



QUICK LMI

LABOR MARKET INTELLIGENCE REPORT

AQUACULTURE

As of April 2020

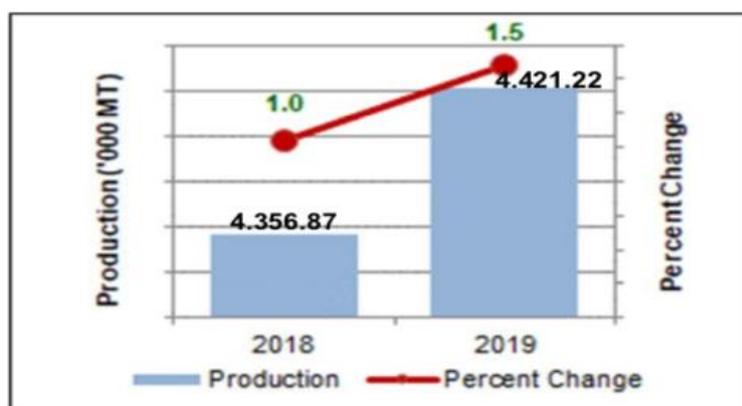
Technical Education and Skills Development Authority (TESDA)





BACKGROUND

- According to the Food and Agriculture Organization (FAO), the Philippines ranked 9th among the top fish producing countries in the world in 2017 with its total production of 4.125 million metric tons of fish, crustaceans, molluscs, and aquatic plants (including seaweeds). The production constitutes 2.01% of the total world production of 205.56 million metric tons.
- In addition, the FAO also ranks the Philippines as 11th in the world in its aquaculture production in 2017, with 0.822 million metric tons in aquaculture production of fish, crustaceans and molluscs and a 1.03% share to the total global aquaculture production of 80.0134 million metric tons. In terms of value, the country's aquaculture production of fish, crustaceans and molluscs has amounted to over 1.834 billion dollars.
- Aquaculture is the “production from brackishwater fishpond; freshwater fishpond; fish pen and fish cage in fresh and marine waters; and mariculture of oyster, mussel and seaweed.”
- The Philippines is also the world's 4th largest producer of aquatic plants (including seaweeds) having produced a total of 1.415 million metric tons or nearly 4.45% of the total world production of 31.81 million metric tons.
- In 2019, fisheries production improved by 1.5 percent. Total volume of production was estimated at 4,421.22 thousand metric tons, higher than the 4,356.87 thousand metric tons in 2018.



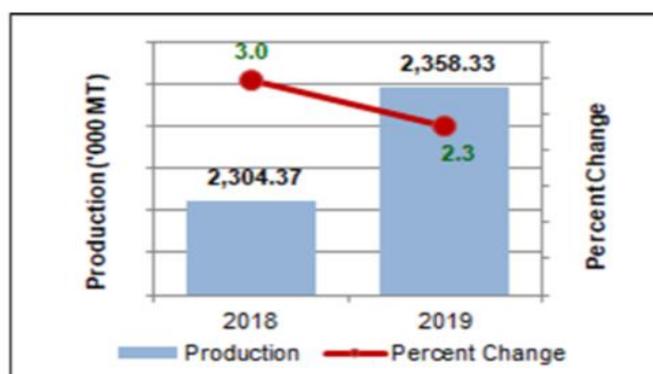
Volume of Fisheries Production, Philippines, 2018 and 2019

Source: Philippine Statistics Authority

BACKGROUND



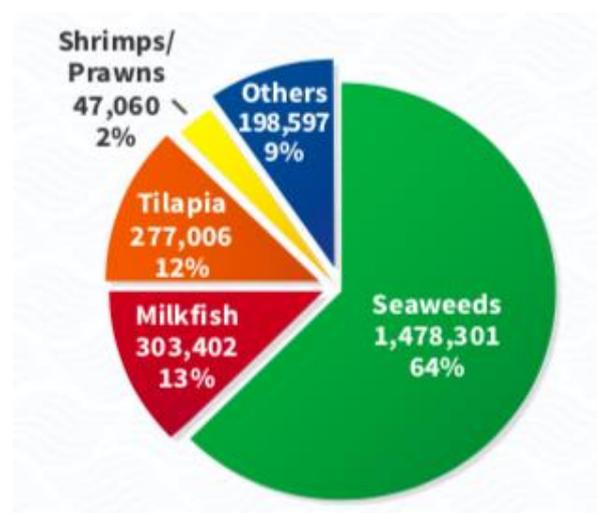
- In 2019, the total aquaculture produce was 2,358.33 thousand metric tons. Aquaculture posted an increase of 2.3 percent from its previous year's level of 2,304.37 thousand metric tons. Its production recorded the largest share of 53.3 percent to the total fisheries production.



Volume of Aquaculture Production, Philippines, 2018 and 2019

Source: Philippine Statistics Authority

- In 2018, 2,304,365 metric tons (MT) is the total aquaculture output. Among the regions, the ARMM has the highest total aquaculture production at 684,907 MT, followed by Region IV-B (347,225 MT) and Region III (247,988 MT).
- In 2018, the following are the major species produced:



Major Species Produced in Aquaculture, 2018

Source: Bureau of Fisheries and Aquatic Resources

- Based on 2018 data from the Bureau of Fisheries and Aquatic Resources (BFAR), there are 209,058 fisherfolk engaged in Aquaculture activities.



BACKGROUND

- Of the 2,995 establishments in the formal sector of the economy that were engaged in agriculture, forestry and fishing in 2017, only 5.5% of establishments are engaged in Aquaculture.
- Of the total employment in the sector in 2017 at 170,186, those employed in aquaculture is at 5,312.
- The following are the jobs in the Aquaculture Sector:
 - Aquaculture and fisheries production managers, i.e. Fishing operations manager; General Manager, fishing; Production and operations/fishing, hunting and forestry manager; Shore captain (fishing); Trawler manager
 - Milkfish and tilapia producers, i.e. Bangus farm producer; Tilapia farm producer
 - Seaweeds producer, i.e. Carageenan producers; Agar-agar producers
 - Prawn producer
 - Oysters and mussels producer
 - Fishery and aquaculture laborers, i.e. Bantay Dagat; Fishery caretaker Laborer/helper, fishery Pond Aide; Prawn hatchery worker
 - Fish farmer
 - Coastal fishery skipper
 - Fisherwoman/man

Source: 2012 Philippine Standard Occupation Classification, Philippine Statistics Authority

TVET CAPACITY



- Most of the jobs in Aquaculture sector has an existing TESDA Training Regulations except for aquaculture managers and oysters and mussels production

- List of identified Jobs in the Aquaculture Industry and Related TESDA Training Regulations

No.	Jobs	TESDA Training Regulation
1	Aquaculture and Fisheries Production Managers	-
2	Milkfish and Tilapia Farm Producers	Aquaculture NC II
3	Seaweeds Producer	Seaweeds Production NC II
4	Prawn Producer	Aquaculture NC II
5	Oysters and Mussels Producer	-
6	Fishery and Aquaculture Laborers	Aquaculture NC II
7	Fish Farmer	Aquaculture NC II
8	Coastal Fishery Skipper	Fish Capture NC I and NC II
9	Fisherwoman/man	Fish Capture NC I and NC II

- List of TESDA Training Regulations in Agriculture, Forestry, and Fishery Sector: as of December 2019

- Out of the total 34 TESDA Training Regulations in Agriculture, Forestry and Fishery, the Aquaculture NC II, Fish Capture NC I and NC II, and Seaweeds Production NC II are the relevant qualifications to aquaculture sector

No.	Qualification Title
1	Agricultural Crops Production NC I
2	Agricultural Crops Production NC II
3	Agricultural Crops Production NC III
4	Agricultural Machinery Operations NC II



No.	Qualification Title	No.	Qualification Title
5	Agricultural Machinery Servicing (4-Wheel Tractor) NC III	19	Fish Capture NC I
6	Agroentrepreneurship NC II	20	Fish Capture NC II
7	Agroentrepreneurship NC III	21	Fishing Gear Repair and Maintenance NC III
8	Agroentrepreneurship NC IV	22	Fishport/Wharf Operation NC I
9	Animal Health Care and Management NC III	23	Grains Production NC II
10	Animal Production (Poultry-Chicken) NC II	24	Horticulture NC III
11	Animal Production (Ruminants) NC II	25	Landscape Installation and Maintenance (Softscape) NC II
12	Animal Production (Swine) NC II	26	Milking Operation NC II
13	Aquaculture NC II	27	Organic Agriculture Production NC II
14	Artificial Insemination (Large Ruminants) NC II	28	Pest Management (Vegetables) NC II
15	Artificial Insemination (Swine) NC II	29	Pressurized Irrigation System Installation and Maintenance NC II
16	Bamboo Processing (Engineered-Bamboo) NC II	30	Rice Machinery Operations NC II
17	Bamboo Production NC II	31	Rubber Processing NC II
18	Drying and Milling Plant Servicing NC III	32	Rubber Production NC II
		33	Seaweeds Production NC II
		34	Sugarcane Production NC II

Source: QSO

- **Number of Enrolled, Graduates, Assessed, and Certified in Aquaculture Related Qualifications: CY 2019**
 - Training qualification related to Aquaculture NC II recorded the highest number in all training and assessment data.

INDICATOR/YEAR	Enrolled	Graduates	Assessed	Certified
Aquaculture NC II	558	437	1,374	1,327
COC on Aquaculture NC II	776	611		

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Fish Capture NC II	80	48	89	89
Fish Capture NC I	-	-	-	-
COC on Fish Capture NC I / NC II	542	428		
Seaweeds Production NC II	-	-	62	37

- Number of Enrolled and Graduates by Region in Aquaculture Related Qualifications: CY 2019

Region	Aquaculture NC II		COC on Aquaculture NC II		Fish Capture		COC on Fish Capture NC I / NC II	
	Enrolled	Graduate	Enrolled	Graduate	Enrolled	Graduate	Enrolled	Graduate
I	149	24						
II	71	51						
III								
IV-B							132	132
V								
VI			70	70				
VIII			128	64				
IX	46	38	410	309	80	48	134	20
X	77	64						
XI	165	164						
XII	50	50	168	168			276	276
CARAGA		46						

Source: MITD



TVET CAPACITY

- Number of Assessed and Certified by Region in Aquaculture Related Qualifications: CY 2019

- o The table shows that Region IX has the highest output on enrolled and graduates with 882 and 627, respectively. While, Region XI has most output in terms of assessment and certification with a total of 249 and 241. On the other hand, the following regions has no reported output, VII, NCR, CAR, and BARMM.

Region	Aquaculture NC II		Fish Capture NC II		Seaweeds Production NC II		Aquaculture Sector Total	
	Assessed	Certified	Assessed	Certified	Assessed	Certified	Assessed	Certified
I	231	218					231	218
II	213	213					213	213
III	36	36	42	42			78	78
IV-A	23	23					23	23
V	74	63			62	37	136	100
IX	109	103	47	47			156	150
X	101	98					101	98
XI	249	241					249	241
XII	132	131					132	131
CARAGA	206	201					206	201

Note: January to December 2019 data

Source: MITD

TVET CAPACITY

- No. of TVET Provider & Registered Program by Region related to Aquaculture Sector: CY 2019

Region	TVET Provider	Registered Program
I	3	5
II	2	2
III	1	1
IV-A	1	1
IV-B	1	1
V	1	1
VIII	1	1
IX	3	5
X	1	1
XI	3	3
XII	1	2
CARAGA	1	1
NCR	1	1
Grand Total	20	25

Note: December 2019 Compendium

Source: TESDA-Certification Office

- No. of Registered Program by Qualification on Aquaculture in Aquaculture Related Qualifications: CY 2019

No.	Qualification Title	Registered Program
1	Aquaculture NC II	18
2	Brackish Water Fishpond Operator	1
3	Catfish Induced Spawning	1
4	Diploma in Fishery Technology	2
5	Fish Capture NC I	1
6	Fish Capture NC II	1
7	Fishing Net Mending and Maintenance	1

Note: December 2019 Compendium

Source: TESDA-Certification Office



TVET CAPACITY

- No. of Assessment Centers and Competency Assessor in Aquaculture related Qualifications: CY 2019

Qualification Title	Assessment Center	Competency Assessor
Aquaculture NC II	13	24
Fish Capture NC I	2	-
Fish Capture NC II	2	4
Seaweeds Production NC II	1	2

Note: 2018 Infra-Capacity Map, there are possible changes in 2019

Source: TESDA-Certification Office

- No. of NTTC Holder in Aquaculture related Qualifications: CY 2018

Qualification Title	NTTC Holder
Aquaculture NC II	75
Fish Capture NC I	-
Fish Capture NC II	16
Seaweeds Production NC II	-

Note: 2018 Infra-Capacity Map, there are possible changes in 2019

Source: TESDA-Certification Office

- Majority of assessment centers and competency assessor for aquaculture related qualifications are on Aquaculture NC II. This is also similar to the available trainers.

CONCLUSION AND RECOMMENDATIONS



- There are identified requirements of the aquaculture industry that do not have corresponding TVET program, specifically on aquaculture managers and oysters and mussels production. TESDA has to conduct consultation with the concern institutions on the development of a Training Regulation or Competency Standards.
- There is limited number of providers in on aquaculture related qualifications. Likewise, not all regions have program offering on aquaculture. It is suggested to determine the reasons for the limited number of providers of the aquaculture programs to facilitate the necessary actions to increase the number of providers.
- If there is a foresee demand for aquaculture programs, TESDA has to strengthen its capacity. This should include the capacity of the agency in terms of the number of providers, assessment center, trainers and assessors.



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