

Annual Report 2018 *Caraga*



BUREAU OF FISHERIES AND AQUATIC RESOURCES
Km. 4, Brgy. Luna, Surigao City

Whats Inside?

Messages

Fisheries Development Program

- **Capture Fisheries** : 6
Gearing towards Productivity and Climate Resiliency
- **Aquaculture** : 8
Securing Food, Sustaining Lives
- **Post-harvest** : 10
Reducing Losses while Adding Value
- **Market Development Services** : 11
Flaunting Caraga's Seafood Pride
- **Special Projects** : 12
 - Special Areas for Agricultural Development (SAAD) Program for Fishery: Severing the Rope of Poverty in Coastal Communities
 - Fisheries Coastal Resource and Livelihood (FishCoral) Project
 - Balik Sigla sa Ilog at Lawa (BASIL)

Fisheries Regulatory and Law Enforcement Program

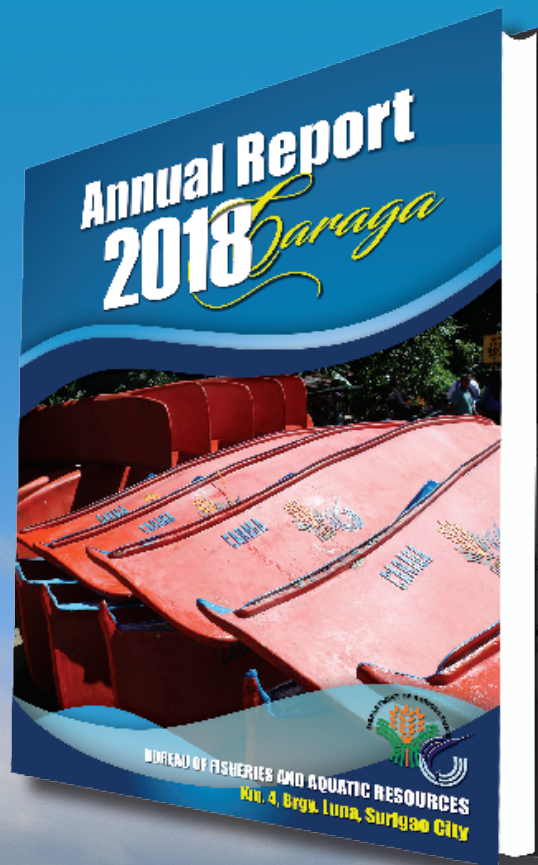
- **Monitoring, Control and Surveillance** : 16
Safeguarding the Wealth of Caraga Fishing Grounds
- **Quality Control and Inspection** : 19
Securing Safe and Reliable Food Fish Source
- **Quarantine, Registration and Licensing** : 23
Ensuring food safety
- **Coastal and Inland Fisheries Resource Management** : 26
Enhancing Fishery Resources in Coastal Communities

Fisheries Extension Program

- **Trainings, Education and Technical Services:** 28
Transforming Fisherfolk Lives and Bridging Opportunities
- **Technology Demonstrations** : 30
- **Fisheries Scholarship Program** : 30
- **Fisheries Information Services** : 31
- **Fisheries and Aquatic Resources Management Council (FARMC)** : 32
- **Development of Policies, Plans and Programs** : 33
- **National Stock Assessment Program** : 34
- **Legal and Advisory Services** : 37

Organizational Structure

Photo News

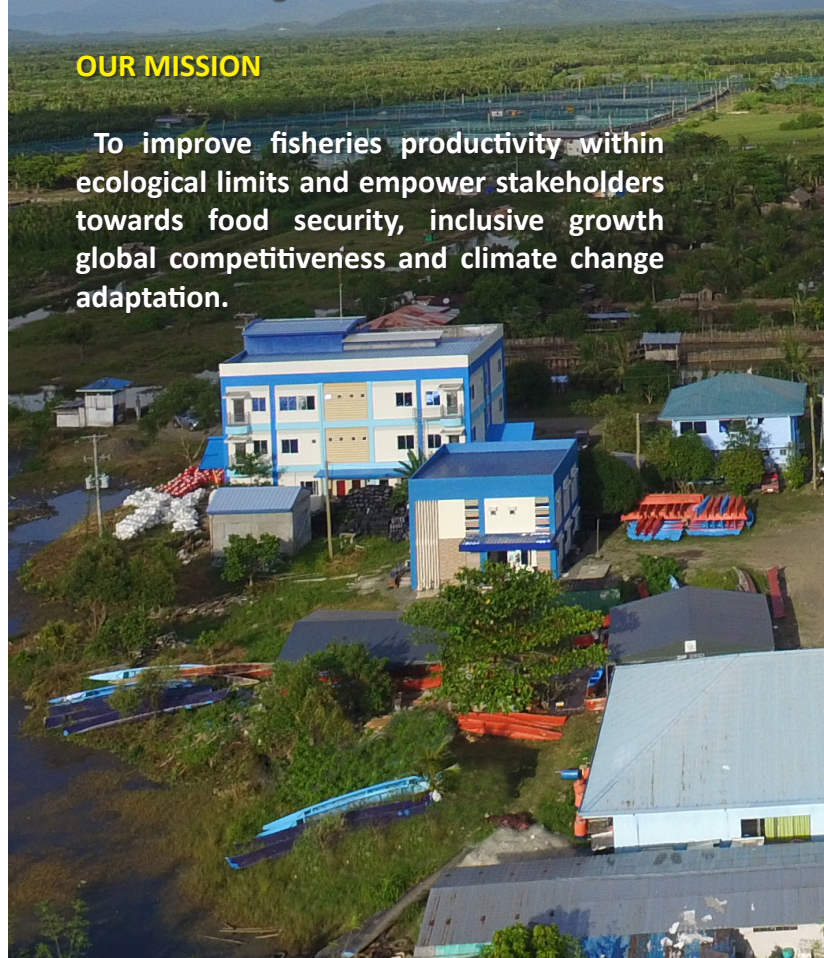


OUR VISION

An institution of excellence in sustainable fisheries management and services.

OUR MISSION

To improve fisheries productivity within ecological limits and empower stakeholders towards food security, inclusive growth global competitiveness and climate change adaptation.



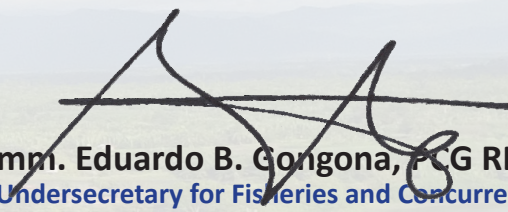


I would like to congratulate the hardworking men and women of BFAR Caraga for another successful year in implementing the programs and projects of BFAR and for sustaining a productive fisheries sector in Caraga Region.

The achievements etched in this annual report are proof of your tireless effort in combatting Illegal, Unreported and Unregulated Fishing, promoting coastal resource protection and management, and providing sustainable livelihood for our fisherfolk.

Likewise, I commend the office for ensuring that the agency's policies and programs such as the Malinis at Masaganang Karagatan (MMK) and the Balik Sigla sa Ilog at Lawa (BASIL), among others, are well-implemented in the grassroots level. It is worth recognizing that the first ever Hall of Fame Awardee of the MMK Search for Outstanding Coastal Community, the Municipality of Cortes in Surigao del Sur, hails from the Caraga Region.

May you continue serving as stewards of the sea and in advocating for fisheries conservation and sustainable resource management, as we strive to improve the production of our fisheries commodities and to bring sufficient and safe food for the Filipino people, today and in the years to come.



Com. Eduardo B. Gongona, PCG RET
Undersecretary for Fisheries and Concurrent
BFAR National Director

Messages



With barely less than a year since I took the helm as the Regional Director of BFAR Caraga, it was my priority to deliver the needed and appropriate interventions towards the development of aquaculture in the region. The advent of climate change, growing population and rising demand of food, shifted the strategic direction of fisheries to aquaculture.

For this year, one significant milestone of the Bureau is the preliminary but noteworthy steps undertaken in the establishment of three (3) legislated hatchery facilities in the region. Working in close coordination with BFAR National Office and support from the Southeast Asian Fisheries Development Center (SEAFDEC), the construction will commence in 2019 and hopefully operate in the succeeding year. Another five (5) areas are targeted for legislated hatcheries, making eight (8) units allocation for Caraga Region. The initiative will significantly address the shortage of fry and fingerlings needed for aquaculture and it will also enable the fish seed production of other high-value fish species.

While progress has been made in fisheries law enforcement, formation of Baywide Management Alliances of Local Government Units is underway to boost regulation and sustainable use of the vast fisheries resources in the region.

For 2018, it is an honor and with gratitude to present the results of the cohesive efforts of the regional Bureau through this report of the various interventions made for the development of the region's fisheries sector and its industry as a whole.

Mabuhay tayong lahat!



Visa Tan-Dimerin, CESO V
Office of the Regional Director



The year 2018 has paved another challenging year for the BFAR Caraga. We have faced the pressure brought by the increasing demand for safe and affordable food fish, the widespread illegal fishing and the ever changing climate. In spite of this, we vigorously continued to pursue our mission to improve fisheries production and contribute to the nation's food security.

I would like to extend my great thanks to the Local Government Units, other regional line agencies and the private sector, who are our partners towards growth. All our endeavors would have not been realized without your paramount support. My profound appreciation also to the regional office staff, Provincial Fisheries Offices, and Technology Outreach Stations for a job well done and may we all continue our relentless efforts to ensure productivity and sustainability of the fisheries sector.

It is with profound honor and pride to present the accomplishments of the BFAR Caraga for these are the fruit of our collaborative efforts towards the development of our region.

Edgardo P. Balambao

Office of the Assistant Regional Director

Fisheries Development Program

A. Capture Fisheries : *Gearing towards productivity and climate resiliency*

Fishermen are the prime absorber of impacts of coastal resource degradation and adverse weather conditions. Better gears and resilient fishing boats could help increase fish catch and improve living conditions of these local fishers.

The people in coastal communities in Caraga have since relied on the bounty of the fishing grounds of the region. Many of them depend on fishing as a primary source of income and livelihood.

The reality in which these same people are the primary absorber of impacts of illegal fishing activities, destruction of marine habitats, and adverse weather conditions, pushed the Bureau towards improving the socio-economic condition of these fishermen. Through the F/B Pagbabago Livelihood Development Program, the Bureau has equipped fishermen with fiberglass reinforced plastic (FRP) boats, a climate-resilient boat made from durable material (fiberglass) that could last longer than traditional wooden boats.

Distribution of FRP boats in Caraga Region in 2018.

Province	Fishing Boat				Patrol Boat		No. of Beneficiaries
	14-16 footer	20 footer	32 footer	Engine	32 footer	Engine	
Agusan del Norte	105	120	6	128	15	22	368
Agusan del Sur	16	-	-	-	-	2	17
Dinagat Islands	-	1	-	1	5	10	6
Surigao del Norte	26	56	51	52	6	12	243
Surigao del Sur	35	37	5	2	18	-	104
Total	182	214	62	183	44	46	738



Seven hundred thirty eight fishermen from the five (5) provinces in Caraga received a total of 458 units of FRP boats in 2018. These ranged from 14-16 footer paddle boats (182 units), 20-footer (214 units) and 32-footer (62 units) fishing boats with complete accessories. Twenty seven coastal municipalities in the region also received 44 units of FRP Patrol Boats to support the local government in reinforcing fishery laws in the municipal waters.

The capture fishers were provided with environment-friendly fishing gears and paraphernalia. A total of 6,497 units of gears were distributed to 689 fisherfolk throughout Caraga. There were 1,853 units of gill nets, 121 units of cast nets, 766 units of hook and lines, 1,505 fish pots, 2,000 units of squid jiggers, 200 units of life vests and 52 units of shallow-water fish shelter, locally known as payaos.

Distribution of fishing gear and paraphernalia in Caraga Region CY 2018

Fishing Gear/ Paraphernalia	Province					TOTAL (per gear)
	ADN	ADS	PDI	SDN	SDS	
Gill net	33	300	670	350	500	1,853
Cast net	21	100	-	-	-	121
Hook and lines	282	-	-	484	-	766
Fish pot	-	155	1,000	110	240	1,505
Squid jigger	-	-	1,000	1,000	-	2,000
Payao	22	-	-	24	6	52
Life vests	200	-	-	-	-	200
TOTAL (per Province)	558	555	2,670	1,968	746	6,497

Legend: ADN – Agusan del Norte, ADS – Agusan del Sur, PDI – Province of Dinagat Islands, SDN – Surigao del Norte, SDS – Surigao del Sur

The project does not only provide livelihood intervention to fisherfolk but also promote responsible resource utilization by providing selective and easy to operate gears to decrease illegal fishing activities in municipal waters particularly the use of explosives and poisonous substances.



B. Aquaculture: Securing Food, Sustaining Lives

The people in Caraga are fond eaters of fish and fishery product as evidenced by its per capita consumption placed at 41.6 kgs. Aquaculture, coupled with production from the wild, could ensure sufficient, safe and affordable fish and other aquatic products for its population

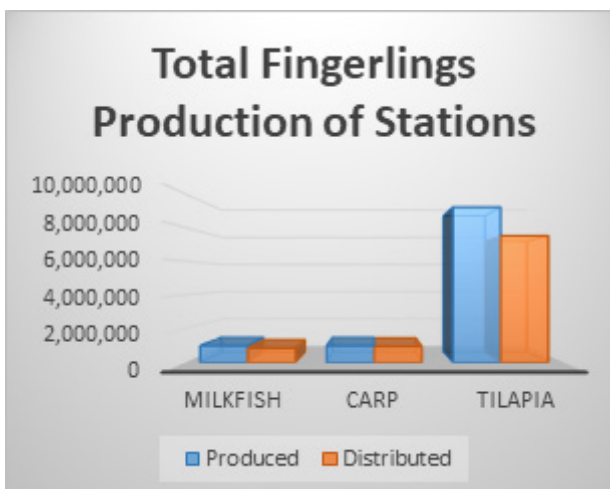


Over the years, the Bureau has unceasingly promoted competitive and sustainable

aquaculture to augment fish capture production and at the same time reduce fishing pressure in the wild. The initiative requires the provision of inputs and technical assistance on aqua farming, with priority fisheries commodity namely tilapia, milkfish, seaweeds, shrimp and shellfish.

The Bureau has sustained the production of quality fish fingerlings to support qualified fisherfolk and private fish farm operators in the region. The fingerlings are produced from three (3) technology outreach stations located in Brgy. Anibongan, Kitcharao, Agusan del Norte, Sitio Tawilon, Brgy. Ambago, Butuan City and Brgy. Pananay-an, Placer, Surigao del Norte.

In 2018, the Stations produced a total of 11,200,000 pieces of fingerlings. Ninety-one percent (91%) of which were from Kitcharao station where freshwater fish species are produced. These include 9.2 million pieces of tilapia fingerlings and one (1) million pieces of carp. Production of tilapia in 2018 was 14% higher than the 8.05 million pieces produced in 2017. The other eight percent (8%) was from Masao and Placer stations, which produced a total of one (1) million pieces of milkfish fingerlings.



Fingerlings production and distribution, CY 2018 (in pieces)

The fingerlings produced were distributed to private operators of small-scale fishponds, fish cages or fish pens throughout the region.

A total of 9,305,000 pieces of fingerlings were distributed in 2018, consisting of 7,500,000 pieces tilapia, 955,000 pieces carp, and 850,000 pieces milkfish fingerlings.

Aside from fish, the Bureau also distributed 20,000 kilograms seaweed propagules through its Seaweed Development Program. The seaweeds were produced from nurseries in Cagdianao, Province of Dinagat Islands and in Lianga, Surigao del Sur. To help farmers who have their own propagules, 227 units of seaweed farm implements were distributed in the provinces of Dinagat Islands, Surigao del Norte, and Surigao del Sur.

The Bureau also established its first Shrimp School in Masao Technology Outreach Station in 2018. The Shrimp School served as a demonstration of a modified intensive shrimp farming that utilizes low-cost and locally-available materials while ensuring bio-security in the farm. There were 120,000 pieces of white shrimp *Litopennaeus vannamei* fry stocked in November 2018 for the Shrimp School.

In terms of technical assistances, the Fisheries Production and Support Services Division (FPSSD) – Aquaculture Section and Regional Fish Health Laboratory, under the HIPON Program (Hipun Inaangat ang Produksyon), conducted farm registrations of those engaged in shrimp monoculture or polyculture with other species. Its purpose is to establish traceability of shrimp farms in an effort to prevent the spread of diseases associated with shrimp culture. Forty (40) farms were registered in 2018, majority of which were in Agusan del Norte (25 farms) and the rest were in Surigao del Sur (12 farms), Province of Dinagat Islands (2 farms) and Surigao del Norte (1 farm).



The seaweed nursery in Sta. Rita, Cagdianao, Province of Dinagat Islands.





Participants during the 2nd Caraga Shrimp Forum in Butuan City.

Under the HIPON Program, the 2nd Caraga Shrimp Forum was conducted last May 3, 2018 in Butuan City to create a venue for the Bureau and partner LGUs, Private sectors and stakeholders of the shrimp industry to discuss technology updates, issues, policies, and opportunities regarding shrimp culture and marketing.

Preliminary works on the establishment of legislated hatcheries in Caraga were conducted. Three (3) legislated hatcheries from the 16th Congress were selected. These are in Lingig, Surigao del Sur by virtue of Republic Act 10787, Del Carmen, Surigao del Norte through RA 10825, and Jabonga, Agusan del Norte in line with RA 10813. There are five (5) more legislated hatcheries to be put up in the region with legislation initiated by the House of Representatives.

Ocular inspection, check listing, drone footage and assessments of the proposed hatchery sites were conducted jointly with the Southeast Asian Fisheries and Development Center Aquaculture Department (SEAFDEC/AQD). The sites for legislated hatchery are one (1) hectare area in Brgy. San Fernando, Del Carmen, Surigao del Norte and 1.2 hectare in Brgy. Palo-Alto, Lingig, Surigao del Sur, and another 340 square meter area in Sitio Trucut, Cuyago, Jabonga, Agusan del Norte.

C. Post-harvest : ***Reducing losses while adding value***

Post-harvest losses refer to the portion of the harvest that is lost in the food supply chain before it reaches the consumer. Next to low productivity, post-harvest losses is a major concern in the food sector as it results to income loss and contribute substantially to food shortage.

One of the means to reduce fisheries post-harvest losses is value-adding, wherein a product is enhanced for it to become more valuable in the market. Processed fish, for instance, is more appealing in a presentable container or packaging, than when sold fresh.

For the year in review, the Bureau through its Provincial Fisheries Offices provided 100 units of post-harvest equipment to fisherfolk associations who are engaged in fish processing. These include 27 units of solar dryers, five (5) seaweed dryers, 62 plastic sealers, four (4) vacuum packers and two (2) pressure cookers. Utensils for fish processing were also distributed to women organizations.

D. Market Development Services: *Flaunting Caraga's Seafood*



The lobster from the Dinagat Islands commands high price in Tagbilaran City!

The Bureau, via the regional Fisheries Post-Harvest and Marketing Section (FPHMS), strives to promote the region's seafood and seafood-based products. It takes pride to exhibit the value-added/processed fishery products developed by fisheries stakeholders in agri-aqua trade fairs and expos throughout the country.

Before the first quarter of 2018 ended, the Bureau received invitations from and participated in two (2) prestigious expositions – the Mindanao Trade Expo during the Araw ng Dabaw in Davao City, and the National Trade Fair (Sikat Pinoy) at SM Megamall, Mandaluyong City.

By the end of 2018, the Bureau showcased Caraga's fishery products in 13 expositions such as CARAT Expo 2018 in Surigao City, Bohol Fish Market and Tienda in Tagbilaran City, and the World Bazaar Festival in Pasay City, to mention a few.

Some of the products featured in these expos include bottled Tuna Flakes/Chunks in Corn Oil by MAFISCO (Mangagoy Fisherfolk Cooperative) of Bislig City, Seaweed Pickles of Indog Lianga Delights of Lianga, Surigao del Sur, Seaweed Strips and Cubes by Annabel's Seaweed Strips of Santiago, Agusan del Norte, bottled sardines and bangus varieties by JIDA Aqua Resources of Butuan City, Salted Oyster from Libjo, Province of Dinagat Islands, dried pusit from Malimono, Surigao del Norte, and fresh and frozen products by Chen Marine Products of Jabonga, Agusan del Norte.

FPHMS brought the region's fishery pride to the Bohol Fish Market and TienDA in Tagbilaran City



V. Special Projects: Severing the Rope of Poverty in Caraga's Coastal Communities

Special Areas for Agricultural Development (SAAD) Program for Fishery

Addressing the high incidence of poverty in most coastal communities has been a major challenge among development agencies. These areas are most often neglected due to poor infrastructure, and its inaccessibility has hindered government assistance to reach the poorest of the poor. This description fits the rural areas of Agusan del Sur and Surigao del Sur, which is the poorest provinces of the Caraga Region. Identified as target provinces for Special Areas for Agricultural Development (SAAD) Program for Fisheries, the Bureau has undertaken series of pre-implementation activities in preparation for the program launching in 2019.

Multiple engagements undertaken with the Provincial Fishery and Aquatic Resources Office (PFARO) of the Province of Surigao del Sur and the Provincial Agriculture and Veterinary Office (PAVO) of the Province of Agusan del Sur decided the selection of SAAD municipalities based on their poverty incidence rankings.

Identified SAAD Municipalities

Province	Municipality
Agusan del Sur	San Luis, Esperanza, La Paz, Veruela, Loreto, Talacogon, San Francisco
Surigao del Sur	Marihatag, San Miguel, Lanuza, San Agustin, Lingig, Barobo, Lian-ga Bayabas, Tago

A total of 193 households and nine (9) associations from seven (7) municipalities were the identified beneficiaries for Agusan del Sur, 81 households and 22 associations have been proposed for Surigao del Sur.

The Provincial Fisheries Offices, with the support of the Planning, Monitoring and Evaluation Unit, spearheaded the validation of targeted beneficiaries submitted by the selected LGUs. The validation was guided by the eligibility requirement set by the program with emphasis on Fish-R registration and the household income.

The Needs Assessment activity for the Province of Agusan del Sur was conducted on September 4-5, 2018 and for the Province of Surigao del Sur on September 19-20, 2018.

The output of these activities was the identification of projects per identified municipality and the respective target beneficiaries.

Identified interventions for SAAD.

Projects	SDS	ADS
Fishing boat & gear livelihood package	√	√
Aquaculture livelihood package		
Crab culture in pond (aquasilvi)	√	-
Crab fattening	√	-
Bangus culture in pond	√	-
Bangus garungan	√	-
Bangus and siganid polyculture	√	-
Bangus in Pen	√	-
Lobster grow-out culture	√	-
Lobster nursery	√	-
Seaweed culture	√	-
Shellfish culture	√	-
Tilapia culture in pond	√	√
Tilapia culture in cage	√	√
Tilapia nursery	√	√

2018 FishCORAL ACCOMPLISHMENT REPORT

The Fisheries, Coastal Resources and Livelihood (FishCORAL) Project implements specific activities intended to increase income of fishermen through engagement of livelihood activities. The project implementors is in close coordination with the municipalities/cities covered by the FishCORAL.

Physical Accomplishment:

The highlight accomplishments of the Project for 2018 are as follows;

- a. Continuous strengthening of the 2 Baywide Management Councils of Lianga-Hinatuan Bislig Bay and Butuan Bay through regular meetings and approval of ordinances.
- b. Continuous strengthening of the 18 Municipal Fishery and Aquatic Resources Management Councils through provision of technical assistance and determination of the level of their organization.
- c. Continuous support to municipal fishery licensing through FishR and BoatR comprising 322 registrations.
- d. Completion on the construction of the 1 Baywide Multipurpose Management Building (BMMB) for Lianga-Hinatuan-Bislig Bay.
- e. Completion on the construction of 5 watchtowers located in the municipality of Jabonga, Nasipit, Cabadbaran City and Carmen of Agusan del Norte and Cagwait of Surigao del Sur.
- f. Completion on the conduct of 2 Participatory Resource and Socio-economic Assessment (PRSA), evaluation and validation of results and dissemination of PRSA data to stakeholders.
- g. Formulation of 18 Coastal Resource and Fisheries Management (CRFM) Plans for the municipalities and cities covered by the project.
- h. Rehabilitation of 12 hectares of mangrove area located in Barobo, Surigao del Sur with 5 hectares, Lianga, Surigao del Sur with 3 hectares and Bayabas, Surigao del Sur with 4 hectares.
- i. Establishment/Rehabilitation of 16 Fish Sanctuaries utilizing 87 fish sanctuary markers covering 738.32 hectares in 10 municipalities.
- j. Implementation of the Giant Clam Stock Enhancement Project in Carmen, Agusan del Norte.
- k. 2 other resource management measures accomplished with the delivery of diving gears for the CRM Section of BFAR Caraga and support equipment to Multispecies Hatchery in Cortes, Surigao del Sur for operation.

Balik Sigla sa Ilog at Lawa (BASIL)

Advocating for productive fisheries resources and poverty alleviation among fisherfolk living in upland or inland far-flung areas is one of the ultimate goals of the Bureau. With this, the Bureau implemented the National Inland Fisheries Enhancement Program (NIFEP) through the Balik Sigla sa Ilog at Lawa (BASIL) which aims to rehabilitate/restore physical conditions of minor lakes and reservoirs, enhance inland fisheries production, and repopulate indigenous species in support to biodiversity conservation. This program will significantly benefit fisherfolks living near these bodies of water especially the indigenous people who depend on its natural bounties.

BASIL was officially launched last April 19, 2018 at Butuan City. The activity was attended by various stakeholders including Local Government Units (LGUs) and fisherfolk beneficiaries' mostly indigenous people who were the main target of this program.

Throughout the year, the program successfully dispersed 1,100,000 pieces of tilapia fingerlings in various lakes in the region. The mode of dispersal includes the selection of the strategic location for the release of fingerlings and the stocking of fingerlings in municipalities where rivers traverse.



Other species were also stocked in several areas: 531,744 pieces of carp and 60,000 pieces of bangus fingerlings in the shorelines of the four (4) municipalities bordering Lake Mainit, 30,437 pieces in Mahayahay Dam, Kitcharao, Agusan del Norte, and 50,000 pieces of fingerlings in NIA Lagoon, Sta. Josefa, Agusan del Sur. These municipalities are eyeing for a chance to increase fish production in their respective areas which are landlocked and are dependent on freshwater resources.

Aside from the series of dispersal activities, the project initiated site evaluation of target minor lakes for restoration and enhancement activities. This year, the team successfully selected three (3) minor lakes from the Province of Agusan del Sur and one (1) from the Province of Agusan del Norte. Among the beneficiaries are mostly Manobo Tribe living in Agusan Marsh and members of the Association of Rebel Returnees in the Municipality of Sta. Josefa. Capacity building were conducted in each management areas and members of the association were informed and taught basic lake management protocols to capacitate them on proper management measures of their own freshwater resource.



Mangrove Rehabilitation Program

To restore mangrove areas severely affected by human activities, a mangrove rehabilitation program was spearheaded. The Bureau, in coordination with the Department of Environment and Natural Resources and Local Government Units (LGUs), initiated mangrove planting activities through cash-for-work scheme to various fisherfolk organizations. Because of this initiative, mangrove planting has become a source of income for families engaged in this activity.

Mangroves planted in municipalities/ cities in Caraga Region

Municipality/ City	No. of Mangrove propagules Planted (pcs.)
Butuan City	100,000
Cabadbaran City	50,000
Magallanes, ADN	50,000
Nasipit, ADN	50,000
Taganaan, SDN	20,000
Placer, SDN	20,000
Dapa, SDN	30,000
General Luna, SDN	70,000

Fisheries Regulatory and Law Enforcement

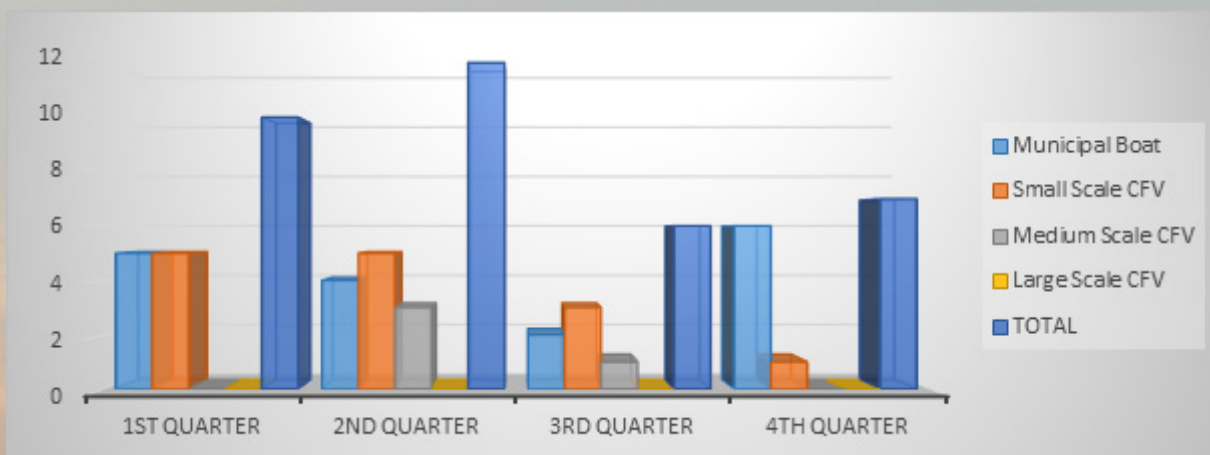
A. Monitoring, Control and Surveillance:

Safeguarding the wealth of Caraga Fishing Grounds

The BFAR Caraga Fisheries Protection and Law Enforcement Group (FPLEG) readily patrol the sea to guard against illegal, unreported and unregulated fishing.

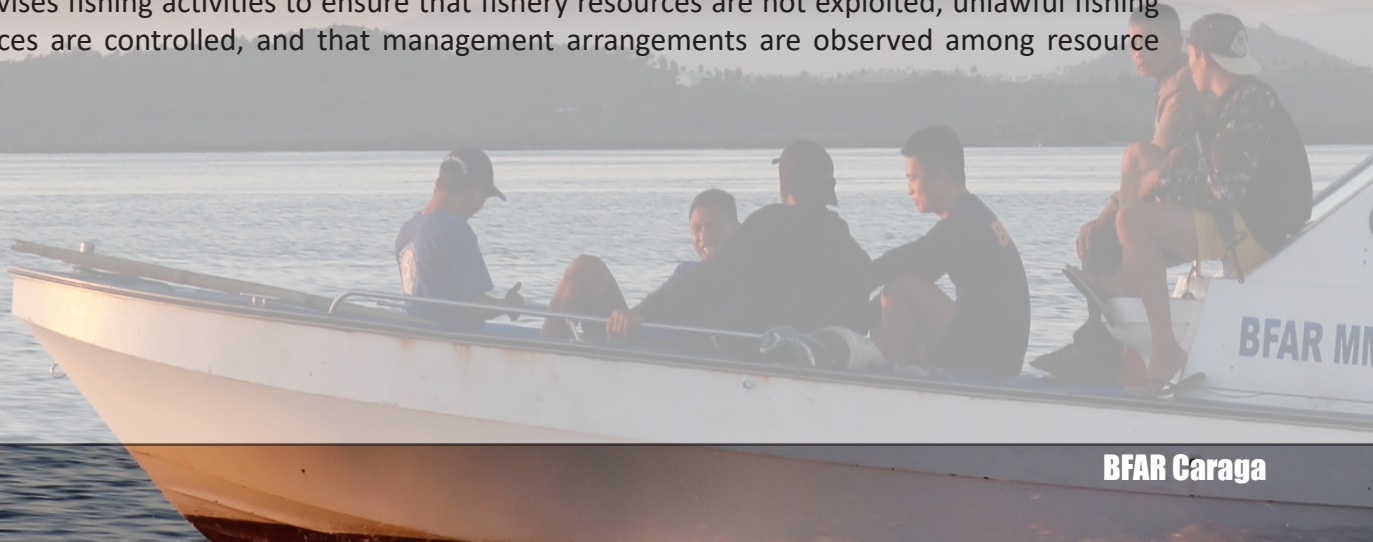


Illegal, unreported and unregulated (IUU) fishing is amongst the major threats to marine ecosystems. Throughout the years, the Bureau through its regional FPLEG, and in partnership with Local Government Units, Philippines Coast Guard (PCG), Philippine National Police (PNP), maritime group and other relevant institutions, continued to wage war against the potent ability of IUU fishing to undermine efforts to sustainable fishery resource management.



Number of fishing vessels (by type) apprehended per quarter in F.Y. 2018.

The FPLEG is the BFAR’s implementing group on fishery laws, rules and regulations for the conservation and protection of the fisheries and aquatic resources. It continuously checks and supervises fishing activities to ensure that fishery resources are not exploited, unlawful fishing practices are controlled, and that management arrangements are observed among resource users.

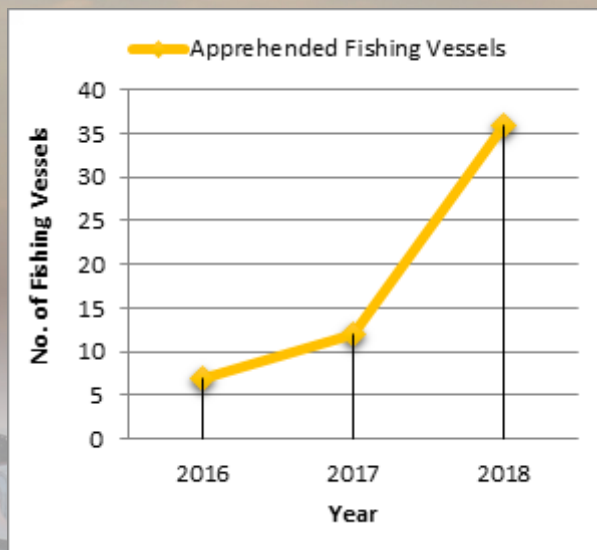


A series of monitoring, control and surveillance operations were conducted by the group in the fishing grounds of the region such as the Hinatuan Passage in Surigao del Norte, Dinagat Sound, Butuan Bay, Melgar Bay, and Lanuza Bay. A total OF 92 municipal and commercial fishing vessels were boarded. Fifty six (56) were found compliant to existing laws and regulations, while 36 were non-compliant, hence, issued with a Notice of Violation. Out of the 36, 17 were municipal fishing boats, 15 were small-scale commercial fishing vessels and four (4) were medium-scale commercial fishing vessels of which two (2) were using a modified Danish Seine, locally known as liba-liba. Administratively charges were filed for violations of Sections 86, 95, 97 and 121 of the Republic Act 10654, the Implementing Rules and Regulations of the Philippine Fisheries Code of 1998 (RA 8550) and Fisheries Administrative Order 246, which bans the operation of Danish Seines in Philippine waters.



Apprehended fishing vessel operating a modified Danish seine (liba-liba).

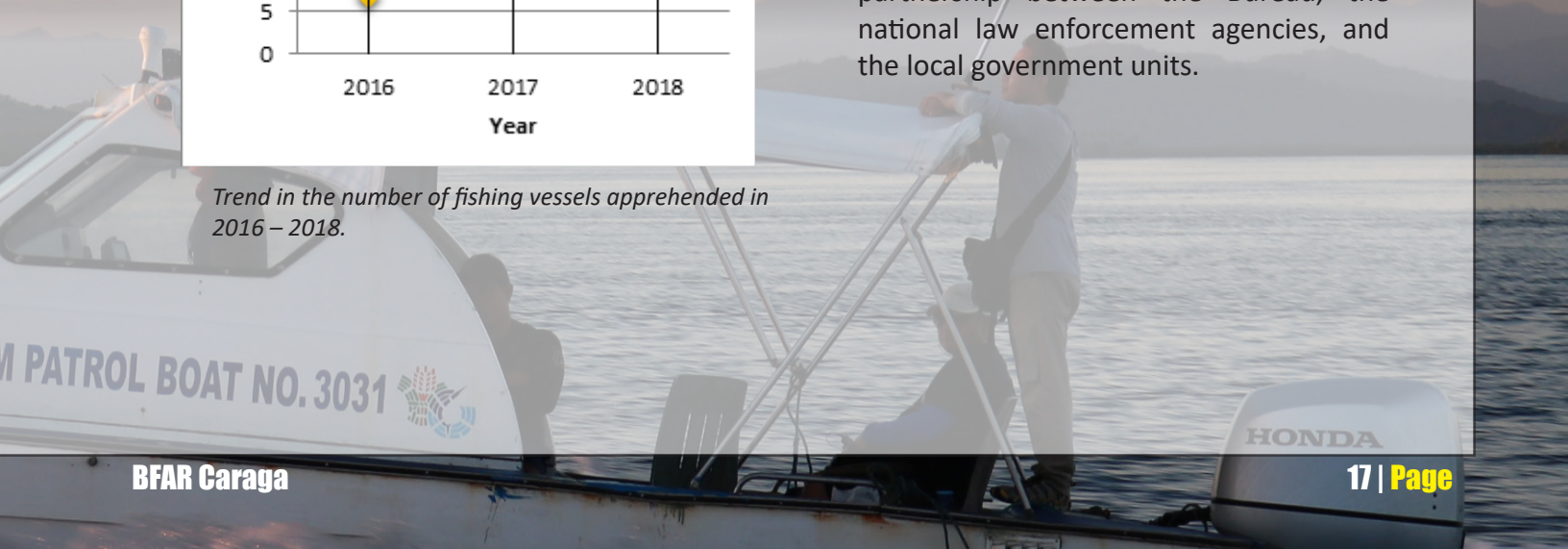
It was observed that more non-compliant fishing vessels were apprehended in 2018 than in previous years. This is a result of the intensified efforts of the Bureau to combat illegal fishers in the region.



Trend in the number of fishing vessels apprehended in 2016 – 2018.

The FPLEG operations, however, do not end at sea. The group also conducted fisheries mobile checkpoints. It resulted to the arrest of two (2) persons due to violation of Fisheries Administrative Order 250, which prohibits the collection, harvesting, gathering, selling and/or exporting brown algae, *Sargassum* sp.. They also conducted market and landing denials, which also resulted to the arrest of a fish buyer reported to be dealer of dynamite or explosives through a joint operation of FPLEG and PNP Maritime Group

By the end of 2018, a total of 98 administrative cases and 38 criminal cases were filed against the violators of existing fishery laws, rules and regulations. This is seen as an indicator of a stronger partnership between the Bureau, the national law enforcement agencies, and the local government units.



Harmful Algal Bloom Monitoring: *Monitoring for safe shellfish*

Harmful algal bloom (HAB) is an event associated with the blooms of algae, which cause harmful effects to the environment, living organisms and humans. It refers to blooms of toxic and non-toxic algae that discolor the water, as well as to blooms that are not significantly dense to change the water color but which are dangerous due to the algal toxin they contain or the physical damage they cause to other living organisms.

HAB could either pose a human health hazard or result to economic losses particularly in the shellfish industry. Mitigation strategies and impact prevention is therefore necessary to protect public health, marine ecosystem health and fishery resources.

One of the roles of the Bureau is to monitor occurrences of harmful algal blooms. This aims to safeguard the public against marine biotoxins that are present in shellfish found in Lianga, Hinatuan, and Bislig bays as these toxins can cause detrimental effects to human health such as diarrhea, paralysis, amnesia, and even death. The Regional Fish Health Laboratory conducted a weekly monitoring of coastal waters located in the following municipalities in the province of Surigao del Sur: San Agustin, Lianga, Barobo, Hinatuan, and Bislig. Sea water and shellfish samples were gathered in every established sampling area per municipality and analyzed for Plankton Count at the laboratory and Enzyme-Linked Immunosorbent Assay (ELISA) at the Aquatic Toxicology Laboratory (ATL) of the BFAR National Fisheries Laboratory Division (NFLD), 860 Arcadia Bldg., Quezon Avenue, Quezon City. Results of the analyses were published in the National Shellfish Bulletin and disseminated for the information of the public.



HAB monitoring activities.

Activities	
HAB monitoring conducted	13
Water samples analyzed	548
Shellfish samples analyzed	337
Positive HAB results (based on water sampling)	31

Harmful Algal Bloom Monitoring and Management

B. Quality Control and Inspection:

Securing safe and reliable food fish source

Food security means availability of food in sufficient quantity and quality. It implies that food should not only be enough in supply but also safe for consumption. Food safety should begin at the farm where fish are grown.

Inspection of Live Food Fish Facilities

To secure safe and healthy fish commodities, the Regional Fish Health Laboratory, conducted laboratory analyses and technical supports related to fish disease surveillance and diagnoses, food safety, and quality control of chemicals in aquaculture.



RFHL during the conduct of inspection of the live food fish facility of LFDA Trading.

These include the registration, inspection and monitoring of live food fish facilities and aquaculture farms. Three (3) exporters were registered in accordance with Sections 62, 65(1), and 67 of R.A. 8550 and complied with the existing Sanitary and Photosanitary (SPS) requirements for the trade of live aquatic animals-live food fish. These are DRF Marine Products, located in Purok 4, Marketsite District, Mangagoy, Bislig City; LFDA Trading, located in Purok 1, Antipolo, Marihatag, Surigao del Sur; and Cabadbran Aquatech Resources Corporation (CARC), located in La Union, Cabadbaran City, Agusan del Norte.

Likewise, a total of 72 aquaculture farms were inspected and monitored by the laboratory.

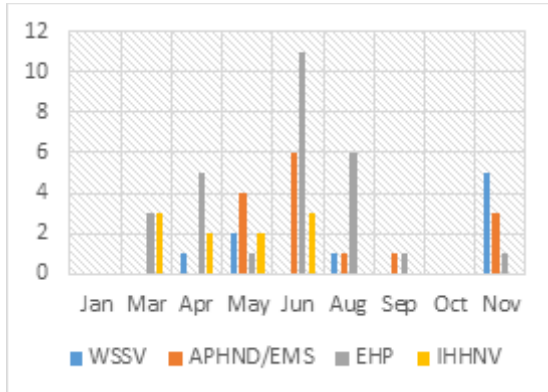
National Antibiotic Residue Monitoring Program

The National Antibiotic Residue Monitoring Program covers all registered aquaculture farms. Chloramphenicol and Nitrofurans such as AMOZ (3-amino-5-morpholinomethyl-1,3-oxazolinidone) and AOZ (3-amino-2-oxazolinidone) are banned antibiotics that are being strictly monitored since these substances cause detrimental effects to human health. Food fish and feeds are samples that are subject for chemical testing of banned antibiotics.

A total of 37 samples (n) (Shrimp, n=13; Milkfish, n=15; Tilapia, n= 7; Lobster, n=1; Eel, n=1) were gathered from aquaculture farms and facilities in Agusan del Norte and Surigao City areas and were sent to the National Fisheries Laboratory Division of the Bureau for Chemical testing of Chloramphenicol and Nitrofurans.

Molecular Diagnosis

Molecular diagnosis of shrimp diseases is one of the services of the laboratory. Shrimp, shrimp fry samples submitted are analyzed for White Spot Syndrome Virus (WSSV) and Monodon Baculovirus (MBV); and POCKIT™ Micro Nucleic Acid Analyzer for Acute Hepatopancreatic Necrosis Disease/Early Mortality Syndrome (AHPND/EMS), Enterocytozoon hepatopenaei, and Infectious Hypodermal and Hematopoietic Necrosis (IHHNV) among others.



A total of 295 samples were analyzed in the laboratory. Based on the samples submitted by the clients, cases of AHPND/EMS, EHP and IHHNV were reported to be highest in June 2018 while there were no positive detections of the aforementioned pathogens reported in January and October 2018.

Occurrence of White Spot Syndrome Virus (WSSV), Acute Hepatopancreatic Necrosis Disease/Early Mortality Syndrome (AHPND/EMS), Enterocytozoon hepatopenaei, and Infectious Hypodermal and Hematopoietic Necrosis (IHHNV) based on the samples submitted by 52 clients from January to December 2018.

Quantitative Bacteriology

Water and shrimp samples were subjected to bacteriological examination for presence of Luminous Bacteria. A total of 181 samples were examined for Bacterial Count. There was no presence of Luminous Bacteria in all these samples.



Physico-chemical analysis of water

The laboratory used La Motte® Aquaculture Kit and YSI Pro Plus® Multiparameter which can measure water quality parameters such as Dissolved Oxygen (O₂), Temperature, pH, Salinity, Total Alkalinity (as mg·L⁻¹ CaCO₃), Carbon Dioxide (CO₂), Nitrate-Nitrogen (NO₃⁻), Nitrite-Nitrogen (NO₂⁻), and Unionized Ammonia (NH₃). Water samples were measured in-situ.

A total of 37 customers and 1050 data were generated out of the 800-physical target.

In-situ Physico-Chemical Analysis of water samples during the occurrence of fish mortalities in Buenavista Agusan del Norte dated 8 May 2018.

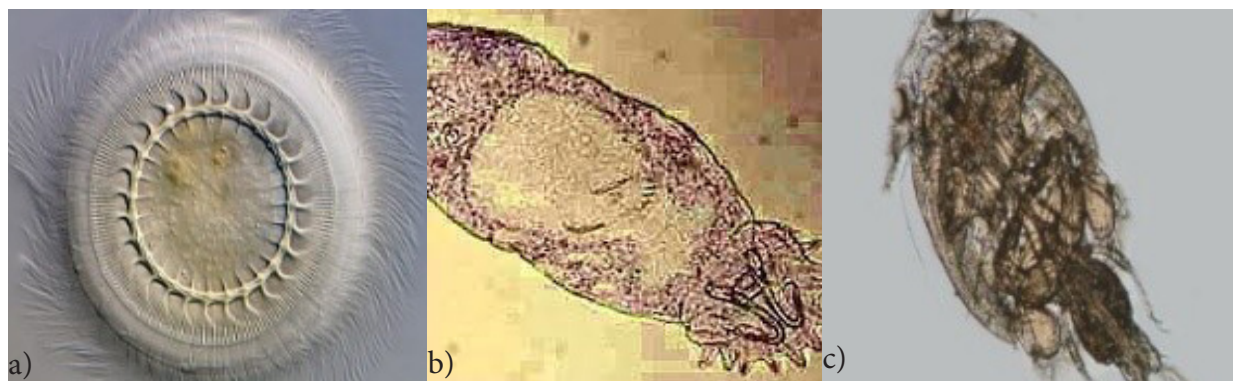
Parasitological Examination

There were 254 parasitological examinations conducted in 2018.

Three (3) common fish samples were examined for abnormalities and harmful parasites: Eel (*Anguilla bicolor pacifica*), Milkfish, and Tilapia. Cabadbran Aquatech Resources Corporation (CARC) was the sole client for Eel samples. All samples originating from this farm were found apparently healthy upon examination without overt signs of disease. A total of five (5) Health Certificates were issued to the aforementioned client.

Milkfish and tilapia samples from grow-out ponds and fish cages in Agusan del Norte and Surigao del Norte areas were found positive of having parasites that may also cause fish mortalities and abnormal behavior.

Sample	Parasite(s) present	[6]Harmful Effect(s)
Milkfish	Caligus spp. (Fish Lice)	Skin ulcers, Mortality
Tilapia	Trichodina spp., Gill Flukes	Gill lesions, mortality



Profile of parasites that were present in Milkfish and Tilapia samples submitted in the laboratory from January to November 2018. (Method: Wet Mount Microscopy)

Prawn Fry Quality Assessment

A total of 49 out of 50 targeted shrimp fry samples specifically that of *Peneaus vannamei* and *Peneaus monodon*, were assessed in the laboratory based on criteria established by BFAR and the Negros Prawn Producers Cooperative (which is based in Bacolod, Negros Oriental) to determine fry quality and survival rate prior to stocking in a grow-out farm.

Inspection of Fish Processing Establishments, Fishing Boats and Foreign Vessels



As part of implementation of food safety standards and regulations to manufacturing companies, the regional Fisheries Inspection Unit have conducted eleven (11) system audit activities in all fishery plants, buying stations and establishments around Caraga region.

Other activities conducted were three (3) pre-shipment inspections and three (3) desk reviews piloted in seven processing establishments and buying stations. It has noted a significant drop by 443% percent from last year's thirteen (13) activities conducted. This is mainly due to the maintenance of facilities initiated by the exporting companies for this year.



C. Quarantine, Registration and Licensing:

Ensuring food safety

“The goal of the food safety professionals should be to create a food safety culture”

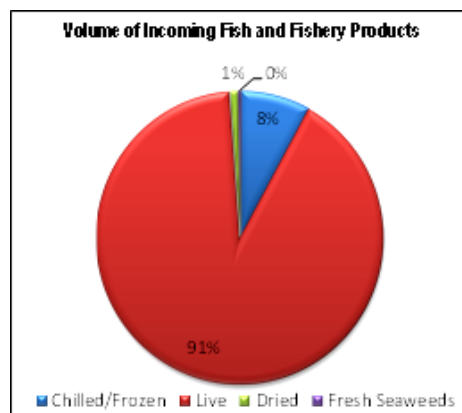
- Frank Yianna

The Bureau is committed to implement programs and measures to ensure food safety of fish and fishery products from fish farms, fish ports and up to dining tables.

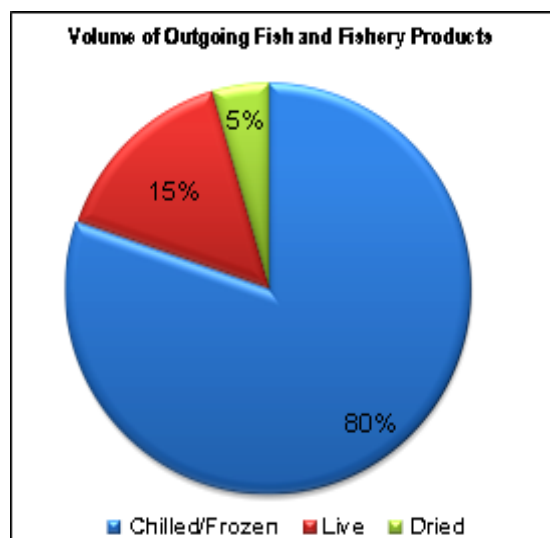
These programs include activities such as registration and issuance of licenses to fishing operators, provision of leasing permits, and inspection and quarantine services for fishery products traversing the region.

Fisheries Quarantine Services

The regional Fisheries Quarantine Unit strictly implement quarantine laws, rules and regulations on the transport of fish and fishery products coming in and out via seaports, airports or in any entry and exit points of the region. In calendar year 2018, the quarantine and inspection unit of the Bureau recorded 10,498 inspection activities for incoming and outgoing fish carriers in all sea ports and airports throughout Caraga.



Percentage volume of fish and fishery products transported outside Caraga in 2018.



Percentage volume of fish and fishery products coming in Caraga region in 2018.

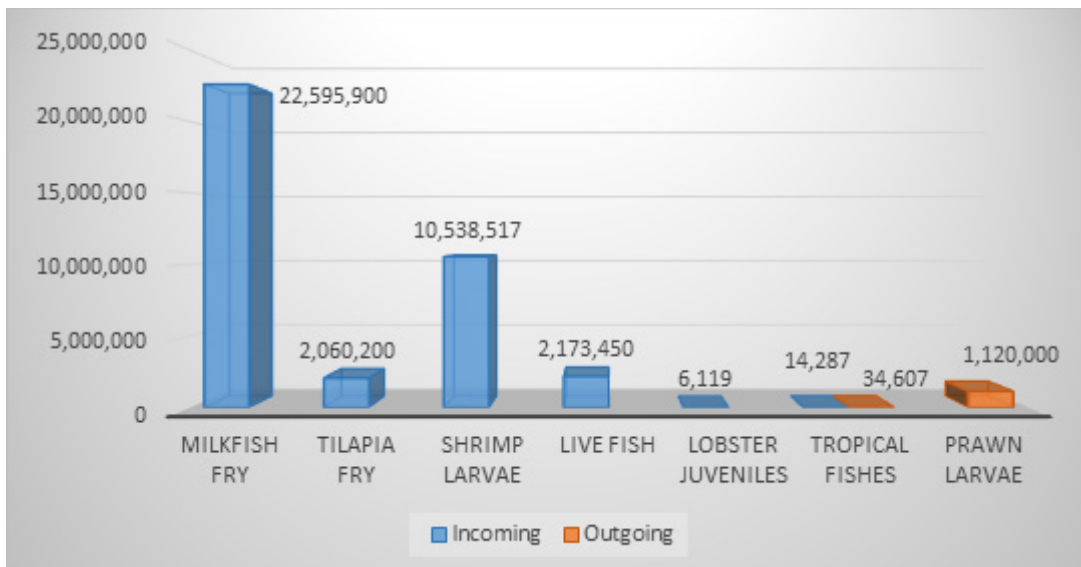
These numbers were up by 183% from the annual target of 5,724. Increase in number was recorded in the Port of Nasipit, Port of Surigao City, Port of Lipata and in Bangcasi Airport, while minor contributors consisted of Siargao Airport, Surigao City Airport and Tandag City Airport.

In terms of volume of fish and fishery products, 638,129 kilograms have been coming inside the region while 2,229,455 kilograms were transported outside. Ninety-one percent (91%) of the incoming products were live fishes with a corresponding weight of 580,138 kilograms and 80% or 1,790,351 kilograms of outgoing products were chilled or frozen.



In terms of aquatic fauna, 22,595,900 pieces milkfish fry were mainly the incoming commodity and 1,120,000 pieces prawn fry for outgoing commodity.

The inspection unit of the Bureau has also conducted 12 monitoring activities and three (3) pre-shipment inspections throughout the year to the fish processors presently operating within the region. This is to monitor exporting companies as to compliance with the labelling requirements and international standards of importing countries.



Volume of incoming and outgoing live fish commodities in the region.

Registration and Licensing Services

In the conduct of registration and licensing, 72,008 fisherfolk and 8,080 municipal fishing boats have been registered through FishR and BoatR online registration system, while 58 commercial fishing vessel and gear licenses were issued. The issuance of clearance certificates had also increased to 21, 59% higher from last year's issuance. Only 449 fishermen's licenses have been issued this year, which is 32% lower compared to last year.

The total collections generated from these activities amounted to ₱157,421.00, which is 2% higher than the previous year's collection.

For the conduct of inspection and boarding activities of foreign vessels, 123 inspections were undertaken which was 23% higher from the annual target.

Fishpond Lease Agreements (FLA) for Aquaculture Production

For inland aquaculture, leasing of fishpond areas for production are granted through a Fishpond Lease Agreement (FLA). Documentation procedure of FLA covered areas constitutes major activities such as collection of rentals, issuance of permits or renewal of FLA contracts for another 25 years period, and inspection and verification of fishpond areas.

In 2018, 25 FLA holders applied for renewal. The number of inspection and verification activities of fish pond areas throughout the region also increased from 17 in 2017 to 27 in 2018. Collections generated from FLA rentals amounted to ₱928,745.00.

Conduct of ocular inspection of FLA area in Cantilan, Surigao del Sur.

D. Coastal and Inland Fisheries Resource Management

Enhancing Fishery Resources in Coastal Communities

“The conservation of natural resources is the fundamental problem. Unless we solve that problem it will avail us little to solve all others.”

– Theodore Roosevelt

The degradation of coastal and marine resources is a common problem in every corner of the country. In coastal areas where majority of people live, the effect is notable. Caraga is not exempted. Given this problem, the Bureau has prioritized its efforts in protecting and rehabilitating the region’s vast marine treasures.



Conduct of PCRA in Jabonga, Agusan del Norte.

PCRAs conducted in Caraga

Municipalities	Number of Coastal Barangay
Jabonga, ADN	4
Nasipit, ADN	1
Carmen, ADN	2
Carrascal, SDS	7
Claver, SDN	4
Marihatag, SDS	4
Lianga, SDS	3

Participatory Coastal Resource Assessment Services

In an effort to stimulate proper actions in managing our fishery resources, the Bureau have conducted Participatory Coastal Resource Assessments (PCRA) in areas recommended by different LGUs to gather data which will be useful for their local legislations.

For 2018, there were 10 PCRAs conducted covering three (3) provinces in Caraga. Compared to 2017, this year’s accomplishment was 25% higher.

Monitoring and Assessments of Sanctuaries and Marine Protected Areas

The monitoring and assessments of marine sanctuaries is a crucial activity tailored in different areas mostly in municipalities or cities having Marine Protected Areas (MPAs) and sanctuaries for information generation and ecosystem observation.

Marine sanctuaries assessed and monitored in 2018.

Municipality/City	MPA/ Sanctuary
Nasipit, ADN	Aclan Amontay Fish Sanctuary
Carmen, ADN	Tagcatong and Gosoon Fish Sanctuary
Buenavista, ADN	Sacol Fish Sanctuary
Carrascal, SDS	Adlay Fish Sanctuary and Caglayag Marine Fish Sanctuary
Claver, SDN	Urbiztondo Marine Sanctuary and Lambuhan Reef
Marihatag, SDS	Omangon, Sto Niño & Alegria Marine Protected Areas
Liangá, SDS	Liatemco, Ganayon & Manyayay Marine Fish Sanctuaries
Butuan City	Butuan Fish Sanctuary
Cabadbaran City	Cabadbaran Fish Sanctuary

Sixteen (16) monitoring and assessments of sanctuaries and MPAs were conducted in 2018. This exceeded 20% of the previous year's accomplishments.

Artificial Reef Deployment

Artificial reef deployment aims to promote marine life in areas having featureless bottom or with low concentration of marine habitat. Fifty (50) artificial reefs were deployed in Sacol Fish Sanctuary located in Buenavista, Agusan del Norte. This activity helped enhance productivity in the area, and is expected to benefit local fisherfolk in the community.



Artificial reef deployment in Buenavista, Agusan del Norte.

Fisheries Extension Program

Trainings, Education and Technical Services: Transforming fisherfolk lives and bridging opportunities

“We will make food and livelihood available for everybody to address poverty.”

- DA Secretary Emmanuel F. Piñol

The Bureau is committed to provide livelihood opportunities and education to the fisherfolk throughout the region. Advocating for sound social and economic status of its stakeholders, the Bureau implements programs that help empower fishing communities towards a more dynamic, resilient and improved living conditions. These programs include provision of trainings, education and technical services, establishments of technology demonstrations, Fisherfolk Scholarship Program (FSP) and Fisheries and Aquatic Resource Management Council (FARMC) program, which serves as a bridge towards better living for fisherfolk communities.

Trainings and Technical Assistance

The Regional Fisheries Training and Fisherfolk Coordination Division (RFTFCD) together with the technical staff of the Fisheries Production and Support Services Division (FPSSD), Fisheries Management Regulatory and Enforcement Division (FMRED) and the Provincial Fisheries Offices (PFOs) were able to deliver trainings and technical services to various stakeholders in the region. The collaboration resulted to 83 trainings throughout the year with a total of 1, 925 participants.

A total of 49 aquaculture trainings were conducted, imparting technical knowledge and skills to 1,022 fish farmers with the aim to expand fisherfolk's capability to improve production through application of cost-efficient and eco-friendly methods in seafood culture.

Fish from the farm is more precious when handled properly and/or processed into value-added products. Thus, 16 hands-on trainings were conducted on fish processing, benefitting 325 fisherfolk women who can now apply the skills they have learned to generate additional income for their families.

Meanwhile, local government units were equipped with regulatory and enforcement knowledge and skills through 10 trainings on fishing rules and regulations conducted to 200 deputized fish wardens or “Bantay Dagat,” who would serve as stewards of the municipal waters.

There were also eight (8) municipal trainings conducted to further capacitate fisherfolk organizations. A total of 175 fisherfolk participated in the said trainings.

Various technical assistances were rendered by the Bureau throughout the year. A total of 3,839 fisherfolk assisted by the Bureau's technical personnel, in matters relating but not limited to aquaculture, municipal fishing technologies, commercial fishing, regulatory, and post-harvest technologies.



Technology Demonstrations

Technology demonstration is the actual application of the techniques and principles learned during trainings.

One of the roles of the Bureau is to demonstrate new aquaculture technologies to its client fisherfolk in order to improve the practices they use in fish farming. In this regard, the Provincial Fishery Offices led the establishment of 174 aquaculture techno-demo projects in strategic areas in the region in 2018. These include nine (9) integrated farming, 100 pond culture technology sites, 29 cage aquaculture technology, two (2) fishpen aquaculture technology, 28 aquasilviculture, and 6 shellfish culture projects, awarded to 183 fisherfolk associations covering the five provinces of Caraga.

The point of having these techno-demos is to provide the beneficiaries a first-hand experience on the investment potential of aquaculture to encourage them to farm fish, and to lessen fishing pressure in the wild.



Techno-Demos: (a) Mangrove crab fattening in Lanuza, Surigao del Sur, (b) tilapia culture in cage in Sta. Josefa, Agusan del Sur.

Fisheries Scholarship Program

Another program being implemented by the Bureau is the Fisheries Scholarship Program (FSP) which comprises two components namely: the Fisheries Industry Leaders Grant (FILG) for those students who belong to the top ten in their class, and the Fisherfolk Children Educational Grant (FCEG) for those qualified K-12 senior high school graduates. A full scholarship was granted to successful applicants who passed the nationwide examination with the degree of Bachelor of Science in Fisheries at any BFAR- accredited State Universities and Colleges (SUCs).



Fisheries Information Services

The Bureau has rendered services to various stakeholders that includes radio airings/ advertisements, distribution of Information, Education and Communication (IEC) campaigns, materials, Audio-Visual Presentations (AVP) and documentations of major activities.

This year, radio airings/advertisements were initiated to promote the “Malinis at Masaganang Karagatan” (MMK) Program in coastal municipalities covering the region. The Bureau also distributed 11,161 pieces IEC materials to different beneficiaries including academes, NGOs and other government institutions.



IEC campaign on Shark Conservation conducted at Aurillo, San Jose, PDI



During the visitation of DA Secretary Emmanuel F. Piñol for his Biyaheng Bukid Program at Mainit, SDN

The Audio-Visual Presentation was also piloted for this year’s Hall of Fame Awardee – LGU, Cortes of Surigao del Sur for the MMK program in partnership with the Mag-Agri Tayo and BFAR Central Office.

In addition, the documentation of major activities conducted includes launching of BASIL Program, DA Secretary’s Biyaheng Bukid and Regional Fisherfolk Directorship program.



Fisheries and Aquatic Resources Management Council (FARMC) Program

The Fisheries and Aquatic Resources Management Council (FARMC) program aims to strengthen partnerships between the Bureau and major stakeholders across five (5) provinces in the region. The program covers 52 Municipal/City FARMCs strengthened for this year. These comprised 19 M/CFARMC from Surigao del Sur, 18 M/CFARMC from Surigao del Norte, 9 M/CFARMC from Agusan del Norte, six (6) from Agusan del Sur, and five (5) from the province of Dinagat Islands.



Provincial FARMC Meeting conducted in SDS.

The Bureau also supported the observance of the annual celebration of Farmer's and Fisherfolk's Month every second day of May. This commemorates the heroism and sacrifices of our fellow countrymen in agriculture and fisheries sector.



a)



b)



c)



d)

Fisherfolk Directorship Program 2018: (a) turn-over ceremony of responsibility RFD Ruben M. Timogán; (b) distribution of gears in Dapa, Surigao del Norte; (c) the radio program "Balikatan sa Kadagatan"; (d) coastal resource monitoring.

One of the highlights of this celebration was the election for the Regional Fisherfolk Directorship Program. In 2018, the elected fisherfolk director for Caraga was Mr. Ruben M. Timogán, a fisherfolk from the province of Agusan del Norte.

Mr. Timogán represented the agency in a month-long directorship program involving administrative and technical activities. He joined seaborne patrol operations of the FPLEG, conducted diving activities in support to Coastal Resource Management, attended fisherfolk and stakeholders' fora, and had a regular weekend radio program dubbed as "Balikatan sa Kadagatan" in line with his advocacy to intensify information, education and communication campaign on BFAR programs and projects.

Development of Policies, Plans and Programs

Policies and Advocacy Services

Policies are a starting point for a government to take a course of action that makes a real life change. It is a result of a great number of individuals working together to solve common problems.

The Planning, Monitoring and Evaluation Unit (PMEU) has reinforced project implementation by introducing strategies and feedback procedures that would ensure the attainment of organizational goals in alignment to the priorities of BFAR Central Office.

For 2018 the PMEU has participated in six (6) planning workshops covering regular, special programs/projects, physical target setting and budgeting activities. This was followed-up by 8 cascading activities involving division heads, focal persons and partner agencies in the regional level. The unit also conducted two (2) technical reviews (mid-year and year-end), and 6 project monitoring in the provincial level. In addition, the BFAR Central Office thru Fisheries Production and Economic Division (FPED) conducted a joint monitoring with PMEU of the region's existing facilities including the Provincial Fisheries Offices, Community Fish Landing Centers (CFLCs) and other BFAR funded facilities.

The PMEU likewise spearheaded the pre-implementation activities for the Special Areas for Agricultural Development (SAAD) Program for Fisheries. It conducted two (2) workshops on Community Needs Analysis and Project Identification and beneficiary validation for SAAD Program in the provinces of Agusan del Sur and Surigao del Sur.



The PMEU team with the identified LGU beneficiaries during the Workshop on Community Needs Analysis and Project Identification for SAAD Program for the Province of (a) Agusan del Sur and (b) Surigao del Sur.



Region-wide monitoring of BFAR facilities with BFAR Central Office: (c) Courtesy call to RD Visa Dimerin of BFAR Caraga and (d) visit to CFLC building in San Benito, Surigao del Norte.



Research and Development National Stock and Assessment Program

The National Stock Assessment Program (NSAP) was conceptualized due to the lack of standardized and continuous information on fishery resources which is fundamental to fisheries management and the apparent institutional incapacity of the Regional Field Units to conduct resource assessment studies in their respective areas of jurisdiction.

It plays a critical role in characterizing and monitoring the state of the fisheries resources of the country to guide BFAR in setting the policy and regulatory framework for its sustainable use pursuant to Section 7, 8 and 9 of R.A. 8550 as amended by RA 10654 in establishing harvest control rules and reference points.

For 2018, NSAP continues its catch and effort monitoring to 57 landing centers covering the major fishing grounds namely: Surigao Strait, Dinagat Sound, Hinatuan Passage, part of Philippine Sea, Bohol Sea, East Siargao Waters, Surigao Sea, Lanuza Bay, Hinatuan Bay, Bislig Bay and Butuan Bay including freshwater systems such as Lake Mainit and Agusan Marsh.

The following are the significant accomplishments of NSAP in 2018.

1. Baseline Catch Estimates

NSAP generated the Baseline Catch Estimates for 2018 from the monitored landing centers. Total landed catch was recorded at 17,543 metric tons with projected estimate or “raise” at a total catch production of 35,214 metric tons which is 1.8% lower from the 2017 data. The slight decrease was attributed to several factors such as unfavorable weather condition and results of intensified law enforcement activities in municipal fishing grounds where commercial fishing vessels usually intrude and operate. Of the total, 97% and 3% are represented by marine and freshwater species, respectively.

Baseline Catch Estimates for 2018.

Region	Total Number of Landing Centers			Number of Landing Centers Monitored			Total Annual Monitored Production (in mt)			Average Monitored Production (in mt 12-month period)		(Raised) Total Production (in mt)
	Major Landing Centers	Minor Landing Centers	Total	Major LC's	Minor LC's	Total	Major LC's	Minor LC's	Total Monitored	Major LC's	Minor LC's	Total
CARAGA												
Marine	38	108	146	22	25	47	15,034.00	1,989.67	17,023.67	683.36	79.59	34,563.19
Lake Mainit	3	13	16	3	3	6	440.40	24.97	465.38	146.80	8.32	548.63
Agusan Marsh	3	5	10	2	2	4	32.58	21.38	53.96	16.29	10.69	102.32

1.1 Fishing Ground and Species Group Distribution

For marine fishing grounds, the catch from Philippine Sea was the highest, followed by Surigao Sea, Dinagat Sound, Hinatuan Passage, Surigao Strait and Butuan Bay. The major species of landed catch were composed of different stocks of oceanic tuna (Skipjack and yellowfin tuna), small pelagics (anchovies, sardines, mackerels and scads) and demersal species (katambak, jiging). Notable also are neritic tuna (frigate and bullet tunas and other large pelagic: pandawan, mahi-mahi, liplipan and tanguigi). In 2018, it was observed that oceanic tuna, invertebrates and pelagics posted an increase in volume, while demersal, neritic tuna and small pelagics decreased in volume.

Distribution of catches by fishing ground and species in 2018.

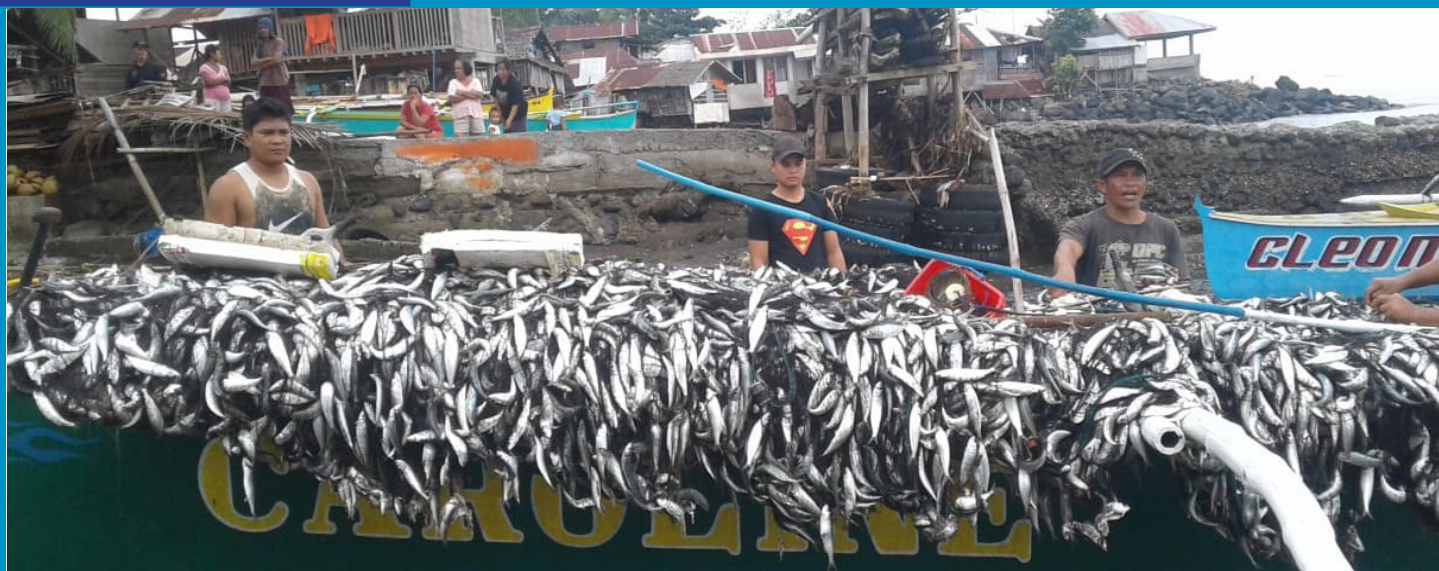
Fishing Ground	Demersal	Invertebrates	Neritic Tuna	Oceanic Tuna	Other Large Pelagics	Pelagics	Small Pelagics	Sharks and Rays	Shell	Grand Total
Philippine Sea	14.26	-	-	5,358.00	105.83	232.24	576.13	-		6,286.47
Surigao Sea	1.51	-	10.54	4,429.99	83.12	66.82	163.74	0.02		4,755.73
Hinatuan Passage	728.93	50.47	97.32	16.87	0.47	375.81	663.11	0.60		1,933.58
Dinagat Sound	728.41	31.15	7.73	263.68	10.76	58.30	289.75	0.09		1,389.86
Surigao Strait	78.26	243.34	14.83	13.06	0.62	81.82	574.30	0.85		1,007.08
Butuan Bay	8.87	0.61	10.50	10.25	1.25	13.49	610.22	1.58	0.05	656.82
Lanusa Bay	14.10	11.12	0.09	2.04	1.23	4.43	578.31	0.40		611.72
Liang Bay	3.56	0.13	0.36	156.33	5.12	2.17	3.79	-		171.45
East Siargao Waters	2.44	1.11	0.54	97.70	53.61	1.33	1.65	-		158.38
Hinatuan Bay	9.52	10.33	0.04	10.60	0.94	1.31	0.94	0.22		33.90
Bislig Bay	13.27	4.70				1.17				19.14
Grand Total	1,603.13	352.95	141.95	10,358.53	262.95	838.89	3,461.93	3.75	0.05	17,024.13

1.2 Reference Points

Reference point is a benchmark or values based on indicators used to compare estimates of fishery stock size and fishing mortality overtime, depending on biological characteristics of a species. The values would determine whether: a) limit or level that should be avoided; b) target which should be achieved or maintained; and c) trigger that signals the need to take prescribed actions.

For 2018, NSAP generated reference points for the *Sardinella lemuru* (tamban) and *Portunus pelagicus* (lambay) in support to the proposed National Sardine Framework Plan and the Blue Swimming Crab Management Plan.

The analysis showed that the fishery of *Sardinella lemuru*, in terms of proportion of catch for juveniles and adult, have already exceeded the limit except for the spawners. While the catch trend is slightly increasing, it is still considered as stable. Assessment of fishing mortality and exploitation has also exceeded the reference point. Hence, the status of sardine in the area needs an appropriate Harvest Control Rule to lessen juvenile catch and improve performance indicator within a specified period.



Reference Points for the *Sardinella lemuru* in Butuan Bay

Performance Indicator	Process/Method	Assessment Result	Reference Point		Interpretation ✓ or x
			Target	Limit	
Proportion of - juveniles - Adult - Spawner	FROESE	48-59%	< 10%	38%	x
		28-43%	≤80%	44%	x
		4-16%	<10%	18%	√
Catch trend	CPUE	Slight increasing	increasing	stable	√
Egg Production/Fecundity	SPR	16%	> 30%	20%	x
Fishing mortality	LBAR	1.56	$F/M \leq 1$	$F = 2M$	x
Exploitation	E and YPR values	0.74-0.79	0.50	0.60	x

In the case of the *Portunus pelagicus* (lambay) in Hinatuan Bay, results of the assessment illustrated that proportion of catch for juveniles and adult are not sustainable, except for the spawners. Catch trend is also stable but is expected to decrease when the limit of its regenerative capacity is reached. Again, there is a need for precautionary measures such as the adoption of the existing Joint Administrative Order (JAO) 01 Series of 2014, to sustain the production of the species.

Reference Points for *Portunus pelagicus* in Hinatuan Bay

Performance Indicator	Process/Method	Results from Assessment	Reference Point		Interpretation √ Or X
			Target	Limit	
Proportion of: Juvenile Adult Megaspawner	Froese Indicator	Ave. 43.86%	< 10%	38%	x
		35%	≤80%	44%	x
		3.6%	<10%	18%	√
Fishing Mortality	LBAR	1.86	$F/M \leq 1$	$F = 2M$	x
Egg Production/ Fecundity	SPR	Data gap	> 30%	20%	
Catch Rate Trend	CPUE Trend	Slightly decreasing	Increasing	Stable	x
Exploitation	E and YPR Values	0.65	0.50	0.60	x

Legal and Advisory

It is the job of the legal unit to assist the processing of administrative and criminal cases before the BFAR. Administrative and Criminal Cases were filed against the violators before the BFAR Adjudication Committee through the BFAR XIII Hearing Officer and at the Prosecutor's Office, respectively. For the Administrative Case, there were 105 cases filed to the Hearing Officer of the Bureau and 14 cases which were filed at the Prosecutor's Office by the Bureau and PNP Maritime. These cases involved 101 violations on the provisions of Republic Act (RA) 10654 and four (4) Fisheries Administrative Orders.

The owners/operators, boat captain and crew were called by the Hearing Officer to formally inform them of the violations they have committed. They were also informed that under Section 131, Rule 131.2 of RA 10654, an administrative settlement of not lower than 30% of the minimum imposable penalty may be availed of as a matter of right within the three-year period of their license. Most of the respondents availed of this right in writing through the Hearing Officer. Out of the total violations, 62 has been settled and the respondents have paid the settlement penalty.

A total of ₱1,163,493.70 has been collected and a remaining penalty of ₱1,171,596.70 is due for collection. There were also five (5) violations that were dismissed by the Adjudication Committee-Central Office for the lack of merit and insufficiency of evidence.

For the criminal case, the same are pending before the court and the witnesses are waiting for the scheduled hearing.



Conference with the Hearing Officers, PNP Maritime and Respondents

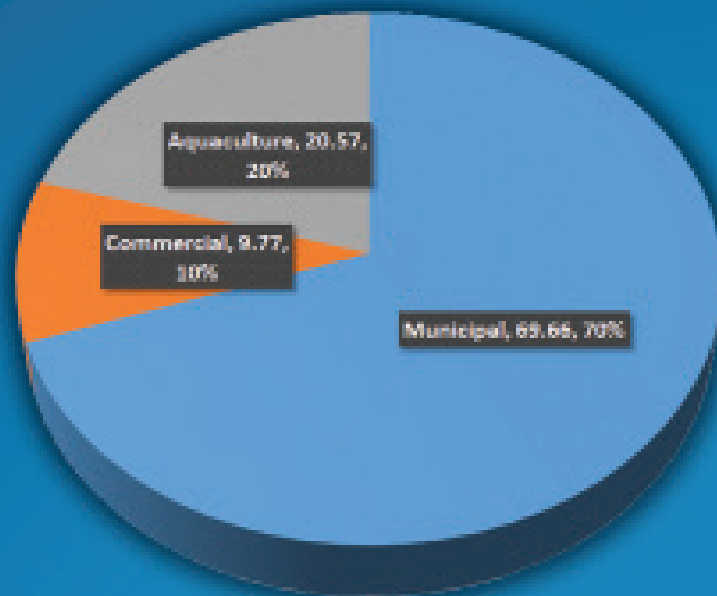


ORGANIZATIONAL STRUCTURE





FISHERIES PRODUCTION BY SECTOR IN CARAGA REGION CY 2018



Municipal

51,863.56 metric tons

Commercial

7,271.88 metric tons

Aquaculture

15,319.28 metric tons

Total:

74,454.72 metric tons

PREPARED BY:

The Planning, Monitoring and Evaluation Unit (PMEU)

IN COLLABORATION WITH THE:

Fisheries Production and Support Services Division,
Fisheries Management Regulatory and Enforcement Division,
Regional Fisheries Training and Fisherfolk Coordination Division,
PFO Agusan del Norte, PFO Agusan del Sur, PFO Surigao del Norte,
PFO Surigao del Sur and PFO Province of Dinagat Islands,
Masao Aquaculture Center, Kitcharao Technology Outreach Station,
Placer Technology Outreach Station,
Office of the Asst. Regional Director
Office of the Regional Director