	785.2
Camarines Norte	1,238.6	1,490.6	1,775.9	1,916.7
Camarines Sur	839.7	923.3	1,032.8	1,165.2
Catanduanes	3.9	5.1	6.6	14.3
Masbate	640.4	661.3	686.8	708.5
Sorsogon	264.3	331.6	335.1	336.6

	2009	2010	2011	2012
Tilapia				
Philippines	14,920.6	13,999.3	14,194.3	14,381.3
Bicol Region	148.7	184.4	217.1	255.8
Albay	..	..	..	5.1
Camarines Norte	63.1	93.8	114.9	130.3
Camarines Sur	32.5	35.6	39.6	43.7
Catanduanes	0.5	1.0	1.8	6.9
Masbate	34.8	37.1	42.1	49.2
Sorsogon	17.8	16.8	18.8	20.6

	2009	2010	2011	2012
Tiger prawn				
Philippines	47,829.7	48,161.8	47,494.7	48,196.6
Bicol Region	1,009.6	1,156.2	1,277.3	1,489.1
Albay	9.3	9.6	9.6	9.7
Camarines Norte	464.7	573.4	695.6	776.9
Camarines Sur	330.9	342.8	353.2	383.0
Catanduanes	9.9	13.4	21.0	23.0
Masbate	74.1	77.0	75.2	78.6
Sorsogon	120.7	140.1	122.8	217.9

	2009	2010	2011	2012
Mudcrab				
Philippines	13,720.2	14,436.5	15,730.9	16,359.6
Bicol Region	1,614.4	1,899.6	1,578.0	1,390.7
Albay	16.1	16.5	16.3	16.5
Camarines Norte	131.3	170.2	185.8	206.1
Camarines Sur	175.9	197.5	221.5	241.8
Catanduanes	9.7	12.8	16.6	81.6
Masbate	57.5	59.5	61.2	65.7
Sorsogon	1,224.0	1,443.1	1,076.7	779.1

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
234,478.2	227,476.8	227,814.7	241,203.4	244,365.6	226,107.6
5,256.4	5,569.6	5,004.3	4,158.1	4,123.6	3,780.9
791.8	784.4	280.0	280.9	285.8	299.7
2,102.8	2,257.7	2,407.7	1,435.0	977.3	1,246.3
1,258.8	1,342.1	1,340.5	1,428.8	1,882.7	1,345.6
21.3	21.6	28.6	10.3	7.4	3.0
695.3	700.2	650.0	638.8	650.3	589.6
386.4	463.6	297.5	364.4	320.2	296.7

2013	2014	2015	2016	2017	2018
15,213.4	18,449.4	18,377.8	17,511.8	18,401.6	18,511.2
290.4	317.1	328.1	227.9	221.5	219.7
5.3	6.1	8.2	13.3	11.7	10.1
147.9	169.6	195.3	129.3	133.5	149.8
42.1	42.7	36.4	12.8	6.4	0.2
12.0	13.1	20.4	6.8	2.8	1.3
53.2	60.5	55.8	58.8	58.4	54.9
30.1	25.1	11.9	7.0	8.8	3.5

2013	2014	2015	2016	2017	2018
49,466.9	47,843.4	49,527.3	49,139.3	46,067.7	44,780.2
1,602.3	1,622.7	1,593.9	2,298.7	2,348.2	2,586.1
7.1	6.6	1.1	3.1	2.3	2.0
869.2	940.9	1,024.7	1,824.6	1,952.5	2,269.2
379.5	364.1	324.9	228.2	126.6	101.1
25.5	22.7	26.4	22.4	23.3	0.3
78.1	79.6	62.6	61.0	63.0	57.6
242.9	208.8	154.2	159.5	180.4	156.0

2013	2014	2015	2016	2017	2018
15,794.0	16,159.7	16,198.5	16,856.5	18,097.5	20,762.0
1,352.3	1,518.5	1,239.1	1,051.3	1,112.5	1,203.0
15.6	14.0	2.0	..	0.5	0.6
229.2	246.2	263.2	213.7	198.9	214.3
240.7	235.9	212.1	171.2	121.8	99.8
116.6	87.0	96.1	93.1	16.8	16.4
66.9	69.9	68.5	68.1	68.6	62.5
683.3	865.5	597.3	505.2	706.0	809.4

Table 2.5.1 (continued)
AQUACULTURE IN BRACKISHWATER FISHPOND: VOLUME OF PRODUCTION
BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Endeavor prawn				
Philippines	801.3	689.4	689.8	778.5
Bicol Region	143.3	145.9	155.3	162.0
Albay	..	..	..	..
Camarines Norte	1.2	..	..	..
Camarines Sur	70.4	69.3	69.9	67.8
Catanduanes	..	..	..	..
Masbate	71.6	76.6	85.4	93.6
Sorsogon	0.1	..	..	0.5

	2009	2010	2011	2012
Endeavor prawn				
Philippines	801.3	689.4	689.8	778.5
Bicol Region	143.3	145.9	155.3	162.0
Albay	..	..	..	..
Camarines Norte	1.2	..	..	..
Camarines Sur	70.4	69.3	69.9	67.8
Catanduanes	..	..	..	..
Masbate	71.6	76.6	85.4	93.6
Sorsogon	0.1	..	..	0.5

	2009	2010	2011	2012
White shrimp				
Philippines	2,204.5	2,076.5	1,974.1	1,878.6
Bicol Region	142.3	149.8	158.4	166.6
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	0.5	0.9	0.1	0.7
Masbate	140.6	148.4	157.0	165.0
Sorsogon	1.3	0.5	1.3	0.9

	2009	2010	2011	2012
Grouper				
Philippines	45.7	35.5	18.9	20.2
Bicol Region	..	..	..	0.1
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	0.1

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
757.2	1,150.6	950.3	635.8	644.0	520.6
154.4	159.0	148.0	111.6	99.3	89.0
..
..	..	..	1.6	1.2	0.4
54.7	48.3	40.4	9.4	2.0	1.9
..
99.6	110.8	107.6	100.6	96.1	86.8
..	0.0	..	..	..	..

2013	2014	2015	2016	2017	2018
757.2	1,150.6	950.3	635.8	644.0	520.6
154.4	159.0	148.0	111.6	99.3	89.0
..
..	..	..	1.6	1.2	0.4
54.7	48.3	40.4	9.4	2.0	1.9
..
99.6	110.8	107.6	100.6	96.1	86.8
..	0.0	..	..	..	..

2013	2014	2015	2016	2017	2018
1,871.0	1,826.7	1,646.0	1,673.7	1,744.3	1,758.9
180.0	191.0	180.1	166.9	145.7	129.1
..	..	..	1.3	..	..
..	..	..	..	..	0.0
..	..	0.2	..	..	..
2.9	3.6	7.7	8.3	1.4	0.1
175.6	186.2	171.7	157.0	144.1	128.9
1.5	1.2	0.6	0.2	0.3	0.1

2013	2014	2015	2016	2017	2018
26.3	14.9	22.3	20.2	17.8	20.3
..	..	0.3	3.6	2.7	4.5
..
..	0.8	0.7	0.3
..	..	0.3	2.8	2.0	4.2
..
..
..

Table 2.5.1 (continued)
AQUACULTURE IN BRACKISHWATER FISHPOND: VOLUME OF PRODUCTION
BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Siganid				
Philippines	56.4	59.9	58.1	61.9
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Others				
Philippines	3,294.1	5,134.0	4,367.2	5,781.3
Bicol Region	0.0	2.1	1.7	2.6
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	0.3	0.3	1.8
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	0.0	1.9	1.3	0.7

	2009	2010	2011	2012
Milkfish				
Philippines	3,269.3	636.9	783.4	835.4
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Tilapia				
Philippines	65.4	58.8	45.2	40.2
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

. Data not available .. No reported data
Source: Philippine Statistics Authority

Total may not add up because of rounding off.

2013	2014	2015	2016	2017	2018
69.7	99.1	91.8	64.6	63.5	63.3
0.2	0.1	..	..	0.4	0.4
..	..	..	..	0.3	0.2
..
..
..	..	..	..	..	0.1
..
0.2	0.1	..	..	0.1	0.2

2013	2014	2015	2016	2017	2018
7,787.0	7,812.3	9,000.1	10,477.0	14,391.3	12,979.8
2.1	3.2	4.3	26.0	43.9	35.9
..	..	..	1.4	..	0.0
..	..	..	1.8	2.2	0.7
2.1	2.4	4.3	22.9	41.7	35.0
..	..	..	0.0	..	0.2
..
..	0.8	..	..	..	..

2013	2014	2015	2016	2017	2018
872.8	814.7	800.3	2,022.9	2,759.2	2,877.1
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
40.9	39.2	29.4	57.7	2.9	2.5
..
..
..
..
..
..
..

Table 2.5.2
AQUACULTURE IN BRACKISHWATER FISHPEN: VOLUME OF PRODUCTION
BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Grouper				
Philippines	0.6	0.2	0.3	..
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Siganid				
Philippines	2.4	1.1	1.4	1.2
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Others				
Philippines	12.0	6.1	1.5	0.9
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
..	0.1	0.3
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
1.3	1.2	1.8	3.2	1.9	0.7
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
0.8	0.5	0.7	2.4	1.2	1.6
..
..
..
..
..
..
..

Table 2.5.3
AQUACULTURE IN BRACKISHWATER FISH CAGE: VOLUME OF
PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Milkfish				
Philippines	2,073.5	740.6	652.9	634.9
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Tilapia				
Philippines	112.9	76.7	89.4	106.0
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Grouper				
Philippines	12.1	34.7	9.4	10.4
Bicol Region	1.0	..	..	..
Albay	..	..	..	..
Camarines Norte	1.0	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
816.9	799.4	959.2	822.7	701.9	841.8
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
116.8	123.9	153.1	94.1	133.5	291.5
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
14.4	11.6	6.2	5.7	4.3	5.9
..
..
..
..
..
..
..

Table 2.5.3 (continued)
AQUACULTURE IN BRACKISHWATER FISH CAGE: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Siganid				
Philippines	35.4	42.1	39.2	65.7
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Others				
Philippines	6.7	19.6	13.4	10.7
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

Table 2.5.4
AQUACULTURE IN FRESHWATER FISHPOND: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Milkfish				
Philippines	1.8	2.2	2.4	6.2
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
71.9	42.7	51.7	54.6	83.4	106.2
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
11.4	2.2	1.8	1.7	4.7	3.3
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
6.4	6.2	3.6	5.4	4.0	2.1
..	0.1	..
..	0.1	..
..
..
..
..
..

Table 2.5.4 (continued)

AQUACULTURE IN FRESHWATER FISHPOND: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Tilapia				
Philippines	140,422.1	138,406.1	138,010.2	139,105.2
Bicol Region	1,443.6	1,510.5	1,553.0	1,715.1
Albay	59.1	61.0	60.8	62.0
Camarines Norte	144.5	272.7	307.9	355.5
Camarines Sur	1,087.5	1,008.3	978.9	1,079.8
Catanduanes	0.7	1.0	1.5	2.0
Masbate	108.3	124.9	157.5	166.4
Sorsogon	43.6	42.6	46.3	49.4

	2009	2010	2011	2012
Carp				
Philippines	450.6	446.6	385.4	367.6
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Catfish				
Philippines	2,845.4	2,960.0	3,117.9	3,595.4
Bicol Region	130.2	114.0	102.1	120.0
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	129.7	114.0	102.1	120.0
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	0.5	..	..	..

	2009	2010	2011	2012
Gourami				
Philippines	170.6	175.0	166.9	183.5
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
142,852.2	143,336.1	142,339.0	140,540.7	150,929.8	155,432.8
1,721.3	1,699.8	1,632.8	1,279.9	3,362.7	3,490.4
67.8	71.0	104.9	131.1	104.1	120.0
406.5	465.3	525.6	375.7	227.2	225.5
1,053.8	972.0	882.6	758.3	3,023.5	3,136.5
2.5	3.1	3.5	1.7	..	..
139.0	134.4	71.0	..	..	..
51.7	53.9	45.3	13.2	7.9	8.4

2013	2014	2015	2016	2017	2018
376.3	388.8	354.6	353.0	226.9	238.3
..	1.9	0.6	1.1
..
..	1.9	0.6	1.0
..	0.0	..	0.1
..
..
..

2013	2014	2015	2016	2017	2018
3,754.0	3,625.5	3,615.4	3,724.0	4,136.6	4,392.5
113.1	103.8	94.4	75.5	54.9	48.5
..
..	..	..	1.3	0.0	0.0
113.1	103.8	94.4	74.1	54.9	48.5
..
..
..

2013	2014	2015	2016	2017	2018
114.7	125.5	143.1	110.1	180.6	93.3
..	..	0.2	..	..	..
..
..
..
..
..
..	..	0.2	..	..	..

Table 2.5.4 (continued)

AQUACULTURE IN FRESHWATER FISHPOND: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Mudfish				
Philippines	750.2	817.1	875.6	915.4
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Freshwater prawn				
Philippines	27.5	2.8	2.9	4.5
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Others				
Philippines	56.0	102.9	83.8	83.4
Bicol Region	..	..	..	16.0
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	16.0
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Milkfish				
Philippines	27,038.9	26,434.7	28,084.6	27,762.1
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

.. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
902.3	1,157.2	1,026.1	859.6	935.1	1,178.3
..	2.1	0.1	0.2
..
..	2.1	..	0.0
..	0.1	0.1
..
..
..

2013	2014	2015	2016	2017	2018
5.8	3.4	2.5	1.6	1.4	1.0
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
120.0	97.9	85.1	61.0	50.9	181.4
38.0	36.2	34.7	32.0	30.8	30.6
..
..
38.0	36.2	34.7	32.0	30.8	30.6
..
..
..

2013	2014	2015	2016	2017	2018
27,216.4	26,492.2	24,709.2	23,935.0	32,026.8	30,694.4
..
..
..
..
..
..
..

Table 2.5.4 (continued)

AQUACULTURE IN FRESHWATER FISHPOND: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Tilapia				
Philippines	21,512.3	21,533.4	22,268.2	21,379.5
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

Table 2.5.5

AQUACULTURE IN FRESHWATER FISH PEN: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Carp				
Philippines	13,451.1	14,548.1	15,181.7	15,550.4
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Catfish				
Philippines	..	0.0	..	..
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
21,904.8	21,358.6	21,460.3	17,604.1	17,753.4	17,247.1
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
16,051.9	14,788.7	14,659.7	15,071.1	13,018.1	9,700.9
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
0.1	..	0.4	0.2	6.8	1.0
..
..
..
..
..
..
..

Table 2.5.5 (continued)
AQUACULTURE IN FRESHWATER FISH PEN: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Others				
Philippines	0.1	..	3.2	3.7
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

Table 2.5.6
AQUACULTURE IN FRESHWATER FISH CAGE: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Milkfish				
Philippines	16,074.2	16,351.4	14,165.3	13,755.9
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Tilapia				
Philippines	83,748.8	84,556.9	82,527.2	85,160.8
Bicol Region	7,873.3	7,706.3	7,568.0	7,792.7
Albay	1,991.3	1,981.8	1,976.2	2,066.4
Camarines Norte	37.8	..	..	..
Camarines Sur	5,844.2	5,724.6	5,591.8	5,726.3
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Carp				
Philippines	1,783.0	1,707.5	1,758.5	1,761.5
Bicol Region	17.0	14.3	12.0	9.3
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	17.0	14.3	12.0	9.3
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
3.4	3.9	3.7	0.4	0.4	0.7
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
14,957.7	10,395.8	14,075.3	12,948.4	13,874.1	16,511.1
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
88,536.7	75,771.9	78,788.9	83,185.1	80,443.9	85,439.6
7,805.4	7,826.7	6,934.0	6,566.1	6,308.9	6,340.7
2,149.5	2,198.5	1,688.9	1,816.0	1,610.7	1,529.0
..
5,655.9	5,628.2	5,245.1	4,750.2	4,698.1	4,811.7
..
..
..

2013	2014	2015	2016	2017	2018
1,823.2	1,571.7	1,855.7	1,422.7	1,342.9	1,357.2
12.9	13.1	12.8	12.0	14.9	12.8
..
..
12.9	13.1	12.8	12.0	14.9	12.8
..
..
..

Table 2.5.6 (continued)

AQUACULTURE IN FRESHWATER FISH CAGE: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Catfish				
Philippines	4.9	2.8	..	0.2
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..
. Data not available.. No reported data				Total may not add up
Source: Philippine Statistics Authority				

Table 2.5.6 (continued)

AQUACULTURE IN FRESHWATER FISH CAGE: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Others				
Philippines	0.0	3.3	0.6	3.8
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..
. Data not available.. No reported data				Total may not add up
Source: Philippine Statistics Authority				

Table 2.5.7

AQUACULTURE IN MARINE PEN: VOLUME OF PRODUCTION BY SPECIES AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012
Milkfish				
Philippines	21,390.3	26,680.2	21,535.8	23,878.9
Bicol Region	69.0	149.8	197.9	188.1
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	69.0	147.9	191.6	188.1
Sorsogon	..	1.9	6.3	..
. Data not available.. No reported data				Total may not add up
Source: Philippine Statistics Authority				

2013	2014	2015	2016	2017	2018
0.1	0.4	1.1	2.2	1.5	2.4
..
..
..
..
..
..
..

because of rounding off.

2013	2014	2015	2016	2017	2018
2.7	2.5	2.1	10.4	37.2	38.8
..
..
..
..
..
..
..

because of rounding off.

2013	2014	2015	2016	2017	2018
22,240.1	14,244.5	11,139.5	11,301.8	11,013.9	9,857.4
122.2	36.0	162.1	245.1
..
..
..
122.2	36.0	162.1	245.1
..

because of rounding off.

Table 2.5.7 (continued)
AQUACULTURE IN MARINE PEN: VOLUME OF PRODUCTION BY SPECIES
AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Tilapia				
Philippines	0.3	..	..	..
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Tiger prawn				
Philippines	0.2	0.1	..	..
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Mudcrab				
Philippines
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Endeavor prawn				
Philippines
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data
Source: Philippine Statistics Authority

Total may not add up because of rounding off.

2013	2014	2015	2016	2017	2018
..	1.0	0.0	0.1
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
..	0.2
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
0.0
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
..	0.0	..	..
..
..
..
..
..
..

Table 2.5.7 (continued)
AQUACULTURE IN MARINE PEN: VOLUME OF PRODUCTION BY SPECIES
AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Grouper				
Philippines	86.7	23.0	13.4	4.5
Bicol Region	..	0.5	1.4	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	0.5	1.4	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Siganid				
Philippines	47.5	40.7	17.0	5.5
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Spiny lobster				
Philippines	45.3	6.6	4.8	5.3
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

	2009	2010	2011	2012
Others				
Philippines	4.0	3.3	1.6	5.0
Bicol Region	..	..	..	..
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
0.0	0.1	0.3	0.3	0.5	0.4
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
3.7	0.7	0.7	0.0	0.4	..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
4.1	4.7	4.0	3.6	4.2	4.4
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
3.5	6.4	4.2	0.4	0.8	5.3
..
..
..
..
..
..

Table 2.5.8
AQUACULTURE IN MARINE CAGE: VOLUME OF PRODUCTION BY SPECIES
AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Milkfish				
Philippines	57,762.5	60,519.2	82,422.4	88,811.4
Bicol Region	..	1.0	0.7	0.2
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon	..	1.0	0.7	0.2

	2009	2010	2011	2012
Tilapia				
Philippines	7.5	7.2	2.0	7.0
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Tiger prawn				
Philippines	0.1	..	..	..
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012
Mudcrab				
Philippines	9.6	1.2	..	..
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

. Data not available .. No reported data
Source: Philippine Statistics Authority

Total may not add up because of rounding off.

2013	2014	2015	2016	2017	2018
100,477.9	110,003.1	104,923.7	105,848.4	106,357.8	108,239.0
0.7	0.1	0.3	..	..	..
..
..
..
..
..
0.7	0.1	0.3	..	..	..

2013	2014	2015	2016	2017	2018
0.1	1.4	8.0	0.4
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
..	0.2	..	0.1
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
0.1	2.6	7.9
..
..
..
..
..
..
..

Table 2.5.8 (continued)
AQUACULTURE IN MARINE CAGE: VOLUME OF PRODUCTION BY SPECIES
AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Grouper				
Philippines	775.4	141.5	183.1	167.6
Bicol Region	5.9	10.1	11.5	13.7
Albay	..	..	..	..
Camarines Norte	5.9	9.9	11.2	13.6
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	0.1	0.3	0.2

	2009	2010	2011	2012
Siganid				
Philippines	53.5	49.2	34.8	35.0
Bicol Region	..	0.0	0.1	0.0
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	0.0	0.1	0.0

	2009	2010	2011	2012
Spiny lobster				
Philippines	18.5	82.4	63.1	32.9
Bicol Region	..	..	0.0	0.1
Albay	..	..	..	..
Camarines Norte	..	..	..	..
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	0.0	0.1

	2009	2010	2011	2012
Others				
Philippines	399.0	1,168.2	1,074.2	1,370.7
Bicol Region	7.2	9.6	10.4	8.5
Albay	..	..	..	..
Camarines Norte	7.2	9.6	10.4	8.5
Camarines Sur	..	..	..	..
Catanduanes	..	..	..	..
Masbate	..	..	..	..
Sorsogon	..	..	..	..

. Data not available .. No reported data
Source: Philippine Statistics Authority

Total may not add up because of rounding off.

2013	2014	2015	2016	2017	2018
214.3	244.7	235.0	146.4	190.4	83.4
17.2	16.7	7.4	..	..	..
..
16.9	16.7	7.4	..	..	..
..
..
..
0.3	..	..	..	..	..

2013	2014	2015	2016	2017	2018
62.5	63.5	77.6	63.8	45.1	133.6
0.1
..
..
..
..
..
0.1

2013	2014	2015	2016	2017	2018
8.5	4.7	4.8	6.1	7.8	4.5
0.0	0.0	..	..	..	..
..
..
..
..
..
0.0	0.0	..	..	..	..

2013	2014	2015	2016	2017	2018
808.9	396.6	365.5	191.1	159.0	482.9
13.7	12.0	18.1	34.7	18.5	15.5
..
13.7	12.0	18.1	34.7	18.5	15.5
..
..
..
..

TABLE 2.5.9
AQUACULTURE OF OYSTER, MUSSEL, SEAWEED: VOLUME OF
PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Oyster				
Philippines	19,930.6	22,525.5	21,461.8	20,648.4
Bicol Region	4.1	..
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon	4.1	..

	2009	2010	2011	2012
Mussel				
Philippines	19,936.5	20,876.8	22,442.7	25,660.4
Bicol Region	12.2	272.1
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon	12.2	272.1

TABLE 2.5.9 (continued)
AQUACULTURE OF OYSTER, MUSSEL, SEAWEED: VOLUME OF
PRODUCTION BY SPECIES AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012
Seaweed				
Philippines	1,739,995.0	1,801,272.0	1,840,833.0	1,751,071.0
Bicol Region	52,684.8	56,861.5	58,842.0	61,503.5
Albay	..	501.6	766.5	673.4
Camarines Norte	28,741.9	31,129.3	32,962.4	35,545.6
Camarines Sur	22,810.2	23,883.4	23,888.9	23,996.2
Catanduanes	4.7	6.0	4.0	..
Masbate	1,043.1	1,165.4	1,169.3	1,245.1
Sorsogon	84.8	175.9	50.9	43.2

. Data not available .. No reported data

Total may not add up because of rounding off.

Source: Philippine Statistics Authority

2013	2014	2015	2016	2017	2018
22,069.8	22,355.2	20,260.8	19,512.4	22,944.4	28,708.2
..
..
..
..
..
..
..

2013	2014	2015	2016	2017	2018
22,894.2	18,761.8	15,949.1	18,774.6	19,208.6	26,302.8
283.8	284.5	322.2	404.9	439.6	435.1
..
..
..
..
..
283.8	284.5	322.2	404.9	439.6	435.1

2013	2014	2015	2016	2017	2018
1,558,378.0	1,549,576.0	1,566,362.0	1,404,519.2	1,415,320.8	1,478,300.9
61,089.9	59,863.8	55,382.1	34,199.5	36,985.5	52,607.1
591.9	596.1	215.1	196.6	194.8	220.0
36,841.7	36,205.2	34,547.2	19,080.0	20,460.0	35,432.2
22,394.2	21,800.9	19,016.4	13,379.0	14,578.3	15,564.6
1.1	2.9	6.6	..	..	..
1,221.8	1,161.7	1,219.4	1,170.1	1,201.4	1,102.1
39.3	96.9	377.4	373.7	551.0	288.3

Table 2.6.1
PALAY AND CORN: AREA HARVESTED BY ECOSYSTEM/CROPTYPE & GEOLOCATION
2009 to 2018
(In hectares)

	2009	2010	2011	2012	2013
Palay					
Philippines	4,532,310	4,354,161	4,536,642	4,690,061	4,746,091
Bicol Region	313,602	316,804	318,361	334,275	343,199
Albay	48,638	51,159	55,269	55,494	55,964
Camarines Norte	20,671	20,986	21,428	23,521	25,369
Camarines Sur	158,348	158,870	150,652	156,312	159,105
Catanduanes	12,993	12,240	15,152	10,924	10,339
Masbate	39,148	41,847	41,091	51,807	57,401
Sorsogon	33,804	31,702	34,769	36,217	35,021

	2009	2010	2011	2012	2013
Irrigated Palay					
Philippines	3,055,763	3,008,325	3,072,637	3,163,185	3,236,337
Bicol Region	206,060	216,256	203,609	217,458	222,226
Albay	37,494	39,606	42,759	43,276	43,979
Camarines Norte	13,103	13,725	13,665	14,839	16,075
Camarines Sur	117,132	124,594	108,342	115,873	116,625
Catanduanes	6,589	5,488	5,909	4,782	4,992
Masbate	7,156	8,244	8,736	13,320	15,496
Sorsogon	24,586	24,599	24,198	25,368	25,059

	2009	2010	2011	2012	2013
Rainfed Palay					
Philippines	1,476,547	1,345,836	1,464,005	1,526,876	1,509,754
Bicol Region	107,542	100,548	114,752	116,817	120,973
Albay	11,144	11,553	12,510	12,218	11,985
Camarines Norte	7,568	7,261	7,763	8,682	9,294
Camarines Sur	41,216	34,276	42,310	40,439	42,480
Catanduanes	6,404	6,752	9,243	6,142	5,347
Masbate	31,992	33,603	32,355	38,487	41,905
Sorsogon	9,218	7,103	10,571	10,849	9,962

.. Data not available

Notes:

Zamboanga Sibugay included in Zamboanga del Sur prior to 2002

Compostela Valley included in Davao del Norte prior to 2002

Dinagat Islands included in Surigao Norte up to 3rd Quarter of 2009

Totals may not add up due to rounding off

Source: Philippine Statistics Authority

Last updated: November 2016

2014	2015	2016	2017	2018
4,739,672	4,656,227	4,556,043	4,811,808	4,800,406
329,573	342,307	354,089	363,823	357,654
53,488	51,883	52,095	54,184	53,589
25,493	23,016	23,867	26,653	25,444
145,973	171,244	180,583	182,831	179,100
11,498	10,663	11,635	12,349	12,133
57,441	52,039	52,264	53,233	52,410
35,680	33,462	33,645	34,573	34,978

2014	2015	2016	2017	2018
3,253,080	3,233,186	3,181,102	3,295,086	3,286,153
214,082	229,301	236,205	242,155	237,232
42,339	40,959	41,677	43,788	42,582
15,218	14,591	15,024	16,372	15,529
110,803	131,207	136,486	138,713	136,249
5,361	5,164	6,011	5,635	5,758
15,352	12,456	11,808	12,794	12,338
25,009	24,924	25,199	24,853	24,776

2014	2015	2016	2017	2018
1,486,592	1,423,041	1,374,940	1,516,722	1,514,253
115,491	113,006	117,884	121,668	120,422
11,149	10,924	10,418	10,396	11,007
10,275	8,425	8,843	10,281	9,915
35,170	40,037	44,097	44,118	42,851
6,137	5,499	5,624	6,714	6,375
42,089	39,583	40,456	40,439	40,072
10,671	8,538	8,446	9,720	10,202

Table 2.6.1 (continued)

PALAY AND CORN: AREA HARVESTED BY ECOSYSTEM/CROPTYPE & GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Corn					
Philippines	2,683,890	2,499,040	2,544,612	2,593,924	2,563,718
Bicol Region	106,715	101,812	108,243	112,964	109,582
Albay	19,259	20,859	21,750	23,035	22,454
Camarines Norte	1,013	630	1,021	1,056	1,134
Camarines Sur	31,965	30,281	36,891	38,479	43,766
Catanduanes	272	264	289	296	355
Masbate	53,180	49,709	48,252	50,010	41,770
Sorsogon	1,026	69	40	88	103

	2009	2010	2011	2012	2013
White Corn					
Philippines	1,402,845	1,338,943	1,283,701	1,311,619	1,278,635
Bicol Region	58,977	55,873	56,249	57,986	49,832
Albay	1,170	2,908	2,920	2,778	2,841
Camarines Norte	825	530	850	888	965
Camarines Sur	4,029	3,272	4,216	4,139	4,588
Catanduanes	197	199	211	191	231
Masbate	52,338	48,920	48,022	49,930	41,135
Sorsogon	418	44	30	60	72

	2009	2010	2011	2012	2013
Yellow Corn					
Philippines	1,281,045	1,160,097	1,260,911	1,282,304	1,285,083
Bicol Region	47,738	45,939	51,994	54,978	59,750
Albay	18,089	17,951	18,830	20,257	19,613
Camarines Norte	188	100	171	168	169
Camarines Sur	27,936	27,009	32,675	34,340	39,178
Catanduanes	75	65	78	105	124
Masbate	842	789	230	80	635
Sorsogon	608	25	10	28	31

.. Data not available

Note:

Totals may not add up due to rounding off

Source: Philippine Statistics Authority

2014	2015	2016	2017	2018
2,611,432	2,561,934	2,484,465	2,552,592	2,511,436
113,596	103,025	107,544	114,616	111,900
21,487	19,500	21,052	21,091	20,470
844	1,076	1,078	1,088	1,103
48,012	39,350	44,646	47,645	47,233
371	453	459	1,124	923
42,697	42,413	40,047	43,483	41,962
185	233	262	185	209

2014	2015	2016	2017	2018
1,290,213	1,265,494	1,174,038	1,174,134	1,153,744
52,378	52,708	50,371	55,715	54,499
3,192	3,344	4,181	4,169	3,941
708	910	905	914	928
5,959	6,158	5,321	6,906	7,480
241	299	299	739	613
42,150	41,898	39,495	42,862	41,406
128	99	170	125	131

2014	2015	2016	2017	2018
1,321,219	1,296,440	1,310,427	1,378,459	1,357,692
61,218	50,317	57,173	58,901	57,401
18,295	16,156	16,871	16,922	16,529
136	166	173	174	175
42,053	33,192	39,325	40,739	39,753
130	154	160	385	310
547	515	552	621	556
57	134	92	60	78

Table 2.6.2
OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION
2009 to 2018
(In hectares)

	2009	2010	2011	2012	2013
Abaca					
Philippines	135,081	135,090	138,991	138,524	138,369
Bicol Region	42,662	41,748	42,864	42,171	44,509
Albay	5,300	5,300	5,300	5,400	5,500
Camarines Norte	1,023	1,023	1,010	1,025	1,025
Camarines Sur	6,679	6,679	6,679	6,712	6,712
Catanduanes	22,384	22,384	22,384	22,384	24,622
Masbate	..	..	..	..	..
Sorsogon	7,276	6,362	7,491	6,650	6,650

	2009	2010	2011	2012	2013
Coffee Excelsa					
Philippines	9,687	9,576	9,115	8,916	8,589
Bicol Region	1	1	1	1	1
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	1	1	1	1	1

	2009	2010	2011	2012	2013
Rubber					
Philippines	128,337	138,710	161,565	176,244	185,476
Bicol Region	4
Albay
Camarines Norte	4
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
134,773	134,194	134,427	132,463	132,251
45,254	45,254	45,254	43,225	43,280
5,500	5,500	5,500	4,815	4,815
1,025	1,025	1,025	1,025	1,092
6,712	6,712	6,712	6,712	6,700
25,367	25,367	25,367	24,023	24,023
..
6,650	6,650	6,650	6,650	6,650

2014	2015	2016	2017	2018
8,453	8,007	7,969	7,775	7,730
1	1	1	1	1
..
..
..
..
..
1	1	1	1	1

2014	2015	2016	2017	2018
217,687	222,602	223,283	226,285	228,944
4	4	4	4	4
..
4	4	4	4	4
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Cacao					
Philippines	9,538	9,462	9,582	9,339	9,431
Bicol Region	284	284	283	285	287
Albay	85	85	85	85	85
Camarines Norte	11	11	10	10	10
Camarines Sur	40	40	40	40	42
Catanduanes	3	3	3	3	3
Masbate	..	..	..	..	..
Sorsogon	145	145	145	147	147

	2009	2010	2011	2012	2013
Coffee Liberica					
Philippines	1,444	1,410	1,378	1,360	1,308
Bicol Region	8	8	8	8	8
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	8	8	8	8	8

	2009	2010	2011	2012	2013
Sugarcane					
Philippines	404,034	354,878	439,698	433,304	437,070
Bicol Region	6,042	5,523	6,181	6,060	5,533
Albay	1,042	1,042	1,042	1,060	1,060
Camarines Norte	..	..	..	..	..
Camarines Sur	5,000	4,481	5,139	5,000	4,473
Catanduanes	0	0	0	0	0
Masbate	..	..	..	..	..
Sorsogon	0	0	0	0	0

2014	2015	2016	2017	2018
12,035	13,911	14,816	18,264	27,133
287	272	273	275	276
85	85	85	85	85
10	10	10	10	10
42	42	43	42	43
3	3	3	3	3
..
147	132	132	135	135

2014	2015	2016	2017	2018
1,281	1,280	1,310	1,300	1,290
8	8	7	7	6
..
..
..
..
8	8	7	7	6

2014	2015	2016	2017	2018
432,026	421,312	410,104	437,471	437,506
5,530	5,030	5,030	5,030	4,905
1,030	1,030	1,030	1,030	1,030
..
4,500	4,000	4,000	4,000	3,875
0	0	0	0	..
..
0	0	0	0	0

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Cashew					
Philippines	27,428	28,114	28,204	28,316	28,663
Bicol Region	3	3	3	3	3
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	3	3	3	3	3

	2009	2010	2011	2012	2013
Coffee Robusta					
Philippines	91,181	90,320	89,774	90,355	87,374
Bicol Region	563	563	542	542	522
Albay	211	211	211	211	211
Camarines Norte	28	28	27	27	27
Camarines Sur	124	124	124	124	124
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	200	200	180	180	160

	2009	2010	2011	2012	2013
Tobacco					
Philippines	26,104	29,707	32,235	34,025	34,451
Bicol Region	7	4	..	..	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	7	4	..	..	..
Sorsogon	..	..	..	..	..

2014	2015	2016	2017	2018
28,602	28,639	28,654	28,631	28,666
3	3	3	3	3
..
..
..
..
..
3	3	3	3	3

2014	2015	2016	2017	2018
88,417	85,683	86,923	85,634	86,228
522	493	457	382	300
211	200	200	135	60
27	27	27	27	27
124	122	122	112	112
..
..
160	144	108	108	101

2014	2015	2016	2017	2018
36,082	33,096	32,501	30,829	28,212
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Coconut					
Philippines	3,401,500	3,575,944	3,561,981	3,574,614	3,551,299
Bicol Region	447,764	452,679	452,681	453,501	452,967
Albay	40,200	40,200	40,200	41,000	41,000
Camarines Norte	85,376	85,378	85,380	85,400	85,405
Camarines Sur	119,045	119,045	119,045	119,045	119,045
Catanduanes	14,375	14,735	14,735	14,735	14,735
Masbate	91,076	95,629	95,629	95,629	95,629
Sorsogon	97,692	97,692	97,692	97,692	97,153

	2009	2010	2011	2012	2013
Cotton					
Philippines	310	48	176	188	157
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Tobacco Native					
Philippines	6,684	7,143	7,965	7,723	7,074
Bicol Region	7	4	..	..	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	7	4	..	..	..
Sorsogon	..	..	..	..	..

2014	2015	2016	2017	2018
3,502,011	3,517,743	3,565,059	3,612,304	3,628,134
453,704	454,013	454,349	454,020	453,994
41,000	41,000	41,007	41,007	41,007
85,405	85,405	85,405	85,405	85,405
119,045	119,045	119,045	119,045	119,044
15,472	15,781	16,110	15,781	15,756
95,629	95,629	95,629	95,629	95,629
97,153	97,153	97,153	97,153	97,153

2014	2015	2016	2017	2018
14	5	4	9	34
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
6,127	4,891	3,690	4,662	4,335
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Coffee					
Philippines	122,645	121,399	119,637	120,000	116,460
Bicol Region	838	838	815	814	793
Albay	335	335	335	335	335
Camarines Norte	45	45	43	42	43
Camarines Sur	213	213	213	213	213
Catanduanes	11	11	11	11	11
Masbate	..	..	..	..	..
Sorsogon	234	234	213	213	191

	2009	2010	2011	2012	2013
Oil Palm					
Philippines	41,444	45,044	49,328	53,015	53,856
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Tobacco Virginia					
Philippines	14,502	17,392	18,731	19,508	20,539
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
117,451	113,738	114,839	112,843	113,352
793	737	694	606	475
335	300	300	230	108
43	43	43	43	43
213	210	210	192	192
11	11	9	9	9
..
191	173	132	132	123

2014	2015	2016	2017	2018
55,083	59,754	60,069	60,069	62,671
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
21,133	21,107	20,091	19,578	17,407
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Coffee Arabica					
Philippines	19,862	19,622	19,369	19,369	19,190
Bicol Region	266	266	264	263	262
Albay	124	124	124	124	124
Camarines Norte	17	17	16	15	16
Camarines Sur	89	89	89	89	89
Catanduanes	11	11	11	11	11
Masbate	..	..	..	..	..
Sorsogon	25	25	24	24	22

	2009	2010	2011	2012	2013
Pili Nut					
Philippines	2,161	2,158	2,292	2,292	2,293
Bicol Region	1,763	1,763	1,901	1,904	1,910
Albay	330	330	340	340	345
Camarines Norte	64	64	67	67	68
Camarines Sur	110	110	111	111	111
Catanduanes	11	11	11	11	11
Masbate	2	2	2	2	2
Sorsogon	1,246	1,246	1,370	1,373	1,373

	2009	2010	2011	2012	2013
Chrysanthemum					
Philippines	245	248	258	259	258
Bicol Region	7	7	7	7	6
Albay	6	6	6	6	5
Camarines Norte	..	..	..	..	..
Camarines Sur	1	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

2014	2015	2016	2017	2018
19,300	18,768	18,637	18,134	18,104
262	235	229	216	168
124	100	100	95	48
16	16	16	16	16
89	88	88	80	80
11	11	9	9	9
..
22	20	16	16	15

2014	2015	2016	2017	2018
2,285	2,288	2,281	2,283	2,262
1,910	1,911	1,908	1,928	1,929
345	345	345	345	345
68	68	68	82	82
111	112	112	112	113
11	11	11	11	11
2	2	2	5	5
1,373	1,373	1,370	1,373	1,373

2014	2015	2016	2017	2018
254	256	243	246	252
6	5	5	6	5
5	5	5	5	5
..
1	1	1	1	1
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION**2009 to 2018****(In hectares)**

	2009	2010	2011	2012	2013
Gladiola					
Philippines	157	155	153	148	112
Bicol Region	7	7	7	7	6
Albay	2	2	2	2	1
Camarines Norte	..	..	..	..	..
Camarines Sur	5	5	5	5	5
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Banana Saba					
Philippines	185,118	185,800	186,317	187,428	183,484
Bicol Region	9,462	9,500	9,492	9,514	9,514
Albay	241	241	230	230	230
Camarines Norte	2,955	2,970	2,975	2,996	2,996
Camarines Sur	4,719	4,719	4,719	4,719	4,719
Catanduanes	213	213	213	213	213
Masbate	350	373	373	373	373
Sorsogon	984	984	982	983	983

	2009	2010	2011	2012	2013
Mango Carabao					
Philippines	145,926	147,026	145,518	146,873	146,457
Bicol Region	1,075	1,112	1,112	1,112	1,112
Albay	25	25	25	25	25
Camarines Norte	..	..	..	..	..
Camarines Sur	202	202	202	202	202
Catanduanes	..	..	..	..	..
Masbate	741	778	778	778	778
Sorsogon	107	107	107	107	107

2014	2015	2016	2017	2018
103	99	90	89	68
6	6	6	5	5
1	1	1	1	0
..
5	5	5	5	4
..
..
..

2014	2015	2016	2017	2018
182,416	182,001	182,414	185,279	185,700
9,392	9,372	9,381	9,570	9,632
168	158	150	150	160
2,996	2,996	3,013	3,202	3,252
4,719	4,715	4,715	4,715	4,715
213	213	213	213	213
373	367	367	367	367
923	923	923	923	925

2014	2015	2016	2017	2018
146,915	147,467	147,166	145,302	145,225
1,115	1,112	1,111	1,111	1,111
28	25	25	25	25
..
202	202	202	202	202
..
778	778	778	778	778
107	107	106	106	106

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Orchids					
Philippines	319	326	313	307	305
Bicol Region	10	10	10	10	10
Albay	6	6	6	6	6
Camarines Norte	..	..	..	..	..
Camarines Sur	3	3	3	3	3
Catanduanes	..	..	..	..	..
Masbate	1	1	1	1	1
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Calamansi					
Philippines	20,912	20,987	21,141	20,843	20,262
Bicol Region	1,030	993	988	967	952
Albay	150	148	145	140	130
Camarines Norte	84	84	82	84	85
Camarines Sur	479	479	479	479	479
Catanduanes	11	11	11	11	11
Masbate	43	47	47	47	47
Sorsogon	263	224	224	206	200

	2009	2010	2011	2012	2013
Mangosteen					
Philippines	2,263	2,287	2,313	2,409	2,464
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
300	299	295	293	292
10	10	10	10	10
6	6	6	6	7
..
3	3	3	3	3
..
1	1	1	1	1
..

2014	2015	2016	2017	2018
20,065	19,993	19,824	19,788	19,778
947	885	827	827	827
125	70	68	68	68
85	85	94	94	94
479	475	475	475	475
11	11	11	11	11
47	44	44	44	44
200	200	135	135	135

2014	2015	2016	2017	2018
2,523	2,531	2,548	2,787	2,926
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Roses					
Philippines	266	270	269	273	277
Bicol Region	7	8	8	7	7
Albay	1	1	1	1	1
Camarines Norte	3	3	3	3	3
Camarines Sur	2	2	2	2	2
Catanduanes	..	..	..	..	..
Masbate	2	2	2	2	2
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Durian					
Philippines	18,669	18,838	19,001	19,392	16,366
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Orange					
Philippines	1,657	1,630	1,556	1,524	1,465
Bicol Region	472	484	474	464	464
Albay	1	1	1	1	1
Camarines Norte	320	320	310	300	300
Camarines Sur	144	144	144	144	144
Catanduanes	..	12	12	12	12
Masbate	..	..	..	..	..
Sorsogon	7	7	7	7	7

2014	2015	2016	2017	2018
278	265	269	273	271
7	7	7	7	7
1	1	1	1	1
3	3	3	3	3
2	2	2	2	2
..
2	2	2	2	2
..

2014	2015	2016	2017	2018
16,542	16,623	16,619	16,672	16,693
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
1,447	1,417	1,386	1,340	1,331
464	464	464	450	450
1	1	1	1	1
300	300	300	300	300
144	144	144	130	130
12	12	12	12	12
..
7	7	7	7	7

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Banana					
Philippines	446,371	449,443	450,125	454,262	446,017
Bicol Region	18,694	18,809	18,777	18,816	18,824
Albay	967	967	932	932	932
Camarines Norte	4,437	4,454	4,463	4,500	4,507
Camarines Sur	9,335	9,335	9,335	9,335	9,335
Catanduanes	407	407	407	407	407
Masbate	1,056	1,149	1,150	1,150	1,150
Sorsogon	2,492	2,497	2,490	2,492	2,493

	2009	2010	2011	2012	2013
Lanzones					
Philippines	20,430	20,505	20,586	20,663	19,940
Bicol Region	34	34	35	35	35
Albay	2	2	2	2	2
Camarines Norte	7	7	8	8	8
Camarines Sur	15	15	15	15	15
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	10	10	10	10	10

	2009	2010	2011	2012	2013
Papaya					
Philippines	8,904	8,751	8,647	8,585	8,399
Bicol Region	581	587	580	564	543
Albay	102	98	98	94	81
Camarines Norte	140	147	140	130	122
Camarines Sur	166	166	166	166	166
Catanduanes	14	14	14	14	14
Masbate	20	21	21	21	21
Sorsogon	139	141	141	139	139

2014	2015	2016	2017	2018
442,751	443,370	442,865	446,764	447,889
18,522	18,288	18,277	18,510	18,699
778	599	571	571	588
4,507	4,507	4,524	4,757	4,916
9,335	9,322	9,322	9,322	9,322
407	407	407	407	407
1,150	1,108	1,108	1,108	1,108
2,345	2,345	2,345	2,345	2,358

2014	2015	2016	2017	2018
19,936	20,158	20,144	20,842	21,287
35	33	36	36	36
2	..	3	3	3
8	8	8	8	8
15	15	15	15	15
..
..
10	10	10	10	10

2014	2015	2016	2017	2018
7,918	7,748	7,835	7,787	7,783
536	503	504	492	531
81	76	75	75	75
115	102	104	105	135
166	163	163	163	163
14	14	14	14	14
21	9	9	9	9
139	139	139	126	135

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Banana Cavendish					
Philippines	77,599	79,642	80,230	82,414	82,903
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Mandarin					
Philippines	9,444	9,289	9,107	9,113	9,009
Bicol Region	1,751	1,741	1,720	1,720	1,720
Albay	65	55	55	55	55
Camarines Norte	921	921	900	900	900
Camarines Sur	744	744	744	744	744
Catanduanes	1	1	1	1	1
Masbate	..	..	..	..	..
Sorsogon	20	20	20	20	20

	2009	2010	2011	2012	2013
Pineapple					
Philippines	58,823	58,547	58,457	58,450	60,759
Bicol Region	3,109	3,079	3,084	3,093	3,083
Albay	75	75	70	70	60
Camarines Norte	2,520	2,510	2,520	2,525	2,525
Camarines Sur	335	335	335	335	335
Catanduanes	4	4	4	4	4
Masbate	5	6	6	6	6
Sorsogon	170	149	149	153	153

2014	2015	2016	2017	2018
84,133	85,809	86,668	88,010	88,667
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
8,982	8,779	8,747	8,597	8,594
1,720	1,713	1,713	1,723	1,723
55	50	50	50	50
900	900	900	910	910
744	744	744	744	744
1	1	1	1	1
..
20	18	18	18	18

2014	2015	2016	2017	2018
61,643	62,812	65,224	65,998	66,190
3,078	3,079	4,773	4,778	4,773
55	55	45	45	40
2,525	2,528	4,231	4,231	4,231
335	333	334	339	339
4	4	4	4	4
6	6	6	6	6
153	153	153	153	153

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Banana Lakatan					
Philippines	56,252	56,579	57,032	58,071	55,908
Bicol Region	1,063	1,080	1,079	1,079	1,080
Albay	18	18	17	17	17
Camarines Norte	225	225	226	226	226
Camarines Sur	572	572	572	572	572
Catanduanes	..	..	..	..	..
Masbate	170	187	187	187	187
Sorsogon	78	78	77	77	78

	2009	2010	2011	2012	2013
Mango					
Philippines	188,139	189,437	187,073	188,719	187,939
Bicol Region	2,787	2,872	2,870	2,870	2,851
Albay	56	57	57	57	59
Camarines Norte	853	853	851	851	830
Camarines Sur	318	318	318	318	318
Catanduanes	18	18	18	18	18
Masbate	1,246	1,328	1,328	1,328	1,328
Sorsogon	296	298	298	298	298

	2009	2010	2011	2012	2013
Rambutan					
Philippines	5,672	5,743	5,849	5,889	6,173
Bicol Region	17	17	17	17	15
Albay	3	3	4	4	5
Camarines Norte	5	5	4	4	..
Camarines Sur	1	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	8	8	8	8	9

2014	2015	2016	2017	2018
56,395	56,473	54,675	54,978	55,040
1,075	1,059	1,058	1,081	1,080
12	12	11	11	8
226	226	226	249	249
572	570	570	570	570
..
187	173	173	173	173
78	78	78	78	80

2014	2015	2016	2017	2018
188,092	188,422	187,834	186,038	185,858
2,859	2,840	2,836	2,837	2,837
67	59	59	59	59
830	830	830	831	831
318	318	318	318	318
18	18	18	18	18
1,328	1,317	1,317	1,317	1,317
298	298	294	294	294

2014	2015	2016	2017	2018
6,263	5,494	5,485	5,637	5,727
15	14	15	15	25
5	4	5	5	5
..	..	..	..	10
1	1	1	1	1
..
..
9	9	9	9	9

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION**2009 to 2018****(In hectares)**

	2009	2010	2011	2012	2013
Tamarind Fruit					
Philippines	2,641	2,598	2,540	2,525	2,455
Bicol Region	82	82	81	79	76
Albay	32	32	32	30	28
Camarines Norte	20	20	19	19	18
Camarines Sur	..	..	..	..	..
Catanduanes	2	2	2	2	2
Masbate	..	..	..	..	..
Sorsogon	28	28	28	28	28

	2009	2010	2011	2012	2013
Sweet Potato/Camote					
Philippines	114,380	109,438	103,704	101,087	94,844
Bicol Region	19,892	19,603	19,422	19,454	18,978
Albay	5,944	5,830	5,700	5,700	5,700
Camarines Norte	216	216	215	216	220
Camarines Sur	8,782	8,602	8,598	8,626	8,588
Catanduanes	1,684	1,684	1,684	1,684	1,684
Masbate	1,007	1,012	1,012	1,012	1,012
Sorsogon	2,259	2,259	2,213	2,216	1,774

	2009	2010	2011	2012	2013
Garlic					
Philippines	3,552	3,039	2,830	2,676	2,539
Bicol Region	1	1	1	1	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	1	1	1	1	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

2014	2015	2016	2017	2018
2,266	2,211	2,172	2,146	2,251
76	74	74	74	185
28	28	28	28	28
18	16	16	16	127
..
2	2	2	2	2
..
28	28	28	28	28

2014	2015	2016	2017	2018
88,968	85,843	84,752	84,974	84,045
18,039	17,583	17,402	17,405	17,399
5,150	5,150	5,150	5,150	5,150
220	220	220	220	219
8,555	8,550	8,536	8,536	8,531
1,684	1,260	1,255	1,255	1,255
1,012	1,012	982	982	982
1,418	1,391	1,259	1,262	1,262

2014	2015	2016	2017	2018
2,555	2,744	2,647	2,569	2,654
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Watermelon					
Philippines	6,237	6,703	6,102	6,245	6,913
Bicol Region	163	187	176	168	165
Albay	26	26	26	24	20
Camarines Norte	120	126	123	125	126
Camarines Sur	1	20	12	4	4
Catanduanes	3	3	3	3	3
Masbate	3	4	4	4	4
Sorsogon	10	8	8	8	8

	2009	2010	2011	2012	2013
Carrots					
Philippines	5,080	5,115	4,947	4,923	4,820
Bicol Region	4	4	5	5	5
Albay	..	..	..	..	..
Camarines Norte	4	4	5	5	5
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Ginger					
Philippines	3,948	3,967	4,037	4,012	3,963
Bicol Region	71	73	73	77	82
Albay	17	17	16	19	22
Camarines Norte	3	3	5	5	6
Camarines Sur	33	33	32	33	33
Catanduanes	4	4	4	4	4
Masbate	8	10	10	10	10
Sorsogon	6	6	6	6	7

2014	2015	2016	2017	2018
7,020	7,357	7,082	7,309	8,368
159	164	163	177	981
10	10	7	10	10
126	131	133	143	947
8	8	8	8	8
3	3	3	3	3
4	4	4	4	4
8	9	8	9	9

2014	2015	2016	2017	2018
4,760	4,673	4,607	4,606	4,531
5	5	5	5	5
..
5	5	5	5	5
..
..
..
..

2014	2015	2016	2017	2018
3,850	3,805	3,831	3,908	3,930
82	82	82	85	89
23	23	23	25	28
6	6	6	6	6
32	32	32	34	34
4	4	4	4	4
10	10	10	10	10
7	7	7	7	7

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Asparagus					
Philippines	536	368	349	368	306
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Cassava					
Philippines	215,933	217,622	221,235	217,259	217,146
Bicol Region	22,895	22,830	22,750	22,753	22,825
Albay	1,890	1,820	1,800	1,725	1,725
Camarines Norte	695	695	692	698	705
Camarines Sur	16,724	16,724	16,716	16,785	16,677
Catanduanes	90	90	90	90	90
Masbate	840	845	845	845	1,120
Sorsogon	2,656	2,656	2,607	2,610	2,508

	2009	2010	2011	2012	2013
Gourd					
Philippines	8,152	7,847	7,773	7,765	7,262
Bicol Region	256	257	255	257	258
Albay	32	32	32	32	34
Camarines Norte	53	53	53	54	54
Camarines Sur	15	16	15	15	15
Catanduanes	7	7	7	7	7
Masbate	129	131	131	131	131
Sorsogon	20	18	17	18	17

2014	2015	2016	2017	2018
305	305	229	206	200
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
216,775	222,993	229,769	234,540	227,644
22,254	22,396	22,330	21,485	21,409
1,700	1,710	1,910	1,910	1,810
705	730	730	732	786
16,665	16,665	16,657	15,810	15,765
90	156	154	154	154
1,120	1,185	1,185	1,185	1,185
1,974	1,950	1,694	1,694	1,709

2014	2015	2016	2017	2018
7,299	7,428	7,302	7,181	7,195
259	263	263	284	289
34	34	34	34	34
55	55	55	76	80
15	16	17	18	18
7	10	10	10	10
131	131	130	130	130
17	17	17	17	18

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Ampalaya					
Philippines	11,038	11,129	10,877	10,896	10,834
Bicol Region	426	427	417	421	423
Albay	77	77	75	75	78
Camarines Norte	43	43	41	43	43
Camarines Sur	181	182	175	176	176
Catanduanes	2	2	2	2	2
Masbate	108	111	112	112	112
Sorsogon	15	12	12	13	12

	2009	2010	2011	2012	2013
Cauliflower					
Philippines	997	987	1,067	1,081	1,105
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Habitchuelas					
Philippines	3,662	3,770	3,621	3,567	3,504
Bicol Region	220	222	221	227	227
Albay	77	80	83	88	88
Camarines Norte	..	..	..	..	..
Camarines Sur	143	142	138	139	139
Catanduanes	0	0	0	0	0
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

2014	2015	2016	2017	2018
10,681	10,633	10,526	10,657	10,679
422	424	422	421	423
78	78	78	78	78
43	43	43	40	42
175	177	177	179	179
2	2	2	2	2
112	112	110	110	110
12	12	12	12	12

2014	2015	2016	2017	2018
1,095	1,079	1,069	1,098	1,042
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
3,397	3,241	3,131	3,150	3,103
222	223	224	224	222
85	85	85	85	85
..
137	137	138	138	136
0	1	1	1	1
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Broccoli					
Philippines	269	267	293	305	303
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Eggplant					
Philippines	21,170	21,423	21,377	21,485	21,239
Bicol Region	1,359	1,383	1,355	1,363	1,359
Albay	360	368	363	363	363
Camarines Norte	44	44	43	45	45
Camarines Sur	675	686	667	673	673
Catanduanes	11	11	11	11	11
Masbate	207	214	214	214	214
Sorsogon	62	60	57	57	53

	2009	2010	2011	2012	2013
Kangkong					
Philippines	7,423	7,255	7,209	6,963	7,041
Bicol Region	934	924	893	813	771
Albay	650	640	610	525	485
Camarines Norte	52	52	51	49	48
Camarines Sur	150	149	150	151	151
Catanduanes	23	23	23	23	23
Masbate	7	8	8	12	12
Sorsogon	52	52	51	53	52

2014	2015	2016	2017	2018
306	285	282	310	296
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
21,159	21,008	21,038	21,446	21,651
1,359	1,363	1,353	1,388	1,369
363	363	363	363	363
45	45	41	33	14
673	672	674	717	717
11	18	18	18	18
214	214	209	209	209
53	51	48	48	48

2014	2015	2016	2017	2018
6,803	6,737	6,425	6,482	6,465
676	680	645	636	640
390	390	370	360	360
48	46	46	47	50
151	152	146	146	147
23	28	27	27	27
12	12	12	12	12
52	52	44	44	45

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Cabbage					
Philippines	8,483	8,561	8,550	8,531	8,414
Bicol Region	39	32	27	26	24
Albay	18	14	10	9	8
Camarines Norte	..	..	..	..	..
Camarines Sur	16	14	13	13	12
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	5	4	4	4	4

	2009	2010	2011	2012	2013
Gabi					
Philippines	17,882	16,998	16,827	16,362	15,819
Bicol Region	1,571	1,547	1,504	1,462	1,427
Albay	875	850	810	760	725
Camarines Norte	40	40	42	41	43
Camarines Sur	283	282	281	282	282
Catanduanes	91	91	91	91	91
Masbate	14	16	16	16	16
Sorsogon	268	268	264	272	270

	2009	2010	2011	2012	2013
Lettuce					
Philippines	451	466	482	501	543
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
8,310	8,179	8,018	7,912	7,839
21	10	9	9	8
5	5	5	5	5
..
12	1	1	1	1
..
..
4	4	3	3	2

2014	2015	2016	2017	2018
15,384	15,345	15,143	15,011	14,923
1,377	1,322	1,288	1,283	1,280
675	665	654	652	644
43	43	43	40	45
282	281	281	281	282
91	48	47	47	47
16	16	16	16	16
270	269	247	247	247

2014	2015	2016	2017	2018
512	484	482	494	492
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Mongo					
Philippines	38,658	40,080	45,283	44,351	43,589
Bicol Region	258	254	242	255	244
Albay	85	78	75	65	55
Camarines Norte	1	1	1	1	1
Camarines Sur	93	93	90	90	90
Catanduanes	18	18	18	18	18
Masbate	22	23	23	46	46
Sorsogon	39	41	35	35	34

	2009	2010	2011	2012	2013
Radish					
Philippines	1,369	1,375	1,352	1,350	1,357
Bicol Region	62	59	59	59	61
Albay	21	20	20	19	21
Camarines Norte	2	2	2	2	2
Camarines Sur	25	24	24	24	24
Catanduanes	3	3	3	3	3
Masbate	..	..	..	..	..
Sorsogon	11	10	10	11	11

	2009	2010	2011	2012	2013
Pechay Native					
Philippines	7,194	7,097	7,079	7,122	7,108
Bicol Region	2,252	2,258	2,248	2,239	2,240
Albay	567	567	562	549	549
Camarines Norte	46	46	46	48	49
Camarines Sur	1,520	1,521	1,516	1,517	1,517
Catanduanes	22	22	22	22	22
Masbate	90	93	93	93	93
Sorsogon	7	9	9	10	10

2014	2015	2016	2017	2018
42,978	41,426	41,349	41,933	41,581
232	233	224	220	218
43	36	31	28	27
1	1	1	1	1
89	82	81	81	81
18	34	34	33	33
46	46	46	46	46
35	34	31	31	30

2014	2015	2016	2017	2018
1,349	1,355	1,330	1,311	1,305
61	60	61	62	61
21	20	22	22	22
2	2	2	2	2
24	23	23	24	23
3	4	4	4	4
..
11	11	10	10	10

2014	2015	2016	2017	2018
7,103	7,132	7,156	7,215	7,231
2,238	2,246	2,251	2,207	2,216
549	549	555	555	555
49	48	48	49	56
1,515	1,518	1,519	1,504	1,505
22	28	27	27	27
93	93	93	63	63
10	10	9	10	10

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Okra					
Philippines	3,555	3,570	3,497	3,570	3,587
Bicol Region	175	176	172	176	176
Albay	14	14	14	14	16
Camarines Norte	17	17	15	17	17
Camarines Sur	13	13	13	13	13
Catanduanes	5	5	5	5	5
Masbate	87	90	90	90	90
Sorsogon	39	37	35	37	35

	2009	2010	2011	2012	2013
Squash Fruit					
Philippines	13,565	13,427	12,877	12,873	12,771
Bicol Region	1,111	1,107	1,084	1,089	1,088
Albay	690	675	655	655	655
Camarines Norte	118	128	128	131	131
Camarines Sur	164	164	162	162	162
Catanduanes	34	34	34	34	34
Masbate	74	76	76	76	76
Sorsogon	31	30	29	31	30

	2009	2010	2011	2012	2013
White Potato					
Philippines	7,904	8,129	8,171	8,096	7,890
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
3,648	3,693	3,688	3,845	3,941
176	177	175	175	175
16	16	16	16	16
17	17	17	17	17
13	13	13	13	13
5	6	6	6	6
90	90	89	89	89
35	35	34	34	34

2014	2015	2016	2017	2018
12,757	12,829	12,902	13,083	13,046
1,079	1,102	1,102	1,099	1,094
645	665	665	665	665
132	133	133	126	122
162	164	164	168	168
34	34	34	34	34
76	76	76	76	76
30	30	30	30	30

2014	2015	2016	2017	2018
7,868	7,843	7,744	7,793	7,571
..
..
..
..
..
..
..

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Onion					
Philippines	14,526	15,169	14,641	15,012	15,437
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Stringbeans					
Philippines	14,832	14,681	14,298	14,205	13,770
Bicol Region	1,314	1,324	1,313	1,328	1,320
Albay	396	401	401	401	395
Camarines Norte	104	106	104	105	106
Camarines Sur	472	475	472	474	475
Catanduanes	9	9	9	9	9
Masbate	158	160	160	160	160
Sorsogon	175	173	167	179	175

	2009	2010	2011	2012	2013
Ubi					
Philippines	4,929	4,744	2,974	2,688	2,621
Bicol Region	98	97	94	92	91
Albay	68	67	64	62	61
Camarines Norte	..	..	..	..	..
Camarines Sur	3	3	3	3	3
Catanduanes	2	2	2	2	2
Masbate	21	21	21	21	21
Sorsogon	4	4	4	4	4

2014	2015	2016	2017	2018
15,844	14,861	12,988	18,259	17,905
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
13,786	13,808	13,754	13,939	13,907
1,331	1,335	1,327	1,312	1,324
405	405	410	410	410
107	108	108	107	119
475	477	477	462	462
9	12	12	12	12
160	160	160	160	160
175	173	160	161	161

2014	2015	2016	2017	2018
2,616	2,433	2,476	2,457	2,446
88	88	82	82	77
58	58	53	53	48
..
3	3	3	3	3
2	2	2	2	2
21	21	21	21	21
4	4	3	3	3

Table 2.6.2 (continued)

OTHER CROPS: AREA PLANTED/HARVESTED BY CROP AND GEOLOCATION

2009 to 2018

(In hectares)

	2009	2010	2011	2012	2013
Peanut					
Philippines	28,235	27,123	26,902	26,110	25,602
Bicol Region	1,374	1,367	1,338	1,332	1,276
Albay	835	833	820	815	760
Camarines Norte	22	22	21	22	22
Camarines Sur	316	308	297	295	295
Catanduanes	84	84	84	84	84
Masbate	58	59	59	59	59
Sorsogon	59	61	57	57	56

	2009	2010	2011	2012	2013
Tomato					
Philippines	17,656	17,663	17,556	17,345	17,231
Bicol Region	577	581	564	557	552
Albay	243	245	240	230	225
Camarines Norte	6	6	6	7	7
Camarines Sur	305	306	294	296	296
Catanduanes	3	3	3	3	3
Masbate	15	16	16	16	16
Sorsogon	5	5	5	5	5

	2009	2010	2011	2012	2013
Pechay Chinese					
Philippines	3,736	3,735	3,742	3,759	3,775
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
25,048	24,580	23,522	23,774	23,898
1,214	1,214	1,203	1,182	1,189
700	640	640	640	640
22	22	22	22	29
293	293	294	279	279
84	144	138	132	132
59	59	59	59	59
56	56	50	50	50

2014	2015	2016	2017	2018
16,742	16,165	16,197	16,491	16,494
546	550	550	550	550
220	220	220	220	220
7	7	7	7	6
295	298	299	299	299
3	4	4	4	4
16	16	16	16	16
5	5	5	5	5

2014	2015	2016	2017	2018
3,697	3,625	3,601	3,554	3,521
..
..
..
..
..
..
..

Table 2.7.1

PALAY AND CORN: VOLUME OF PRODUCTION BY ECOSYSTEM/CROPTYPE & GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Palay					
Philippines	16,266,417	15,772,319	16,684,062	18,032,525	18,439,420
Bicol Region	1,045,501	1,081,078	1,070,917	1,173,307	1,243,241
Albay	170,564	182,472	201,037	206,808	220,980
Camarines Norte	71,087	72,815	77,188	85,526	92,411
Camarines Sur	535,090	568,327	520,322	563,749	601,480
Catanduanes	38,060	34,556	43,947	32,330	29,488
Masbate	109,042	112,609	113,441	154,463	168,653
Sorsogon	121,658	110,299	114,982	130,431	130,230

	2009	2010	2011	2012	2013
Irrigated Palay					
Philippines	12,083,264	11,992,459	12,358,931	13,396,483	13,823,149
Bicol Region	739,995	791,987	735,577	815,197	872,206
Albay	135,030	147,111	159,599	165,703	179,205
Camarines Norte	48,408	52,681	51,842	56,364	62,149
Camarines Sur	420,538	461,725	394,503	434,964	464,196
Catanduanes	20,998	17,170	18,717	14,854	15,105
Masbate	22,371	23,930	26,218	45,413	51,919
Sorsogon	92,650	89,370	84,698	97,899	99,632

	2009	2010	2011	2012	2013
Rainfed Palay					
Philippines	4,183,153	3,779,860	4,325,131	4,636,042	4,616,270
Bicol Region	305,506	289,091	335,340	358,110	371,035
Albay	35,534	35,361	41,438	41,105	41,775
Camarines Norte	22,679	20,134	25,346	29,162	30,262
Camarines Sur	114,552	106,602	125,819	128,785	137,284
Catanduanes	17,062	17,386	25,230	17,476	14,383
Masbate	86,671	88,679	87,223	109,050	116,734
Sorsogon	29,008	20,929	30,284	32,532	30,598

2014	2015	2016	2017	2018
18,967,826	18,149,838	17,627,245	19,276,347	19,066,094
1,258,147	1,264,448	1,275,492	1,335,077	1,350,438
225,700	204,345	201,811	204,824	206,019
95,784	89,615	89,909	107,099	110,850
583,797	658,548	666,413	683,385	689,722
35,452	35,741	34,065	37,789	39,945
180,173	147,754	149,871	158,832	156,032
137,241	128,445	133,423	143,148	147,870

2014	2015	2016	2017	2018
14,405,716	13,937,924	13,539,873	14,557,319	14,347,993
881,474	923,012	918,904	955,709	971,552
183,787	170,430	170,595	175,189	177,659
61,313	59,925	60,298	69,631	72,594
461,297	529,138	521,988	539,115	546,469
17,681	18,898	19,938	19,519	22,159
53,387	42,500	40,080	44,796	42,905
104,009	102,121	106,005	107,459	109,765

2014	2015	2016	2017	2018
4,562,110	4,211,913	4,087,371	4,719,028	4,718,101
376,673	341,436	356,588	379,368	378,887
41,913	33,915	31,216	29,635	28,361
34,471	29,690	29,611	37,468	38,256
122,500	129,410	144,425	144,270	143,253
17,771	16,843	14,127	18,270	17,785
126,786	105,254	109,791	114,036	113,127
33,232	26,324	27,418	35,689	38,105

Table 2.7.1 (continued)

**PALAY AND CORN: VOLUME OF PRODUCTION BY ECOSYSTEM/CROPTYPE & GEOLOCATION
2009 to 2018
(In metric tons)**

	2009	2010	2011	2012	2013
Corn					
Philippines	7,034,033	6,376,796	6,971,221	7,407,068	7,377,293
Bicol Region	197,116	174,479	215,025	230,545	258,115
Albay	54,951	49,391	51,500	57,556	59,436
Camarines Norte	1,891	797	1,446	1,617	1,800
Camarines Sur	96,549	85,667	125,730	136,233	161,863
Catanduanes	230	226	243	261	322
Masbate	41,590	38,313	36,056	34,692	34,470
Sorsogon	1,905	85	50	186	224

	2009	2010	2011	2012	2013
White Corn					
Philippines	2,316,434	2,169,103	2,150,222	2,165,548	2,129,091
Bicol Region	50,728	45,564	47,208	47,714	49,177
Albay	1,176	2,980	2,220	2,316	3,071
Camarines Norte	1,116	500	919	1,041	1,223
Camarines Sur	8,033	5,588	8,246	9,595	11,813
Catanduanes	161	167	172	164	198
Masbate	39,475	36,274	35,612	34,476	32,719
Sorsogon	767	55	39	122	153

	2009	2010	2011	2012	2013
Yellow Corn					
Philippines	4,717,599	4,207,693	4,820,999	5,241,520	5,248,203
Bicol Region	146,388	128,915	167,817	182,831	208,938
Albay	53,775	46,411	49,280	55,240	56,365
Camarines Norte	775	297	527	576	577
Camarines Sur	88,516	80,079	117,484	126,638	150,050
Catanduanes	69	59	71	97	124
Masbate	2,115	2,039	444	216	1,751
Sorsogon	1,138	30	11	64	71

.. Data not available Totals may not add up due to rounding off

Source: Philippine Statistics Authority

2014	2015	2016	2017	2018
7,770,603	7,518,756	7,218,817	7,914,908	7,771,919
285,647	243,908	259,375	287,005	279,732
60,665	53,469	58,775	56,130	51,895
1,558	2,048	2,138	2,297	2,416
187,260	153,320	161,904	187,432	187,143
373	555	538	1,658	1,282
35,397	33,987	35,440	39,086	36,524
394	529	580	402	472

2014	2015	2016	2017	2018
2,262,234	2,134,673	2,022,508	2,104,201	2,145,306
57,440	55,472	57,685	64,960	65,026
3,874	4,375	5,788	4,698	4,577
1,076	1,438	1,475	1,557	1,650
18,128	16,601	15,842	20,144	22,715
219	314	312	939	812
33,877	32,552	33,908	37,358	34,989
266	192	360	264	283

2014	2015	2016	2017	2018
5,508,369	5,384,083	5,196,309	5,810,708	5,626,612
228,207	188,436	201,690	222,045	214,706
56,791	49,094	52,987	51,432	47,318
482	610	663	740	766
169,132	136,719	146,062	167,288	164,428
154	241	226	719	470
1,520	1,435	1,532	1,728	1,535
128	337	220	138	189

Table 2.7.2
OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION
2009 to 2018
(In metric tons)

	2009	2010	2011	2012	2013
Abaca					
Philippines	65,825	66,512	68,613	68,510	64,952
Bicol Region	18,833	20,264	22,645	23,086	24,078
Albay	1,407	1,473	1,440	1,516	1,617
Camarines Norte	160	121	113	116	120
Camarines Sur	370	392	792	909	912
Catanduanes	15,141	16,461	18,519	19,045	20,092
Masbate	..	..	..	..	..
Sorsogon	1,754	1,817	1,781	1,501	1,337

	2009	2010	2011	2012	2013
Coffee Excelsa (dried berries)					
Philippines	6,572	6,354	5,916	5,737	4,917
Bicol Region	1	1	1	1	1
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	1	1	1	1	1

	2009	2010	2011	2012	2013
Rubber (cuplump)					
Philippines	390,962	395,237	425,705	442,998	444,818
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

2014	2015	2016	2017	2018
68,053	70,356	71,840	68,841	71,516
28,951	29,561	30,016	26,196	28,812
1,368	1,365	1,478	1,354	1,408
123	127	139	143	134
856	841	897	810	794
25,435	26,419	26,864	23,272	25,847
..
1,169	809	637	617	629

2014	2015	2016	2017	2018
4,725	4,546	4,269	4,064	4,039
1	1	1	1	1
..
..
..
..
1	1	1	1	1

2014	2015	2016	2017	2018
453,053	398,137	362,626	406,984	423,371
..
..
..
..
..
..
..

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Cacao					
Philippines	5,134	5,019	4,856	4,831	4,876
Bicol Region	30	31	32	33	34
Albay	13	13	13	14	15
Camarines Norte	1	1	1	1	1
Camarines Sur	9	9	10	10	10
Catanduanes	1	1	1	1	1
Masbate	..	..	..	..	..
Sorsogon	6	7	7	7	7

	2009	2010	2011	2012	2013
Coffee Liberica (dried berries)					
Philippines	652	633	630	598	563
Bicol Region	4	5	4	4	4
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	4	5	4	4	4

	2009	2010	2011	2012	2013
Sugarcane					
Philippines	22,932,819	17,929,269	28,376,518	26,395,915	24,584,842
Bicol Region	246,343	224,001	306,049	282,047	259,311
Albay	62,625	64,920	66,462	70,119	74,225
Camarines Norte	..	..	..	..	..
Camarines Sur	183,715	159,078	239,584	211,925	185,084
Catanduanes	0	0	0	0	0
Masbate	..	..	..	..	..
Sorsogon	2	2	2	2	2

	2014	2015	2016	2017	2018
Cacao					
Philippines	5,428	6,023	6,263	7,009	7,983
Bicol Region	35	36	38	37	38
Albay	14	14	15	15	17
Camarines Norte	1	1	1	1	1
Camarines Sur	11	11	13	12	11
Catanduanes	1	1	1	1	1
Masbate	..	..	..	..	..
Sorsogon	7	8	7	8	8

	2014	2015	2016	2017	2018
Coffee Liberica (dried berries)					
Philippines	533	514	499	496	496
Bicol Region	4	4	3	3	3
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	4	4	3	3	3

	2014	2015	2016	2017	2018
Sugarcane					
Philippines	25,029,880	22,926,437	22,370,546	29,286,893	24,730,820
Bicol Region	259,239	239,010	264,095	245,887	224,386
Albay	69,412	67,096	70,584	65,818	70,473
Camarines Norte	..	..	..	..	..
Camarines Sur	189,824	171,911	193,508	180,066	153,910
Catanduanes	0	0	0	0	..
Masbate	..	..	..	..	..
Sorsogon	2	2	2	3	3

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Cashew (ripe fruit with nut)					
Philippines	111,993	134,681	133,388	132,541	146,289
Bicol Region	4	4	4	4	4
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	4	4	4	4	4

	2009	2010	2011	2012	2013
Coffee Robusta (dried berries)					
Philippines	69,357	67,933	62,978	63,825	54,560
Bicol Region	253	255	249	252	244
Albay	75	78	76	79	84
Camarines Norte	17	16	15	16	16
Camarines Sur	14	14	15	15	15
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	147	148	143	142	130

	2009	2010	2011	2012	2013
Tobacco					
Philippines	36,383	40,530	44,944	48,075	53,753
Bicol Region	7	3	..	..	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	7	3	..	..	..
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Cashew (ripe fruit with nut)					
Philippines	170,853	205,531	216,398	222,541	228,612
Bicol Region	4	5	4	5	5
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	4	5	4	5	5

	2014	2015	2016	2017	2018
Coffee Robusta (dried berries)					
Philippines	52,168	49,847	47,299	43,033	42,071
Bicol Region	224	221	197	186	168
Albay	73	75	70	63	51
Camarines Norte	16	16	17	18	18
Camarines Sur	14	14	13	12	11
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	121	116	98	94	89

	2014	2015	2016	2017	2018
Tobacco					
Philippines	61,418	56,194	56,457	51,024	50,381
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Coconut (with husk)					
Philippines	15,667,565	15,510,283	15,244,609	15,863,801	15,354,334
Bicol Region	1,257,221	1,269,538	1,201,707	1,240,459	1,255,507
Albay	155,663	161,104	160,987	171,040	180,333
Camarines Norte	234,261	235,022	233,187	239,547	244,048
Camarines Sur	318,603	331,018	322,149	333,822	340,452
Catanduanes	3,167	3,782	4,055	4,181	4,398
Masbate	315,810	307,108	285,829	317,015	316,655
Sorsogon	229,718	231,504	195,500	174,853	169,622

	2009	2010	2011	2012	2013
Cotton					
Philippines	127	35	51	77	55
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Tobacco Native					
Philippines	10,416	10,765	11,546	10,525	10,806
Bicol Region	7	3	..	..	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	7	3	..	..	..
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Coconut (with husk)					
Philippines	14,696,298	14,735,189	13,825,080	14,049,131	14,726,165
Bicol Region	1,124,412	1,105,743	1,081,112	1,076,257	1,186,964
Albay	105,420	102,844	109,462	112,264	121,271
Camarines Norte	242,369	247,012	249,454	261,450	288,477
Camarines Sur	323,599	322,706	328,927	292,177	334,413
Catanduanes	4,739	4,967	5,131	3,818	4,141
Masbate	300,424	277,812	270,439	285,080	313,023
Sorsogon	147,860	150,403	117,698	121,469	125,639

	2014	2015	2016	2017	2018
Cotton					
Philippines	11	6	5	10	27
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Tobacco Native					
Philippines	10,169	8,178	5,779	6,495	6,967
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Coffee (dried berries)					
Philippines	96,433	94,536	88,526	88,943	78,634
Bicol Region	335	336	327	331	325
Albay	102	106	104	107	114
Camarines Norte	29	25	24	25	26
Camarines Sur	26	26	27	27	27
Catanduanes	2	2	2	2	2
Masbate	..	..	..	..	..
Sorsogon	176	177	171	171	157

	2009	2010	2011	2012	2013
Oil Palm (fresh fruit bunch)					
Philippines	516,115	565,460	540,914	531,294	473,416
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Tobacco Virginia					
Philippines	16,578	18,839	21,447	23,644	28,245
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Coffee (dried berries)					
Philippines	75,454	72,342	68,823	62,078	60,313
Bicol Region	299	296	267	251	226
Albay	98	101	94	85	69
Camarines Norte	26	26	28	29	29
Camarines Sur	26	26	24	21	19
Catanduanes	2	2	2	1	..
Masbate	..	..	..	..	..
Sorsogon	147	141	120	115	109

	2014	2015	2016	2017	2018
Oil Palm (fresh fruit bunch)					
Philippines	437,439	432,497	439,529	474,792	500,466
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Tobacco Virginia					
Philippines	31,321	32,148	31,611	30,418	29,789
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Coffee Arabica (dried berries)					
Philippines	19,655	19,421	19,002	18,783	18,594
Bicol Region	76	75	73	74	76
Albay	27	28	27	28	30
Camarines Norte	12	10	9	9	10
Camarines Sur	12	12	12	12	12
Catanduanes	2	2	2	2	2
Masbate	..	..	..	..	..
Sorsogon	23	23	23	23	22

	2009	2010	2011	2012	2013
Pili Nut					
Philippines	6,122	6,637	7,105	7,933	8,243
Bicol Region	4,973	5,491	5,922	6,757	7,081
Albay	1,602	1,677	1,819	1,935	2,132
Camarines Norte	41	41	43	45	49
Camarines Sur	338	347	355	365	368
Catanduanes	11	11	11	11	11
Masbate	1	1	1	2	2
Sorsogon	2,981	3,414	3,693	4,400	4,518

	2009	2010	2011	2012	2013
Chrysanthemum					
Philippines	2,542	2,497	2,567	2,606	2,561
Bicol Region	71	70	67	62	57
Albay	63	62	59	54	48
Camarines Norte	..	..	..	..	..
Camarines Sur	8	8	8	8	8
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Coffee Arabica (dried berries)					
Philippines	18,028	17,434	16,756	14,485	13,706
Bicol Region	69	70	65	61	55
Albay	25	26	24	22	19
Camarines Norte	10	10	11	12	11
Camarines Sur	12	11	10	10	8
Catanduanes	2	2	2	1	..
Masbate	..	..	..	..	..
Sorsogon	20	20	18	17	16

	2014	2015	2016	2017	2018
Pili Nut					
Philippines	7,316	7,362	7,291	7,427	7,649
Bicol Region	6,183	6,258	6,283	6,439	6,679
Albay	1,743	1,760	1,855	1,882	2,028
Camarines Norte	50	51	50	58	55
Camarines Sur	373	382	386	358	386
Catanduanes	11	12	12	10	10
Masbate	2	2	2	2	2
Sorsogon	4,004	4,052	3,979	4,128	4,199

	2014	2015	2016	2017	2018
Chrysanthemum					
Philippines	2,620	2,467	2,292	2,405	2,452
Bicol Region	48	48	45	45	43
Albay	40	40	38	36	35
Camarines Norte	..	..	..	..	..
Camarines Sur	8	8	8	9	8
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Gladiola					
Philippines	1,231	1,181	1,114	1,066	1,014
Bicol Region	6	6	6	6	5
Albay	5	5	5	4	4
Camarines Norte	..	..	..	..	..
Camarines Sur	1	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Banana Saba					
Philippines	2,636,342	2,632,692	2,616,842	2,645,893	2,557,109
Bicol Region	38,636	40,745	41,415	42,704	43,196
Albay	4,314	4,521	4,465	4,866	5,355
Camarines Norte	5,609	5,558	5,583	5,707	5,778
Camarines Sur	18,073	19,021	19,011	19,095	19,313
Catanduanes	643	694	681	680	698
Masbate	1,476	1,531	1,529	1,637	1,614
Sorsogon	8,521	9,421	10,146	10,720	10,439

2014	2015	2016	2017	2018
787	668	550	532	432
4	4	4	4	4
3	3	3	3	2
..
1	1	1	1	1
..
..
..

2014	2015	2016	2017	2018
2,567,495	2,627,129	2,474,199	2,520,010	2,593,101
38,657	39,658	40,103	38,488	41,457
3,917	3,739	3,871	3,558	3,915
5,420	5,565	5,844	6,892	7,898
18,361	18,561	19,291	16,638	17,923
678	710	733	590	631
1,619	1,632	1,618	1,738	1,802
8,662	9,451	8,745	9,072	9,287

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Orchids					
Philippines	1,821	1,698	1,557	1,397	1,313
Bicol Region	499	492	470	382	355
Albay	494	486	465	377	350
Camarines Norte	..	..	..	..	..
Camarines Sur	3	3	3	3	4
Catanduanes	..	..	..	..	..
Masbate	2	2	1	1	2
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Calamansi					
Philippines	192,187	188,341	182,550	178,549	164,091
Bicol Region	2,309	2,287	2,238	2,176	2,112
Albay	152	145	138	138	124
Camarines Norte	417	415	417	432	445
Camarines Sur	431	452	452	454	454
Catanduanes	12	13	12	12	13
Masbate	105	110	110	124	127
Sorsogon	1,192	1,152	1,109	1,016	949

	2014	2015	2016	2017	2018
Orchids					
Philippines	1,185	1,157	1,149	1,154	1,165
Bicol Region	300	302	315	332	348
Albay	295	297	310	327	343
Camarines Norte	..	..	..	..	..
Camarines Sur	4	4	3	3	3
Catanduanes	..	..	..	..	..
Masbate	2	2	1	2	2
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Calamansi					
Philippines	160,740	162,676	118,248	116,665	113,552
Bicol Region	1,845	1,826	1,925	1,905	1,967
Albay	90	87	81	69	68
Camarines Norte	454	464	619	644	697
Camarines Sur	437	468	476	435	443
Catanduanes	12	12	12	10	9
Masbate	135	140	134	132	130
Sorsogon	716	653	602	615	620

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Roses					
Philippines	2,355	2,328	2,337	2,393	2,438
Bicol Region	11	10	11	12	12
Albay	2	2	3	3	3
Camarines Norte	3	2	2	2	2
Camarines Sur	5	5	5	5	5
Catanduanes	..	..	..	..	..
Masbate	2	2	1	1	1
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Durian					
Philippines	55,727	77,549	58,969	85,961	91,212
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Roses					
Philippines	2,443	2,336	2,232	2,423	2,587
Bicol Region	11	11	11	12	12
Albay	3	3	3	3	3
Camarines Norte	2	3	2	2	2
Camarines Sur	5	5	5	6	5
Catanduanes	..	..	..	..	..
Masbate	1	1	1	1	1
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Durian					
Philippines	80,334	87,382	71,444	66,458	75,521
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Banana					
Philippines	9,013,186	9,101,341	9,165,046	9,226,768	8,646,417
Bicol Region	73,512	77,892	78,942	81,414	83,353
Albay	12,121	12,709	12,568	13,497	14,718
Camarines Norte	8,136	8,030	8,104	8,301	8,457
Camarines Sur	33,076	34,822	34,749	34,828	35,353
Catanduanes	1,228	1,319	1,290	1,284	1,321
Masbate	3,229	3,356	3,307	3,563	3,561
Sorsogon	15,722	17,655	18,925	19,942	19,942

	2009	2010	2011	2012	2013
Lanzones					
Philippines	15,341	49,500	4,256	14,190	35,207
Bicol Region	9	8	8	8	8
Albay	..	..	..	..	..
Camarines Norte	2	2	2	2	2
Camarines Sur	2	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	5	5	5	6	6

	2014	2015	2016	2017	2018
Banana					
Philippines	8,884,857	9,083,929	8,903,684	9,166,334	9,358,785
Bicol Region	74,511	76,452	76,841	73,343	79,063
Albay	11,574	11,235	11,696	11,098	11,863
Camarines Norte	7,840	8,085	8,849	10,496	12,196
Camarines Sur	33,534	33,939	34,539	29,378	31,882
Catanduanes	1,291	1,339	1,385	1,126	1,230
Masbate	3,583	3,645	3,594	3,813	3,953
Sorsogon	16,690	18,209	16,778	17,431	17,938

	2014	2015	2016	2017	2018
Lanzones					
Philippines	13,899	20,814	17,160	8,031	12,368
Bicol Region	8	8	20	13	13
Albay	..	..	12	5	5
Camarines Norte	2	2	2	2	2
Camarines Sur	1	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	5	5	5	5	5

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Banana Cavendish					
Philippines	4,497,722	4,600,617	4,685,997	4,694,655	4,230,089
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Mandarin					
Philippines	20,376	18,783	17,697	16,755	15,287
Bicol Region	817	824	831	844	844
Albay	12	12	11	10	11
Camarines Norte	503	506	512	523	530
Camarines Sur	149	152	152	153	153
Catanduanes	0	0	0	0	0
Masbate	..	..	..	..	..
Sorsogon	152	154	155	157	151

	2014	2015	2016	2017	2018
Banana Cavendish					
Philippines	4,448,460	4,566,907	4,638,328	4,836,254	4,919,220
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Mandarin					
Philippines	14,045	14,064	13,243	12,908	11,880
Bicol Region	820	843	878	822	674
Albay	9	9	9	8	7
Camarines Norte	540	555	624	585	429
Camarines Sur	136	142	119	100	108
Catanduanes	0	0	0	0	0
Masbate	..	..	..	..	..
Sorsogon	136	137	126	128	130

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Banana Lakatan					
Philippines	916,932	921,602	926,719	942,938	930,032
Bicol Region	3,554	3,720	3,727	3,812	3,927
Albay	275	287	283	294	311
Camarines Norte	344	330	340	351	362
Camarines Sur	2,349	2,463	2,446	2,460	2,507
Catanduanes	..	..	..	..	..
Masbate	181	184	182	193	192
Sorsogon	406	456	476	514	555

	2009	2010	2011	2012	2013
Mango					
Philippines	771,441	825,676	788,074	768,410	816,378
Bicol Region	1,410	1,516	1,398	1,474	1,532
Albay	9	10	9	9	9
Camarines Norte	640	618	636	656	676
Camarines Sur	7	89	81	83	98
Catanduanes	6	6	6	5	5
Masbate	492	521	447	492	498
Sorsogon	256	273	221	228	246

	2014	2015	2016	2017	2018
Banana Lakatan					
Philippines	954,856	970,496	898,515	910,983	929,542
Bicol Region	3,644	3,672	3,639	3,272	3,581
Albay	268	248	255	239	227
Camarines Norte	314	329	391	453	591
Camarines Sur	2,403	2,406	2,345	1,894	2,051
Catanduanes	..	..	..	..	..
Masbate	193	194	198	212	221
Sorsogon	467	495	450	475	491

	2014	2015	2016	2017	2018
Mango					
Philippines	885,038	902,739	814,055	737,032	711,660
Bicol Region	1,592	1,684	1,888	1,879	2,347
Albay	10	10	11	10	10
Camarines Norte	646	680	933	948	1,355
Camarines Sur	116	124	132	113	177
Catanduanes	5	5	5	4	4
Masbate	545	568	539	520	509
Sorsogon	269	297	267	285	291

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Mango Carabao					
Philippines	621,280	669,520	638,954	630,596	671,929
Bicol Region	260	285	238	261	264
Albay	0	1	0	0	0
Camarines Norte	..	..	..	..	..
Camarines Sur	1	12	10	10	12
Catanduanes	..	..	..	..	..
Masbate	240	254	212	234	234
Sorsogon	19	20	15	16	17

	2009	2010	2011	2012	2013
Tamarind Fruit					
Philippines	10,063	9,032	8,122	7,921	7,782
Bicol Region	163	168	165	163	165
Albay	39	40	39	35	34
Camarines Norte	19	19	19	20	21
Camarines Sur	..	..	..	..	..
Catanduanes	1	1	1	1	1
Masbate	..	..	..	..	..
Sorsogon	104	108	106	107	110

	2009	2010	2011	2012	2013
Sweet Potato/Camote					
Philippines	560,516	541,265	516,338	516,907	528,250
Bicol Region	95,861	94,701	92,121	91,943	94,881
Albay	40,167	38,475	37,068	35,097	38,042
Camarines Norte	717	686	693	729	752
Camarines Sur	42,134	42,198	41,441	42,563	42,155
Catanduanes	5,212	5,661	5,318	5,253	5,394
Masbate	1,418	1,458	1,347	1,428	1,555
Sorsogon	6,214	6,223	6,253	6,873	6,982

2014	2015	2016	2017	2018
730,140	740,239	659,014	598,714	571,437
287	300	288	277	279
1	1	1	1	1
..
14	14	17	15	22
..
254	265	252	242	236
18	20	18	20	21

2014	2015	2016	2017	2018
7,558	7,436	7,128	6,756	6,638
155	160	151	153	154
32	31	33	31	33
21	21	19	19	17
..
1	1	1	1	1
..
102	106	98	102	103

2014	2015	2016	2017	2018
519,855	535,996	529,472	537,303	525,634
87,911	90,415	89,250	87,378	85,610
33,582	37,502	39,394	40,560	42,280
762	775	697	825	849
40,619	39,762	37,194	34,598	30,414
5,349	5,119	5,204	4,567	5,233
1,601	1,689	1,711	1,737	1,747
5,999	5,569	5,050	5,090	5,087

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Mangosteen					
Philippines	1,567	5,553	683	3,209	3,303
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Watermelon					
Philippines	97,106	110,238	101,524	105,095	130,005
Bicol Region	3,682	4,671	5,104	5,341	5,421
Albay	129	134	123	113	105
Camarines Norte	3,510	4,476	4,927	5,175	5,252
Camarines Sur	0	14	9	3	3
Catanduanes	7	7	7	7	7
Masbate	4	4	4	4	5
Sorsogon	32	35	34	39	48

	2009	2010	2011	2012	2013
Carrots					
Philippines	68,328	72,109	67,162	68,454	68,111
Bicol Region	21	19	20	21	22
Albay	..	..	..	..	..
Camarines Norte	21	19	20	21	22
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Mangosteen					
Philippines	2,686	3,400	2,522	1,171	2,659
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Watermelon					
Philippines	131,530	148,030	143,880	147,319	150,524
Bicol Region	5,424	5,598	5,756	5,686	6,514
Albay	95	98	88	96	99
Camarines Norte	5,248	5,409	5,583	5,503	6,321
Camarines Sur	12	11	12	6	10
Catanduanes	8	7	8	8	8
Masbate	6	5	5	6	6
Sorsogon	56	67	60	67	69

	2014	2015	2016	2017	2018
Carrots					
Philippines	68,342	67,037	65,987	65,219	64,896
Bicol Region	22	22	18	17	13
Albay	..	..	..	..	..
Camarines Norte	22	22	18	17	13
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Orange					
Philippines	4,663	4,337	3,984	3,827	3,513
Bicol Region	948	915	903	912	921
Albay	1	1	1	0	0
Camarines Norte	760	724	711	718	730
Camarines Sur	161	164	166	168	164
Catanduanes	13	14	13	13	13
Masbate	..	..	..	..	..
Sorsogon	13	13	13	13	13

	2009	2010	2011	2012	2013
Asparagus					
Philippines	7,121	4,637	3,443	4,106	3,213
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Cassava					
Philippines	2,043,719	2,101,454	2,209,684	2,223,182	2,361,561
Bicol Region	115,112	114,625	110,020	111,236	113,790
Albay	15,240	14,538	14,052	13,246	14,136
Camarines Norte	3,897	3,739	3,818	3,999	4,103
Camarines Sur	85,439	85,865	81,885	82,583	81,260
Catanduanes	391	406	392	393	404
Masbate	2,550	2,665	2,528	2,960	5,669
Sorsogon	7,595	7,412	7,346	8,055	8,219

	2014	2015	2016	2017	2018
Orange					
Philippines	3,325	3,219	2,861	2,634	2,365
Bicol Region	899	917	797	701	570
Albay	0	0	0	0	0
Camarines Norte	728	743	660	592	477
Camarines Sur	148	150	115	92	83
Catanduanes	12	12	12	6	..
Masbate	..	..	..	..	..
Sorsogon	10	11	10	11	11

	2014	2015	2016	2017	2018
Asparagus					
Philippines	2,939	2,742	2,172	1,904	1,648
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Cassava					
Philippines	2,540,254	2,710,919	2,755,146	2,806,668	2,723,033
Bicol Region	109,021	108,630	105,855	96,708	87,256
Albay	13,774	15,912	17,000	15,545	15,253
Camarines Norte	4,150	4,449	4,872	4,215	4,549
Camarines Sur	76,519	73,726	69,862	62,050	52,754
Catanduanes	390	432	476	426	410
Masbate	6,627	7,223	7,793	8,676	8,573
Sorsogon	7,562	6,887	5,851	5,795	5,717

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Papaya					
Philippines	176,656	165,981	157,907	164,913	166,336
Bicol Region	9,574	9,703	9,551	9,607	9,628
Albay	852	857	825	767	716
Camarines Norte	2,688	2,607	2,620	2,685	2,692
Camarines Sur	4,345	4,434	4,419	4,442	4,466
Catanduanes	38	39	39	39	40
Masbate	86	93	93	102	106
Sorsogon	1,565	1,673	1,555	1,573	1,608

	2009	2010	2011	2012	2013
Ampalaya					
Philippines	86,498	88,437	86,599	87,090	89,887
Bicol Region	2,919	2,895	2,816	2,940	3,095
Albay	825	842	806	873	944
Camarines Norte	327	309	300	315	325
Camarines Sur	987	940	899	910	919
Catanduanes	15	16	16	16	16
Masbate	660	667	666	692	769
Sorsogon	104	121	129	135	122

	2009	2010	2011	2012	2013
Cauliflower					
Philippines	10,559	11,102	11,583	11,636	11,782
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Papaya					
Philippines	172,629	172,650	162,481	167,043	169,143
Bicol Region	9,074	9,188	9,118	8,755	8,802
Albay	511	537	578	566	600
Camarines Norte	2,655	2,735	2,717	3,127	3,359
Camarines Sur	4,294	4,260	4,324	3,505	3,247
Catanduanes	40	39	40	35	46
Masbate	111	113	112	115	119
Sorsogon	1,464	1,503	1,347	1,407	1,432

	2014	2015	2016	2017	2018
Ampalaya					
Philippines	90,111	88,918	87,460	89,460	87,395
Bicol Region	2,746	2,695	2,798	2,900	3,002
Albay	664	626	648	680	697
Camarines Norte	301	311	314	299	300
Camarines Sur	907	920	1,012	1,080	1,155
Catanduanes	16	15	14	10	12
Masbate	740	702	696	716	719
Sorsogon	119	121	113	116	118

	2014	2015	2016	2017	2018
Cauliflower					
Philippines	11,739	11,865	11,641	12,061	11,328
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Pineapple					
Philippines	2,198,497	2,169,233	2,246,806	2,397,745	2,458,528
Bicol Region	109,967	112,205	116,123	121,735	124,961
Albay	1,045	1,064	972	886	782
Camarines Norte	104,789	106,877	111,048	116,670	119,834
Camarines Sur	2,860	2,903	2,817	2,825	2,784
Catanduanes	13	13	12	13	13
Masbate	91	83	90	99	105
Sorsogon	1,169	1,266	1,183	1,242	1,443

	2009	2010	2011	2012	2013
Broccoli					
Philippines	2,685	2,699	2,881	2,994	3,026
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Eggplant					
Philippines	200,942	208,242	207,994	211,885	219,911
Bicol Region	6,834	7,159	6,937	7,306	7,882
Albay	2,812	2,978	2,918	3,117	3,369
Camarines Norte	293	280	276	289	297
Camarines Sur	2,278	2,393	2,331	2,378	2,391
Catanduanes	23	24	23	23	24
Masbate	1,306	1,355	1,260	1,346	1,643
Sorsogon	122	130	130	153	160

	2014	2015	2016	2017	2018
Pineapple					
Philippines	2,507,098	2,582,699	2,612,474	2,671,711	2,730,985
Bicol Region	123,412	130,595	137,991	127,489	151,217
Albay	637	622	560	455	418
Camarines Norte	118,492	125,630	133,114	122,606	146,052
Camarines Sur	2,736	2,724	2,825	2,911	3,210
Catanduanes	13	13	13	10	8
Masbate	110	107	102	104	101
Sorsogon	1,423	1,499	1,377	1,402	1,428

	2014	2015	2016	2017	2018
Broccoli					
Philippines	3,064	2,911	2,859	3,159	2,906
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Eggplant					
Philippines	225,579	232,865	235,626	241,901	244,838
Bicol Region	7,115	6,746	6,636	6,885	6,820
Albay	2,712	2,465	2,628	2,681	2,677
Camarines Norte	284	290	237	226	236
Camarines Sur	2,390	2,342	2,239	2,380	2,310
Catanduanes	23	24	25	23	21
Masbate	1,548	1,473	1,360	1,418	1,415
Sorsogon	158	153	147	158	161

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Rambutan					
Philippines	9,435	12,743	6,271	7,189	7,440
Bicol Region	19	21	20	28	28
Albay	10	11	10	17	17
Camarines Norte	..	..	..	..	..
Camarines Sur	1	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	9	9	9	9	9

	2009	2010	2011	2012	2013
Cabbage					
Philippines	124,712	128,964	125,310	126,381	127,464
Bicol Region	301	283	265	256	239
Albay	210	199	184	177	165
Camarines Norte	..	..	..	..	..
Camarines Sur	83	77	74	72	67
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	7	7	6	7	7

	2009	2010	2011	2012	2013
Gabi					
Philippines	115,218	110,761	110,719	111,561	112,262
Bicol Region	13,807	13,482	12,991	12,535	11,685
Albay	8,555	8,235	7,750	7,119	6,254
Camarines Norte	219	211	214	224	226
Camarines Sur	2,770	2,731	2,712	2,742	2,755
Catanduanes	526	565	537	536	552
Masbate	29	30	30	33	33
Sorsogon	1,708	1,710	1,747	1,881	1,865

	2014	2015	2016	2017	2018
Rambutan					
Philippines	6,479	8,723	7,668	6,065	7,208
Bicol Region	23	24	24	24	26
Albay	13	14	14	14	15
Camarines Norte	..	..	..	..	..
Camarines Sur	1	1	1	1	1
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	8	9	8	9	9

	2014	2015	2016	2017	2018
Cabbage					
Philippines	127,987	125,752	123,080	122,474	120,656
Bicol Region	187	112	114	112	107
Albay	117	105	105	100	97
Camarines Norte	..	..	..	..	..
Camarines Sur	64	1	2	6	4
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	6	7	6	6	5

	2014	2015	2016	2017	2018
Gabi					
Philippines	110,366	111,988	107,569	109,374	107,957
Bicol Region	10,539	10,801	10,158	9,726	10,026
Albay	5,177	5,486	4,946	4,574	4,607
Camarines Norte	228	232	292	310	308
Camarines Sur	2,683	2,631	2,570	2,456	2,592
Catanduanes	535	515	492	487	605
Masbate	32	33	33	27	26
Sorsogon	1,885	1,905	1,824	1,872	1,888

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Garlic					
Philippines	10,451	9,563	9,056	8,808	8,986
Bicol Region	2	2	2	2	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	2	2	2	2	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Mongo					
Philippines	27,694	27,055	32,960	32,366	32,422
Bicol Region	159	157	147	166	181
Albay	71	68	64	60	54
Camarines Norte	1	1	1	1	1
Camarines Sur	29	28	27	28	29
Catanduanes	7	7	7	7	7
Masbate	20	20	18	38	57
Sorsogon	32	33	30	33	33

	2009	2010	2011	2012	2013
Radish					
Philippines	9,696	9,876	9,661	9,636	9,827
Bicol Region	202	196	193	195	198
Albay	70	68	65	63	68
Camarines Norte	13	10	11	12	12
Camarines Sur	70	66	65	66	66
Catanduanes	3	4	4	4	4
Masbate	..	..	..	..	..
Sorsogon	47	48	48	50	49

2014	2015	2016	2017	2018
8,993	10,420	7,469	7,751	7,559
..
..
..
..
..
..
..

2014	2015	2016	2017	2018
32,144	33,623	34,039	35,341	36,664
166	162	158	158	151
41	34	31	27	26
1	1	1	1	1
28	28	29	29	32
7	8	5	7	3
56	55	58	59	55
33	37	35	35	34

2014	2015	2016	2017	2018
9,880	9,959	9,516	9,301	9,119
193	195	186	178	173
67	68	73	73	74
12	13	12	11	10
63	63	54	47	43
4	4	4	3	3
..
47	47	43	44	44

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Ginger					
Philippines	27,415	27,097	27,755	27,677	28,216
Bicol Region	292	294	293	306	327
Albay	91	93	90	96	104
Camarines Norte	20	19	19	21	22
Camarines Sur	94	89	86	89	89
Catanduanes	20	20	19	20	20
Masbate	54	59	65	65	75
Sorsogon	13	13	13	15	16

	2009	2010	2011	2012	2013
Okra					
Philippines	29,710	29,716	29,129	29,774	30,122
Bicol Region	1,777	1,778	1,776	1,864	1,870
Albay	43	45	45	47	50
Camarines Norte	214	199	193	201	207
Camarines Sur	52	54	53	54	54
Catanduanes	16	17	16	16	17
Masbate	947	928	921	987	1,008
Sorsogon	506	536	547	560	535

	2009	2010	2011	2012	2013
Squash Fruit					
Philippines	247,759	244,701	223,791	222,634	223,523
Bicol Region	32,958	33,150	31,340	32,747	34,300
Albay	26,540	26,437	24,720	25,954	27,393
Camarines Norte	2,579	2,776	2,725	2,839	2,905
Camarines Sur	1,776	1,775	1,766	1,783	1,785
Catanduanes	1,004	1,050	1,031	1,015	1,036
Masbate	659	678	655	685	713
Sorsogon	400	435	443	472	469

	2014	2015	2016	2017	2018
Ginger					
Philippines	27,197	26,623	26,787	27,482	27,926
Bicol Region	317	319	329	350	367
Albay	95	93	98	107	118
Camarines Norte	21	20	20	24	26
Camarines Sur	87	85	90	98	103
Catanduanes	20	20	19	17	17
Masbate	78	85	86	87	87
Sorsogon	16	16	16	17	17

	2014	2015	2016	2017	2018
Okra					
Philippines	30,274	30,638	30,529	31,379	31,277
Bicol Region	1,809	1,796	1,779	1,859	1,876
Albay	45	44	47	44	44
Camarines Norte	197	196	186	194	198
Camarines Sur	54	54	51	56	54
Catanduanes	17	16	16	15	15
Masbate	956	939	948	1,012	1,028
Sorsogon	540	546	532	538	537

	2014	2015	2016	2017	2018
Squash Fruit					
Philippines	222,207	217,908	214,147	206,024	202,229
Bicol Region	33,949	33,002	33,179	31,661	31,762
Albay	27,198	26,174	26,431	25,356	25,231
Camarines Norte	2,839	2,930	2,841	2,396	2,534
Camarines Sur	1,763	1,793	1,812	1,825	1,863
Catanduanes	1,014	976	964	913	959
Masbate	683	681	679	705	705
Sorsogon	452	448	453	465	469

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Gourd					
Philippines	102,787	97,586	93,780	92,588	88,464
Bicol Region	3,309	3,326	3,223	3,315	3,417
Albay	672	692	663	676	729
Camarines Norte	1,231	1,218	1,211	1,245	1,267
Camarines Sur	74	75	75	76	76
Catanduanes	270	272	255	263	272
Masbate	848	844	792	820	839
Sorsogon	214	226	226	235	234

	2009	2010	2011	2012	2013
Onion					
Philippines	127,055	135,377	128,387	124,890	134,239
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Stringbeans					
Philippines	119,511	118,453	116,303	117,277	119,536
Bicol Region	11,035	11,386	11,351	11,818	12,343
Albay	4,390	4,600	4,549	4,801	5,158
Camarines Norte	769	773	758	796	822
Camarines Sur	4,028	4,068	4,045	4,120	4,219
Catanduanes	83	87	84	83	86
Masbate	590	606	636	674	733
Sorsogon	1,174	1,252	1,279	1,344	1,325

	2014	2015	2016	2017	2018
Gourd					
Philippines	83,218	82,737	79,978	81,402	79,231
Bicol Region	3,323	3,331	3,226	3,279	3,421
Albay	651	647	645	651	661
Camarines Norte	1,281	1,329	1,242	1,290	1,432
Camarines Sur	75	76	78	83	84
Catanduanes	260	252	246	241	224
Masbate	822	790	782	779	781
Sorsogon	234	238	232	236	239

	2014	2015	2016	2017	2018
Onion					
Philippines	203,651	181,208	122,594	184,427	172,666
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Stringbeans					
Philippines	117,545	118,660	117,201	116,804	114,380
Bicol Region	11,188	11,322	11,527	11,616	11,478
Albay	4,203	4,228	4,301	4,481	4,565
Camarines Norte	810	835	913	960	993
Camarines Sur	4,106	4,251	4,356	4,176	3,922
Catanduanes	82	82	84	83	83
Masbate	764	720	723	753	743
Sorsogon	1,225	1,206	1,149	1,163	1,172

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Habitchuelas					
Philippines	16,187	15,820	15,426	15,328	15,423
Bicol Region	806	813	816	834	871
Albay	340	358	374	395	430
Camarines Norte	..	..	..	..	..
Camarines Sur	465	454	441	439	441
Catanduanes	1	1	1	1	1
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Peanut					
Philippines	30,978	29,624	29,734	29,136	29,091
Bicol Region	945	956	931	924	869
Albay	679	699	679	661	599
Camarines Norte	31	24	24	26	27
Camarines Sur	143	137	124	127	130
Catanduanes	28	29	26	28	29
Masbate	43	45	55	58	58
Sorsogon	21	22	22	25	26

	2009	2010	2011	2012	2013
Tomato					
Philippines	198,948	204,272	203,582	203,594	207,668
Bicol Region	3,543	3,562	3,432	3,427	3,483
Albay	1,018	1,052	1,007	975	1,016
Camarines Norte	15	11	11	12	13
Camarines Sur	2,419	2,406	2,327	2,348	2,353
Catanduanes	10	10	10	10	10
Masbate	68	68	63	66	74
Sorsogon	13	14	14	16	17

	2014	2015	2016	2017	2018
Habitchuelas					
Philippines	15,306	14,745	14,389	14,151	13,950
Bicol Region	683	703	758	785	701
Albay	255	271	285	307	320
Camarines Norte	..	..	..	..	..
Camarines Sur	427	432	472	478	380
Catanduanes	1	1	1	0	0
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Peanut					
Philippines	29,196	29,195	27,921	29,374	29,428
Bicol Region	884	852	882	866	899
Albay	619	580	611	600	634
Camarines Norte	28	29	30	32	33
Camarines Sur	129	129	131	125	125
Catanduanes	27	30	27	26	27
Masbate	54	55	57	57	55
Sorsogon	27	30	26	26	26

	2014	2015	2016	2017	2018
Tomato					
Philippines	214,573	214,774	210,720	218,793	220,825
Bicol Region	3,372	3,665	3,891	3,718	3,704
Albay	924	1,028	1,095	1,101	1,081
Camarines Norte	12	13	12	12	14
Camarines Sur	2,338	2,526	2,686	2,501	2,506
Catanduanes	10	10	10	9	7
Masbate	71	70	71	77	76
Sorsogon	16	18	17	18	18

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Kangkong					
Philippines	83,045	80,801	79,572	77,409	75,439
Bicol Region	4,820	4,775	4,710	4,635	4,468
Albay	2,460	2,359	2,208	2,076	1,868
Camarines Norte	455	447	461	450	446
Camarines Sur	761	770	800	820	836
Catanduanes	333	347	341	345	359
Masbate	3	2	3	9	13
Sorsogon	808	850	898	935	947

	2009	2010	2011	2012	2013
Pechay Chinese					
Philippines	49,451	52,222	50,581	51,618	51,798
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2009	2010	2011	2012	2013
Ubi					
Philippines	22,567	21,906	17,844	16,429	14,770
Bicol Region	662	657	625	600	589
Albay	566	562	539	507	494
Camarines Norte	..	..	..	..	..
Camarines Sur	4	4	4	4	4
Catanduanes	2	2	2	2	2
Masbate	77	75	66	72	74
Sorsogon	14	15	14	15	16

	2014	2015	2016	2017	2018
Kangkong					
Philippines	73,107	71,971	69,649	69,144	68,874
Bicol Region	3,927	3,968	3,734	3,728	3,874
Albay	1,347	1,398	1,231	1,062	1,092
Camarines Norte	448	438	401	510	594
Camarines Sur	820	841	839	887	927
Catanduanes	356	355	369	338	317
Masbate	13	13	13	14	14
Sorsogon	943	922	881	917	931

	2014	2015	2016	2017	2018
Pechay Chinese					
Philippines	52,243	51,435	50,745	50,266	49,662
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Ubi					
Philippines	15,245	13,798	14,166	14,376	14,465
Bicol Region	535	528	468	435	418
Albay	439	429	373	341	325
Camarines Norte	..	..	..	..	..
Camarines Sur	4	4	4	4	3
Catanduanes	2	2	2	2	2
Masbate	74	76	74	74	72
Sorsogon	16	17	15	16	16

Table 2.7.2 (continued)

OTHER CROPS: VOLUME OF PRODUCTION BY CROP AND GEOLOCATION

2009 to 2018

(In metric tons)

	2009	2010	2011	2012	2013
Lettuce					
Philippines	3,577	3,634	3,519	3,647	4,041
Bicol Region	..	..	..	..	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2009	2010	2011	2012	2013
Pechay Native					
Philippines	44,922	44,861	44,525	45,126	45,983
Bicol Region	13,753	13,957	13,442	13,458	13,988
Albay	7,005	6,942	6,446	6,421	6,875
Camarines Norte	311	284	277	288	295
Camarines Sur	6,087	6,372	6,348	6,357	6,413
Catanduanes	67	69	65	68	70
Masbate	253	257	272	288	299
Sorsogon	30	32	33	36	36

	2009	2010	2011	2012	2013
White Potato					
Philippines	119,159	124,671	120,574	119,570	117,722
Bicol Region	..	..	..	..	..
Albay	..	..	..	..	..
Camarines Norte	..	..	..	..	..
Camarines Sur	..	..	..	..	..
Catanduanes	..	..	..	..	..
Masbate	..	..	..	..	..
Sorsogon	..	..	..	..	..

	2014	2015	2016	2017	2018
Lettuce					
Philippines	4,061	3,810	3,822	4,033	4,083
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

	2014	2015	2016	2017	2018
Pechay Native					
Philippines	45,645	46,582	46,658	48,625	47,990
Bicol Region	12,784	13,464	13,542	13,962	13,975
Albay	5,735	5,997	6,237	6,710	6,719
Camarines Norte	287	298	250	306	295
Camarines Sur	6,365	6,775	6,671	6,567	6,575
Catanduanes	69	71	73	67	64
Masbate	292	286	277	276	286
Sorsogon	36	37	36	37	37

	2014	2015	2016	2017	2018
White Potato					
Philippines	119,140	118,479	116,783	117,637	117,423
Bicol Region
Albay
Camarines Norte
Camarines Sur
Catanduanes
Masbate
Sorsogon

Table 2.8.1**PALAY: ESTIMATED AREA APPLIED RECEIVING INORGANIC FERTILIZER****(In hectares)**

	2005	2006	2007	2008
Philippines	3,700,858	3,815,586	3,934,801	4,225,049
Bicol Region	247,781	243,614	238,009	270,417

... Data not Available

Total may not add up to due to rounding off

Revised data for 2009, 2011, and 2014

Table 2.8.2**PALAY: ESTIMATED AREA HARVESTED RECEIVING INORGANIC FERTILIZER****(In hectares)**

	2005	2006	2007	2008
Philippines	4,070,421	4,159,930	4,272,889	4,459,977
Bicol Region	304,549	281,483	286,374	290,718

.. Data not Available

Total may not add up to due to rounding off

Revised data for 2009, 2011, and 2014

Table 2.8.3**CORN: ESTIMATED AREA APPLIED RECEIVING INORGANIC FERTILIZER****(In hectares)**

	2005	2006	2007	2008
Philippines	1,510,411	1,617,612	1,910,772	2,500,667
Bicol Region	5,193	28,589	29,918	98,352

.. Data not Available

Total may not add up to due to rounding off

Revised data for 2009, 2011, and 2014

Source: Philippine Statistics Authority

Table 2.8.4**CORN: ESTIMATED AREA HARVESTED RECEIVING INORGANIC FERTILIZER****(In hectares)**

	2005	2006	2007	2008
Philippines	2,441,788	2,570,673	2,648,317	2,661,021
Bicol Region	80,237	80,789	89,513	100,274

.. Data not Available

Total may not add up to due to rounding off

Revised data for 2009, 2011, and 2014

Source: Philippine Statistics Authority

2009	2010	2011	2012	2013	2014
4,287,413	3,935,498	4,314,720	4,572,108	4,484,027	4,402,249
281,663	284,830	309,117	333,550	303,103	317,899

2009	2010	2011	2012	2013	2014
4,532,310	4,354,161	4,536,642	4,689,960	4,746,082	4,739,672
313,602	316,804	318,361	334,275	343,199	329,573

2009	2010	2011	2012	2013	2014
2,173,063	2,247,585	2,543,915	2,570,339	2,563,306	2,049,744
96,716	92,187	108,243	112,817	109,582	91,672

2009	2010	2011	2012	2013	2014
2,683,890	2,499,040	2,544,612	2,593,825	2,563,635	2,611,432
106,715	101,812	108,243	112,964	109,582	113,596

Table 2.9.1**PALAY: AVERAGE QUANTITY APPLIED OF INORGANIC FERTILIZER BY GRADE****(In bags of 50 kilos)**

		2005	2006	2007	2008
Philippines	Average Quantity Applied	4.62	4.76	4.75	4.16
	Urea	2.03	1.99	2.01	1.86
	Ammosul	0.44	0.47	0.52	0.51
	Ammophos	0.63	0.72	0.64	0.45
	Complete	1.41	1.48	1.48	1.25
	Others	0.1	0.09	0.1	0.08
Bicol Region	Average Quantity Applied	3.6	3.01	3.38	3.08
	Urea	1.89	1.59	1.81	1.7
	Ammosul	0.15	0.1	0.16	0.13
	Ammophos	0.37	0.15	0.15	0.22
	Complete	1.07	1.13	1.21	1.02
	Others	0.11	0.04	0.05	..

... Data not available

Total may not add up to due to rounding off

Revised data for 2009, 2011 and 2014

Source: Philippine Statistics Authority

Table 2.9.2**CORN: AVERAGE QUANTITY APPLIED OF INORGANIC FERTILIZER BY GRADE****(In bags of 50 kilos)**

		2005	2006	2007	2008
Philippines	Average Quantity Applied	4.31	4.95	4.63	4.31
	Urea	1.77	2.09	2.13	1.87
	Ammosul	0.42	0.59	0.4	0.47
	Ammophos	0.76	0.82	0.73	0.75
	Complete	1.12	1.26	1.25	1.19
	Others	0.25	0.2	0.12	0.03
Bicol Region	Average Quantity Applied	5.65	5.37	5.2	2.47
	Urea	2.5	2.23	2.15	0.95
	Ammosul	0.81	0.12	0.05	0.08
	Ammophos	0.42	0.01	0.02	0.31
	Complete	1.92	2.81	2.74	1.1
	Others	..	0.2	0.25	0.02

... Data not available

Total may not add up to due to rounding off

Revised data for 2009, 2011 and 2014

Source: Philippine Statistics Authority

2009	2010	2011	2012	2013	2014
4.43	4.58	4.5	4.66	4.69	5.06
2.07	2.12	2.03	2.02	2.08	2.24
0.46	0.51	0.51	0.52	0.54	0.57
0.55	0.53	0.57	0.54	0.51	0.52
1.34	1.42	1.4	1.58	1.57	1.73
..
3.46	3.17	2.99	3.45	3.44	3.55
1.88	1.74	1.58	1.69	1.67	1.7
0.04	0.08	0.05	0.1	0.01	0.01
0.31	0.23	0.27	0.27	0.29	0.32
1.23	1.12	1.08	1.39	1.47	1.53
..

2009	2010	2011	2012	2013	2014
4.16	4.03	4.16	4.63	4.36	4.85
1.89	1.86	2.02	2.16	1.95	2.34
0.48	0.48	0.43	0.44	0.34	0.43
0.65	0.57	0.66	0.69	0.67	0.82
1.07	1.11	1.04	1.31	1.22	1.25
0.08	..	0.01	0.03	0.17	..
2.59	2.6	3.08	2.74	3.82	3.98
1.27	1.27	1.54	1.29	1.6	1.89
0.08	0.17	0.11	0.11	0.13	0.1
0.37	0.32	0.53	0.31	0.42	0.13
0.8	0.84	0.88	1.02	1.42	1.85
0.06	..	0.02	0.01	0.25	..

Table 2.10.1
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2009			2010			2011		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Carabao									
Philippines	3,320,966	3,314,832	6,134	3,270,406	3,262,489	7,917	3,075,259	3,063,741	11,518
Bicol Region	248,920	247,404	1,516	256,335	254,844	1,491	245,321	244,212	1,109
Albay	47,497	47,497	0	51,435	51,435	0	49,841	49,841	0
Camarines Norte	30,231	30,231	0	30,624	30,624	0	30,520	30,520	0
Camarines Sur	65,486	65,429	57	66,037	65,979	58	61,715	61,715	0
Catanduanes	10,577	10,577	0	10,679	10,679	0	11,775	11,775	0
Masbate	65,469	64,010	1,459	66,537	65,104	1,433	63,549	62,440	1,109
Sorsogon	29,660	29,660	0	31,023	31,023	0	27,921	27,921	0

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

2012			2013			2014			2015		
Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
2,963,980	2,951,714	12,266	2,912,842	2,900,681	12,161	2,847,445	2,835,818	11,627	2,854,838	2,842,768	12,070
250,726	249,630	1,096	257,943	256,832	1,111	269,100	267,990	1,110	278,331	277,318	1,013
52,376	52,376	0	56,781	56,781	0	62,139	62,139	0	68,026	68,026	0
33,500	33,500	0	36,486	36,486	0	39,065	39,065	0	41,359	41,359	0
62,864	62,864	0	61,846	61,820	26	63,238	63,206	32	65,019	64,986	33
9,622	9,596	26	8,509	8,486	23	7,732	7,710	22	6,865	6,840	25
63,270	62,200	1,070	63,331	62,269	1,062	63,690	62,634	1,056	64,076	63,121	955
29,094	29,094	0	30,990	30,990	0	33,236	33,236	0	32,986	32,986	0

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2016			2017			2018		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Carabao									
Philippines	2,877,091	2,865,836	11,255	2,881,894	2,870,873	11,021	2,882,655	2,871,904	10,751
Bicol Region	288,641	287,601	1,040	302,610	301,588	1,022	311,988	311,132	856
Albay	72,794	72,794	0	80,300	80,300	0	85,641	85,641	..
Camarines Norte	43,842	43,842	0	46,165	46,165	0	48,864	48,864	..
Camarines Sur	67,010	66,993	17	69,330	69,328	2	71,627	71,626	1
Catanduanes	6,412	6,397	15	6,092	6,077	15	5,812	5,799	13
Masbate	64,368	63,360	1,008	66,740	65,735	1,005	66,204	65,362	842
Sorsogon	34,215	34,215	0	33,983	33,983	0	33,840	33,840	..

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2009			2010			2011		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Cattle									
Philippines	2,586,386	2,421,725	164,661	2,570,879	2,403,296	167,583	2,518,407	2,343,975	174,432
Bicol Region	69,200	42,568	26,632	68,759	42,110	26,649	73,779	42,285	31,494
Albay	4,061	3,867	194	3,416	3,227	189	3,251	2,964	287
Camarines Norte	5,808	5,636	172	5,999	5,829	170	5,801	5,720	81
Camarines Sur	10,283	9,580	703	10,068	9,358	710	12,275	11,557	718
Catanduanes	3,330	3,078	252	3,645	3,465	180	2,981	2,819	162
Masbate	32,021	7,057	24,964	31,474	6,501	24,973	37,270	7,495	29,775
Sorsogon	13,697	13,350	347	14,157	13,730	427	12,201	11,730	471

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2012			2013			2014		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Cattle									
Philippines	2,493,157	2,321,655	171,502	2,497,908	2,323,361	174,547	2,512,184	2,341,837	170,347
Bicol Region	81,233	48,900	32,333	91,254	58,509	32,745	96,300	63,203	33,097
Albay	3,612	3,272	340	4,201	3,872	329	4,939	4,549	390
Camarines Norte	5,726	5,650	76	5,745	5,683	62	6,050	5,990	60
Camarines Sur	16,280	15,500	780	21,192	20,436	756	22,133	21,391	742
Catanduanes	1,375	1,273	102	1,386	1,298	88	1,362	1,292	70
Masbate	40,030	9,523	30,507	42,932	11,952	30,980	45,021	13,716	31,305
Sorsogon	14,210	13,682	528	15,798	15,268	530	16,795	16,265	530

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

2015			2016			2017			2018		
Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
2,534,243	2,367,997	166,246	2,553,747	2,390,658	163,089	2,547,614	2,389,191	158,423	2,553,937	2,403,220	150,717
102,659	70,188	32,471	108,043	74,854	33,189	111,792	77,560	34,232	112,950	79,155	33,795
5,916	5,515	401	6,792	6,339	453	7,320	6,830	490	7,652	7,117	535
6,175	6,111	64	6,270	6,200	70	6,372	6,298	74	6,618	6,543	75
25,385	24,891	494	25,387	24,986	401	25,787	25,343	444	25,666	25,230	436
1,401	1,320	81	1,541	1,470	71	1,685	1,592	93	1,731	1,649	82
48,032	17,049	30,983	51,650	19,932	31,718	54,741	22,080	32,661	55,376	23,284	32,092
15,750	15,302	448	16,403	15,927	476	15,887	15,417	470	15,907	15,332	575

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2009			2010			2011		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Goat									
Philippines	4,222,234	4,178,607	43,627	4,177,721	4,131,415	46,306	3,881,503	3,817,848	63,655
Bicol Region	121,573	121,006	567	129,797	129,040	757	113,953	113,084	869
Albay	18,380	18,380	0	23,887	23,887	0	15,692	15,692	0
Camarines Norte	7,314	7,314	0	7,347	7,347	0	7,450	7,450	0
Camarines Sur	39,595	39,285	310	39,713	39,247	466	38,000	37,513	487
Catanduanes	1,897	1,897	0	1,972	1,972	0	1,063	1,063	0
Masbate	48,642	48,430	212	51,634	51,404	230	47,114	46,776	338
Sorsogon	5,745	5,700	45	5,244	5,183	61	4,634	4,590	44

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

2012			2013			2014			2015		
Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
3,715,228	3,645,909	69,319	3,694,025	3,629,408	64,617	3,695,627	3,635,033	60,594	3,674,186	3,613,645	60,541
116,905	115,556	1,349	118,723	117,272	1,451	127,710	126,083	1,627	136,237	134,259	1,978
16,145	15,938	207	20,778	20,603	175	25,312	25,163	149	29,013	28,897	116
6,648	6,600	48	6,619	6,575	44	6,970	6,930	40	7,408	7,366	42
40,714	40,216	498	37,967	37,571	396	39,895	39,480	415	43,148	42,704	444
1,500	1,500	0	1,651	1,651	0	1,790	1,790	0	1,929	1,929	0
46,648	46,157	491	45,755	45,051	704	47,496	46,582	914	48,575	47,269	1,306
5,250	5,145	105	5,953	5,821	132	6,247	6,138	109	6,164	6,094	70

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2016			2017			2018		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Goat									
Philippines	3,663,060	3,604,111	58,949	3,710,348	3,659,374	50,974	3,724,808	3,677,267	47,541
Bicol Region	145,460	143,351	2,109	153,081	152,263	818	156,430	155,681	749
Albay	35,609	35,479	130	44,150	44,021	129	49,717	49,602	115
Camarines Norte	7,671	7,513	158	8,287	8,119	168	8,580	8,468	112
Camarines Sur	44,715	44,412	303	43,812	43,575	237	41,759	41,545	214
Catanduanes	1,981	1,981	..	1,919	1,919	..	1,670	1,670	..
Masbate	49,149	47,721	1,428	47,994	47,741	253	48,280	48,000	280
Sorsogon	6,335	6,245	90	6,919	6,888	31	6,424	6,396	28

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2009			2010			2011		
	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
Hog									
Philippines	13,596,399	9,602,822	3,993,577	13,397,789	9,542,192	3,855,597	12,303,096	8,466,925	3,836,171
Bicol Region	859,794	648,287	211,507	1,050,795	760,870	289,925	952,649	714,497	238,152
Albay	193,854	88,924	104,930	362,323	163,761	198,562	309,839	125,910	183,929
Camarines Norte	108,051	101,115	6,936	113,955	102,522	11,433	110,533	97,233	13,300
Camarines Sur	226,657	216,788	9,869	228,392	218,104	10,288	198,190	187,123	11,067
Catanduanes	80,141	80,141	..	108,405	108,405	..	142,345	142,011	334
Masbate	189,905	104,063	85,842	169,001	103,603	65,398	128,906	101,940	26,966
Sorsogon	61,186	57,256	3,930	68,719	64,475	4,244	62,836	60,280	2,556

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.1 (continued)
LIVESTOCK INVENTORY¹ BY ANIMAL TYPE, FARM TYPE, AND GEOLOCATION
2009-2018
(In heads)

	2012			2013			2014		
	Total	Backyard	Commer-cial	Total	Backyard	Commer-cial	Total	Backyard	Commer-cial
Hog									
Philippines	11,863,021	7,981,667	3,881,354	11,843,051	7,750,238	4,092,812	11,801,656	7,656,825	4,144,831
Bicol Region	760,517	608,330	152,187	797,901	646,050	151,851	858,408	703,568	154,840
Albay	184,823	72,058	112,765	190,182	73,748	116,434	195,249	77,422	117,827
Camarines Nc	110,700	97,500	13,200	111,622	96,999	14,623	116,430	99,350	17,080
Camarines Su	206,784	189,988	16,796	251,698	239,267	12,431	284,010	270,560	13,450
Catanduanes	82,384	82,209	175	65,975	65,904	71	72,463	72,428	35
Masbate	108,149	101,061	7,088	99,812	93,430	6,382	101,400	97,262	4,138
Sorsogon	67,677	65,514	2,163	78,612	76,702	1,910	88,856	86,546	2,310

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

2015			2016			2017			2018		
Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
11,999,722	7,782,290	4,217,432	12,478,711	7,959,930	4,518,781	12,427,790	8,120,087	4,307,703	12,604,441	8,092,940	4,511,501
863,382	721,878	141,504	857,119	742,214	114,905	909,474	776,271	133,203	959,017	808,240	150,777
184,379	82,612	101,767	166,489	90,664	75,825	202,673	116,090	86,583	221,880	121,280	100,600
121,367	102,985	18,382	125,698	105,380	20,318	135,538	109,234	26,304	146,756	120,881	25,875
296,956	281,830	15,126	299,797	284,390	15,407	304,181	287,234	16,947	311,941	291,816	20,125
77,431	77,360	71	83,974	83,818	156	83,081	82,980	101	84,595	84,480	115
101,910	97,749	4,161	98,706	97,535	1,171	98,174	96,971	1,203	107,570	106,200	1,370
81,339	79,342	1,997	82,455	80,427	2,028	85,827	83,762	2,065	86,275	83,583	2,692

Table 2.10.2 (continued)
POULTRY INVENTORY¹ BY ANIMAL TYPE, FARM TYPE AND GEOLOCATION
2009-2018
(In heads)

	2009				2010			
	Total	Broilers	Layers	Native	Total	Broilers	Layers	Native
Chicken								
Philippines	158,663,075	56,941,610	25,181,591	76,539,874	158,984,322	52,213,317	28,638,913	78,132,092
Bicol Region	6,473,352	860,844	889,725	4,722,783	7,518,045	797,094	977,114	5,743,837
Albay	1,273,481	81,250	105,621	1,086,610	1,443,204	91,500	113,062	1,238,642
Camarines Norte	434,698	30,264	5,344	399,090	422,790	27,624	0	395,166
Camarines Sur	2,758,602	718,780	729,160	1,310,662	2,964,364	659,970	812,244	1,492,150
Catanduanes	422,723	..	..	422,723	530,900	0	0	530,900
Masbate	1,119,268	..	..	1,119,268	1,688,229	0	0	1,688,229
Sorsogon	464,580	30,550	49,600	384,430	468,558	18,000	51,808	398,750

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

2011				2012			
Total	Broilers	Layers	Native	Total	Broilers	Layers	Native
162,812,901	54,753,886	31,444,301	76,614,714	164,192,253	57,284,153	31,523,802	75,384,298
7,237,322	1,059,213	928,453	5,249,656	6,699,831	1,329,911	961,275	4,408,645
1,472,118	116,000	107,952	1,248,166	1,170,046	124,546	104,593	940,907
295,566	21,000	735	273,831	395,800	20,000	0	375,800
2,902,904	823,750	776,128	1,303,026	3,084,812	1,106,574	804,998	1,173,240
523,942	..	..	523,942	342,446	0	684	341,762
1,509,532	34,815	..	1,474,717	1,138,273	35,841	0	1,102,432
533,260	63,648	43,638	425,974	568,454	42,950	51,000	474,504

Table 2.10.2 (continued)
POULTRY INVENTORY¹ BY ANIMAL TYPE, FARM TYPE AND GEOLOCATION (continued)
2009-2018
(In heads)

	2013				2014			
	Total	Broilers	Layers	Native	Total	Broilers	Layers	Native
Chicken								
Philippines	166,386,275	59,196,045	32,002,512	75,187,718	167,671,053	61,582,178	30,006,758	76,082,117
Bicol Region	6,443,666	1,513,044	978,642	3,951,980	8,282,457	3,191,300	916,076	4,175,081
Albay	1,142,333	92,399	110,128	939,806	1,374,036	207,500	105,307	1,061,229
Camarines Nc	380,700	0	0	380,700	399,676	0	0	399,676
Camarines Su	3,124,654	1,306,722	820,239	997,693	4,736,980	2,890,933	761,115	1,084,932
Catanduanes	56,484	0	3,398	53,086	60,677	700	3,004	56,973
Masbate	1,000,127	37,708	0	962,419	869,991	35,267	0	834,724
Sorsogon	739,368	76,215	44,877	618,276	841,097	56,900	46,650	737,547

.. Data not available ... Data not yet available

¹Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

2015				2016			
Total	Broilers	Layers	Native	Total	Broilers	Layers	Native
176,469,099	66,616,937	31,253,663	78,598,499	178,792,807	65,713,051	32,227,250	80,852,506
8,201,612	3,040,308	861,776	4,299,528	9,992,146	4,532,982	669,294	4,789,870
1,319,326	89,500	105,669	1,124,157	2,345,837	852,000	83,077	1,410,760
436,578	30,368	0	406,210	615,468	132,108	..	483,360
4,741,480	2,824,298	708,587	1,208,595	5,260,177	3,400,315	562,330	1,297,532
64,081	0	2,131	61,950	71,080	8,425	647	62,008
812,719	36,142	0	776,577	833,670	39,684	..	793,986
827,428	60,000	45,389	722,039	865,914	100,450	23,240	742,224

Table 2.10.2 (continued)
POULTRY INVENTORY¹ BY ANIMAL TYPE, FARM TYPE AND GEOLOCATION
2009-2018
(In heads)

	2017				2018			
	Total	Broilers	Layers	Native	Total	Broilers	Layers	Native
Chicken								
Philippines	175,316,918	62,444,399	34,473,562	78,398,957	175,771,740	59,902,901	35,568,632	80,300,207
Bicol Region	10,388,300	4,965,703	614,673	4,807,924	10,434,560	4,416,132	602,972	5,415,456
Albay	1,546,977	262,000	87,656	1,197,321	1,583,585	160,000	90,637	1,332,948
Camarines North	728,099	140,269	..	587,830	794,475	141,002	..	653,473
Camarines Sur	6,290,545	4,337,715	499,594	1,453,236	6,057,011	3,906,269	480,708	1,670,034
Catanduanes	73,585	7,454	1,023	65,108	76,136	7,035	1,029	68,072
Masbate	864,624	39,765	..	824,859	943,536	42,326	..	901,210
Sorsogon	884,470	178,500	26,400	679,570	979,817	159,500	30,598	789,719

.. Data not available ... Data not yet available

¹ Inventory as of 01 January of the next year

Source: Philippine Statistics Authority

Table 2.10.2 (continued)
POULTRY INVENTORY¹ BY ANIMAL TYPE, FARM TYPE AND GEOLOCATION
2009-2018
(In heads)

	2009			2010			2011		
	Total	Backyard	Commer-cial	Total	Backyard	Commer-cial	Total	Backyard	Commer-cial
Duck									
Philippines	10,577,395	7,761,740	2,815,655	10,268,012	7,723,677	2,544,335	10,126,364	7,461,861	2,664,503
Bicol Region	364,530	282,722	81,808	376,273	304,421	71,852	403,583	338,506	65,077
Albay	85,079	67,562	17,517	107,415	91,885	15,530	161,233	141,684	19,549
Camarines No	48,634	35,162	13,472	34,686	23,811	10,875	29,122	20,100	9,022
Camarines Sui	166,713	119,775	46,938	160,142	118,877	41,265	153,501	120,406	33,095
Catanduanes	6,648	6,648	0	9,552	9,552	0	7,030	7,030	0
Masbate	12,085	12,085	0	14,652	14,652	0	11,796	11,796	0
Sorsogon	45,371	41,490	3,881	49,826	45,644	4,182	40,901	37,490	3,411

Table 2.10.2 (continued)
POULTRY INVENTORY¹ BY ANIMAL TYPE, FARM TYPE AND GEOLOCATION
2009-2018
(In heads)

	2012			2013			2014		
	Total	Backyard	Commer-cial	Total	Backyard	Commer-cial	Total	Backyard	Commer-cial
Duck									
Philippines	10,011,483	7,329,643	2,681,840	10,134,884	7,343,118	2,791,766	9,885,775	7,079,781	2,805,995
Bicol Region	378,159	325,075	53,084	344,545	304,900	39,645	362,274	314,566	47,708
Albay	162,427	145,225	17,202	136,365	127,326	9,039	150,001	140,058	9,943
Camarines No	26,051	18,200	7,851	24,676	17,120	7,556	27,620	15,270	12,350
Camarines Sui	129,333	104,175	25,158	121,219	101,310	19,909	124,131	101,778	22,353
Catanduanes	5,064	5,064	0	3,694	3,694	0	3,275	3,275	0
Masbate	13,088	13,088	0	11,806	11,806	0	8,698	8,698	0
Sorsogon	42,196	39,323	2,873	46,785	43,644	3,141	48,549	45,487	3,062

2015			2016			2017			2018		
Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial	Total	Backyard	Commer- cial
10,066,727	7,023,523	3,043,204	10,518,539	7,235,535	3,283,004	10,841,959	7,467,826	3,374,133	11,220,127	7,731,859	3,488,268
390,837	325,793	65,044	425,889	350,893	74,996	488,903	405,972	82,931	523,395	421,002	102,393
167,653	151,830	15,823	186,884	165,914	20,970	204,371	180,120	24,251	217,118	181,921	35,197
34,923	14,902	20,021	37,504	15,904	21,600	38,224	15,912	22,312	41,177	16,775	24,402
128,844	102,347	26,497	141,223	110,704	30,519	177,112	142,015	35,097	194,794	154,215	40,579
2,345	2,345	0	2,112	2,112	..	2,260	2,260	..	2,397	2,397	..
8,734	8,734	0	8,906	8,906	..	9,277	9,277	..	9,454	9,454	..
48,338	45,635	2,703	49,260	47,353	1,907	57,659	56,388	1,271	58,455	56,240	2,215

Table 2.11.1

SUMMARY of WATER PERMIT ISSUED AND VOLUME of WATER ALLOCATED BY WATER USE
As of December 2015
(In million cubic meters (mcm))

WR Region	Type	Municipal		Industrial		Irrigation		Power	
		No.	mcm	No.	mcm	No.	mcm	No.	mcm
Philippines		7,516	6,746.6	1,736	9,930.7	10,391	67,005.6	291	115,275.5
Sub-total	GW	7,050	2,081.9	1,402	546.1	1,876	932.5	8	64.7
	SW	466	4,664.7	334	9,384.6	8,515	66,073.1	283	115,210.8
V	GW	266	115.2	21	3.9	84	39.5	-	-
	SW	24	42.0	27	34.9	666	2,943.8	24	780.9

Table 2.11.2

SUMMARY of WATER PERMIT ISSUED AND VOLUME of WATER ALLOCATED BY WATER USE
As of December 2018
(In million cubic meters (mcm))

WR Region	Type	Municipal		Industrial		Irrigation		Power	
		No.	mcm	No.	mcm	No.	mcm	No.	mcm
Total		7,842	7,180.6	1,908	16,124.1	10,409	67,047.3	305	122,457.0
Sub-total	GW	7,355	2,191.7	1,551	587.1	1,886	941.9	10	64.7
	SW	487	4,988.9	357	15,537.0	8,523	66,105.3	295	122,392.3
V	GW	272	116.9	22	4.1	84	39.5	0	0.0
	SW	24	42.0	27	34.9	668	2,970.1	24	780.9

Notes:

Values that do not exceed 0.05 have been rounded off to and appear as 0.0. Zero values appear as -.

WR - Water resource

GW - Groundwater

SW - Surface water

Source: National Water Resources Board

Fisheries		Livestock		Recreation		Others		Total	
No.	mcm	No.	mcm	No.	mcm	No.	mcm	No.	mcm
484	753.4	203	18.7	265	261.0	816	684.0	21,702	200,675.5
108	57.6	197	18.6	229	94.7	768	97.7	11,638	3,893.8
376	695.8	6	0.1	36	166.3	48	586.3	10,064	196,781.7
2	0.1	-	-	10	2.0	11	0.1	394	160.9
11	6.6	-	-	8	67.8	5	4.9	765	3,880.9

Fisheries		Livestock		Recreation		Others		Total	
No.	mcm	No.	mcm	No.	mcm	No.	mcm	No.	mcm
484	753.4	215	19.4	290	266.7	964	701.6	22,417	214,550.1
108	57.6	209	19.4	253	100.4	906	108.6	12,278	4,071.3
376	695.8	6	0.1	37	166.4	58	593.0	10,139	210,478.8
2	0.1	0	0.0	10	2.0	18	0.3	408	162.9
11	6.6	0	0.0	8	67.8	5	4.9	767	3,907.1

Component Three

Residuals

COMPONENT THREE

RESIDUALS

Residuals are flows of solid, liquid, gaseous materials and energy that are discarded, discharged or emitted by establishments and households through processes of consumption, production or accumulation. Residuals may be discarded, discharged or emitted directly to the environment or be captured, collected, treated, recycled or reused (UN FDES, 2013).

The volume of residuals released and its characteristics such as the type, source, location and trends over time have different impacts both on human and the environment. Thus, environment statistics on residuals can be used for evidenced-based policy making particularly to environment regulations to mitigate its impacts on human sub-systems.

The compilation of environment statistics on residuals have links to environmental accounts following the framework of the System of Environmental-Economic Accounting (SEEA) 2012 – Central Framework particularly on emissions to air, emissions to water (effluents), and accounting for solid wastes.

The environment statistics on residuals, likewise, have several links to the different Sustainable Development Goals such as: Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture; Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; Goal 11: make cities and human settlements inclusive, safe, resilient and sustainable; Goal 12: Ensure sustainable consumption and production patterns; Goal 13: Take urgent action to combat climate change and its impacts; Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development; Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (Sustainable Development Knowledge Platform).

3.1 Generation and management of waste

Wastes are discarded materials that are no longer required by the owner or user. It includes materials in solid or liquid but excludes wastewater and emissions to air, water or soil (UN FDES, 2013).

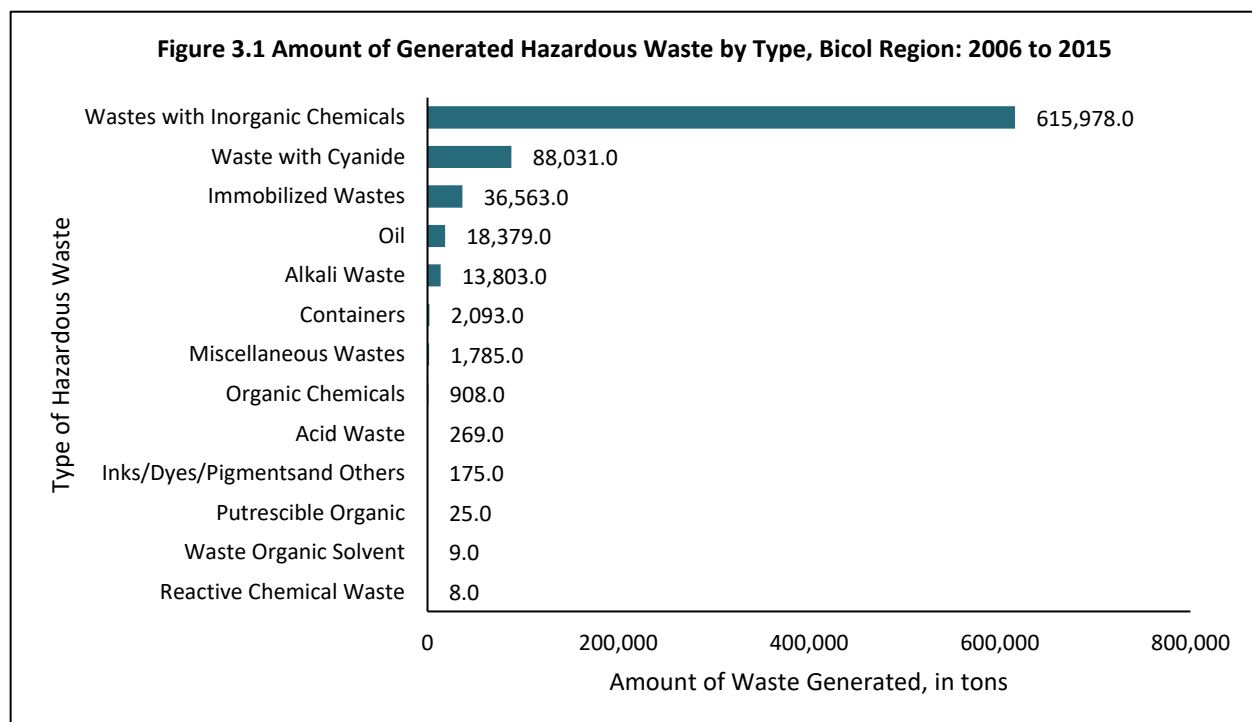
Generation of waste answers questions of who creates it and how much, while management of waste answers where does waste go. The compilation of statistics on the generation of waste is important because solid waste disposed on land and water have negative impacts on human and the ecosystems. Human activities in the course of production and consumption process, directly affect the environment and often lead to environmental changes in form of depletion and degradation. In order to reduce the amount of waste generated, it is important to increase the portion of waste that is recycled and reused as material or energy source. This is essential to ensure sustainable consumption, production and natural resource management.

The generation and management of waste is related to the physical flow accounts (flows from the economy to the environment), of the SEEA 2012 Central Framework, particularly on accounting for solid waste and environmental protection expenditures.

In the Philippines, the Solid Waste Management Division (SWMD) of the EMB is the primary office in charge of implementing Republic Act No. 9003 or the Ecological Solid Waste Management Act of 2000 (NSWMC, 2014). The compendium reports proxy indicators for the following core statistics; amount of hazardous waste treated by type of treatment disposal; number of hazardous waste treatment and disposal facilities; and amount of recycled waste.

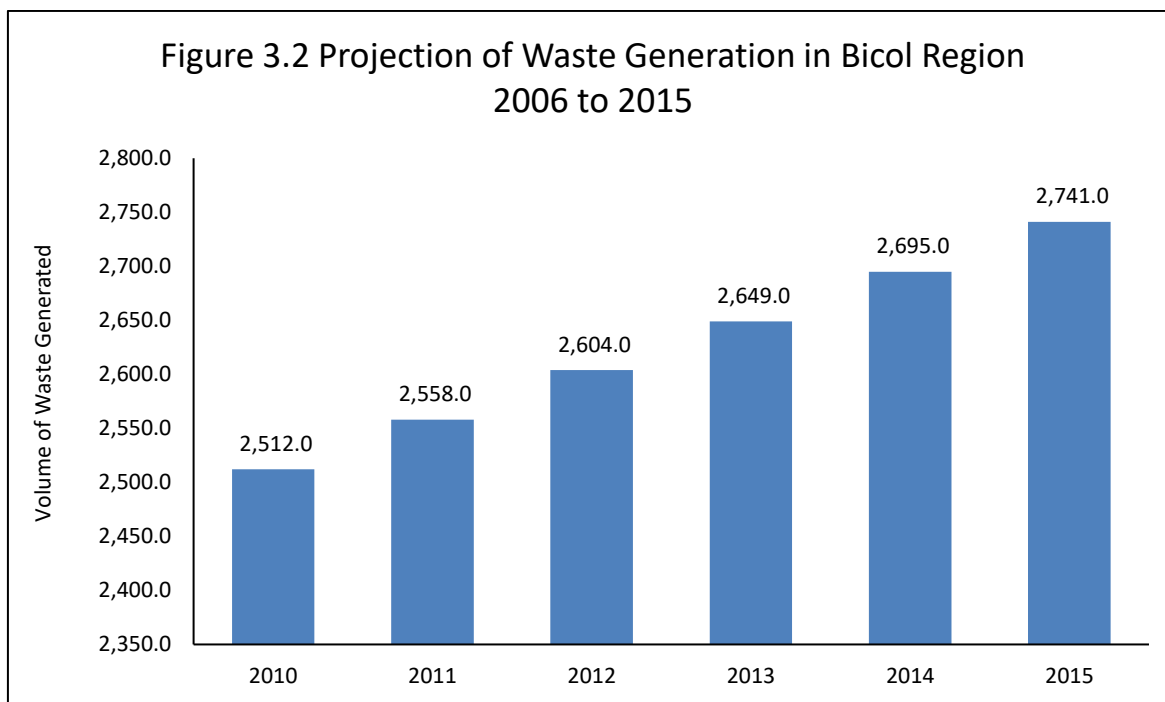
Hazardous waste is a special group of waste that, due to its toxic or other hazardous character, requires special management and is controlled by law in many countries (UN FDES, 2013). In the Philippines, the management of hazardous wastes is governed by the Republic Act No. 6969, known as the "Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990".

As seen in figure 3.1, there are 13 types of hazardous wastes (see Annex for descriptions). Among these, waste with inorganic chemicals had the highest amount generated with 615,978.0 tons of waste for period 2006 to 2015, collectively. Bicol Region generated about 0.38 % share of these wastes in the Philippines. Meanwhile, reactive chemical wastes had the lowest amount of waste generated in the region with 8.0 tons from 2006 to 2015, collectively.



Source: *Environmental Management Bureau*

Figure 3.2 presents the projection of waste generation in the Bicol Region, in tons per day, for the period 2010 to 2015. During the six-year period, there was a steady increase in the volume of projected waste generation, from 2,512.0 tons in 2010 to 2741.0 tons in 2015. The waste projection is derived as waste generation rate per capita multiplied by the population.



Source: Environmental Management Bureau

There are several types of solid wastes disposal facilities in the region. It includes open dumpsite, controlled dumpsite, materials recovery facility (MRF) and sanitary landfill. For the past twelve years, the number of solid waste disposal facilities is continuously increasing (Figure 3.3. A 142.3 % increase in the total number of solid waste disposal facilities in 2018 was observe compared to that in 2007. MRF operations increased significantly from 77 facilities (24.4% in 2007 to 315 facilities (75.6% in 2018 with the reduced operations for dumpsites.

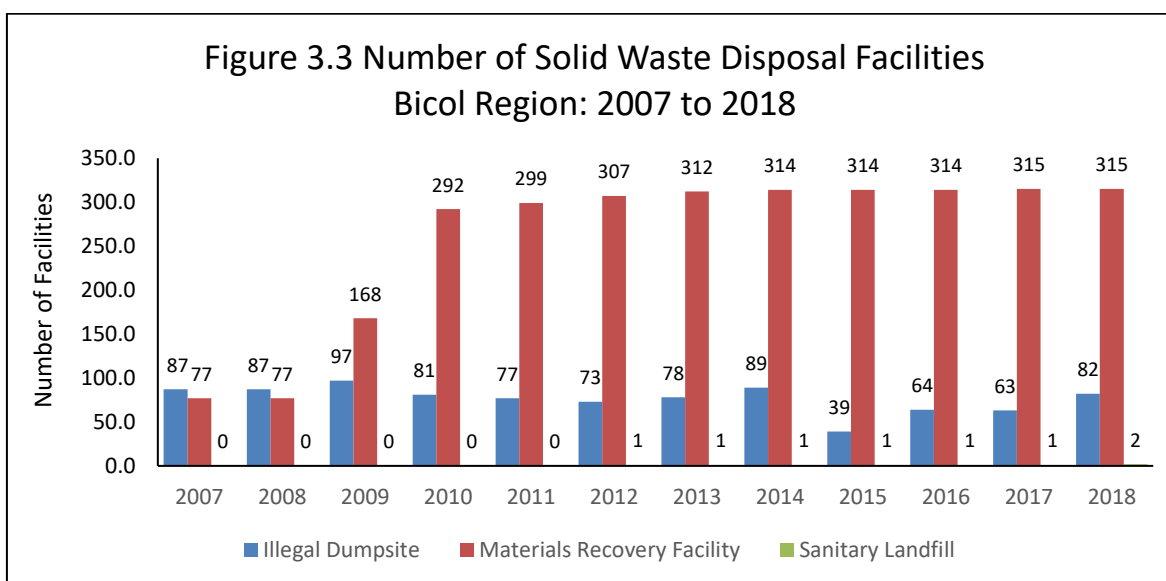


Table 3.1.1
Amount of Generated Hazardous Waste By Type
2006
 (tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	132,889	13,998	187,163	9,514,528	22,205	20,698
V Bicol Region	3,715	0	170	28	2	0

Table 3.1.2
Amount of Generated Hazardous Waste By Type
2007
 (tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	922,995	12,373	38,139	52,289	10,311	7,567
V Bicol Region	20	1	10	27	0	3

Table 3.1.3
Amount of Generated Hazardous Waste By Type
2008
 (tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	5,551,042	19,664,161	1,966,258	532,251	1,411,982	525,517
V Bicol Region	228	5	35	1,957	6	0

Table 3.1.4
Amount of Generated Hazardous Waste by Type
2009
 (tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	258,304	5,655	200,947	54,623	7,547	9,839
V Bicol Region	208	17	0	6	0	0

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
127,393	4,852	800,259	8,523	14,206	26,616	912,724	11,786,053
5	11	147	4	1,475	0	71	5,628

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
7,641	10,726	52,355	2,766	4,270	831	7,984	1,130,247
0	0	402	1	2,397	2	54	2,917

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
78,369,455	29,490	3,750,531	33,196,202	397,469	2,154,458	17,390,465	164,939,281
0	0	743	2	2,139	165	151	5,432

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
3,525	912,374	302,589	129,171	5,290	210	10,575	1,900,651
0	14	6,682	90	0	0	256	7,273

Table 3.1.5
Amount of Generated Hazardous Waste by Type
2010
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	936,881	9,938	98,752	77,161	806	9,911
V Bicol Region	4,760	234	19	32	0	0

Table 3.1.6
Amount of Generated Hazardous Waste by Type
2011
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	3,054,612	12,653	187,711	283,644	1,990	77,409
V Bicol Region	7,020	7	13,403	603	0	0

Table 3.1.7
Amount of Generated Hazardous Waste by Type
2012
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	112,620	281,167	53,086	29,082	337	5,475
V Bicol Region	40,459	1	0	668	0	0

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
4,473	28,597	136,212	3,175	16,476	983	23,142	1,346,506
3	0	8,653	41	9,729	732	245	24,447

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
817,424	70,800	404,632	27,085	23,879	581	16,920	4,979,340
0	0	788	0	20,818	4	297	42,942

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
165,137	23,959	72,675	13,856	3,402	37	19,689	780,523
0	0	0	0	0	0	0	41,128

Table 3.1.8
Amount of Generated Hazardous Waste by Type
2013
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	565,841	100,891	195,009	269,816	464,668	10,418
V Bicol Region	0	0	0	0	0	0

Table 3.1.9
Amount of Generated Hazardous Waste by Type
2014
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	190,714	271,959	579,074	806,359	63	134,881
V Bicol Region	25,137	2	165	611,409	0	0

Table 3.1.10
Amount of Generated Hazardous Waste by Type
2015
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	401,467	317,404	983,030	710,107	330	67,807
V Bicol Region	6,484	2	1	1,248	0	172

Source: Environmental Management Bureau- Hazardous Waste Management Section

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
352,381	620,720	5,918,534	432,478	1,486	115	44,598	8,976,956
0	0	0	0	0	0	0	0

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
27,970	513	144,694	13,448	4,847	2,302	322,162	2,498,988
0	0	624	1,901	5	5	373	639,623

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
33,822	5,366	1,351,706	15,565	2,377	929	442,311	4,332,222
1	0	340	54	0	0	338	8,638

Table 3.2
Projection of Waste Generation
2010-2015
(tons per day)

	2010	2011	2012	2013	2014	2015
Philippines	49,243	50,139	51,036	51,932	52,828	53,724
Bicol Region	2,512	2,558	2,604	2,649	2,695	2,741

Table 3.3
Number of Registered Hazardous Waste Generators (HWG)
2007-2018
(tons per day)

Region	2007	2008	2009	2010	2011	2012
Philippines	9,204	10,034	11,162	12,285	14,109	15,865
5	568	599	635	651	681	691

Region	2013	2014	2015	2016	2017	2018
Philippines	17,874	19,485	21,719	24,738	28,429	33,324
5	707	730	841	859	882	927

Note:

- 1) Solid waste management facility shall refer to any resource recovery system or component thereof; any system, program, or facility for resource conservation; any facility for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of solid waste.
- 2) Open dump shall refer to a disposal area wherein the solid wastes are indiscriminately thrown or disposed of without due planning and conservation for environmental and health standards.
- 3) Controlled dump shall refer to a disposal site at which solid waste is deposited in accordance with the minimum prescribed standards of site operation
- 4) Sanitary Landfill
- 5) Materials Recovery Facility includes a solid waste transfer station or sorting station, drop-off center, a composting facility, and a recycling facility.

Source: Ecological Solid Waste Management (R.A. 9003 series of 2000)
 Environmental Management Bureau (EMB) - Solid Waste Management Division (SWMD)

Table 3.2
Projection of Waste Generation
2010-2015
(tons per day)

	2010	2011	2012	2013	2014	2015
Philippines	49,243	50,139	51,036	51,932	52,828	53,724
Bicol Region	2,512	2,558	2,604	2,649	2,695	2,741

Table 3.3
Number of Registered Hazardous Waste Generators (HWG)
2007-2018
(tons per day)

Region	2007	2008	2009	2010	2011	2012
Philippines	9,204	10,034	11,162	12,285	14,109	15,865
5	568	599	635	651	681	691

Region	2013	2014	2015	2016	2017	2018
Philippines	17,874	19,485	21,719	24,738	28,429	33,324
5	707	730	841	859	882	927

Note:

- 1) Solid waste management facility shall refer to any resource recovery system or component thereof; any system, program, or facility for resource conservation; any facility for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of solid waste.
- 2) Open dump shall refer to a disposal area wherein the solid wastes are indiscriminately thrown or disposed of without due planning and conservation for environmental and health standards.
- 3) Controlled dump shall refer to a disposal site at which solid waste is deposited in accordance with the minimum prescribed standards of site operation
- 4) Sanitary Landfill
- 5) Materials Recovery Facility includes a solid waste transfer station or sorting station, drop-off center, a composting facility, and a recycling facility.

Source: Ecological Solid Waste Management (R.A. 9003 series of 2000)
 Environmental Management Bureau (EMB) - Solid Waste Management Division (SWMD)

Table 3.4.1
Amount of Treated/Disposed Hazardous Waste By Type
2006
(In tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	8,071	12,086	58,261	38,569	20,411	8,656
V Bicol Region	7.5	0.0	8.5	1.1	0.0	0.0

Table 3.4.2
Amount of Treated/Disposed Hazardous Waste By Type
2007
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	12,926	117,862	19,813	82,410	7,498	9,790
V Bicol Region	0.0	0.6	7.8	0.0	0.0	0.5

Table 3.4.3
Amount of Treated/Disposed Hazardous Waste By Type
2008
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	21,584,711	66,214,466	425,330	119,140	2,158,715	7,335,225
V Bicol Region	48.5	47.3	34.4	1.1	0.0	0.5

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
32,496	4,479	374,966	2,179	5,206	841	906,909	1,473,130
0.0	0.0	10.3	0.0	0.0	0.0	2.8	30.2

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
5,337	7,449	25,230	3,138	3,451	378	7,794	303,077
0.0	0.0	18.0	0.6	0.0	0.0	12.4	39.9

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
24,394,153	55,330	86,390,275	48,806,813	145,112	13,319	1,434,317	259,076,905
0.0	0.0	148.4	1.0	0.0	124.4	160.4	566.0

Table 3.4.4
Amount of Treated/Disposed Hazardous Waste By Type
2009
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	212,773	6,684	6,659	582,903	396	497,913
V Bicol Region	75.5	0.0	0.0	0.0	0.0	0.0

Table 3.4.5
Amount of Treated/Disposed Hazardous Waste By Type
2010
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	79,475	7,122	16,413	24,045	433	3,929
V Bicol Region	4,177.3	0.0	0.0	0.0	0.0	0.0

Table 3.4.6
Amount of Treated/Disposed Hazardous Waste By Type
2011
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	2,659,981	7,258	78,927	213,753	495	65,901
V Bicol Region	0.0	0.0	0.0	0.4	0.0	0.0

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
1,865	648,820	132,645	14,680	357	1,454	2,624	2,109,772
0.0	0.0	96.0	0.3	0.0	65.0	240.9	477.7

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
3,117	407	104,589	8,898	2,350	75	3,632	254,485
0.0	0.0	0.0	0.0	0.0	0.0	180.0	4,357.3

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
898,194	932	609,314	36,734	7,925	40	15,728	4,595,184
0.0	0.0	149.1	0.0	0.0	0.0	17.1	166.6

Table 3.4.7
Amount of Treated/Disposed Hazardous Waste By Type
2012
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	51,607	12,682	13,896	6,250	61	2,091
V Bicol Region	0.0	0.0	0.0	0.0	0.0	0.0

Table 3.4.8
Amount of Treated/Disposed Hazardous Waste By Type
2013
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	131,622	48,552	103,159	165,455	464,125	58,981
V Bicol Region	0.0	0.0	0.0	0.0	0.0	0.0

Table 3.4.9
Amount of Treated/Disposed Hazardous Waste By Type
2014
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	208,833	3,057	612,507	15,833	22	6,572
V Bicol Region	0.0	0.0	0.0	1.1	0.0	0.0

Table 3.4.10
Amount of Treated/Disposed Hazardous Waste By Type
2015
(tons per year)

Region	Wastes with Cyanide	Acid Wastes	Alkali Wastes	Wastes with Inorganic Chemicals	Reactive Chemical Wastes	Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic Sludge
Philippines	372,930	18,290	356,467	84,779	48	129,099
V Bicol Region	0.0	0.0	0.0	3.0	0.0	0.0

Source: Environmental management Bureau (EMB)- Hazardous Waste Management Section (HWMS)

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
125,666	196	8,613	9,226	165	12	395	230,860
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
66,394	21,829	5,521,087	13,619	7,968	702	34,886	6,638,380
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
13,231	132	74,096	2,004	15,294	13	10,807	962,401
0.0	0.0	65.2	0.0	0.0	0.0	0.0	66.2

Waste Organic Solvent	Putrescible Organic	Oil	Containers	Immobilized Wastes	Organic Chemicals	Miscellaneous Wastes	Total
19,013	924	471,084	2,443	2,104	129	122,410	1,579,719
0.0	0.0	0.0	0.0	0.0	0.0	2,821.4	2,824.4

Table 3.5**Number of Registered Treatment, Storage and Disposal (TSD) Facilities by Region
2006-2015**

Region	2006	2007	2008	2009	2010
Philippines	80	94	98	106	124
Bicol Region	3	5	4	3	3

*(continued)***Number of Registered Treatment, Storage and Disposal (TSD) Facilities by Region
2006-2015**

Region	2011	2012	2013	2014	2015
Philippines	127	130	127	114	123
Bicol Region	2	1	1	1	0

Source: Environmental Management Bureau (EMB)-Hazardous Waste Management Section (HWMS)

Table 3.6
NUMBER OF SOLID WASTES DISPOSAL FACILITIES BY REGION
2004 - 2018
(tons per day)

Region	2007			2008			2009		
	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill
Philippines	1,013	2,186	15	936	2,428	24	1,232	6,151	30
V	87	77	0	87	77	0	97	168	0

Region	2010			2011			2012		
	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill
Philippines	1,170	6,957	33	1,024	7,312	34	945	7,713	44
V	81	292		77	299		73	307	1

Region	2013			2014			2015		
	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Controlled Dump	Materials Recovery Facility	Sanitary Landfill
Philippines	923	8,486	55	899	8,656	86	553	9,335	101
V	78	312	1	89	314	1	39	314	1

Region	2016			2017			2018		
	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill	Illegal Dumpsite	Materials Recovery Facility	Sanitary Landfill
Philippines	488	9,357	108	385	10,052	135	353	10,052	165
V	64	314	1	63	315	1	82	315	2

Note:

- 1) Solid waste management facility shall refer to any resource recovery system or component thereof; any system, program, or facility for resource conservation; any facility for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of solid waste.
- 2) Open dump shall refer to a disposal area wherein the solid wastes are indiscriminately thrown or disposed of without due planning and conservation for environmental and health standards.
- 3) Controlled dump shall refer to a disposal site at which solid waste is deposited in accordance with the minimum prescribed standards of site operation
- 4) Sanitary Landfill
- 5) Materials Recovery Facility includes a solid waste transfer station or sorting station, drop-off center, a composting facility, and a recycling facility.

Source: Ecological Solid Waste Management (R.A. 9003 series of 2000)
 Environmental Management Bureau (EMB) - Solid Waste Management Division (SWMD)

Component Four

Extreme Events and Disasters

COMPONENT FOUR

EXTREME EVENTS AND DISASTERS

An extreme event is one that is rare within its statistical reference distribution at a particular location while disaster is often described as a result of exposure to an extreme event (UN FDES, 2013). There are two subcomponents: Subcomponent 4.1: Natural Extreme Events and Disasters; and Subcomponent 4.2: Technological Disasters. The former organizes statistics on the frequency and intensity of extreme events and disasters deriving from natural phenomena and their impact on human lives. The latter, on the other hand, organizes statistics on extreme events resulting from human intent, negligence or error, or faulty or failed technological applications.

This component compiles statistics on the occurrence of extreme events and disasters and their impacts on human well-being and the infrastructure of the human subsystem. The source of basic data for the core set of statistics was obtained from the National Disaster Risk Reduction and Management Council (NDRRMC), a government agency created in 2010 through the Philippine Disaster Risk Reduction and Management Act of 2010 or Republic Act No. 10121. Its mandate is to develop and implement disaster risk reduction programs that are incorporated in the development plans of various levels of government. The classification for the natural extreme events and disasters in this publication followed the definitions and typologies of disasters by the Centre for Research on the Epidemiology of Disasters (CRED). The classification for the technological disasters was based on the guidelines of the NDRRMC. The NDRRMC also uses the term “human induced disasters” in their reports instead of technological disasters and hence, the term was adopted in this publication.

The environment statistics on Extreme Events and Disasters have links to environmental accounts as described in the System of Environmental-Economic Accounting – Central Framework (2012 SEEA-CF), particularly on the type of natural extreme events and disasters, economic losses due to and effects of natural extreme events and disasters on the integrity of ecosystems. Component Four is also related to the Sendai Framework for Disaster Risk Reduction 2015-2030, a non-binding agreement which affirms that the state has the primary role to reduce disaster risk and that responsibility should also be shared to other stakeholders including the local government (Sendai Framework for Disaster Risk Reduction).

4.1 Natural Extreme Events and Disasters

Statistics on natural extreme events and disasters are important to policy makers, analysts and civil society not only to assess the impact of an ongoing disaster, but also to monitor the frequency, intensity and impact of disasters over time (FDES 2013). The topics under this subcomponent are the occurrence and the impact of natural extreme events and disasters.

4.1.1 Occurrence of Natural Extreme Events and Disasters

The core statistics included in this topic are type of natural extreme event and disaster, and location. According to the CRED Emergency Events Database (CRED EM-DAT), natural disasters are classified into five subgroups, namely: geophysical, climatological, meteorological, hydrological, and biological disasters. Geophysical disasters are events originating from the solid earth. Climatological disasters are events caused by long-lived processes in the spectrum from intra-seasonal to multi-decadal climate variability. Meteorological disasters are events caused by short-lived processes in the spectrum from minutes to days. Hydrological disasters are events caused by deviations in the normal water cycle and/or overflow of bodies of water caused by wind setup. Lastly, biological disasters are events caused by the exposure of living organisms to germs and toxic substances.

In this publication, natural disasters were presented according to the five CRED EM-DAT classifications and a Not Elsewhere Classified (NEC) category. Data on location, however, were reported only for events classified by the NDRRMC as major disasters. The list of major events and their location can be found in Table 4.1 Major Natural Extreme Events and Disasters.

4.1.2 Impact of Natural Extreme Events and Disasters

There are two core statistics under this topic, number of people killed and economic loss due to natural extreme events and disasters. According to FDES 2013, the impact in terms of damage and losses makes it possible to estimate the impact of disasters on economic growth, the population's living conditions and environmental conditions in the region. Economic loss is measured in terms of currency and can be seen in damages to buildings and transportation networks, loss of revenue for businesses, and loss of crops, among other material indicators. In the Philippines, the NDRRMC organizes the economic loss data into three categories: Infrastructure, Agriculture, and Private and Communication. From 2006 to 2015, a total of 9,811 deaths due to natural disasters and extreme events were recorded due to meteorological disasters. Typhoon, a meteorological disaster subtype, claimed the most lives with a total of 9,051 individuals.

Among the three categories, the highest loss incurred over the ten-year period was attributed to the agricultural sector with a total of about Php 165 billion or 58% of the total losses. This was followed by the private and/or communication sector with a total of about Php 60 billion or 21% of the total losses. Infrastructure sector also recorded an economic loss of Php 59 billion or about 21%.

Table 4.7
MAJOR NATURAL EXTREME EVENTS AND DISASTERS
2010 to 2015

Dates	Disaster Subgroup	Disaster Type	Disaster	Areas Affected	Casualties		
					Dead	Injured	Missing
Total Disaster							
2006					1,319	3,281	1,871
May 9 to 15	Meteorological	Storm	Typhoon Caloy	Regions I, CALABARZON, MIMAROPA, V, VI	82	59	36
July 10 to 14			Tropical Storm Florita	Regions I, III, CALABARZON, V, VI, XI, CAR, and NCR	45	33	6
September 25 to 29			Typhoon Milenyo	Regions III, CALABARZON, MIMAROPA, V, VI, VII, VIII, CAR, and NCR	213	660	48
October 27 to 30			Typhoon Paeng	Regions I, II, III, V, and CAR	32	62	23
November 28 to December 1			Typhoon Reming	Regions III, CALABARZON, MIMAROPA, and V	734	2,360	762
			Typhoon Seniang	Regions CALABARZON, MIMAROPA, V, VI, VII, and VIII	37	63	21
2007					124	50	39
August 13 to 18	Meteorological	Storm	Typhoon Egay	Regions I, II, III, CALABARZON, MIMAROPA, V, CAR, and NCR	5	1	0
November 19 to 28			Tropical Storm Lando	Regions MIMAROPA, V, VI, VII, VIII, IX, X, and CARAGA	14	11	6
November 21 to 27			Typhoon Mina	Regions I, II, III, CALABARZON, MIMAROPA, V, VIII, and CAR	50	20	11

Table 4.7 - Continued

Affected		Damaged Houses		Damaged Properties (Php millions)			Total Cost of Damages (In millions)
Families	Persons	Total	Part	Agriculture	Infrastructure	Private/ Communication	
2,400,823	11,271,561	375,962	863,334	10,876.6	9,416.4	48.8	20,341.8
176,361	927,961	17,356	63,259	2,549.9	1,771.0	...	...
42,413	202,614	163	6,253	774.2	477.1	...	1,251.3
841,207	4,139,195	118,081	385,096	3,968.8	2,638.0	...	6,606.8
79,895	364,733	1,395	12,412	788.9	460.5	48.8	1,298.2
707,966	3,536,342	228,436	359,601	1,936.2	3,512.4	...	5,448.6
199,036	952,277	9,912	35,209	629.4	349.8	...	979.2
378,817	1,800,617	251,610	1,215,210	1,666.8	1,029.5	0.5	2,696.7
148,700	716,486	43	56	18.6	51.2	...	69.8
13,316	59,535	87	217	16.3	74.1	...	90.4
175,176	838,061	1,540	12,417	460.1	659.9	...	1,120.0

Table 4.7
MAJOR NATURAL EXTREME EVENTS AND DISASTERS
2010 to 2015

Dates	Disaster Subgroup	Disaster Type	Disaster	Areas Affected	Casualties		
					Dead	Injured	Missing
2008					673	925	138
June 17 to 23	Meteorological	Storm	Typhoon Frank	Regions I, III, CALABARZON, MIMAROPA, V, VI, VII, VIII, IX, X, XI, XII, ARMM, CARAGA, and NCR	557	826	87
September 19 to 24			Tropical Storm Nina	Regions I, II, II, MIMAROPA, V, VI, VIII, X, and CAR	16	30	7
2009					1,216	890	122
April 30 to May 2	Meteorological	Storm	Tropical Depression Crising	Regions CALABARZON, V, VIII, and X	2	0	1
May 1 to 5			Typhoon Dante	Region V	28	8	1
June 23 to 26			Typhoon Feria	Regions III, CALABARZON, MIMAROPA, V, VI, VII,	17	12	4
September 24 to 27			Tropical Storm Ondoy	Regions I, II, III, CALABARZON, MIMAROPA, V, VI, IX, X,	464	529	37
September 30 to October 10			Typhoon Pepeng	Regions I, II, III, CALABARZON, MIMAROPA, V, VI, CAR,	465	207	47
October 28 to November 01			Typhoon Santi	Regions III, CALABARZON, MIMAROPA, V, and NCR	34	20	5
2010					133	133	50
July 11 to 14	Meteorological	Storm	Typhoon Basyang	Regions III, CALABARZON, V, VI, and NCR	102	91	46

Table 4.7 - Continued

Affected		Damaged Houses		Damaged Properties (Php millions)			Total Cost of Damages (In millions)
Families	Persons	Total	Part	Agriculture	Infrastructure	Private/ Communication	
1,411,057	6,982,042	111,805	503,054	12,550.3	7,492.8	62.4	20,105.5
958,515	4,776,778	82,735	345,475	7,481.3	5,856.3	...	13,337.7
31,188	128,507	170	933	106.1	246.4	...	352.5
2,874,458	13,739,856	75,277	328,543	29,860.5	12,976.5	1,601.1	44,438.1
645	3,225	0	15	...	5.0	...	5.0
84,213	418,928	297	3,457	625.7	597.1	73.2	1,296.0
30,566	150,491	1,435	12,196	72.0	161.9	...	233.9
993,227	4,901,234	30,082	154,922	6,600.2	3,595.6	599.8	10,795.6
954,087	4,478,284	6,807	55,062	20,435.5	6,012.2	767.5	27,215.1
170,497	802,155	9,868	57,843	351.8	307.8	45.4	705.0
542,849	2,594,370	37,426	184,082	11,760.0	199.0	425.3	12,384.4
114,905	585,383	7,378	65,908	232.0	93.7	49.1	374.8

Table 4.7
MAJOR NATURAL EXTREME EVENTS AND DISASTERS
2010 to 2015

Dates	Disaster Subgroup	Disaster Type	Disaster	Areas Affected	Casualties		
					Dead	Injured	Missing
2011					1,557	6,312	244
May 6 to 11	Meteorological	Storm	Tropical Storm	Regions III, IV toA, IV toB, NCR, V, VII and VIII	35	11	2
			Bebeng				
May 20 to 28			Typhoon	Regions NCR, II, V, IX, X, XII and ARMM	4	0	0
			Chedeng				
July 25 to 28			Tropical Storm	Regions III, IV toA, IV toB, V, VII, VIII and NCR	77	53	8
			Juaning				
August 21 to 29			Typhoon	Regions I, II, V, VI, CAR and NCR	36	37	p
			Mina				
September 24 to 28			Typhoon	Regions I, II, III, IV-A, IV - B, V, VI, CAR and NCR	85	91	21
			Pedring				
2012					1,386	2,747	860
July 28 to 31	Meteorological	Storm	Tropical Depression	Regions I,II,III,IV-A, IV-B,V, VI,VII,IX,X,XI,XII, CAR and NCR	54	35	3
			Gener				
October 22 to 26			Tropical Depression	Regions III, IV toA, IV toB, V, VI, VII, VIII, IX, XII, CAR and CARAGA	27	19	6
			Ofel				
2013					6,678	29,800	1,091
January 11 to 13	Meteorological	Storm	Tropical Storm	Regions V,VIII, XI, XII and CARAGA	0	0	0
			Bising				
June 27 to July 1			Tropical Storm	Regios IV-A, IV-B, V. VI and VIII	7	4	0
			Gorio				
August 9 to 12			Typhoon	Regions I, II,III, V and CAR	11	7	2
			Labuyo				
September 16 to 22			Tropical Storm	Regions I, II, III, IV toB, V, VI, and CAR	4	16	2
			Odette				
October 8 to13			Tropical Storm	Regions I,II, III, IV-A and V	15	32	5
			Santi				
November 6 to 9			Typhoon	Regions IV-A, IV-B, V, VI, VII, VIII, X, XI & CARAGA	6,300	28,688	1,062
			Yolanda				

Table 4.7 - Continued

Affected		Damaged Houses		Damaged Properties (Php millions)			Total Cost of Damages (In millions)	
Families	Persons	Total	Part	Agriculture	Infrastructure	Private/ Communication		
2,088,909	9,884,577	38,380	149,570	17,640.6	7,591.1	3,116.4	P	28,348.1
83,632	431,837	64	10,134	1,085.7	1,167.5	...	P	2,253.2
91,767	446,907	83	48	8.8	5.5	4.6	P	18.9
255,129	1,285,906	11,196	21,710	1,590.9	2,850.9	....	P	4,441.8
97,006	411,468	159	2,918	1,668.5	420.8	...	P	2,089.3
667,602	3,105,355	7,491	47,022	13,457.8	2,094.8	...	P	15,552.6
1,098,950	8,006,126	93,419	142,367	34,267.6	7,819.9	2,860.2	P	44,947.7
211,967	948,696	1,424	7,945	424.4	301.3	2.6	P	728.3
36,353	173,427	236	2,558	96.4	113.0	...	P	209.4
5,523,982	25,994,087	534,545	817,247	31,921.0	16,565.0	58,179.8	P	106,665.9
5,454	16,801	0	0	...	1.5	...	P	1.5
1,328	6,418	23	48	1.8	...	...	P	1.8
90,026	407,493	2,592	18,605	1,004.6	573.8	...	P	1,578.4
17,041	79,127	586	2,877	32.3	308.0	...	P	340.3
247,448	1,389,029	20,787	101,014	3,172.2	130.3	...	P	3,302.6
3,424,593	16,078,181	489,163	595,149	25,248.0	12,055.2	58,179.8	P	95,483.1

Table 4.8
MAJOR NATURAL EXTREME EVENTS AND DISASTERS
2010 to 2015

Dates	Disaster Subgroup	Disaster Type	Disaster	Areas Affected	Casualties		
					Dead	Injured	Missing
Total Disaster							
2014					301	3,335	32
July 13 to 17	Meteorological	Storm	Typhoon Glenda	Regions I, III, IV-A, IV-B, V, VIII, and NCR	106	1,257	5
September 17 to 22			Typhoon Mario	Regions I, II, III, IV-A, IV-B, V, VII, CAR, and NCR	18	16	4
December 4 to 10			Typhoon Ruby	Regions III, IV toA, IV toB, V, VI, VII, VIII, CARAGA, and NCR	24	1,913	0
2015					173	159	35
July 2015 to July 2016	Meteorological	Extreme Temperature	El Niño	Regions CAR, I, II, III, CALABARZON, MIMAROPA, V, VI, NIR, VII, VIII, IX, X, XI, XII, CARAGA, and ARMM	0	0	0
January 16 to 19			Tropical Depression		2	0	0
October 14 to 21		Storm	Amang Typhoon Lando	Regions V, VII, VIII	58	87	4
December 12 to 17			Typhoon Nona	Regions III, IV-B, V and VIII	51	28	4

Table 4.8 - Continued

Affected		Damaged Houses		Damaged Properties (Php millions)			Total Cost of Damages (In millions)	
Families	Persons	Total	Part	Agriculture	Infrastructure	Private/ Communication		
2,988,919	13,442,085	159,932	791,781	42,716.6	10,535.0	274.1	P	53,525.8
1,028,319	4,673,967	112,067	521,613	33,849.2	4,520.0	247.4	P	38,616.6
453,190	2,052,141	2,256	9,335	3,105.7	646.0	...	P	3,751.7
992,729	4,363,677	42,634	249,433	3,635.8	2,048.5	...	P	5,684.3
2,728,302	12,389,161	129,803	334,148	32,366.3	8,348.8	29.7	P	40,744.8
1,481,994	6,962,727	0	0	12,834.3	...	...	P	12,834.3
25,201	106,808	49	491	507.4	829.8	...	P	1,337.3
733,152	3,126,130	18,795	118,885	10,910.40	3,482.00	...	P	14,392.4
303,507	1,349,532	110,539	208,145	5,623.8	1,413.3	...	P	7,037.1
							P	

Component Five

Human Settlements and Environmental Health

COMPONENT FIVE

HUMAN SETTLEMENTS AND ENVIRONMENTAL HEALTH

Human Settlements and Environmental Health tackles the living conditions of humans and how they affect their health. As human settlements affect the environment as well as the health of the people, it becomes necessary to compile its statistics for management enhancement and better-quality conditions related to human settlements.

Compiled statistics in this sub-component may provide indicators helpful to achieve the Sustainable Development Goals e.g. to ensure healthy lives and promote well-being for all at all ages (SDG 3), to ensure access to water and sanitation for all (SDG 6), and to make cities inclusive, safe, resilient and sustainable (SDG 11). The subcomponent also contains statistics related to ensuring access to affordable, reliable, sustainable and modern energy for all (SDG 7) and taking urgent action to combat climate change and its impacts (SDG 13).

All available statistics from various sources in Bicol Region were included in this chapter. Source agencies include Land Transportation Office (LTO) and Department of Health (DOH). Data from the 2010 Census of Population and Housing (CPH) of the Philippine Statistics Authority was also included in this chapter.

5.1 Human Settlements

The sub-component on human settlements deals with the totality of human community where people reside, may it be on large cities, towns, or villages. Statistics on this are usually gathered so that policy makers, analyst, and civil society will have information on how the residents work and live in their settlements, how they transform the landscape and supporting ecosystem and how it affects the resident's well-being and health.

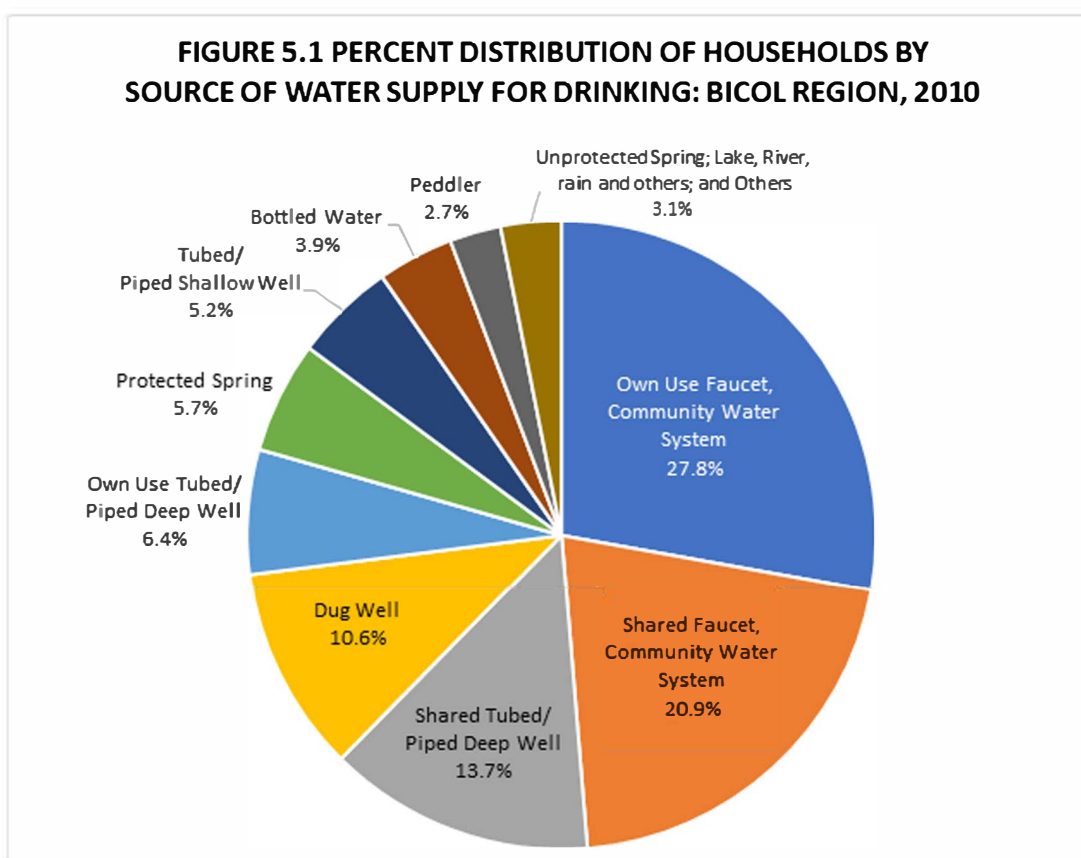
Out of the five topics under Human Settlements, only two topics specifically 5.1.2 Access to selected basic services and 5.1.5 Environmental concerns specific to urban settlements contained core statistics. Data for these statistics are gathered usually in the form of censuses, surveys, administrative records and remote sensing.

5.1.2 Access to selected basic services

Access to selected basic services include access to water, sanitation, and waste removal services. Having access to the said basic services can have a favorable effect on a person's health and well-being, which in turn can contribute to better environmental quality. Collected statistics for the compendium included access to improved drinking water quality and improved sanitation facility obtained from the Philippine Statistics Authority's (PSA) Census of Population and Housing (CPH) for the year 2010.

Figure 5.1 shows the percent distribution of households in Bicol Region by source of water supply for drinking from the Census of Population and Housing. The Community Water System comprises of the own use faucet and shared faucet; Well consisting of shared tubed/piped deep well or, own use tubed/piped deep well, tubed/piped shallow well and dug well. Other categories are springs (further disaggregated into protected and unprotected); peddlers; lake river, rain and others; bottled water; and others.

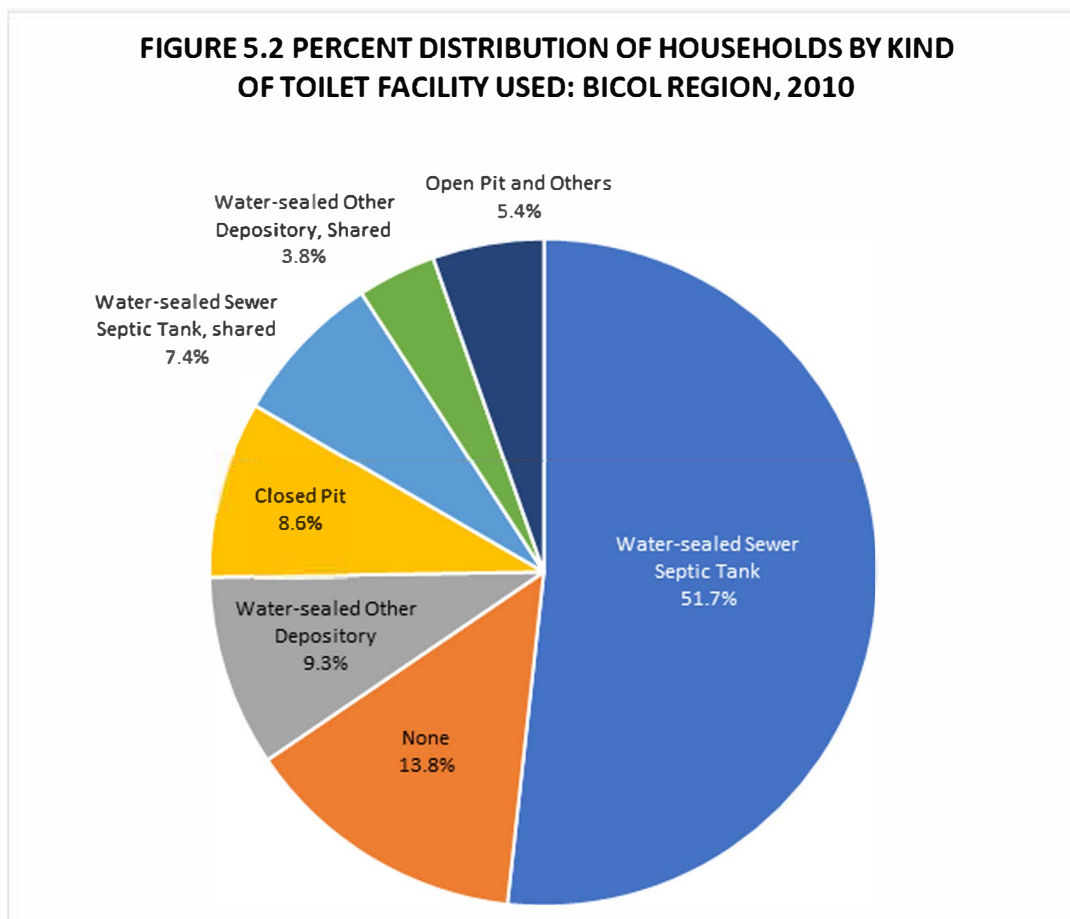
A total of 20,171,899 households in the country was reported in the CPH while 1,111,753 of these households are in Bicol Region. In the Community Water System, 27.8% or 309,246 households in Bicol Region use own faucet compared to those with shared faucet with only 20.9%. Shared tubed/piped deep well system was used by 13.7% of households. Water from tubed/piped shallow well is used by 5.2% or 57,631 of the households which is lower from those who use water from dug well which comprised 10.6% of the households. Water sourced from protected spring was also the source of 63,788 households (5.7%). 2.6% of the households indicated peddlers as their water source while almost four percent or 43,459 of these households use bottled water as their drinking water.



Another core statistic under this topic is access to improved sanitation facilities. On this, the number of households by kind of toilet facility from the PSA's Census of Population and Housing 2010 was used as an indicator.

Figure 5.2 shows the percent distribution of households and the type of toilet facility being used in Bicol Region. The following types of toilet facility were identified: the water-sealed sewer septic tank which includes those that are used exclusively by households and those that are shared with other household; water sealed other depository which consists of those used exclusively by the household and those that are shared with other households; pits consisting of open and closed pits; households that do not have toilet facilities (none); and lastly other types of toilet facility.

Almost eight percent of the households use water-sealed sewer septic tank, being shared with other households. Water-sealed other depository used exclusively by households was posted at 9.26% while closed pit are used by 8.63% of households. Water-sealed other depository being shared with other households are used by 3.81% of the households in Bicol Region. Water-sealed sewer septic tank is used exclusively by 575,224 or 51.74% of the households. Out of these households, 13.75% or 152,834 do not have any of these mentioned sanitation facilities.

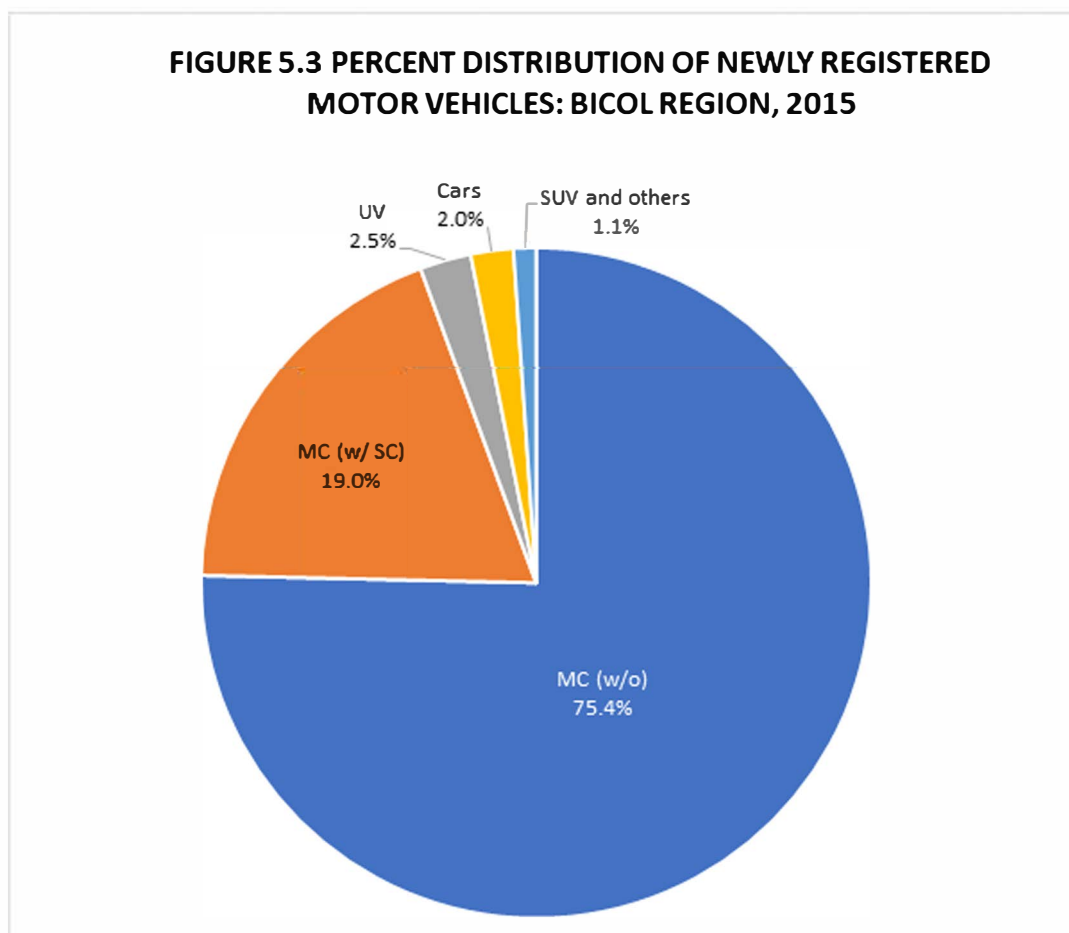


Source: *Philippine Statistics Authority, 2010 Census of Population and Housing*

5.1.5 Environmental concerns specific to urban settlements

Urban settlements are deemed a primary concern due to increasing population density, which in turn has an effect on human health and well-being, as well as the quality of environment. Other issues that are of concern here are the extent of urban sprawl, availability of green spaces for urban residents, the prevailing types of transportation in and between urban areas, and the existence and effectiveness of urban planning and zoning.

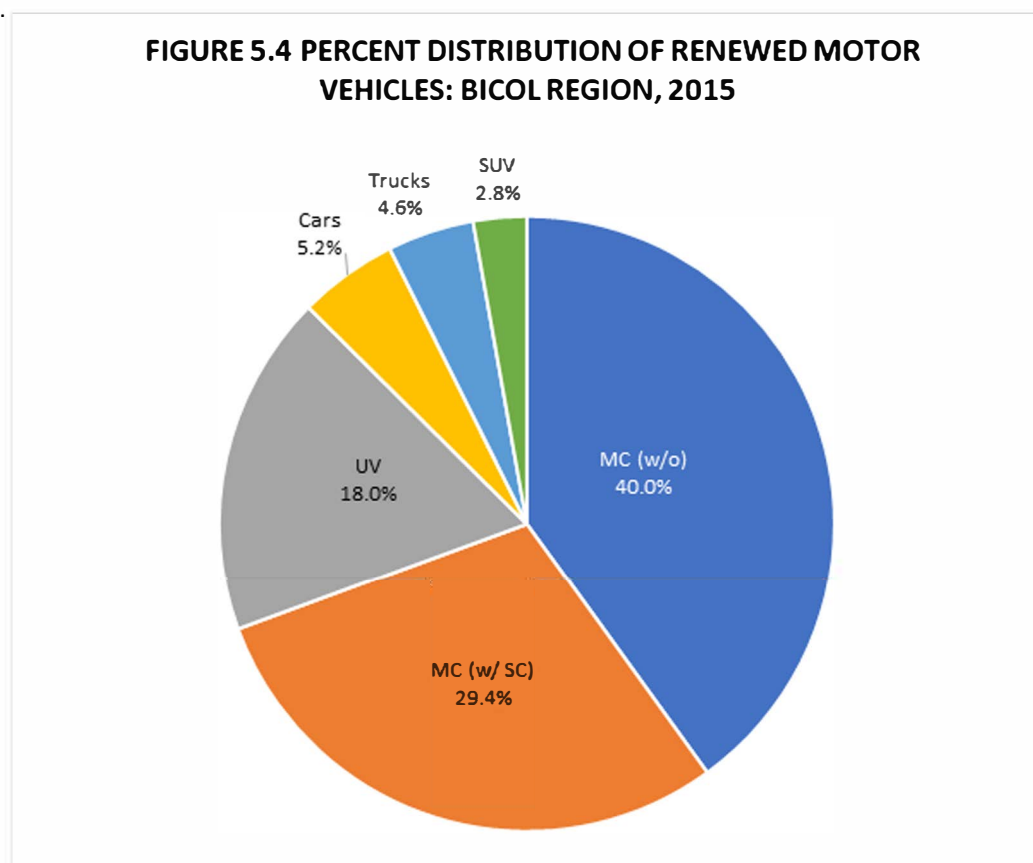
The core statistic for this topic is the number of private and public vehicles. The data gathered as an indicator for these statistics was the number of registrations by type of registration and vehicle in 2015, gathered from the Land Transportation Office (LTO). The LTO reports seven types of motor vehicles including Cars, Utility Vehicles (UV), Sports Utility Vehicle (SUV), Trucks, Buses, Trailers, and Motor Cycles which is further classified to without sidecars, with sidecars and non-conventional ones (Tricycles).



Source: *Land Transportation Office*

A total of 307,052 motor vehicles in Bicol Region were registered in 2015 which comprised only 3.53% of the total number of vehicles in the country. There were 71,112 new registrations and 235,940 renewed registrations.

Motorcycles without sidecars make up the largest share (49.38%) of the new and renewed vehicles in the region. They also comprise 75% of the newly registered vehicles, followed by the motorcycles with sidecars which comprised 19% as shown in Figure 5.3. Only 3% or 1,761 utility vehicles (UV) were registered in Region V in 2015 while the remaining percentage was shared by cars (2.1 %), and others such as SUV, trucks, buses and trailers (1.1%).



Source: Land Transportation Office

Motorcycles without sidecars that were renewed comprised 41% or 98,080 of the total number of renewed vehicles in the region. This was followed by motorcycles with sidecar with 67,542 (29%) total number of vehicles renewed in 2015. Utility vehicles (UV) comprised 18% with 41,484 vehicles. The remaining percentage belonged to cars (5%) with 11,982 vehicles, trucks (4%) with 10,469 vehicles; and SUV, buses and trailers (3%) with 6,443 vehicles renewed.

5.2 Environmental Health

Environmental health focuses on how the environmental factors and processes affect and alter the health of an individual. Statistics that are usually gathered here are morbidity (incidence and prevalence) and mortality of certain types of diseases.

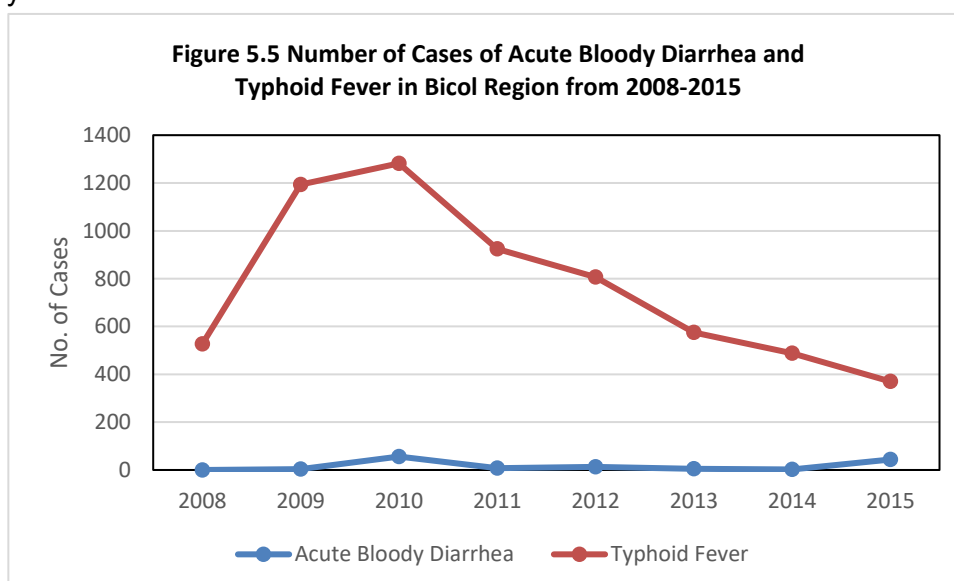
The sub-component has five topics wherein only 5.2.2 Water related diseases and conditions, and 5.2.3 Vector Borne Diseases have core statistics.

5.2.2 Water-related diseases and conditions

Water related diseases are caused by the ingestion of chemicals and micro-organisms. These include diseases caused by bacteria, viruses, protozoa, water-borne parasite infection and chemical contamination of water. Water-related diseases pose great threat to a person's health since it can trigger health problems such as cancer, organ damage, and increase in blood cholesterol and blood pressure.

The FDES 2013 recommends compiling statistics for this topic on the incidence (the rate of occurrence of new cases of disease), prevalence (part of the population with a disease at a given time period) and mortality (number of deaths by place, time and cause) of water-borne diseases. However, only the last two were compiled for this compendium.

Statistics on water-borne diseases were gathered from the Department of Health (DOH). These include the number of cases of and deaths due to Acute Bloody Diarrhea, Confirmed Cholera, Confirmed Hepatitis A, Rotavirus, and Typhoid Fever. Confirmed cholera patients are those with diarrhea that has been laboratory-confirmed through the isolation of *Vibrio cholera* from stools. Confirmed Hepatitis A cases are those laboratory-confirmed positive for IgM anti-HAV. Prevalence and deaths due to these waterborne diseases were reported for 2008 to 2015, except for Rotavirus, which has been monitored only starting in 2015 only.

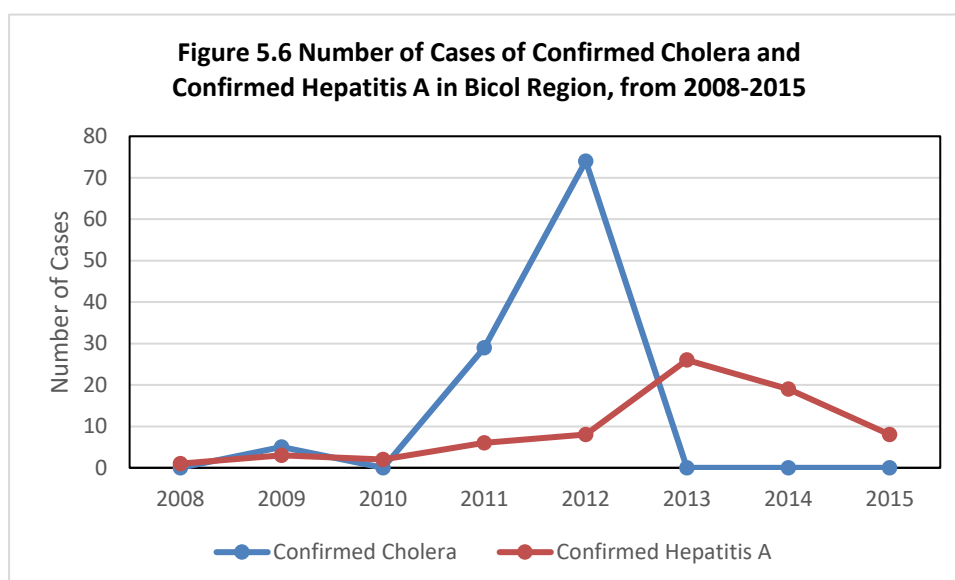


Source: Department of Health

As shown in Figure 5.6, the number of cases for Typhoid Fever in Bicol Region increased from 2008 to 2010, with peaks in 2010 with 1,282 cases, and exhibiting a decline in the succeeding years. This ailment commonly affects children and teens aged five to 15 years old, and teens and young adults aged 15 to 24 years old.

Cases of acute Bloody Diarrhea has been increasing from 2008 to 2010, with its highest incidence reported in 2010 with 56 cases. A gradual decline is noted in 2011 however, the number of cases reached high with 13 cases in 2012. The second highest number of cases for this disease was noted in 2015 with 44 cases. This disease commonly affects toddlers aged one to four years old, adults aged 40 to 64 years old, and babies aged less than a year old.

Figure 5.7 shows the number of cases of confirmed cholera and confirmed hepatitis A in Bicol Region. The number of cases for Confirmed Hepatitis A has been increasing over the years from 2010 to 2013, posting the highest in 2013 with 26 cases recorded. Cases of Confirmed Cholera, on the other hand, increased from 2010 to 2012, having the highest number in 2012 with 74 confirmed cases. Improvement was made in the succeeding years wherein no cases were recorded until 2015.



Source: Department of Health

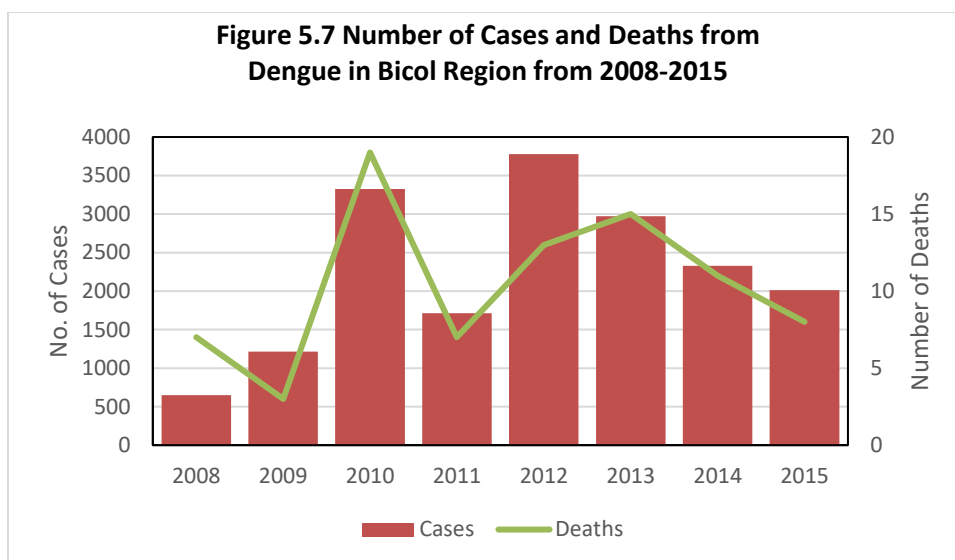
The highest number of reported deaths from water-borne diseases in Bicol Region for the years 2008 to 2015 were due to Typhoid Fever (14 deaths) and was recorded in 2011. Cases of reported deaths due to confirmed Cholera were posted at 4 deaths. Mortality due to Typhoid Fever from 2008 to 2015 summed to 60 cases, while the number of deaths due to Acute Bloody Diarrhea only recorded 1 case.

As mentioned above, surveillance of the DOH for Rotavirus commenced in 2015 for certain Rural Health Units. A total of 50 cases was recorded due to rotavirus.

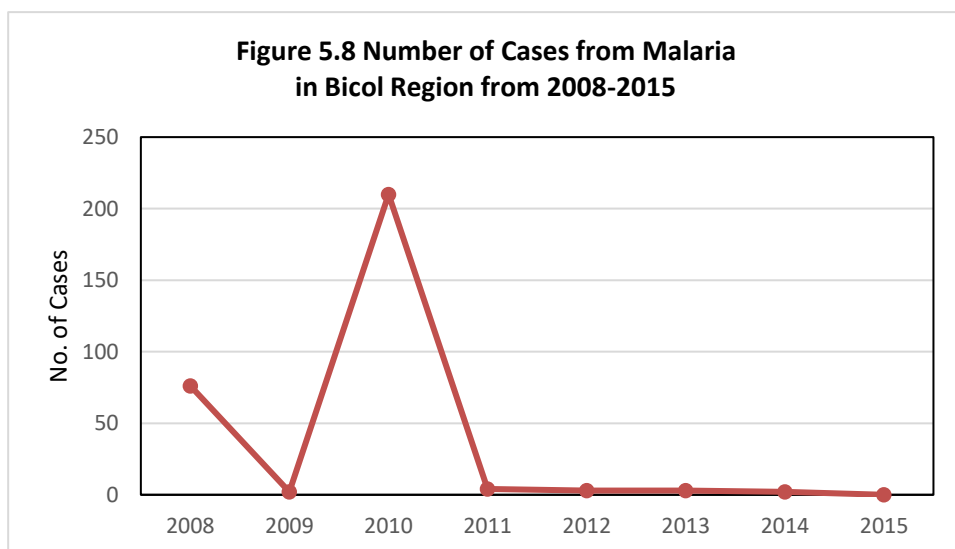
5.2.3 Vector-borne diseases

Vector-borne diseases are those that are transferred by organisms such as insects that have viruses, bacteria, protozoa and other pathogens in them. Statistics on vector-borne diseases were gathered from the Department of Health (DOH). These include the number of cases and deaths for Dengue and Malaria.

A total of 17,998 cases and 83 deaths were reported due to Dengue from 2008 to 2015 in Bicol Region. Figure 5.8 displays the number of cases and deaths caused by Dengue per year. The highest number of deaths occurred in 2010, within 19 recorded deaths. In 2011, the number of cases dropped by 48.45% from the preceding year. However, the number of cases increased again and went up 13.5% higher than the cases recorded in 2010.



Source: Department of Health



Source: Department of Health

Figure 5.9 shows the recorded number of cases due to malaria peaking in 2010 at 210 recorded cases. There was an abrupt decrease in cases from 2010 to the succeeding years and it continuously decreased until 2015 in which there was no recorded cases.

Table 5.4.1
WATER BORNE DISEASES CASES AND DEATHS
Acute Bloody Diarrhea
2008-2015

	2008		2009		2010		2011	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Philippines	436	1	5,323	17	9,050	20	13,392	48
V	0	0	3	0	56	0	7	0

Source: Department of Health

Table 5.4.2
WATER BORNE DISEASES CASES AND DEATHS
Confirmed Cholera
2008-2015

	2008		2009		2010		2011	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Philippines	237	0	114	1	33	2	120	3
V	0	0	5	0	0	0	29	2

Source: Department of Health

Table 5.4.3
WATER BORNE DISEASES CASES AND DEATHS
Confirmed Hepatitis A
2008-2015

	2008		2009		2010		2011	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Philippines	77	1	316	4	385	2	500	2
V	1	0	3	0	2	0	6	0

Source: Department of Health

Table 5.4.4
WATER BORNE DISEASES CASES AND DEATHS
Rotavirus
2015

	Cases	Deaths
Philippines	3,240	44
V	50	0

Source: Department of Health

2012		2013		2014		2015	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
15,080	39	12,058	34	10,774	9	12,833	18
13	0	5	1	2	0	44	0

2012		2013		2014		2015	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
92	2	6	0	17	0	18	0
74	2	0	0	0	0	0	0

2012		2013		2014		2015	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
590	3	599	2	655	2	839	1
8	0	26	0	19	0	8	0

Table 5.4.5
WATER BORNE DISEASES CASES AND DEATHS
Typhoid Fever
2008-2015

	2008		2009		2010		2011	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Philippines	10,284	42	21,136	69	31,833	68	31,276	129
V	527	9	1,194	10	1,282	4	925	14

Source: Department of Health

Table 5.4.6
VECTOR BORNE DISEASES CASES AND DEATHS
Dengue
2008-2015

	2008		2009		2010		2011	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Philippines	46,389	415	57,818	548	173,029	1,057	125,975	654
V	650	7	1,213	3	3,327	19	1,715	7

Source: Department of Health

Table 5.4.7
VECTOR BORNE DISEASES CASES AND DEATHS
Malaria
2008-2015

	2008		2009		2010		2011	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Philippines	639	14	1,982	16	3,300	26	2,620	22
V	76	0	2	0	210	0	4	0

Source: Department of Health

2012		2013		2014		2015	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
38,783	141	35,264	76	28,884	39	31,379	35
806	11	575	5	488	5	370	2

2012		2013		2014		2015	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
187,031	921	204,906	660	121,580	465	213,930	647
3,777	13	2,973	15	2,329	11	2,014	8

2012		2013		2014		2015	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1,543	10	1,555	3	772	8	990	13
3	0	3	0	2	0	-	-

Component Six

*Environment Protection,
Management and Engagement*

COMPONENT SIX

ENVIRONMENTAL PROTECTION, MANAGEMENT AND ENGAGEMENT

Component 6: “Environmental Protection, Management, and Engagement” compiles information on a country’s activities involving the protection and management of its environment. Specifically, this component consists of information on expenditures, regulations, and other activities such as international agreements focusing on the protection of the environment and management of resources.

In the SEEA 2012 Central Framework, environmental protection activities are defined as activities whose primary purpose is to prevent, reduce and eliminate pollution and other forms of environment degradation. In this connection, Environmental Protection Expenditure statistics under Component 6 can be used to compile the Environmental Protection Expenditure Accounts (EPEA), which aims to measure the society’s response to the degradation of the environment.

Aside from expenditure on environmental protection, the component includes information on the institutional strength of environmental authorities and other related agencies, as well as the regulations in place to preserve the environment by setting limits on pollution and extraction from the environment. These regulations act as instruments towards achieving the Sustainable Development Goals on clean energy (SDG 7), responsible consumption and production (SDG 12), protecting life below water and on land (SDGs 14 and 15), and climate change mitigation (SDG 13). The component also focuses on the country’s engagement on global partnership, which is anchored on SDG 17, “Partnership for Goals”.

Component 6 comprises four subcomponents: environmental protection and resource management expenditure; environmental governance and regulation; extreme event preparedness and disaster management; and environmental information and awareness. There are three core statistics recommended by the FDES under this component. One is under environmental protection and resource management expenditure, while the other two are under environmental governance and regulation.

6.1 Environmental protection and resource management expenditure

6.1.1 Annual government environmental protection expenditure

While it is recommended by the FDES to compile information on the expenditures for both activities of both private and public sectors, only the public expenditure on environmental protection is deemed a core statistic. The Department of Budget and Management (DBM) provided information on funds allocated to each department for climate change related activities, waste and wastewater management, environmental protection research and development and other environmental protection related activities. Expenditure allocation for each priority of the National Climate Change Action Plan (NCCAP) was also compiled. The NCCAP is a plan translating the National Framework Strategy on Climate Change (NFSCC) in creating climate change resiliency. It contains strategic priorities such as: food security, water sufficiency, environmental and ecological stability, human security, sustainable energy, climate-smart industry and services, and knowledge and capacity development.

6.2. Environmental governance and regulation

6.2.1 List of regulated pollutants and description

Lists of regulated pollutants were gathered from existing laws and administrative orders of the Department of Environment and Natural Resources. These instruments are enforced to limit the amount of pollutants emitted to air and water.

The Philippine Republic Act No. 8749, also known as the Philippine Clean Air Act, was signed into law on 23 June 1999 to enforce the right to clean air. It sets standards on air pollutants emitted by stationary (i.e. buildings and other immobile structures) and mobile sources (i.e. vehicles), and sets the national ambient quality guidelines for criteria-specific and source-specific hazardous pollutants.

Pursuant to RA 8749, several Department Administrative Orders (DAOs) were also implemented to set limits on mobile vehicle emissions. DAO No. 2010-23 and 2010-24 are recent administrative orders that contain a revised set of guidelines for regulating emissions from compression-ignition (e.g. diesel engine) and spark-ignition (e.g. gasoline engine) motor vehicles, and motorcycles/tricycles and mopeds, respectively. DAO 2013-13 establishes the national ambient air quality guideline for Particulate Matter 2.5, a type of pollutant. As of 2015, DAO No. 2015-04 enforces a set of emissions limits to be followed by Euro 4/IV and In-Use Vehicles. Euro IV vehicles are vehicles calibrated to release emissions following the European emission standards set by the European for cars emitted in the continent.

Apart from regulations on air emissions, the DENR issued administrative orders on regulating water quality. DAO No. 1994-26A revises the National Standards for Drinking Water of 1978 in pursuant of Presidential Decree No. 856, or the Code on Sanitation of the Philippines. It sets the acceptable values of parameters on the bacteriological, biological, chemical, physical, and radiological quality for drinking water, as well as the guidelines for sampling and evaluation.

Furthermore, quality guidelines are enlisted in DAO No. 2016-08 for water bodies. The administrative order sets limits to primary and secondary parameters for each category of fresh and marine surface water and groundwater. Primary parameters include biochemical oxygen demand (BOD), chloride, color, minimum dissolved oxygen, fecal coliform, nitrate (as NO₃-N), pH, phosphate, temperature and total suspended solids. Secondary parameters include several inorganics, organics and metals. The DAO also lists the significant parameters to be monitored for each industry, as well as the maximum allowable limits of effluents.

6.2.2 List of Multilateral Environmental Agreements (MEAs)

Table 6.4 lists 38 of the international conventions, agreements, and organizations that the Philippines is engaged with, as well as their objectives and the dates of signature, ratification, approval, adoption, and/or entry into force.

The oldest organization where the country is a member is the International Hydrographic Organization (IHO). The organization was established in 1921 aimed at nautical navigation safety and marine environment protection.

The Philippines is also part of the United Nations Environmental Assembly (UNEA), the world's highest authority for global environmental agenda. During its first assembly, the UNEA tackled issues on air pollution, waste, and illegal wildlife trade.

Table 6.1.1
CLIMATE CHANGE (CC) EXPENDITURES^{1/} BY DEPARTMENT AND SPECIAL PURPOSE
FY 2015
(In thousand Pesos)

Department/Special Purpose Fund	2015		
	CC Expenditure		
	Adaptation	Mitigation	Total
DEPARTMENTS	99,242,185	10,611,253	109,853,438
Department of Agrarian Reform	-	-	-
Department of Agriculture	13,044,322	283,691	13,328,013
Department of Energy	-	594,246	594,246
Department of Environment and Natural Resources	4,956,661	7,304,373	12,261,034
Department of Finance	-	-	-
Department of Foreign Affairs	1,487	-	1,487
Department of the Interior and Local Government	4,000	-	4,000
Department of Labor and Employment	359,253	-	359,253
Department of National Defense	333,361	1,666	335,027
Department of Public Works and Highways	76,366,503	-	76,366,503
Department of Science and Technology	4,099,477	74,146	4,173,623
Department of Social Welfare and Development	996	-	996
Department of Tourism	-	1,000	-
Department of Trade and Industry	22,000	-	22,000
Department of Transportation (formerly Department of Transportation and Communications)	-	-	-
Department of Transportation and Communications (renamed Department of Transportation)	4,837	2,342,950	2,347,787
National Economic and Development Authority	1,811	-	1,811
Other Executive Offices	47,477	9,181	56,658
SPECIAL PURPOSE FUNDS	1,147,371	19,478	1,166,849
TOTAL	100,389,556	10,630,731	111,020,287

1/ Net of the CC expenditures of Government-Owned and Controlled Corporations (GOCCs) and State Universities and Colleges (SUCs)

2/ The CC expenditures of the Technical Education and Skills Development Authority were lodged under the Department of Labor and Employment in FY 2015–2016, and under Other Executive Offices in FY 2017.

Source: Department of Budget and Management

Table 6.1.2
CLIMATE CHANGE (CC) EXPENDITURES BY NATIONAL CLIMATE
FY 2015
(In thousand Pesos)

Department/Special Purpose Fund	2015		
	CC Expenditure		
	Adaptation	Mitigation	Total
Food Security	13,026,844	283,691	13,310,535
Water Sufficiency	56,101,960	-	56,101,960
Ecosystem and Environmental Stability	4,342,747	7,274,015	11,616,762
Human Security	505,919	-	505,919
Climate Smart Industries and Services	1,423,662	33,024	1,456,686
Sustainable Energy	20,631,044	3,030,820	23,661,864
Knowledge and Capacity Development	4,161,871	-	4,161,871
Cross-Cutting	195,509	9,181	204,690
TOTAL	100,389,556	10,630,731	111,020,287

1/ Net of the CC expenditures of Government-Owned and Controlled Corporations (GOCCs) and State Universities and Colleges (SUCs)

Source: Department of Budget and Management

Table 6.2

DETAILS OF SECTORAL ALLOCATION OF NATIONAL GOVERNMENT

FY 2014-2015

(In thousand pesos)

Particulars	2014	2015
ENVIRONMENTAL PROTECTION	5,396,706	6,679,518
Waste management	1,226,695	1,723,677
State Universities and Colleges (SUCs)	0	0
Region IX - Zamboanga Peninsula	0	0
Zamboanga State College of Marine Sciences and Techn	0	0
Department of Environment and Natural Resources (DENR)	233,158	728,407
Office of the Secretary	128,842	80,000
Environmental Management Bureau	104,316	648,407
Other Executive Offices	0	1,732
Philippine Commission of Women (National Commission on the Role of Filipino Women)	0	1,732
Allocations to Local Government Units	993,537	993,538
Metropolitan Manila Development Authority	993,537	993,538
Waste water management	611,512	525,884
State Universities and Colleges (SUCs)	0	0
Region V - Bicol	0	0
Catanduanes State University	0	0
National Capital Region (NCR)	0	0
University of the Philippines System	0	0
Department of Public Works and Highways (DPWH)	0	10,000
Office of the Secretary	0	10,000
Department of Science and Technology (DOST)	0	10,000
Philippine Science High School	0	10,000
Budgetary Support to Government Corporations	0	0
Department of Public Works and Highways (DPWH)	0	0
Local Water Utilities Administration	0	0
Allocations to Local Government Units	611,512	505,884
Metropolitan Manila Development Authority	611,512	505,884
Pollution abatement	1,489,689	1,545,935
Department of Agriculture (DA)	0	30,856
Office of the Secretary	0	30,856
Department of Environment and Natural Resources (DENR)	850,825	828,137
Environmental Management Bureau	850,825	828,137
Department of Transportation and Communications (DOTC)	526,389	579,612
Philippine Coast Guard	526,389	579,612
Other Executive Offices	112,475	107,330
Pasig River Rehabilitation Commission	96,254	53,618
Philippine Commission of Women (National Commission on the Role of Filipino Women)	15,811	53,712
Presidential Management Staff	410	0
Department of Transportation	0	0
Philippine Coast Guard	0	0

Protection of biodiversity and landscape	1,284,441	1,703,198
State Universities and Colleges (SUCs)	0	3,000
Region XIII—CARAGA	0	3,000
Caraga State University	0	3,000
Department of Environment and Natural Resources (DENR)	1,150,829	1,650,198
Office of the Secretary	1,108,940	1,602,083
Palawan Council for Sustainable Development Staff	41,889	48,115
Department of Interior and Local Government (DILG)	133,612	50,000
Office of the Secretary	133,612	50,000
R&D Environmental protection	88,101	217,319
State Universities and Colleges (SUCs)	0	0
Region XI—Davao	0	0
Davao Oriental State College of Science and Technology	0	0
Department of Environment and Natural Resources (DENR)	88,101	123,319
Environmental Management Bureau	88,101	123,319
Department of Science and Technology (DOST)	0	0
Philippine Atmospheric, Geophysical and Astronomical Services Administration	0	0
Philippine Nuclear Research Institute	0	0
Other Executive Offices	0	94,000
Climate Change Commission	0	94,000
Environmental protection n.e.c.	696,268	963,505
Department of Agriculture (DA)	88,862	366,854
Office of the Secretary	88,862	87,227
Bureau of Fisheries and Aquatic Resources	0	279,627
State Universities and Colleges (SUCs)	0	0
Region V—Bicol	0	0
Catanduanes State University	0	0
Region IX—Zamboanga	0	0
Zamboanga State College of Marine Sciences and Technology	0	0
Department of Environment and Natural Resources (DENR)	136,700	200,933
Office of the Secretary	106,423	140,601
Environmental Management Bureau	30,277	60,332
Department of Public Works and Highways (DPWH)	91,865	0
Office of the Secretary	91,865	0
Other Executive Offices	47,051	119,961
Climate Change Commission	47,051	119,961
Autonomous Region of Muslim Mindanao	331,790	275,757
Autonomous Regional Government in Muslim Mindanao	331,790	275,757

Source: Department of Budget and Management

Table 6.3.1

**INITIAL LIST AND VALUES OF HAZARDOUS AIR POLLUTANTS
FOR NATIONAL AMBIENT AIR QUALITY GUIDELINE FOR CRITERIA POLLUTANTS**

Pollutants	Short Term ¹			Long Term ²		
	µg/Ncm	ppm	Averaging Time	µg/Ncm	ppm	Averaging Time
Suspended Particulate Matter ³						
TSP	230 ⁴		24 hours	90	...	1 year ⁵
PM 10	150 ⁶		24 hours	60	...	1 year ⁵
Sulfur Dioxide ³	180	0.07	24 hours	80	0.03	1 year
Nitrogen Dioxide	150	0.08	24 hours	...	...	...
Photochemical Oxidants	140	0.07	1 hour	...	...	...
As Ozone	60	0.03	8 hours	...	...	...
Carbon Monoxide	35		1 hour	...	...	...
	mg/Ncm	30				
	10	9	8 hours	...	...	...
	mg/Ncm					
Lead ⁷	1.5	...	3 months ⁷	1	...	1 year

¹ Maximum limits represented by ninety-eight percentile (98%) values not to be exceeded more than once per year.

² Arithmetic mean

³ SO₂ and Suspended Particulate matter are sampled once every six days when using the manual methods. A minimum of twelve sampling days per quarter of forty-eight sampling days each year is required for these methods. Daily sampling may be done in the future once continuous analyzers are procured and become available.

⁴ Limits for Total Suspended Particulate Matter with mass median diameter less than 25-50 µm.

⁵ Annual Geometric Mean

⁶ Provisional limits for Suspended Particulate Matter with mass median diameter less than 10 microns and below until sufficient monitoring data are gathered to base a proper guideline.

⁷ Evaluation of this guideline is carried out for 24-hour averaging time and averaged over three moving calendar months. The monitored average value for any three months shall not exceed the guideline value.

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.2
INITIAL LIST AND VALUES OF HAZARDOUS AIR POLLUTANTS
FOR NATIONAL AMBIENT AIR QUALITY STANDARDS FOR SOURCE SPECIFIC AIR
POLLUTANTS FROM INDUSTRIAL SOURCES/ OPERATIONS

Pollutants ¹	Concentration ²		Averaging time	Method of Analysis/ Measurement ³
	µ/Ncm	ppm		
1 Ammonia	200	0.28	30	Nesslerization/IndoPhenol
2 Carbon Disulfide	30	0.01	30	Tischer Method
3 Chlorine and Chlorine Compounds expressed as Cl ²	100	0.03	5	Methyl Orange
4 Formaldehyde	50	0.04	30	Chromotropic acid Method or MBTH Colorimetric Method
5 Hydrogen Chloride	200	0.13	30	Volhard Titration with Iodine Solution
6 Hydrogen Sulfide	100	0.07	30	Methylene Blue
7 Lead	20		30	AAS ³
8 Nitrogen Dioxide	375,260	0.20,0.14	30,60	Greiss- Saltzman
9 Phenol	100	0.03	30	4-Aminoantiphrine
10 Sulfur Dioxide	470, 340	0.18, 0.13	30,60	Colorimetric-Pararosaniline
11 Suspended Particulate Matter - TSP	300	...	60	Gravimetric

¹ Pertinent ambient standards for Antimony, Arsenic.

² Ninety-eight percentile (98%) values of 30-minute

³ Other equivalent methods approved by the Department may be used.

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.3

MAXIMUM LIMITS OF CONCENTRATION OF AIR POLLUTANTS AT THE POINT OF EMISSION WITH RESPECT TO ANY TRADE, INDUSTRY, PROCESS, AND FUEL-BURNING EQUIPMENT OR INDUSTRIAL PLANT

Pollutants	Standard Applicable to Source	Maximum Permissible Limits (mg/Ncm)	Method of Analysis¹
1. Antimony and Its compounds	Any source	10 as Sb	AAS ²
2. Arsenic and its compounds	Any source	10 as As	AAS ²
3. Cadmium and its compounds	Any source	10 as Cd	AAS ²
4. Carbon Monoxide	Any industrial Source	500 as CO	Orsat analysis
5. Copper and its Compounds	Any industrial source	100 as Cu	AAS ²
6. Hydrofluoric Acids and Fluoride compounds	Any source other than the manufacture of Aluminum from Alumina	50 as HF	Titration with Ammonium Thiocyanate
7. Hydrogen Sulfide	i) Geothermal Power Plants	3, 4	Cadmium Sulfide Method
	ii) Geothermal Exploration and well-testing	5	
	iii) Any source other than (i) and (ii)	7 as H ₂ S	Cadmium Sulfide Method
8. Lead	Any trade, industry or process	10 as Pb	AAS ²
9. Mercury	Any Source	5 as elemental Hg	AASb/Cold-Vapor Technique or Hg Analyzer

10. Nickel and its compounds, except Nickel Carbonyl ⁶	Any source	20 as Ni	AAS ²
11. NOx	i) Manufacture of Nitric Acid	2,000 as acid and NOx and calculated as NO ₂	Phenol-disulfonic acid Method
	ii) Fuel burning steam generators		Phenol-disulfonic acid Method
	Existing Source	1,500 as NO ₂	
	New Source		
	• Coal-Fired	1,000 as NO ₂	
	• Oil-Fired	500 as NO ₂	
12. Phosphorus Pentoxide ⁷	iii) Any source other than (i) and (ii)		Phenol-disulfonic acid Method
	Existing Source	1000 as NO ₂	
	New Source	500 as NO ₂	
13. Zinc and its Compounds	Any source	200 as P ₂ O ₅	Spectrophotometry
13. Zinc and its Compounds	Any source	100 as Zn	AAS ²

¹ Other equivalent methods approved by the Department may be used.

² Atomic Absorption Spectrophotometry

³ All new geothermal power plants starting construction by 01 January 1995 shall control H₂S emissions to not more than 150 g/GMW-Hr

⁴ All existing geothermal power plants shall control H₂S emissions to not more than 200 g/GMW-Hr within 5 years from the date of effectivity of these revised regulations.

⁵ Best practicable control technology for air emissions and liquid discharges. Compliance with air and water quality standards is required.

⁶ Emission limit of Nickel Carbonyl shall not exceed 0.5 mg/Ncm.

⁷ Provisional Guideline

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.4
MAXIMUM LIMITS OF PARTICULATES IN STATIONARY SOURCES
In milligram per normal cubic meters (mg/Ncm)

Sources	Maximum Limits (mg/Ncm)
1. Fuel Burning Equipment	
a) Urban or Industrial Area	150
b) Other Area	200
2. Cement Plants (Kilns, etc.)	150
3. Smelting Furnaces	150
4. Other Stationary Sources ¹	200

¹ Other Stationary Sources means a trade, process, industrial plant, or fuel burning equipment other than thermal power plants,
Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.4
MAXIMUM LIMITS OF PARTICULATES IN STATIONARY SOURCES
In milligram per normal cubic meters (mg/Ncm)

Sources	Maximum Limits (mg/Ncm)
1. Fuel Burning Equipment	
a) Urban or Industrial Area	150
b) Other Area	200
2. Cement Plants (Kilns, etc.)	150
3. Smelting Furnaces	150
4. Other Stationary Sources ¹	200

¹ Other Stationary Sources means a trade, process, industrial plant, or fuel burning equipment other than thermal power plants,
Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.6**MAXIMUM LIMITS FOR EXHAUST GAS IN OTHER STATIONARY SOURCES OF POLLUTION,
DAILY AND HALF HOURLY AVERAGE VALUES**

	Daily Average Values	Half Hourly Average Values
Total dust	10 mg/m ³	30 mg/m ³
Gaseous and vaporous organic substances, expressed as total organic carbon	10 mg/m ³	20 mg/m ³
Hydrogen chloride (HCl)	10 mg/m ³	60 mg/m ³
Hydrogen fluoride (HF)	1 mg/m ³	4 mg/m ³
Sulfur dioxide (SO ₂)	50 mg/m ³	200 mg/m ³
Nitrogen monoxide (NO) and Nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for incineration plants with a capacity exceeding 3 tonnes per hour	200 mg/m ³	400 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for incineration plants with a capacity of 3 tonnes per hour or less	300 mg/m ³	
Ammonia	10 mg/m ³	20 mg/m ³

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.7**MAXIMUM LIMITS FOR EXHAUST GAS IN OTHER STATIONARY SOURCES OF POLLUTION, ALL THE AVERAGE VALUES OVER THE SAMPLE PERIOD OF A MINIMUM OF 4 HOURS AND MAXIMUM OF 8 HOURS**

	Average Values over the Sample Period
Cadmium and its compounds, expressed as cadmium (Cd)	total 0.05 mg/m ³
Thallium and its compounds, expressed as thallium (Tl)	total 0.05 mg/m ⁴
Mercury and its Compounds, expressed as mercury (Hg)	0.05 mg/m ³
Antimony and its compounds, expressed as antimony (Sb)	total 0.5 mg/m ³
Arsenic and its compounds, expressed as arsenic (As)	total 0.5 mg/m ⁴
Lead and its compounds, expressed as lead (Pb)	total 0.5 mg/m ⁵
Chromium and its compounds, expressed as chromium (Cr)	total 0.5 mg/m ⁶
Cobalt and its compounds, expressed as cobalt (Co)	total 0.5 mg/m ⁷
Copper and its compounds, expressed as copper (Cu)	total 0.5 mg/m ⁸
Manganese and its compounds, expressed as manganese (Mn)	total 0.5 mg/m ⁹
Nickel and its compounds, expressed as nickel (Ni)	total 0.5 mg/m ¹⁰
Vanadium and its compounds, expressed as vanadium (V)	total 0.5 mg/m ¹¹
Tin and its compounds, expressed as tin (Sn)	total 0.5 mg/m ¹²

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.8
EMISSION LIMITS FOR LIGHT DUTY VEHICLES TYPE APPROVAL (DIRECTIVE 91/441/EEC)

CO (g/km) ¹	HC + Nox (g/km) ²	PM (g/km) ³
2.72	0.97	0.14

¹ Carbon Monoxide in gram per kilometer

² Hydrocarbons plus Nitrogen oxides in gram per kilometer

³ Particulate matter in gram per kilometer; value for compression-ignition engines only

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.9
EMISSION LIMITS FOR LIGHT COMMERCIAL VEHICLES TYPE APPROVAL (DIRECTIVE 93/59/EEC)

	Reference Weight (RW) (kg)	CO (g/km) ¹	HC + NOx (g/km) ²	PM (g/km) ³
Category 1	1250 < RW	2.72	0.97	0.14
Category 2	1250 < RW < 1700	5.17	1.40	0.19
Category 3	RW > 1700	6.90	1.70	0.25

¹ Carbon Monoxide in gram per kilometer

² Hydrocarbons plus Nitrogen oxides in gram per kilometer

³ Particulate matter in gram per kilometer; value for compression-ignition engines only

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.10

EMISSION LIMITS FOR HEAVY DUTY VEHICLES TYPE APPROVAL (DIRECTIVE 91/542/EEC)

CO (g/k/Wh)	HC (g/k/Wh)	NOx (g/k/Wh)	PM (g/k/Wh)
4.5	1.1	8	0.36 ¹

¹ Carbon Monoxide in grams per kilowatt-hour

Source: RA 8749 - Philippine Clean Air Act of 1999

Table 6.3.11

TYPE APPROVAL EMISSION LIMITS FOR PASSENGER VEHICLES (M) AND LIGHT DUTY VEHICLES (N1), EURO 2

Category/Class of Vehicle**		Limit Values					
		Reference Mass RW (kg)	Mass of Carbon Monoxide L ₁ (g/km)		Combined Mass of Hydrocarbons and Oxides of Nitrogen L ₂ (g/km)		Mass of Particulates L ₃ (g/km)
			Petrol	Diesel	Petrol	Diesel ⁽¹⁾	Diesel ⁽¹⁾
Category	Class						
M ⁽²⁾	-	all	2.20	1.0	0.5	0.7	0.08
	I	RW ≤ 1,250	2.2	1.0	0.5	0.7	0.08
N ₁ ⁽³⁾	II	1,250 < RW ≤ 1,700	4.0	1.25	0.6	1.0	0.12
	III	1,700 < RW	5.0	1.5	0.7	1.2	0.17

⁽¹⁾ Until 01 January 2011, for vehicles fitted with diesel engines of the direct injection type, the limit values L₂ and L₃ are the following:

	L ₁	L ₂
category M ⁽²⁾ and N ₁ ⁽²⁾ class	0.9	0.10
category N ₁ ⁽³⁾ class II	1.3	0.14
category N ₁ ⁽³⁾ class III	1.6	0.20

⁽²⁾ Except:

- vehicles designed to carry more than six occupants including the driver
- vehicles whose maximum mass exceed 2,500 kg

⁽³⁾ And those category M vehicles which are specified in footnote ⁽²⁾

Source: Department of Environment and Natural Resources Administrative Order No. 2010-23

**For the purpose of this DAO, "vehicle category" refers to a classification of power-drive vehicles in accordance with PNS 1891

Table 6.3.12**EMISSION LIMITS FOR HEAVY DUTY VEHICLE TYPE APPROVAL (EURO II)**

Type of Engine	Class of Vehicle	CO (g/kWh)	HC (g/kWh)	NO _x (g/kWh)	PM (g/kWh)
Compression-ignition	Heavy Duty Vehicles	4.0	1.1	7.0	0.15

Source: Department of Environment and Natural Resources Administrative Order No. 2010-23

Table 6.3.13**EMISSION STANDARDS FOR VEHICLES WITH SPARK-IGNITION ENGINES (GASOLINE)*, **
EXCEPT MOTORCYCLES**

Vehicle Registration	CO	HC
Registered for the first time after	0.5	250
Registered for the first time on or	3.5	600
Registered for the first time prior to	4.5	800

*at idle **Subject to Sec.8, Validity of Certificate of Conformity (COC)

Source: Department of Environment and Natural Resources Administrative Order No. 2010-23

Table 6.3.14**EMISSION STANDARDS FOR VEHICLES WITH COMPRESSION-IGNITION ENGINES (DIESEL)*, ****

Vehicle Registration	Light absorption coefficient
Registered for the first time after	2
Registered for the first time on or	2.5
Registered for the first time prior to	2.5

*at idle **Subject to Sec.8, Validity of Certificate of Conformity (COC)

Source: Department of Environment and Natural Resources Administrative Order No. 2010-23

Table 6.3.15**EMISSION STANDARDS FOR REBUILT AND IMPORTED USED VEHICLES**

Vehicle Registration	CO ^a (% by Volume)	Hc ^a (ppm as Hexane)	Light absorption coefficient m-1-k
Registered for	0.5	2.50	2.0

a - spark-ignition (gasoline) motor vehicles

b - for compression-ignition (diesel) motor vehicles

* applicable only to vehicles listed in Sec 3.1.1-3.1.5 of Executive Order 156

Source: Department of Environment and Natural Resources Administrative Order No. 2010-23

Table 6.3.16**EMISSION LIMITS FOR MOTORCYCLE (L3)****LEVEL 1 WITH EFFECTIVITY TWO (2) YEARS AFTER THE APPROVAL DATE OF THIS ADMINISTRATIVE ORDER**

Class (cc)	Emission Limits (g/km) for Type Approval and Conformity of Production		
	Carbon Monoxide (CO)	Hydrocarbons (HC)	Oxides of Nitrogen (NOx)
<150	5.5	1.2	0.3
>150	5.5	1	0.3

Source: Department of Environment and Natural Resources Administrative Order No. 2010-24

Table 6.3.17**EMISSION LIMITS FOR MOTORTRICYCLE/TRICYCLE(L4)**

Class (cc)	Emission Limits (g/km) for Type Approval and Conformity of Production		
	Carbon Monoxide (CO)	Hydrocarbons (HC)	Oxides of Nitrogen (NOx)
All	7	1.5	0.4

Source: Department of Environment and Natural Resources Administrative Order No. 2010-24

Table 6.3.18**EMISSION LIMITS FOR MOTORCYCLE (L3)****LEVEL 2 WITH EFFECTIVITY THREE (3) YEARS AFTER THE EFFECTIVITY OF LEVEL 1**

Class (cc)	Emission Limits (g/km)		
	Carbon Monoxide (CO)	Hydrocarbons (HC)	Oxides of Nitrogen (NOx)
<150	2.0	0.8	0.15
(UDC cold)[1] >150	2.0	0.3	0.15
(UDC + EUD cold) [2]	2.0	0.3	0.15

[1] Test cycle: ECE* R40 (emission measured for all six modes - sampling starts at T=0)

[2] Test cycle: ECE* R40 + EUDC** (emissions measure from all modes - sampling starts at T=0, with the maximum speed of 120km/h)

*Economic Commission for Europe

**Extra Urban Driving Cycle

Source: Department of Environment and Natural Resources Administrative Order No. 2010-24

Table 6.3.18
EMISSION LIMITS FOR MOTORCYCLE (L3)

LEVEL 2 WITH EFFECTIVITY THREE (3) YEARS AFTER THE EFFECTIVITY OF LEVEL 1

Class (cc)	Emission Limits (g/km)		
	Carbon Monoxide (CO)	Hydrocarbons (HC)	Oxides of Nitrogen (NOx)
<150 (UDC cold)[1]	2.0	0.8	0.15
>150 (UDC + EUD cold) [2]	2.0	0.3	0.15

[1] Test cycle: ECE* R40 (emission measured for all six modes - sampling starts at T=0)

[2] Test cycle: ECE* R40 + EIDC** (emissions measure from all modes - sampling starts at T=0,

with the maximum speed of 120km/h)

*Economic Commission for Europe

**Extra Urban Driving Cycle

Source: Department of Environment and Natural Resources Administrative Order No. 2010-24

Table 6.3.19
EMISSION LIMITS FOR MOPED (L1)

Effectivity	Emission Limits (g/km) for Type Approval and	
	Carbon Monoxide (CO)	Hydrocarbons + Oxides of Nitrogen (HC + NOx)
Level 1 - Two (2) years after the approval of this DAO	6 (1)	3 (1)
Level 2 - Three (3) years after the implementations of Level 1	1 (2)	1.2

(1) The limit values for the masses of CO and HC+NOx are multiplied by a factor of 2 in the case of three-wheel mopeds;

(2) The limit for the mass of CO must be 3.5 g/km in case of three-wheel mopeds

Source: Department of Environment and Natural Resources Administrative Order No. 2010-24

Table 6.3.20
EMISSION LIMITS FOR IN-USE MOTORCYCLE/TRICYCLE AND MOPED

Vehicle Registration Date	Emission Standards		
	Carbon Monoxide (% by vol.)	Hydrocarbon (ppm)	White smoke (% opacity)
Registered for the first time prior to January 1, 2003	6	6,500	30
Registered for the first time from January 1, 2003 up to December 31, 2011	4.5	6,500	30
Registered for the first time on or after January 1, 2012	3.5	4,500	30

Source: Department of Environment and Natural Resources Administrative Order No. 2010-24

Table 6.3.21
THE PROVISIONAL NATIONAL AMBIENT AIR QUALITY GUIDELINE VALUES (NAAQGV) FOR PM_{2.5}

Pollutant	Short-term ⁽¹⁾		Long-term ⁽²⁾		Implementation Period
	µg/Ncu.m.	Averaging time	µg/Ncu.m.	Averaging time	
PM _{2.5}	75 ⁽³⁾	24 hours	35 ⁽³⁾	1 Year	Upon effectivity date of the DAO until 31 December 2015
	50 ⁽³⁾	24 hours	25 ⁽³⁾	1 Year	01 January 2016

⁽¹⁾ Maximum limits represented by ninety eight percentile (98%) values not to be exceeded more than once a year

⁽²⁾ Annual Geometric Mean

⁽³⁾ These are provisional guideline values and shall be reviewed yearly to determine the course of

Source: Department of Environment and Natural Resources Administrative Order 2013-13

Table 6.3.22

**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
STANDARD VALUES FOR BACTERIOLOGICAL QUALITY**

Source and Mode of Supply	Bacteria	Standard Value (No./100mL)
a. All drinking-water supplies under all circumstances (Level I, II, III, Bottled water and Emergency Water Supplies)	E. Coli or Thermotolerant (fecal) coliform bacteria	0
b. Treated water entering distribution system	E. Coli or Thermotolerant (fecal) coliform bacteria	0
	Total coliforms	0
c. Treated water in the distribution system	E. Coli or Thermotolerant (fecal) coliform bacteria	0
	Total coliforms	Must not be detectable in any 100ml sample. In case of large supplies where sufficient samples are examined, it must not be present in 95% of samples taken throughout any twelve month period

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.23**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
STANDARD VALUE FOR BIOLOGICAL ORGANISMS**

Constituents	Permissible Limit
Total Count/mL	10

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.24**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
STANDARD VALUES FOR PHYSICAL AND CHEMICAL QUALITY: HEALTH SIGNIFICANCE****A. Inorganic Constituents**

Constituents	Maximum Level (mg/L)
Antimony	0.005
Arsenic	0.01
Barium	0.7
Boron	0.3
Cadmium	0.003
Chromium	0.05
Cyanide	0.07
Fluoride	1
Lead	0.01
Mercury (total)	0.001
Nitrate as NO ₃	50
Nitrate as NO ₂	3
Selenium	0.01

B. Organic Constituents (Pesticides)

Constituents	Maximum Level (µg/L)
Aldrin & Dieldrin	0.03
Chlordane	0.2
DDT	2
Endrin	0.2
Heptachlor and Heptachlor epoxide	0.03
Lindane	2
Methoxychlor	20
Petroleum oils & grease	nil
Toxyphane	5
2,4 - D	30
2,4,5 - T	9

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.25**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
STANDARD VALUES FOR PHYSICAL AND CHEMICAL QUALITY: AESTHETIC QUALITY**

Constituent or Characteristic	Maximum Level (mg/L)
Taste	Unobjectionable
Odor	Unobjectionable
Color	5 TCU
Turbidity	5NTU
Aluminum	0.2
Chloride	250
Copper	1
Hardness	300 (as CaCo3)*
Hydrogen Sulfide	0.05
Iron	1
Manganese	0.5
pH	6.5-8.5
Sodium	200*
Sulfate	250
Total Dissolved Solids	500
Zinc	5*

*Secondary standards: compliance with the standard and analysis are not obligatory

TCU True Color Unit NTU Nephelometric Turbidity Unit

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.26**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
STANDARD VALUES FOR DISINFECTANTS AND DISINFECTANT BY-PRODUCTS**

Constituents	Maximum Level (mg/L)
a. Disinfectant Chlorine (residual)	0.2-0.5
b. Disinfectant By-products	
Bromate	0.025
Chlorite	0.2
2,4,6 trichlorophenol	0.2
Formaldehyde	0.9
Phenolic substances	0.001
Bromoform	0.1
Dibromochloromethane	0.1
Bromodichloromethane	0.06
Chloroform	0.2

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.27

**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
CHEMICALS OF NO HEALTH SIGNIFICANCE AT CONCENTRATIONS
NORMALLY FOUND IN DRINKING WATER**

Asbestors	in consonance with the findings of WHO, the Department of Health does not prescribe any standard values for these compounds since they are not hazardous to human health at concentrations normally found in drinking water
Silver	
Tin	

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.27

**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
CHEMICALS OF NO HEALTH SIGNIFICANCE AT CONCENTRATIONS
NORMALLY FOUND IN DRINKING WATER**

Asbestors	in consonance with the findings of WHO, the Department of Health does not prescribe any standard values for these compounds since they are not hazardous to human health at concentrations normally found in drinking water
Silver	
Tin	

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.28

**STANDARD PARAMETERS AND VALUES FOR DRINKING-WATER QUALITY
STANDARD VALUES FOR RADIOLOGICAL CONSTITUENTS**

Constituents	Activity Level (Bq/L)
gross alpha activity	0.1
gross beta activity	1

Source: Department of Environment and Natural Resources Administrative Order 26-A Series of 1994

Table 6.3.29

VEHICLE EMISSION LIMITS FOR EURO 4/IV, AND IN-USE VEHICLE EMISSION STANDARDS

Types of Vehicles	Category/Class of		Reference Mass	CO (g/kWh)
	Category	Class	RW (kg)	Petrol
a.1) New passenger vehicles, M and light duty, N1 with Euro 2/Euro 3 engines	M (1)	-	all	2.0
	N1 (2)	I	RW≤1,250	2.0
		II	1,250<RW≤1,700	3.0
		III	1,700<RW	4.0
a.2) New passenger vehicles, M and light duty, N1 with Euro 4 engines				
b.1) New heavy duty vehicles with Euro II/Euro III engines	CO (g/kWh)		HC (g/kWh)	
	2.45		0.73	
b.2) New heavy duty vehicles with Euro IV engines				
c.1) New motorcycles, tricycles and mopeds with Euro 2 engines	Class (cc)		CO (g/km)	
	<150 cc. (1.3)		4.5 (5.0)	
	≥150 cc. (1.3)		4.5 (5.0)	
c.2) New motorcycles, tricycles and mopeds with Euro 2 engines	All (L4)		6.5	
	CO (% by vol.)			
d) In-use, rebuilt and imported used passenger cars light duty and heavy duty vehicles	0.25 [registered for the first time on or after July 1, 2017]		100 [registered for the first time on or after July 1, 2017]	
	0.5 [registered for the first time after July 1, 2017]		250 [registered for the first time after July 1, 2017]	
f) In-use motorcycles, tricycles and mopeds	2.5 [registered for the first time on or after July 1, 2017]		1,000 [registered for the first time on or after July 1, 2017]	
	3.5 [registered for the first time on or after July 1, 2017]		4,500 [registered for the first time on or after July 1, 2017]	
	4.5 [registered for the first time before July 1, 2017]		6,000 [registered for the first time before July 1, 2017]	

Source: Department of Environment and Natural Resources Administrative Order No. 2015-04, effective July 1, 2017

Emission Limits/Standards					
g/km)		HC + NOx		Particulate (PM)	
Diesel	Petrol	Diesel	Petrol	Diesel	
0.9	0.3	0.6	-	0.05	
0.9	0.3	0.6	-	0.05	
1.2	0.4	0.8	-	0.10	
1.4	0.5	1.0	-	0.15	
Euro 4					
NOx (g/kWh)			PM (g/kWh)		
6.9			0.14		
Euro IV					
HC(g/km)			NOx(g/km)		
0.80 (1.1)			0.20 (.29)		
0.70 (0.9)			0.20 (.29)		
1.0			0.39		
Euro 3					
HC(ppm)		Light Absorption Coefficient, m ⁻¹			
<i>the first time on or after</i>		1.0 [registered for the first time on or after July 1, 2017]			
<i>the first time after December 31, 2007]</i>		2.0 [registered for the first time after December 31, 2015]			
<i>or the first time on or after</i>		20% smoke opacity			
<i>or the first time on or after January 1,</i>		30% smoke opacity			
<i>or the first time before</i>		30% smoke opacity			
<i>ve July 1, 2015</i>					

Table 6.3.30
WATER QUALITY GUIDELINES FOR PRIMARY PARAMETERS

Parameter	Unit			
		AA	A	B
BOD	mg/L	1	3	5
Chloride	mg/L	250	250	250
Color	TCU	5	50	50
Dissolved Oxygen ^(a) (Minimum)	mg/L	5	5	5
Fecal Coliform	MPN/100mL	<1.1	<1.1	100
Nitrate as NO ₃ -N	mg/L	7	7	7
pH (range)		6.5-8.5	6.5-8.5	6.5-8.5
Phosphate	mg/L	<0.003	0.5	0.5
Temperature ^(b)	°C	26-30	26-30	26-30
Total Suspended Solids	mg/L	25	50	65

Notes:

MPN/100mL - Most Probable Number per 100 milliliter

n/a - Not Applicable

TCU - True Color Unit

(a) Samples shall be taken from 9:00 AM to 4:00 PM

(b) The natural background temperature as determined by EMB shall prevail if the temperature is lower or higher than the WQG; provided that the m

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

Table 6.3.31
WATER QUALITY GUIDELINES FOR SECONDARY PARAMETERS-INORGANICS

Parameter	Unit			
		AA	A	B
Ammonia as NH ₃ -N	mg/L	0.05	0.05	0.05
Boron	mg/L	0.5	0.5	0.5
Fluoride	mg/L	1	1	1
Selenium	mg/L	0.01	0.01	0.01
Sulfate	mg/L	250	250	250

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

Water Body Classification					
C	D	SA	SB	SC	SD
7	15	n/a	n/a	n/a	n/a
350	400	n/a	n/a	n/a	n/a
75	150	5	50	75	150
5	2	6	6	5	2
200	400	<1.1	100	200	400
7	15	10	10	10	15
6.5-9.0	6.0-9.0	7.0-8.5	7.0-8.5	6.5-8.5	6.0-9.0
0.5	5	0.1	0.5	0.5	5
25-31	25-32	26-30	26-30	25-31	25-32
80	110	25	50	80	110

maximum increase in only up to 10 percent and that it will not cause any risk to human health and the environment

Water Body Classification					
C	D	SA	SB	SC	SD
0.05	0.75	0.04	0.05	0.05	0.75
0.75	3	0.5	0.5	5	20
1	2	1.5	1.5	1.5	3
0.02	0.04	0.01	0.01	0.1	0.2
275	500	250	250	275	500

Table 6.3.32**WATER QUALITY GUIDELINES FOR SECONDARY PARAMETERS-METALS(C)**

Parameter	Unit			
		AA	A	B
Arsenic	mg/L	0.01	0.01	0.01
Barium	mg/L	0.7	0.7	0.7
Cadmium	mg/L	0.003	0.003	0.003
Chromium as Hexavalent	mg/L	0.01	0.01	0.01
Chromium (Cr ⁶⁺)				
Copper as Dissolved Copper	mg/L	0.02	0.02	0.02
Iron	mg/L	1	1	1
Lead	mg/L	0.01	0.01	0.01
Manganese	mg/L	0.2	0.2	0.2
Mercury	mg/L	0.001	0.001	0.001
Nickel	mg/L	0.02	0.02	0.04
Zinc	mg/L	2	2	2

Note:

(c) Unless otherwise specified, the above parameters are expressed as total metals.

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

Water Body Classification					
C	D	SA	SB	SC	SD
0.02	0.04	0.01	0.01	0.02	0.04
3	4	0.1	0.7	1	4
0.005	0.01	0.003	0.003	0.005	0.01
0.01	0.02	0.05	0.05	0.05	0.1
0.02	0.04	0.02	0.02	0.02	0.04
1.5	7.5	1.5	1.5	1.5	7.5
0.05	0.1	0.01	0.01	0.05	0.1
0.2	2	0.4	0.4	0.4	4
0.002	0.004	0.001	0.001	0.002	0.004
0.2	1	0.02	0.04	0.06	0.3
2	4	0.04	0.05	0.8	1.5

Table 6.3.33

WATER QUALITY GUIDELINES FOR SECONDARY PARAMETERS-ORGANICS

Parameter	Unit			
		AA	A	B
Benzo(a)pyrene	µg/L	0.7	0.7	0.7
BTEX				
Benzene	mg/L	0.01	0.01	0.01
Toluene	mg/L	0.7	0.7	1
Ethylbenzene	mg/L	0.3	0.3	0.3
Xlenes	mg/L	0.5	0.5	0.5
Cyanide as Free Cyanide	mg/L	0.07	0.07	0.07
Organophosphate as Malathion	mg/L	1	1	1
Oil and Grease	mg/L	<1	1	1
Polychlorinated Biphenyls ^(d)	µg/L	<0.1	<0.1	0.2
Phenol & Phenolic Substances ^(e)	mg/L	<0.001	<0.001	<0.001
Surfactants (MBAS)	mg/L	<0.025	0.2	0.3
Trichloroethylene	mg/L	0.07	0.07	0.07
Total Organochlorine Pesticides ^(f)	µg/L	n/a	n/a	50
Aldrin	µg/L	0.03	0.03	n/a
Chlordane	µg/L	0.2	0.2	n/a
Dichlorodiphenyltri-chloroethane	µg/L	1	1	n/a
Dieldrin	µg/L	0.03	0.03	n/a
Endrin	µg/L	0.6	0.6	n/a
Heptachlor	µg/L	0.03	0.03	n/a
Lindane	µg/L	2	2	n/a
Methoxychlor	µg/L	50	50	n/a
Toxaphene	µg/L	4	4	n/a

Notes:

CAS-Chemical Abstracts Service

IUPAC-International Union of Pure and Applied Chemistry

MBAS - Methylene Blue Active Substances

µg/L - microgram per liter

(d) Polychlorinated Biphenyls (PCBs) include the nine Aroclors and 19 individual PCB congeners described below:

Water Body Classification

C	D	SA	SB	SC	SD
1.5	3	0.7	0.7	1.5	3
0.05	0.5	0.01	0.01	0.05	0.5
4	5	1	1	4	5
1.5	2	0.2	0.2	1.5	2
1.5	1.8	0.5	0.5	1.5	1.8
0.1	0.2	0.02	0.02	0.1	0.2
3	6	1	1	3	6
2	5	1	2	3	5
0.5	1	0.3	0.3	0.5	1
0.05	0.5	<0.001	<0.001	0.05	0.5
1.5	3	0.3	0.3	1.5	3
0.9	2	0.07	0.07	0.9	2
50	50	50	50	50	50
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a

Compound	CAS#	IUPAC#
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	52
2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	66
2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	87
2,2',4,4,5'-Pentachlorobiphenyl	37680-73-2	101
2,3,3',4',6'-Pentachlorobiphenyl	38380-03-9	110
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	138
2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	141
2,2',3,5,5',6'-Hexachlorobiphenyl	52663-63-5	151
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	153
2,2',3,3',4,4',5,5'-Heptachlorobiphenyl	35065-30-6	170
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	180
2,2',3,4,4',5',6'-Heptachlorobiphenyl	52663-69-1	183
2,2',3,4',5,5',6'-Heptachlorobiphenyl	52663-68-0	187
2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	40186-72-9	206

); Total Organochlorine Pesticides shall be monitored, which refers to the organochlorine pesticides listed in Table 0-6 plus Benzene Hexachloride

Table 6.3.34

GROUNDWATER QUALITY GUIDELINES

Intended Beneficial Use	Groundwater Quality Guidelines
Source of Potable Water	Adopt Class A WQG (except BOD and
Bathing and Other Primary	Adopt Class B WQG (except BOD and
Irrigation, Fish Culture,	Adopt Class C WQG (except BOD, Dissolved

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

Table 6.3.35

SIGNIFICANT EFFLUENT QUALITY PARAMETERS PER SECTOR

PSIC	Industry Category	Significant Parameters
A. Agriculture, Forestry, Fishing		
014	Animal production	BOD, Total Suspended Solids, Total Coliform (for
032	Aquaculture (excluding fish)	BOD, Total Suspended Solids, Ammonia, Nitrate,
B. Mining and Quarrying		
05	Mining of coal and lignite	Color, pH, Total Suspended Solids, Nitrate, Sulfate,
06	Extraction of crude petroleum	pH, Total Suspended Solids, Sulfate, Fluoride, Barium,
07100	Mining of iron ores	Color, pH, Total Suspended Solids, Nitrate,
	Mining of precious metal ores	
	Gold ore mining	pH, Total Suspended Solids, Nitrate, Cyanide, Copper,
	Silver ore mining	pH, Total Suspended Solids, Nitrate, Cyanide, Copper,
0722	Platinum ore mining	pH, Total Suspended Solids, Nitrate, Sulfate, Cyanide,
07291	Copper ore mining	pH, Total Suspended Solids, Nitrate, Sulfate, Cyanide,
07292	Chromite ore mining	pH, Total Suspended Solids, Nitrate, Chromium,
07293	Manganese ore mining	pH, Total Suspended Solids, Nitrate, Manganese,
07294	Nickel ore mining	pH, Total Suspended Solids, Manganese, Arsenic,
08913	Pyrite mining	pH, Total Suspended Solids, Sulfate, Manganese,
08914	Rock phosphate mining	pH, COD, Total Suspended Solids, Ammonia,
C. Manufacturing		
10110	Slaughtering and meat packing	Temperature, pH, BOD, Total Suspended Solids,
10120	Production precrossing and	Temperature, pH, BOD, Total Suspended Solids, Oil
1020	Processing and preserving of	Temperature, pH, BOD, Total Suspended Solids,
10205	Processing of seaweeds;	Temperature, pH, COD, Total Suspended Solids
1030	Processing and preserving of	Temperature, pH, BOD, Total Suspended Solids, Oil
104	Manufacture of vegetable and	Temperature, pH, BOD, Total Suspended Solids,
105	Manufacture of dairy products	Temperature, pH, BOD, Total Suspended Solids,
106	Manufacture of grain mill	Temperature, pH, COD, Total Suspended Solids,
10610	Rice/corn milling	BOD, Total Suspended Solids
10621	Cassava flour milling	BOD, Total Suspended Solids, Cyanide
107	Manufacture of other food	Temperature, BOD, Total Suspended Solids, Oil and
1072	Manufacture of sugar	
	Sugar milling	Temperature, pH, BOD, Total Suspended Solids,
	Sugar refining	Temperature, pH, COD, Total Suspended Solids,
10800	Manufacture of prepared animal	Temperature, pH, BOD, Total Suspended Solids,
11	Manufacture of beverages	Color, Temperature, pH, BOD, Total Suspended
12	Manufacture of tobacco products	Color, Temperature, pH, COD, Total Suspended
13	Manufacture of textiles	Color, Temperature, pH, BOD, COD, Chromium,
14	Manufacture of wearing apparel	Temperature, pH, Surfactants, Color, COD
15110	Tanning and dressing of leather	Color, pH, COD, Total Suspended Solids, Total
1621	Manufacture of veneer sheets;	COD, Total Suspended Solids, Nitrate, Sulfate, Boron,
17012	Pulp milling including	Color, Temperature, pH, COD, Total Suspended
17013	Paper and paperboard milling	Color, Temperature, pH, COD, Total Suspended
18110	Printing	Color, pH, COD, Total Suspended Solids, Cadmium,
19100	Manufacture of coke oven	Temperature, pH, COD, Total Suspended Solids,
19200	Manufacture of refined	Temperature, pH, COD, Total Suspended Solids,
19900	Manufacture of refined	Temperature, pH, COD, Total Suspended Solids, Oil
20111,	Manufacture of ethanol	
20114	Manufacture of ethanol for:	Temperature, pH, BOD, Total Suspended Solids,

20112	Blending of ethanol for Manufacture of industrial	pH, COD Temperature, pH, COD, Nitrate, Sulfate, Chloride,
20113,	Manufacture of inorganic,	Color, Temperature, pH, COD, Total Suspended
20116,	organic and other basic	Solids and other parameters depending on the major
20117,	chemicals	chemical/s manufactured
20119		
20115	Manufacture of alcohol except	Temperature, pH, COD, and metals depending on the
20120	Manufacture of fertilizers and	Temperature, pH, COD, Total Suspended Solids,
2013	Manufacturing of plastics and	Temperature, pH, COD, Ammonia, Sulfate, Cyanide,
20210	Manufacture of pesticides and	pH, COD, Total Suspended Solids, Oil and Grease,
2022,	Manufacture of paints, ink,	Color, Temperature, pH, COD, Total Suspended
20293	varnishes and similar coating	Solids, Barium, Selenium, Chromium, Nickel, Copper,
2023	Manufacture of soap and	Temperature, pH, COD, Total Suspended Solids,
20294	Manufacture of glues and adhesives	
	Synthetic glues and adhesives	pH, COD, Cyanide, Zinc, Mercury, Oil and Grease,
	Animal/plant derived glues and	ph,COD, Boron, Chloride
20299	Manufacture of miscellaneous	Color, pH, Temperature, COD, Total Suspended
2030	Manufacture of man-made fibers	Temperature, COD, Total Suspended Solids
21001	Manufacture of drugs and	pH, COD, Total Suspended Solids
2310	Manufacture of glass and glass	Color, Temperature, pH, Total Suspended Solids,
239	Manufacture of ceramics, clay	Color, Temperature, pH, COD, Chromium, Copper,
23940	Manufacture of cement	Temperature, pH, Total Suspended Solids
241,	Manufacture of iron and steel	Temperature, pH, COD, Total Suspended Solids,
2431		Ammonia, Nitrate, Phosphate, Sulfate, Fluoride,
24210	Manufacture of precious metals	Temperature, pH, COD, Total Suspended Solids,
24220	Non-ferrous smelting and	Temperature, pH, COD, Total Suspended Solids,
24230	Non-ferrous rolling, drawing and	Temperature, pH, COD, Total Suspended Solids,
24240	Manufacture of pipe fittings of	Temperature, pH, COD, Total Suspended Solids,
24290	Manufacture of basic precious	Temperature, pH, COD, Total Suspended Solids,
2431	Casting/foundry of iron and steel	Temperature, pH, COD, Total Suspended Solids,
2432	Casting of Non-ferrous metal	Temperature, pH, COD, Total Suspended Solids,
25920	Treatment, coating, and	pH, COD, Total Suspended Solids, Ammonia, Nitrate,
261	Manufacture of electronic	pH, COD, Total Suspended Solids, Fluoride, Chloride,
2720	Manufacture of batteries and	pH, COD, Total Suspended Solids, Fluoride,
D. Electricity, Gas, Steam and Air Conditioning Supply		
35100	Electric power generation (except transmission and distribution)	
	Coal	Temperature, pH, COD, Total Suspended Solids,
	Natural gas	Temperature, pH, COD, Total Suspended Solids,
	Oil (Petroleum)	Temperature, pH, COD, Total Suspended Solids,
	Geothermal	Temperature, pH, COD, Total Suspended Solids,
	Hydro	Oil and Grease
	Biomass	Temperature, pH, COD, Total Suspended Solids, and
35200	Manufacture of gas; distribution	Temperature, pH, COD, Total Suspended Solids,
35300	Air conditioning supply and	Temperature, pH, COD, Ammonia, Nitrate,
E. Water Supply; Sewerage, Waste Management and Remediation Activities		
36000	Water collection, treatment and	pH, Total Suspended Solids, Chloride, Fluoride, Iron
37000	Sewerage (operation of sewer	BOD, Fecal Coliform, Ammonia, Nitrate, Phosphate,
38210	Treatment and disposal of non-	Color, Temperature, pH, COD, Total Suspended
38220	Treatment and disposal of	Color, Temperature, pH, COD, Total Suspended
39000	Remediation activities and other	Color, Temperature, pH, COD, Total Suspended
G. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles		

452, 454 47300, 4661	Maintenace and repair of vehicles, their parts and Wholesale and retail sale of automotive fuels	Color, pH, Total Suspended Solids, Ammonia, Nitrate, Nickel, Cadmium, Mercury, Lead, Oil and Grease, Total Suspended Solids, Oil and Grease, Benzen, Toluene, Ethylbenzene, Xylenes, Benzo(a)pyrene
H. Transportation and Storage		
52104	Cold storage	Color, Temperature, pH, COD, Total Suspended
I. Accommodation and Food Services		
55 56	Hotels, motels, resorts, Restaurants, food chains, bars	BOD, Fecal Coliform, Ammonia, Nitrate, Phosphate, BOD, Total Suspended Solids, Oil and Grease,
J. Real Estate Activities		
681	Real estate activities with own or	BOD, Fecal Coliform, Ammonia, Nitrate, Phosphate,
M. Professional, Scientific and Technical Activities		
71200 7210 75	Technical testing and analysis Research and experimental Veterinary activities	All significant parameters depending on the nature of All significant parameters depending on the nature of Color, pH, COD, Total Suspended Solids, Fecal
P. Education		
85	Public and private education	BOD, Fecal Coliform, Ammonia, Nitrate, Phosphate,
Q. Human Health and Social Works		
86, 87 86900	Hospitals, clinics, nursing homes and other human health and Other human health activities -	Color, pH, BOD, Total Suspended Solids, Fecal Coliform, Ammonia, Nitrate, Phosphate, Oil and All significant parameters depending on the nature of
S. Other Service Activities		
OC1 OC2 OC3 OC4	Public markets Scrubbing of flue gases from Effluent from oil water Effluent from cooling ponds,	Color, Temperature, pH, BOD, Total Suspended Color, Temperature, pH, COD, Sulfate, Fluoride, pH, Total Suspended Solids, Oil and Grease Temperature, pH

Notes:

COD - Chemical Oxygen Demand

PSIC - Philippine Standard Industrial Classification (2009)

1. For sectors not included in Table 8, EMB Central Office shall determine the significant effluent parameters for the said sector.
2. Domestic sewage of all establishments shall be monitored for the same parameteres listed

PSIC No. 37000.

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

Table 6.3.36
EFFLUENT STANDARDS^(g)

Parameter	Unit			
		AA	A	B
Ammonia as NH ₃ -N	mg/L	NDA	0.5	0.5
BOD	mg/L	NDA	20	30
Boron	mg/L	NDA	2	2
Chloride	mg/L	NDA	350	350
COD	mg/L	NDA	60	60
Color	TCU	NDA	100	100
Cyanide as Free Cyanide	mg/L	NDA	0.14	0.14
Fluoride	mg/L	NDA	2	2
Nitrate as NO ₃ -N	mg/L	NDA	14	14
pH (Range)		NDA	6.0-9.0	6.0-9.0
Phosphate	mg/L	NDA	1	1
Selenium	mg/L	NDA	0.02	0.02
Sulfate	mg/L	NDA	500	500
Surfactants (MBAS)	mg/L	NDA	2	3
Temperature ^(h)	°C change	NDA	3	3
Total Suspended Solids	mg/L	NDA	70	85
Arsenic	mg/L	NDA	0.02	0.02
Barium	mg/L	NDA	1.5	1.5
Cadmium	mg/L	NDA	0.006	0.006
Chromium as Hexavalent	mg/L	NDA	0.02	0.02
Chromium (Cr ⁶⁺)				
Copper as dissolved Copper	mg/L	NDA	0.04	0.04
Iron	mg/L	NDA	5	5
Lead	mg/L	NDA	0.02	0.02
Manganese	mg/L	NDA	2	2
Mercury	mg/L	NDA	0.002	0.002
Nickel	mg/L	NDA	0.1	0.2
Zinc	mg/L	NDA	4	4
Benzo(a)pyrene	µg/L	NDA	1.5	1.5
BTEX				
Benzene	mg/L	NDA	0.1	0.1
Toluene	mg/L	NDA	3.5	5
Ethylbenzene	mg/L	NDA	1.5	1.5
Xylenes	mg/L	NDA	5	5
Malathion (Organophosphate)	µg/L	NDA	1	1
Oil and Grease	mg/L	NDA	5	5
Polychlorinated Biphenyls ⁽ⁱ⁾	µg/L	NDA	<0.1	<0.1
Phenol & Phenolic Substances ^(j)	mg/L	NDA	0.01	0.01
Trichloroethylene	mg/L	NDA	0.7	0.7
Total Organochlorine Pesticides ^(k)	µg/L	NDA	<0.419	50
Aldrin	µg/L	NDA	<0.02	<0.02
Chlordane	µg/L	NDA	<0.02	<0.02
DDT	µg/L	NDA	<0.04	<0.04

Water Body Classification					
C	D	SA	SB	SC	SD
0.5	7.5	NDA	0.5	0.5	0.75
50	120	NDA	30	100	150
3	12	NDA	2	20	80
450	500	NDA	n/a	n/a	n/a
100	200	NDA	60	200	300
150	300	NDA	100	150	300
0.2	0.4	NDA	0.04	0.2	0.4
2	4	NDA	3	3	6
14	30	NDA	20	20	30
6.0-9.5	5.5-9.5	NDA	6.5-9.0	6.0-9.0	5.5-9.5
1	10	NDA	1	1	10
0.04	0.08	NDA	0.02	0.2	0.4
550	1000	NDA	500	550	1000
15	30	NDA	3	15	30
3	3	NDA	3	3	3
100	150	NDA	70	100	150
0.04	0.08	NDA	0.02	0.04	0.08
6	8	NDA	1.5	2	8
0.01	0.02	NDA	0.006	0.01	0.02
0.02	0.04	NDA	0.1	0.1	0.2
0.04	0.08	NDA	0.04	0.04	0.08
7.5	35	NDA	7.5	7.5	35
0.1	0.2	NDA	0.02	0.1	0.2
2	20	NDA	4	4	40
0.004	0.008	NDA	0.002	0.004	0.008
1	5	NDA	0.2	0.3	1.5
4	8	NDA	0.1	1.5	3
3	6	NDA	1.5	3	6
0.5	5	NDA	0.1	0.5	5
20	25	NDA	5	20	25
7.5	10	NDA	1	7.5	10
15	18	NDA	5	15	18
3	6	NDA	1	3	6
5	15	NDA	5	10	15
<0.1	<0.1	NDA	<0.1	<0.1	<0.1
0.5	5	NDA	0.01	0.5	5
9	20	NDA	0.7	9	20
50	50	NDA	50	50	50
<0.02	<0.02	NDA	<0.02	<0.02	<0.02
<0.02	<0.02	NDA	<0.02	<0.02	<0.02
<0.04	<0.04	NDA	<0.04	<0.04	<0.04

Dieldrin	µg/L	NDA	<0.02	<0.02
Endrin	µg/L	NDA	<0.02	<0.02
Heptachlor	µg/L	NDA	<0.02	<0.02
Total Organochlorine Pesticides				
<i>(continued)</i>				
Lindane	µg/L	NDA	<0.02	<0.02
Metoxychlor	µg/L	NDA	<0.03	<0.03
Toxaphene	µg/L	NDA	<0.03	<0.03

Notes:

NDA - No Discharge Allowed

(g) GES values are maximum allowable limit.

(h) GES values for temperature refer to the temperature difference of the background value and di

(i) PCBs include the nine Aroclors and 19 individual PCB congeners described in Section 6.1 of D/

(j) Phenols include 2-chlorophenol, 2, 4-dichlorophenol, and 2,4,6-trichlorophenol

(k) When monitoring for Class A waters, the individual organochlorine pesticides shall be monitore

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

<0.02	<0.02	NDA	<0.02	<0.02	<0.02
<0.02	<0.02	NDA	<0.02	<0.02	<0.02
<0.02	<0.02	NDA	<0.02	<0.02	<0.02

<0.02	<0.02	NDA	<0.02	<0.02	<0.02
<0.03	<0.03	NDA	<0.03	<0.03	<0.03
<0.03	<0.03	NDA	<0.03	<0.03	<0.03

ischarge point. Specific sampling locations shall be established based on the EMB Ambient Water and AO 2016-08.

d. For Class B, C, D, SB, SC, SD, Total Organochlorine Pesticides shall be monitored, which refers to

Table 6.3.37
EFFLUENT STANDARDS FOR BOD APPLICABLE TO ESTABLISHMENTS WITH
INFLUENT BOD OF ≥ 3000 mg/L

Influent BOD (mg/L)	Units	Class C	Class D	Class SC	Class SD
3,000 to <6,500	mg/L	100	150	100	150
6,500 to <10,000	mg/L	200	300	200	300
10,000 to 30,000	mg/L	600	1,000	600	1,000
>30,000	mg/L	900	1,500	900	1,500

Source: Department of Environment and Natural Resources Administrative Order No. 2016-08

Table 6.4

LIST AND DESCRIPTION OF MULTILATERAL ENVIRONMENTAL AGREEMENTS AND OTHER GLOBAL ENVIRONMENTAL CONVENTIONS

Multilateral Environmental Agreements/ Global Environmental Conventions	Basic Objective	Date of Signature, Ratification/Approval/ Accession/Adoption, and Entry into Force
United Nations Environment Assembly (UNEA)	<p>Currently, the UNEA serves as the world's highest leading environmental authority for the global environmental agenda.</p> <p>During the first UNEA, Ministers and Heads of Delegation commit to ensure the full integration of the environmental dimension, especially throughout the sustainable development agenda; promote sustainable consumption and production patterns; prevent, combat and eradicate the illegal trade in wildlife and wildlife products; address climate change; halt biodiversity loss and combat desertification; and ensure the full implementation of Multilateral Environmental Agreements and other international and regional environmental commitments.*</p>	<p>First assembly: 23-27 June 2014</p> <p>Second assembly: 04-06 December 2016</p>
Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia	<p>The Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia represents a paradigm shift in management approach that focuses on the interactions between environment and development and addresses issues and impacts across sectoral, administrative, and legal boundaries that are constraints and bottlenecks for sustainable development in the East Asian Seas Region.²</p>	<p>Date of signature: 12 December 2013</p>
Convention on Nuclear Safety	<p>The Convention on Nuclear Safety is an incentive-based instrument that commits States operating nuclear power plants to establish and maintain a regulatory framework to govern the safety of nuclear installations.³</p>	<p>Date of signature: 14 October 2013</p>
Minamata Convention	<p>The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury.*</p>	<p>Date of signature: 10 October 2013</p>

Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter, or London Convention	The Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter contributes to the international control and prevention of marine pollution by prohibiting the dumping of certain hazardous materials. ⁴	Date of accession: 09 May 2012 Date of entry into force: 08 June 2012
ASEAN Cooperation Plan on Transboundary Pollution	The ASEAN Cooperation Plan on Transboundary Pollution aims to prevent and monitor transboundary haze pollution as a result of land and/or forest fires which should be mitigated, through concerted national efforts and intensified regional and international co-operation. ⁵	Date of ratification/ approval: 01 February 2010 Date of deposit of instrument of ratification/ approval with the Secretary General of ASEAN: 04 March 2010 Date of signature: 03 December 2008
Convention on Cluster Munitions	The Convention on Cluster Munitions is an international treaty that addresses the humanitarian consequences and unacceptable harm to civilians caused by cluster munitions, through a categorical prohibition and a framework for action. ⁶	
International Treaty on Plant Genetic Resources for Food and Agriculture Rotterdam	The International Treaty on Plant Genetic Resources for Food and Agriculture seeks to ensure that plant genetic resources of economic and/or social interest, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and scientific purposes. ⁷ The objective of this Convention is to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.*	Date of accession: 28 September 2006 Date of ratification: 31 July 2006 Date of entry into force: 29 October 2006
Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer	The Montreal Protocol on Substances that Deplete the Ozone Layer was designed to reduce the production and consumption of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the earth's fragile ozone layer.*	Date of ratification: 23 May 2006

International Convention for the Prevention of Pollution from Ships, or MARPOL	The International Convention for the Prevention of Pollution from Ships is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. ⁸	Date of deposit of instrument: 15 June 2001 Date of entry into force: 15 September 2001
Stockholm Convention	The objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants.*	Date of adoption: 23 May 2001 Date of ratification: 27 February 2004 Date of entry into force: 27 May 2004
Cartagena Protocol on Biosafety	The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international treaty governing the movements of living modified organisms resulting from modern biotechnology from one country to another. It was adopted on 29 January 2000 as a supplementary agreement to the Convention on Biological Diversity and entered into force on 11 September 2003. ⁹	Date of signature: 25 May 2000 Date of ratification: 05 October 2006 Date of entry into force: 03 January 2007
United Nations Forum on Forests (UNFF)	The main objective of the UNFF is to promote the management, conservation and sustainable development of all types of forests and strengthen long-term political commitment.*	Year of establishment: 2000
Hanoi Plan of Action	The Hanoi Action Plan aims to strengthen ASEAN's cooperation and joint approaches in addressing issues and problems affecting trade in the region's food, agriculture and forestry products including environment and labour issues. ¹⁰	Date of adoption: 15 December 1998

Kyoto Protocol	The objective of the Kyoto Protocol is to reduce global greenhouse gas emissions by at least 5% in comparison to the base year of 1990, during the commitment period from 2008 to 2012.*	Date adopted: 11 December 1997 Date of signature: April 1998 Date of ratification: 20 November 2003 Date of entry into force: 16 February 2005 First Commitment Period: 2008-2012 Second commitment period: 2013-2020
Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, or Assistance Convention	The Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency sets out an international framework for cooperation among States Parties and with the International Atomic Energy Agency to facilitate prompt assistance and support in the event of nuclear accidents or radiological emergencies. ¹¹	Date of accession: 05 May 1997 Date of entry into force: 05 June 1997
Convention on Early Notification of a Nuclear Accident, or Notification Convention	The Convention on Early Notification of a Nuclear Accident establishes a notification system for nuclear accidents which have the potential for international transboundary release that could be of radiological safety significance for another State. ¹²	Date of deposit: 05 May 1997 Date of entry into force: 05 June 1997
Comprehensive Test Ban Treaty	The Comprehensive Test Ban Treaty aims to achieve the discontinuance of all test explosions of nuclear weapons for all time, to continue negotiations to this end, and to put an end to the contamination of man's environment by radioactive substances. ¹³	Date of signature: 24 September 1996 Date of ratification: 23 February 2001
Convention to Combat Desertification	The Convention to Combat Desertification is the sole legally binding international agreement linking environment and development to sustainable land management. CCD addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found. ¹⁴	Date of signature: 08 December 1994 Date of ratification: 10 February 2000

Convention on Wetlands of International Importance, or Ramsar Convention	The Ramsar Convention on Wetlands of International Importance is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. ¹⁵	Date of entry into force: 08 November 1994
Convention on the Conservation of Migratory Species of Wild Animals, or Bonn Convention	The Convention on the Conservation of Migratory Species of Wild Animals provides a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range. ¹⁶	Date of ratification: 01 February 1994
Basel Convention	Below are the objectives of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal: -Effective implementation of parties' obligations on transboundary movements of hazardous and other wastes - Strengthening the environmentally sound management of hazardous and other wastes - Strengthening the environmentally sound management of hazardous and other wastes	Date of ratification: 21 October 1993 Date of entry into force: 19 January 1994
Chemical Weapons Convention	The Chemical Weapons Convention aims to eliminate an entire category of weapons of mass destruction by prohibiting the development, production, acquisition, stockpiling, retention, transfer or use of chemical weapons by States Parties. States Parties, in turn, must take the steps necessary to enforce that prohibition in respect of persons (natural or legal) within their jurisdiction. ¹⁷	Date of signature: 13 January 1993 Date of ratification: 11 December 1996 Date of entry into force: 29 April 1997
Convention on Biological Diversity	The Convention on Biological Diversity entered into force on 29 December 1993. It has three main objectives: (1) the conservation of biological diversity; (2) the sustainable use of the components of biological diversity; and (3) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. ¹⁸	Date of signature: 12 June 1992 Date of ratification: 08 October 1993
United Nations Framework Convention on Climate Change (UNFCCC)	The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.*	Date of adoption: 09 May 1992 Date of entry into force: 31 October 1994 Date of ratification: 02 August 1994

Vienna Convention for the Protection of the Ozone Layer	The Convention aims for Parties to promote cooperation via systematic observations, research and information exchange on the effects of human activities on the ozone layer and to adopt legislative or administrative measures to deal with activities likely to have adverse effects on the ozone layer. Legally binding reduction goals for the use of Chlorofluorocarbons (CFCs) for the Vienna Convention are laid out in the accompanying Montreal Protocol.*	Year of adoption: 1985 Date of ratification: 19 July 1991
Kuala Lumpur Accord on Environment and Development	The Kuala Lumpur Accord on Environment and Development aims to initiate efforts leading towards concrete steps pertaining to environmental management and natural resource management, and to initiate efforts enabling the inclusion of environmental factors into economic calculations and thus providing a better base for international economic cooperation. ¹⁹	Year of adoption: 1985 'Date of signature: 19 June 1990
Montreal Protocol	The Montreal Protocol on Substances that Deplete the Ozone Layer was designed to reduce the production and consumption of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the earth's fragile ozone Layer.*	Date of adoption: 16 September 1987 Date of ratification: 17 July 1991
International Tropical Timber Organization (ITTO)	The International Tropical Timber Agreement (ITTA) was negotiated to provide an effective framework for cooperation and consultation between countries producing and consuming tropical timber, and promote and support research and development to improve forest management and wood utilization.*	Year of establishment: 1983
United Nations Convention on the Law of the Sea	The United Nations Convention on the Law of the Sea is the most comprehensive attempt at creating a unified regime for governance of the rights of nations with respect to the world's oceans. The treaty addresses a number of topics including navigational rights, economic rights, pollution of the seas, conservation of marine life, scientific exploration, and piracy.	Date of signature: 10 December 1982 Date of ratification: 08 May 1984
Convention on the International Trade in Endangered Species of Wild Flora and Fauna	The Convention on International Trade in Endangered Species of Wild Fauna and Flora is an international agreement between governments that aims is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. ²¹	Date of ratification: 18 August 1981 Date of entry into force: 16 November 1981

Convention on Certain Conventional Weapons	The purpose of the Convention on Certain Conventional Weapons is to ban or restrict the use of specific types of weapons that are considered to cause unnecessary or unjustifiable suffering to combatants or to affect civilians indiscriminately. ²²	Date of signature: 15 May 1981 Date of ratification: 15 July 1996 Date of accession: 08 June 1973
Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, or Geneva Protocol	The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare prohibits the use in war of asphyxiating, poisonous, or other gases, and of bacteriological methods of warfare. ²³	
Biological Weapons Convention, or Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological [Biological] and Toxin Weapons and on their Destruction	The Biological Weapons Convention was the first multilateral disarmament treaty to ban the production and use of an entire category of weapons. It entered into force on 26 March 1975. ²⁴	Date of ratification: 21 June 1972 Date of deposition: 23 May 1973
FAO Committee on Forestry (COFO)	The Food and Agriculture Organization of the United Nations created the Committee on Forestry (COFO) as one of its governing bodies to fulfill its goal of providing food security for everyone. It gathers 138 countries in biennial session at the FAO Headquarters in Rome, Italy. It brings together senior government officials and heads of different forest services to review international forestry problems, identify emerging policy and technical issues, provide possible solutions, and advise FAO on appropriate action.*	First session: May 1972

Convention on Civil Liability for Nuclear Damage	The Convention on Civil Liability for Nuclear Damage provides for absolute liability for nuclear damage; that is, liability for nuclear damage is incurred regardless of whether the operator was or was not at fault or responsible for the damage. ²⁵	Date of signature: 21 May 1963 Date of ratification: 15 November 1965 Date of entry into force: 12 November 1977 Year of establishment: 1921 Year of enter into force: 1970
International Hydrographic Organization (IHO)	The International Hydrographic Organization (IHO) is an intergovernmental consultative and technical organization established to support safety of navigation and the protection of the marine environment. It aims to coordinate activities of national hydrographic offices to ensure uniform nautical charts and documents, promote adoption of reliable and efficient methods of carrying out and exploiting hydrographic surveys and develop the sciences in the field of hydrography and the techniques employed in descriptive oceanography.*	

Sources:

- *Department of Environment and Natural Resources
- ² <http://www.pemsea.org/sites/default/files/putrajaya-declaration.pdf>
- ³ <http://www.nti.org/treaties-and-regimes/convention-nuclear-safety/>
- ⁴ <http://www.imo.org/About/Conventions/ListOfConventions/Pages/Conve>
- ⁵ http://haze.asean.org/?wpfb_dl=32
- ⁶ <http://www.clusterconvention.org/>
- ⁷ <http://www.fao.org/waicent/faoinfo/agricult/cgrfa/IU.htm>
- ⁸ <http://www.imo.org/About/Conventions/ListOfConventions/Pages/Intern>
- ⁹ <http://bch.cbd.int/protocol/background/>
- ¹⁰ <http://www.asean.org/news/item/hanoi-plan-of-action>
- ¹¹ <http://www.iaea.org/publications/documents/treaties/convention-assistance-case-nuclear-accident->
- ¹² <http://www.iaea.org/publications/documents/treaties/convention-early-notification-nuclear-accident>
- ¹³ http://disarmament.un.org/treaties/t/test_ban/text
- ¹⁴ <http://www.unccd.int/en/about-the-convention/Pages/About-the-Convention.aspx>
- ¹⁵ <http://www.ramsar.org/>
- ¹⁶ <http://www.cms.int/en/legalinstrument/cms>
- ¹⁷ <http://www.opcw.org/chemical-weapons-convention/>
- ¹⁸ <http://www.cbd.int/intro/default.shtml>
- ¹⁹ <http://environment.asean.org/the-kuala-lumpur-accord-on-environment-a>
- ²¹ <http://cites.org/eng/disc/what.php>
- ²² [http://www.unog.ch/80256EE600585943/\(httpPages\)/4F0DEF093B4860B4C1257180004B1B30](http://www.unog.ch/80256EE600585943/(httpPages)/4F0DEF093B4860B4C1257180004B1B30)
- ²³ http://www.un.org/disarmament/WMD/Bio/pdf/Status_Protocol.pdf
- ²⁴ [http://www.unog.ch/80256EE600585943/\(httpPages\)/04FBDD6315AC720C1257180004B1B2F](http://www.unog.ch/80256EE600585943/(httpPages)/04FBDD6315AC720C1257180004B1B2F)
- ²⁵ <http://www.iaea.org/publications/documents/conventions/vienna-convention-on-civil-liability-for->