


## HIGHLIGHTS

The total volume of fisheries production increased by 3.49 percent during the first quarter of 2009 over the same quarter in 2008. All fisheries sectors outdid their 2008 production levels. Commercial fisheries indicated a 1.27 production gain while aquaculture expanded by 3.88 percent. Municipal fisheries was the top gainer with output surging by 4.79 percent.

Under commercial fisheries, the volume of unloadings was estimated at $296,547.43$ metric tons or $3,712.80$ metric tons more than last year's record during the same quarter. Fish unloadings in 10 regions exhibited an upward trend while six (6) regions reported production losses. The increased volume of unloadings was traced to less weather disturbances which enabled fishermen to increase the frequency of their fishing operations, successive rollbacks of oil price and abundant catch of in-season species. The drop in the volume of unloadings in other regions was largely attributed to the destruction of fish aggregating devices (FADs) which have not been restored and the dry docking and repair of fishing boats in some provinces. SOCCSKSARGEN recorded the biggest volume of unloaded at 51, 804.46 metric tons. About 179,083.36 metric tons were unloaded at traditional landing centers. Commercial fishermen unloaded $47,498.08$ metric tons at private landing centers, $54,764.73$ metric tons at the Philippine Fisheries Development Authority (PFDA) ports and $15,201.26$ metric tons at Local Government Unit (LGU)-managed landing centers. Commercial fisheries contributed about 23.68 percent to the total fisheries production.

Municipal fisheries produced $333,805.56$ metric tons or $15,248.32$ metric tons more than last year's first quarter production. Marine municipal fisheries shared 288,796.00 metric tons while inland municipal fisheries contributed 45,009.56 metric tons to the total municipal fisheries production. Fourteen (14) regions surpassed their last year's production levels while three (3) regions recorded production cuts. MIMAROPA, Western Visayas, Bicol Region, Zamboanga Peninsula and CALABARZON posted the biggest shares to the total municipal fisheries production. The decrease in oil prices, good weather conditions, reduced competition from commercial vessels fishing in municipal waters and the use of FADs improved the volume of fish catch of marine municipal fishermen. The higher production of households engaged in fishing in inland bodies of water was attributed to more fishing time due to good weather conditions, use of fish shelters and traps and dispersal of tilapia and carp fingerlings of the BFAR through the local government units (LGUs). Municipal fisheries accounted for about 26.66 percent of the total fisheries production in the first quarter of 2009.

Aquaculture production was estimated at $621,854.45$ metric tons or $23,248.50$ metric tons more than the output of the same quarter last year. Seaweed contributed more than half ( 68.71 percent) of the total aquaculture production while fins/shellfishes shared 31.29 percent. Seaweed farmers produced $427,299.42$ metric tons or 18,238.42 metric tons more this quarter than in 2008. Bigger volumes of production of seaweed were noted in Palawan, Zamboanga City and Bohol. The growth in production was attributed to good weather conditions, low incidence of pests and diseases and moderate water movement which enhanced the growth of seaweeds. Aquaculture accounted for about 49.66 percent of the total fisheries production during the first quarter of 2009.


Fig. 2 Fisheries: Percent Distribution of Production by
Sector, Philippines, January - December 2009


## PRODUCTION

## COMMERCIAL FISHERIES

Production grew by 1.27 percent during the first quarter of 2009. From 292,834.63 metric tons last year, the volume of unloadings rose to $296,547.43$ metric tons or $3,712.80$ metric tons over last year's level. These regions, namely: llocos Region, Central Luzon, National Capital Region, CALABARZON, MIMAROPA, Bicol Region, Western Visayas, Eastern Visayas, Zamboanga Peninsula and ARMM managed to outdo their 2008 first quarter production. Their gains were attributed to less weather disturbances which enabled fishers to increase the frequency of their fishing operations, successive roll backs of gasoline price, abundant unloadings of anchovies, skipjack, yellowfin tuna, indian sardines and big-eyed scad. Fish unloadings in the National Capital Region, which grew by 28.27 percent or about $4,139.34$ metric tons more this quarter, served as the major source of growth. The output increment was due to the increased number of commercial fishing vessels unloading their catch at Navotas Fishport due to good market price. Zamboanga Peninsula also recorded a huge increase of unloadings at $3,100.69$ metric tons over the same period last year due to more unloadings of tamban in Zamboanga City (Table 2).

On the other hand, commercial fish unloadings in Cagayan Valley, Central Visayas, Northern Mindanao, Davao Region, SOCCSKSARGEN and CARAGA exhibited a downward trend. Commercial fishermen said that the decrease was the result of the destroyed FADs which had to be restored yet, dry docking and repair of number of boats in some provinces. In SOCCSKSARGEN unloadings dropped by. 10.46 percent. The volume of fish unloadings was estimated at $51,804.46$ metric tons or $6,052.49$ metric tons lower than last year's level. There was lower demand from tuna canneries in General Santos City. Some operators limited their fishing trips due to very low price offered by canneries for skipjack and yellowfin tuna. It was noted that the biggest decline in unloading was in Davao Region ( 22.65 percent). The reasons cited were less fishing trips due to high cost of fuel, unloading of fishing boats in other areas and change of migratory path of some species, specifically, in Davao del Sur.

The volume of fish unloadings at the Philippine Fisheries Development Authority (PFDA) grew by 30.11 percent. It recorded an increase of $12,674.52$ metric tons which boosted the performance of commercial fishing. Fish catch unloaded at Local Government Unit (LGU)-managed landing centers recorded a 2.45 percent growth. On the other hand, unloadings at private landing centers went down by 18.09 percent. However, traditional landing centers


## MUNICIPAL FISHERIES

For the first quarter of the year, municipal fisheries production totalled $333,805.56$ metric tons, of which $288,796.00$ metric tons or 86.52 percent came from marine fisheries and 13.48 percent at $45,009.56$ metric tons were from inland fisheries. An output increase of 4.79 percent was posted by the sector compared to the same period last year. Marine sub-sector posted 4.87 percent increase while inland sub-sector grew by 4.24 percent. MIMAROPA ( $45,034.11$ metric tons), Western Visayas ( $43,806.05$ metric tons), Bicol Region ( $36,011.12$ metric tons), Zamboanga Peninsula ( 34.924 .28 metric tons) and CALABARZON ( $29,496.80$ metric tons) contributed the biggest shares to total municipal production. Fourteen (14) out of 17 regions recorded growth in production (Table 3).

The volume of fish unloaded by marine municipal fishermen went up by $13,416.94$ metric tons over last year's production in the first quarter. The regions with highest output increments for marine fishing were Bicol Region (19.80 percent), CALABARZON (17.65 percent), Cagayan Valley ( 12.65 percent) and Western Visayas ( 8.01 percent). Increases in levels of marine catch were also observed in Bicol Region, Western Visayas, MIMAROPA, CALABARZON and ARMM. The huge volume of fimbriated sardines landed in Sorsogon attracted fish dealers from Metro Manila, Pangasinan and Nueva Ecija. The decrease in oil prices, good weather conditions and reduced competition from commercial vessels
 fishing in municipal waters contributed to the increased output of the sector. The use of FADs also improved fish catch of municipal fishermen. Fishing gears and fishing boats provided by the Bureau of Fisheries and Aquatic Resources (BFAR) to sustenance fishermen were recorded in Mindoro provinces, Romblon, Palawan and Antique. Top producing provinces for the first quarter included Palawan ( $37,637.57$ metric tons), lloilo $(23,831.96$ metric tons), Zamboanga del Norte ( $16,170.48$ metric tons), Surigao del Norte ( $14,324.37$ metric tons) and Sorsogon (10,128.59 metric tons)

Inland municipal fisheries, likewise, posted a 4.24 percent or 1,831.38 metric tons increase in the volume of fish catch compared to last year's production. The increase in catch of households engaged in fishing in rivers, lakes, dams, swamps, creeks, irrigation canals was attributed to more fishing time due to good weather conditions, sufficient water level, use of fish shelters and traps, dispersal of tilapia
 and carp fingerlings by the BFAR through the local government units (LGUs). It was also observed that more households were occupied in gathering different types of clams, snails and shells. Davao Region ( 58.03 percent), MIMAROPA ( 50.45 percent), Western Visayas (22.26 percent), Northern Mindanao (20.04 percent) and SOCCSKSARGEN (18.82 percent) registered the biggest output increases among the 16 regions. However, the biggest volume of catch was recorded in Laguna at 11,626.46 metric tons, Rizal at $7,243.43$ metric tons, North Cotabato at $3,670.34$ metric tons and Sultan Kudarat at $2,955.44$ metric tons. The contribution of these four (4) provinces was more than half of the total inland fisheries production. In spite of the reported pollution coming from industrial and agricultural wastes as well as those from households living around the lake, Laguna is still the most productive lake in the country.

## AQUACULTURE

Aquaculture production of about 622 thousand metric tons was 3.88 percent higher this first quarter of 2009 compared to last year's level. The bulk of the increase came from ARMM, Central Visayas, MIMAROPA and CALABARZON. These top seaweed producing regions reported good weather conditions that prevailed during the quarter. It was also observed that there were enough planting materials available from the newly established seaweed nurseries. On the other hand, production in Zamboanga Peninsula dropped by 2.89 percent because some seaweed farmers from Zamboanga del Sur and Sibugay were discouraged by low market price that prompted them to stop operation. It was also noted that the 15.7 percent decrease in CARAGA production was due to the washing-out of pens, cages and seaweed farms by Typhoon Auring (Table 4).

Other aquafarm types that showed significant increases were brackishwater fishpond, freshwater cage and marine cage. Production in Capiz improved due to better market price of brackishwater fishpond species. For freshwater cage, enhanced growth of tilapia in Batangas was recorded due to less water pollution brought about by dismantling of some cages in Taal Lake. Lastly, more cages were opened in Davao Norte as more operators ventured into business in the mariculture park of Panabo.

The following is a summary of the production performance of aquaculture by type of aquafarm.

| Type of Aquafarm/Environment | \% Increase (Decrease) | \% Contribution |
| :--- | :---: | :---: |
| Brackishwater fishpond | 3.71 | 9.67 |
| Brackishwater fish pen | 2.51 | 0.22 |
| Brackishwater fish cage | $(2.11)$ | 0.07 |
| Freshwater fishpond | 1.54 | 10.25 |
| Freshwater fish pen | 0.02 | 2.29 |
| Freshwater fish cage | 6.40 | 4.30 |
| Rice fish | $(32.27)$ | 0.0002 |
| Small Farm Reservoir | $(18.16)$ | 0.0064 |
| Marine fish pen | $(6.94)$ | 0.89 |
| Marine fish cage | 9.99 | 1.84 |
| Oyster | $(1.80)$ | 0.78 |
| Mussel | $(4.14)$ | 0.99 |
| Seaweed | 4.46 | 68.71 |

## SELECTED AQUACULTURE SPECIES

## MILKFISH

Production of milkfish surpassed last year's record by 1.61 percent from 68,776.89 metric tons to $67,687.60$ metric tons in 2008. Output growth was realized in all types of aqua farms except in freshwater and marine fish pens (Table 5).

Milkfish production in brackishwater fishponds in Negros Occidental, Pangasinan, Capiz, Bataan and other provinces moved upward. The 2.84 percent increase in harvest in brackishwater fishponds was attributed to higher stocking rate, availability of quality fingerlings, higher survival rate and increase in area harvested. In addition, the prevailing good weather conditions favored growth of stocks.

Gains in milkfish production in brackishwater, freshwater and marine fish cages were 3.59 percent, 4.83 percent and 8.09 percent, respectively. Most producing provinces recorded bigger sizes of milkfish harvested. This was attained through proper feeding management and improved water condition. Reduced pollution due to dismantling of abandoned and damaged cages in Batangas was observed. There were newly opened fish cages in Panabo marine culture park in Davao del Norte. However, milkfish harvests in Zambales dropped by 14.96 percent as some marine cage operators were discouraged by high cost of operations.

Brackishwater fish pens produced $1,285.34$ metric tons of milkfish This was 2.62 percent higher than last year's level. The output gain was associated to the increase in stocking rate and proper management. On the contrary, milkfish operators of freshwater and marine fish pens experienced output decreases of 5.29 percent and 7.16 percent, respectively. It was observed by freshwater fish pen operators in Metro Manila that the cold weather during the quarter resulted in smaller sizes of milkfish harvests. On the other hand, reduced production in Rizal was due to smaller area utilized because of rehabilitation of some fish pens.

Milkfish production in marine fish pens went down by 7.16 percent. Some structures in Sta. Maria, Davao del Sur were undergoing repair. In lloilo, some fish pens damaged during last year's calamity were not rehabilitated/reoperated, hence, the decrease in production.

## TILAPIA

Tilapia production increased by 3.31 percent on the first quarter of 2009 compared to the same quarter of 2008. About 65 percent of production came from freshwater fishponds, 27 percent were from freshwater fish cages, five (5) percent, from freshwater fish pens and three (3) percent, from brackishwater fishponds (Table 6).

Production in freshwater fishponds grew by 1.51 percent this quarter. Pampanga, the top producing province, came up with a 0.52 percent increase in output due to the increase in stocking rate. Early harvesting was done by some operators to meet the demand during the Lenten season. Re-opening of some previously closed fishponds was also reported. Tarlac, Pangasinan and Nueva Ecija recorded production shares of 3.15 percent, 10.23 percent and 21.57
 percent, respectively, In Tarlac, the availability of quality fingerlings and better management practices were cited. Bigger sizes of tilapia were harvested during the quarter and the availability of fingerlings added to the increase in production in Pangasinan. Meanwhile, operators in Nueva Ecija were encouraged to expand areas to take advantage of high price of tilapia in the market. On the other hand, the downward production trend in Bulacan was attributed to the decrease in area harvested because of the conversion of some fishponds to palay farms, especially in the municipalities of San Rafael, San Ildefonso, Bustos and Pandi.

The volume of tilapia harvested from freshwater fish cages was higher by 6.33 percent this year. The sources of increase were Batangas, Laguna, Camarines Sur, and South Cotabato. Good management practices and the positive results from the dismantling of abandoned and damaged fish cages were noted in Batangas. Intensive feeding by some operators in Laguna resulted in bigger sizes of tilapia. Meanwhile, in South Cotabato, adequate water supply resulted in higher yield which brought up production in the province. On the other hand, output decrease in lfugao was due to the limited number of fish cages being utilized this quarter. Accordingly, operators were experiencing financial difficulties.

Freshwater fish pens produced 12.30 percent more output this quarter. This was traced to the cropping movement from fourth quarter last year to first quarter this year. Furthermore, some pens which were under repair last year were now operational. Sultan Kudarat cited a higher yield due to the usage of quality fingerlings. Maguindanao and Lanao del Sur showed production increases of 10.25 percent and 2.50 percent, respectively. These were the results of well maintained farms with quality stocked fingerlings and availment of fingerlings dispersal from the Bureau of Fisheries and Aquatic

Resources (BFAR). However, production from Rizal and Laguna declined by 11.36 percent and 1.80 percent, respectively. There were cases of delayed harvesting due to lack of food supplement, as well as poor quality fingerlings stocked. These resulted in smaller sizes of harvests. Rehabilitation of some pens in Rizal was also cited. In Laguna, some operators stocked bangus and big head carp on fish pens intended for tilapia.

Output from brackishwater fishponds was higher by 4.30 percent compared to production last year. The gain came from Pampanga, Cagayan, Zamboanga del Sur and Zamboanga Sibugay. Pampanga production increased by 2.10 percent due to better water condition. Cagayan posted a production increase of 1.32 percent due to the harvests from the newly developed seven (7) hectares of fishponds in Sta. Teresita. Zamboanga del Sur and Zamboanga Sibugay recorded production increments of 6.70 percent and 5.41 percent, respectively. In Zamboanga del Sur, it was the effect of increased stocking density and additional harvest area. In Zamboanga Sibugay, more natural entries with bigger sizes were harvested.

## Tiger Prawn

Tiger prawn production for the first quarter of 2009 at $11,311.75$ metric tons was 2.41 percent higher than last year's level. This was due to increased stocking rate, expansion in area harvested, good water salinity, better management practice, and quality post larvae that resulted in bigger sizes of species harvested (Table 7).

The combined increases in production in Pampanga, Lanao del Norte and Zamboanga del Sur were able to offset the production cut in Zamboanga Sibugay. The peace and order situation in the province triggered the 5.89 percent decrease in production. Some operators temporarily stopped operation while some ponds were abandoned. In Bohol, the 10.55 percent decrease was due to stunted growth and infestation of white spot.


Other provinces recorded production gains of 6.95 percent because of availability of post larvae, high survival rate, more natural entry and good price in the market.

## Mud Crab



Production of mud crab during the first quarter of 2009 was higher by 5.25 percent compared to last year's level. The increase in harvest was the result of the availability of quality crablets, bigger sizes of mud crab harvested and the good demand in the market because of the Lenten season. There were also reports of additional areas utilized and new operators engaged in crab culture (Table 7).

Among the top producing provinces, only Misamis Occidental suffered a production cut. Output was down by 1.19 percent due to clearing of ponds. The reported harvests in the municipalities of Tangub, Bonifacio and Plaridel were the left-over stocks from the last quarter of 2008.

## CARP

Total production of carp during the first quarter of 2009 was 2.93 percent lower than that of the same period in 2008. The production increases in pens and cages did not offset the output decline in fishponds.


The combined production from fishponds in Laguna, Lanao del Norte, Quezon, Pampanga and six (6) other provinces recorded a shortfall of 49.27 percent. Operators in Laguna left their ponds empty due to unavailability of fingerlings that resulted in zero production. Some pond operators in Lanao del Norte, on the other hand, temporarily stopped operations due to financial constraints while others shifted culture to tilapia that had higher market demand than
carps. In Quezon, the cold weather and water condition caused carps to move to deeper and warmer water level. Rather than search and take in food, carps restrained their body movements to conserve their heat and this resulted in stunted growth.

Production of carps from fish cages in Metro Manila also went down by 14.21 percent. Stunted growth of carps was reportedly due to cold climate during the period. Meantime, rice-fish farms in Pangasinan dried up early, hence there were no carps harvested.

The good growth of carps in fish pens and cages of Rizal, Laguna and Camarines Sur was attributed to the quality fingerlings stocked as well as the intensive feeding done by the operators. This raised fish pens and cages production by 5.90 percent over last year's level. Farmers in llocos Norte and Quirino harvested carps in small farm reservoirs (SFRs).

## Catfish

Catfish production came mostly from freshwater fishponds, fish cages and small farm reservoirs (SFR). Total catfish production in the $1^{\text {st }}$ quarter of 2009 was 586.42 metric tons or 26.90 percent
 higher than the production in the same quarter of last year. The sources of output increase were lloilo, Nueva Ecija, Davao City and South Cotabato. In Iloilo, catfish production increased by 51.86 percent due to the availability of fingerlings from BFAR and sufficient water supply. There were additional harvest areas in the municipalities of Sta. Barbara, Zarraga, Dingle and Passi. In Nueva Ecija there was a 6.11 percent increment because of high demand. The output gain in Davao City of 128.31 percent and South Cotabato by 12.72 percent were due to sufficient supply of fingerlings and good water condition. Operators were encouraged to expand their areas to meet local market demands. On the contrary, production of catfish in Bulacan decreased by 4.06 percent due to the limited buyers. It was also reported that most of the harvests were of natural entry (Table 7).

## SEAWEED

Production of seaweed grew by 4.46 percent in the first quarter of 2009 compared to last year's level. Palawan, Zamboanga City and Bohol posted the biggest output increases of 12.94 percent, 12.85 percent and 12.42 percent, respectively. The favorable weather conditions during the quarter was conducive to seaweed farming. The moderate water movement during the quarter enhanced the growth of seaweeds. In addition, the continuous supply of quality planting materials from the established nurseries, specifically in the provinces of Tawi-Tawi and Sulu, enabled farmers to plant more and increase their harvest area. It was also observed that there was low incidence of pests and diseases this quarter
 (Table 8).

## OYSTER



Oyster production dropped by 1.80 percent during the first quarter of 2009 compared to the same quarter of last year. There was a 23.46 percent reduction in output in lloilo as demand contracted. Cases of unharvested farms were noted. Negros Occidental suffered a 17.12 percent decline in harvests mainly because of the occurrence of "lampinay". These were small shells that stick to the stakes affecting the growth of oyster. Similarly, oyster production in Capiz and Pangasinan went down by 5.59 percent and 2.67 percent, respectively because of poor quality of water that resulted in smaller size of shells harvested (Table 8).

On the other hand, increased production in Bulacan was due to bigger sizes of oyster harvested. These were harvests from the stocks of last quarter.

## Mussel

Production of mussel went down by 4.14 percent during this quarter. The poor quality of water resulted in small sizes of shells that pulled down mussel harvests in Bataan, Capiz and Samar. However, due to demand from nearby towns, availability of quality spats and favorable weather in Aklan and Negros Occidental, farmers from these provinces were able to expand their area thus increasing their produce (Table 8).

## FISH PRICES





The average prices per kilogram of selected fish species were higher this first quarter of 2009 compared to previous year's quotations. Among the six (6) selected fish species, milkfish, tilapia and roundscad came up with price increases at all levels. Milkfish and tilapia prices had bigger increments ranging from 14.58 percent to 24.17 percent while those of roundscad were between 1.67 percent to 9.65 percent. The producer and retail prices of tiger prawn, frigate tuna and indian mackerel also picked up from their 2008 levels. Increments ranged from 0.07 percent to 8.43 percent. However, the average wholesale prices of these species dropped by 2.07 percent, 0.34 percent and 0.28 percent, respectively.

The producer-retail price margins of milkfish, frigate tuna and indian mackerel were wider this year at P36.01, P34.27 and P50.89, respectively, compared to those of same period in 2008. On the contrary, those of tilapia, tiger prawn and roundscad were narrower by P18.29, P21.02 and P36.09, respectively.


Fig. 7 Prices of Frigate Tuna by Level, Philippines,January - March


Fig. 8 Prices of Indian Mackerel by Level, Philippines, January - March

## P/Kg.

 2007-2009
Table 1. Fisheries: Volume of Fish Production by Sub-Sector, by Region, Philippines, January - March 2008-2009 ${ }^{\text {P }}$

| Region/ <br> Sub-Sector | Fisheries |  | $\begin{gathered} \text { \% } \\ \text { Change } \\ 09 / 08 \end{gathered}$ | Commercial |  | $\begin{gathered} \% \\ \text { Change } \\ 09 / 08 \end{gathered}$ | Municipal |  | $\begin{gathered} \% \\ \text { Change } \\ 09 / 08 \end{gathered}$ | Aquaculture |  | $\begin{gathered} \% \\ \text { Change } \\ 09 / 08 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2008 | 2009 |  | 2008 | 2009 |  | 2008 | 2009 |  | 2008 | 2009 |  |
| PHILIPPINES | 1,209,997.83 | 1,252,207.44 | 3.49 | 292,834.63 | 296,547.43 | 1.27 | 318,557.24 | 333,805.86 | 4.79 | 598,605.96 | 621,854.45 | 3.88 |
| NCR | 16,060.93 | 20,112.20 | 25.22 | 14,644.30 | 18,783.64 | 28.27 | 1,086.73 | 1,021.84 | (5.97) | 329.90 | 306.72 | (7.03) |
| CAR | 1,233.77 | 1,274.29 |  |  |  |  | 242.77 | 250.31 | 3.11 | 991.00 | 1,023.98 | 3.33 |
| 1 | 30,927.32 | 32,899.41 | 6.38 | 1,256.13 | 1,425.59 | 13.49 | 10,186.89 | 10,792.48 | 5.94 | 19,484.30 | 20,681.34 | 6.14 |
| II | 17,372.29 | 18,355.36 | 5.66 | 5,654.94 | 5,463.49 | (3.39) | 9,057.30 | 10,212.09 | 12.75 | 2,660.05 | 2,679.78 | 0.74 |
| III | 93,305.30 | 94,293.67 | 1.06 | 2,196.22 | 2,472.36 | 12.57 | 11,307.24 | 11,572.02 | 2.34 | 79,801.84 | 80,249.29 | 0.56 |
| IV-A | 91,350.88 | 99,744.80 | 9.19 | 22,739.77 | 24,924.94 | 9.61 | 27,941.13 | 29,496.80 | 5.57 | 40,669.98 | 45,323.06 | 11.44 |
| IV-B | 84,108.49 | 92,093.89 | 9.49 | 7,585.47 | 8,172.11 | 7.73 | 42,330.33 | 45,034.11 | 6.39 | 34,192.69 | 38,887.67 | 13.73 |
| V | 58,253.02 | 66,132.24 | 13.53 | 13,878.57 | 14,330.16 | 3.25 | 30,134.16 | 36,001.12 | 19.47 | 14,240.29 | 15,800.96 | 10.96 |
| vI | 97,490.23 | 102,675.27 | 5.32 | 23,968.55 | 24,348.20 | 1.58 | 40,362.01 | 43,806.05 | 8.53 | 33,159.67 | 34,521.02 | 4.11 |
| VII | 60,195.69 | 63,811.28 | 6.01 | 14,921.65 | 14,146.50 | (5.19) | 13,699.23 | 14,487.14 | 5.75 | 31,574.81 | 35,177.64 | 11.41 |
| VIII | 47,925.88 | 49,179.57 | 2.62 | 19,222.24 | 19,685.77 | 2.41 | 22,356.62 | 22,882.46 | 2.35 | 6,347.02 | 6,611.34 | 4.16 |
| IX | 172,491.21 | 174,356.62 | 1.08 | 68,143.93 | 71,244.62 | 4.55 | 34,130.26 | 34,924.28 | 2.33 | 70,217.02 | 68,187.72 | (2.89) |
| x | 36,417.54 | 36,906.62 | 1.34 | 11,669.77 | 11,504.95 | (1.41) | 10,388.42 | 10,883.16 | 4.76 | 14,359.35 | 14,518.51 | 1.11 |
| XI | 21,476.93 | 18,922.23 | (11.90) | 4,891.60 | 3,783.42 | (22.65) | 10,526.08 | 7,531.63 | (28.45) | 6,059.25 | 7,607.18 | 25.55 |
| XII | 75,369.04 | 71,278.23 | (5.43) | 57,856.95 | 51,804.46 | (10.46) | 11,117.14 | 11,993.84 | 7.89 | 6,394.95 | 7,479.93 | 16.97 |
| ARMM | 279,755.15 | 286,438.64 | 2.39 | 22,251.80 | 22,683.43 | 1.94 | 22,805.13 | 23,844.80 | 4.56 | 234,698.22 | 239,910.41 | 2.22 |
| CARAGA | 26,264.16 | 23,733.45 | (9.64) | 1,952.74 | 1,773.79 | (9.16) | 20,885.80 | 19,071.73 | (8.69) | 3,425.62 | 2,887.93 | (15.70) |

P - Preliminary


| Region | Commercial |  |  | Private |  |  | PFDA |  |  | LGU |  |  | Traditional |  | \% <br> Change 09/08 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2008 | 2009 |  | 2008 | 2009 |  | 2008 | 2009 |  | 2008 | 2009 |  | 2008 | 2009 |  |
| PHILIPPINES | 292,834.63 | 296,547.43 | 1.27 | 57,990.64 | 47,498.08 | (18.09) | 42,090.21 | 54,764.73 | 30.11 | 14,838.37 | 15,201.26 | 2.45 | 177,915.41 | 179,083.36 | 0.66 |
| NCR | 14,644.30 | 18,783.64 | 28.27 |  |  |  | 14,161.58 | 18,257.72 | 28.92 |  |  |  | 482.72 | 525.92 | 8.95 |
| CAR |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| I | 1,256.13 | 1,425.59 | 13.49 |  |  |  | 92.79 | 32.47 | (65.01) | 58.69 | 46.62 | (20.57) | 1,104.65 | 1,346.50 | 21.89 |
| II | 5,654.94 | 5,463.49 | (3.39) |  |  |  |  |  |  |  |  |  | 5,654.94 | 5,463.49 | (3.39) |
| III | 2,196.22 | 2,472.36 | 12.57 | 1,545.56 | 1,998.84 | 29.33 |  |  |  | 9.96 | 11.10 | 11.45 | 640.70 | 462.42 | (27.83) |
| IV-A | 22,739.77 | 24,924.94 | 9.61 |  |  |  | 3,491.46 | 4,981.89 | 42.69 | 1,122.69 | 1,274.32 | 13.51 | 18,125.62 | 18,668.73 | 3.00 |
| IV-B | 7,585.47 | 8,172.11 | 7.73 |  |  |  |  |  |  |  |  |  | 7,585.47 | 8,172.11 | 7.73 |
| V | 13,878.57 | 14,330.16 | 3.25 | 2,316.00 | 2,280.00 | (1.55) |  |  |  | 3,020.62 | 3,624.69 | 20.00 | 8,541.95 | 8,425.47 | (1.36) |
| VI | 23,968.55 | 24,348.20 | 1.58 | 1,779.95 | 953.01 | (46.46) | 209.10 | 336.76 | 61.05 | 6,196.19 | 6,037.63 | (2.56) | 15,783.31 | 17,020.80 | 7.84 |
| VII | 14,921.65 | 14,146.50 | (5.19) |  |  |  |  |  |  |  |  |  | 14,921.65 | 14,146.50 | (5.19) |
| VIII | 22,541.76 | 22,941.19 | 1.77 | 153.79 | 145.31 | (5.51) |  |  |  | 3,319.52 | 3,255.42 | (1.93) | 19,068.45 | 19,540.46 | 2.48 |
| IX | 65,935.11 | 68,940.68 | 4.56 | 15,195.06 | 19,847.53 | 30.62 | 3,571.41 | 1,690.43 | (52.67) | 1,110.70 | 951.48 | (14.34) | 46,057.94 | 46,451.24 | 0.85 |
| X | 10,559.07 | 10,553.47 | (0.05) |  |  |  |  |  |  |  |  |  | 10,559.07 | 10,553.47 | (0.05) |
| XI | 4,891.60 | 3,783.42 | (22.65) | 94.00 | 116.34 | 23.77 | 827.50 | 1,008.96 | 21.93 |  |  |  | 3,970.10 | 2,658.12 | (33.05) |
| XII | 57,856.95 | 51,804.46 | (10.46) | 36,906.28 | 22,157.05 | (39.96) | 19,736.37 | 28,456.50 | 44.18 |  |  |  | 1,214.30 | 1,190.91 | (1.93) |
| ARMM | 22,251.80 | 22,683.43 | 1.94 |  |  |  |  |  |  |  |  |  | 22,251.80 | 22,683.43 | 1.94 |
| CARAGA | 1,952.74 | 1,773.79 | (9.16) |  |  |  |  |  |  |  |  |  | 1,952.74 | 1,773.79 | (9.16) |

P-Preliminary
Table 3. Municipal Fish Production by Region, Philippines, January - March 2008-2009 ${ }^{\text {P }}$

| Region | Municipal |  |  | Marine |  |  | Inland |  | \% Change 09/08 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2008 | 2009 |  | 2008 | 2009 |  | 2008 | 2009 |  |
| PHILIPPINES | 318,557.24 | 333,805.56 | 4.79 | 275,379.06 | 288,796.00 | 4.87 | 43,178.18 | 45,009.56 | 4.24 |
| NCR | 1,086.73 | 1,021.84 | (5.97) | 1,086.73 | 1,021.84 | (5.97) |  |  |  |
| CAR | 242.77 | 250.31 | 3.11 |  |  |  | 242.77 | 250.31 | 3.11 |
| I | 10,186.89 | 10,792.48 | 5.94 | 9,329.88 | 9,985.53 | 7.03 | 857.01 | 806.95 | (5.84) |
| II | 9,057.30 | 10,212.09 | 12.75 | 6,257.17 | 7,048.45 | 12.65 | 2,800.13 | 3,163.64 | 12.98 |
| III | 11,307.24 | 11,572.02 | 2.34 | 7,770.86 | 8,291.07 | 6.69 | 3,536.38 | 3,280.95 | (7.22) |
| IV-A | 27,941.13 | 29,496.80 | 5.57 | 8,317.47 | 9,785.36 | 17.65 | 19,623.66 | 19,711.44 | 0.45 |
| IV-B | 42,330.33 | 45,034.11 | 6.39 | 42,188.91 | 44,821.35 | 6.24 | 141.42 | 212.76 | 50.45 |
| v | 30,134.16 | 36,001.12 | 19.47 | 28,796.20 | 34,499.11 | 19.80 | 1,337.96 | 1,502.01 | 12.26 |
| VI | 40,362.01 | 43,806.05 | 8.53 | 38,881.48 | 41,995.91 | 8.01 | 1,480.53 | 1,810.14 | 22.26 |
| VII | 13,699.23 | 14,487.14 | 5.75 | 13,644.41 | 14,430.40 | 5.76 | 54.82 | 56.74 | 3.50 |
| VIII | 22,356.62 | 22,882.46 | 2.35 | 21,416.52 | 22,046.00 | 2.94 | 940.10 | 836.46 | (11.02) |
| IX | 34,130.26 | 34,924.28 | 2.33 | 33,935.65 | 34,716.35 | 2.30 | 194.61 | 207.93 | 6.84 |
| x | 10,388.42 | 10,883.16 | 4.76 | 9,768.47 | 10,138.97 | 3.79 | 619.95 | 744.19 | 20.04 |
| XI | 10,526.08 | 7,531.63 | (28.45) | 10,503.59 | 7,496.09 | (28.63) | 22.49 | 35.54 | 58.03 |
| XII | 11,117.14 | 11,993.84 | 7.89 | 5,501.21 | 5,320.80 | (3.28) | 5,615.93 | 6,673.04 | 18.82 |
| ARMM | 22,805.13 | 23,844.50 | 4.56 | 18,420.01 | 19,446.53 | 5.57 | 4,385.12 | 4,397.97 | 0.29 |
| CARAGA | 20,885.80 | 19,071.73 | (8.69) | 19,560.50 | 17,752.24 | (9.24) | 1,325.30 | 1,319.49 | (0.44) |

P- Preliminary
Table 4. Aquaculture Production by Type, by Environment and by Region, January - March 2008-2009 ${ }^{\text {P }}$


## Table 5. Aquaculture: Milkfish Production of Top Producing

 Provinces by Culture Environment and Type of Aquafarm,Philippines, January - March 2008-2009 ${ }^{\text {P }}$
(Metric Tons)

| Culture Environment/ Type of Aquafarm/Province | 2008 | 2009 | $\begin{gathered} \hline \text { \% Change } \\ 09 / 08 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| PHILIPPINES | 67,687.60 | 68,776.89 | 1.61 |
| Brackishwater Fishpond | 39,438.86 | 40,557.07 | 2.84 |
| Bulacan | 7,664.92 | 7,078.55 | (7.65) |
| Negros Occidental | 4,153.49 | 4,813.06 | 15.88 |
| Pampanga | 3,433.45 | 3,701.95 | 7.82 |
| Capiz | 2,878.50 | 2,995.08 | 4.05 |
| Pangasinan | 2,326.31 | 2,602.44 | 11.87 |
| Bataan | 2,512.50 | 2,581.59 | 2.75 |
| Other Provinces | 16,469.70 | 16,784.39 | 1.91 |
| Brackishwater Fish pen | 1,252.52 | 1,285.34 | 2.62 |
| Pangasinan | 888.97 | 915.81 | 3.02 |
| La Union | 340.38 | 365.88 | 7.49 |
| Other Provinces | 23.17 | 3.65 | (84.25) |
| Brackishwater Fish cage | 361.50 | 374.50 | 3.59 |
| Pangasinan | 204.80 | 210.91 | 2.98 |
| La Union | 30.90 | 32.44 | 4.98 |
| Agusan del Norte | 105.30 | 107.60 | 2.19 |
| Other Provinces | 20.50 | 23.55 | 14.88 |
| Freshwater Fish pen | 9,707.41 | 9,194.09 | (5.29) |
| Rizal | 7,218.71 | 6,706.18 | (7.10) |
| Sultan Kudarat | 2,109.79 | 2,116.54 | 0.32 |
| Metro Manila | 223.88 | 195.12 | (12.85) |
| Maguindanao | 114.00 | 117.29 | 2.89 |
| Other Provinces | 41.02 | 58.95 | 43.71 |
| Freshwater Fish cage | 727.45 | 762.61 | 4.83 |
| Batangas | 723.81 | 754.21 | 4.20 |
| Other Provinces | 3.64 | 8.40 | 130.77 |
| Marine Fish pen | 5,951.74 | 5,525.73 | (7.16) |
| Pangasinan | 3,131.01 | 3,239.35 | 3.46 |
| Davao del Sur | 2,527.95 | 2,071.40 | (18.06) |
| lloilo | 152.88 | 70.55 | (53.85) |
| Other Provinces | 139.90 | 144.43 | 3.24 |
| Marine Fish cage | 10,248.12 | 11,077.56 | 8.09 |
| Pangasinan | 7,750.48 | 7,958.97 | 2.69 |
| Davao Sur | 736.38 | 1,180.63 | 60.33 |
| Zambales | 563.83 | 479.46 | (14.96) |
| Davao Norte | 106.09 | 303.78 | 186.35 |
| Other Provinces | 1,091.34 | 1,154.72 | 5.81 |

[^0]Table 6. Aquaculture: Tilapia Production of Top Producing Provinces, by Culture Environment/Type of Aquafarm, Philippines, January - March 2008-2009 ${ }^{\text {P }}$
(Metric Tons)

| Culture Environment/ Type of Aquafarm/Province | 2008 | 2009 | $\begin{gathered} \text { \% Change } \\ 09 / 08 \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| PHILIPPINES | 93,310.41 | 96,403.32 | 3.31 |
| Brackishwater Fishpond* | 3,035.87 | 3,166.49 | 4.30 |
| Pampanga | 984.79 | 1,005.47 | 2.10 |
| Cagayan | 429.30 | 434.99 | 1.32 |
| Bulacan | 288.00 | 274.81 | (4.58) |
| Zamboanga Sur | 200.09 | 213.50 | 6.70 |
| Zamboanga Sibugay | 185.72 | 195.77 | 5.41 |
| Other Provinces | 947.97 | 1,041.96 | 9.92 |
| Freshwater Fishpond | 61,963.60 | 62,900.44 | 1.51 |
| Pampanga | 49,143.09 | 49,398.63 | 0.52 |
| Tarlac | 2,919.20 | 3,011.16 | 3.15 |
| Pangasinan | 2,657.89 | 2,929.79 | 10.23 |
| Nueva Ecija | 1,135.74 | 1,380.72 | 21.57 |
| Bulacan | 1,311.60 | 1,270.94 | (3.10) |
| Other Provinces | 4,796.08 | 4,909.19 | 2.36 |
| Freshwater Fish cage | 24,201.22 | 25,733.31 | 6.33 |
| Batangas | 18,618.82 | 19,726.64 | 5.95 |
| Laguna | 2,233.30 | 2,562.71 | 14.75 |
| Camarines Sur | 1,537.46 | 1,691.21 | 10.00 |
| South Cotobato | 650.00 | 671.78 | 3.35 |
| Ifugao | 487.41 | 472.79 | (3.00) |
| Other Provinces | 674.23 | 608.18 | (9.80) |
| Freshwater Fish pen | 4,069.28 | 4,569.72 | 12.30 |
| Sultan Kudarat | 1,411.00 | 2,141.62 | 51.78 |
| Rizal | 2,237.87 | 1,983.65 | (11.36) |
| Maguindanao | 322.00 | 355.01 | 10.25 |
| Laguna | 72.92 | 71.61 | (1.80) |
| Lanao del Sur | 10.20 | 10.46 | 2.50 |
| Other Provinces | 15.29 | 7.39 |  |
| Others** | 40.43 | 33.36 | (17.49) |

P- Preliminary

* Including those from fish pens and fish cages
** Including those from SFR, rice fish farms and marine fish cages

Table 7. Aquaculture: Tiger Prawn, Mud Crab, Carp and Catfish Production of Top Producing Provinces by Culture Environment and Type of Aquafarm,

Philippines, January - March 2008-2009 ${ }^{\text {P }}$
(Metric Tons)

| Species/Province | 2008 | 2009 | $\begin{aligned} & \text { \% Change } \\ & \text { 09/08 } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| TIGER PRAWN | 11,045.12 | 11,311.75 | 2.41 |
| Brackishwater Fishpond |  |  |  |
| Pampanga | 4,510.85 | 4,672.79 | 3.59 |
| Lanao del Norte | 1,947.22 | 2,011.48 | 3.30 |
| Zamboanga del Norte | 786.26 | 791.22 | 0.63 |
| Bohol | 775.82 | 693.20 | (10.65) |
| Zamboanga Sibugay | 716.88 | 674.65 | (5.89) |
| Other Provinces | 2,308.09 | 2,468.41 | 6.95 |
| MUD CRAB | 3,362.36 | 3,539.00 | 5.25 |
| Brackishwater Fishpond |  |  |  |
| Lanao del Norte | 1,297.81 | 1,384.50 | 6.68 |
| Sorsogon | 1,083.84 | 1,092.30 | 0.78 |
| Pampanga | 579.30 | 619.50 | 6.94 |
| Misamis Occidental | 84.00 | 83.00 | (1.19) |
| Camarines Sur | 48.36 | 56.12 | 16.05 |
| Other Provinces | 269.05 | 303.58 | 12.83 |
| CARP | 715.47 | 694.54 | (2.93) |
| Freshwater Fishpond | 117.49 | 59.61 | (49.26) |
| Lanao del Norte | 44.41 | 14.75 | (66.79) |
| Quezon | 29.09 | 18.18 | (37.50) |
| Lagunal | 13.79 |  | (100.00) |
| Pampanga | 11.40 | 10.17 | (10.79) |
| Other Provinces | 18.80 | 16.51 | (12.18) |
| Freshwater Fish Pen/Cage | 596.62 | 631.80 | 5.90 |
| Rizal | 415.11 | 422.53 | 1.79 |
| Laguna | 163.45 | 192.60 | 17.83 |
| Metro Manila | 12.99 | 11.14 | (14.24) |
| Other Provinces | 5.07 | 5.53 | 9.07 |
| Small Farm Reservoir | 1.28 | 3.13 | 144.53 |
| llocos Norte |  | 0.01 |  |
| Cagayan | 1.15 | 0.97 | (15.65) |
| Quirino | 0.13 | 2.15 | 1,553.85 |
| Rice Fish | 0.08 | - | (100.00) |
| Pangasinan | 0.08 |  | (100.00) |
| CATFISH | 462.10 | 586.42 | 26.90 |
| Freshwater Fishpond |  |  |  |
| Iloilo | 116.65 | 177.14 | 51.86 |
| Nueva Ecija | 84.19 | 89.34 | 6.12 |
| Davao City | 33.98 | 77.58 | 128.31 |
| Bulacan | 37.12 | 35.61 | (4.06) |
| South Cotabato | 31.25 | 35.22 | 12.70 |
| Other Provinces | 158.91 | 171.53 | 7.94 |

P - Preliminary

Table 8. Aquaculture: Mariculture Production by Species and by Province, Philippines, April-June 2008-2009 ${ }^{\text {P }}$
(Metric Tons)

| Species/Province | 2008 | $\mathbf{2 0 0 9}$ | \% Change <br> 09/08 |
| :--- | ---: | ---: | ---: |
| SEAWEED |  |  |  |
| Tawi-Tawi | $\mathbf{4 0 9 , 0 6 1 . 0 1}$ | $\mathbf{4 2 7 , 2 9 9 . 4 2}$ | $\mathbf{4 . 4 6}$ |
| Sulu | $157,703.22$ | $158,901.77$ | 0.76 |
| Palawan | $56,626.94$ | $59,022.26$ | 4.23 |
| Bohol | $32,952.84$ | $37,217.29$ | 12.94 |
| Zamboanga Sibugay | $25,802.74$ | $29,008.50$ | 12.42 |
| Other Provinces | $20,448.08$ | $23,075.65$ | 12.85 |
|  | $115,527.19$ | $120,073.95$ | 3.94 |
| OYSTER |  |  |  |
| Bulacan | $\mathbf{4 , 9 3 7 . 2 7}$ | $\mathbf{4 , 8 4 8 . 2 9}$ | $\mathbf{( 1 . 8 0 )}$ |
| Capiz | $1,653.60$ | $1,763.90$ | 6.67 |
| Negros Occidental | $1,510.61$ | $1,426.17$ | $(5.59)$ |
| Pangasinan | 430.00 | 356.38 | $(17.12)$ |
| Iloilo | 275.25 | 267.90 | $(2.67)$ |
| Other Provinces | 342.23 | 261.94 | $(23.46)$ |
|  | 725.58 | 772.00 | 6.40 |
| MUSSEL |  |  |  |
| Capiz | $\mathbf{6 , 4 0 1 . 7 9}$ | $\mathbf{6 , 1 3 7 . 0 6}$ | $\mathbf{( 4 . 1 4 )}$ |
| Samar | $3,848.80$ | $3,684.07$ | $(4.28)$ |
| Bataan | 815.32 | 784.33 | $(3.80)$ |
| Negros Occidental | 662.15 | 629.77 | $(4.89)$ |
| Aklan | 517.77 | 525.80 | 1.55 |
| Other Provinces | 214.82 | 232.55 | 8.25 |
|  | 314.66 | 280.54 | $(10.84)$ |
|  |  |  |  |

P-Preliminary
Table 9．Producer，Wholesale and Retail Prices and Price Margins of Selected Aquaculture Fish Species，

|  |  | $\begin{aligned} & \bar{\circ} \\ & \text { én } \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{\infty} \\ & \stackrel{\infty}{\sim} \end{aligned}$ | $\begin{aligned} & \stackrel{\widetilde{N}}{\stackrel{1}{N}} \end{aligned}$ | $\begin{aligned} & \hline \stackrel{\circ}{0} \\ & \stackrel{e}{6} \end{aligned}$ | N |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \stackrel{\sim}{N} \\ \underset{\sim}{\circ} \end{gathered}$ | $\stackrel{N}{\stackrel{\rightharpoonup}{\sim}}$ | $\underset{\sim}{\underset{\sim}{\infty}}$ | $\stackrel{\underset{\sim}{\infty}}{\underset{\sim}{2}}$ | $\stackrel{\text { ® }}{\stackrel{\sim}{\infty}}$ |  |
|  |  | $\underset{\sim}{N}$ | $\stackrel{\curvearrowleft}{\stackrel{\circ}{\gtrless}}$ | $\begin{aligned} & \tilde{m} \\ & \dot{q} \end{aligned}$ | $\underset{\sim}{\underset{\sim}{i}}$ | $\stackrel{\sim}{\sim}$ |  |
| $\begin{gathered} \stackrel{0}{\dot{0}} \\ \stackrel{y}{2} \end{gathered}$ | $\frac{\stackrel{\rightharpoonup}{6}}{\substack{0}}$ | $\begin{aligned} & \stackrel{\circ}{\overleftarrow{+}} \\ & \stackrel{+}{6} \end{aligned}$ |  | $\begin{aligned} & \widehat{o 厄} \\ & \stackrel{ल}{0} \end{aligned}$ |  | $\begin{aligned} & \text { L্ల } \\ & \stackrel{\sim}{c} \end{aligned}$ |  |
|  |  | $\begin{aligned} & \stackrel{\infty}{\infty} \\ & \stackrel{\circ}{\circ} \end{aligned}$ | $\stackrel{\hat{N}}{\mathrm{~N}}$ | $\begin{aligned} & \widehat{\infty} \\ & \stackrel{\infty}{\sim} \end{aligned}$ | $\begin{aligned} & \bar{e} \\ & \stackrel{\sim}{\mathrm{~N}} \end{aligned}$ | $\stackrel{n}{\underset{\sim}{\dot{N}}}$ | $\stackrel{\text { ¢ }}{\text { ¢ }}$ |
|  | $\begin{array}{c:c} \stackrel{y}{0} \\ 0 & \hat{o} \\ \hline \mathbf{N} \end{array}$ | $\begin{aligned} & \stackrel{\infty}{\infty} \\ & \stackrel{\oplus}{\oplus} \end{aligned}$ | $\stackrel{\infty}{\infty}$ | $\begin{aligned} & \stackrel{\nwarrow}{n} \\ & \stackrel{y}{ \pm} \end{aligned}$ | $\begin{aligned} & \stackrel{0}{6} \\ & \stackrel{6}{\circ} \end{aligned}$ | $\stackrel{\infty}{\stackrel{\infty}{\dot{N}}}$ | $\stackrel{\text { ® }}{\text { N }}$ |
| $\begin{array}{lll} \hline 0 & 0 \\ \circ & 0 \\ \hline & 0 \\ \hline 0 & 0 \\ \hline \end{array}$ |  | $\begin{aligned} & \hline \stackrel{\circ}{0} \\ & \stackrel{\circ}{6} \end{aligned}$ | $\begin{aligned} & \text { y } \\ & \stackrel{6}{6} \end{aligned}$ | $\stackrel{\rightharpoonup}{\circ}$ | $\stackrel{\ominus}{+}$ | No | $\stackrel{\infty}{\infty}$ |
| $\left\|\begin{array}{c} \overline{\overline{5}} \\ \stackrel{\rightharpoonup}{0} \end{array}\right\|$ | \％${ }_{\text {O }}$ | $\begin{aligned} & \stackrel{6}{6} \\ & \stackrel{6}{\Gamma} \end{aligned}$ | $\begin{aligned} & \bar{ल} \\ & \infty \\ & \infty \end{aligned}$ | $\begin{aligned} & \hline \stackrel{\circ}{\mathrm{N}} \\ & \underset{\sim}{2} \end{aligned}$ |  |  | － |
|  | $\stackrel{\infty}{\circ}$ | $\begin{aligned} & \underset{\circ}{\circ} \\ & \stackrel{\circ}{2} \end{aligned}$ | $\begin{aligned} & \bar{i} \\ & \stackrel{\text { ® }}{ } \end{aligned}$ | $\begin{aligned} & \stackrel{\circ}{\underset{\sim}{\mathcal{F}}} \end{aligned}$ | $\begin{aligned} & \text { N } \\ & \dot{\circ} \end{aligned}$ | $\stackrel{\bar{\infty}}{\underset{\infty}{\infty}}$ | $\begin{aligned} & \hat{\circ} \\ & \stackrel{\text { ®}}{\sim} \end{aligned}$ |
|  | － | $\begin{aligned} & \infty \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\stackrel{N}{\underset{\sim}{~}}$ | $\begin{aligned} & \underset{\underset{J}{J}}{J} \end{aligned}$ | $\stackrel{\circ}{\mathrm{p}}$ | $\begin{aligned} & \stackrel{セ}{\circ} \\ & \underset{N}{N} \end{aligned}$ | \％ |
|  |  | $\begin{aligned} & \text { जे } \\ & \stackrel{\text { N}}{\sigma} \end{aligned}$ | $\begin{aligned} & \text { İ } \\ & \stackrel{\text { N }}{2} \end{aligned}$ | $\begin{aligned} & \underline{\hat{N}} \mathrm{O} \\ & \end{aligned}$ | $\stackrel{\text { ¢ }}{ }$ | $\stackrel{\text { ¢ }}{\stackrel{\text { ¢ }}{\text { en }}}$ | $\stackrel{\stackrel{N}{¢}}{\stackrel{1}{0}}$ |
| $\begin{aligned} & \frac{*}{\stackrel{0}{\overleftarrow{0}}} \\ & \frac{\mathbf{e}}{0} \\ & \frac{0}{3} \end{aligned}$ | ö̀ | $\begin{aligned} & \hline \stackrel{\circ}{\grave{~}} \\ & \hline \end{aligned}$ | $\begin{aligned} & \hline \stackrel{\infty}{\overleftarrow{\circ}} \\ & \stackrel{y}{8} \end{aligned}$ | $\begin{aligned} & \bar{\sim} \\ & \stackrel{\otimes}{8} \end{aligned}$ | $\begin{aligned} & \bar{ल} \\ & \stackrel{\leftrightarrow}{6} \end{aligned}$ | $\begin{aligned} & \text { N } \\ & \text { N } \end{aligned}$ | $\stackrel{\text { m }}{\substack{\text { m }}}$ |
|  | $\stackrel{\infty}{\circ}$ | $\stackrel{\cong}{\infty}$ | $\stackrel{\otimes}{\infty}$ | $\underset{\underset{\sim}{\mathrm{N}}}{\stackrel{\rightharpoonup}{2}}$ | $\stackrel{\circ}{\grave{j}}$ | $\begin{aligned} & \stackrel{8}{8} \\ & \stackrel{1}{2} \end{aligned}$ | ¢ |
|  | － | $\begin{aligned} & \circ \\ & \stackrel{\circ}{\circ} \\ & \hline \end{aligned}$ | $\stackrel{\circ}{\stackrel{0}{0}}$ | $$ | $\begin{aligned} & \widetilde{\sim} \\ & \underset{\sim}{\circ} \end{aligned}$ | $\stackrel{\bar{\sigma}}{\underset{\sim}{n}}$ | $\stackrel{\circ}{\text { ¢ }}$ |
|  |  |  | $\stackrel{\underset{\sim}{\mathrm{I}}}{ }$ |  | $\stackrel{\llcorner }{\circ}$ | $\stackrel{\substack{\text { ¢ }}}{ }$ | ¢ิ |
| $\left\|\begin{array}{c} \stackrel{\rightharpoonup}{\mathbf{4}} \\ \mathbf{S} \\ \mathbf{0} \mathbf{0} \\ \hline \end{array}\right\|$ | ষ্ণ | $\begin{aligned} & \hline \stackrel{O}{\circ} \\ & \dot{\infty} \end{aligned}$ | $\begin{aligned} & \underset{\sim}{\mathrm{O}} \\ & \end{aligned}$ | $\begin{aligned} & \hline \underset{\sim}{\text { IN }} \end{aligned}$ | $\overline{\hat{m}}$ | $\begin{aligned} & \hline \text { on } \\ & \infty \\ & \infty \end{aligned}$ | $\sim$ |
|  | 이 | $\stackrel{\stackrel{O}{\mathrm{O}}}{\stackrel{1}{\mathrm{C}}}$ | $\begin{aligned} & \text { 毋 } \\ & \text { ei } \end{aligned}$ |  | $\begin{aligned} & \infty \\ & \dot{q} \\ & \dot{¢} \end{aligned}$ | $\begin{aligned} & \infty \\ & \\ & \hline \end{aligned}$ | \％ |
|  | $\stackrel{\rightharpoonup}{\mathrm{N}}$ | $\begin{aligned} & \circ \\ & \stackrel{\infty}{\oplus} \end{aligned}$ | $\begin{aligned} & \stackrel{\infty}{+} \\ & \stackrel{\leftrightarrow}{6} \end{aligned}$ | $\stackrel{\stackrel{N}{N}}{\underset{\sim}{n}}$ | $\underset{\sim}{\underset{\sim}{N}}$ | $\begin{gathered} \text { M } \\ \stackrel{\rightharpoonup}{n} \end{gathered}$ | ¢ |
|  |  |  |  |  |  |  |  |

＊BAS AMSAD data


[^0]:    P - Preliminary

