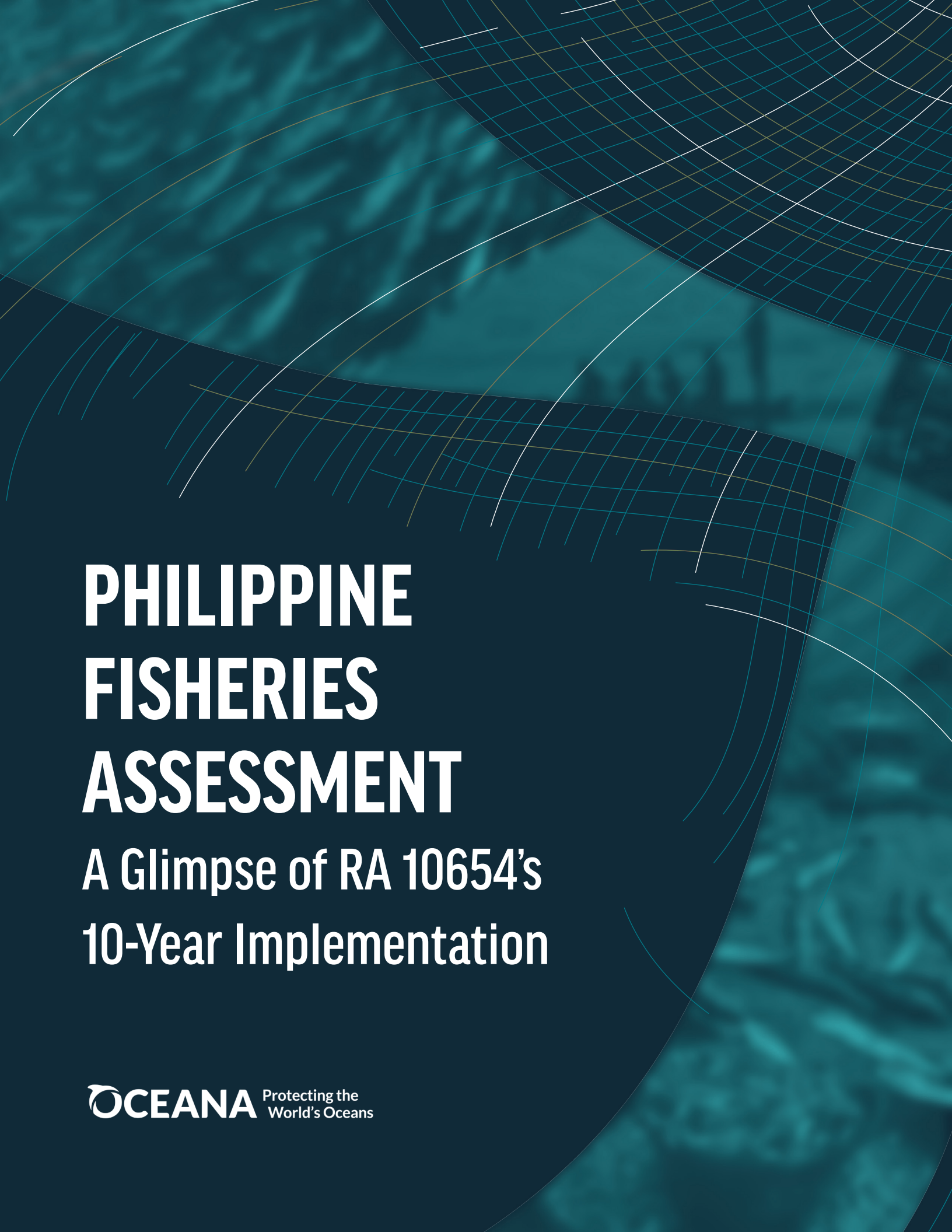

PHILIPPINE FISHERIES ASSESSMENT

A Glimpse of RA 10654's 10-Year Implementation

OCEANA Protecting the World's Oceans

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Alice Joan G. Ferrer
Wilfredo L. Campos
Harold M. Monteclaro

With funding support from Oceana

OCEANA Protecting the World's Oceans

14 September 2025

ACKNOWLEDGEMENTS

This assessment is made possible by the generous funding from Oceana.

Great appreciation is extended to Atty. Gloria Estenzo Ramos, former Vice President of Oceana, and Atty. Rose Liza Eisma-Osorio, the Acting Vice President after Atty. Ramos, for their vision of conducting the assessment and for trusting the team to do the assessment; Danny Ocampo for the support and patience given to the team; Diovanie De Jesus and Jessie Floren for the important data sets shared; and the reviewers, for their insights and comments that further improved the report.

To Macy Tagaduar of the Bureau of Fisheries and Aquatic Resources for assistance in linking the team to the offices in BFAR.

To Pearl Aljean Santacera, Benedict Mark Carmelita, Jinky Hopanda, and Thea Marie Seguran for efficient assistance.

ACRONYMS

AFF	Agriculture, Forestry and Fishing
EU	European Union
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
BD	Bantay Dagat
BFAR	Bureau of Fisheries and Aquatic Resources
BFAR-CO	Bureau of Fisheries and Aquatic Resources - Central Office
BFAR-FP	Bureau of Fisheries and Aquatic Resources Fisheries Profiles
BFAR-FRMD	Bureau of Fisheries and Aquatic Resources - Fisheries Resources Management Division
BFAR-NFRD	Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute
BFAR-RFO	Bureau of Fisheries and Aquatic Resources - Regional Fisheries Office
BFARMC	Barangay Fisheries and Aquatic Resources Management Council
BMB	Biodiversity Management Bureau BMFO Basic Municipal Fisheries Ordinance
BoatR	National Program for Municipal Fishing Vessels and Gears Registration
BUR	Budget Utilization Rate
CAF	Census of Agriculture and Fisheries
CAFCFO	Census of Agriculture and Fisheries Capture Fishing Operation
CAR	Cordillera Administrative Region
CCB	Contact Center ng Bayan
CDP	Comprehensive Development Plan
CF	Committee on Fisheries
CFLC	Community Fish Landing Center
CFV	Commercial Fishing Vessel
CLUP	Comprehensive Land Use Plan
CMB	Chairperson of the Management Body
CMFO	Comprehensive Municipal Fisheries Ordinance
CNFIDP	Comprehensive National Fisheries Industry Development Program
COA	Commission on Audit
CRM	Coastal Resource Management
CRMP	Coastal Resource Management Plan
DA	Department of Agriculture
DA-BFAR	Department of Agriculture - Bureau of Fisheries and Aquatic Resources
DA-DILG	Department of Agriculture - Department of the Interior and Local Government
DAC	Department of Agriculture and Commerce
DANR	Department of Agriculture and Natural Resources
DBM	Department of Budget and Management
DENR	Department of Environment and Natural Resources DILG Department of the Interior and Local Government
DNR	Department of Natural Resources
EAFM	Ecosystem Approach to Fisheries Management
EEPSEA	Economy and Environment Partnership for Southeast

ACRONYMS

Asia EEZ	Exclusive Economic Zone
ENIPAS	Expanded National Integrated Protected Areas System
EO	Executive Order
ERS	Electronic Reporting System
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization
FAO	Fisheries Administrative Order
FAP	Foreign Assisted Project
FARMC	Fisheries and Aquatic Resources Management Council
FCAR	Fisheries Compliance Audit Report
FELiS	Fishing Vessel Electronic Licensing System
FGPD	Fishing Gear/Paraphernalia Distribution
FGP	fishing gear and paraphernalia
FIES	Family Income and Expenditure Survey
FishCoRe	Fisheries and Coastal Resiliency
FishR	Municipal Fisherfolk Registration System
FLA	Fishpond Lease Agreement
FLEO	Fishery Law Enforcement Officer
FMA	Fisheries Management Area
FMAMB	FMA (Fisheries Management Area) Management Board
FO	Fisherfolk Organization
FOP	Fisheries Observer Program
FRLEP	Fisheries Regulatory Law Enforcement Program
FRMP	Fisheries Resources Management Program
FSP	Fisheries Sector Program
FW	Fish Warden
GAA	General Appropriations Act
GAD	Gender and Development
GAR	GAD Accomplishment Report
GPB	GAD Plan and Budget
GT	Gross Tonnes
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
GVA	Gross Value Added
HCR	Harvest Control Rules
HCRef	Harvest Control Reference Points
I-FIT	IUU Fishing Index and Threat Assessment
Tool IF	Institutional Framework
IFARMC	Integrated Fisheries and Aquatic Resources Management Council
IP	Indigenous People
IRR	Implementing Rules and Regulations

ACRONYMS

IUUF	Illegal, Unreported, and Unregulated Fishing
JAO	Joint Administrative Order
KP	Karagatan Patrol
LFARMC	Lake Fisheries and Aquatic Resources Management Council
LFS	Labor Force Survey
LGU	Local Government Unit
M/CFARMC	Municipal/City Fisheries and Aquatic Resources Management Council
MAF	Ministry of Agriculture and Food
MA	Ministry of Agriculture MARINA Maritime Industry Authority MB Management Board
MC	Memorandum Circular
MCS	Monitoring, Control, and Surveillance
MDC	Municipal Development Council
MEAP	Monitoring and Evaluation Action Plan
MEAT	Management Effectiveness Assessment Tool
MFDP	Municipal Fishery Development Plan
MFO	Municipal Fisheries Ordinance
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
MT	Metric Tonnes
NAMRIA	National Mapping and Resource Information Authority
NCR	National Capital Region
NFARMC	National Fisheries and Aquatic Resources Management Council
NFP	National Fisheries Policy
NFRDI	National Fisheries Research and Development Institute
NGA	National Government Agency
NGO	Non-governmental Organization
NIPAS	National Integrated Protected Areas System
NSAP	National Stock Assessment Program
NSCB	National Statistical Coordination Board
NT	National Treasury
OD	Office of the Director
OP	Oceana Philippines
PAMB	Protected Area Management Board
PBB	Performance-Based Bonus
PCFA	Philippine Capture Fisheries Atlas
PCG	Philippine Coast Guard
PD	Presidential Decree
PFC	Philippine Fisheries Commission
PLDP	Pagbabago Livelihood Development Program
PMC	PNP (Philippine National Police) Maritime Command

ACRONYMS

PMG	Philippine Maritime Group
PN	Philippine Navy
PNAP	Philippine National Aquasilviculture Program
PNP	Philippine National Police
PSA	Philippine Statistics Authority
PSOC	Philippine Standard Occupational Classification
RA	Republic Act
RAF	Regular Agency Fund
RD	Regional Director
RFO	Regional Field Office
RIHN-J	Research Institute for Humanity and Nature—Japan
RLO	Regulatory and Licensing Office
RP	Reference Point
SAAD	Special Area for Agricultural Development
SAG	Scientific Advisory Group
SB/SP	Sangguniang Bayan/Sangguniang Panlungso
SC	Supreme Court
SDP	Seaweed Development Program
SEAFDEC	Southeast Asian Fisheries Development Center
SONA	State of the Nation Address
SPA	Social Preparation Activities
TCMZ	Tuna Conservation and Management Zones
TDP	Techno-Demo Projects
TSS	Technical and Support Services
TWG	Technical Working Group
UNCLOS	United Nations Convention on the Law of the Sea
VIIRS	Visible Infrared Imaging Radiometer Suite
VMS	Vessel Monitoring System
WB	World Bank
WCPFC	Western and Central Pacific Fisheries Commission
WCPFC - CMM	Western and Central Pacific Fisheries Commission Conservation and Management Measures

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1 | INTRODUCTION

1.1 Background

The Philippines is an archipelago of 7,641 islands, with its territorial waters (2,200,000 km^2) seven times larger than its land area (300,000 km^2) and a coastline (36,354 km) that is the fifth longest in the world. It has been known as the country with the most diverse marine ecosystems in the world (Carpenter and Springer, 2005) and is located at the apex of the Coral Triangle, considered the global center of marine biodiversity (Hoegh-Guldberg et al., 2009).

The three sectors comprising Philippine fisheries are municipal, commercial, and aquaculture. In 2023, the country's total fisheries production amounted to 4.26M mt, with a corresponding value of Php 326.7B (USD5.9B)[1]. Municipal fisheries (inland and marine) contributed 24.75%, commercial fisheries 19.3%, while aquaculture contributed 55.95% to total fisheries production.

In 2022, fisheries contributed 12.82% to the Gross Value Added (GVA) of the Agriculture, Forestry and Fishing (AFF) sector, while maintaining a trade surplus of Php 15.9B (US$ 292.2M). Next to rice and its products, fish and fishery products are the most consumed food commodities, representing 11.7% of typical food intake. This amount translates to 93.9 g/day, which is 63.3% and 205.9% higher than the intake of meat and its derivatives and poultry, respectively (BFAR, 2022).

The Republic Act 8550 (An Act Providing for the Development, Management and Conservation of the Fisheries and Aquatic Resources, Integrating All Laws Pertinent Thereto, and for Other Purposes) was enacted in 1998 to promote sustainable development and utilization of fisheries and aquatic resources in the country. Generally known as the Fisheries Code of 1998, RA 8550 focused on regulation of fishing practices to prevent overfishing, the protection of municipal waters for the municipal fishers, conservation measures such as Marine Protected Areas (MPAs), supporting the welfare of fisherfolk and coastal communities, and on the prohibited acts including illegal fishing, use of destructive fishing methods and harvesting endangered species.

Although the 1998 Fisheries Code could have been amended after five years, it took 17 years for this to happen. In 2015, Republic Act 10654[2] (An Act to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing) was passed to address persistent illegal, unreported, and unregulated (IUU) fishing activities and to align the Philippines' laws with international commitments. While RA 8550 laid the foundation for fisheries management in the country, RA 10654 (amended Fisheries Code) focuses on strengthening enforcement, increasing penalties, and ensuring compliance with global standards to address more challenges in fisheries management. The amendments are crucial for ensuring the long-term sustainability of the fisheries sector while maintaining access to international seafood markets.

[1] Using Exchange Rate (PHP per USD, eop) -- 55.38:1
[2] It only lapsed into law without the customary presidential signature.

Illegal, unreported, and unregulated (IUU) fishing is a long-standing, growing, and worsening phenomenon that contributed significantly to overfishing and the depletion of marine resources. RA 8550 did not have stringent measures to successfully eliminate IUU fishing. To combat IUU fishing, RA 10654 introduced stiffer penalties, advanced monitoring technologies (e.g., Vessel Monitoring System), and other improvements to enforcement mechanisms to deter IUU fishing.

Meanwhile, the government has signed a number of international agreements, including the 1994 United Nations Convention on the Law of the Sea and the 1995 Code of Conduct for Responsible Fisheries by the Food and Agriculture Organization. In 2014, the European Union (EU) issued "yellow card" warning to the Philippines for failing to control IUU fishing. This warning was a threat to accessing the EU seafood market. With the passage of RA 10654, this warning was lifted.

A number of key provisions in RA 8550 were revised in RA 10654. These revisions focused on increasing penalties for violations, particularly IUU fishing, mandating advanced monitoring systems (e.g., Vessel Monitoring System), establishing Fisheries Management Areas (FMAs) for ecosystem-based management and governance, strengthening stakeholder roles and promoting transparency in fisheries management, and aligning Philippine laws with international agreements.

RA 10654 is 10 years in 2025. During his State of the Nation Address (SONA) in July 2023, the President of the Philippines issued an explicit directive to amend the law. Consultations were held in accordance with this amendment. However, some argue that it is premature to amend a law that has yet to be fully implemented. Several obstacles have hampered its implementation, including the issuance of rules to implement new requirements of vessel monitoring measures (VMM) and implementing an ecosystems-based fisheries management areas approach, among others. With this, an assessment of the Philippine fisheries, particularly the implementation of specific provisions of RA 10654, is necessary to provide answers to the main question: As to what extent these issues of IUU fishing, vessel monitoring, and others have been addressed by the implementation of the amended Fisheries Code and the promotion of the sustainable use of marine resources?

Given the 2024 Supreme Court decision allowing a certain commercial fishing company in municipal waters, evaluating RA 10654's implementation is critical. Although not final, the judgment casts into doubt decades of work by various parties to protect municipal fisheries. More crucially, it casts into doubt the primary sections of RA 10654 concerning municipal waters, local government units (LGUs) as municipal water managers, and small-scale fishers' preferential use rights over municipal waters.

This study seeks to identify implementation gaps in fisheries governance and management, as well as to recommend policies and other strategies for ensuring the country's fisheries and aquatic resources' long-term sustainability. The amended Fisheries Code included substantial reforms to address critical difficulties in the fisheries sector, and reviewing its implementation ensures that it accomplishes its intended goals.

This report proceeds as follows. The rest of the introduction section presents the assessment's objectives, significance, scope and limitations, and framework. A brief description of the methodology follows the introduction. The next section on sustainability and fisheries management presents a brief history of fisheries production, total annual fisheries production, external trade, and fisheries management strategies such as the FMA, closed seasons, and MPAs. The enforcement and compliance section covers topics on fisheries registration and licensing, vessel monitoring systems, and the illegal, unreported, and unregulated fishing. The Institutional Framework briefly presents the existing institutional framework and then focused on performance of the Bureau of Fisheries and

Aquatic Resources in the implementation of RA 10654. The sections on the performance of the local governments in the implementation of the law, and then the socio-economic impact follow. The report ends with sections on conclusions and then recommendations.

1.2 Objectives

The general objective of this study is to assess the implementation of RA 10654 (amended Fisheries Code) from 2015 to present. Specifically, the assessment aims to:

1. Assess the current state of Philippine fisheries;
2. Identify gaps and weaknesses in fisheries governance and compliance mechanisms to address overfishing and IUU Fishing; and
3. Recommend ways to enhance transparency, accountability, and good governance in the fishing industry.

1.3 Significance

The assessment tracks the progress of the implementation of the amended Fisheries Code (RA 10654), a law intended to promote sustainable fisheries management. The assessment is a critical tool for enhancing fisheries governance in the country. It provides evidence-based insights that can inform initiatives to improve the sustainability and viability of the fisheries and coastal communities. The assessment allows for determining the level of success, addressing gaps, and continuing to improve fisheries management for long-term ecological and socio-economic benefits. The following are the potential positive benefits from this assessment:

a. Immediate outcomes:
   - Better understanding of the current state of fisheries management and compliance.
   - Identification of key challenges and opportunities for improving fisheries sustainability.
   - Recommendations for policy and regulatory reforms to strengthen governance and effective law enforcement.

b. Intermediate outcomes:
   - Promotion of responsible fishing practices and the adoption of sustainable technologies.
   - Improved collaboration and information sharing among stakeholders, especially in the Fisheries Management Areas (FMAs).

c. Ultimate outcomes:
   - Increased transparency and accountability in the fishing industry.
   - Protection of marine biodiversity and ecosystems.
   - Positive socio-economic impacts on local fishing communities.

1.4 Scope and Limitations

This is a rapid assessment of the implementation of RA 10654 (amended Fisheries Code), which was enacted into law on February 27, 2015. The implementation period covered is from 2017 to the present, although if data prior

to 2015 is available, they are used to show trends or circumstances that existed before 2015. The assessment was primarily based on secondary data, which were publicly available from government agencies (e.g., PSA, BFAR, DILG, DBM, COA, others), Oceana, and from studies of the authors. While there was a list of important data needed for a more in-depth assessment, these were not shared by the sources. With the available data, the assessment covers five areas (see subsection 1.5 Framework of this report), including sustainability and fisheries management, enforcement and compliance, institutional framework, local government implementation, and socio-economic impact.

1.5 Framework

The framework for assessing the implementation of RA 10654 (Amended Fisheries Code) covers the key aspects of sustainability and fisheries management, enforcement, governance, and socio-economic impact (Figure 1.1). Specifically:

- *Sustainability and Fisheries Management:* RA 10654 aims to curb IUUF, which depletes fish stocks and damages marine ecosystems. Assessing the status of the fish stocks and the enforcement of management measures can help determine if fisheries management practices have become more sustainable. For this assessment, the focus is on total annual fisheries production, external trade, and the enforcement of management measures such as the Fisheries Management Areas, marine protected areas, and closed season.

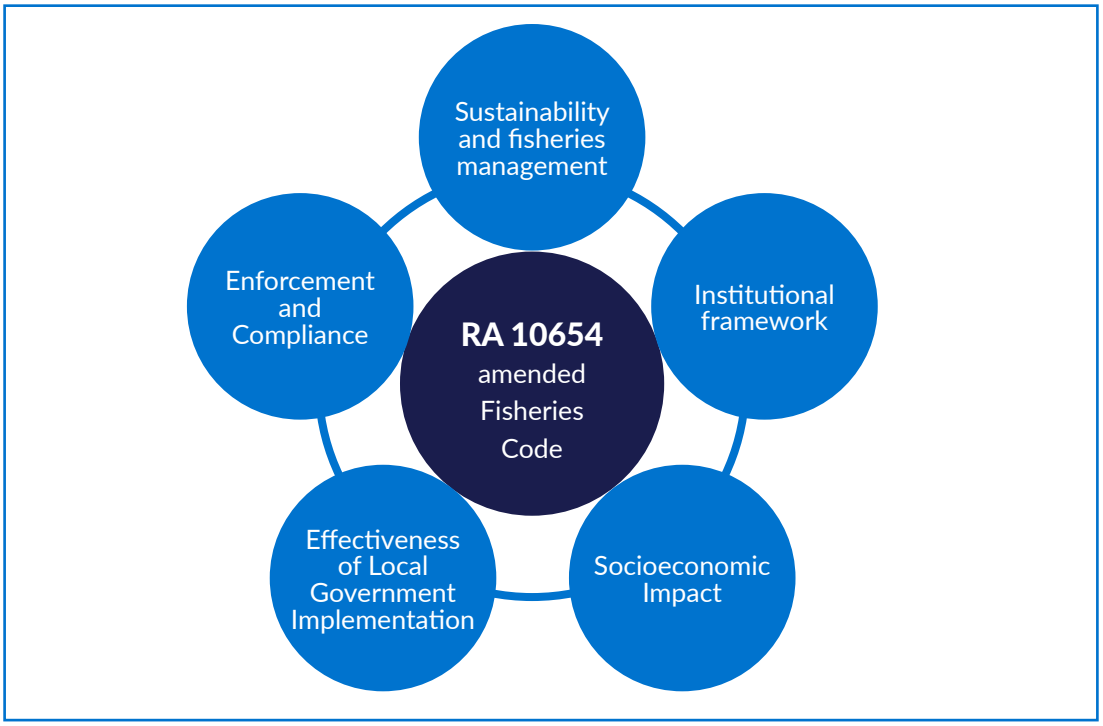
- *Enforcement and Compliance:* RA 10654 intends to strengthen the enforcement mechanisms, including the use of a Monitoring, Control, and Surveillance (MCS) system, including a vessel monitoring system (VMS), and stricter penalties for IUU fishing. Assessing fisheries regulation and licensing, the use of VMS, and IUUF can provide insights as to the compliance among the fishers and fishing operators, as well as the effectiveness of enforcement of the law by BFAR and the LGUs.

- *Institutional framework:* Assessing the legal and institutional framework of RA 10654 will determine how effectively the law is being enforced and whether the institutional structures function properly. For this assessment, the focus is on how well the Bureau of Fisheries and Aquatic Resources oversees the implementation of the law.

- *Effectiveness of Local Government Implementation:* The LGUs are the frontline implementers of RA 10654. They have direct authority to manage the municipal waters (within 15 km from the shoreline) and oversee local fisheries management. Assessing the performance of the LGUs can identify the areas of strengths, weaknesses, threats, and opportunities to refine implementation mechanisms.

- *Socioeconomic Impact:* Fisherfolk rely on fisheries for their livelihood. Assessing the impact of the law on fisherfolk's livelihoods to ensure that their socio-economic welfare is not compromised in the pursuit of sustainable fisheries. Specifically, it will inform if programs like livelihood assistance, subsidies, and alternative income sources are benefiting the fisherfolks.

Figure 1.1. Areas Covered in Assessing the Implementation of RA 10654



2 | METHODOLOGY

The assessment primarily used data from available records, reports, studies, news, and other relevant digital files. The multiple sources of data used in the assessment were:

1. online databanks of national government agencies, including the Philippine Statistics Authority, Bureau of Fisheries and Aquatic Resources, Department of Interior and Local Government, Department of Budget and Management, and Commission on Audit;
2. data and reports from research projects of authors conducted during the period covered by the assessment;
3. data and reports from Oceana;
4. BFAR (Fisheries Resources and Management Division and Fisheries Resources and Licensing Division); and
5. related journal articles and news reports.

The 1998 Fisheries Code (RA 8550) was amended in 2015 to become RA 10654. Data from 2017 to present were given priority with the assumption that changes brought by the implementation of RA 10654 can take two years to show measurable impact. Data for 2015 was taken as the baseline. However, earlier data were also included to show trends. Both raw and processed data were collected. Raw data collected were processed for this report's interpretation and analysis.

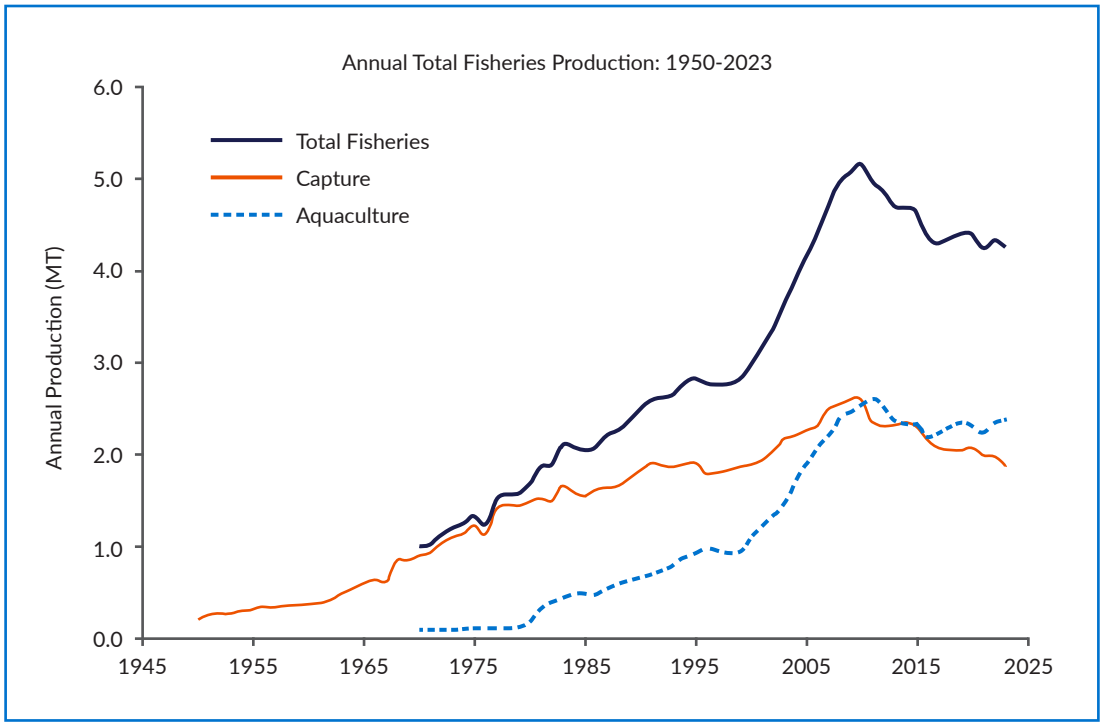
3 | SUSTAINABILITY AND FISHERIES MANAGEMENT

3.1 Brief History of Fisheries Production

To assess the progress in attaining sustainable fisheries in the country, based on the amendments (i.e., in RA 10654) to provisions of the 1998 Fisheries Code (RA 8550), this section provides a brief historical background of the development of capture fisheries in the country as far back as available data will allow.

Annual production estimates compiled by the Philippines Statistics Authority (PSA) show total capture fisheries production increasing from 1950 to 2010, followed by a continuing decrease to the present (Figure 3.1). Estimates for aquaculture are available only from 1970, and show an increasing trend until about 2012, after which production stabilized at a somewhat lower level until 2023.

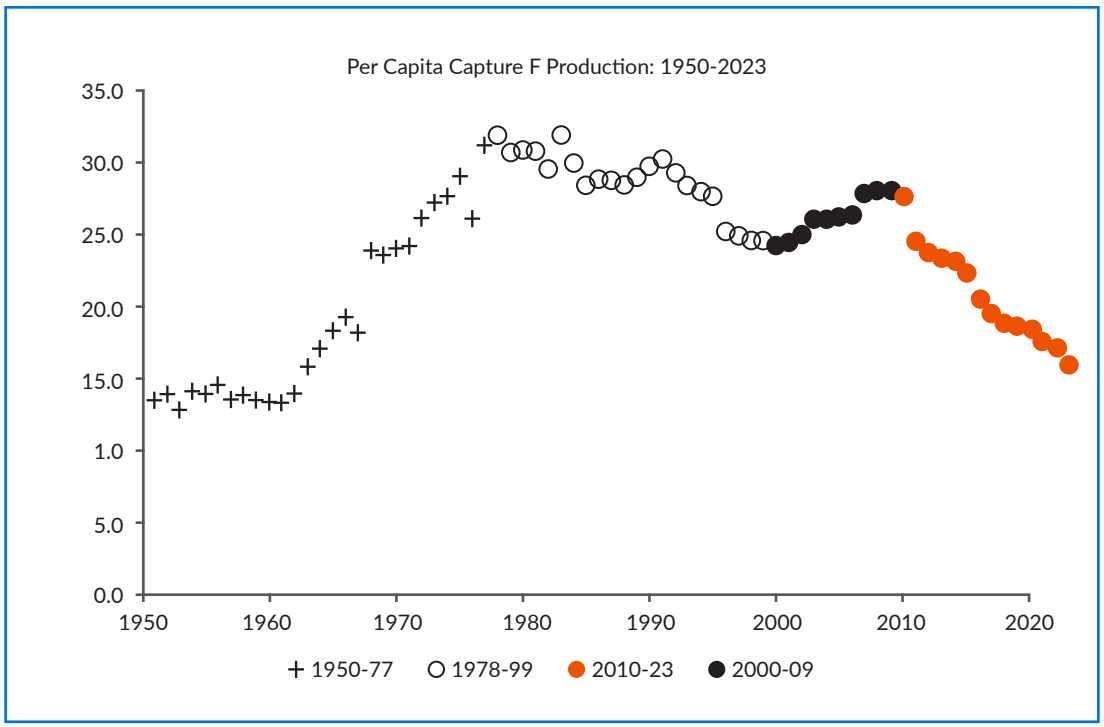
Figure 3.1. Annual production from capture (municipal and commercial sectors) and aquaculture fisheries from 1950-2023.



Source: PSA

The almost continuous decrease from 2010 suggests that overfishing took place around this time. Annual production, however, is determined by factors including changes in the number of fishing operations (= fishers &/or vessels), in the extent of fishing grounds and in fishing power, including mechanization, technological advancements in navigation, fish finding technology, and gear handling. Hence, annual production by itself may not truly reflect stock abundance at all. Unfortunately, reliable information on fishing effort is largely unavailable for estimating production per fisher or any other unit of effort, which would be a better index of resource (stock) abundance. Thus, dividing annual capture fisheries production by the estimated population of the country each year (=per capita capture fisheries production), although rough, could be more indicative of resource abundance (Figure 3.2). Per capita capture fisheries production increased rapidly from the early 60's to about 1978, followed by an overall decreasing trend until the present. The increase from 2001-2008/9 is likely due to intensified targeting of sardines and tuna rather than a true increase in abundance of these or other stocks during this period.

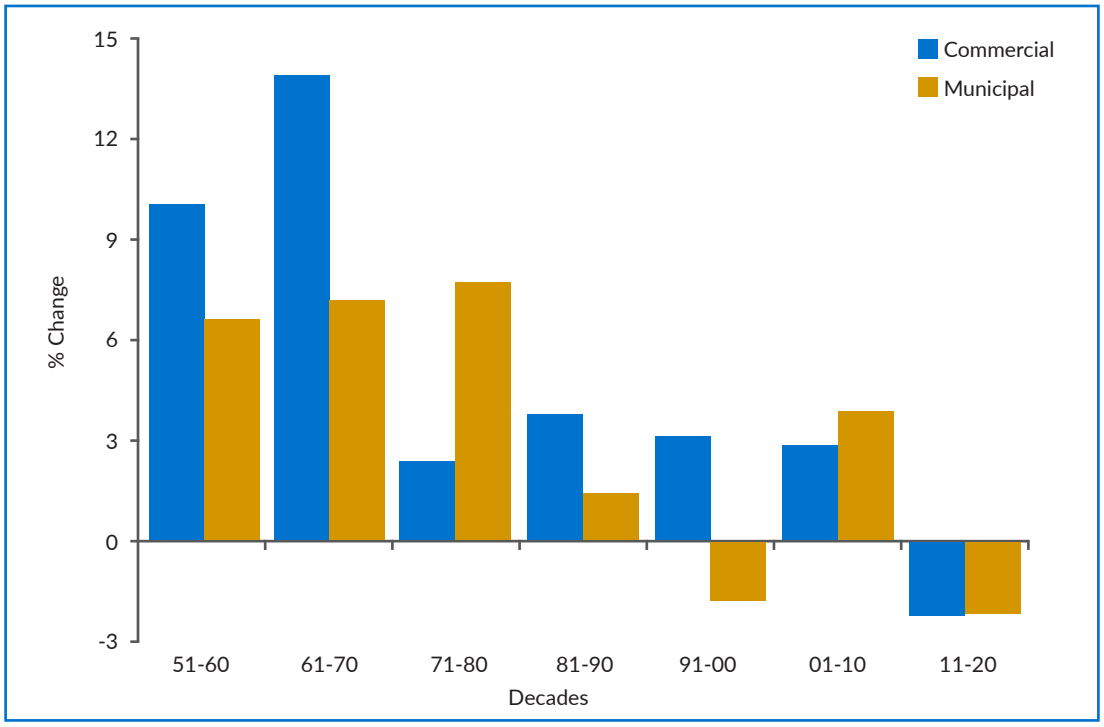
Figure 3.2. Per capita production (kg/person/yr) of capture fisheries from 1950-2023. Based on PSA fisheries statistics & UN population estimates.



Based on PSA fisheries statistics & UN population estimates.

In effect, per capita production of capture fisheries started to go down in the late 1970s. Figure 3.3 shows the average percent (%) change in mean annual landings by 10-year periods for the two sectors of capture fisheries (municipal and commercial). Mean annual growth in the commercial sector dropped from 13.9% to 2.4% the 1960s to the 1970s, while municipal fisheries dropped from 7.8% to 1.4% the following decade. This is the period during which studies done in the 1980s claim that major fishing grounds of the country had already breached their respective maximum sustainable yields (MSY). For soft bottom demersal resources, fishing effort levels in the 1980s should have been reduced by 40% to attain MSY (Silvestre et al., 1986; Armada, 2004), while for small pelagic resources the required reduction was 60% (Dalzell and Ganaden, 1987; Barut, 2004).

Figure 3.3. Average percent (%) change in annual landings by decade for commercial and municipal sectors.



Clearly, overfishing in major fishing grounds around the country had been documented in the 1980s, four decades ago. More systematic in-depth assessments ensued in the 1990s under the Fisheries Sector Program, and similarly in the early 2000s under the Fisheries Resources Management Program, with overall results showing that the situation became worse, particularly for the municipal fisheries sector (MERF, 2006). The results of all these previous studies are summarized in Chapter 3 of the Comprehensive National Fisheries Industry Development Program (CNFIDP) 2021-2025 (BFAR, 2021). The National Stock Assessment Program, then under the BFAR began systematic monitoring of stocks in major fishing grounds around the country in 2000 and continues to the present. Their most recent results, presented in the later section, do not show any improvement from the depleted condition of stocks from 40 years ago.

It is thus critically important to recognize that most major fishing grounds around the country have been overfished for about 40 years. This should serve as the basis for determining not only the magnitude of the problem, but also the urgency of necessary interventions to recover at the level of sustainable fisheries. It is in this historical context that any progress in attaining this goal should be assessed.

3.2. Total Annual Fisheries Production

The annual total fisheries production estimates in terms of volume (mt) and value (Php) from 2010 to 2023 are shown in Figure 3.4. Total fisheries production decreased from 2010 to 2016 and remained at around 4.2 to 4.4M mt per year until 2023. Overall, aquaculture contributed 52% to total production, with municipal and commercial

capture sectors contributing 26.1% and 21.9% respectively over the 14-year period. The value of production, on the other hand, increased continuously over the same period, with aquaculture and municipal capture sectors contributing 40.5 and 36.8% respectively to the value of total production. Commercial capture fisheries showed the least increase in value overall (Figure 3.4).

In 2023, total fisheries production amounted to 4.26M mt, with a corresponding value of Php 326.7B. In 2022, fishery exports amounted to Php 66.07B (US$ 1.2M), exceeding imports by Php 15.9B (US$ 292.2M). From 2010 to 2023, capture fisheries production decreased from 2.6M mt in 2010 to 1.9M mt in 2023, corresponding to a cumulative loss of 591,136 mt over the 13-year period. The mean loss based on the slope of the fitted regression line (Figure 3.5) amounts to 45,472 mt each year.

Figure 3.4. Volume (M mt, upper) and Value (Php, bottom) of annual fisheries production by sector from 2010 to 2023). Source: BFAR Fisheries

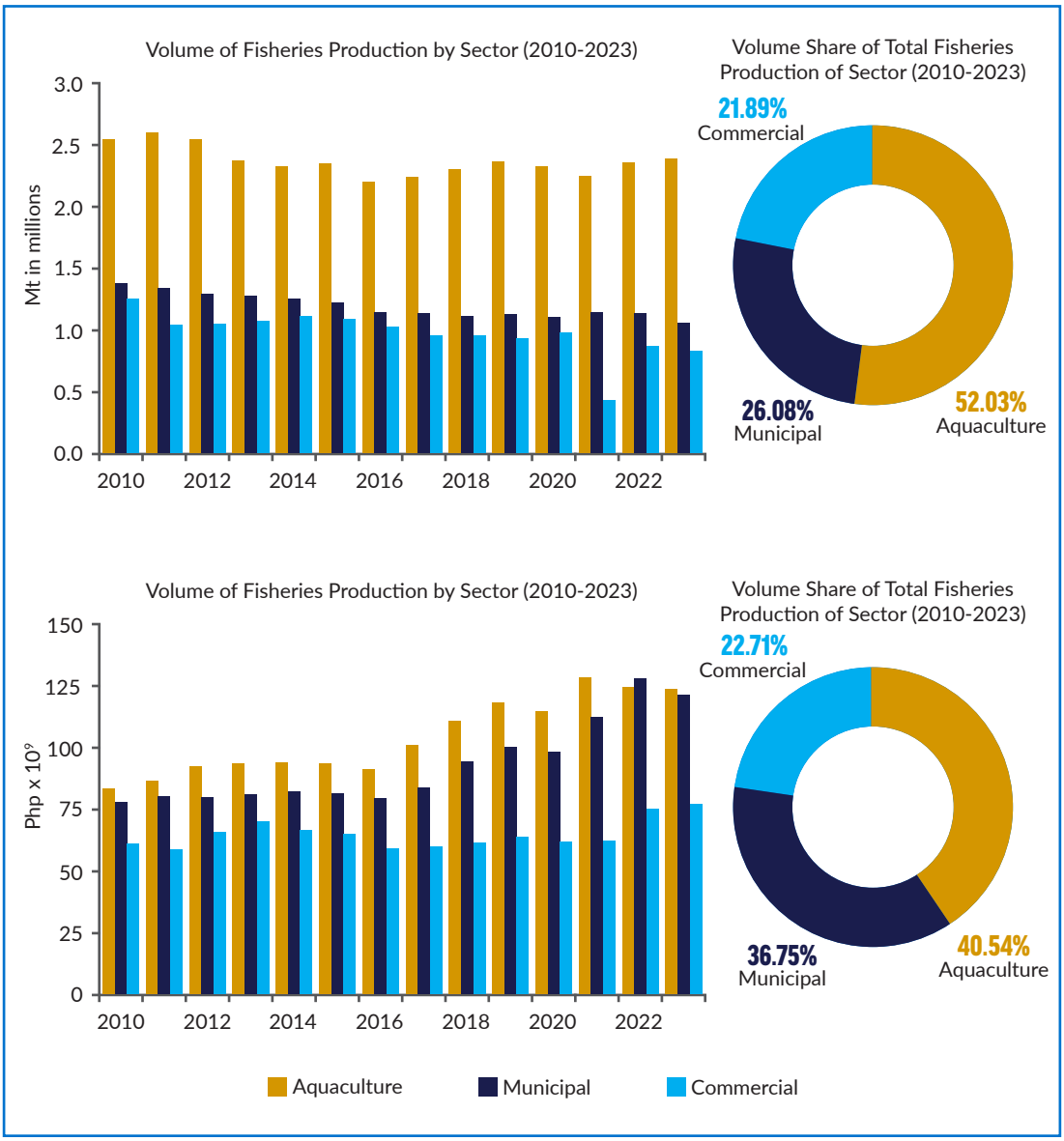
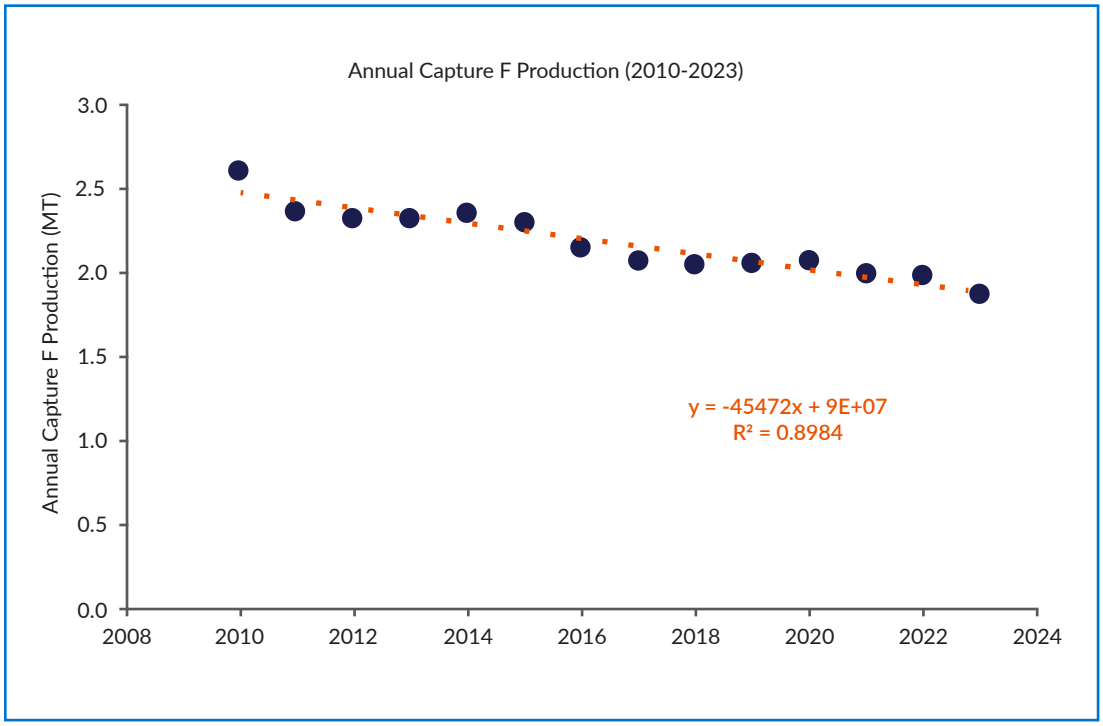


Figure 3.5. Estimate of annual decline in capture fisheries production from 2010-23

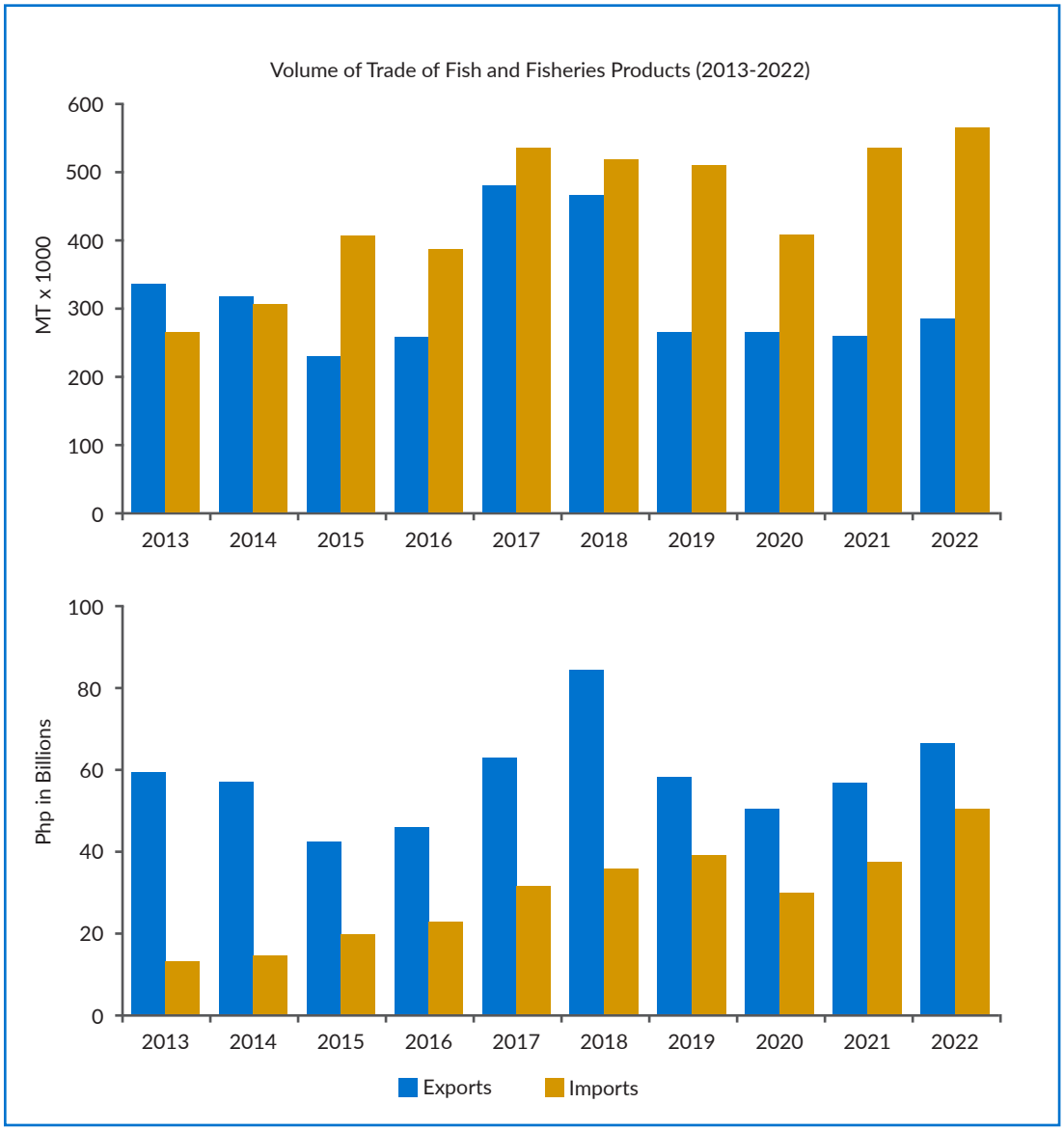


3.3 External Trade

The volume and value of trade of fish and fishery products from 2013-22 are shown in Figure 3.6. In terms of volume, both imports and exports increased from 2016-17, with little change in the amount of imports thereafter, averaging close to 500,000 mt annually. In 2022, imports consisted mostly of tuna, mackerel, cuttlefish, and roundscad (Figure 3.7), 65.2% of which were sourced from China, Vietnam, and Papua New Guinea. Exports, on the other hand, decreased substantially after 2018, remaining at around 250,000 mt annually. Exports consisted mostly of tuna, seaweed, eel, and grouper, with 53.1% going to China, the USA, Japan, and Germany (Figure 3.7). Imports consistently exceeded exports from 2015 onwards, with amounts reaching about twice more in 2021 and 2022.

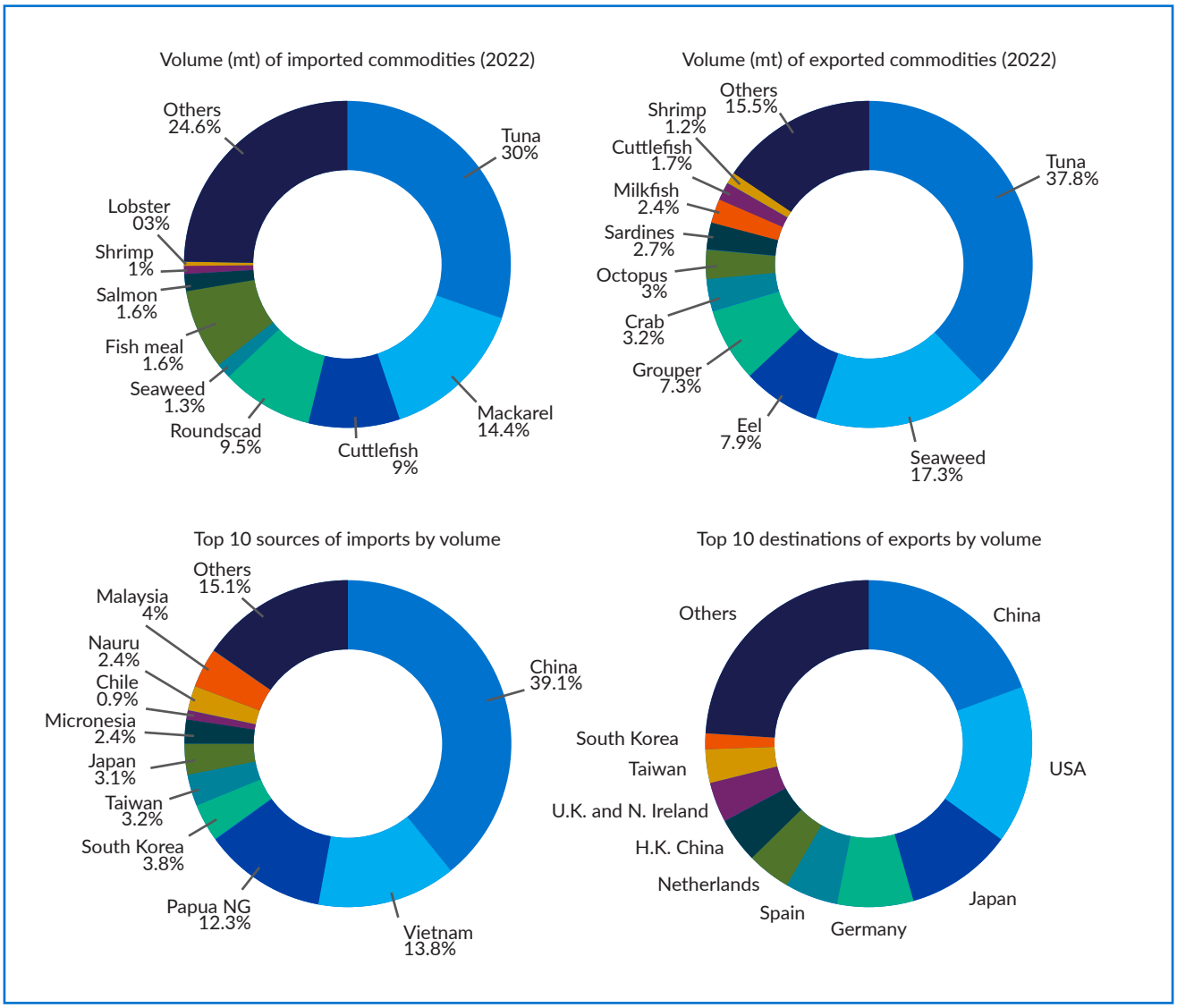
In terms of value, exports consistently exceeded imports during the 10-year period, by an overall mean of US$ 601,400 per year. However, because of the continuous increase in the value of total imports (Figure 3.6), the difference in trade amounted to only US$ 292,250 in 2022.

Figure 3.6. Volume (mt x 1000) and value (Php Billions) of exports and imports from 2013-22.



Source: BFAR Fisheries Profiles

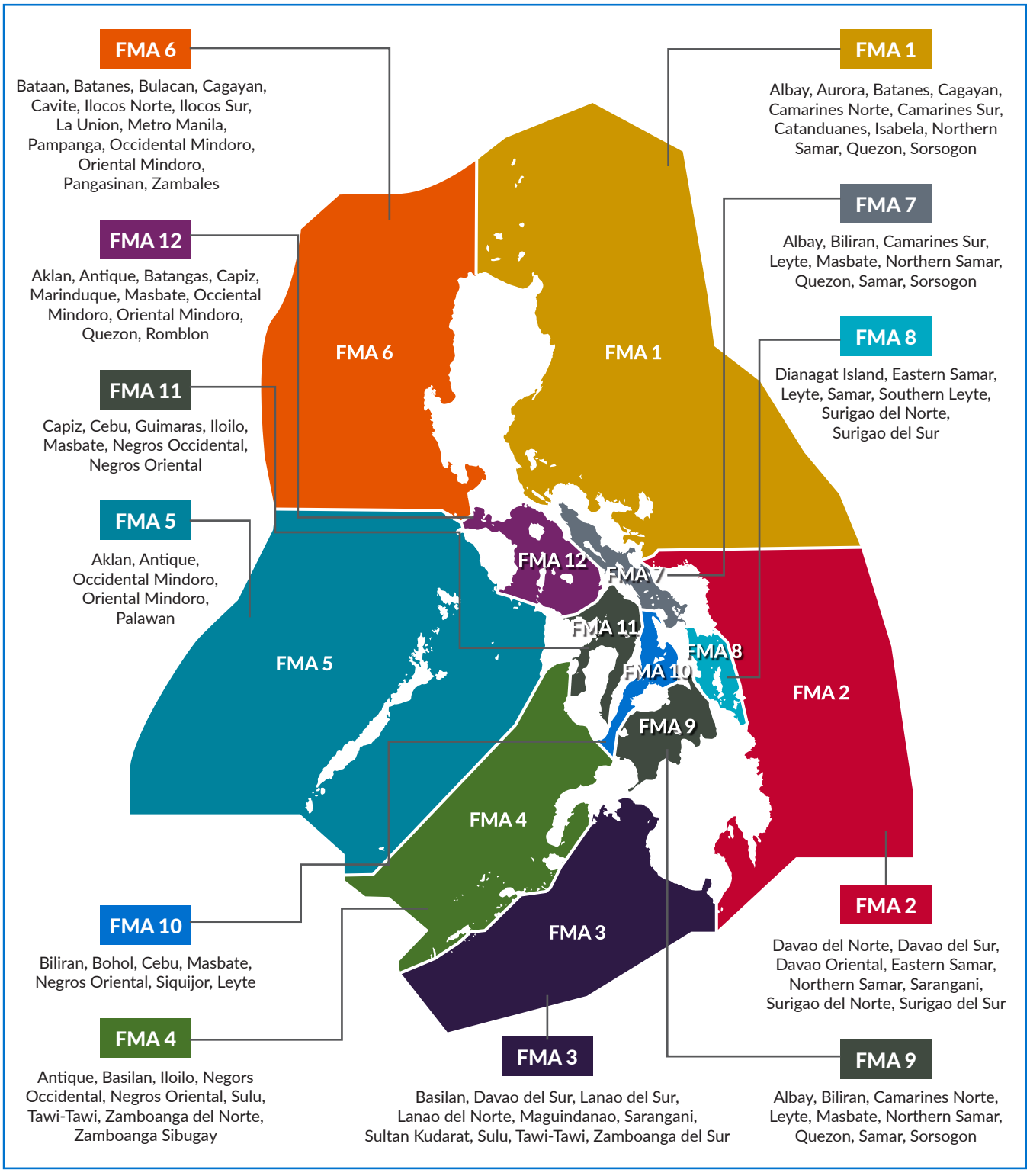
Figure 3.7. Volume (%) by commodity and top destinations of imports (upper) and exports (bottom) of fishery products in 2022.



3.4. Fishery Management Areas

The Fisheries Management Areas (FMAs) were introduced in 2019 under Fisheries Administrative Order (FAO) No. 263 issued by BFAR. This came four years after the fisheries law was amended and passed in 2015. This policy established a science-based, participatory, and transparent governance framework and mechanism to sustainably manage the country's marine and fishery resources. Dividing the Philippine waters into 12 FMAs (Figure 3.8), the initiative aims to address the overexploitation of resources, ensure sustainable fishing practices, and improve the livelihoods of fishing communities. As defined in the amended Fisheries Code (Section 4, 34), Fishery Management Areas are a bay, gulf, lake, or any other fishery area that may be delineated for fishery resource management purposes. The 12 established FMAs are not based on political boundaries, but are delineated based on approximate stock boundaries, range, distribution, and structure of fisheries.

Figure 3.8. Map showing the 12 Fisheries Management Areas.



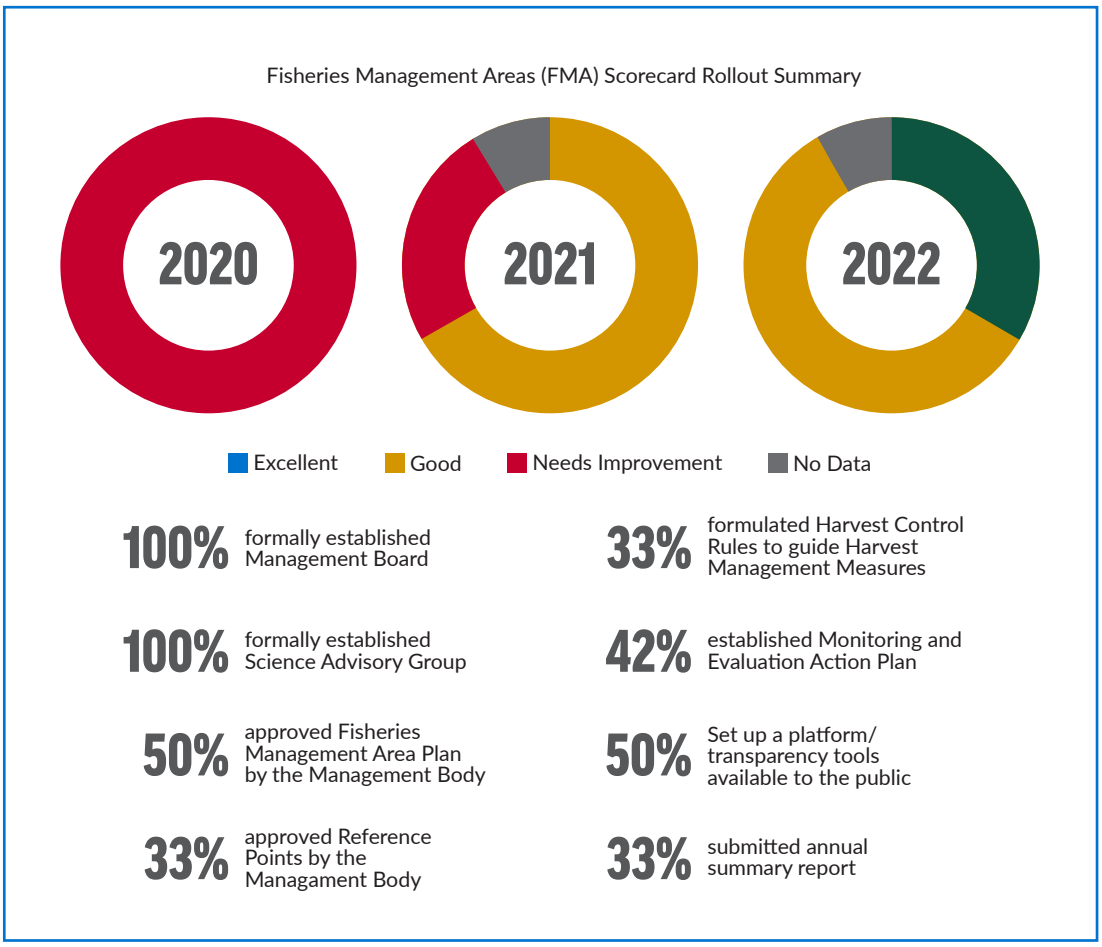
3.4.1 Main Features of FMAs

The FMA has three key features. First is decentralized management, where the FMAs are managed by the Management Board (MB) with the support of the Scientific Advisory Group (SAG) and the Technical Working Group (TWG). Each of these bodies is composed of representatives from the national government, local government units (LGUs), academe, civil society, and fishing sectors. This approach allows tailored management strategies specific to each FMA's ecological and socio-economic context. Second is a science-based approach where FMA's employ scientific data, including stock assessments, to set catch limits and implement conservation measures. The management plan is based on a comprehensive scientific assessment, recommendations from the Scientific Advisory Group, and a thorough consultation process with stakeholders. In each FMA, the Reference Points and Harvest Control Rules must be identified and implemented. The Reference Points, based on biological indicators (e.g., harvest, sizes, yield, catch rates, size at maturity, others) or the level of fishing, are to be developed through a scientific process for each targeted stock. The Harvest Control Rules are the actions or set of actions to be taken to achieve a target benchmark value, Reference Points, and avoid the limit Reference Point. Third, it has a co-management Framework where within the FMA, both the BFAR and LGUs, together with key stakeholders in a given FMA, are envisioned to seek a common goal and synergistically work together, informed by science, and following the principles of Ecosystem Approach to Fisheries Management (EAFM). Local stakeholders, including fisherfolk, play a role in decision-making, promoting shared responsibility.

3.4.2 Performance of FMAs

It has been five years since the FMA system was adopted with the issuance of FAO 263 on January 28, 2019. Based on the results of the 3rd FMA Scorecard roll out (Figure 3.9), all 12 FMAs have established their management bodies, scientific advisory groups, and technical working groups; half have adopted and approved the FMA Management Plans; one-third have approved reference points and have formulated Harvest Control Rules; 42% have established Monitoring and Evaluation Action Plan; two-thirds have set up a platform/transparency tools available to the project; and 83% have submitted annual summary reports (Oceana 2024). Moreover, the report showed that, except for FMA 4 that did not participate in the previous two rollouts, data shows that in 2022, all FMAs are already at the Good or Excellent level of compliance based on the indicators set forth under the FAO 263 provisions. Notably, four FMAs have shown excellent performances: FMA 1, led by BFAR 2 with Chairperson of the Management Body, Regional Director (RD) Dr. Angel Encarnacion; FMA 7, led by BFAR 5 with Chairperson of the Management Body, RD Ariel Pioquinto; FMA 11, led by BFAR 6 with Chairperson of the Management Body, RD Remia Aparri; and FMA 12, led by BFAR 4A with Chairperson of the Management Body, RD Sammy Malvas.

Figure 3.9. Summary of the 3rd FMA scorecard rollout results
(November 2023-January 31, 2024)



Source: Oceana 2024.

3.4.1 Challenges and Issues with FMAs

With EAFM, FMA is supposed to consider the balance between ecological and human well-being and address the entire ecosystem's health and resilience. With the focus on the single-species or stock in every FMA, there seems to be a promotion of single species fisheries management. However, the focus on the conservation of single species can be detrimental in the long run. It can potentially affect other species; missing broader ecosystem conservation needs (Lee et al., 2021) and unintended consequences such as increased effort and bycatch may happen (Tolotti et al., 2023).

On the other hand, Table 3.1 identifies the sector likely to be affected when harvest controls are implemented for specific species.

Table 3.1. Sector likely to be affected when harvest controls are implemented for specific species

FMA	With MB	With SAG	With TWG	With approved Management Plan	Species	Sector likely to be affected by HC/RFP
1	Yes	Yes	Yes	Yes		
2	Yes	Yes	Yes			
3	Yes	Yes	Yes		Tuna and small pelagic species	Municipal and commercial
4	Yes	Yes	Yes		Sardines	Municipal and commercial
5	Yes	Yes	Yes	Yes	Roundscad	commercial
6	Yes	Yes	Yes	Yes	Roundscad	commercial
7	Yes	Yes	Yes		Sardines	Municipal and commercial
8	Yes	Yes	Yes			
9	Yes	Yes	Yes	Yes	Sardines	Municipal and commercial
10	Yes	Yes	Yes			
11	Yes	Yes	Yes		Sardines	Municipal and commercial
12	Yes	Yes	Yes	Yes	Sardines	Municipal and commercial

MB – Management Board; SAG – Scientific Advisory Group l TWG – Technical Working Group

Moreover, compliance and enforcement are still weak. The implementation of vessel monitoring systems (VMS), harvest control rules, and catch documentation, remain inconsistent. IUU fishing continues to threaten marine ecosystems, particularly in remote areas. Incomplete or outdated data on fish stocks and ecosystems makes it difficult to establish accurate catch limits and conservation targets.

Ferrer et al (2024) identified the three main issues of FMA:

1. The Fisheries Administrative Order offers only general direction and guidelines, leaving the operationalization and management details to each FMA to work out. As a result, the FMA is at different levels of implementation.

2. The funding source is not clear. BFAR only supports meetings of MB/SAG/TWG, but not the implementation of activities. Section 6 of Fisheries Administrative Order 263 provides that each FMA will decide and agree

on financing mechanisms. The funding requirements for FMA activities are to be based on the functions and responsibilities of the BFAR, LGUs, and other stakeholders as agreed upon in the implementation and monitoring scheme of the FMA Plan. It was further stipulated that no fees can be exacted from any operator, whether commercial or municipal fisherfolk, within FMAs in support of the operations of the Management Board or the FMA system. Moreover, FMA stakeholders are encouraged to cooperate by pooling or sharing resources in terms of equipment and manpower resources in the conduct of management activities, including law enforcement activities within their respective municipal waters (Fisheries Administrative Order 263, Section 17).

Many FMAs face limited funding and technical resources, hindering the implementation of comprehensive management plans. LGUs often lack the expertise and infrastructure to enforce regulations effectively. Currently, only FMAs 6 and 9 have funding source for the implementation of plans, projects, and activities as FishCore Program sites. In this seven-year World Bank project of Php 11.2 billion, more than 30,000 registered fisherfolk in FMAs 6 and 9 are expected to benefit.

3. Weak representation and participation of municipal fisherfolk. All municipal fishers in the FMA have only one representative on the FMA Management Board. Similarly, there is only one Integrated Fisheries and Aquatic Resources Management Councils (IFARMC) member representing all FARMCs, and one local chief executive representing all LGUs in the given FMA. Moreover, the local FARMCs are advisory in nature, which limits their capability to convert their management initiatives into local regulations and programs. There are reports that local FARMCs are not truly representative of small-scale fishers' interests and that they are minimally effective. The erosion of tenure rights has occurred sometimes with the approval of a local FARMC, whose members can be hand-picked by LGU executives.

3.5. Status of Stocks in Fishery Management Areas

The National Stock Assessment Program (NSAP) implemented by the regional offices of BFAR has been monitoring stocks of the most common species caught in various fishing grounds of the country since late 1998. The program aims to collect information that is needed for sound fisheries management, hence, much of the data relating to harvest control reference points have been and continues to be routinely collected for selected fishing grounds. However, the consolidation of these into summaries by FMA still needs to be worked out. There is restricted access to this information, but the Philippine Capture Fisheries Atlas (Santos et al., 2017), published by BFAR-NFRDI, provides a summary of the status of stocks from selected fishing grounds in each region of the country and is referred to in this section.

The atlas is based on data collected by NSAP in 2015, where stock status is based solely on exploitation ratios (E) computed from estimates of instantaneous fishing (F) and total (Z) mortality rates. Since the report presents data for different monitored fishing grounds in each administrative region, the information was reorganized by FMA in Table 3.2 below. The report covers 166 stocks of 71 of the most common species monitored in the different sites. The results show that in all 12 FMAs, the proportion of monitored stocks that are overfished exceeds 66% (Table 3.2). Of the 166 stocks, 147 are overfished, indicating that in most of the country's fishing grounds, over 88% of the resource stocks are overfished. This is consistent with previous findings dating back to the late 1980s, as already mentioned. Other stock assessment efforts around that time also showed very high proportions of overfished stocks in various fishing grounds of the country (Ingles & Pauly, 1981; Corpuz et al, 1985, and Lavapie-Gonzales et al., 1997). The current results from NSAP systematically covering more stocks in more fishing grounds

reveal the worsening condition of local stocks over the last four decades. While these results pertain to stock conditions in 2015, it is very unlikely that any improvement has taken place since then, considering the limited progress in management interventions.

Table 3.2. Status of fisheries stocks in the 12 FMAs

Species	1	2	3	4	5	6	7	8	9	10	11	12
Pelagic species												
Alepes djebaba							✓					
Amblygaster sirm				X								
Atule mate	X	X			✓		X					
Caranx ignobilis	X											
Coryphaena hippurus	✓											
Cypselurus naresii								X				
Decapterus kurroides			X				X			X		X
Decapterus macarellus	✓	X	X			X	X	X	X			X
Decapterus macrosoma	X	X	X	✓	X	X	X			X	X	
Decapterus maruadsi						X	X					
Decapterus russelli	X				X							
Decapterus tabl		X								X		X
Mene maculata		✓	X									
Elagatis bipinnulata	✓											
Encrasicholina punctifer												X
Escualosa thoracata							X					
Rastrelliger brachysoma	X					X	X				X	
Rastrelliger faughni	X	X	X									X
Rastrelliger kanagurta	X	X	X	X	X		X			X	X	X
Sardinella fimbriata	X						X		X		X	
Sardinella gibbosa			X				X			X	X	X
Sardinella lemuru			X	X		X	X	X	X	X	X	X
Selar boops	X		X			X						X
Selar crumenophthalmus	X	X	X		X	X	X			X	X	X
Selaroides leptolepis											X	
Trichiurus lepturus	X											

Species	1	2	3	4	5	6	7	8	9	10	11	12
Tuna & tuna-like species												
Auxis rochei	X	X	X		X	X	✓		X	X		
Auxis thazard	X		X						X			
Euthynnus affinis	X		X			X	X					
Katsuwonus pelamis	X		X	X								
Scomberomorus commerson	X											
Thunnus obesus	✓											
Demersal species												
Arius maculatus	X											
Brama orcini			X									
Ctenochaetus strigosus						X						
Dendrophysa russelli	X											
Epinephelus fasciatus								X				
Gazza minuta					X			X				
Gerres oyena							X					
Johnius borneensis	X											
Leiognathus splendens					X		X				X	
Lethrinus ornatus												
Lethrinus semicinctus								X				
Lutjanus rufolineatus												
Mugil cephalus												X
Nemipterus bathybius						X						
Nemipterus furcosus												
Nemipterus hexodon							X				X	X
Nemipterus nematopus			X									
Nemipterus peronii			X									
Nemipterus tanbuloides								X				
Nemipterus virgatus						X						
Nemipterus zysron			X									
Otolithes ruber	X											
Parascolopsis eriomma						X						
Pentaprion longimanus								X				
Priacanthus hamrur			X									
Priacanthus sagittarius												
Priacanthus tayenus						X						

Species	1	2	3	4	5	6	7	8	9	10	11	12
Saurida tumbil						X	X					
Saurida undosquamis												
Scolopsis taenioptera											X	
Siganus canaliculatus			X			X					X	X
Sillago aeolus											X	
Sillago ingenuua							X					
Sillago sihama											X	
Upeneus moluccensis									X			
Upeneus sulphureus								X			X	X
Upeneus tragula						X						
Upeneus vittatus												X
Portunus pelagicus											X	
Total no. of species monitored	24	9	24	6	9	17	21	11	6	8	16	15
Total no. of stocks overfished	20	8	19	4	7	17	18	9	6	8	16	15
% overfished stocks	83.3	88.9	79.2	66.7	77.8	100	85.7	81.8	100	100	100	100

Note: "x" = overfished (E>0.5), "✓" = not overfished (E≤0.5). In FMAs where species is not among those routinely monitored, the cells are left blank.

BFAR has spearheaded efforts to produce four (4) national management plans for specific fisheries resources of major importance. These are the:

1. National Tuna Management Plan (2018; approved)
2. National Sardine Management Plan (2020; approved)
3. Blue Swimming Crab National Management Plan (drafted 2020)
4. Octopus National Management Framework Plan (drafted 2021)

These plans provide comprehensive guidelines consistent with EAFM on the management of the targeted resources to achieve sustainability of stocks, equity of livelihoods and responsiveness of governance. They tackle all aspects of fisheries from capture & post-harvest practices and facilities to enforcement, marketing and innovation. Since interventions are FMA &/or fishing ground-specific, the actual harvest control reference points and interventions are to be determined by each FMA.

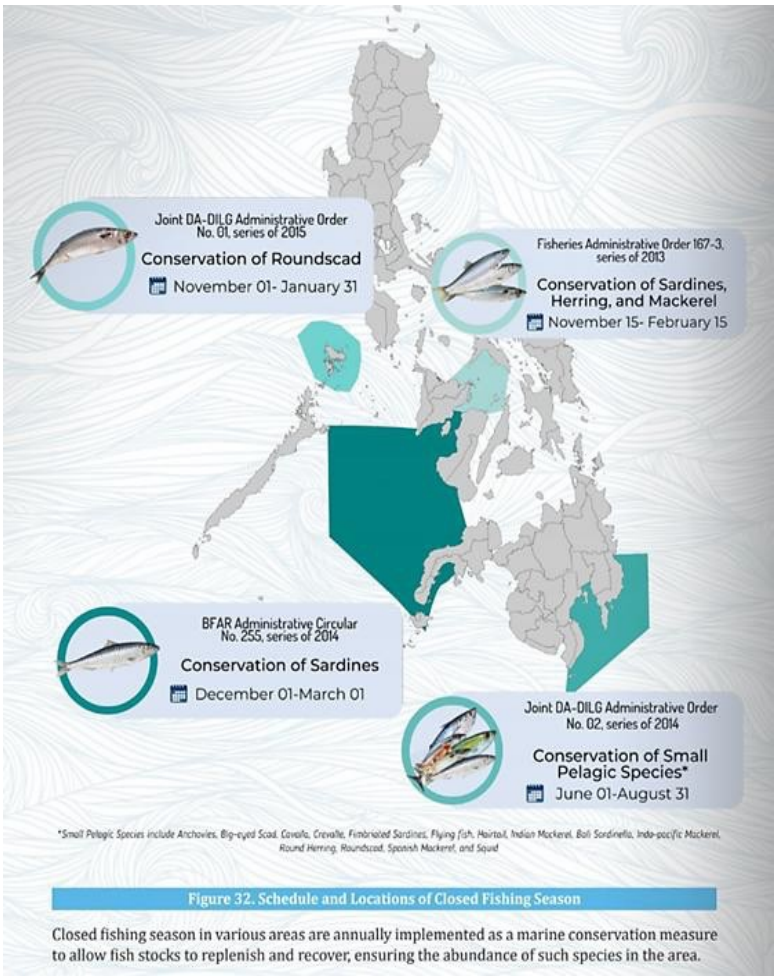
3.6 Closed Seasons

The most extensive management interventions that have been implemented so far are closed seasons in the following fishing grounds: (Figure 3.10)

- Sardines in FMA 4 (Zamboanga Peninsula + Sulu Archipelago) in 2011,
- Roundscads or galunggong in FMA 5 (Northern Palawan) in 2015, and
- Common small pelagic stocks in FMA 2 (Davao Gulf starting2014), FMA 11 (Visayan Sea starting 2013), and FMA 12 (Balayan Bay starting 2014).

Closed seasons are enforced during the peak spawning months of the target stocks to allow spawning to occur unhindered, to ensure successful recruitment year after year. However, while successful spawning is central to recruitment, other factors, such as spawning biomass or the number of spawners remaining in the stock, have critical roles as well. When overall stock abundance is so low, which is likely the situation with stocks under prolonged overfishing, spawning biomass may be close to minimum levels required for recruitment success.

Figure 3.10. Map showing the target species and fishing grounds where closed seasons are currently being implemented.

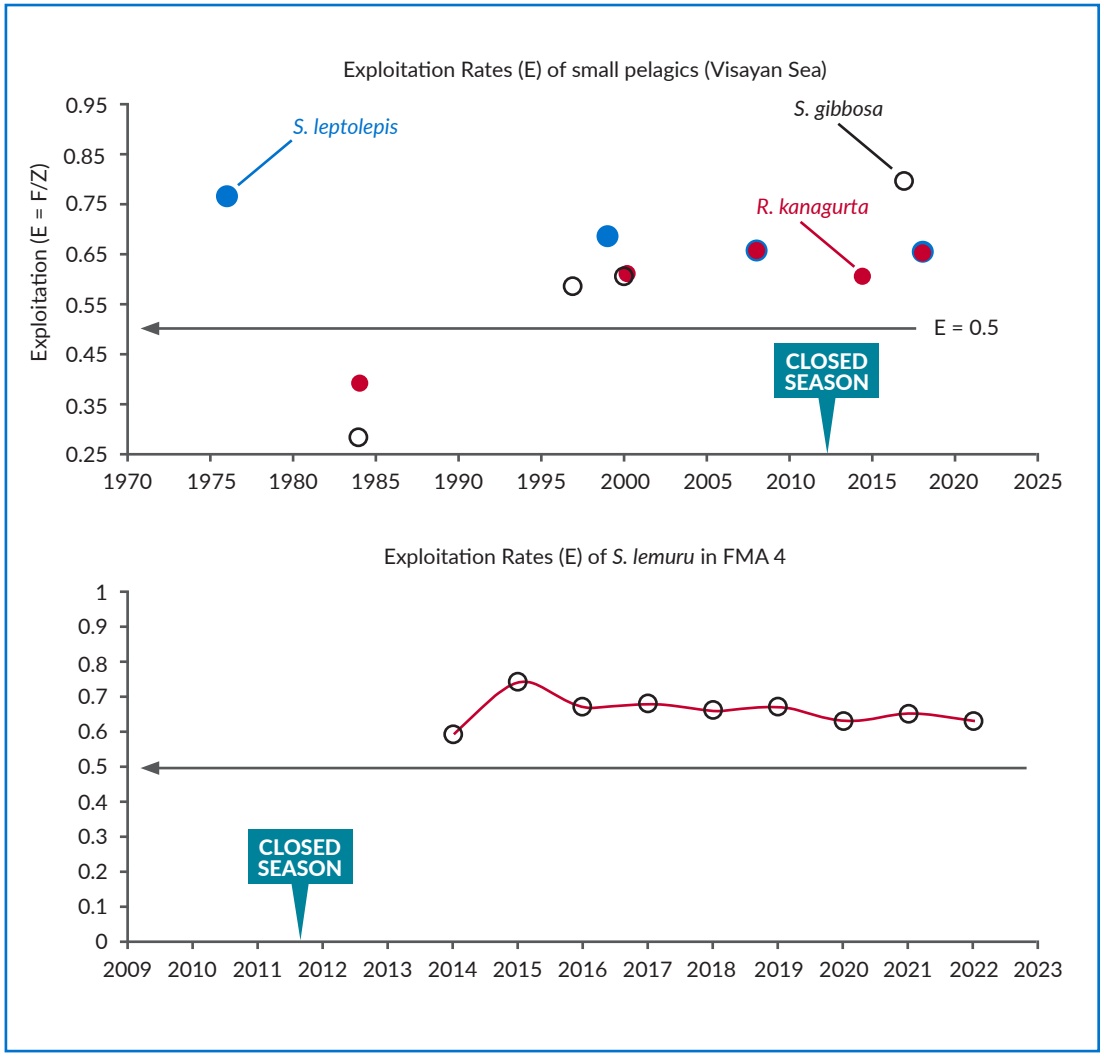


Source: BFAR, 2022

There are claims that closed seasons showed a positive impact in Davao Gulf, Zamboanga Peninsula, and Northern Palawan, based solely on increased landings after enforcement. These, however, are in direct contradiction to what regular systematic monitoring of stocks by NSAP in the Visayan Sea and FMA 4 shows. Current exploitation ratios remain exceedingly high even years after closed seasons were enforced in these fishing grounds (Fig. 3.11). In the Visayan Sea, exploitation rates for three small pelagic species (*Selaroides leptolepis*, *Rastrelliger kanagurta*, and *Sardinella gibbosa*) were already above the upper limit for sustainability (E = 0.5) in the 1990s. E-values did not decrease and remained high (0.65-0.8) over the next two to three decades, until 2020 (most recent available data), even seven years after stricter implementation of the closed season in 2013. In FMA 4, exploitation rates on the Bali sardine, Sardinella lemuru, consistently remained above 0.5 from 2014-2022, even after 11 years of enforcing the closed season. If closed seasons aimed at these species have not been effective, the conditions of other stocks not subject to similar interventions could not have improved over the same period.

It is clear that closed seasons are not enough to allow recovery of local fisheries stocks. Additional measures and actions are necessary if we are to recover the level of sustainability we are aiming for in our fisheries.

Figure 3.11. Estimates of exploitation ratios (E) of (a) small pelagic stocks in the Visayan Sea from 1975 to 2018 (various sources for earlier years, NSAP VI for 2017/18) (upper), and (b) Sardinella lemuru in FMA 4 from 2014 to 2022 (NSAP IX) (bottom).



Note horizontal arrows indicate the upper limit of the optimum range of E (= 0.5) for healthy stocks.

In the Visayan Sea, the close fishing season is November to February, primarily targeting sardines and mackerels. Ecosystem modeling by Bacalso et al. (2023) emphasized that fishing pressure remains the primary driver of biomass and catch changes, but environmental variables such as sea surface temperature and primary productivity also significantly influence fish populations. Similarly, Bagsit et al. (2021) found that while the closed fishing season had mixed results on catch volumes, it did not significantly alter fishing pressure on other species, highlighting gaps in enforcement and stakeholder adaptation. Socio-economic analyses revealed that community knowledge and perceptions of the close fishing season were varied, with compliance strongly correlated with awareness and livelihood conditions (Ungkakay-Bagsit et al., 2023). Moreover, Napata et al. (2020) underscored the economic vulnerabilities faced by fishers, proposing that the close fishing season must be coupled with complementary measures such as gear restrictions, habitat protection, and alternative livelihoods.

In the Zamboanga Peninsula, the implementation of the Joint DA-DILG Administrative Order No. 1 series of 2011 marked a widely studied close fishing season for sardines. Several assessments concluded that the policy had a favorable biological impact, leading to increased catch volumes and more frequent sightings of larger-sized Sardinella lemuru (Naguit, 2016; Rola et al., 2018). The policy also generated positive industry-level outcomes. Narvaez et al. (2016, 2018) demonstrated that both commercial and municipal fishers experienced increased incomes, while canning and bottling factories expanded operations. Despite temporary income losses during the closed season (Brillo et al., 2019; Jalotjot & Cervantes, 2016), fisheries workers often secured re-employment or pursued alternative livelihoods, mitigating the overall impact. Rola et al. (2016) reported a benefit-cost ratio of 2.4, indicating that societal gains outweighed economic costs. However, challenges in policy implementation persisted, including inadequate livelihood assistance, poor dissemination of information, and limited support for income diversification (Ferrer et al, 2017; Paunlagui, 2016; Brillo et al., 2016). et al. (2016).

From a governance standpoint, the Zamboanga case highlights the importance of collective action and multistakeholder engagement. Israel et al. (2016) and Rola et al. (2020) advocate for institutionalizing support mechanisms such as loan deferment schemes and social protection to cushion seasonal unemployment. Community participation in policy design and consistent impact assessment are also identified as keys to refining and sustaining the policy.

In Davao Gulf, where the closed fishing season runs from June to August, Macusi et al. (2021) analyzed both ecological and social indicators. The study revealed that catch per unit effort was influenced by economic factors and fishing experience, while support for the close fishing season was tied to revenue, price dynamics, and participation in community organizations. These findings point to the role of economic motivation and social cohesion in shaping compliance and policy outcomes.

3.7 Harvest Controls

The NSAP, coordinated by NFRDI through the BFAR regional offices, is a continuing program aimed at collecting, processing, analyzing, and interpreting data necessary for managing resource stocks in the different FMAs. Because the protocols are standard across all regions, the list of possible performance indicators for harvest control will be the same across all FMAs. The harvest control rules also follow the same protocol with respect to target, trigger, and limit reference points, while their actual values will depend on species/stock and FMA or fishing grounds within FMAs. A list of performance indicators and possible harvest control measures approved for FMAs 7 and 12 is shown in Table 3.3 below. These are likely to be the same in all FMAs.

Table 3.3. Performance indicators and harvest control measures in current use

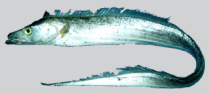
Perfomance Indicators	Harvest control measures
% Mature	Catch limits
% Megaspawner	Size limits of catches
% Within Optimum Length Range (Lopt)	Gear type regulations
Mean Length	Mesh size regulations
Length at first capture (Lc)	Reduction in fishing effort/capacity
Spawning Potential Ratio (SPR%)	Licensing regulation
F/Fmsy	Spatio-temporal restrictions
B/Bmsy	Market restrictions
Fishing mortality (F)/Natural mortality (M)	
Exploitation ratio (E = F/Z)	

Figures 3.12 & 3.13[3] are examples of how multiple harvest control reference points (HCRef) are used in determining the status of some of the stocks in FMAs 6 and 8. The color codes indicate what management decisions to take: light green – HCRef within target range (no need for interventions), yellow – HSRefs at trigger level (interventions must be initiated), and red – HCRefs are at or over the Limit level (drastic measures necessary to prevent collapse). In both FMAs, the performance indicators clearly call for concrete actions in addition to those already in place (i.e., closed seasons).

In theory, a fishery that is still truly developing and thus has not yet reached levels of overfishing, the harvest control indicators improve from below target (green) to limit (red) levels. Hence, regular monitoring of stocks under such conditions allows managers to monitor and adjust exploitation levels to avoid reaching the red level (collapse). The country was probably in this situation in the 1970s and 80s, but we are now well past this. Our fisheries are already at the red stage for over 85% of stocks. Other actions in addition to closed seasons, should have already been implemented.

[3] Slides were part of the presentation of NFRDI delivered by Mr. Ronnie Romero during the Atin ang Kinse forum, March 20, 2025, B Hotel, Quezon City.

Figure 3.12. Summary of performance indicator levels for some stocks in FMA 6.

Species		Performance Indicator				
		% mature	±10% of Lopt	% Megaspawner	Lbar	F/M
1. Nemipterus bathybius (Threadfin bream)		LRP	LRP	LRP	LRP	LRP
2. Decapterus macarellus (Mackarel scad)		LRP	LRP	LRP	TRP	LRP
3. Saurida tubmbil (Greater lizardfish)		LRP	LRP	LRP	LRP	Tri RP
4. Selar crumenopthalmus (Big-eye scad)		LRP	LRP	LRP	LRP	LRP
5. Encrasicholina punctifer (Anchovy)		LRP	LRP	LRP	LRP	LRP
6. Decapterus maruadsi (Japanese scad)		LRP	LRP	LRP	LRP	LRP
7. Trichiurus lepturus (Hairtail)		LRP	LRP	LRP	LRP	LRP
8. Auxis rochei (Bullet tuna)		Tri RP	LRP	LRP	Tri RP	LRP
9. Dussumeria elopsoides (Bullet tuna)		LRP	LRP	LRP	TRP	LRP

TRP Tri RP LRP

Figure 3.13. Summary of performance indicator levels for some stocks in FMA

Species		% mature	± 10% of Lopt	% Megaspawner	Lbar	F/M
1. Indian scad (GG)						
2. Purple spotted bigeye						
3. Orangefin ponyfish (sapsap)						
4. Eastern little tuna (budis)						
5. Bali sardines						
6. Whitespotted spinefoot (danggit)						
7. Orangespotted spinefoot						

TRP Tri RP LRP

3.8 Marine Protected Areas

In the Philippine context, MPAs are critical in sustaining marine biodiversity and the livelihoods of millions who depend on coastal resources. The government has adopted MPAs as a strategic approach for achieving fisheries sustainability and biodiversity protection. RA 10654 stated that at least 15%, where applicable, of the total coastal areas in each municipality shall be identified, based on the best available scientific data and in consultation with the Department, and automatically designated as fish sanctuaries by the LGUs in consultation with the concerned Fisheries and Aquatic Resources Management Councils (FARMCs). With devolution that enabled community-based resource governance, this legislative environment fostered the proliferation of community-based MPAs, where local stakeholders collaborate with NGOs and government agencies for implementation (White et al., 2002; Horigue et al., 2012).

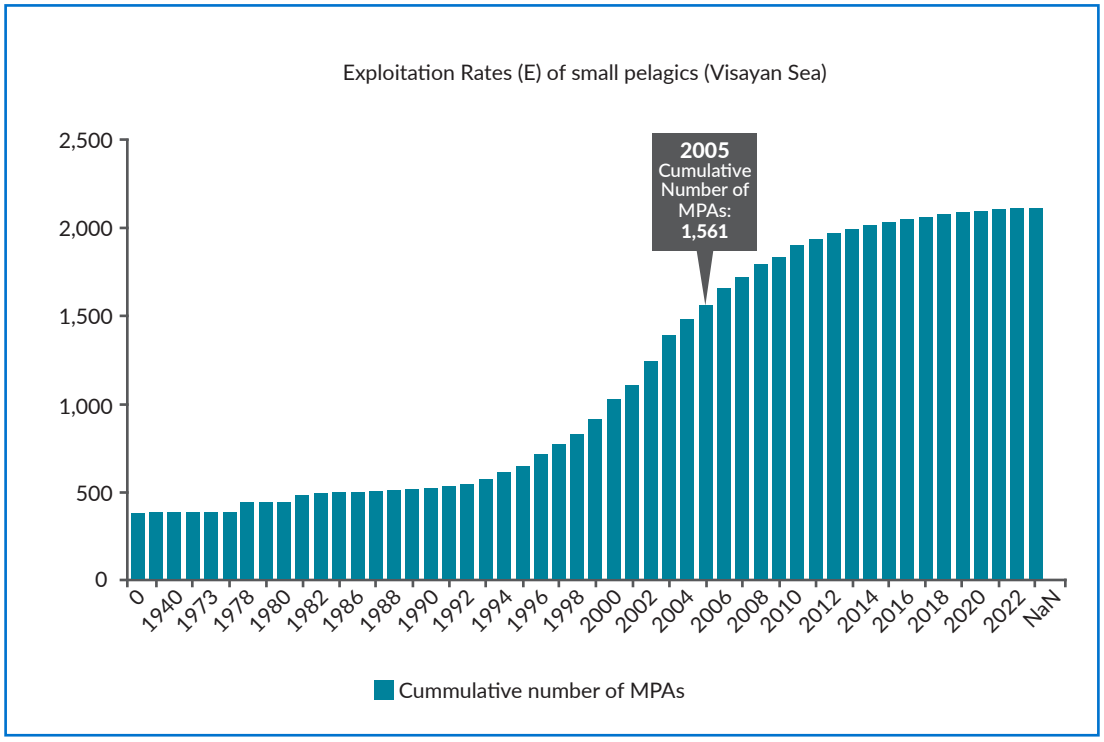
MPAs protect a portion of the stock(s) within a specified area and should result in increased fisheries production through an increase in abundance and biomass within their boundaries. This eventually leads to fish movement from non-fished (MPA) to fished areas outside (via spillover) and or to enhanced larval transport to fished areas downstream (via recruitment). When, where, and if these do happen depend on many factors. Actual

implementation of management is central to this. In 2023, there were 2,112 MPAs in the country, most established at the barangay-LGU level with modal sizes of between 10-100ha (MPA Support Network, 2025; https://db.mpasupportnetwork.org/).

In 2007, it was estimated that less than 10% of MPAs at the time showed effective management with no-take zones (Campos & Alino, 2009), while most were merely "paper" MPAs with little if any, implementation of management. No updated estimates of truly managed MPAs were found in more recent reports, but the percentage has likely increased with the introduction of management effectiveness assessment tools (MEAT) (Cabral et al., 2014). Nevertheless, the high proportion of "paper" MPAs remains a challenge.

RA 10654 specifies that coastal municipalities should target protecting 15% of their coastal waters. Using an average size of 50ha, the cumulative area covered by roughly 2,000 LGU-based MPAs amounts to only 100 km^2.

Figure. 3.14. Historical establishment of MPAs in the Philippines.



Source: MPA Support Network database

In successful cases, MPAs have led to increased coral cover, fish biomass, and species richness. Magdaong et al. (2014) conducted a meta-analysis of coral cover and found a significant improvement in MPAs compared to non-protected areas, especially in regions with active enforcement. Similarly, Muallil et al. (2015, 2019) observed higher diversity and density of commercially important reef fishes within MPAs than outside.

However, these gains are often localized and fragile. The effectiveness of MPAs is constrained by poor enforcement, limited financial and technical resources, and pressures from adjacent fishing activities. Tupper et al. (2015) found that although ecological indicators in selected MPAs were generally positive, management

weaknesses, such as unclear zoning and inadequate surveillance, limited long-term benefits. Additional studies, such as Pleños et al. (2020), have shown that MPAs may also positively influence fish catch productivity in nearby areas, suggesting ecological spillover when MPAs are well-managed and appropriately located.

Community-based MPAs have been integral to the country's coastal resource management since the 1980s. Case studies from Balicasag and Pamilacan Islands in Bohol showed significant ecological improvements post-establishment but also highlighted vulnerability to enforcement lapses and environmental stressors (Christie et al., 2002).

Community participation, perceived resource crisis, and alternative livelihoods are among the top predictors of MPA success (Pollnac et al., 2001; Ballad et al., 2022). Yet, the socio-economic impact of MPAs is not universally positive. In some instances, fisherfolk experience short-term losses due to access restrictions, and the benefits of MPAs, such as spillover or tourism revenue, are not always equitably distributed (Samonte et al., 2016; Segi, 2014).

Gender dynamics also play a role. Kleiber et al. (2018) found that women, who often depend on intertidal gleaning, may be disproportionately affected by MPA regulations, yet are underrepresented in governance processes. Inclusive participation that considers diverse stakeholder perspectives is crucial for equity and long-term success. Supporting this, Espectato et al. (2016) emphasize that community perceptions and trust significantly influence compliance and enforcement outcomes.

In sum, MPAs have made substantial contributions to biodiversity conservation and local fisheries management in the Philippines. Yet, their overall effectiveness is limited by small size, fragmented planning, inconsistent enforcement, and governance challenges. Scaling up MPAs into ecologically coherent networks and integrating them into broader marine spatial planning frameworks are necessary steps to enhance ecological resilience and social equity.

Strategies to strengthen the possible impact of MPAs include (a) inclusion of connected habitats, (b) reference to hydrography and larval transport in locating MPA networks, and (c) networking of the management of MPAs.

4 | ENFORCEMENT AND COMPLIANCE

4.1 Fisheries Registration and Licensing

Fisherfolk registration is essential for achieving sustainable fisheries management, improving fisherfolk welfare, and supporting the enforcement of fisheries laws. Fisheries registration in the Philippines is a cornerstone of fisheries management, ensuring that fishing activities are regulated, monitored, and aligned with sustainable practices. The Fisheries Code tasked the LGUs to register the municipal fisherfolks, municipal fishing vessels by type of gear, and other boat particulars with the assistance of the FARMC (Section 19) for management purposes. The BFAR is also tasked to assist the LGUs in implementing the national program for the registration of municipal fishing vessels, gear, fisherfolk, and fishery operators (Implementing Rules and Regulations [IRR] of the amended Fisheries Code, Rule 19.1). Registration is also required for commercial fishing vessels (Section 28) and fishing gears used in commercial fishing (Section 29).

4.1.1 Municipal Fisherfolk Registration

In actual implementation, registration encompasses both fisherfolk and their vessels under the Municipal Fisherfolk Registration (FishR) and the Municipal Fishing Vessel (BoatR) programs, introduced by BFAR. These systems aim to improve governance, reduce illegal fishing, and promote equitable resource use, and by doing so improves the visibility of the sector. However, inconsistencies in the estimates cast some doubt on the reliability of these data.

The FishR, launched in 2014, is a database for municipal fisherfolk, enabling the identification and monitoring of small-scale fishers. The BoatR and the Gear Registration, implemented in 2015, registered municipal fishing vessels and gears to ensure compliance with size and gear restrictions. In both cases, the registration conducted by the LGUs was largely voluntary, but with incentives provided by BFAR. In succeeding years, however, incentives were no longer provided. In 2024, there were 442,014 municipal fishing vessels on record, while over 2.5 million fisherfolk were registered based on values provided by FishCore (Table 4.1).

Table 4.1. Number of Registered fisherfolk, 2024

Registered fisherfolk	2,521,772
Registered municipal boats	442,014
Registered gear	196,946
Commercial Vessels	5,643

Source: https://fishcore.bfar.da.gov.ph/

Table 4.2 shows the number of registered municipal fisherfolk in the different livelihood categories from 2015 to 2024, while Table 4.3 shows the number of registered fisherfolk for the same period broken down by sex. While both datasets were provided by the same office (BFAR-FRMD), the estimated total number of registered fishers in 2024 differs by 9.6%. Furthermore, both are different from the estimate provided by FishCore.

For 2024, the lower estimate of registered municipal fishers is 2,372,605 (Table 4.2), Of these, 50.6% are directly engaged in capture fishing only, while another 11.1% are involved in gleaning only, where fishing is generally conducted by hand and/or with simple implements for digging/prying within the shallow intertidal zone of the coast. Since gleaning is technically a means of catching from the wild, it is a "fishing" activity. Hence, for 2024, the total number of municipal fisherfolk engaged in "fishing" activities (capture & gleaning) was 1,464,642.

Table 4.2. Registered Fisherfolk by Livelihood Sector, 2015-2024

Year	Capture Fishing	Aquaculture	Fish Vending	Gleaning	Fish Processing	Others	Total
2015	811,365	189,728	91,575	228,600	30,415	354,246	1,705,929
2016	871,238	196,822	100,845	232,851	32,255	361,995	1,796,006
2017	923,327	206,806	109,517	236,038	34,442	372,754	1,882,884
2018	948,218	212,884	113,118	237,642	35,540	378,344	1,925,746
2019	952,267	214,810	113,636	237,814	35,680	379,433	1,933,640
2020	982,785	223,129	121,942	240,750	36,965	384,027	1,989,598
2021	1,071,389	242,105	146,526	250,379	41,157	392,032	2,143,588
2022	1,142,223	253,508	156,587	254,803	43,537	399,047	2,249,705
2023	1,168,808	260,473	163,653	258,250	44,987	406,917	2,303,088
2024	1,201,520	270,249	172,832	263,122	47,169	417,713	2,372,605

Source: BFAR FRMD (2024)

Table 4.3. Men and Women Registered Fisherfolk, 2015-2024

Year	Counts	Male	Female
2015	1,650,006	1,123,811	526,195
2016	1,769,949	1,216,474	553,475
2017	1,885,486	1,304,393	581,093
2018	1,942,077	1,347,915	594,162
2019	1,949,889	1,353,992	595,897
2020	2,023,764	1,411,718	612,046
2021	2,233,164	1,566,910	666,254
2022	2,391,380	1,690,583	700,797
2023	2,500,773	1,772,442	728,331
2024	2,600,334	1,844,839	755,495

Source: BFAR FRMD (2024)

Another means of estimating the number of fishers is by projecting values based on baselines established by the Philippine Statistics Authority (formerly National Statistics Office). In their 2002 Census of Fisheries, actual population growth rates provided by the UN were used. Unlike FishR, this census is a rigorously designed statistical census focused on the fisheries sector. No other census of this nature has been conducted by the PSA to date. Thus, in 2002, there were 1,614,368 fishing operators in the 3 fisheries sectors, with 1,371,676 municipal fishers (excluding vending, processing & others).

Using progressively decreasing population growth rate estimates from 2002-2024, ranging from 2.102 – 1.345% (UN Dept. Economic and Social Affairs, Population Division; https://population.un.org), the estimated number of municipal fishers in 2024 is 1,947,255. The underlying premise of this projection is that the population growth rate in coastal fishing communities is no different from that of the entire country. Based on this premise, the current FishR estimate for 2024 (capture fisheries only) is 61.7% of this projected value, and increases to 75.2% if gleaning is included. Hence, the current FishR may have underestimated the actual number of municipal fishers by 25%.

Reliable estimates of fishers are of critical importance in determining how many livelihoods will be affected by specific management decisions and actions, or the dire consequences of inaction. For example, how many municipal fishers will be displaced by allowing commercial vessels to fish in municipal waters? What would be the necessary investments of the government to offset those displaced to maintain equity? The fisher and boat registration systems comprise an area that needs considerable improvement, particularly at the LGU level.

4.1.2 Commercial Fishing Vessel and Gear Registration

The commercial vessels are also registered at MARINA and vessels have to comply with stricter monitoring requirements, including the use of Vessels Monitoring Systems (VMS). As of 2024, there were 5,643 commercial fishing vessels, although the data provided by the Regulatory and Licensing Office of BFAR as of 30 June 2024 (Table 4.4) shows only a total of 4,368 commercial fishing vessels (CFVs). This difference may be attributed to the expiration and renewal/non-renewal of licenses during the course of the year.

Table 4.4. Registered Commercial Fishing Vessels, June 30, 2024

	No.	%
Small Scale (3.1-20 GT)	1,925	44.07
Medium Scale (20.1-150 GT)	2,141	49.02
Scale (>150 GT*)	302	6.91
Total	4,368	100.00

Source: BFAR-RFO Database through Regulatory and Licensing Offices as of June 30, 2024. Note: The numbers of vessel licenses vary from time to time depending on the expiration, renewal and/or non-renewal of the same.

On the other hand, information from BFAR Fisheries Profiles shows that the number of registered commercial fishing vessels decreased by about 40% from 2018 to 2022 (Figure 4.1). Since the intervention was not to grant any new licenses nor to replace lapsed registrations, the decreasing number of vessels in all three categories suggests that low stock abundance in local fishing grounds leads to a substantial number of operators leaving the fishery. It would be instructive to go further back to even earlier data to see whether similar changes took place in the past

or if this substantial decrease occurred only recently. Based on fisheries profiles published by BFAR, information on the number of commercial vessels is available only for 1999 (3601 vessels) and 2007 (6371), although it is not clear if these estimates cover small commercial vessels as well. Because licenses are renewed each year, there should be data available for intervening years in the archives of BFAR. Economic overfishing has a strong influence on commercial fishing operations, particularly when government subsidies are practically absent. Hence, the historical trend in the number of CFVs by size category could be more indicative of the status of fishing grounds and their stocks than municipal fishing effort data.

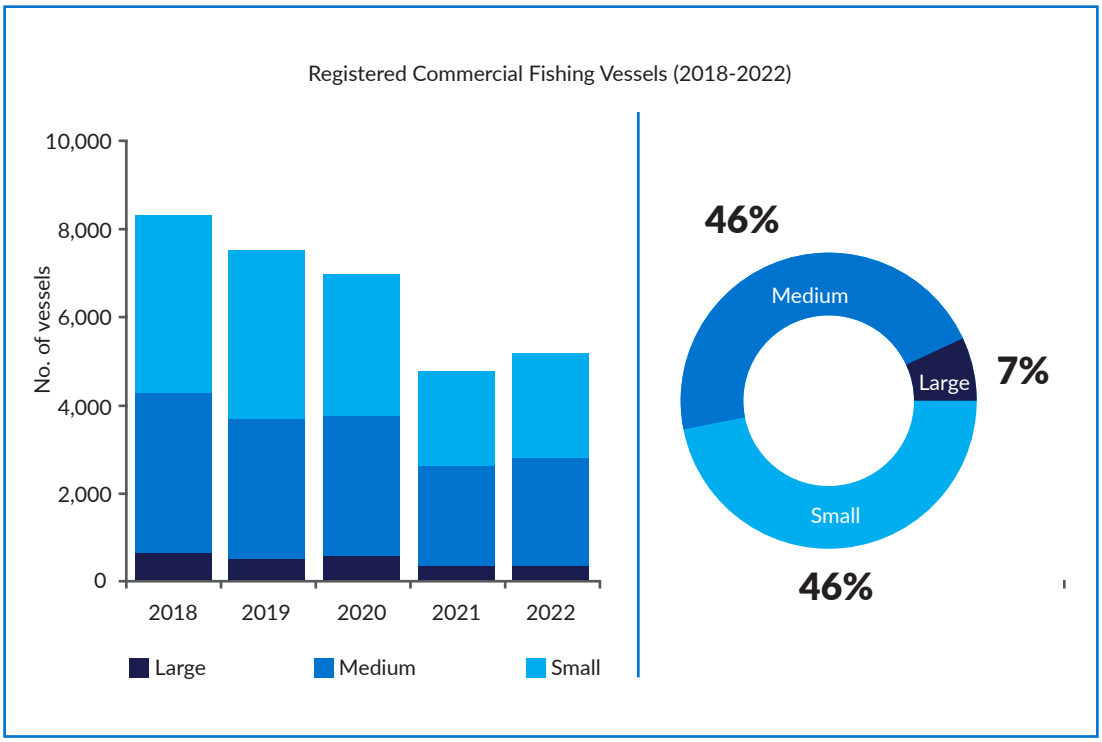


Figure 4.1. Number and proportion of registered commercial fishing vessels from 2018-2022 by size category.
Source: BFAR Fisheries Profiles

Another list available, *List of BFAR Approved Fishing Vessels and Boats* provides different information. Based on the available lists, Table 4.5 shows that the BFAR-approved fishing vessels and boats were 735 as of June 30, 2023, 1069 as of Jan 31, 2025, and 1076 as of March 31, 2025, and April 15, 2025. Comparison of the last two lists shows identical entries, although the latter had additional details.

The numbers are significantly low for the entire country, and when compared to the number of commercial fishing vessels in Table 4.4 and Figure 4.1. No data is available for Regions II and VI, which are known to have commercial fishing vessels. The number of vessels for Region 3 is available only for the period, January 31, 2025, and March 31, 2025. These 11 fishing vessels in Region 3 were inspected in April 2024 or August 2024, similar to the other fishing vessels in other regions.

Table 4.5 BFAR Approved Fishing Vessels and Boats

Region	As of 30 June 2023[a]	As of 31 January 2025[b]	As of 31 March 2025[c] and 15 April 2025[d]
1	0	14	14
3	0	0	11
4A	89	146	146
4B	192	246	246
5	149	74	74
7	83	131	131
8	28	23	23
9	87	108	108
10	0	11	11
11	1	7	7
12	86	227	223
13	0	20	20
NCR	20	12	12
BARMM	0	50	50
TOTAL	735	1069	1076

Source of raw data:
a https://www.bfar.da.gov.ph/wp-content/uploads/2023/06/APRIL-CY2023-BFAR-Approved-Fishing-Vessels-and-Boats.pdf
b https://www.bfar.da.gov.ph/wp-content/uploads/2025/02/LIST-OF-BFAR-APPROVED-FISHING-BOATS-AND-VESSELS-AS-OF-JANUARY-31-2025.pdf
c https://www.bfar.da.gov.ph/wp-content/uploads/2025/04/LIST-OF-BFAR-APPROVED-FISHING-BOATS-AND-VESSELS-AS-OF-MARCH-31-2025.pdf
d https://www.bfar.da.gov.ph/wp-content/uploads/2025/04/LIST-OF-BFAR-APPROVED-FISHING-BOATS-AND-VESSELS-AS-OF-April-15-2025.pdf

The list, as of April 15, 2025, shows information that includes the region, registry number, name of vessel/boat, name of company/owner, type of vessel, classification of vessel, activities, tonnage, date of inspection, validity, and status (Table 4.6). It has a total of 1076 entries, where 70% were municipal fishing boats, 9% were small-scale commercial fishing vessels, 8% were medium-scale commercial fishing vessels, and 13% were large-scale commercial fishing vessels.

The list contains municipal fishing boats, when these are supposed to be registered at the local government units. This is especially true that many of the fishing boats in the list were catcher boats. Mercidar Fishing Corporation is not on the list. The corporation is involved in the recent Supreme Court ruling that upheld the Malabon Regional Trial Court decision, allowing it to catch fish inside municipal waters.

This is a demonstration of the challenge in data quality available on the actual number of commercial fishing vessels. Decisions are based on the available information. With conflicting and unreliable registration on fishing vessel registration, properly addressing the municipal-commercial fisheries conflict is a challenge.

Table 4.6. BFAR Approved Fishing Vessels and Boats By Region, as of April 15, 2025

Region	Total	Municipal	Commerical			carrier	catcher	number of owners	Range of GT	
			small	medium	large				lowest	highest
1	14	14	0	0	0	0	14	13	1.50	1.50
3	11	5	3	3	0	0	11	9	0.51	62.57
4A	146	101	42	3	0	0	146	93	0.31	3.45
4B	246	242	3	1	0	0	246	157	0.20	41.76
5	74	71	3	0	0	0	74	69	0.50	17.27
7	131	129	0	2	0	0	131	106	0.39	46.10
8	23	23	0	0	0	0	23	21	0.31	3.00
9	108	63	1	5	39	24	84	16	0.20	318.33
10	11	11	0	0	0	0	11	11	0.30	0.66
11	7	0	0	3	4	6	1	2	23.00	144.39
12	223	25	44	69	84	96	127	47	0.41	346.00
13	20	20	0	0	0	0	20	17	0.13	0.53
NCR	12	0	0	0	12	12	0	1	134.00	593.00
BARMM	50	50	0	0	0	0	50	50	<3	<3
TOTAL	1076	754	96	86	139	138	938	612	0.13	593.00
	%	70.07	8.92	7.99	12.92	12.83	87.17	56.88		

Note: raw data is from the list available in this link: https://www.bfar.da.gov.ph/wp-content/uploads/2025/04/LIST-OF-BFAR-APPROVED-FISHING-BOATS-AND-VESSELS-AS-OF-April-15-2025.pdf

4.1.3 Registration of Small Commercial Vessels

As designated by law, all commercial fishing vessels (CFVs) are to be registered with the central office of the BFAR. In practice, however, many small commercial vessels are not registered with BFAR nor with LGUs, although most of them fish within municipal waters. In the Visayan Sea, for example, in 2017, in a study on trawl fishing, Ferrer (2017b) indicated that only five trawls were registered with the BFAR, whereas their count from the study's field work was more than 300.

Similarly, BFAR records for 2022-23 indicate that there were 57 sensuro (round-haul seine) vessels in the entire FMA 11, whereas an independent study by Bagarinao-Regalado et al. (2023) showed that from 2016-2021, 31-35 sensuro vessels were operating in Concepcion, Iloilo alone. This gear is operated in both Masbate and Northern Negros as well. The law requires that all commercial vessels of all sizes should be registered with the BFAR. Why are there large discrepancies between supposedly official records and actual vessel counts? Such gaps are likely happening nationwide.

Again, the importance of reliable and accurate vessel counts cannot be overstated. Small CFVs range from 3.1 – 20 GT. Those in the lower range might be perceived as "borderline" and can readily be dismissed as "negligible", but they are still subject to the rule of law. Because many small CFVs are designed to operate close to their bases, they necessarily make up a large part of the encroachment problem.

The implementing rules and regulations for all small CFVs should be clearer and not ambiguous. A review of the vessel size criteria for this category, particularly in relation to their target fisheries should be done.

Improving operational efficiency in fishing vessels has become an important measure in recovering stock sustainably that will lead to potential gains in reducing spoilage, particularly in small pelagic fisheries. Hence, a systematic review of small CFV efficiency and regulatory requirements is important and necessary.

4.1.4 Reportorial requirements for commercial vessels

Under Section 38 of RA 8550, and duly amended by RA 10654, each commercial fishing vessel is required to keep daily fishing logsheets. The FAO 198-1 (ser 2018) *Amended Rules and Regulations on Regjstration and Licensing of Commercial Fishing Vessels, Fishing Gears and Fishworkers* and FAO 251-1 (ser 2023) *Traceability System for Fish and Fishery Products* defined these as daily records of fish catches containing the following details of fishing operations:

- Catch volume and spoilage
- Coordinates/fishing grounds,
- Landing points
- Species caught

Submission of daily fishing logsheets is a requirement for the renewal of CFV licenses provided for in the Fisheries Code (RA 8550) at least since 1998. However, such information has neither been used nor made available by BFAR for management purposes. This may be because the agency has tolerated non-compliance with this requirement all these years.

Such information provides a historical record of catch rates as indices of stock abundance in the different fishing grounds. These could have provided a more reliable timeline on the worsening condition of stocks in waters outside of the 15km municipal waters, from 1998 onwards. Decisive actions could have been taken early on, to regulate fisheries, particularly the commercial sector, when prospects for stock recovery were still more manageable. As it is now, we are faced with the daunting task of stringent regulations of fisheries when stocks are already extensively depleted. Worse, the commercial fishing sector is deeply overinvested in unsustainable fishing. The latter is the driving reason for the strong lobbying and pressure on Congress to amend the limits of municipal waters.

4.1.5. Challenges in Fisheries Registration

The following are the main challenges in fisheries registration:

1. Incomplete Coverage --- Despite significant progress, many municipal fisherfolk and boats remain unregistered, especially in remote and conflict-prone areas, and in island communities. Migratory and part-time fishers are often excluded due to mobility or lack of awareness. Commercial fishing vessel compliance with VMS is inconsistent.

2. Unimplemented provisions --- specifically those that could have prompted more timely, decisive actions, such as the reportorial requirements of commercial vessels.

3. Data quality issues --- discrepancies and outdated information in the registration databases hinder accurate decision-making and enforcement. Some LGUs struggle to maintain accurate and up-to-date records due to resource constraints.

4. Limited Awareness and Participation. --- Some fisherfolk are unaware of the benefits of registration or are hesitant to register due to fear of taxes or restrictions. Some fisherfolk view registration as burdensome.

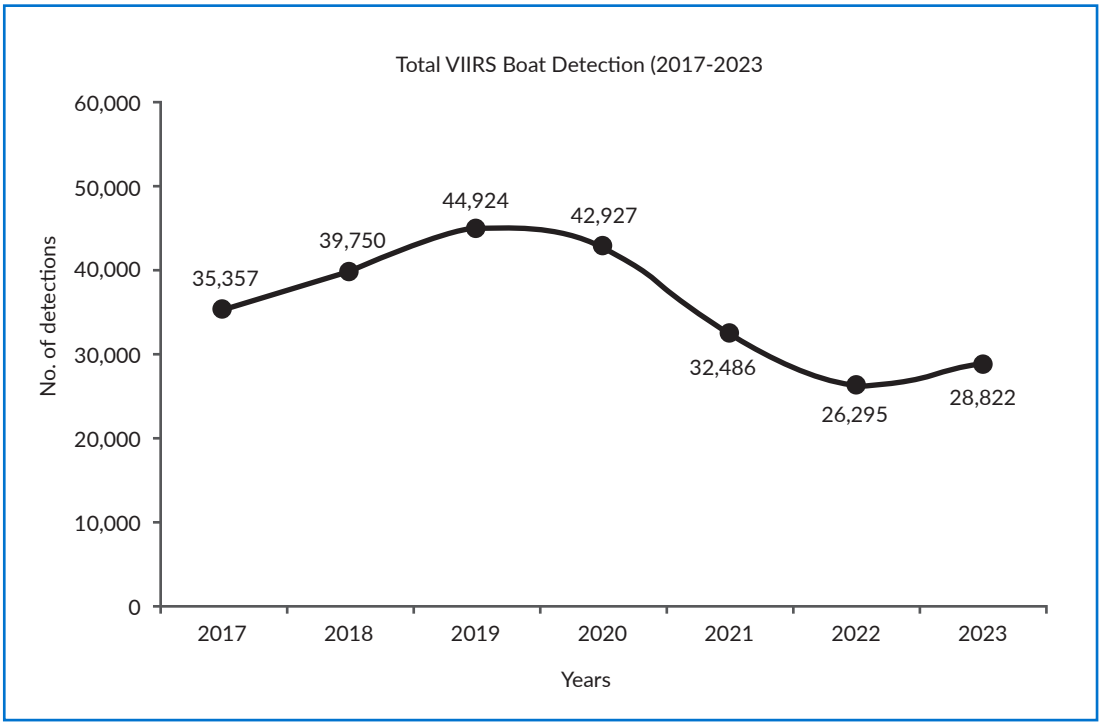
5. Enforcement Gaps --- Registration alone does not guarantee compliance with fisheries regulations, as enforcement remains a challenge due to limited resources and personnel.

6. Overlapping jurisdiction --- coordination between BFAR, LGUs, and other agencies is fragmented, leading to inefficiencies in registration and monitoring. Weak collaboration among stakeholders slows down validation and utilization.

4.2 Vessel Monitoring

Boat detection data from Karagatan Patrol using the Visible Infrared Imaging Radiometer Suite (VIIRS) and covering the period January 2017 to June 2024 were summarized by province and municipality. The data show an increasing trend of apparent CFVs inside municipal waters in the country before the pandemic (2017-2020). This decreased during the pandemic (2020-2022) but rose again in 2023 (Figure 4.2). By June 2024, the number of boats detected was already 19,584. If this trend continues, by the end of 2024, the total number could be much higher than the 28,822 count in 2023. A similar pattern is shown in each FMA. These numbers include vessels that had been allowed to fish within 10.1-15km by some LGUs, following the requirements set by law.

Figure 4.2. Boat detection using the Visible Infrared Imaging Radiometer Suite inside the municipal waters.



Source of raw data from Karagatan Patrol

Table 4.7 shows the top 20 LGUs with the highest number of commercial vessels in municipal waters as detected by VIIRS for the period 2017 to June 2024 (90 months). The top three (3) LGUs were from FMA 4 (East Sulu Sea, Moro Gulf). These were Zamboanga City, Tongkil, and Languyan.

Table 4.7 Top 20 LGUs with the most number of intrusions per month

Rank	LGU	Province	Region	FMA	Mean/mo.
1	Zamboanga City	Zamboanga del Sur	IX	4	185.7
2	Tongkil	Sulu	BARMM	4	153.4
3	Languyan	Tawi-Tawi	BARMM	4	77.6
4	Cuyo	Palawan	IV-B	5	74.8
5	Milagros	Masbate	V	11	74.3
6	San Pascual	Masbate	V	7	73.8
7	Hadji Mohammad Ajul	Basilan	BARMM	3	73.3
8	Santa Cruz	Marinduque	IV-B	12	59.2
9	Calauag	Quezon	IV-A	1	54.5
10	Linapacan	Palawan	IV-B	5	53.8
11	Cawayan	Masbate	V	11	51.7
12	Carles	Iloilo	VI	11	49.4
13	Pagbilao	Quezon	IV-A	12	45.7
14	Coron	Palawan	IV_B	5	44.3
15	San Francisco	Quezon	IV_A	12	43.7
16	Madridejos	Cebu	VII	11	42.7
17	Catbalogan City	Samar	VIII	7	40.0
18	Magsaysay	Palawan	IV-B	5	39.4
19	Sariaya	Quezon	IV-A	12	37.6
20	Pangutaran	Sulu	BARMM	4	36.5

FMAs 4, 5 (Northern Palawan), and 11 (Visayan Sea) each had four (4) LGUs in the top 20, making them "hotspots" of encroachment by CFVs. The highest encroachment rates were recorded in FMA 4, followed by FMA 5 and FMA 11 (Table 4.8).

Table 4.8 Number of commercial fishing vessels inside the municipal waters as detected using the Visible Infrared Imaging Radiometer Suite.

FMA	2017	2018	2019	2020	2021	2022	2023	2024	Total
1	2229	2237	3197	3377	2586	1951	1783	1413	18773
2	393	413	326	466	280	245	168	206	2517
3	1077	1177	1229	951	790	394	642	255	6515
4	8498	11424	12190	10062	8377	5422	6903	4287	67163
5	8912	8650	8624	7940	5245	3765	4910	3544	51590
6	1658	2180	2208	2197	1577	2262	1572	937	14591
7	2542	2525	4448	4035	2712	2256	2197	1641	22356
8	854	713	616	1047	712	732	1087	610	6371
9	470	512	526	560	418	229	285	231	3231
10	612	828	926	928	536	560	601	438	5429
11	2677	2481	4633	5569	3326	3197	3162	1834	26879
12	5435	6610	6001	5795	5927	5282	5512	4188	44750
TOTAL	35357	39750	44924	42927	32486	26295	28822	19584	270165

Source of raw data from Karagatan Patrol

Encroachment in the Visayan Sea ranged from 50-70 vessels per month is comparable to those in FMA 5 but is up to 3X lower than encroachment in FMA 4, particularly in the Sulu Archipelago (Table 4.9)

Table 4.9. Mean no. vessels per month encroaching in waters of the top 20 municipalities in the different FMAs from January 2017 to June 2024

Rank	LGU	Province	Region	FMA	Mean/mo.
1	Zamboanga City	Zamboanga del Sur	REGION IX	4	185.70
2	Tongkil	Sulu	BARMM	4	153.44
3	Languyan	Tawi-Tawi	BARMM	4	77.61
4	Cuyo	Palawan	REGION IV-B	5	74.84
5	Milagros	Masbate	REGION V	11	74.29
6	San Pascual	Masbate	REGION V	7	73.80
7	Hadji Mohammad Ajul	Basilan	BARMM	3	73.30
8	Santa Cruz	Marinduque	REGION IV-B	12	59.21

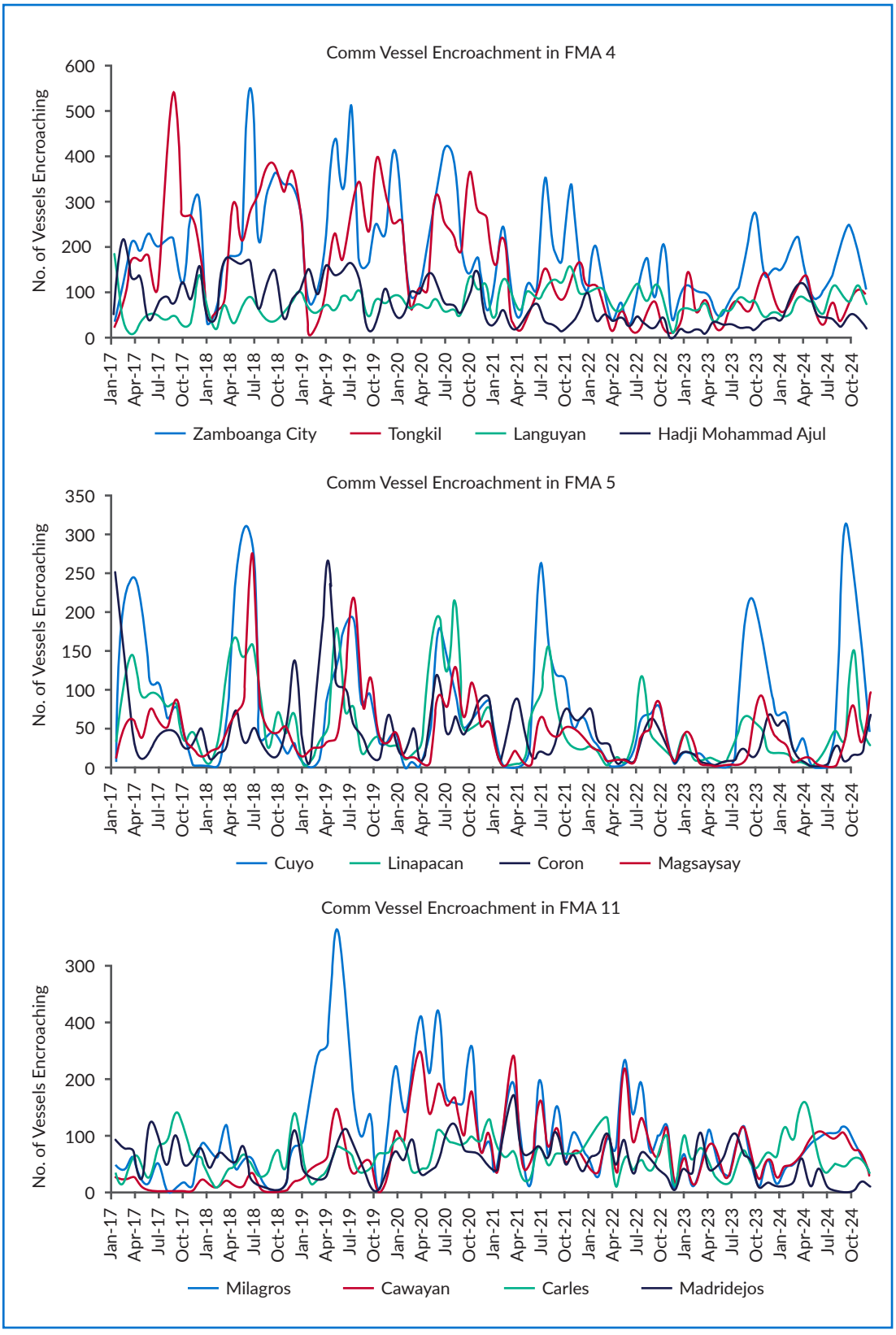
Rank	LGU	Province	Region	FMA	Mean/mo.
9	Calauag	Quezon	REGION IV-A	1	54.50
10	Linapacan	Palawan	REGION IV-B	5	53.76
11	Cawayan	Masbate	REGION V	11	51.73
12	Carles	Iloilo	REGION VI	11	49.40
13	Pagbilao	Quezon	REGION IV-A	12	45.68
14	Coron	Palawan	REGION IV-B	5	44.27
15	San Francisco	Quezon	REGION IV-A	12	43.73
16	Madridejos	Cebu	REGION VII	11	42.67
17	Catbalogan City	Samar	REGION VIII	7	40.02
18	Magsaysay	Palawan	REGION IV-B	5	39.40
19	Sariaya	Quezon	REGION IV-A	12	37.56
20	Pangutaran	Sulu	BARMM	4	36.49

Source of raw data from Karagatan Patrol

Within- and between-year patterns in the extent of encroachment in these FMAs are shown in Figure 4.3. Overall, there seems to be some seasonality in encroachment in the top 20 municipalities, which is determined partly by the closed seasons, particularly in FMAs 4, 11, and 5. There is also a general decrease in detections from 2021-24, with Cuyo as the only exception. Whether this is a result of stricter enforcement nationwide or not, is uncertain.

The use of VIIRS is clearly strategic from both an enforcement and management standpoint. While it does not provide real-time observations by itself, it indicates locations where enforcement and innovative management measures can be focused on. While satellite images are available for public use, the data need to be processed before any meaningful analysis and interpretation can be made. The Karagatan Patrol platform, which generated all the data used above, is an effort led by Oceana in the Philippines. The BFAR should be able to develop the capacity to provide similar analytical services in the future, should Oceana discontinue its efforts.

Figure 4.3. Seasonal and annual changes in encroachment rates in FMAs 4 (top), 5 (middle), and 11 (bottom) from 2017-2024. Source: Karagatan Patrol.



Source: Karagatan Patrol

4.3 Illegal, Unreported, and Unregulated Fishing (IUUF)

The Fisheries Code of 1998 (RA 8550) was amended under RA 10654 specifically to address and mitigate the problem of IUUF in the Philippines. With the implementation of the amended law, there is greater awareness of IUUF and its consequences. The amended law has several key provisions targeting IUUF through stronger penalties, monitoring, control, and surveillance; fisheries observer program; port state measures; collaboration with international partners; and capacity building and stakeholder engagement. Specifically, these are:

1. Increased fines and penalties for IUUF offenses. For instance: Using prohibited gear like dynamite or cyanide fishing can result in fines up to ₱10 million for large-scale operations. Unauthorized fishing in municipal waters or protected areas incurs substantial penalties.

2. Requires the use of Vessel Monitoring Systems (VMS) for commercial fishing vessels to track their activities and ensure compliance. Mandates the establishment of a national surveillance system to monitor fishing activities.

3. Deploys observers onboard fishing vessels to ensure accurate reporting of catches and compliance with regulations.

4. Prevents the landing of IUUF catches at Philippine ports, consistent with international agreements like the FAO's Port State Measures Agreement.

5. Encourages cooperation with international bodies to combat IUUF, including data sharing and joint enforcement efforts.

6. Provides for education and training for fishers, coastal communities, and LGUs to increase awareness and capacity to address IUUF.

There are three sources of information on IUU in the country as presented in this section of the report. First is Karagatan Patrol showing boat detection data from analyzing data gathered by the Visible Infrared Imaging Radiometer Suite (VIIRS). The other two are (1) DA BFAR -Fish Right IUU report using the I-FIT tool in 2021 & 2023; and (2) Reports/studies/news.

4.3.1 DA-BFAR Reports on IUU Fishing using the I-FIT tool, 2021, 2023

The DA-BFAR and the United States Agency for International Development (USAID), through Fish Right and the Marine Environment and Resources Foundation developed the IUU Fishing Index and Threat Assessment (I-FIT) Tool to assess illegal, unreported, and unregulated (IUU) fishing in Philippine waters. This tool is used at the LGU level to assess three main areas: prevalence of IUU fishing in waters under the LGUs jurisdiction, and LGUs vulnerability and response to IUU fishing. Each indicator is given a score from 1 to 4, which are then averaged or aggregated to get the index score for the three areas. The scores are interpreted as follows: 1 – Low means very minimal presence or threat/IUU fishing is rare or effectively managed; 2 – Moderate means manageable level/ Some IUU fishing, but not very severe; 3 – High means widespread problem/IUU fishing is common and concerning; and 4 – Very High means severe and critical/IUU fishing is rampant or a major threat.

The I-FIT tool was used to assess IUUF in the country during the period of 2020-2021. During this first cycle of assessment, 777 fisheries expert and stakeholders assessed 160 municipalities and cities in nine out of 12 FMAs, with a combined average IUU fishing risk score (index score) of 2.58 on the I-FIT scale, indicating moderate overall risk (DA BFAR 2022). By area, the scores were in the median range of the scale with the prevalence score at 2.51, vulnerability score at 2.53, and response score at 2.76. In the next cycle, during the years of 2022-23, the IUU fishing risk score improved to 2.36, with several areas reassessed and with the addition of other LGUs mostly from the northern and western parts of the Philippines (DA BFAR 2024).

IUU Fishing Assessment Report 2021

As already noted, not all FMAs were represented during the first cycle of IUUF assessment using I-FIT tool covering the years 2020 – 2021. Also, there were inconsistencies between the data in FMAs, particularly in 8, 9 and 11 and those from the assessed LGUs. These account for almost 70 percent of the assessed LGUs and thus will heavily influence the overall results presented in the IUUF index.

By FMA, the IUUF Index of seven out of nine FMAs were greater than 2.5 indicating high score, which means a 'widespread problem (Table 4.10). Only in FMAs 6 and 9 were the scores are at 2.42, which mean IUUF is manageable.

49 out of 51 LGUs of FMA 8 were included in the assessment of IUU fishing, resulting in a poor score of 2.55 to 4.00 (DA BFAR 2022). An estimated 3,170 tons annually are illegally caught by commercial fishing vessels in FMA 8, both within and outside of municipal waters. Within municipal waters, an estimated 2,155 tons are illegally caught by both municipal and commercial fishers.

Table 4.10. Illegal, Unreported, and Unregulated (IUU) Fishing Index, 2021

FMA	IUU Fishing Index	Prevalence	Vulnerability	Response
National	2.58	2.51	2.53	2.76
FMA 2	2.59	2.57	2.49	2.80
FMA 4	2.74	2.39	2.60	3.17
FMA 5	2.75	2.45	2.79	3.11
FMA 6	2.42	2.27	2.50	2.60
FMA 8	2.55	2.49	2.58	2.66
FMA 9	2.42	2.35	2.33	2.72
FMA 10	2.75	2.50	2.30	3.40
FMA 11	2.76	2.75	2.53	2.98
FMA 12	2.57	2.58	2.87	2.08

IUU Fishing Index: 1 – Low: Very minimal presence or threat; 2 – Moderate: Manageable level
3 – High: Widespread problem; 4 – Very High: Severe and critical. Prevalence – how common IUU fishing is in the area; A low score (1–2) means it is less common or under control; A high score (3–4) means IUU fishing is frequent (e.g., rampant use of illegal gear, unreported landings). Vulnerability – how exposed or susceptible the community is to IUU fishing; A Low score (1-2) means stronger governance, diversified livelihoods, or resilient fisheries; High score = weak enforcement, high poverty, or high dependence on fishing. Response – what actions or measures are in place to address IUU fishing. Low score = strong institutional response, active enforcement, and community support. High score = weak or no response from authorities (e.g., lack of patrols, poor coordination).

The main results of the 2020-2021 assessment (BFAR 2022) were, (1) variation of threat across LGUs, with the most common ones constitute multiple violations of the amended Philippine Fisheries Code, These include the use of active fishing gear in municipal waters, or illegal use of fine mesh nets. Fishing with fine mesh nets appears to be the most common IUU fishing practice during the years in review (reported in 74 percent of assessed LGUs); (2) As reported by the study, the annual catches of IUU fishing in the municipal waters of the assessed LGUs during the year reviewed was about 113,000 tons, valued at around Php5.6 billion at a conservative price of Php50/kg, and 3) By far the largest volume of IUU catch is said to come from 'fishing without permit' (more than 100,000 tons). This is believed to include catches of commercial fishing in municipal waters (which was explicitly reported by 82 of 160 assessed LGUs[4]) and other forms of IUU fishing.

IUU Fishing Assessment Report 2023

In the second cycle of the roll out of the I-FIT that took place in 2022-2023, a total of 213 cities and municipalities from all the 12 FMAs except FMAs 7 and 8 participated (DA BFAR 2024). The annual IUU fish catch in 2022 and 2023 was estimated at 107,176 MT. This is equivalent to income loss due to IUUF of about Php5.4 billion for the country's 2.3 million registered municipal fishers. More than half (54%) of this loss was contributed by (CFVs) encroaching in municipal waters.

The improvement in the national index score to 2.36 in 2023 (from 2.58 in 2021) was posted from LGUs that underwent reassessments. Most of these got better I-FIT score in the second cycle owing to four factors: (1) more data sources and information on the IUU fishing happening in their areas, (2) the use of participatory and adaptive approaches to IUU fishing reduction planning, (3) more targeted and purposeful responses to address deficiencies identified in the previous assessment, and (4) more knowledge sharing among LGUs.

Using apprehension data from BFAR, the second cycle assessment at the FMA level assessment4 revealed that in 2022, CFVs engaged in IUU fishing in municipal waters caught an estimated 618 MT of fish in FMA 5, and 756 MT of fish in FMA 6. The IUU fishing "hotspots" for CFVs inside municipal waters in FMA 5 were Palawan, Cuyo Island Group, and western Mindoro, while in FMA 6, these were Antique, Lingayen Gulf, Manila Bay, northwestern Luzon, and the northern part of the West Philippine Sea. The information point to the need for improved compliance in the commercial fishing sector regulated by BFAR, more effective enforcement of fishery laws, and a coordinated response to IUU fishing through collaboration between and among local, regional, and national government agencies and stakeholders.

4.3.2 Commercial Fishing

During the first wave of the pandemic in 2020, the commercial fishing sector demonstrated that they had the means to continue and sustain their fishing and trading operations despite the pandemic. Using data from the Philippine Statistics Authority, commercial fishing production was 6.71% higher than in the same period in 2019, while municipal fishing declined by 1.83%. Even at the height of the strict implementation of community quarantine in the second quarter of 2020 (April to June), commercial fisheries production was higher (13.68%) than during the same period in the previous year, and continued to the next quarter (11.53% higher) (Ferrer et al 2021; Ferrer et al 2024).

[4] These estimates were made independently of the LGU estimates and not checked for double reporting

Studies on different seas in the country, reported presence of commercial fishing vessels inside municipal waters. Mercado and Mercado (2016) reported that the 393 fishers who participated in their study in Surigao del Sur identified "presence of typhoon" (score of 2.28) and "presence of commercial fishing" (score of 2.05) as "high" problems in fishing. In Tanza, Cavite, Andriesse et al (2021) found the intrusion of commercial fishing vessels in the municipal waters as the main problem contributing to lower catch as shared by 100 fishers who participated in the study. In Palawan, Madarcos et al (2021) found unsustainable fishing practices, including overfishing by the local community, illegal fishers, fishing by commercial large-scale fisheries, and destructive fishing practices. These were perceived by the local communities as the driver that has highest negative impact on the state of coastal marine environment. Similarly, Yoshioka et al (2021) reported that fishers in two cities, Laguna Province, and two municipalities in Quezon Province, identified illegal fishing activities in their municipal waters as their main concern. Similarly, to the fishers in four coastal fishing villages in Mati (Mayo, Tagabakid, Dahican, and Bobon), Davao Oriental, and Cantilan (Ayoke Island, San Pedro, Linintian, and Consuelo) in Surigao del Sur, their most pressing problem was the conflict between commercial fishers who want access to municipal fishing grounds of small-scale fishers, even as they were already catching fewer fish in the area.

Earlier studies in the Visayan Sea on the closed fishing season (Ferrer et al. 2017a) and trawling (Ferrer et al. 2017b) reported the presence of commercial fishing vessels in municipal waters of LGUs identified now belonging to FMA11. News reports also reported commercial fishers in municipal waters in the Visayan Sea. Nepomuceno (2017, 2018) reported that sinsoro, bottom trawl, otter trawl, and ringnet vessels were caught in the waters of Concepcion and Carles – two municipalities with the largest territorial waters in the Visayan Sea. Novio (2020) reported the presence of commercial fishing vessels in the municipal waters of Bantayan in Cebu Province. Cabico (2020) study indicated that Milagros, Masbate topped the list of LGUs with the most number of detections of commercial fishing vessels inside municipal waters, as shown also in Karagatan Patrol. Similarly, Chavez (2021) reported that Madridejos is among the LGUS with high incidence of IUUF, particularly hulbot-hulbot encroaching in the municipal waters.

5 | INSTITUTIONAL FRAMEWORK

5.1 Existing Institutional Framework

Each of the organizations involved in the implementation of RA 10654 has a designated role and is expected to collaborate within a framework. The Bureau of Fisheries and Aquatic Resources (BFAR), an agency under the Department of Agriculture (DA), is responsible for the development, improvement, management, and conservation of the country's aquatic resources. While the DA sets the policy, the BFAR executes and enforces fisheries policies and programs.

The BFAR is the lead agency for implementing RA 10654, the amended Fisheries Code. Its responsibilities include enforcing the law, setting policies, and monitoring compliance. It coordinates and works with other government agencies, including the Department of Environment and Natural Resources (DENR), Philippine Coast Guard (PCG), Philippine Maritime Group (PNP-MG), local government units (LGUs), and the Protected Area Management Board (PAMB). Under the RA 10654, BFAR issues Fisheries Administrative Orders (FAOs) to carry out the law.

While BFAR leads and coordinates, the LGUs are responsible for protecting, conserving, and managing the municipal waters. They register the municipal fisherfolk and their fishing boats, issue licenses/permits, and enforce local fisheries ordinances. These fisheries local ordinances are developed by the LGUs based on local needs and must be aligned with the Fisheries Code. LGUs may also form their local Bantay Dagat[5] (sea patrol) to conduct surveillance in support of law enforcement. Section 6 of this report describes how the LGUs have implemented the relevant provisions of RA 10654.

The BFAR and the LGUs are supported by the National Fisheries and Aquatic Resources Management Council (FARMC), local (city/municipal) FARMC, and the integrated FARMC (for inland bodies of water that span several LGUs). Working together, they coordinate and oversee the sustainable management of fishery resources in accordance with RA 10654. The FARCs provide recommendations, advice, and assistance to the BFAR and LGUs in implementing policies related to fisheries management, among many other responsibilities.

The BFAR coordinates with DENR on matters involving ecosystem-based management, marine conservation, and protected areas, particularly in managing critical habitats, coastal zoning, and endangered marine species.

The DENR has a role in habitat protection by managing mangroves, coral reefs, and seagrass beds, all of which are critical to sustaining fish stocks, and also in conducting environmental impact assessments for coastal and marine projects that may affect the fisheries. Meanwhile, PAMB, a multi-sectoral body led by the DENR, oversees and the enforces fisheries law in protected areas (Table 5.1).

[5] Bantay Dagat is a community-based strategy for coastal law enforcement. Its creation is not currently mandatory for all coastal LGUs, as there is no national law mandating its establishment. While not mandated, many LGUs have voluntarily created their BD.

Table 5.1. Major stakeholders in the implementation of RA 10654

Stakeholders	Roles
Bureau of Fisheries and Aquatic Resources (BFAR)	• Lead implementing agency; • Issues Fisheries Administrative Orders and fishing licenses and permits for commercial fishing; • Leads the monitoring, control, and surveillance (MCS), vessel monitoring system, and law enforcement; • supports the establishment and operation of Fishery Management Areas • Provides technical and livelihood support to the LGUs and fisherfolks • Coordinates with the NFARMC
Local Government Units (LGUs) (city/municipality)	• Managers of municipal waters (up to 15km from the shore) • Issues municipal fishing permits • Creates and enforce local ordinances • Organize Bantay Dagat • Establish and manage local FARMCs • Coordinates with BFAR, PNP Maritime Group and PCG for enforcement • Lead community-based resource management and enforcement.
Fisheries and Aquatic Resources and Management Council	• Serves as an advisory and recommendatory body to BFAR and LGUs on fisheries policies and programs • Has a role in promoting participatory governance, policy and ordinance drafting, conflict resolution, resource management, support for sustainable fisheries, and monitoring and evaluation.
Department of Environment and Natural Resources (DENR)	• Manages coastal habitats (seagrass beds, mangroves, coral reefs • Leads establishment of marine protected areas under NIPAS • Leads Environmental Impact Assessments for coastal development • Coordinates habitat protection with BFAR
Philippine Coast Guard (PCG)	• Enforces maritime safety laws and vessel safety • Supports BFAR in vessel inspections • Conduct offshore patrols • Participates in joint MCS operations
PNP Maritime Group	• Enforces laws in municipal water • Support arrests and gear confiscation • Works with Bantay Dagat and LGUs • Assists joint seaborne patrols and surveillance
Protected Area Management Board	• Manages MPAs within the NIPAS framework, • Monitors compliance and resolves local disputes in protected areas.
Fisherfolk Organizations and commercial operators	• Work with BFAR and LGU on compliance and resource management • Assists joint seaborne patrols and surveillance
Academe and the NGOs and civil society groups	• Provide research and advocacy support

There are existing coordination schemes and efforts for the Philippine Maritime Group (PNP-MG), local police, and Bantay Dagat, although the level of integration varies and can be strengthened through training and communication. Bantay Dagat volunteers are often deputized to assist in enforcing fishery laws, working alongside local and national agencies like the PNP-MG to protect marine resources and enforce maritime regulations.

The PCG and the PNP-MG support the enforcement of the fisheries laws in offshore (with BFAR) and municipal waters (with the LGUs), especially in combating illegal fishing. They work closely with BFAR in the monitoring, control and surveillance (MCS) of our waters. Particularly, the PNP-MG is active in the municipal waters in coordination with the local police and to provide support to the local Bantay Dagat.

There are many other stakeholders in the fisheries sector. These include the fisherfolk organizations and the commercial fishing operators who should be working with the BFAR and the LGUs on compliance and resource management. The academe, NGOs and civil society groups provide research and advocacy support.

5.2 Bureau of Fisheries and Aquatic Resources

5.2.1 Legal Basis

The BFAR was known as the Bureau of Fisheries when it was created by RA 177 (June 20, 1947) under the Department of Agriculture and Commerce (DAZ). Later, it was renamed to the Philippine Fisheries Commission (PFC) under the Department of Agriculture and Natural Resources (DANR) with the passage of RA 3512 (March 20, 1963).[6] PFC became BFAR through PD No. 461 (May 17, 1974) under the Department of Natural Resources. In 1984, BFAR became a staff bureau under the Ministry of Agriculture and Food (EO 967 dated June 30, 1984) and later, the Ministry of Agriculture (EO 116 dated January 30, 1987).

The BFAR was reconstituted as a line bureau of the DA, with the passage of the 1998 Fisheries Code. It has the primary responsibility of implementing RA 10654, which amends the 1998 Philippine Fisheries Code. With the amended Fisheries Code, BFAR was further strengthened to combat illegal, unreported, and unregulated fishing.

Specifically, the following are the functions of BFAR as stipulated in RA 8550 (Section 65, a-q), and as amended by RA 10654 (Section 16, r-aa):

a. Prepare and implement a Comprehensive National Fisheries Industry Development Plan;
b. Issue licenses for the operation of commercial fishing vessels;
c. Issue identification cards free of charge to fishworkers engaged in commercial fishing;
d. Monitor and review joint fishing agreements between Filipino citizens and foreigners who conduct fishing activities in international waters, and ensure that such agreements are not contrary to the Philippine commitment under international treaties and the convention on fishing in the high seas;
e. Formulate and implement a Comprehensive Fishery Research and Development Program, such as, but not limited to, sea farming, sea ranching, tropical/ornamental fish, and seaweed culture, aimed at increasing resource productivity, improving resource use efficiency, and ensuring the long-term sustainability of the country's fishery and aquatic resources;
f. Establish and maintain a Comprehensive Fishery Information System;

[6] Source of information is found here https://www.dbm.gov.ph/wp-content/uploads/OPCCB/opif2009/da-bfar.pdf

g. Provide extensive development support services in all aspects of fisheries production, processing, and marketing;
h. Provide advisory services and technical assistance on the improvement of the quality of fish from the time it is caught (i.e., on board fishing vessel, at landing areas, fish markets, to the processing plants, and to the distribution and marketing chain);
i. Coordinate efforts relating to fishery production undertaken by the primary fishery producers, LGUs, FARMCs, fishery, and organizations/cooperatives;
j. Advise and coordinate with LGUs on the maintenance of proper sanitation and hygienic practices in fish markets and fish landing areas;
k. Establish a corps of specialists in collaboration with the Department of National Defense, Department of the Interior, and Local Government, Department of Foreign Affairs for the efficient monitoring, control and surveillance of fishing activities within Philippine territorial waters, and provide the necessary facilities, equipment, and training;
l. Implement an inspection system for import and export of fishery/aquatic products and fish processing establishments, consistent with international standards to ensure product quality and safety;
m. Coordinate with LGUs and other concerned agencies for the establishment of productivity-enhancing and market development programs in fishing communities to enable women to engage in other fisheries/ economic activities and contribute significantly to development efforts;
n. Enforce all laws, formulate and enforce all rules and regulations governing the conservation and management of fishery resources, except in municipal waters, and to settle conflicts of resource use and allocation in consultation with the NFARMC, LGUs, and local FARMCs;
o. Develop value-added fishery-products for domestic consumption and export;
p. Recommend measures for the protection/enhancement of the fishery industries;
q. Assist the LGUs in developing their technical capability in the development, management, regulation, conservation, and protection of the fishery resources;

Under RA 10654 (Amended Philippines Fisheries Code of 2015), the following responsibilities of BFAR were added:

r. Formulate and implement rules and regulations for the conservation and management of straddling fish stocks, highly migratory fish stocks, and threatened living marine resources such as sharks, rays, and ludong, inter alia, in the Philippine Exclusive Economic Zone, territorial sea, archipelagic and internal waters, in coordination with LGUs and integrated/municipal/city Fisheries and Aquatic Resources Management Councils;
s. Train, designate, and deploy fisheries observers in Philippine-flagged fishing vessels engaged in commercial fishing in Philippine waters, or distant water fishing to ensure compliance with conservation and management measures adopted by Regional Fisheries Management Organizations (RFMOs) and by the DA;
t. Implement boarding and inspection protocols for Philippine-flagged fishing vessels to promote observance of international treaty obligations on food safety, to curb IUUF, and to comply with conservation and management measures;
u. Adopt appropriate monitoring, control, surveillance, and traceability system for municipal fishing vessels supplying exporters with concurrence of the local government units;
v. Adopt and implement a national plan of action to manage fishing capacity, implement the international code of conduct for responsible fisheries, and declare fishery management areas as over-exploited in coordination with the LGUs and FARMCs;

w. Require performance bonds and impose and collect reasonable fees, and charges for laboratory services, inspection, and deployment of fisheries observers, and catch documentation and validation, taking into account the balance required between recovering the costs of services rendered and the socioeconomic impact of their imposition upon prior consultation with stakeholders;
x. Hear and decide administrative cases before it;
y. Determine the appropriate levels of administrative and other sanctions, particularly for serious violations, that deprive offenders of economic benefits from their violations of the laws, rules, and regulations;
z. Initiate the criminal prosecution of offenses committed in violation of this Code, regardless of their situs; and
aa. Perform such other related functions which shall promote the development, conservation, management, protection, and utilization of fisheries and aquatic resources."

The BFAR is also the primary agency responsible for establishing Fisheries Management Areas in the country. FAO 263 issued by BFAR in 2019 is the specific order that established the 12 FMAs in the country. While the BFAR is responsible for establishing FMAs, the process encourages cooperation and participation from various stakeholders and sectors, including LGUs, FARMCs, and other government agencies. Section 3.4 of this report provides more details on FMAs in the country.

5.2.2 Delivery Units and Personnel Complement of BFAR

BFAR is headed by the Director, who is assisted by two assistant directors (for technical services and for administrative services). Currently, there are 14 offices under the Office of the Director, 13 offices under the Technical and Support Services, and 16 Regional Field Offices (RFOs). Each RFO is headed by a Regional Director (RD).

Since the passage of RA 10654, BFAR has four directors. Every year, the personnel complement changes for years 2013 to 2023 (Table 5.2). There was a notable dip during the year 2016 with only 2,362 personnel, a year after RA 10654 was passed. This reflects the restructuring that happened in the bureau. This was followed by three years of relatively high number of personnel, with the highest registered personnel of 6,925 in 2017. Currently, the general trend is decreasing, and it returned to the number of staff before RA 10654 was passed.

Knowing the personnel complement of BFAR can provide a better appreciation of the common claim that implementation of the programs, projects, and activities are affected by the number of staff available. The number of contractual employees has been more than double the permanent employees. The number of available items for years 2021 to 2023 were not fully filled up. The unfilled items were 292 in 2023, 539 in 2022, and 583 in 2021.

Table 5.2. Personnel Complement of BFAR

Year	Permanent	Casual[d]	Contract of Service/ Job order[d]	Total
2023	1600[a]		3387	4987
2022	1587[b]	13	3624	5224
2021	1595[c]	27	3981	5603
2020	1545		3737	5282
2019	1576		4625	6201
2018	1466	32	5236	6734
2017	1679	42	5204	6925
2016	886	35	1441	2362
2015	1415		4162	5577
2013	1200	40	4162	5402

Sources:
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2013/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2015/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2016/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2017/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2018/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2019/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-management-letter-2020/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2021/
https://www.coa.gov.ph/download/5826/department-of-agriculture/79164/bureau-of-fisheries-and-aquatic-resources-executive-summary-2022.pdf
https://www.coa.gov.ph/reports/annual-audit-reports/aar-ngs/#49-6454-department-of-agriculture-1715150609
Notes:
[a] number shown is filled items out of the 1892 available items, or 292 unfilled items
[b] number shown is filled items out of 2126 available items, or 539 unfilled items
[c] number shown is filled items out of 2178 available items, or 583 unfilled items d A casual employee is a person hired on a temporary basis for essential services or emergency situations where there are not enough regular staff to meet demand. These roles are for intermittent periods, generally not exceeding one year. While similar to contract of service (CoS) employees, casual employees are typically meant to fill a temporary need for essential or specialized services, whereas CoS employees are often for projects that are not part of the agency's regular functions or for specialized expertise not available within the agency.

5.2.3 BFAR Budget for 2010-2025

The General Appropriations Act (GAA) allocations for the Department of Agriculture (DA) and its attached agency, the Bureau of Fisheries and Aquatic Resources (BFAR), from 2010 to 2025 demonstrate a fluctuating yet generally increasing trend (Table 5.3). From 2010 to 2025, the DA's annual budget increased from ₱39.24 billion to ₱124.44 billion, reflecting an overall growth of over 216% over the 16 years. Despite occasional year-on-year declines—particularly in 2011, 2015, and 2016, the trajectory from 2020 onwards shows a consistent upward trend.

Table 5.3. Budget of Department of Agriculture and Bureau of Fisheries and Aquatic Resources, 2010 - 2025

Year	Department of Agriculture (DA)	Bureau of Fisheries and Aquatic Resources (BFAR)	Share of BFAR to DA Budget
2010	39,241,610,000	3,307,502,000	8.43
2011	34,757,973,000	2,335,305,000	6.72
2012	52,932,023,000	2,985,626,000	5.64
2013	64,474,099,000	4,609,672,000	7.15
2014	68,596,751,000	4,877,724,000	7.11
2015	48,697,540,000	6,315,172,000	12.97
2016	48,447,476,000	6,702,613,000	13.83
2017	45,222,425,000	6,989,829,000	15.46
2018	53,336,259,000	6,092,494,000	11.42
2019	47,293,174,000	5,758,003,000	12.18
2020	62,291,350,000	6,108,884,000	9.81
2021	68,622,033,000	4,736,988,000	6.90
2022	68,574,822,000	4,567,278,000	6.66
2023	98,864,397,000	6,816,077,000	6.89
2024	111,687,758,000	9,654,143,000	8.64
2025	124,437,141,000	10,442,197,000	8.39

Source of Data: Various years of DA General Appropriations Act, 2010 to 2025

The budget allocation to BFAR, as an attached agency under DA, similarly reflects this upward trend but with notable variability. Beginning at ₱3.31 billion in 2010, the agency's budget peaked initially in 2017 at ₱6.99 billion. Subsequent allocations slightly decreased in 2018 (₱6.09 billion) and 2019 (₱5.76 billion), before stabilizing around ₱6 billion from 2020 to 2023. There was a substantial increase in 2024 (₱9.65 billion) and a further rise in 2025 (₱10.44 billion)—marking the highest ever allocation given to the bureau. This rise can be attributed to the increased focus on climate-adaptive fisheries programs, infrastructure development, and compliance with international fisheries governance standards.

From 2010 to 2014, BFAR's budget has been consistently about 6% to 7.5% of the DA's total annual GAA. The agency got a higher share of the Department's budget during the years of 2015 to 2019. Notably, the years with significant budget increases for BFAR—such as 2015 to 2019, and 2023 to 2025—were the period when regulatory enforcement was heightened, rehabilitation of fishery infrastructure post-natural disasters (e.g., Typhoon Yolanda) was done, international trade compliance efforts were strengthened (e.g., response to the EU yellow card on IUU fishing), and continued post-pandemic.

The share of BFAR in the overall budget of DA measures the attention given to the protection, development, management, and utilization of coastal resources relative to terrestrial resources. On the other hand, it may also reflect the absorptive capacity of the BFAR. The approved budget for a given year is usually affected by the previous year's budget utilization rate.

5.2.4 Performance of BFAR[7]

The performance of BFAR is measured in terms of its eligibility for the Performance Based Bonus (PBB),[8] a financial incentive granted by the government to employees based on their performance and contribution to achieving agency targets and commitment. It is awarded in compliance with several requirements, spanning organization, team, and individual levels.[9] In the last three years of implementation of PBB, 2021-2023, BFAR received 75 points[10] each year to be eligible for PBB.

To be eligible for the PBB, BFAR itself must meet the criteria across four dimensions: Performance Results, Process Results, Financial Results, and Citizen/Client Satisfaction Results. Individual eligibility for the bonus is tied to the agency's performance and requires employees to achieve a "Satisfactory" performance rating based on the Bureau's approved Strategic Performance Management System (SPMS), along with other conditions.

The BFAR's Performance Management Team (PMT) is responsible for coordinating the PBB process. The PMT coordinates with the various Delivery Units (DUs) to get their performance data and accomplishments against established targets. The PMT then uses this information to score the Bureau's performance for the PBB. The PMT submits these scores to the relevant Human Resource management division for further preparation, such as the PBB Evaluation Matrix. The final scores are used to determine the overall eligibility of BFAR for the PBB.

[7] https://www.bfar.da.gov.ph/wp-content/uploads/2021/02/Compliance-with-the-Guidelines-on-the-Grant-of-Performance-Based-Bonus-for-2020.pdf

[8] PBB was first granted in 2012 and a PIDs study (Albert et al 2021; https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn2101.pdf) found evidence of the positive outcomes and has recommended its continued use.

[9] To be eligible for the PBB, the agency must satisfy the criteria and conditions under the four dimensions of accountability: Performance Results, Process Results, Financial Results, and Citizen/Client Satisfaction Results and attain a total score of at least 70 points and achieve at least a rating of 4 for at least three criteria based on the PBB Scoring.

[10] https://www.bfar.da.gov.ph/bfar-scorecard/

Table 5.4. Performance of BFAR: Points received using PBB criteria

Year	Performance Results	Process Results	Financial Results	Citizen/client	Total points
2023[a]	15	15	25	20	75
	Achieved 70.59% (12 out of 17) of the Congress-approved Performance Target for FY 2023	Achieved substantial improvements to ease transactions in external service only	Achieved 91.40% Disbursement BUR	Achieved 100% resolution, and 65.79% compliance of #8888 complaints; and 100% resolution and compliance of CCB complaints	Compliant in 10 out of 14 Agency Accountability requirements
2022[b]	10	25	25	15	75
	Achieved 66.67% (12 out of 18) of the Congress-approved Performance Target for FY 2022	Achieved substantial improvement s to ease transactions in priority core serve (external) and internal service	Achieved 88.07% Disbursement BUR	Achieved 4.86 satisfaction rate; 53.28% resolution, and 9.84% compliance of #8888 complaints; and no complaints received from CCB	Compliant in 7 out of 11 Agency Accountability requirements
2021[c]	10	25	25	15	75
	Achieved 77.77% (7 out of 9) of the Congress-approved Performance Target for FY2021	Achieved ease of transaction for 100% (83 out of 83)	Achieved 80 % Disbursement BUR	Achieved 4.76 overall satisfaction rate; 34.16% resolution, and 93.33 9.84% compliance of #8888 complaints; and no complaints received	Compliant in 5 out of 11 Agency Accountability requirements

https://www.bfar.da.gov.ph/bfar-scorecard/
[a] https://www.bfar.da.gov.ph/wp-content/uploads/2025/02/BFAR_2023-Scorecards.pdf
[b] https://www.bfar.da.gov.ph/wp-content/uploads/2024/05/BFAR_2022-Scorecards-5-14-2024.pdf
[c] https://www.bfar.da.gov.ph/wp-content/uploads/2024/04/FY-2021-Performance-based-bonusScorecard.pdf

5.3 Performance of BFAR in Implementing RA 10654

5.3.1 Implementation Gaps

BFAR has a number of mandated functions as stipulated in RA 8550, as amended by RA 10654 in 2015. Table 5.5 has 10 of these functions and shows what should have been done by BFAR and the implementation gaps as identified in this current assessment. Details on each of these are provided in several sections in this report. Despite the many efforts by BFAR in implementing the provision of RA 10654, there are still many gaps and plenty of room for improvement. The full implementation of the law is needed.

Table 5.5 Performance of BFAR in Implementing RA 10654

Mandate / Provision	Legal Basis	What BFAR Should Have Done	Implementation Gaps	Section of this Report
Fishery Management Areas	RA 8550, Sec. 4; RA 10654, Sec. 8, Sec. 94	Establish functional FMAs with reference points and harvest control rules	Have created 12 FMAs with MB and SAG; no FMA as of yet, is functioning, as expected	Section 3
Vessel Monitoring Measures	RA 10654, Sec.	Install tracking systems on all commercial fishing vessels	Delayed roll-out; resistance from industry; weak	Section 4
Fisherfolk Registry (FishR)	RA 8550, Sec. 19;	Maintain updated, comprehensive fisherfolk and vessel registry	Incomplete, outdated data; limited use in planning or benefits distribution	Section 4
Combat IUU Fishing	RA 10654, Sec. 86-117	Enforce strong penalties; conduct surveillance and inter-agency operations	Persistent illegal fishing in municipal waters; slow case resolution	Section 4
Devolution to LGUs	RA 8550, Sec. 16-17	Provide capacity support to LGUs for managing municipal waters	Slow or partial delegation; many LGUs lack resources and support	Section 6
Fisheries and Aquatic Resources Management Councils	RA 8550, Sec. 69-74	Establish and empower local FARMCs for participatory governance	Many FARMCs inactive, underfunded, or not functioning effectively	Section 6

Mandate / Provision	Legal Basis	What BFAR Should Have Done	Implementation Gaps	Section of this Report
Gender Equity and Women's Participation	RA 10654, Sec. 110; RA 9710	Mainstream gender in policies; support women in fisheries	Weak integration of gender; limited recognition of women's roles	Section 7
Fisheries Research and Stock Assessment	RA 8550, Sec. 8-9	Conduct regular stock assessments and ecological studies	Limited and outdated data; poor integration into policy; difficult access by researchers.	Section 3
Penalty System and Enforcement	RA 10654, Sec. 118-124	Apply standardized penalties; ensure legal follow-through	Inconsistent enforcement; many violators not penalized adequately	Section 4

Establishment of Fisheries Management Areas[11]

RA 10654 stipulated the establishment of Fisheries Management Areas. In 2019, BFAR introduced 12 FMAs to ensure sustainable and science-based fisheries governance through FAO 263. By 2024, these FMAs had functioning management bodies, scientific advisory groups, and technical working groups. Six FMAs have adopted and approved their FMA Management Plans. No FMA has yet to demonstrate that it can function what is expected. Two FMAs (6 and 9) are covered by the Philippine Fisheries and Coastal Resiliency (FishCoRe) Project funded by the World Bank. The biggest challenge for the FMAs is the lack of clear funding mechanisms and reporting protocols, which hinders the implementation of management plans and monitor progress effectively. The other gaps include limited enforcement capacity, weak community engagement, challenges in data collection and monitoring, among others.

Establishment of Vessel Monitoring System[12]

BFAR pushed for the VMS installation on commercial fishing vessels to prevent illegal fishing. The Vessel Monitoring Measures (VMM) was introduced in 2015 in RA 10654 in Section 14 (Monitoring, Control and Surveillance (MCS) of Fishing in all Philippine Waters and Philippine Flagged Distant Water Fishing Vessels) and Section 19 (Noncompliance with Vessel Monitoring Measures). On October 5, 2018, FAO 260 (Rules and Regulations on the Implementation of the Vessel Monitoring Measures (VMM) and Electronic Reporting System (ERS) for Commercial Philippine Flagged fishing Vessel Targeting Straddling Highly Migratory Fish Stock), which further implements Section 119 of RA 10l54. In October 2020, BFAR amended FAO 260 by issuing FAO 266. On December 3, 2020, a petition for declaratory relief with application for the issuance of the Temporary Restraining

[11] Section 3 of the report has more details of FMAs in the country.
[12] The brief history, legislative and antecedent facts relating to FAO 266 can be found in this court document available online: https://sc.judiciary.gov.ph/wp-content/uploads/2024/04/Memorandum-Republic.pdf

Order (TRO) and/or Writ of Preliminary Injunction was filed by three commercial fishing corporation before the Malabon City Regional Trial Court (RTC). On June 1, 2021, the RTC issued its decision declaring FAO No., 266 as "null and void" for being unconstitutional and making permanent the writ of preliminary injunction it previous issued.

In response to the RTC ruling, the Department of Agriculture (DA) and the Bureau of Fisheries and Aquatic Resources (BFAR) suspended the implementation of FAO 266. The DA, BFAR, the National Telecommunications Commission (NTC)[13], and Oceana Philippines[14] International filed a consolidated petition[15] with the Supreme Court to have the trial court's decision reversed, arguing that the ruling could devastate marine resources and make the Philippines unable to meet its international obligations to fight illegal fishing.

On March 13, 2023, the Office of the President directed the Department of Agriculture (DA) and BFAR to temporarily suspend the implementation of FAO 266 nationwide. This was later reversed with the order of President Ferdinand Marcos Jr. directing BFAR work closely with the Office of the Executive Secretary to craft the necessary issuances to require CFVs to install vessel monitoring systems (VMS).[16]

The Supreme Court has not yet issued a decision on the consolidated petitions. BFAR is yet to disclose the data from VMS to concerned agencies for effective enforcement and fisheries management.

Fisherfolk Registration [17]

The BFAR has made significant strides in fisherfolk registration through the Fisherfolk Registration System (FishR), a nationwide initiative aimed at creating a comprehensive database of individuals in the fisheries sector. The FishR has helped the government in prioritizing registered fisherfolk for relief and livelihood assistance programs. However, there are still gaps that include incomplete and gender-exclusive registration, inconsistent implementation across LGUs, lack of integration with other fisheries management systems, limited public awareness and engagement, and challenges in data validation and maintenance. (See Section 4 for more details).

Combat IUU Fishing, Penalty System, and Enforcement[18]

RA 10654 has increased penalties for IUU fishing activities. BFAR has implemented these increased penalties through enforcement operations and legal actions. There are measures to strengthen the Monitoring, Control, and Surveillance System. The BFAR, in coordination with other law enforcement agencies, has intensified patrols and inspections to apprehend violators of fishing regulations. BFAR has also launched the Philippine IUU Fishing Index and Threat Assessment Tool[19], a suite of tools to assess and monitor the status of IUU fishing as well as track the progress towards preventing, deterring, and eliminating IUU fishing in Philippine waters across various levels

[13] https://sc.judiciary.gov.ph/wp-content/uploads/2024/01/256282-COMMENT.pdf
[14] https://sc.judiciary.gov.ph/wp-content/uploads/2024/04/Memorandum-Royale-Fishing-et-al._compressed.pdf
[15] https://sc.judiciary.gov.ph/wp-content/uploads/2024/04/Memorandum-Republic.pdf
[17] See Section 4 of this report for more details
[18] See Section 4 of this report for more details
[19] https://www.bfar.da.gov.ph/iuu-fishing-index-and-threat-assessment-tool-report/; https://www.bfar.da.gov.ph/2022/09/16/bfarpressrelease-da-bfar-launches-1st-philippine-iuu-fishing-assessment-report/

of governance, from municipal to fisheries management areas to the entire country. It was first used in the 2021 assessment, leading to an estimate of the country's overall IUU fishing risk exposure. Despite these efforts, there are still several gaps that include limited enforcement capacity and resources, inconsistent implementation of penalties, challenges with legal and administrative processes, lack of comprehensive data and monitoring systems, and need for strengthened coordination across agencies.

Assistance to the Local Government Units and Fisheries and Aquatic Resources Management Councils[20]

The BFAR has played a pivotal role in assisting LGUs in managing municipal waters. They have provided various support, including technical assistance and capacity building, resource assessment and infrastructure support, establishment of FARMCs, incentive programs for sustainable practices (e.g., MMK program), collaborative governance and policy support (e.g., develop and implement local fisheries ordinances), livelihood support, among others. Moreover, the BFAR collaborates with the LGUS to support and strengthen the FARMCs to uphold participatory fisheries governance, enhance local capacities, and promote sustainable management of aquatic resources. BFAR has supported capacity building and training of the FARMCs, provided recognition and incentives (e.g., Search for outstanding FARMC).

However, several gaps hinder the effectiveness of these efforts and the recognition and the critical role of FARMCs in decentralized management of municipal waters. These include limited enforcement capacity, inconsistent implementation across regions, overlapping jurisdiction and regulatory gaps, challenges in monitoring and data collection, a need for enhanced community engagement, and more.

Gender Equity and Women's Participation[21]

The BFAR has actively pursued initiatives to mainstream gender and promote equity within the fisheries sector. These efforts encompass policy development, capacity building, and community engagement to ensure inclusive and sustainable fisheries management. The agency developed the GAD checklist to assist in designing programs that address gender disparities and promote equality. There are Gender and Development training sessions for fisherfolk, particularly women, to raise awareness about gender equality and empower them to participate actively in fisheries management. Despite the efforts in promoting gender equality within the Philippine Fisheries Sector, several gaps persist. Women's contributions remain not fully recognized, gender-disaggregated data are still insufficient, the implementation of gender policies, among others are still inadequate.

Fisheries Research and Stock Assessment

The BFAR, in collaboration with the National Fisheries Research and Development Institute (NFRDI), has been actively involved in various research initiatives. There is the National Stock Assessment Project and other research activities crucial for informed policy-making. There are also stock enhancement initiatives to replenish and enhance

[20] See Section 6 of this report for more details.
[21] See Section 7 of this report for more details.

fish stocks in various aquatic environments. There are gaps that hinder the full potential of these initiatives. These include limited scientific validation of stock enhancement programs, inadequate long-term and spatially detailed data, insufficient integration of research outputs into management practices, and research imbalance, such as limited research on commercial fisheries and regional disparities. (See Section 3 for more details).

5.3.2 The Fishery Administrative Orders Created

The BFAR issues the Fishery Administrative Orders (FAOs) to operationalize specific provisions of the law. For the period 2015 to 2024, BFAR has issued 31 FAOs (Table 5.6).

The FAOs are composed of: (a) nine on tuna management; (b) three each on endangered species (whale shark), bycatch prevention (using purse seine) and on specific species conservation (mangrove crabs and spiny lobsters), and Monitoring, Control, and Surveillance (VMM and Fisheries Observer); (c) two each on seaweed (on exports and management), gear regulation (Danish Seine and Use of Superlight), and transhipping of fish and fishery products; and (d) one each on licensing and registration of commercial fishing vessels, on fisheries management (Fisheries Management Areas), enforcement (anti-poaching), fish importation, and fish trade and certification, and public land conversion for aquaculture purposes.

5.3.3 Commission on Audit Observations[22]

The annual Commission on Audit Report shows gaps and inefficiencies in specific operational areas of BFAR. Table 5.7 shows entries in the COA report for specific years (2016, 2017, 2020 to 2023) that were related to the implementation of the law. It shows that most of the COA observations are in livelihood support, enforcement, and gender and development.

The deficiencies cited for livelihood support programs include unutilized funds, delays in procurement, inappropriate inadequate performance measures/indicators/guidelines, absence of specific guidelines and policies in the distribution of fishing gears/paraphernalia, delayed coordination with the LGUs, below target accomplishments, delayed schedules, non-utilization of distributed equipment, among others. These gaps and deficiencies in livelihood programs hindered the timely accomplishment of the project, and the fisherfolks of the benefits that can be derived from the program.

For deficiencies under enforcement, these include lack of access to data, and lack of monitoring and enforcement. This prevents the program to attain goals and also depriving revenues for the government in the case of non-collection of penalties for violations and rentals.

[22] The Commission on Audit, a Philippine government body responsible for auditing public funds. It is crucial for ensuring government accountability, transparency, and efficiency in using public funds and assets. It serves to promote good governance by validating that government agencies and entities comply with laws and regulations, prevent fraud, identify operational inefficiencies, and ultimately benefit the Filipino people.

Table 5.6. Fisheries Administration Orders created during years 2015 to 2024

No.	Year	FAO #	Title	Theme
1	2015	236-4	Extension of FAO 236-3 Series of 2015 on the Rules and Regulations on the Operations of Purse Seine and Ring Net Vessels Using Fish Aggregating Devices (FADs) Locally Known as Payaos During the FAD Closure Period as Compatible Measures To WCPFC CMM 2014-01	FAD & Tuna Gear Management
2	2015	245-3	Regulations and Implementing Guidelines on Group Tuna Purse Seine Operations in High Seas Pocket Number 1 As A Special Management Area	Tuna Fisheries Management
3	2015	250-1	Granting A Grace Period of Eight (8) Calendar Months to Seaweed Traders/Exporters to Transport and Export Their Remaining Raw Dried Sargassum Stocks Inspected and Audited By BFAR	Seaweed Exports
4	2018	198-1	Amended Rules and Regulations on Registration and Licensing of Commercial Fishing Vessels	Licensing & Registration
5	2018	236-5	Extension of FAO 236-4 Series Of 2015 on the Rules and Regulations on the Operations of Purse Seine and Ring Net Vessels Using Fish Aggregating Devices (FADs) Locally Known as Payaos During the FAD Closure Period as Compatible Measures To WCPFC CMM 2017-01	FAD & Tuna Gear Management
6	2018	245-4	Regulations and Implementing Guidelines on Group Tuna Purse Seine Operations in High Seas Pocket Number 1 As A Special Management Area	Tuna Fisheries Management
7	2018	246-1	Amending FAO No. 246 on the Banning of the Operation of Danish Seine in the Philippine Waters	Gear Ban / Destructive Fishing
8	2018	250-2	Amendment To FAO No. 250 S. 2014 Re: Regulations on the Collection, Harvesting, Gathering, Selling, and Exporting of Sargassum Spp.	Seaweed Resource
9	2018	254-1	Regulation and Implementing Guidelines on Group Handline Fishing Operations in the High Seas of the WCPFC Convention Area	Tuna Fisheries Management
10	2018	258	Establishment of Tuna Conservation and Management Zones (TCMZ) in the Mindanao/Celebes Sea	Tuna Fisheries Management
11	2018	259	Rules and Regulations on the Importation of Frozen Fish and Fishery/ Aquatic Products for Wet Markets During Closed and Off-Fishing Seasons or During the Occurrence of Calamities	Fish Importation
12	2018	260	Rules And Regulations on the Implementation of Vessel Monitoring System (VMM) And Electronic Reporting System (Ers) For Commercial Philippine Flagged Fishing Vessels Targeting Straddling and Highly Migratory Fish Stocks	Monitoring, Control, and Surveillance
13	2018	261	Rules And Regulations on Fisheries Observer Program (FOP) in the Philippines and in Distant Water Fishing Targeting Straddling and Highly Migratory Fish Stocks	Monitoring, Control, and Surveillance

No.	Year	FAO #	Title	Theme
14	2018	262	Regulation on the Use of Superlights and Fishing Light Attractors in Commercial Fishing	Gear Regulation
15	2019	263	Establishment Of Fisheries Management Areas (FMA) for the Conservation and Management of Fisheries in Philippine Waters	Governance / Resource Spatial Management
16	2020	264	Regulations on the Catching, Possession, Transporting, Selling, Trading, And Exporting of Mangrove Crablets, Juvenile Mangrove Crabs and Gravid Mangrove Crabs (Scylla Spp.)	Species-Specific Conservation
17	2020	265	Regulations on the Catching, Possession, Transporting, Selling, Trading, And Exporting of Puerulus, Juvenile, And Gravid Spiny Lobsters (Palinuridae)	Species-Specific
18	2020	266	Rules and Regulations on the Implementation of Vessel Monitoring Measures (VMM) and Electronic Reporting Systems (ERs) For Commercial Philippine Flagged Fishing Vessels Amending FAO 260 Series Of 2018	Monitoring, Control, and Surveillance
19	2021	200-1	Guidelines And Procedures in Implementing Section 91 (Poaching in Philippine Waters) of the Philippines Fisheries Code Of 1998, As Amended by Republic Act No. 10654	Law Enforcement & Anti-Poaching
20	2021	267	Rules and Regulations Governing the Landing and Transhipping of Fish and Fishery Products That Have Not Been Previously Landed, and Other Port Services in the Philippines by Foreign-Flagged Fishing Vessels	International Fishing Regulation
21	2023	267-1	Amending FAO 267, Series Of 2021, entitled: “Rules and Regulations Governing the Landing and Transshipping of Fish and Fishery Products That Have Not Been Previously Landed, And Other Port Services in the Philippines by Foreign-Flagged Fishing Vessels”	International Fishing Regulation
22	2023	269	Rules And Regulations on Tuna Purse Seine/Ring Net Operations in the Pacific Seaboard of the Philippine Exclusive Economic Zone (Eez)	Tuna Fisheries Management
23	2023	270	Rules And Regulations on the Operations of Philippine Flagged Fishing Vessels Operating in Distant Waters (Beyond National Jurisdiction)	Distant Water Fisheries
24	2023	271	Rules And Regulations for the Protection of Cetaceans and Whale Sharks from Purse Seine and Ring Net Fishing Operations	Endangered Species / Bycatch Prevention
25	2023	272	Rules And Regulations for the Conservation and Management of Sharks for Philippine Fishing Vessels	Endangered Species / Bycatch Prevention
26	2023	264-1	Amending Fisheries Administrative Order No. 264, Series Of 2020, entitled “Regulation on the Catching, Possession, Transporting, Selling, Trading, and Exporting of Mangrove Crablets, Juvenile Mangrove Crabs, and Gravid Mangrove Crabs (Scylla Spp.)	Species-Specific Conservation

No.	Year	FAO #	Title	Theme
27	2023	268	Rules And Regulations Governing the Catch Certification or Documentation Scheme for Fish and Fishery Products Intended for Export That Require Catch Certificates	Trade & Certification
28	2024	1972-2	Amended Rules and Regulations Governing the Lease of Public Lands for Fishponds and Mangrove Friendly Aquaculture	Aquaculture Regulation
29	2024	208-1	Amendment To Fisheries Administrative Order No. 208, Series of 2001 on the Conservation of Rare Threatened, And Endangered Fishery Species	Endangered Species Protection
30	2024	236-6	Amending Rules and Regulations on the Operations of Purse Seine and Ringnet Vessels Using Fish Aggregating Devices (Fads) Locally Known as Payaos During the FAD Closure Period	FAD & Tuna Gear Management
31	2024	254-2	Amending Fisheries Administrative Order (FAO) 254-1 Providing for the Regulation and Implementing Guidelines on Group Handline Fishing Operations in the High Seas of the WCPFC Convention Area	Tuna Fisheries Management

Note: Soft copies of the Fisheries Administrative Orders can be found in this link: https://www.bfar.da.gov.ph/laws-regulations-issuances/administrative-orders/

5.3.4 Assessment of BFAR's Performance in Implementing RA 10654

Republic Act (RA) 10654, enacted in 2015, amended the Philippine Fisheries Code of 1998 (RA 8550) to combat IUUF, improve fisheries management, and ensure sustainable use of marine resources. The BFAR is the primary agency responsible for implementing the law.

With the RA 10654, a solid policy architecture is in place. The BFAR has laid down most of the right instruments (law, FMAs, VMM/ERS, closures, gear bans) and has tangible successes in select fisheries and areas. RA 10654's Implementing Rules and Regulations sharpened definitions/penalties for IUU fishing. BFAR complemented this with FAOs (e.g., FAO 266 on VMM/ERS; FAO 263 creating Fisheries Management Areas with management board and scientific advisory group). These are concrete levers for BFAR to manage effort and enforce rules. The FMAs formalize ecosystem-scale planning with stakeholder participation and enable tools like harvest control rules and spatial/temporal closures (e.g., Visayan Sea; Zamboanga sardine closure). The VMM/ERS (FAO 266) and the multi-agency eCDTS guidelines are laying a national backbone for tracking vessels and catches—critical for compliance, trade, and stock assessment data. BFAR works with PCG, PN, LGUs and civil society; bans on destructive gear (e.g., Danish seine under FAO 246/246-1) and periodic joint operations remain bright spots.

But alongside these notable progress (e.g., seasonal closures, some area-based rules) are persistent IUUF, especially in municipal waters; fragmented, and capacity-limited enforcement at the local level; legal and political headwinds slowing VMM/ERS roll out and fight against the present of commercial fishing in municipal waters, data and compliance gaps, funding limitations, and socio-economic pressures. So effectiveness still hinges on: (a) resolving legal disputes and standardizing VMM/ERS enforcement; (b) resourcing LGU-level MCS and case prosecution; (c) closing data gaps (especially municipal); and (d) pairing enforcement with livelihood and compliance incentives for small-scale fishers.

Table 5.7. Significant Observations of the Commission on Audit on the Performance of BFAR, 2016, 2017, 2020 to 2023

	Significant Observation
2023	
Fishing Gear/Paraphernalia Distribution (FGPD)	Gaps were noted in the implementation of the Fishing Gear/Paraphernalia Distribution (FGPD) project for 2023, such as: a) fund redirection and deviations from the original targeted activities; b) delay in the procurement and distribution of fishing gear and paraphernalia (FGPs); c) inadequate performance measures/indicators; and d) absence of specific guidelines and policies in the distribution of fishing gears/paraphernalia. Thus, these noted deficiencies hindered the timely achievement of the FGPD project including provision of livelihood assistance to fisherfolk and adoption of environment-friendly fishing methods.
Livelihood Support Fuel Assistance to the Fisherfolk Program	Fuel Assistance to the Fisherfolk Program in CY 2023 were deprived of its benefits, as the allocated funds of P417.161 million for 16 regions remained unutilized due to the delayed issuance and lack of pertinent provisions of the implementing guidelines, preventing the program's objectives from being achieved.
2022	
Aquaculture - livelihood support Legislated hatcheries	Eight (8) legislated hatcheries reported as complete projects have components which were still not accomplished as of CY 2022 due to reasons not disclosed by the Management, while nine (9) constructions in progress projects with targeted date of completion in CY 2022 were not completed on time due to difficulty in the acquiring/securing land ownership and permits and delayed coordination with LGUs, among others. Moreover, three (3) projects with FY 2021 source of budget were still under on-going site identification due to site suitability issues. Thus, these noted deficiencies hindered the timely achievement of the objectives of the legislated hatcheries in addressing critical farming issues such as limited species variety, high fry cost and erratic supply.
Enforcement Fisheries Regulatory Law Enforcement Program	Gaps were noted in the implementation of the Fisheries Regulatory Law Enforcement Program (FRLEP) for CY 2022, such as a) inability to access the Fishing Vessel Electronic Licensing System (FELiS); b) lack of monitoring of Fishpond Lease Agreement (FLA); c) nonpayment of annual leases of active and existing FLA holders for two consecutive years; d) non-submission of required annual reports as regards the development, operation, and production of FLA holders; e) non-seizure of fishing gears; and f) unreported FRLEP award.
2021	
Gender and Development	The bureau allocated the amount of P418.300 million or seven percent of the total appropriations of P5.697 billion for GAD programs and activities for SY 2021, of which only P91.201 million or 22 percent of the total allocation was utilized. Further, the PCW-endorsed GAD Plan and Budget (GPB) and GAD Accomplishment Report (GAR) for CY 2021 in CO and two RFOs were not submitted to the Audit Teams within the prescribe period.
2020	
Gender and Development	BFAR-CO and RFOs IVB and VI did not submit the signed GAD Plan and Budget (GPB) and GAD Accomplishment Report (AR), thus, the evaluation of the GAD programs/projects/activities, and costs incurred could not be made.

	Significant Observation
2017	
Livelihood Support	The objective of BFAR to provide extensive support services in fisheries production, processing and marketing by providing the agricultural facilities and equipment was not fully attained due to: a) delayed construction of Community Fish Landing Centers (CFLCs) in RFOs I, V, VI, VII and XI amounting to P281. 196 million; b) delayed turnover date of completed CFLCs in RFO I; c) non-utilization of 14 upright and chest-type freezers distributed for CFLCs in RFO VI; and d) non-operational of three (3) units of Custom -Built Air Blast Freezers with refrigeration equipment and generator sets amounting to P24,728 million already distributed in Region VII. Also, funds transferred to LGU beneficiaries in RFO VI exceeded the allocated budget by P23, 388.23 to P50,000.
Enforcement	The agency could have generated a total revenue of 165.989 million had there been strict enforcement of the provisions of the Fisheries Administrative Order 197, Series of 2000 and intensified collection of rental fees and applicable surcharges from Fish Landing Agreements (FLAs) in RFOs I, IV-A,VI, and X, depriving the government of additional funds.
Fishpond Lease Agreement	FLA is Fishpond Lease Agreement
Fines and penalties	Fines and penalties amounting to P9.013 million were not collected by the BFAR CO due to non-compliance with the guidelines on the payment of violations by the BFAR Adjudication Committee.
2016	
Livelihood Support Fishing Gear Program	RFO I attained all the targets on the procurement and distribution of FGPs for CY 2016, while in BFAR CO, RFOs IV-A, V, IX, XI, and XII, procurement and distribution nf FGPs were delayed, and sometimes accomplishments were below the target, thus depriving various fisherfolks and the general public of the benefits that can be derived from the program.
Livelihood Support Seaweeds Development Program	RFOIX attained its target on the distribution of seaweed farm implements while BFAR CO, RFOs I and IV-A were short of its targets and have not maximized the production and distribution of seaweed in CY 2016. In RFO VI, out of the five activities under the Seaweeds Development Program, two activities with aggregate cost of P1.085 million were not implement as of year-end while implementation of three activities amounting to P7.572 million incurred delays ranging from three weeks to 31 weeks.
Livelihood Support Broodstock/fingerlings	Distribution of broodstocks/fingerlings in BFAR CO (except for tilapia) and RFOs I and IV-A were short of its target.
Livelihood Support Cage farming and CFLCs	The provision of six cages for livelihood in RFO I amounting to P1.787 million; construction of Community Fish Landing Centers (CFLCs) in RFOs III and VII amounting to P74.528 million and P101.100 million, respectively, and procurement/delivery of various equipment/facilities for CYs 2016 and 2015 amounting to P5.640 million and P12.957 million, respectively, in RFO IX were delayed, thus, deprived the intended recipients of the immediate benefits that may be derived from their use.

	Significant Observation
2016	
Livelihood support Post-harvest facilities	Six units of chest-type freezers procured by RFO VI amounting to P342,000 which were already distributed to fisherfolk organizations in the provinces of Aklan, Antique, and Iloilo were nonoperational, due to observed defects and lack of facility to properly house the equipment, hence the project objectives were not fully attained.
Livelihood support	Funds amounting to P119.091 million remained unobligated as o Dec 31, 2016 in RFOs V and XI, contrary to sound fiscal policy on timely utilization of appropriated funds, to the prejudice of beneficiaries who could have benefited in terms of livelihood opportunities. Also, unutilized/lapsed cask allowances P1.384 billion in BFAR CO for the implementation of various activities under the Regular Agency Fund and the Foreign Assisted Projects (FAPS) were reverted to the National Treasury.

Source:
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2016/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2017/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-management-letter-2020/
https://www.coa.gov.ph/wpfd_file/bureau-of-fisheries-and-aquatic-resources-executive-summary-2021/
https://www.coa.gov.ph/download/5826/department-of-agriculture/79164/bureau-of-fisheries-and-aquatic-resources-executive-summary-2022.pdf
https://www.coa.gov.ph/reports/annual-audit-reports/aar-ngs/#49-6454-department-of-agriculture-1715150609

5.3.4 On the Supreme Court Ruling on the Mercidar Case

The BFAR faces significant criticism in implementing RA 10564, particularly in light of the Mercidar Fishing Corporation case.

In December 2024, the ruling of the Supreme Court on the Mercidar case was made known to the public. The Supreme Court upheld the Malabon Regional Trial Court's decision to allow the commercial fishing vessels of Mercidar Fishing Corporation in municipal waters. This ruling has significant implication for BFAR, who has since filed a motion for reconsideration with the Supreme Court, seeking to overturn the decision.

In October 2023, the Mercidar Fishing Corporation filed a petition challenging the constitutionality of specific provisions of RA 10654 that restricted commercial fishing operations within municipal waters traditionally reserved for small-scale fishers. The Malabon Regional Trial Court rules in favor of Mercidar, declaring these provisions unconstitutional. This decision was subsequently upheld by the Supreme Court's First Division in August 2024, effectively permitting commercial fishing vessels to operate within municipal waters and shifting regulatory authority from LGUs to national agencies. BFAR attempted to appeal the RTC decision. However, the petition was filed beyond the 15-day reglementary period, leading to its dismissal.

The delayed action by BFAR has been the focal point of criticisms, with stakeholders accusing BFAR and the Office of Solicitor General of a "sluggish defense" of their mandates under RA 10654. This ruling undermines the key provision of RA 10654, designed to protect municipal waters for small-scale fishers. By allowing commercial fishing in the municipal waters, the decision poses risks to the livelihood of municipal fishers and the sustainability of marine resources. The ruling diminishes BFAR's and the LGUs' authority over municipal waters, transferring regulatory control to national agencies.

The ruling has sparked reactions and actions from various small-scale fisherfolk, advocacy groups, and other stakeholders. The ruling is viewed as a failure to adequately defend the law's intent and the communities it aims to protect. These initial inactions in the case have been perceived as a significant shortcoming in enforcing RA 10654. BFAR's delayed response is seen as a lapse in protecting the interests of small-scale fishers and upholding the principles of RA 10654. The SC ruling presents a substantial challenge to BFAR's implementation of RA 10654.

6 EFFECTIVENESS OF LOCAL GOVERNMENT IMPLEMENTATION

This section examines the local government units' (LGUs) progress in implementing relevant provisions under RA 8550 and RA 10654.

The municipal/city government has jurisdiction over its municipal waters (Sec. 16, RA 8550). Local government units (LGUs) have been mandated for the management, conservation, development, protection, utilization, and disposition of all fish and fishery/aquatic resources within their respective municipal waters (RA 7160, RA 8550). While the governance of municipal waters rests upon the LGUs, protected areas are placed under the control and administration of the Department of Environment and Natural Resources through the Biodiversity Management Bureau (RA 11038 or Expanded National Integrated Protected Areas Systems Act of 2018) although the city/municipality participates in the protected area management through representations in the Protected Area Management Board.

Specifically, RA 8550 (Philippine Fisheries Code of 1998) lists the following responsibilities of local government units in relation to fisheries:

1. Determine license fees for fishery activities in municipal waters (Sec. 4).
2. Establish closed seasons in municipal waters, fisheries management, and other areas, in consultation with the FARMC for conservation or ecological purposes (Sec. 9).
3. Issue an auxiliary invoice for all fish and fishery products prior to their transport (Sec. 15).
4. Be responsible for the management, conservation, development, protection, utilization, and disposition of all fish and fishery/aquatic resources within their respective municipal waters. The LGU may enact appropriate ordinances for this purpose and in accordance with the National Fisheries Policy (Sec. 16).
5. Enforce all fishery laws, rules, and regulations, as well as valid fishery ordinances enacted by the municipal/city council (Sec. 16).
6. The LGU may, through its local chief executive and acting pursuant to an appropriate ordinance, authorize or permit small and medium commercial fishing vessels to operate within the 10.1-15 km area from the shoreline, provided that conditions are met (Sec. 18).
7. Maintain a registry of municipal fisherfolk who are fishing or may desire to fish in municipal waters for the purpose of determining priorities among them, of limiting entry into the municipal waters, and monitoring of fishing activities and/or other related purposes. The LGUs shall also maintain a registry of municipal fishing vessels by type of gear and other boat particulars with the assistance of the FARMCs (Sec. 19).

8. Grant demarcated fishery rights to fishery organizations/ cooperatives for mariculture operations in specific areas identified by the Department (Sec. 22).
9. Prohibit or limit fishery activities in municipal waters that have been determined by the LGU and Department to be overfished based on available data or information, or in danger of being overfished, and that there is a need to regenerate fishery resources in that water (Sec. 23).

    a. The Department and the LGU shall provide support to municipal fisherfolk through appropriate technology and research, credit, production and marketing assistance, and other services such as, but not limited to, training for additional/ supplementary livelihood (Sec. 24).
    b. Establish zones, in consultation with FARMC, for fish pens, fish cages, fish traps, and other structures for the culture of fish and other fishery products (Sec. 51).
    c. Grant new leases to qualified persons for the operation of pearl farms (Sec. 52).
    d. Determine sections for any construction in river mouths and estuaries to avoid obstruction of free navigation (Sec. 56).
    e. Maintain a registry of fish hatcheries, fish breeding facilities, and private fishponds (Sec. 57).
    f. Coordinate with the private sector and other concerned agencies and FARMCs in the establishment of post-harvest facilities for fishing communities (Sec. 59).
    g. Issue licenses for all post-harvest facilities and other fishery business establishments following minimum standards for such facilities (Sec. 60).
    h. Penalize fraudulent practices and unlawful possession or use of instruments of weights and measures, through an appropriate ordinance (Sec. 62).
    i. Coordinate with BFAR for the establishment of productivity enhancing and market development programs in fishing communities to enable women to engage in other fisheries/ economic activities and contribute significantly to development efforts (Sec 65m).
    j. Assist fisherfolk and their organizations in the establishment of M/C FARMCs (Sec. 69).
    k. May create the Barangay FARMCs and Lakewide FARMCs (Sec. 73).
    l. In consultation with the FARMC, may recommend to the Department a portion of the municipal waters to be declared as fishery reserves for special or limited use (Sec. 80).
    m. In consultation with FARMCs, establish fishery refuges and sanctuaries (Sec. 81).

Under RA 10654 (Amended Philippines Fisheries Code of 2015), the following responsibilities of local government units were added:

    n. The Department and the LGU shall provide support to municipal fisherfolk through appropriate technology and research, credit, production and marketing assistance, and other services such as, but not limited to, training for additional/ supplementary livelihood (Sec. 24).
    o. Establish zones, in consultation with FARMC, for fish pens, fish cages, fish traps, and other structures for the culture of fish and other fishery products (Sec. 51).
    p. Grant new leases to qualified persons for the operation of pearl farms (Sec. 52).

As of 30 September 2024, the Philippines has a total of 1,642 local government units that comprise of 149 cities and 1,493 municipalities belonging to 82 provinces and the National Capital Region (DILG, 2024). Of this number, 930 are coastal LGUs (DILG, 2023). Due to this large number of coastal LGUs, it is not easy to evaluate the performance of cities and municipalities in terms of fisheries management, especially because data needed

for such an evaluation is mainly unavailable. In this report, we looked at how LGUs have made progress in utilizing several tools used in fisheries management. Except for the creation of Fisheries and Aquatic Resources Management Councils (FARMCs), the other indicators and tools are not necessarily required by RA 8550 and RA 10654. However, the formulation of CRM/fisheries management plans, enactment of fisheries ordinances, fisheries alliances, law enforcement are considered inherent in the management, conservation, development, protection, utilization, and disposition of all fish and fishery/aquatic resources within municipal waters, thus were used in this report.

6.1 Enactment of Fisheries Ordinance

A city/municipal ordinance is a local law enacted by the city/municipal legislative council (i.e., the Sangguniang Panlungsod or Sangguniang Bayan). These municipal/city ordinances are vital for maintaining local order, promoting public welfare, and addressing specific needs of the community. Failure to comply with an ordinance can result in legal penalties, often in the form of fines. In several cases, ordinances are passed to "localize" national laws. However, even if a national law is not "localized" through an ordinance, the provisions of a national law are still the applicable rules for the municipality/city and its residents.

As stated in RA 8550 (Fisheries Code of the Philippines), the municipal/city government, in consultation with the Fisheries and Aquatic Resources Management Council (FARMC), may enact appropriate ordinances for the management, conservation, development, protection, utilization, and disposition of all fish and fishery/aquatic resources within their respective municipal waters, in accordance with the National Fisheries Policy (Sec. 16, RA 8550). In addition, the LGUs shall also enforce all fishery laws, rules, and regulations as well as valid fishery ordinances enacted by the municipal/city council.

Fisheries ordinances are seen to be essential for municipalities/cities to create solutions that are specific to their unique communities and diverse needs. These also allow municipalities/cities to set and enforce their own standards on local matters including environmental protection and fisheries conservation and management. For example, a fisheries ordinance can regulate a wide range of fisheries and aquaculture activities, including establishing zones (such as fishing and no-take zones) and granting of business permits (including permit to engage in fishery), in a manner that benefits the community. An updated fisheries ordinance can be regarded as an indicator that the local government unit has made efforts to improve or modify local fisheries regulations thereby incorporating practical or functional contemporary needs.

Based on data from the 2023 Fisheries Compliance Audit Report of the Department of Interior and Local Government (DILG 2023), compliance with a directive to enact fisheries ordinances is considerably high among LGUs (Table 6.1). However, in CY2023, more than 80 LGUs (of the 930 coastal LGUs) had yet to enact a fisheries ordinance. The lowest rate of compliance was in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) at 54% in CY2022.

Table 6.1. Compliance of LGUs in enacting municipal/city fisheries ordinances

Region	Total no. of coastal LGUs	No. (and percentage) of LGUs with fisheries ordinance	No. (and percentage) of LGUs with ordinance on IUU Fishing
I	53	52 (98%)	35 (66%)
II	27	20 (74%)	12 (44%)
III	37	32 (86%)	30 (81%)
IV-A	69	60 (87%)	40 (58%)
IV-B	71	69 (97%)	48 (68%)
V	89	83 (93%)	48 (54%)
VI	83	78 (94%)	48 (58%)
VII	109	105 (96%)	63 (58%)
VIII	121	119 (98%)	64 (53%)
IX	47	42 (89%)	34 (72%)
X	55	55 (100%)	39 (71%)
XI	30	29 (97%)	16 (53%)
XII	10	8 (80%)	3 (30%)
CARAGA	51	46 (90%)	25 (49%)
BARMM	73	20 (54%)*	12 (32%)*
NCR	5	3 (60%)	3 (60%)
Total		801 (90%)	508 (57%)

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data).

In February 2015, RA 10654 (Amended Philippine Fisheries Code) lapsed into law. RA 10654 aims to prevent, deter, and eliminate illegal, unreported, and unregulated (IUU) fishing in the Philippines. The amended fisheries law includes some of the following new features:

1. Determination of the fishing ground's carrying capacity and the number of fishing vessels allowed to operate based on reference points and harvest control rules;
2. Reportorial requirements for commercial fishing vessels;
3. Monitoring, Control and Surveillance (MCS) System wherein fishing vessels are required to comply with vessel monitoring measures;
4. Additional prohibited acts, and;
5. Harsher penalties for violations wherein penalties could reach up to several millions of pesos.

Based on the DILG 2023 Fisheries Compliance Audit Report, only about 54% of the coastal LGUs have ordinances on IUU Fishing. Based on this information, it appears that about half of the fisheries ordinances in the country have not been revised or updated since the amended Fisheries Code lapsed into law. In Southern Iloilo, for example, of the four coastal municipalities, only one has revised its municipal fisheries ordinance post RA 10654, while three others have MFOs that have not been revised or updated for more than 17-22 years. An updated fisheries ordinance would be ideal especially in the context of combatting and eliminating illegal fishing, promotion of fish catch monitoring, and better coordination with BFAR in matters related to law enforcement and filing of administrative and criminal cases as stipulated in RA 10654.

One of the strategies to deter IUU Fishing is the imposition of fines and penalties through ordinances. When a violator has been apprehended by the local PNP or Bantay Dagat and prosecuted and subsequently convicted, the violator is made to pay fines and penalties. At the LGU, these fines and penalties are established through the city/municipal ordinances. As stated in Sec. 447, a city/municipality can approve ordinances imposing a fine not exceeding Php 2,500 or an imprisonment for a period of not exceeding six months, or both in the discretion of the court, for the violation of a municipal ordinance.

In contrast, RA 10654 imposes fines and penalties that range from ten thousand to several million pesos (Table 6.2). However, these fines cannot be imposed by the LGUs. The power of a local government unit to impose penalties is granted by the RA 7160 (Local Government Code of the Philippines), and the scope and limits of this power are defined by the code itself. Thus, a local government unit cannot impose penalties that exceed the limits (i.e., Php 2,500) prescribed by RA 7160.

Instead, the administrative fines and penalties provided in RA 10654 are imposed by the Adjudication Committee, which is chaired by the Director of DA-BFAR. While there is not much information on the number of cases of IUUF in municipal waters filed in the Adjudication Committee, the prevalence of illegal fishing in municipal waters and the continued encroachment of commercial fishing vessels in municipal waters suggest that the high fines and penalties have not deterred these violations.

Table 6.2. Fines and penalties of selected prohibitions that may occur in municipal waters, as stated in RA 10654

Prohibitions	Fine* (in PhP)
Unauthorized fishing Fishing gear or fishing vessel has no license or permit	
Administrative fine	
Small-scale commercial fishing	50,000 - 100,000
Medium-scale commercial fishing	150,000 - 500,000
Large-scale commercial fishing	1,000,000 - 5,000,000
Criminal penalty	Twice the administrative fine
Unregistered municipal fisherfolk Fishing activity in municipal waters	
Administrative fine	5,000

Prohibitions	Fine* (in PhP)
Engaging in unauthorized fisheries activities	
Administrative fine	500,000 – 1,000,000
Criminal penalty	Twice the administrative fine
Fishing through explosives, noxious or poisonous substances	
Administrative fine	
Municipal fishing	30,000
Small-scale commercial fishing	300,000
Medium-scale commercial fishing	1,500,000
Criminal penalty	Twice the administrative fine
Use of electrofishing devices for illegal fishing	5,000
Possession of explosives and noxious or poisonous substances for illegal fishing	
Administrative fine	
Municipal fishing	10,000
Use of fine mesh net	
Administrative fine	
Small-scale commercial fishing	100,000
Medium-scale commercial fishing	500,000
Criminal penalty	Twice the administrative fine
Fishing in overexploited fishery management areas	
Administrative fine	
Municipal fishing	20,000
Small-scale commercial fishing	100,000
Medium-scale commercial fishing	500,000
Criminal penalty	500,000 – 5,000,000
Use of active gear in municipal waters, bays and other fishery management areas	
Administrative fine	
Municipal fishing	20,000
Small-scale commercial fishing	100,000
Medium-scale commercial fishing	500,000
Criminal penalty	Twice the administrative fine
Illegal use of superlights	
Administrative fine	20,000 per superlight
Criminal penalty	40,000 per superlight
Conversion of mangroves	
Administrative fine	10,000,000 per hectare
Criminal penalty	Same as administrative fine; May include environmental damages

Prohibitions	Fine* (in PhP)
Fishing during closed season	
Administrative fine	
Municipal fishing	20,000
Small-scale commercial fishing	100,000
Medium-scale commercial fishing	300,000
Criminal penalty	Twice the administrative fine
Fishing in MPAs, fishery reserves, refuge and sanctuaries	
Administrative fine	
Municipal fishing	20,000
Small-scale commercial fishing	100,000
Medium-scale commercial fishing	600,000
Criminal penalty	Twice the administrative fine
Fishing of rare, threatened or endangered species	
Administrative fine	500,000 – 5,000,000
Criminal penalty	Twice the administrative fine
Capturing fry and other breeders/spawners	
Administrative fine	500,000
Criminal penalty	Twice the administrative fine

* Penalties may include imprisonment, confiscation of catch and gear

The DILG Fisheries Compliance Audit Report indicates only the number of LGUs with enacted municipal/city fisheries ordinances. What is not clear from the report is how comprehensive the ordinances are relative to RA 8550 (Fisheries Code of the Philippines), RA 10654 (Amended Fisheries Code), RA 7160 (Local Government Act of 1991), RA 7586 (NIPAS Act), RA 11038 (Expanded NIPAS Act), and other relevant national laws and policies.

It is not clear what factors hinder coastal LGUs from enacting their fisheries ordinance. This, despite that fact that the DILG through Memorandum Circular No. 2023-012 (DILG, 2023) already provided templates for (a) Basic Municipal Fisheries Ordinance, and (b) Comprehensive Municipal Fisheries Ordinance as an enabling mechanism for LGUs.

The impact of non-compliance by LGUs in enacting ordinances related to fisheries management, IUU Fishing, and other fisheries-related laws and policies need to be evaluated. The status of fishery resources, number of fisheries violations, conflicts among marine resource users, socio-economic wellbeing of fishers, among others, should be assessed, particularly if commercial fishing operations are allowed inside the 10.1-15 km municipal waters from the coastline.

6.2 Allowing Commercial fishing operations in municipal waters 10.1-15 km from the coastline

The local government unit may, through its local chief executive and acting pursuant to an appropriate ordinance, authorize or permit small and medium commercial fishing vessels (CFVs) to operate within the 10.1 to 15 km area from the shoreline in municipal waters, subject to the following conditions (Sec 18, RA 8550):

a. No commercial fishing in municipal waters with a depth less than seven (7) fathoms as certified by the appropriate agency;
b. Fishing activities utilizing methods and gears that are determined to be consistent with national policies set by the Department;
c. Prior consultations, through public hearing, with the M/CFARMC have been conducted; and
d. The applicant vessel, as well as the shipowner, employer, captain, and crew have been certified by the appropriate agency as not having previously violated RA 8550, environmental laws, and related laws.

Table 6.3 shows the number of LGUs that allow entry of CFVs in municipal waters 10.1 to 15 km from the coastline (DILG, 2023). Of the 930 coastal LGUs, about 174 (or about 18%) reported that they allow commercial fishing operations within their municipal waters. The highest number of LGUs that allow CFVs to operate in their municipal waters is in Region IV-B, comprising more than 50% of the region's coastal LGUs.

Table 6.3. Number of coastal LGUs that 1) allow entry of commercial fishing vessels in municipal waters 10.1-15km from the coastline and 2) with an enacted ordinance allowing commercial fishing operations in municipal waters

Region	Total no. of coastal LGUs	Number of LGUs that allow commercial fishing operations in municipal waters	No. of LGUs with existing ordinance allowing commercial fishing operations in municipal waters
I	53	7	18
II	27	9	7
III	37	5	5
IV-A	69	9	8
IV-B	71	36	32
V	89	7	8
VI	83	28	26
VII	109	15	35
VIII	121	13	42
IX	47	12	11
X	55	19	31
XI	30	3	16
XII	10	0	0

Region	Total no. of coastal LGUs	Number of LGUs that allow commercial fishing operations in municipal waters	No. of LGUs with existing ordinance allowing commercial fishing operations in municipal waters
CARAGA	51	3	5
BARMM	73	8*	5*
NCR	5	0	0
Total	930	174	249

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data)

Table 6.3 also shows that at least 249 LGUs reported having an existing ordinance allowing commercial fishing operations in their municipal waters. It appears there is a data inconsistency between both numbers, as there are more LGUs that have ordinances allowing entry of CFVs, vis-à-vis those that have declared to allow entry of CFVs. There is therefore a need to validate this information.

In addition, there is a need to validate whether the LGUs that allow commercial fishing operations in their municipal waters have complied with the conditions set by RA10654, which are:

a. The area (10.1-15 km zone) must be deeper than 7 fathoms, as certified by NAMRIA
b. No illegal fishing gears are used
c. M/C FARMCs have been duly consulted
d. The vessel, shipowner, employer, captain, and crew have certification of non-violation of fisheries and environmental laws

Generally, we have no information on how the practice of allowing commercial fishing operations in municipal waters impacts the status of fish stocks in these areas, the number of IUUF cases, the number of apprehensions, and the ensuing socio-economic-political concerns, if ever. Such information would have been relevant to properly evaluate the practice of allowing commercial fishing operations in municipal waters and coming up with improved local governance and management measures to ensure sustainable fisheries stocks in municipal waters. In addition, commercial fishing operators submit catch data reports to BFAR but do not necessarily submit the same data to LGUs. A mechanism should be established to ensure exchange of such catch data for monitoring and management purposes.

6.3 Delineation of Municipal Waters by NAMRIA

Section 123 of RA 8550 states that the National Mapping and Resource Information Authority (NAMRIA) is authorized by the DA to designate and chart navigational lanes in fishery areas and delineate municipal waters. The delineation is also seen to resolve issues on overlapping claims of LGUs on municipal waters.

Table 6.4 shows the number of LGUs whose municipal waters have been delineated by NAMRIA. In 2023, about half of the coastal LGUs have reported compliance with the delineation requirement. Region II reported the lowest compliance (22%) while Region V (75%) and NCR (100%) reported the highest compliance.

Table 6.4. Water delineation by NAMRIA

Region	Total no. of coastal LGUs	No. of compliant LGUs	% Compliance
I	53	28	52.83
II	27	6	22.22
III	37	18	48.65
IV-A	69	22	31.88
IV-B	71	42	59.15
V	89	67	75.28
VI	83	57	68.67
VII	109	63	57.80
VIII	121	47	38.84
IX	47	18	38.30
X	55	36	65.45
XI	30	12	40.00
XII	10	3	30.00
CARAGA	51	36	70.59
BARMM	73	15*	40.54*
NCR	5	5	100.00

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data)

6.4 Creation of FARMCs

A Municipal/ City Fisheries and Aquatic Resources Management Council (M/C FARMC) shall be created in each of the municipalities and cities abutting municipal waters (Section 73, RA 8550). In addition, an LGU may create a Barangay FARMC or Lake FARMC when necessary. The main functions of the M/C FARMC are:

a. Assist in the preparation of the Municipal Fishery Development Plan and submit such plan to the Municipal Development Council;
b. Recommend the enactment of municipal fishery ordinances to the Sangguniang Bayan/ Sangguniang Panlungsod through its Committee on Fisheries;

c. Assist in the enforcement of fishery laws, rules, and regulations in municipal waters;
d. Advise the Sangguniang Bayan/Panlungsod on fishery matters through its Committee on Fisheries, if such has been organized; and
e. Perform such other functions as may be assigned by the Sangguniang Bayan/Panlungsod.

Table 6.5 shows the number of coastal LGUs that have created their own M/C FARMC. Compliance is relatively high in most of the regions, although more than 50 LGUs have yet to create their own M/C FARMC.

Table 6.5. Number of coastal LGUs that have created their respective Municipal/City Fisheries and Aquatic Resources Management Council

Region	Total no. of coastal LGUs	No. of LGUs with M/C FARMC
I	53	52
II	27	21
III	37	37
IV-A	69	66
IV-B	71	68
V	89	84
VI	83	81
VII	109	98
VIII	121	113
IX	47	45
X	55	54
XI	30	30
XII	10	9
CARAGA	51	50
BARMM	73	28*
NCR	5	4

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data)

There is a dearth of information on how FARMCs in the Philippines perform in accordance with their functions. In a study by Bondoc (2005) however, it was reported that FARMCs may not be empowered and are ineffective because they failed to encourage fisherfolk participation in its various programs and activities.

6.5 Formulation and Implementation of Coastal Resource Management Plans

White and Lopez (1991) defined coastal resource management (CRM) as *"comprises those activities that achieve sustainable use and management of economically and ecologically valuable resources in the coastal areas, which consider interaction among and within resource systems as well as those of humans and their environment"*. The Department of Environment and Natural Resources (DENR) defines coastal resource management (CRM) as "a participatory process of planning, implementing, and monitoring sustainable uses of coastal resources through collective action and sound decision-making" (DENR et al., 2001). CRM is sometimes referred to as "coastal management", "coastal zone management", "coastal area management", and "integrated coastal management".

Under the CRM framework, the planning, implementing and monitoring of the sustainable use of coastal resources are conducted through participatory and consultative processes, as well as multisectoral and interdisciplinary approaches. Thus, a Coastal Resource Management (CRM) Plan is a document that comprehensively identifies strategies for the management, conservation, and sustainable utilization of coastal and fishery resources. Its key components include the following:

a. dentification of issues (e.g., declining fish catch, habitat degradation),
b. baseline assessment (e.g., determination of current status of coastal and fisheries resources),
c. program and activities that promote the sustainable use of resources while also implementing conservation measures (e.g., establishment of marine protected areas, restoration of coral reef habitats, mangrove reforestation, etc.),
d. monitoring and evaluation, and
e. community development strategies (e.g., provision of alternative livelihood projects, empowerment of coastal communities).

RA 8550 and RA 10654 do not explicitly mandate LGUs to formulate and submit a Coastal Resource Management Plan (CRMP) or a Fisheries Management Plan. However, since the jurisdiction and management of municipal waters are primarily assigned to them (RA 7160 and RA 8550), coastal resource management is considered an inherent function of cities/municipalities.

When crafted appropriately and carefully, a CRMP is an indicator that the LGU has taken key steps in taking stock of their fishery and coastal resources, assessing their status, recognized fishery issues and concerns, and identified measures to address gaps and challenges.

Table 6.6 shows the efforts of LGUs in formulating their CRMP and mainstreaming the same in their respective Comprehensive Land Use Plan (CLUP), zoning ordinance, and Comprehensive Development Plan (CDP). Based on the DILG report (2023), compliance of LGUs with CRMP formulation is only at about 70%, with the lowest rate in the Region IV-A and BARMM. The values reported in the DILG Fisheries Compliance Audit, however, need validation as the number of mainstreamed CRMPs is higher than the actual number of reported CRMPs.

More information is needed to fully assess the performance of LGUs in planning for their coastal resources. The following need to be clarified:

1. What is the compliance rate of LGUs in allocating sections of their respective municipal waters for aquaculture use and marine protected areas? Under RA10654, LGUs shall allocate not exceeding 10% of the total area of municipal waters for aquaculture and at least 15% of municipal waters declared as fish sanctuary/ marine protected areas (MPAs). This shall be reflected in the CLUP and zoning ordinance of the LGU.

2. If the LGUs have not yet declared at least 15% of their municipal waters as fish sanctuaries/MPAs, what are the hindrances to attaining this provision?

3. How and when were the CRMPs formulated? What was the role of various stakeholders in the formulation of these plans? Has there been a monitoring and evaluation of these plans?

Table 6.6. Formulation of coastal resource management plans by LGUs

Region	Total no. of coastal LGUs	No. of LGUs with CRMP	No. of LGUs with CRMP	No. of LGUs with CRMP
I	53	48	47	47
II	27	19	17	18
III	37	29	32	31
IV-A	69	21	42	48
IV-B	71	52	50	61
V	89	68	58	60
VI	83	61	60	65
VII	109	94	78	76
VIII	121	91	90	99
IX	47	40	35	34
X	55	48	48	50
XI	30	26	26	26
XII	10	8	7	7
CARAGA	51	36	32	31
BARMM*	73	16	16	29
NCR	5	3	3	4
Total	930			

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data) CLUP = Comprehensive Land Use Plan CDP = Comprehensive Development Plan

To promote sustainable fisheries management in the country, the national government, through the DA and BFAR, launched the Malinis at Masaganang Karagatan (MMK) program in 2016. The MMK aims to recognize the outstanding initiatives and contributions to sustainable fisheries development (https://region9.bfar.da.gov.ph/malinis-at-masaganang-karagatan/).

Specifically, it aims to:

1. To identify coastal municipalities/cities that:
    a. Have exemplary initiatives and accomplishments in the effort against illegal fishing and observance of ecosystem approach to fisheries resource management measures, such as off-fishing season and ban on the collection of endangered species, among others
    b. Have established, formulated, and adopted an MPA or Fisheries Managed Area
    c. Have kept coastal waters clean of domestic solid and/or liquid wastes, garbage, or industrial effluence flowing to the sea as a result of innovative waste management or other programs;
    d. Have a successful mangrove protection and rehabilitation program
    e. Have accomplished or implemented unique or innovative operational schemes on coastal resource management
    f. Have initiated programs with LGU-funded budget for coastal/fisheries resource management

2. To document the best practices and strategies of these outstanding municipalities/cities and promote their replication or adoption among other LGUs

3. To encourage other LGUs to:
    a. Adopt best practices and promote awareness on conservation, management, and sustainable development of the municipal waters, and provide sufficient funds for these endeavors
    b. Encourage active participation in the implementation of Municipal Fisheries Ordinance, RA 8550, as amended by RA 10654, and other pertinent laws
    c. Enhance partnerships between LGUs, other line agencies, and the fishing community in the management of fisheries and coastal resources.

The MMK Program has elicited numerous interests and applications from the local government units across the country. Below is a list of MMK winners in recent years.

Table 6.6. Formulation of coastal resource management plans by LGUs

Year	Prize	LGUs
2022	National Champion 1st Runner-up 2nd Runner-up	Bayabas, Surigao del Sur Ajuy, Iloilo Gonzaga, Cagayan
2021	National Champion 1st Runner-up 2nd Runner-up	Caluya, Antique Padre Burgos, Southern Leyte Sagñay, Camarines Sur

Year	Prize	LGUs
2020	National Champion 1st Runner-up 2nd Runner-up	Prieto Diaz, Sorsogon Hinunangan, Southern Leyte Libertad, Antique
2019	National Champion 1st Runner-up 2nd Runner-up	Bacolod, Lanao del Norte Dingalan, Aurora Lobo, Batangas

The MMK Program has elicited numerous interests and applications from the local government units across the country. Below is a list of MMK winners in recent years.

Grand Winner: Php 30 million
First Runner-up: Php 18 million
Second Runner-up: Php 10 million

To use the cash prizes from MMK, winning LGUs are required to submit proposals to support various projects that enhance sustainable fisheries management for the benefit of local fisherfolk. These proposed projects may include improvement of fisheries infrastructure, provision for livelihood inputs, and community engagement and awareness, capacity building for fisherfolk, and CRM initiatives.

Another award that the national government bestows in recognition of outstanding efforts in fisheries is the Gawad Saka: Parangal sa mga Natatanging Magsasaka at Mangingisda. The award was launched in 1970 to honor outstanding individuals, groups, and organizations in the agriculture and fisheries sectors for their excellence, innovation, and sustainable practices.

Some of the categories for the awards include a) Aquaculture, b) Capture Fisheries, c) Fisherfolk Organization, d) FARMCs, e) LGU, and f) Young Fisherfolk. It is envisaged that through these awards, fishers, fisherfolk organizations, FARMCs, the youth, and the LGUs would work further to promote sustainability in the aquaculture and fisheries sectors.

6.6 Inter-LGU Cooperation in Managing Municipal Waters

Section 16 of RA 8550 states that “the management of contiguous fishery resources such as bays which straddle several municipalities, cities or provinces, shall be done in an integrated manner, and shall not be based on political subdivisions of municipal waters to facilitate their management as single resource systems”.

Thus, LGUs that share or border such resources are encouraged to group themselves and coordinate with each other to achieve the objectives of integrated fisheries resource management.

Table 6.7 shows the number of LGUs that have established collaborations with other LGUs to achieve CRM goals.

Table 6.7. Number of local government units that have collaborative efforts with other LGUs on coastal resource management

Region	Total no. of coastal LGUs	No. of LGUs with collaborative efforts (with other LGUs) on CRM
I	53	47
II	27	19
III	37	35
IV-A	69	63
IV-B	71	61
V	89	76
VI	83	72
VII	109	88
VIII	121	107
IX	47	41
X	55	49
XI	30	28
XII	10	7
CARAGA	51	44
BARMM	73	16*
NCR	5	5

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data)

Forging alliances among local governments is being advocated to allow effective management of shared marine resources and responsibilities (Horigue et al., 2012). LGU alliances can provide potential benefits by promoting cooperation, sharing of responsibilities (financial and manpower), and mitigating policy and implementation constraints among LGUs. Alliances among neighboring LGUs can also serve as a venue to resolve conflicts and address common fisheries and marine issues through coordination and networking arrangements (Espectato, 2022).

Based on data from DILG 2023, it appears that collaboration among coastal LGUs in CRM planning is high. However, the following information needs to be determined and assessed:

1. What type of collaboration exists between LGUs?
2. No information on the status of inter-LGU fisheries management strategies (i.e., if functional or not)
3. What are the factors that facilitate or hinder CRM collaboration among neighboring LGUs?

We have no clear information on the exact number of LGU alliances in the country. GTZ et al (2010) reported 26 case examples of inter-local cooperation on natural resource management. Horigue et al (2012) reported about 40 LGU alliances that were established in the context of marine protected areas (MPA) social networking. However, there is no information on the current status of these alliances and whether they are still operational (Espectato, 2022).

6.7 Fishery Law Enforcement Officers and Fish Wardens

Fisheries law enforcement is critical to prevent illegal, unreported, and unregulated (IUU) fishing in municipal waters. Strong enforcement of fisheries laws ensures the protection of fish populations and marine habitats, maintains economic stability, and promotes safety and wellbeing of fishers and other members of coastal communities. In the Philippines, the primary law enforcers are the members of the Philippine National Policy (PNP). In some areas, the PNP has a support unit called the PNP Maritime Group whose mandate is to perform all police functions in Philippine territorial waters, including lakes, rivers, harbors, and small islands. However, not every local government unit has its own dedicated PNP Maritime Command. Other agencies authorized to enforce fishery laws and relevant provisions of RA 8550 and RA 10654 include uniformed personnel such as the members of the Philippine Navy and Philippine Coast Guard. Non-uniformed fishery law enforcers include the Department of Agriculture – Bureau of Fisheries and Aquatic Resources (DA-BFAR).

Policing municipal waters is a huge task for a local government unit considering that, (a) not all LGUs have floating assets to conduct seaborne patrols, (b) not all LGUs can allot financial resources to fund seaborne patrols, (c) the area of municipal waters can be vast making constant surveillance a difficult task, and (d) the number of PNP members assigned to an LGU may not be adequate.

The legal minimum ratio is one police officer per 1,000 residents (RA 6975), although the actual number of deployed PNP members in each LGU depends on the population size, peace and order situation, and other factors. In Iloilo Province, the ratio of police to the general population (using the 2010 census numbers) is reported to be at 1:1,015 (https://ippo.pro6.pnp.gov.ph/about-ippo/). Thus, considering that the PNP also performs other functions in each city/municipality such as crime control and investigation, drug enforcement, traffic control, intelligence and counterintelligence, providing security, among others, fishery law enforcement in municipal waters through the PNP is seen to be inadequate.

To fill in the inadequacy, LGUs are expected to organize their own Bantay Dagat or Fishery Law Enforcement groups. A Bantay Dagat is a community-based volunteer organization. Competent government officials and employees, heads of barangays and officials, and members of fisherfolk associations who have undergone training on law enforcement may be designated as deputy fish wardens (Bantay Dagat) in the enforcement of fishery laws (Section 124, RA 8550). Bantay Dagat groups are organized to address severe threats of IUU Fishing in municipal

waters such as encroachment of commercial fishers in municipal waters and the use of destructive fishing methods such as fine meshed nets and poison. By involving community members, especially fisherfolks, they serve as community-based first line of defense to protect the municipal water's rich marine biodiversity and livelihoods of coastal communities. This community-approach allows for wider coverage of the vast archipelagic waters. Bantay Dagat groups also perform environmental stewardship as they are active in planting mangroves, conducting coastal clean-ups, and safeguarding marine protected areas/municipal sanctuaries.

The Bantay Dagat is seen as an extension of the reach of local government units and other government agencies in enforcing fishery and environmental laws within municipal waters. The Bantay Dagat is seen as a deterrent against IUUF through active local campaigns, information drives, and visibility in municipal waters. It should be noted that in the conduct of patrol operations, there should be effective coordination and working relationship with the local PNP. Ideally, arrests and apprehensions of violators should be performed by the PNP. Table 6.7 shows the percentage of LGUs that have deputized fishery law enforcement officers and wardens. These data show a high level of deployment of FLEOs and fish wardens, though there are areas that require attention.

Table 6.8. Percentage of LGUs that have deputized fishery law enforcement officers and wardens

Region	Total no. of coastal LGUs	No. of LGUs with collaborative efforts (with other LGUs) on CRM
I	53	81.13
II	27	77.78
III	37	89.19
IV-A	69	75.36
IV-B	71	88.73
V	89	77.53
VI	83	91.57
VII	109	91.74
VIII	121	69.42
IX	47	82.98
X	55	89.09
XI	30	93.33
XII	10	90.00
CARAGA	51	86.27
BARMM	73	32.43
NCR	5	80.00
Total	930	78.06

Source: DILG Fisheries Compliance Audit Report 2023
* Based on DILG Fisheries Compliance Audit Report 2022 (Note: Of 73 LGUs, only 37 have submitted data)

Most of the Bantay Dagat units in the country are created at the municipal level. While central to its operation stems from a spirit of volunteerism and motivation of communities to protect their natural resources, a few other variants have been implemented across the Philippines, such as the following:

a. Barangay Bantay Dagat: Several barangays across the country have established their own Bantay Dagat, although such depends on the leadership in the barangay (Gonzales et al 2021).

b. The Bantay Dagat Commission (BDC) of Cebu City which was created through an ordinance by the City Council in 1988. The BDC was organized to develop and provide livelihood programs to marginal fishers (on the premise that poverty is a key driver of various illegal fishing activities), provide effective programs for the conservation and protection of marine resources, and to strengthen cooperation and partnership between and among government agencies and people's organizations. The BDC is under the direct supervision of the Mayor of Cebu City, who sits as Chair over the 10-member commission composed of representatives from various agencies, the local legislature, NGOs, BFARs, and fisherfolk. Unlike other Bantay Dagat programs in other municipalities where fisherfolks themselves are personally involved in law enforcement activities, the role of fishers as members of the Cebu BDC is limited to gathering information needed for the improvement of their livelihood. Fishers serve as navigators or provide logistical support to the local police during actual seaborne patrols (Maderazo 2016).

c. Bantay Dagat and Local Policy Making through MFARMC as practiced in Calatagan, Batangas. The active presence and participation of one people's organization, the SAMACA or Samahan ng Maliliit na Mangingisda sa Calatagan, laid the foundation for the institutionalization of the Bantay Dagat in Calatagan. With the support of international NGOs, the Bantay Dagat program in Calatagan was institutionalized through an ordinance that provides annual funds for Bantay Dagat operations. The Calatagan Bantay Dagat has additional unique features such as recruiting members from among the commercial fishers, a law enforcement component in MPA management, coordination with the local fisheries council, the MFARMC, MFARMC, close coordination with the MFARMCS in pursuing advocacy for local policies, conduct of regular quarterly meetings, and monitoring of progress of cases involving violation of fishery laws filed with the local court (Maderazo 2016).

c. Bantay Dagat as an Independent Community Organization as practiced in Tingloy, Batangas. The Bantay Dagat in Tingloy is a registered association that has the advantage of dealing directly with their benefactors (e.g., NGOs, private sector, etc) who provide financial, operational, and logical support for their operations. In addition, a municipal ordinance mandates the Bantay Dagat to collect diver and tourist fees which are used in Bantay Dagat operations (Maderazo 2016).

c. Provincial Level Bantay Dagat: In some provinces, such as Iloilo, Capiz, and Batangas, there exists a provincial Bantay Dagat. In these cases, the provincial government usually issues an executive order that creates a province-wide inter-agency task force of coastal and marine law enforcement. The provincial government also supports skills training related to marine law enforcement and provides socio-economic benefits to Bantay Dagat members (Maderazo 2016).

While LGUs have reported the establishment of fish wardens, there is little information on the status, organization, available resources, and effectiveness of these law enforcement bodies and fish wardens in implementing fishery laws and ordinances at the municipal waters.

Available literature reported various challenges encountered by the Bantay Dagat groups in the country, such as:

a. Limited funds: Bantay Dagat members do not perform monitoring on a daily basis but only when the need arises due to the limited funds they receive (Cayabo et al 2020). The limited funds also hinder members from attending relevant training and capacity building and professional development related activities (Jabar et al 2022).
b. Limited resources, equipment, protective paraphernalia: A common problem among Bantay Dagat is when their patrol boat has been damaged, the patrolling activity also stops due to the lack of funds to repair the
c. boat (Cayabo et al, 2020; Esmas et al, 2021; Jabar et al, 2022)
c. Limited manpower/ Insufficient honoraria (Cayabo et al, 2020; Esmas et al, 2021)
d. Lack of reporting and documentation skills/ enforcement database (Cayabo et al, 2020; Esmas et al, 2021)
e. Weak implementation of laws (Cayabo et al, 2020, Esmas et al, 2021; Jabar et al, 2022)
f. Sustainability (Jabar et al, 2022). NGOs and the private sector can sometimes fill the gaps, but support may also end after some time.
g. Safety risks during conduct of patrol operations and effective coordination and dynamic working relationship between Bantay Dagat and local PNP (Maderazo 2016).
h. Availability of legal counsel to defend Bantay Dagat against harassment suits (Maderazo 2016).

For many local government units, providing the Bantay Dagat with the necessary technical, logistical, and legal support remains a challenge because of limited resources. In 2016, the average cost of Bantay Dagat operations was estimated at Php 400,000 per year to cover expenses for patrolling, trainings, and meetings (Maderazo 2016). However, it was estimated that an efficient Bantay Dagat operation should be allotted Php 1.2 million annually. In addition, LGUs need to invest in seaborne patrol-related equipment such as GPS, megaphones, life vests, cameras, and cellphones which can require an additional cost of about Php 446,000 per year (Maderazo 2016).

Still, illegal fishing, particularly encroachment of commercial fishing vessels in municipal waters, is a huge concern among local government units (BFAR, 2021). Several case studies have reported continued operations of small-scale and medium-scale commercial fishing boats in municipal waters (Ferrer et al, 2017a, Ferrer et al 2017b, Magallanes, 2022).

The use of nighttime satellite images also suggests widespread intrusions of commercial fishing boats in municipal waters. These satellite images can be generated using sensors such as the Visible Infrared Imaging Radiometer Suite (VIIRS). While VIIRS detection does not automatically equate to the presence of illegal fishing activity, it has been used as an indicator of the presence of commercial fishing vessels in the oceans, including municipal waters. Geronimo et al (2018) reported that lights from commercial fishing vessels occurred as near as 6 km from the coastline. The same use of nighttime satellite images also showed that commercial fishing vessels would be present in a fishing ground even during closed fishing seasons (Elvidge et al 2019). VIIRS has been used as a fisheries law enforcement tool in the Philippines. For example, Karagatan Patrol, an online platform established by Oceana (https://www.karagatanpatrol.org), has been monitoring the presence of commercial fishing vessels within the municipal waters using the VIIRS technology. By collaborating with the League of Municipalities of the Philippines and BFAR, the alerts and maps generated from VIIRS data have been used to help plan and direct patrols to areas with suspected illegal activity. See Section 4 of this report for more detailed information on VIIRS data in the Philippines.

Some case studies suggest that encroachment of commercial fishing vessels in municipal waters has been continuing. Figure 6.1 shows the fishing grounds of municipal and small-scale commercial trawlers in northern Iloilo. Based on these figures, it appears that the use of active fishing gears and small-scale commercial fishing vessels in municipal waters has been a practice. In recent years, however, the use of trawls in the Visayan Sea has been prohibited, though there are still cases of trawl fishing in the area.

6.8 Synthesis

Assessing the performance of cities and municipalities in terms of fisheries management is not easy due to the sheer number of coastal cities and municipalities in the country (930 among a total of 1,642) and the general lack of data on how these LGUs manage their coastal resources and municipal fisheries. However, various literature including the Comprehensive National Fisheries Industry Development Plan (2021-2025) (BFAR 2021) have identified persistent issues and concerns in fisheries. Also, the CNFIDP has listed the role of LGUs in addressing major issues and concerns. Table 6.9 lists these major issues and concerns and summarizes how LGUs have addressed the same using the indicators discussed in this section.

Table 6.9. Major fisheries issues and concerns that are expected to be addressed by local government units and corresponding status based on available information

Major issues and concerns	Status
Strengthening of Anti-IUUF measures	
Improve compliance to boat/vessel and gear licensing and fisherfolk registration	Incomplete, outdated fisherfolk and vessel registry data (See Section 4)
Strict implementation of relevant laws	Outdated fisheries ordinances; slow resolution of cases in both LGU and BFAR (Adjudication Committee) levels; Inconsistent enforcement, many violators not penalized adequately (Also see Section 4)
Continuous monitoring, control, and surveillance	Persistent illegal fishing in municipal waters; Various challenges faced by Bantay Dagat groups including low support for budget, equipment, manpower
Creation of Bantay Dagat with appropriate budget	
Adoption of EAFM in all FMAs	
Development and implementation of CRM or Fisheries Management Plans by coastal LGUs	Not all LGUs have CRM or Fisheries Management Plans which could be a relevant tool in managing coastal resources and municipal fisheries
Establishment of LGU alliances in managing shared aquatic resources	Not all neighboring LGUs have formed into an alliance towards fisheries management; Inter-LGU alliances encounter sustainability issues because of the political system
Strengthened governance structures through continuous capacity building activities	Lack of personnel at the LGU level that can provide technical services to fisherfolk
Enhanced IEC of fisheries management plans, policies, law enforcement, results of research studies	
Inclusion of all sectors in planning and formulation of fisheries related policies	Many FARMCs are inactive or are not functioning effectively

Major issues and concerns	Status
Identify, plan and implement appropriate and socially acceptable fisheries management tools in the FMA, in accordance with EAFM and supported by scientific information	
Establish MPAs to protect spawners, fish larvae, endangered species, and/or habitats	Substantial contributions to biodiversity conservation and local fisheries management; Gains often localized and fragile, threatened and constrained by poor enforcement, limited financial and technical resources, fragmented planning, and governance challenges (Also see Section 3)
Conduct of habitat restoration projects	Mangrove replanting often conducted by fisherfolk organizations and development organizations; Mixed results on the success of initiatives
Establish closed season for fisheries	Closed fishing seasons are not enough to allow recovery of local fisheries stocks (See Section 3)
Aquaculture-related	
Farm consolidation and clustering	Lack of personnel at the LGU level who can provide technical services to fisherfolks
Regulation of mariculture operators	
Water quality monitoring to address pollution	
Fisheries postharvest-related	
Implement relevant food safety programs	Lack of personnel at the LGU level who can provide technical services to fisherfolks
Improved wellbeing of fisherfolks	
Strengthen/ facilitate/ capacitate organizations of registered fisherfolk multi-purpose cooperatives and associations to enhance access to financial services and livelihood opportunities and other purposes	Fisherfolk sector remains the poorest among the basic sectors in the country; Persistent poverty and economic disadvantage in coastal communities reflecting inequality and the urgent need for sustainable, inclusive, and climate-resilient development strategies for coastal communities (Also see Section 7)
Facilitate options for alternative livelihood opportunities in areas affected by closed seasons and most heavily fished areas	

7 SOCIO-ECONOMIC IMPACTS

7.1 Socio-Demographic Profile

7.1.1 Number of Fishers

Knowing the number of fisherfolks, who they are, and where they live is critical in developing programs to help them and the fisheries. An updated estimate of fisherfolk is critical for successful fisheries management, resource allocation, and maintaining fishing communities' livelihoods, particularly in places where fisheries are a major industry.

Currently, there are two sources of data on the number of fishers at the national level. These are FishR (See Section 4) and 2022 Census of Agriculture and Fisheries Capture Fishing Operation. The PSA released the official results of the 2022 Census on 2 January 2025. The census was implemented a decade after the last one in 2002. Many sources cite the 2002 number of individuals engaged in capture fishing, despite the fact that the data is outdated, making the information based on it unreliable.

The 2022 Census included only covered fishing operations[23] and fishing operators. The number of households with capture fishing operators increased by 9.3 % during a decade, from 2012 (760, 297) to 2022 (830,954). Similarly, the number of fishing operators increased by 7.5% from 2012 (795,070) to 2022 (853,065).

Table 7.1 Number and Average Number of Fishing Households and Operators: Philippines, 2012 and 2022

Major issues and concerns	2022	2012	% change
Number of Households with Fishing Operators	830,954	769, 297	9.3
Number of Fishing Operators	853,065	795,070	7.3
Average number of fishing operators per households with fishing operators	1.03	1.05	-1.8

Source: Philippine Statistics Authority, 2025; 2022 Census of Agriculture and Fisheries; https://psa.gov.ph/statistics/caf

[23] Found in the accompanying technical note of the said Census, fishing refers to the catching and gathering of fish, crustaceans, mollusks, and other marine organisms and products, including other aquatic plants. It is the catching, collecting, and gathering activities directed at removing or collecting live wild aquatic organisms predominantly fish, mollusk, (such as clams, snails, octopus, and squid), and crustaceans (such as crabs, lobsters, shrimps, and crawfish), including plants from the sea or inland waters for human consumption and other purposes by hand or varuous types of gear such as nets, lines and stationery traps. Moreover, fishing operator defined as one who is solely responsible for making the technical and economic decisions and implementation of the plans, involving when and where to go out, what fishing gears/ accessories/devises to use, management, and other consequences that may results in the fishing operation. More notes can be found in this link: https://psa.gov.ph/statistics/caf

According to the 2022 Census. Region V has the most capture fishing operators (97,272), followed by Region VII (96,489) and Region VI (81,022) (Table 7.2). When compared to the number of capture fishing operators available in FishR for 2022, the discrepancy is clear. Given the differences in methodology between the two data sets (Census that used stratified sampling and voluntary registration), the results are expected to be different, but the difference is not substantial. The segment of the population being identified and quantified is identical. In 2022, the FishR recorded 1,173, 381 individuals in capture fishing, whereas the Census had 853, 065 capture fishing operators, representing a 320,318 discrepancy across the country. The discrepancy varies by region, with Region IV (53, 393) having the greatest difference, followed by Region III (46,675) and BARMM (43,588).

Table 7.2. Number of Fishing Households and Operators by Region: Philippines, 2022

Region	Census of Agriculture and Fisheries Capture Fishing Operation[1]		Fisheries Registration (Capture Fishing)[2] (b)	Difference c = (a) – (b)
	Households with Fishing Operators	Fishing Operators (a)		
PHILIPPINES	830,954	853,065	1,173, 381	(320,316.00)
National Capital Region (NCR)	1,161	1,185	9,591	(8,406)
Cordillera Administrative Region (CAR)	10,079	10,345	11,365	(1,020)
Region I (Ilocos Region)	40,346	41,339	58,250	(16,911)
Region II (Cagayan Valley)	27,666	28,238	57,669	(29,431)
Region III (Central Luzon)	26,979	27,576	74,251	(46,675)
Region IV-A (CALABARZON)	43,401	44,145	97,538	(53,393)
MIMAROPA Region	76,351	77,569	103,533	(25,964)
Region V (Bicol Region)	93,706	97,272	132,052	(34,780)
Region VI (Western Visayas)	78,288	81,022	106,199	(25,177)
Region VII (Central Visayas)	93,630	96,489	90,674	5,815
Region VIII Eastern Visayas)	77,458	80,304	109,458	(29,154)
Region IX (Zamboanga Peninsula)	55,372	56,045	48,956	7,089
Region X (Northern Mindanao)	29,948	30,477	42,368	(11,891)
Region XI (Davao Region)	36,459	37,409	37,936	(527)
Region XII (SOCCSKSARGEN) excluding Cotabato City	20,660	21,438	39,388	(17,950)
Region XIII (Caraga)	55,414	56,695	45,049	11,646
BARMM	64,037	65,516	109,104	(43,588)

[1] Philippine Statistics Authority, 2025; data is from the 2022 Census of Agriculture and Fisheries; https://psa.gov.ph/statistics/caf
[2] BFAR 2021. The 2021 Fisheries Profile. Data is from BFAR-FishR retrieved July 5, 2023.

The discrepancy between the FishR record and the Census causes confusion, doubt, and difficulties in identifying which data is accurate and reliable, as well as forming a clear, dependable idea of how many fishers there are in the country. It could be a reflection of the biases and errors in the data management, necessitating a rigorous examination of the data collection process, particularly for FishR,

Age of fishers

Knowing the age of fishermen is crucial for understanding the structure of fishing communities, determining workforce potential, and developing fisheries management strategies. Fishers' experience-based knowledge, which is often passed down through generations, is heavily influenced by age and interaction with older, more experienced fishers.

According to the 2012 and 2022 Census, fishing operators under the age of 50 dominate the industry. This finding is supported by the age of the fisherfolk in the FishR record in 2022 (Table 7.3). The mean age of fishers in small studies suggests that they were in their early to late 40s. However, the number of fishers aged less than 50 years old decreased by 3.6% between 2012 and 2022, while the number of those aged at least 50 years old increased by 36.4%. This means that we have more older fishers now than a decade ago. This could result in fewer young people entering fishing. The reason could be due to the perceived low income and limited opportunities for advancement, the physical demands and risk of fishing, or they seek alternative, more stable work.

Table 7.3. Age of Fishers

	Coverage	Reference
Age group of Fishing Operators	Nationwide Data is from the 2022 Census of Agriculture and Fisheries;	Philippine Statistics Authority, 2025 https://psa.gov.ph/statistics/caf
Year 2012 (No.; %)		
<50 years old: 578,249; 72.73%		
≥50 years old: 216,821; 27.27%		
Year 2022 (No.; %)		
<50 years old: 557, 368; 65.34%		
≥50 years old: 295,697; 34.66%		
Age group of Fishing Operators	Nationwide Data is from the Fisheries Registration 2022	BFAR 2022 The 2022 Philippines Fisheries Profile
≤50 years old: 55.09%		
>50 years old: 45.21%		
Average age of fisherfolk by livelihood		
Capture fishing:50		
Aquaculture:52		
Fish vending: 50		
Gleaning: 51		
Fish Processing:49		
Others : 51		

	Coverage	Reference
Age of Fisherfolk Year 2022 (N=2.3 million)	Nationwide Data is from the Fisheries Registration 2021 (retrieved on 21 December 2021)	BFAR 2022 The 2021 Philippines Fisheries Profile
≤50 years old: 55.97%		
>50 years old: 44.04%		
Age of Fishers (n=66) Year 2022 (N=2.3 million)	Balingasag, Misamis Oriental	Ferrer et al, 2022
Balingasag, Misamis Oriental: 47.14		
Average Age of Fishers (Year 2012)	Aklan Data came from Study 4 (Social Analysis) of Coastal Area Capability Enhancement in Southeast Asia. A collaborative project of UP Visayas, SEAFDEC and Research Institute for Humanity and Nature-Japan. 1 April 2012 to 31 March 2017.	Ferrer et al, 2012
Altavas (n=104) : 50.08		
Batan (n=123): 46.61		
New Washington (n=240) :43.97		
All (N=467): 46.03		
Average Age of Fishers (Year 2016)	Iloilo Data came from the study titled, Assessing The Impacts Of Marine Protected Areas On The Welfare Of Small Scale Fishers In Southern Iloilo, Philippines in 2017 funded	Ferrer et al, 2016
Miagao (n=240): 45.37		
San Joaquin (n=240) : 44.62		
Average Age of Fishers	Negros Occidental Data came from a study that evaluated the marine protected areas in the municipalities identified, with funding from GTZ	Ferrer et al 2009; Ferrer et al 2012
Year 2009 --- Sipalay City (n-72): 44.26		
Year 2009 --- Cauayan (n-80): 44.51		
Year 2009 --- Sagay City (n=72): 43.81		

7.2. Poverty Among Fisherfolks

The Family Income and Expenditure Survey (FIES), which is conducted every three years, is used to estimate poverty incidence. The most recent survey was in 2023.[24] The FIES dataset is being combined with the Labor Force Survey (LFS) to identify family members in the basic sector. The the National Statistical Coordination Board initiated the application to the basic sectors in 2003, and it was continued by the Philippine Statistics Authority, which was established in 2013, and currently includes the NSCB.

The poor in the Philippines are those *individuals and families whose income fall below the poverty threshold and/or cannot afford in a sustained manner to provide their minimum baseeds of food, health, education, housing, and other essential amenities of life* (RA 8425 or the "Social Reform and Poverty Alleviation Act"). Further, the law defines the basic sectors as the *disadvantaged or marginalized* sectors of the Philippine society. In the estimation of poverty incidence of the basic sectors, the fisherfolk are those employed individuals 15 years old and over whose primary occupation is fishing. They include the subsistence fishers, fishery workers, and fishery and aquaculture laborers.

The fisherfolk have been regarded as one of the poorest among the basic sectors. Two measures of poverty --- poverty incidence and subsistence incidence --- are presented below based on PSA data, with the 2023 poverty estimates being the most recent and released publicly in March. Table 7.4 shows poverty incidence of the fisherfolks during two decades, from 2003 to 2023, together with other basic sectors.

7.2.1 Poverty Incidence

Poverty incidence among fisherfolk refers to the proportion of fisherfolk (belonging to poor families) with per capita income less than the per capita poverty threshold to the total number of fisherfolk. Fisherfolk refer to employed individuals 15 years old and over whose primary occupation is fishing. These include occupations under Skilled Agricultural, Forestry and Fishery Works and Elementary Occupations in the 2012 Philippine Standard Occupational Classification (PSOC).

The poverty incidence of the fisherfolk has consistently been higher than the national average, ranking among the highest. The poverty incidence of fisherfolk increased from 2003 to 2009, then decreased in 2015 and 2018, before rising again in in 2021 and falling again in 2023.

In terms of poverty incidence, the fisherfolk ranked first for years 2003 to 2015 and 2021 and was second to farmers in 2018 and to the Indigenous People[25] in 2023.

[24] See full information on the technical notes and data set for the Poverty Statistics among Basic Sectors at https://psa.gov.ph/statistics/poverty
[25] In the 2023 Poverty Estimates, the category Indigenous People was introduced.

Table 7.4 Poverty Incidence among Basic Sectors: 2003, 2006, 2009, 2018, 2021, 2023 (%)

Sector	2003	2006	2009	2015	2018	2021	2023
Philippines	30.00	32.90	26.50	21.60	16.70	18.10	15.5
Indigenous people							32.4
Fisherfolk	**35.00**	**41.40**	**41.40**	**36.90**	**26.20**	**30.60**	**27.4**
Farmers	35.00	37.20	36.70	40.80	31.60	30.00	27.0
Children	32.70	34.80	35.10	33.50	23.90	26.40	23.4
Rural Residents				34.00	24.50	25.70	
Self-employed and Unpaid Family Workers	28.00	29.40	29.00	26.20	18.00	18.70	16.1
Women	24.00	25.10	25.10	23.90	16.60	18.40	15.6
Persons Aged 15 Years and Above with Disability					14.70	17.20	14.1
Youth	19.00	20.80	21.80	20.50		16.60	14.1
Urban Residents	11.10	12.50	12.80	13.20	9.30	11.60	10.3
Senior Citizens	15.10	16.20	15.80	14.40	9.10	10.30	7.8
Migrant and Formal Workers				14.40	8.80	10.20	8.3

Sources: Philippine Statistics Authority, 2023 and National Statistical Coordination Board, 2012
Fisherfolks refer to employed individuals 15 years old and over whose primary occupation is fishing. These include occupations under Skilled Agricultural, Forestry and Fishery Works and Elementary Occupations in the 2012 Philippine Standard Occupational Classification (PSOC).
Poverty incidence among fisherfolks refers to the proportion of fisherfolks (belonging to poor families) with per capita income less than the per capita poverty threshold to the total number of fisherfolks.
The Indigenous People was first introduced as a basic sector in the 2023 Poverty Incidence estimates

From 2018 to 2023, the poverty incidence among fisherfolk varies by region (Table 7.5). Out of the 18 regions, six showed a constant increase in poverty incidence in 2018, 2021, and 2023; two had a fall in 2021 but grew again in 2023; and 10 had an increase in 2018 and 2021 but a decrease in 2023.

Poverty among fisherfolk was highest in BARMM (54.5%) in 2018 (pre-pandemic), followed by Region VII (44.4%) in 2021 and Region V (36%) in 2023. In 2023 (post-pandemic), the next two highest poverty incidence rates are among fisherfolks in Region IX (35.9%) and Region V (36.0%). They fell behind farmers in 2021, during the pandemic's second year. Fishing was not prohibited, and fishers, like farmers, were identified as frontline food producers.

Although the poverty incidence declined between 2021 and 2023, the number of poor fisherfolk increased. From 287,070 in 2018, the number rose to 342,760 in 2021, and then 353,190 in 2023. The BARRM region consistently recorded the highest number of poor fisherfolk with 82,670 in 2018, 64,130 in 2021, and then 62,930 in 2023. In 2023, Region IV-B (53,930) and Region V (41,480) posted had the highest number of poor fisherfolk after BARMM.

Table 7.5 Poverty Incidence and Magnitude of Poor Fisherfolks, by Region: 2018, 2021, and 2023

Region	Estimate (%)			Estimate ('000)		
	2018	2021	2023	2018	2021	2023
PHILIPPINES	26.2	30.2	27.4	287.07	342.76	353.19
National Capital Region (NCR)	1.7	4.2	7.2	0.18	0.45	0.67
Cordillera Administrative Region (CAR)	14.2	19.5	0.0	0.21	0.26	0.00
Region I (Ilocos Region)	9.7	21.2	26.2	3.67	7.62	15.02
Region II (Cagayan Valley)	15.0	6.4	16.7	1.32	0.50	2.47
Region III (Central Luzon)	15.3	23.0	15.0	11.50	11.25	9.04
Region IV-A (CALABARZON)	16.4	19.7	13.3	12.08	20.98	8.53
MIMAROPA Region	14.7	22.2	32.2	13.77	22.24	53.93
Region V (Bicol Region)	28.9	28.0	36.0	30.52	31.77	41.48
Region VI (Western Visayas)	14.4	22.1	17.3	11.55	17.59	12.43
Negros Island Region (NIR)	20.3	24.3	26.3	12.03	11.34	20.18
Region VII (Central Visayas)	18.3	44.4	32.9	13.21	33.26	27.60
Region VIII Eastern Visayas)	30.5	31.5	28.3	27.08	28.21	26.31
Region IX (Zamboanga Peninsula)	35.7	43.0	35.9	28.26	32.00	32.70
Region X (Northern Mindanao)	20.5	26.1	32.3	6.04	9.19	10.50
Region XI (Davao Region)	21.8	21.9	26.6	7.02	8.42	10.86
Region XII (SOCCSKSARGEN) excluding Cotabato City	25.5	37.8	23.6	13.52	28.08	11.15
Region XIII (Caraga)	28.6	39.2	15.1	12.44	15.46	7.38
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) including Cotabato City	54.5	40.4	29.4	82.67	64.13	62.93

Source: Philippine Statistics Authority 2025; https://psa.gov.ph/statistics/poverty
Fisherfolks refer to employed individuals 15 years old and over whose primary occupation is fishing. These include occupations under Skilled Agricultural, Forestry and Fishery Works and Elementary Occupations in the 2012 Philippine Standard Occupational Classification (PSOC).
Poverty incidence among fisherfolks refers to the proportion of fisherfolks (belonging to poor families) with per capita income less than the per capita poverty threshold to the total number of fisherfolks. In 2023, the per capita poverty threshold
Magnitude of poor fisherfolks refers to the number of fisherfolks (belonging to poor families) with per capita income less than the per capita poverty threshold

7.2.2 Subsistence Incidence

Despite the fact that fishers are food producers, the subsistence incidence remains high among them (Table 7.6). Subsistence incidence among fisherfolks is the proportion of fisherfolks (belonging to food-poor families) with per capita income less than the per capita food threshold to the total number of fisherfolks. Although the subsistence incidence has been declining since 2018, the number of food poor fisherfolk in 2021 and 2023 increased from 2018. The pandemic's impact was obvious in the increased subsidence incidence and magnitude of food-poor fisherfolk in 2021, compared to 2018 (pre-pandemic) and in 2023 (post-pandemic).

Table 7.6. Subsistence Incidence and Magnitude of Food Poor Fisherfolk, by Region: 2018, 2021, and 2023

Region	Estimate (%)			Estimate ('000)		
	2018	2021	2023	2018	2021	2023
PHILIPPINES	8.3	10.5	7.2	90.55	119.66	93.03
National Capital Region (NCR)	0.0	1.2	0.0	0.00	0.13	0.00
Cordillera Administrative Region (CAR)	2.5	7.0	0.0	0.04	0.09	0.00
Region I (Ilocos Region)	0.3	2.6	7.0	0.10	0.92	4.02
Region II (Cagayan Valley)	5.9	0.0	6.0	0.52	0.00	0.89
Region III (Central Luzon)	3.5	6.2	2.5	2.65	3.02	1.53
Region IV-A (CALABARZON)	3.2	3.7	2.2	2.33	3.98	1.39
MIMAROPA Region	2.0	6.7	8.8	1.92	6.71	14.83
Region V (Bicol Region)	6.2	9.2	9.7	6.58	10.41	11.17
Region VI (Western Visayas)	3.4	3.6	3.2	2.72	2.85	2.28
Negros Island Region (NIR)	8.5	4.9	4.6	5.03	2.29	3.55
Region VII (Central Visayas)	3.7	29.8	10.4	2.67	22.31	8.73
Region VIII Eastern Visayas)	6.0	9.9	7.2	5.29	8.86	6.71
Region IX (Zamboanga Peninsula)	12.9	18.7	8.9	10.20	13.96	8.12
Region X (Northern Mindanao)	4.9	8.1	8.1	1.46	2.87	2.63
Region XI (Davao Region)	6.5	4.8	4.2	2.09	1.86	1.71
Region XII (SOCCSKSARGEN) excluding Cotabato City	8.4	16.4	7.5	4.48	12.17	3.55
Region XIII (Caraga)	11.6	14.6	4.4	5.06	5.77	2.15
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) including Cotabato City	24.6	13.5	9.2	37.42	21.46	19.78

Source: Philippine Statistics Authority 2025; https://psa.gov.ph/statistics/poverty
Fisherfolks refer to employed individuals 15 years old and over whose primary occupation is fishing. These include occupations under Skilled Agricultural, Forestry and Fishery Works and Elementary Occupations in the 2012 Philippine Standard Occupational Classification (PSOC).
Poverty incidence among fisherfolks refers to the proportion of fisherfolks (belonging to poor families) with per capita income less than the per capita poverty threshold to the total number of fisherfolks. In 2023, the per capita poverty threshold
Magnitude of poor fisherfolks refers to the number of fisherfolks (belonging to poor families) with per capita income less than the per capita poverty threshold

By region, subsistence incidence was highest in BARMM in 2018 (24.6%), in Region VII in 2021 and 2023 (29.8 & 10.4, respectively). In terms of magnitude, however, it is in BARMM where most of the food poor fisherfolk are found in 2018 (37,420) and in 2023 (19,780). It was close second to Region VII (22,310) in 2021.

7.2.3 Quality of Income Data

There is no systematic or regular national collection of fishers' socio-economic data. There is no collection of income data from municipal and commercial fishers. Data on their socio-economic status are sourced from national surveys such the Philippine Statistics Authority's Family Income and Expenditure Survey (FIES).

Table 7.7 shows the average monthly family income of fisherfolks and the monthly poverty and food threshold per family by region. The data appeared on two different documents but the same raw data was used, which is the FIES[26] data of PSA.

The processed data on the 2021 Average Monthly Family Income of Fisherfolks appeared on the BFAR's Philippine Fisheries Profile of 2022. The 2021 Monthly Poverty and Food Threshold per Family were from the *Facts in Figures* publication of the Congressional Policy and Budget Research Department of the House of Representatives in August 2022.

Table 7.7 Average Monthly Income of Fisherfolks and Monthly Poverty and Food Threshold per Family

Region	2021 Average Monthly Family Income of Fisherfolks (in PhP)[1]	2021 Monthly Poverty Threshold Income per Family (in Php)[2]	2021 Monthly Food Threshold per Family (in Php)[2]
PHILIPPINES	15, 617.50	12,030	8,379
National Capital Region (NCR)	25,752.50	13,741	9,595
Cordillera Administrative Region (CAR)	25,192.50	11,793	8,248
Region I (Ilocos Region)	19,416.67	12,964	9,114
Region II (Cagayan Valley)	16,365.83	11,788	8,240
Region III (Central Luzon)	19,492.50	13,160	9,392
Region IV-A (CALABARZON)	16,574.17	12,941	8,886
Region IV-B (MIMAROPA)	15,018.33	10,967	7,710
Region V (Bicol Region)	15,913.33	11,531	8,069
Region VI (Western Visayas)	14,873.33	11,285	7,897
Region VII (Central Visayas)	16,780.00	13,008	9,122
Region VIII Eastern Visayas)	15,849.17	11,187	7,819
Region IX (Zamboanga Peninsula)	13,403.33	11,975	8,637
Region X (Northern Mindanao)	16,035.00	12,015	8,385
Region XI (Davao Region)	14,857.50	11,709	8,185
Region XII (SOCCSKSARGEN)	15,038.33	11,018	7,695
Region XIII (Caraga)	15,378.33	11,390	7,950
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	12,894.17	11,789	8,274

[1] "Average Monthly Family Income whose Head is Engaged as Skilled Fishery and Aquaculture Workers or Fishery and Aquaculture Laborers by Region, 2021" which appears in 2022 Philippines Fisheries Profile. The documents is available here: https://www.bfar.da.gov.ph/wp-content/uploads/2024/02/2022-Philippine-Fisheries-Profile.pdf; data is from PSA, which was retrieved on July 21, 2023

[2] https://econgress.gov.ph/wp-content/uploads/publications/FF2022-51%20Regional%20Poverty%20Statistics%20Update.pdf; the data is from PSA 2021 Official Full Year Poverty Statistics

[26] Technical notes of PSA FIES is available here: https://psa.gov.ph/statistics/income-expenditure/fies/technical-notes

It is shown that seven regions have lower 2021 Average Monthly Family Income than the national average. However, no region has a lower average monthly family income of fisherfolk than the 2021 Monthly Poverty Threshold Income per Family or the 2021 Monthly Food Threshold per Family. This seems to imply that no fisherfolk are poor. However, as previously shown, the fisherfolk are among the poorest sectors of the population.

Clarity emerges from knowing FIES data on on average monthly family income for fisherfolks. It is the average monthly income data of families with a head who is engaged as skilled fishery and aquaculture workers or fishery and aquaculture laborers. The data does not distinguish municipal and commercial fisherfolk. The raw data in the FIES ranges from a few hundreds to millions, resulting in high mean value. Processing or using data to reflect income of the fisherfolk might cause misunderstanding if the data is not adequately understood and communicated.

Small studies show low income for fisherfolk in the country. They include the following:

National

In 2016, Anticamara and Go (2016) reported an average daily net income for fishers of less than USD 10, a figure that translates to roughly PHP 9,403 on a monthly basis after accounting for limited fishing days each year.

Luzon

- In Albay Gulf, a 2019 survey revealed average monthly incomes from fishing and other sources reached PHP 15,146, below regional and national averages. Fishing contributed to the majority of household incomes within that area (Labayo & Preña, 2021).

- Likewise in 2016 a certain Panukulan Polillo Island study found 84% of fishers reported monthly incomes at or below PHP 5000; only a minority were earning substantially more through ownership of diversified assets like motorized boats and farms (Lagbas 2016).

- Along the West Philippine Sea, small-scale fishers made USD 7.6 daily on average, or PHP 5,808 each month, approximately, in 2013 (Muallil et al. 2013).

- Recent findings from 2024 in Masbate show incomes mostly capped at PHP 5,000 per month, far below the national poverty threshold, with households relying heavily on informal and irregular income-augmenting strategies such as combining fishing and farming (Clores, 2024).

Visayas

- Artisanal fishers in Northern Samar's riverine systems averaged only PHP 3,488 in monthly income in 2014, which highlights subsistence-level living conditions exacerbated by environmental degradation, overfishing, and pollution (Vista & Salvador, 2014).

- The 2017 data for the fishers in Miagao (P2,591.39, n=240) and San Joaquin (P2,625.85; n=240) in Iloilo Province (Ferrer et al, 2016); in Balingasag (P5697.75, n=66) in Misamis Oriental (Ferrer et al, 2022). On the other hand, monthly income of owners of trawls in northern Iloilo was P25,742 in 2917 (Ferrer et al, 2017).

- In Siaton, Negros Oriental in 2024, small-scale fishers, mainly middle-aged males with elementary education, reported monthly incomes between PHP 4,000 to PHP 7,000, significantly lower than the national average household income (Atillo, 2024).

Mindanao

- A study within Northern Surigao del Sur back in 2015 involved around 391 rural fishers. This study indicated that it was men (94%) and women (6%) who participated in fishing activities, mostly using gill nets (54.55%), and with monthly fishing incomes that are typically below PHP 5,000. Researchers identified elevated costs for gears, typhoons, as well as competition from commercial fishers as key livelihood challenges (Mercado & Mercado, 2016).

- Studies conducted in 2021 and 2022 in Davao Gulf found fishers' self-reported monthly incomes ranging from PHP 5,000 to PHP 15,000, with many facing economic vulnerability due to declining fisheries and readiness to exit the fishery sector (Macusi et al., 2021b; Macusi et al., 2022).

7.3 Livelihood Support[27]

Section 24 of the Fisheries Code provides that part of the Bureau's mandate is to provide support to municipal fisherfolk through appropriate technology and research, credit, production and marketing assistance such as provision of fishing boats utilizing reinforced fiberglass materials as alternative to wood.

To help in poverty alleviation, BFAR has several livelihood programs (Table 7.8) for the fisherfolks and those living in the coastal communities. The target beneficiaries are fisherfolk associations or individuals that are registered in the FishR. *The most common livelihood support by the BFAR is the provision of production inputs (boats, gears, engine; fingerlings, seaweed propagules; fish cages), post-harvest facilities and equipment, and technology demonstration facilities. The purpose is usually to increase production or improve quality or productivity, reduce losses, improve their resilience with the aim to uplift the economic status of the fisherfolk.*

The livelihood program supported by BFAR is usually implemented nationwide, but the provision is by approved request. BFAR selects banner commodities (e.g., seaweed, milkfish, tilapia, others) and identifies and supports the LGU where these commodities are present in significant amounts.

[27] Materials used here came from the report on the study on Assessing the Livelihood Programs of National Government Agencies in the Philippines by Ferrer et al 2024.

Table 7.8 Livelihood Programs of the BFAR

Livelihood	Purpose
Establishment of Technology Demonstrations	To showcase different innovative technologies on seaweed production, integrated farming, aquasilvi/ mangrove culture and shellfish culture among others.
Tilapia Fingerlings Distribution Milkfish Fingerlings Distribution	To provide quality inputs for fish farmers to ensure that they are producing high quality products. It also hopes to attract the private sector to invest and participate in aqua-farming, and to provide technical assistance on existing farms and hatcheries
Provision of Postharvest Facilities and Equipment	To reduce post-harvest losses, protect the health of the consumers, increase fisheries exports, establish appropriate product standards, implement quality inspection procedures for fishery products, and provision of transport for better market access are needed.
Fishing Gear and Paraphernalia Distribution	To fulfill a mandated responsibility to provide support to municipal fisherfolk through appropriate technology and research, credit, production and marketing assistance such as provision of fishing boats utilizing reinforced fiberglass materials as alternative to wood.
Pagbabago Livelihood Development Program (Provision of Fiberglass Reinforced Plastic Boats with Marine Engine and underwater Fittings)	To uplift the economic status of Filipino fisherfolk through the provision of disaster-resilient fishing boats and resource-appropriate fishing gear, while at the same time empowering the fisherfolk and their families to become responsible users.
Philippine National Aquasilviculture Program (PNAP)- Mangrove Resource and Habitat Rehabilitation	BFAR to showcase different innovative technologies on seaweed production, integrated farming, aquasilvi/mangrove culture and shellfish culture among others.
Seaweed Development Program	Long range: to enhance the BFAR R&D projects/activities on seaweed for its further development to be able to address the issues and concerns of the seaweed industry Short-range: to put all seaweed related projects and activities under one umbrella, to establish linkages with the other sectors of the industry, and to facilitate transfer of technologies to end users, particularly the small seaweed farmers, processors and entrepreneurs.
Special Area for Agricultural Development (SAAD) Phase 1	To help alleviate poverty in areas it operates through the provision of fishery livelihood interventions

The Special Area for Agricultural Development (SAAD) is one of BFAR's largest poverty alleviation programs. is During its Phase 1, FY 2017-2022, the aim was to reduce poverty incidence in the 30 poorest provinces identified by PSA (2012 and 2015) through its four components: social preparation, food production and livelihood, marketing assistance, and enterprise development and program management. In Phase 2[28] (2023–2028), SAAD is implemented in 60 provinces throughout 15 regions of the country. There were 964 Social Preparation Activities conducted, 249 livelihood projects distributed, and 332 specialized trainings were conducted. Under the project for establishment of Techno-Demo Projects[29], in 2019, around 1,193 training courses on aquaculture, municipal, commercial, regulatory and post-harvest technologies were conducted that benefitted a total of 31,876 individuals and 341 groups of participants. Aside from trainings, BFAR provided 76,731 technical assistance to 87,801 individuals and 18,761 groups of fish farmers, NGAs, LGUs and other stakeholders.

The livelihood support programs are a significant investment in improving the welfare of the fisherfolk. In 2023[30], BFAR SAAD had a budget allotment of P486 million, with P483 million (99%) obligated and P430 million (88%) disbursed. Moreover, the budget for fishing gear/paraphernalia distribution was P304,92 million in 2022, and P682,932 million in 2023. Similarly, the budget for fishing on farm/post-harvest equipment and facilities was P47.843 million in 2022, and P157.315 million in 2023.

One of the BFAR's major activities is technology demonstrations, which are intended to showcase various fishery technologies such as seaweed farming, integrated farming, aquasilvi/mangrove culture, and shellfish culture, among others. In 2019, BFAR established 605 techno-demo projects that benefitted 747 groups/associations and 1,909 individual fisherfolk and other stakeholders.

Table 7.9 summarizes BFAR's successes in terms of livelihood support during the last three years. These were taken from publicly available BFAR narrative accomplishment reports for 2015, 2019, and 2020. The table illustrates the various types of livelihood support as well as the number of beneficiaries.

Table 7.9 Accomplishments of BFAR in terms of livelihood support to fisherfolks, 2015, 2019, 2020

Program Name/Services	Sub-Programs/Projects	Accomplishments
2015		
Fish Seed Production and Distribution	Broodstock and fingerlings production/ distribution	4.44M broodstock distributed, 300.35M fingerlings distributed to LGUs, fisherfolk, individuals, and academe
Seaweed Production and Distribution	Distribution of propagules, farm implements; establishment of nurseries and labs	1.29M kg propagules to 6,898 beneficiaries; 6,867 implement sets to 14,206 fisherfolk/family beneficiaries; 36 nurseries; 14 labs
Fishing Gear/Paraphernalia Distribution	Distribution of nets, lines, pots, boats, engines, traps, vests	Distributed to 61,554 fisherfolk; incl. 24,459 gillnets, 14,821 hook & lines, 850 motorized bancas, 3,720 vests

[28] https://www.bfar.da.gov.ph/da-bfar-saad-program-phase-2-celebrates-first-year-success/
[29] BFAR 2020 (2019 Fisheries Annual s Report)
[30] https://www.bfar.da.gov.ph/da-bfar-saad-program-phase-2-celebrates-first-year-success/

Program Name/Services	Sub-Programs/Projects	Accomplishments
Mariculture Parks	Operation, maintenance, and livelihood cage projects	Maintained 37 parks; 96 livelihood cages established for fisherfolk families/ associations
Post-Harvest and Infrastructure Support	Fishmarts, post-harvest equipment, CFLC construction	3,080 equipment units to fisherfolk; 34 fishmarts; CFLCs: 50 under construction, 73 bidding, 49 other stages
Market Development	Market matching, agri-aqua fairs, investment fora	167 market matching; 2,861 individuals; 139 agri-aqua fairs, and 30 investment fora
Extension Support, Education, Training Services	Trainings, technical assistance, IEC campaigns, FARMC strengthening	1,608 trainings, 63,939 TA; 1,239 techno-demos; 218,489 IEC materials; 558 FARMCs assisted
Fisheries Scholarship Program	IL and FCEG scholarships	916 scholars supported in 60 schools; IL: 110, FCEG: 806 (reduced to 908 total)
Coastal and Inland Resource Management	Sanctuary monitoring, artificial reef/ mangrove planting, communal water restocking	280 sanctuaries, 2,698 reefs, 12.4M mangroves planted, 254 communal waters restocked
2019		
Fisheries Development Program - Aquaculture Sub-program	Broodstock, Fingerlings, Key Commodities (Shrimp, Tilapia, Seaweed, Milkfish, Shellfish), Mariculture Parks	5.72M broodstock, 239M fingerlings, 844K kg seaweed propagules, 11 tissue labs, 30 mariculture parks maintained; 27K+ individuals, 1K+ groups benefited
Fisheries Development Program - Capture Fisheries Sub-program	Fishing Gear Distribution, FADs/Payao, F/B Pagbabago	31,542 gears to 20,716 individuals, 181 groups; 162 FADs to 266 beneficiaries; 6,321 FRP boats to 7,264 individuals and 14 beneficiaries
Fisheries Development Program - Post-harvest Sub-program	CFLCs, Reefer Vans, Processing Plants	2,210 post-harvest equipment was distributed to 715 fisherfolk, 729 CFLCs approved (371 operational), 102 established in 2019; 10 reefer vans; 5 plants; facilities include fish stalls, shelters
Fisheries Development Program - Market Development Sub-program	Promotions, TienDA, Price Monitoring	179 events, TienDA selling support, 5,742 price monitoring activities
SAAD	Aquaculture, Capture, Post-harvest Projects	101 training sessions, 101 projects, ~3,000 individuals, 500+ groups

Program Name/Services	Sub-Programs/Projects	Accomplishments
FishCORAL	Livelihood kits, councils, CRM, mangrove rehab, facilities	Implemented in 103 municipalities; various infrastructure & training support
Fisheries Extension Program - NFEP	Training, Tech Assistance, Demo Projects, IEC	1,193 trainings, 76,731 tech assistances, 605 demo projects, 249,593 IEC materials; 87,801 individuals, 18,761 groups
Fisheries Extension Program - FSP	FCEG and FILG	981 FCEG & 130 FILG (2018-19); 1,020 FCEG & 140 FILG (2019-20)
Coastal & Inland Fisheries Management	Sanctuary Monitoring, Artificial Reefs, Mangrove Planting	484 LGUs, 399 sanctuaries monitored, 466 reefs deployed, 2.27M mangroves planted
Malinis at Masaganang Karagatan (MMK)	Livelihood Incentives	243 LGUs nominated since 2016; ₱139M in projects awarded
Balik Sigla sa Ilog at Lawa (BASIL)	Inland Water Restoration	60 sites rehabilitated, 34 ongoing, 32 validated
2020		
Aquaculture Sub-program	Fingerling and broodstock production/ distribution; shrimp production; seaweed propagules/tissue culture; mariculture parks	259M fingerlings and 5.7M broodstock distributed to 34,586 individuals and 2,375 groups; 851,934 kg seaweed propagules to 4,710 individuals and 152 groups; 39 mariculture parks operational
Capture Fisheries Sub-program	Fishing gear distribution; F/B Pagbabago (fiberglass boats and training)	23,507 gears to 14,172 individuals and 239 groups/associations; 846 boats to 839 individuals and 68 groups
Community Fish Landing Center Project	Construction and operationalization of CFLCs	670 CFLCs constructed; 418 operational
Market Development Sub-program	Market matching, agri-aqua fairs, price monitoring, KADIWA programs	8,476 monitoring activities; 895 events; 133 market matching
Fisheries Extension Program	Trainings, technical assistance, techno-demo projects, IEC, FARMC strengthening	633 trainings; 55,733 technical assistances to 54,957 individuals and 1,935 groups; 1,575 demo projects; 175,143 IEC materials; 238 FARMCs strengthened
Urban Aquaculture	Aquaponics units' distribution	356 units to 186 groups and 31 individuals
Fisheries Scholarship Program	FCEG and FILG for BS Fisheries	810 FCEG and 76 FILG scholars

Program Name/Services	Sub-Programs/Projects	Accomplishments
SAAD	Aquaculture, capture fisheries, post-harvest livelihood projects	Aquaculture: 4,481 individuals and 239 groups; Capture: 1,178 individuals and 75 groups; post-harvest: 2 individuals and 56 groups
Financial Literacy Program	Financial education for fisherfolk	Implemented with BSP, BDO Foundation, Silliman University, and others

Source of raw data:
2015: https://www.bfar.da.gov.ph/wp-content/uploads/2021/10/BFAR-Annual-Accomplishment-Report-FY2015.pdf
2019: https://www.bfar.da.gov.ph/wp-content/uploads/2021/05/Philippine-Fisheries-Profile-2019.pdf
2020: https://www.bfar.da.gov.ph/wp-content/uploads/2021/10/BFAR-Annual-Narrative-Report-2020.pdf

The available studies on the impact of livelihood programs yield mixed results. Ballesteros et al. (2025) found that the FCLD component of the Fisheries, Coastal Resources, and Livelihood (FishCORAL) Project in the Eastern Visayas region (Region VIII) did not significantly increase the income and wealth of beneficiary fishing households.

Several implementation issues, project design flaws, and systemic shocks encountered throughout the project's execution were highlighted as probable contributors to these results. As a result, resolving these challenges in future projects throughout the region's coastal villages is critical.

On the other hand, Mamalangkap et al. (2016) found that BFAR's livelihood program in Jolo, Sulu, Tawi-tawi, and Basilan helped to improve the economic situation of direct recipients and other members of the coastal community. Furthermore, the livelihood program benefits the environment through the community's climate change mitigation techniques, such as using mangrove areas for aqua-marine and aqua-silviculture, which provided shelter for a variety of fish and increased the community's income.

The non-powered banca also promotes environmental improvement by avoiding the use of carbon-emitting motorized machinery, which can deplete the ozone layer and contribute to global warming. Furthermore, Pomeroy et al. (2017) examined 15 livelihood projects conducted in the Philippines' fishing and coastal communities during the last 30 years. They discovered that the majority of the projects encounter similar issues, problems, and challenges that affect their success and sustainability.

Among other things, there is a lack of engagement with beneficiaries in project design, inadequate social preparation and technical assistance, poor coordination and cooperation among agencies and levels of government, as well as other livelihood projects in the area, and not enough documentation of project processes and results to share lessons with others.

7.3.1 Share of Men and Women in Fisheries Livelihood Types

The Fisheries Code supports women through various services to enable them to engage in fisheries/economic activities (Section 2-e, Section 65-m) and participate in the local fisheries management council (Section 75-g, Section 78-f) (Ferrer et al, 2024).

Table 7.10 shows registered fisherfolk by sex for the years 2015-2024. The list was taken from the BFAR – FRMD. Historically, men made up 68% to 71% of the fisherfolk, while women made up 29% to 31%. Notably, women's participation in fisheries livelihood has decreased between 2015 and 2024.

Table 7.10 Men and Women Registered Fisherfolk, 2015-2024

Year	Men		Women		Total
	No.	%	No.	%	
2015	1,123,811	68.11	526,195	31.89	1,650,006
2016	1,216,474	68.73	553,475	31.27	1,769,949
2017	1,304,393	69.18	581,093	30.82	1,885,486
2018	1,347,915	69.41	594,162	30.59	1,942,077
2019	1,353,992	69.44	595,897	30.56	1,949,889
2020	1,411,718	69.76	612,046	30.24	2,023,764
2021	1,566,910	70.17	666,254	29.83	2,233,164
2022	1,690,583	70.69	700,797	29.31	2,391,380
2023	1,772,442	70.88	728,331	29.12	2,500,773
2024	1,844,839	70.95	755,495	29.05	2,600,334

Source of data: BFAR-FRMD, 2024

Data from the BFAR – FishR shows where more women in fishing livelihood are (Table 7.11). Women are present in all fisheries livelihoods, but their participation is higher in fish vending (68%), gleaning (71%), and fish processing (70%). Their participant in capture fisheries is low (9%). In the 2022 Census of Agriculture and Fisheries, Capture Fishing Operation registered 853,065 fishing operators, with women accounting for 5% (42,920) and men accounted for 95% (810,145) (PSA 2025).

Table 7.11 Licensed Fisherfolk by Livelihood Type and Sex, 2022

Livelihood Type	Men		Women		Total
	No.	%	No.	%	
Capture fishing	1,063,104	90.60	110,277	9.40	1,173,381
Aquaculture	173,576	66.90	85,872	33.10	259,448
Fish Vending	50,310	32.01	106,851	67.99	157,161
Gleaning	74,161	28.80	183,350	71.20	257,511
Fish processing	13,428	29.74	31,720	70.26	45,148
Others	237,055	57.82	172,944	42.18	409,999
TOTAL	1,611,634	69.99	691,014	30.01	2,302,648

Source: BFAR 2022; Data is from BFAR-FishR retrieved July 5, 2023

7.3.2 Women in Fisheries

Several studies in the Philippines show women participate in various forms of fishing livelihood types. Studies show women participate in the entire fisheries value chain or dominate a node of it (e.g., Iguban et al. 2017; Gay et al. 2023, Prieto-Carolino et al 2016, Macusi et al 2022, Ocampo & Binondo 2022, Corpuz et al 2023), participate in fisheries law enforcement (Ferrer et al. 2014, Macusi et al 2023b), fisheries management (Clabots 2013, Jumawan-Dadang 2015, Espectato et al. 2016, Ladia et al 2019).

In gleaning, women and children were found to be more actively participating than men (Kleiber et al 2014, De Guzman et al, 2016, Suyo & Altamirano, 2018, De Guzman, 2019a,b, Bantayan et al, 2023; Villarta et al, 2021, Stiepani et al, 2023).

According to studies, men prefer the offshore, while women go to the nearshore. Women, for example, collect abalone at tidal flats but men skin dive in deeper parts of the sea (Prieto-Carolino et al, 2016). Suyo & Altamirano (2018) found that women glean sandfish nearshore in Guimaras province. Torrel et al (2021) found that men have access to high-value species, whereas nearshore and shallow habitats are managed by both women and men in the country's nine key biodiversity areas.

However, Torrel et al. (2021) pointed to inequality in the workload, leadership, and decision-making in the Philippine' fisheries. Men were found to have a stronger voice and are regarded as natural leaders in the fishing sector in nine key biodiversity areas in the country. Similarly, while women in Lagonoy Gulf are active as ancillary workers, with key responsibilities in marketing the harvest to local traders and markets and engaging in profit-saving activities, these roles are viewed as support and do not merit women's participation in community decision-making (Ocampo & Binondo, 2022). This perception also reflects disparities at the household level, where women are expected to handle household and childcare responsibilities.

7.4 Contribution of Municipal Fisheries to Food Security

Table 7.12 shows the average fish consumption in the Philippines. In the 1980s, the average fish consumption was a little more than 40 kg/year. This dropped in the 1990s and early 2000s to 36-38 kg/year. The average consumption increased back to 40 kg/year from 2008 to 2013 but has since dropped from 2015 onwards.

In 2018-2019, the average fish consumption in the Philippines was 34.3 kg/capita/year. The figure accounts for 11.7% of the total food intake of a Filipino consumer. Based on the DOST-FNRI report (retrieved in 2021), fish and fishery products constitute the primary source of protein of Filipinos, accounting for 11.7% of total food intake. Meat and meat products accounted 7.2% of the total food intake, with poultry contributing 3.8%. This underscores the importance of fish in food security and nutrition for the Filipino population.

Table 7.12 Average fish consumption (in kg/capita/year) in the Philippines

Year data was collected	Average national-level fish consumption (kg/capita/year)
1978	37
1982	41
1987	41
1993	36
2003	38
2008	40
2013	40
2015	37
2018-2019	34.3

The table above shows the consumption of fish that came from municipal fisheries, commercial fisheries, and aquaculture, respectively. To estimate municipal fisheries' contribution to national consumption of fish, the percentage share of landings of municipal fisheries in 2015 was obtained from Philippine Statistics Authority data, and consumption by fish species and fish product was extrapolated. Based on this computation, the per capita consumption of fish from municipal fisheries was 13.97 kg/yr. This figure represents 38% of the total per capita consumption of fish. Sardines, roundscads, and frigate tuna were among the most commonly consume fish.

Table 7.13 indicates that the annual per capita intake of fish in 2015 was 37 kg., which included 24.7 kg fresh fish, 4.2 kg dried fish (as fresh fish), 4.9 kg of processed fish, and 3 kg crustaceans. In 2018-2019, the annual per capita intake of fish was lower at 34.3 kg. Fresh fish (23.36 kg) comprised the majority of the consumed fish, followed by processed fish (4.96 kg), crustaceans/mollusks (3.10 kg), and dried fish (2.85 kg).

Table 7.13 Per capita annual intake of fish in 2015 and 2018-2019 by species

Commodity	Annual Per capita intake 2015			2018-2019
	kg (From all sources)	% share by Municipal Fisheries	kg (From Mun. Fisheries only)	kg (from all sources)
FRESH	24.7			23.36
Tulingan	2.0	42.72	0.85	2.04
Bangus	3.6	1.26	0.05	3.69
Galunggong	3.4	26.95	0.92	3.29
Dilis buo	0.5	67.79	0.34	0.33
Alumahan	0.4	56.61	0.23	0.47
Tamban	1.7	25.08	0.43	1.06
Dalagang bukid	0.5	68.43	0.34	0.29
Sapsap	0.8	71.65	0.57	0.51
Bisugo	0.6	78.76	0.47	0.51
Tilapia	3.7	13.90	0.51	4.42
Albakora/ Tambakol	0.9	51.64	0.46	0.99
Balila/ Espada	0.0	75.30	0.03	0.04
Hasa-hasa	0.4	68.11	0.27	0.33
Lapulapu	0.2	89.10	0.18	0.11
Matangbaka	1.5	63.17	0.95	1.31
Maya-maya	0.3	90.34	0.27	0.26
Salay-salay	0.1	68.33	0.07	0.15
Silinyasi/ Tunsoy	0.0	48.58	0.02	0.04
Tanigi	0.1	69.37	0.07	0.11
Other fresh fish and cooked fish	3.9		2.43	3.39
DRIED FISH (as fresh fish)	4.2		2.51	2.85
PROCESSED FISH	4.9			4.96
Bagoong (as fresh fish)	0.6	35.81	0.21	0.44
Patis	0.1	35.81	0.04	0.15
Canned fish, sardines etc (as fresh fish)			0.09	3.87
Smoked fish, all tinapa type (as fresh fish)	3.6		0.13	0.51

Commodity	Annual Per capita intake 2015			2018-2019
	kg (From all sources)	% share by Municipal Fisheries	kg (From Mun. Fisheries only)	kg (from all sources)
CRUSTACEANS AND MOLLUSKS	3			3.10
Shrimp (all types)	0.8	5.00	0.04	0.58
Crabs	0.4	96.86	0.39	0.37
Squid/octopus	0.6	76.90	0.46	0.77
Tahong (mussels)	0.2	2.00	0.00	0.29
Others	0.7	60.00	0.42	0.88
Dried and processed (as fresh)	0.1	10.00	0.01	0.07
Bagoong, alamang, etc (as fresh)	0.2	89.28	0.18	0.15
Cooked/ Mixed shellfish dishes	0.0	48.62	0.02	----
TOTAL	36.8		13.97	34.3

8 | CONCLUSIONS

8.1 Background

The Philippine fisheries are of global importance. Despite this, it faces many challenges to its sustainable development and utilization. The Philippine Fisheries Code (RA 8550) was enacted in 1998 to focus on the regulation of fishing practices to prevent overfishing, the protection of municipal waters for the municipal fishers, conservation measures such as marine protected areas, supporting the welfare of fisherfolk and coastal communities, and on the prohibited acts including illegal fishing, use of destructive fishing methods and harvesting endangered species. Seventeen years later, in 2015, the Fisheries Code was amended to become RA 10654, which addressed persistent illegal, unreported, and unregulated (IUU) fishing activities while also aligning Philippines laws with international commitments.

A number of key provisions from RA 8550 were changed in RA 10654. These revisions focused on increasing penalties for violations, especially IUU fishing, mandating advanced monitoring systems (e.g., Vessel Monitoring System), establishing Fisheries Management Areas (FMAs) for ecosystem-based management and governance, strengthening stakeholder roles and promoting transparency in fisheries management, and aligning Philippine laws with international agreements.

Ten years have passed since RA 10654 was enacted. An assessment of its implementation, particularly of specific provisions of RA 10654, is necessary to measure successes, identify and address gaps, and continue improving fisheries management for long-term ecological and socio-economic benefits. The topics covered include sustainability and fisheries management, enforcement and compliance, the performance of BFAR and the LGUs, and socioeconomic status of the fisherfolk.

8.2 On Sustainability and Fisheries Management

Since 2010, total marine capture fishery production has declined by around 45,500 mt per year. Over 591,000 mt of fish have been lost over the last 13 years (2010-2023). According to the National Strock Assessment program, 88% of stocks in various Fisheries Management Areas are overfished. This is not a recent occurrence, as prior studies have shown that most of the country's major fishing grounds have been overfished for up to 40 years. As a result, the present fisheries management mindset should be to rebuild stock sustainability, which requires far more urgent activities, rather than to protect against overfishing, as we have already passed this stage. Closed seasons alone are insufficient to allow stock recovery; hence additional measures are required to limit fishing pressure. Many marine protected areas do not function or exist just on paper.

According to the current information available on marine protected areas in the country, we still have a long way to go in terms of expanding area coverage for protection and attaining true management implementation in established MPAs. Alliances between surrounding LGUs are critical in MPA administration.

On the other hand, the establishment of FMAs represents a critical step forward in sustainable fisheries management in the Philippines. Although the FMAs have improved collaboration between BFAR, LGUs, and local stakeholders, fostering coordinated management across regions, they are yet to demonstrate their effectiveness in fisheries management. While the management bodies and scientific advisory groups have been established, the completion and approval of most of them are still in progress. While progress has been made, persistent challenges such as limited resources, IUU fishing, and stakeholder conflicts must be addressed to ensure the long-term success of the FMA system. The greatest challenge is the unclear source of budget.

8.3 On Enforcement and Compliance Vessel and Fisher registration

Illegal, Underreported, and Unregulated Fishing

Nine years after the amendment of the Fisheries Code, IUUF remains a significant challenge. Although RA 10654 provides a robust legal framework to combat IUUF, an effective implementation of this law, coupled with community engagement, capacity building, and international cooperation, is essential to achieving sustainable fisheries management and protecting marine resources. VIIRS images from 2017-24 (c/o Karagatan Patrol) show substantial encroachment by commercial fishing vessels, particularly in the most heavily-fished fishing grounds. Specifically, there is a need to fully implement the key provisions targeting IUUF, which include the stronger penalties; monitoring, control, and surveillance; fisheries observer program; port state measures; collaboration with international partners; and capacity building and stakeholder engagement.

8.4 On the Performance of the Bureau of Fisheries and Aquatic Resources

BFAR has achieved significant progress in fisheries management and anti-IUUF efforts since 2015. It has been proactive in strengthening monitoring, control and surveillance mechanisms to reduce IUU fishing. It has worked with LGUs, various stakeholders, and fisher groups to improve enforcement and compliance with RA 10654 provisions. It increased the use of technology (i.e., satellite tracking, VMS, and other technologies that help in the enforcement of fisheries management regulations. It has improved fisheries management by establishing FMAs, which promote science-based policies to allow fish stock recovery. It has conducted capacity building and training to LGUs and fisherfolk to improve compliance with the law. It was supported by fisherfolk with various livelihood assistance. However, issues such as legal setbacks (e.g., VMS, Mercidar case), funding limitations, human resources limitations, uneven enforcement of the law across the country, and enforcement gaps continue to pose challenges to achieving the goals of RA 10654.

8.5 On the Performance of the Local Government Units

RA 7160 (Local Government Code of 1991) and RA 8550 (Philippine Fisheries Code of 1988) have given local government units more power over the management of their municipal waters and natural resources. These legal documents, together with RA 10654 (Amended Philippine Fisheries Code of 2015), have identified the specific functions and responsibilities of municipalities and cities in 1) managing, conserving, developing, protecting, and utilizing all fish and fishery/aquatic resources and 2) preventing, deterring, and eliminating illegal, unreported and unregulated fishing (IUUF) within their jurisdiction.

It is difficult to evaluate the performance of LGUs in terms of fisheries management due to the large number of coastal LGUs (930 municipalities and cities) across the country and the amount of information (which is mainly unavailable) required for such an evaluation. However, based on available information, the performance of LGUs in carrying out these responsibilities is summarized as follows:

1. On the robustness of LGUs' legal framework on fisheries: Ten years after RA10654 became a law, only about half of the LGUs across the country have updated their respective fisheries ordinances. It also appears that about 8% of the coastal LGUs have yet to enact their fisheries ordinance.

2. On efficiency of the bureaucracy: The LGUs have numerous responsibilities as outlined in RA 8550 and as amended by RA 10654. One of the main factors that influences the successful implementation of fisheries programs among LGUs is the willpower of the chief local executive in pushing their fisheries agenda (Hansen et al, 2007, Rawlins, 2009, Carbonetti et al, 2014, Mendoza and Soliman, 2017, Espectato, 2022).

   Another challenge is the limited number of personnel assigned to fisheries-related tasks. Normally, LGUs assign only one personnel (a Fisheries Technician) to attend to all these fisheries-related tasks, who cannot possibly attend to all the industry demands and expectations for the entire LGU, especially in the wake of the Mandanas-Garcia Supreme Court ruling in 2018. The level of performance of the fisheries technician would naturally depend on his/her professional capability, training, educational background, and capacity to partner and work with relevant national government agencies, fisherfolk communities, and other stakeholders.

   Also crucial on the role of the bureaucracy in the success of fisheries management at the local level is the education of the public to generate the values necessary to ensure cooperation and enforcement of fisheries management policies.

3. On sufficiency of resources: The budget allotted by LGUs related to fisheries management and enforcement of fishery laws significantly varies. Some LGUs provide relatively higher funding to fisheries programs and projects, while others do not (or cannot) give the same priority. Still others would be fortunate to partner with international NGOs and the private sector, who would assist in providing resources in implementing fisheries projects. Funding is necessary to implement fisheries programs and projects that would contribute to the conservation of fishery resources, such as the establishment and maintenance of marine protected areas, combating IUUF in municipal waters, improving the well-being of fisherfolk, conducting effective education and information campaigns, among others.

The causal link between good governance and strong institutions (such as LGUs) in supporting growth performance and broadening inclusiveness is well accepted (Zhuang et al, 2010, Lopes et al, 2023). A robust legal framework, efficient bureaucracy, sufficient resources, technical capability, political will, and partnerships (with neighboring LGUs for inter-LGU alliances, national government agencies, private sector, academe, NGOs, etc) are some of the crucial factors in the effective implementation of fisheries plans, programs, projects, and activities. Based on available information, however, it appears that many coastal LGUs across the country may not possess these important features. Thus, many LGUs have limited ability to provide technical services to fishers, aquaculturists, fish processors, fish vendors, and other fisherfolk. Also, they have limited ability to combat IUU Fishing. The challenges (e.g., financial, operational, skills, manpower, legal, etc.) that the LGU's Bantay Dagat faces in performing their

functions remain and have impacted their ability to police their municipal waters. Groundworks should also be laid out for empowerment and capacitation at the grassroots levels, including women, to further enhance good governance.

In addition, it is not known how LGUs craft their own fisheries ordinances and policies. Considering the lack of information on the status of fishery and aquatic resources in municipal waters, it can be surmised that decision-making at the LGU level probably does not make use of science in the legislative or executive process. The inability to update the fishery ordinance is also a reflection of weak monitoring and evaluation of policies. For example, the practice of allowing commercial fishing operations in municipal waters needs to be evaluated in terms of the status of fish stocks, the number of IUUF cases, and the ensuing socio-economic conditions.

8.6 On Socio-economic Impact

The fisherfolk have consistently been poor in terms of income. Without the inclusion of Indigenous People category, the fisherfolk would have remained the poorest among the basic sectors in the country for two decades (2003 -2023). This reflects persistent poverty and economic disadvantage in coastal communities. The incidence and magnitude of poor households are more than just statistics --- it reflects deep structural inequality and the urgent need for sustainable, inclusive, and climate-resilient development of strategies for coastal communities.

Fisherfolk's low income makes them highly vulnerable to climate change (typhoons, sea-level rise, warming seas), resource depletion (due to overfishing, illegal fishing, and habitat destruction), market exploitation (middlemen, low buying prices), and a lack of access to financial services, technology, or education. This also shows that existing interventions have not been enough to significantly improve their economic status. It is not surprising that fishing is not popular among young people. The need for targeted programs in livelihood support, fisheries management, education and health services, as well as market and infrastructure access.

To further improve the welfare of the fisherfolk, there should me a more accurate way of identifying, registering, and supporting them. The unregistered folk should be identified and registered through the FishR and BoatR and the lists should be cleaned of those who have exited their fishing livelihood activities because of change of livelihood, moving to other places, and death. A reliable and clean list of active fisherfolk is the starting point of many support programs for them that needs strengthening.

9 | RECOMMENDATIONS

The current performance of the fisheries sector reflects both achievements and areas needing improvement. BFAR is the lead agency for implementing RA 10654, issuing Fisheries Administrative Orders, monitoring and enforcement, science-based management (via FMA), and coordinating with LGUs and other agencies. While BFAR has produced enabling policies (FAO 263, FAO 266), operationalization lags. The coverage, enforcement, and consistent application remain limited. There are a number of management plans developed but the implementation is a problem. This section presents recommendations for the gaps identified in the previous sections in this report.

9.1 On Sustainability and Fisheries Management

Immediate additional management actions in areas where closed seasons have already been implemented, together with closer enforcement of closed seasons if need be. Mastering new/cutting-edge approaches to data analysis will not change the status of stocks and will not mitigate the urgency for actions.

For fishing grounds like the Visayan Sea, where the municipal sector dominates, the following actions can be taken:

1. Strengthening of LGU alliances
2. Capacitating of fishers' organizations
3. Determining specific actions to reduce fishing pressure
4. Determining needs for reducing waste or spoilage
5. Determining the means of adding value to produce
6. Determining and implementing steps for improving the value/market chain

For fishing grounds like the Visayan Sea, where the municipal sector dominates, the following actions can be taken:

1. Conduct consultations on further reducing the frequency of fishing operations (i.e., closed seasons already reduce fishing pressure, but are not enough)
2. Ensure a successful shift in the livelihood of displaced fishers if CFV operations are to be allowed closer than 15 km from the shore
3. Full implementation of VMS
4. Review the policies regarding small commercial vessels.

For the FMAs:

1. Determine sources of funds and mechanisms for generating funds for implementing FMA activities
2. Strengthen FARMC capacity and ensure true and active representation of the different sectors
3. Continued collaboration among all stakeholders and increased investment in research and enforcement are vital to achieving sustainable and equitable fisheries management.

For the FMAs:

1. Determine sources of funds and mechanisms for generating funds for implementing FMA activities
2. Strengthen FARMC capacity and ensure true and active representation of the different sectors
3. Continued collaboration among all stakeholders and increased investment in research and enforcement are vital to achieving sustainable and equitable fisheries management.
4. Strengthen the technical and operational capacities of FMA MBs and, TWGs and LGUs to enforce regulations effectively
5. Allocate more financial resources for research, monitoring, and enforcement activities. Unless there is a budget item on FMA in the General Appropriations Act, then financing FMA implementation remains a

For the MPAs

1. Expand the scale of MPAs
2. Strategic location of no-take MPAs based on ecological criteria;
3. Support community-based governance through sustained capacity-building and financing;
4. Integrate gender and social inclusion in MPA design and management;
5. Institutionalize science-based planning and adaptive monitoring frameworks;
6. Mainstream MPA networks within national marine spatial planning and biodiversity strategies.

9.2 On Enforcement and compliance

The following are key to achieving universal fisherfolk registration and realizing its full potential as a tool for sustainable fisheries governance:

1. Capacitate, inform, and provide the means for LGUs to conduct complete boat and fisher registration. Fishers need to be properly informed of the need for registering.
2. Increase the capacity of the LGUs and BFAR to enforce registration requirements and monitor compliance effectively
3. Develop mobile applications or online platforms to make registration and updates more accessible.
4. Introduce mobile registration units for hard-to-reach areas.
5. Conduct awareness campaigns to educate fisherfolk about the importance of registration and the benefits it provides. Dispel misconceptions about potential restrictions or costs. Partner with NGOs and community leaders for grassroots advocacy.
6. Simplify registration procedures and reduce barriers, such as fees or documentation requirements, to encourage participation.
7. Ensure that FishR, BoatR, and other fisheries databases basis are interoperable and regularly updated to support evidence-based policy making,
8. Offer additional tangible benefits, fishing requirements, or priority access to government programs, to encourage registration. Include fisherfolk in social protection schemes as part of the benefits.
9. Implement all provisions pertaining to licensing, including reportorial requirements for commercial fishing vessels
10. Ensure the completeness and reliability of data in registration databases
11. Address the gaps in the enforcement of regulations
12. Clarify the registration requirements for small commercial vessels

13. Strengthen collaboration between BFAR, LGUs, and other agencies to harmonize registration efforts and share data effectively.
14. Clarity and consistency on their stand on allowing commercial fishing vessels in municipal waters.
15. Full implementation of the Vessel Monitoring Measures by ensuring that all commercial fishing vessels install VMS
16. Strengthen law enforcement against IUUF by deploying more patrol vessels and surveillance teams in high-risk fishing areas. Increase coordination with the Philippine Coast Guard, Philippine Maritime Police, and the LGUs for joint operations.
17. Address the weak prosecution of the fisheries violators by working closely with the judiciary and prosecutors to fast-track cases against violators.
18. Ensure LGU compliance with fisheries management policies by enforcing stricter monitoring of LGUs to ensure they follow RA 10654 guidelines on municipal waters management. Provide technical training for LGUs on proper fisheries governance.

9.3 On the Performance of the Bureau of Fisheries and Aquatic Resources

While BFAR has taken significant steps in implementing RA 10654, several gaps and shortcomings (e.g., enforcement gaps, legal actions, support for small-scale fisherfolks) have been identified in its implementation and must be addressed. Below are some of the areas with implementation gaps and what further actions BFAR may do to minimize, if not close the gap.

On policy and institutional framework, BFAR has laid down most of the right instruments (RA 10654, FAOs 263 [FMA] and 266 [VMS], closures, bans, more) but the implementation is uneven across regions and LGUs. There should be policy harmonization with LGUs and checking if they have updated their local policies aligned with RA 10654 to close loopholes.

BFAR has established MCS centers and have joint patrols with the coastguard, maritime police, and the LGUs, but there is still limited vessels, human resources, and weak prosecution capacity. There should be more investment on patrol vessels and technology (e.g., drones, radars), and enhance capacity building (e.g., case-building and prosecution training).

BFAR has helped establish the 12 FMAs, their management boards and the scientific advisory groups (SAG), and management plans. But the enforcement is still inconsistent and FMAs are underfunded, which limit their activities and impact. Dedicated budget for the operationalization of the FMAs must be secured, while at the same time, there should be promotion of LGU's ownership of management measures.

On data and stock assessment, the national stock assessment and the SAG provide information, but the municipal/small-scale data is incomplete or is weakly integrated. There should be an improvement in landing-site data collection, integration of FishR/BoatR with stock assessment, and training of LGUs on basic fisheries monitoring.

The FishR and BoatR provides a national database but is still incomplete and weakly validated. There should be an intensification of registration drive nationwide and the validation of records regularly. Gender disaggregated data is needed for inclusivity.

The BFAR has provided support in the training of the Bantay Dagat nationwide but there is uneven LGU capacity and political will that hinder consistency. The MMK program should be reviewed and reformatted to support LGUs for effective enforcement and linked to programs that can expand capacity-building programs for local enforcers.

Gender equity has been promoted through some livelihood and postharvest programs for women, but women remain to be underrepresented in registries, decision making and data. The GAD budgeting must be mainstreamed in BFAR projects and women representation in FMA management board and SAG are ensured. Moreover, sex-disaggregated fisheries data are collected.

BFAR has provided socio-economic support through livelihood programs but many of these programs are short-term and not linked to compliance. A way to improve the support is to tie them to compliance with the fisheries law, to develop alternative livelihood and link them to long-term poverty reduction strategies.

9.4 On the Performance of the Local Government Units

9.4.1 Policy analysis

There is a need to improve the measurement of governance and institutional quality and how these affect the fisheries industry at the local level. Clearly, more research is necessary to evaluate fisheries governance by coastal LGUs, which total at 930 municipalities and cities across the country. Information such as a) resources allotted (e.g., manpower, budget, infrastructure, technology, etc), b) level of planning (e.g., Annual Investment Plans, Comprehensive Land Use Plans (CLUP), CRM plans, Fisheries Management Plans, more), and c) partnership, coordination, and communication (with relevant stakeholders) need to be collected and evaluated.

While information is not available, it would also be important to look at how LGUs have made counterpart ordinances in response to fisheries-related national laws such as those related to national protected areas, water quality, labor laws, climate change, including fisheries-related policies that are promoted by other government agencies such as the Department of Social Welfare and Development (DSWD), Department of Trade and Industry (DTI), Department of Environment and Natural Resources (DENR), among others. Also important is a policy analysis of local fisheries ordinances and policies to evaluate their responsiveness, relevance, effectiveness, and how these are operationalized by the LGUs.

Further, the implications of the August 2024 ruling of the Supreme Court in favor of Mercidar Fishing Corp.'s petition against RA 8550's ban on commercial fishing operations within municipal waters need to be evaluated. This court ruling has serious implications not only for municipal fishers but also for food security, the livelihood of millions of families, the status of fish stocks, and the authority of local government units to manage municipal waters.

9.4.2 Capacity building

The declining fish catch, poor state of the ecological health, poverty among fisherfolk households, lack of appropriate policies (including effective fisheries management programs), weak implementation of existing policies, among others, could be indicators of the inability of institutions to manage and govern fishery resources. Evidently, LGU personnel need to be continuously capacitated in order to improve governance of municipal waters. Such capacity capacity-building activities should include trainings on fishery data collection and the analyses analysis of these data to determine the status of fish stocks in municipal waters.

9.4.3 Explore other modalities in the governance of municipal waters

While it appears that governance of municipal waters is not optimal, it is necessary to explore other strategies and modalities. For example, the concept of inter-LGU alliances wherein bureaucrats are tasked with the management of shared marine and fishery resources could be explored. An improved model of these inter-LGU alliances can be created (learning from good practices and past mistakes). These alliances can be positioned in the context of sub-FMAs and under the general umbrella of the Fisheries Management Area system.

By elevating the governance of municipal waters to a bigger entity of neighboring LGUs, the concerns on the constant replacement of chief local executives every three years, the variable political will of these municipal/city mayors, the large task of fishery technologies in delivering services, budget, and other constraints could be addressed.

9.5 On Improving the Welfare of Fisherfolks

To further improve the welfare of the fisherfolk, there should me be a more accurate way of identifying, registering, and supporting them.

1. Implement the National Plan of Action for Small-scale fisheries at all levels
2. Strengthening registration and licensing by simplifying and supporting FishR and BoatR processes to ensure small-scale fishers are officially recognized and
3. eligible for support. An active and mobile registration teams can be deployed in remote coastal communities.
4. The unregistered folk should be identified and registered through the FishR and BoatR, and the lists should be cleaned of those who have exited their fishing livelihood activities because of change of livelihood, moving to other places, and death. A reliable and clean list of active fisherfolk is the starting point of many support programs for them that needs strengthening.
5. Enforce preferential access to municipal waters by ensuring it is for exclusive use for registered small-scale fishers. Commercial fishing vessels must be presented and penalized in for entering the municipal waters.
6. Deliver livelihood support and capacity building by delivering alternative livelihoods and skills training, access to credit, insurance, and post-harvest facilities, and support fishers' cooperatives and organizations to increase the bargaining power and access to markets.
7. Integrate small-scale fishers in decision-making by ensuring representation in FARMCs and in Fisheries Management Areas.
8. Promote health, safety, and social protection by coordinating with agencies to provide fishers access to Philhealth, SSS, and medical services. Conduct an information campaign on fisherfolk rights, safety at sea, and disaster preparedness.
9. Educate the fishers on RA 10654, sustainable fishing practices, and their rights and responsibilities. Translate materials intro local languages and accessible formats.
10. Provide more support for small-scale fishers by allocating more funds and technical assistance to help small-scale fishers to transition to sustainable fishing practices. There's also a need to strengthen the alternative livelihood programs to reduce fishers' dependency on fishing
11. Support research and data collection by funding studies and community-based monitoring to inform policy on small-scale fisheries.

9.6 On Court Cases: VMS and Use of Municipal Waters

Currently, the two cases --- the vessel monitoring system (VMS) and the use of municipal waters are still awaiting the Supreme Court's final decision. There can still be things to be done while these are in court.

On the VMS, there should be a push for transparency versus privacy balance, to highlight international commitments, and preparation of data-access protocols. The following can still be done:

- a forum attended by the academe, data privacy experts, fisheries governance groups to shed light on how VMS data balances transparency, enforcement, and privacy rights.
- Fisherfolk organizations directly affected by IUUF should argue for greater disclosure.
- More emphasis on international commitments in submission, showing transparency is not just domestic policy but also an international obligation.
- There should be mobilization of public awareness about why VMS transparency matters for sustainability, food security, and stopping IUUF.
- There should be legislative consultations to explore amendments clarifying VMS access rules to identify and close gaps, while waiting for the Supreme Court ruling.
- LGUs must be encouraged to adopt ordinances that prepare for VMS-based monitoring, whichever way the ruling goes.
- There can also be a tiered-access framework to respond to information accessible to the public and those that only available to regulators.
- Technical capacity in both BFAR and LGUs to analyze VMS data can be supported so that enforcement will not lag once disclosure rules are clarified.

On the case of who can fish in municipal waters, continued activities from different stakeholders is critical. There should be a stronger push for the preferential rights of small-scale fishers, strengthening LGU role, and preparation of local ordinances and registrations for post-ruling enforcement. Specifically, the following can still be done:

- briefers from different sectors – LGUs, fisherfolk organization, NGOs, academe, development partners --- to assert preferential rights of municipal fishers under the fisheries laws (RA8550 and RA10654) and the Constitution;
- move to intervene by LGUs directly managing municipal waters, citing their mandate under the fisheries laws and the 1991 Local Government Code
- stakeholders must build a stronger unified position and communicate it publicly while the court deliberates;
- policy briefs from academic institutions on the socio-economic impacts if commercial fishing is allowed in municipal waters; this is also in response to the call of Senator Francis Pangilinan for information on the impacts of commercial fishing in municipal waters.
- LGUs should prepare zoning ordinances to align with whichever ruling comes out.

REFERENCES

Albert, J. R. G., Mendoza, R. U., Cuenca, J. S., Vizmanos, J. F. V., & Muñoz, M. S. (2021, January). What are the effects of the Performance-Based Bonus on government workers and agencies? (Policy Notes No. 2021-01). Philippine Institute for Development Studies. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn2101.pdf

Andriesse, E., Kittitornkool, J., Saguin, K., & Kongkaew, C. (2021). Can fishing communities escape marginalisation? Comparing overfishing, environmental pressures and adaptation in Thailand and the Philippines. Asia Pacific Viewpoint, 62(1), 3–19. https://doi.org/10.1111/apv.12270

Anticamara, J. A., & Go, K. T. (2016). Spatio-temporal declines in Philippine fisheries and its implications to coastal municipal fishers' catch and income. Frontiers in Marine Science, 3, 21.

Atillo, G. N. A. (2024). Socio-economic status of small-scale fisheries in central Philippines. Ho Chi Minh City Open University Journal of Science-Social Sciences, 14(3), 12-26.

Armada, N.B., 2004. Fish resource assessment and management recommendations for Davao Gulf. p. 332-335. In DA-BFAR (Department of Agriculture-Bureau of Fisheries and Aquatic Resources). In turbulent seas : the status of Philippine marine fisheries. CRMP document No: 02-CRM/2004. Cebu City, Philippines. 378 p.

Bacalso, R.T.M., Romagnoni, G., & Wolff, M. (2023). Identifying drivers of change during the recent two decades in the Visayan Sea using a trophic modeling approach. Frontiers in Marine Science, 10, 1099400. https://doi.org/10.3389/fmars.2023.1099400

Bagarinao-Regalado, A., Campos, W., Felix, L., Jr., & Piloton, R. (2023). The Lobo-lobo fry fishery in the western Visayan Sea, Philippines: Abundance, catch composition, and potential fisheries impact. Deep Sea Research Part II: Topical Studies in Oceanography, 212, 105324. https://doi.org/10.1016/j.dsr2.2023.105324

Bagsit, F.U., Frimpong, E., Asch, R.G., & Monteclaro, H.M. (2021). Effect of a seasonal fishery closure on sardine and mackerel catch in the Visayan Sea, Philippines. Frontiers in MarineScience,8, 640772. https://doi.org/10.3389/fmars.2021.640772

Ballad, E. L., Macusi, E. D., & Digal, L. N. (2022). Ensuring sustainability of community participation in locally-managed MPAs. Maritime Technology and Research, 4(4), 258234. https://doi.org/10.33175/mtr.2022.258234

Ballesteros, Josefina & Custodio, Ian Dave & Ragub, Jay-Ar & Jandoc, Karl & Paran, Evangeline & Colas-Villaber, Jam & Rosales, Meylene. (2025). Impact of Livelihood Projects on the Fishing Households' Income and Wealth: The Case of Fisheries, Coastal Resources, and Livelihood (FishCORAL) Project in Eastern Visayas, Philippines. Journal of Philippine development: a technical journal of the National Economic and Development Authority. 49. 1-32.

Bantayan, J. M. D. (2022). Involvement of men and women in gleaning macro-invertebrates in Baganga, Davao Oriental, Philippines. Davao Research Journal, 13, 59–75. https://www.researchgate.net/publication/363799058

Barut, I. F., Erdogan, N., & Basak, E. (2004). Hydrogeochemical evaluation of Western Anatolian mineral waters. Environmental Geology, 45, 494–503. https://doi.org/10.1007/s00254-003-0904-0

BFAR. (2019, January 28). Fisheries Administrative Order No. 263, s. 2019: Establishment of Fisheries Management Areas (FMA) for the Conservation and Management of Fisheries in Philippine Waters.

BFAR. (2020, October 12). Fisheries Administrative Order No. 266, s. 2020: Rules and regulations on the implementation of vessel monitoring measures (VMM) and electronic reporting system (ERS) for commercial Philippine-flagged fishing vessels. BFAR. (2024, April). FY 2021 Performance-Based Bonus Scorecard. Department of Agriculture – Bureau of Fisheries and Aquatic Resources.

BFAR (2021) Comprehensive National Fisheries Industry Development Plan (2021-2025). Bureau of Fisheries and Aquatic Resources, Visayas Avenue, Quezon City. ISSN: 2815-2131.

BFAR. (2024, May 14). BFAR 2022 Accountability Scorecards. Department of Agriculture – Bureau of Fisheries and Aquatic Resources.

BFAR. (2025, February). BFAR 2023 Accountability Scorecards. Department of Agriculture – Bureau of Fisheries and Aquatic Resources.

Bondoc, L. M. G. (2005). Assessment of Fisheries and Aquatic Resources Management Councils (FARMCs) empowerment in Mariveles, Bataan, Philippines [Dissertation]. University of the Philippines Los Baños.

Brillo, B.B.C., Elazegui, D.D., Cervantes, C., & Rola, A. (2016). Assessing the formulation and implementation of the closed fishing season policy for sardines in Zamboanga Peninsula, Philippines. Philippine Journal of Science, 145, 395–404.

Brillo, B.B.C., Jalotjot, H.C., Cervantes, C.C., et al. (2019). Impact on income and livelihood of fisheries workers: Closed fishing season policy for sardines in Zamboanga Peninsula, Philippines. Journal of Coastal Conservation, 23, 1057–1067.

Bureau of Fisheries and Aquatic Resources. (2019). Fisheries Administrative Order No. 263: Establishing the framework of fisheries management areas for the conservation and management of fisheries in Philippine waters. Department of Agriculture – Bureau of Fisheries and Aquatic Resources.

Bureau of Fisheries and Aquatic Resources. (2021). Comprehensive National Fisheries Industry Development Plan (CNFIDP) 2021–2025. Department of Agriculture – Bureau of Fisheries and Aquatic Resources.

Cabico, G.K. 2020. Oceana: Commercial fishing boats seen in municipal waters as gov't preoccupied with COVID-19 fight.Philstar. https://www.philstar.com/nation/2020/04/02/2005101/oceanacommercial-fishing-boats-seen-municipal-waters-govtpreoccupied-covid-19-fight (Accessed 17 December 2020).

Cabral, R. B., Aliño, P. M., Lim, M. T., Arceo, H. O., Nañola, C. L., & Geronimo, R.C. (2014). The Philippine MPA database. Philippine Science Letters, 7(2), 300–308.

Campos, W. L., & Aliño, P. M. (2008). Recent advances in the management of marine protected areas in the Philippines. Kuroshio Science, 2(1), 29–34.

Carbonetti, B., Pomeroy, R., & Richards, D. L. (2014). Overcoming the lack of political will in small-scale fisheries. Marine Policy, 44, 295301. https://doi.org/10.1016/j.marpol.2013.09.028

Carpenter, K. E., & Springer, V. G. (2005). The center of the center of marine shore fish biodiversity: The Philippine Islands. Environmental Biology of Fishes, 72(4), 467–480. https://doi.org/10.1007/s10641-004-3154-4

Cayabo, L. B., Gonzales, J. M. M., & Regencia, M. M. (2020). Assessment of coastal law enforcement initiatives in Misamis Occidental, Philippines. International

Chavez, L. 2021. Philippine artisanal fishermen cry for help as illegal fishing empties municipal waters. https://oeconomedia.org/features/philippine-artisanal-fishermen-cry-for-help-as-illegal-fishing-empties-municipal-waters/ Journal of Fisheries and Aquatic Studies, 8(3), 234–239.

Christie, P., White, A. T., Armada, N. B., & Eisma-Osorio, R. L. (2002). Community-based MPAs in the Philippines. Journal of Environmental Management, 66(4), 441–454. https://doi.org/10.1006/jema.2002.0591

Clabots, B. M. (2013). Gender dimensions of community-based management of marine protected areas in Siquijor, Philippines. https://digital.lib.washington.edu: 443/researchworks/bitstream/1773/23502/1/ Clabots_washington_0250O_11904.pdf Congress of the Philippines. (1998). Republic Act No. 8550: An act providing for the development, management and conservation of the fisheries and aquatic resources, integrating all laws pertinent thereto, and for other purposes.

Clores, N. (2024). Equitable food and nutrition security initiatives for farmers and fisher folks in Masbate, Philippines. Diversitas Journal, 9(4).

Congress of the Philippines. (2015). Republic Act No. 10654: An act to prevent, deter, and eliminate illegal, unreported and unregulated fishing, amending Republic Act No. 8550, otherwise known as “The Philippine Fisheries Code of 1998,” and for other purposes.

Congress of the Philippines. (2015). Republic Act No. 10654: An act to prevent, deter, and eliminate illegal, unreported and unregulated fishing, amending Republic Act No. 8550, otherwise known as “The Philippine Fisheries Code of 1998,” and for other purposes. https://lawphil.net/statutes/repacts/ra2015/ra_10654_2015.html

Corpuz, A., J. Saeger and V. Sambilay. 1985. Population Parameters of Commercially Corpuz, J. T. M., Cacho, R., Villamor, B., Samson, M. G., & Simat, M. S. (2023). Unfolding women’s role in small-scale fishing community in The Philippines toward formulating a gender-sensitive local government policy. Otoritas Jurnal Ilmu Pemerintahan, 13(1), 30–43. https://doi.org/10.26618/ojip.v13i1.9911

Dalzell, P. and R.A. Ganaden, 1987. A review of the fisheries for small pelagic fishes in Philippine waters. Tech. Pap. Ser. Bur. Fish. Aquat. Resour. (Philipp.) 10(1):58 p. Bureau of Fisheries and Aquatic Resources, Quezon City, Philippines.

De Guzman A.B., Sumalde Z.M., Colance M.D.B., Ponce M.F.V. & Rance G.M.S. (2016). Economics of reef gleaning in the Philippines: Impact on the coastal environment, household economy and nutrition. EEPSEA 2016-RRG1. WorldFish (ICLARM) – Economy and Environment Program for Southeast Asia (EEPSEA). 40 p.

De Guzman, A. B. (2019). Women in subsistence fisheries in the Philippines: The undervalued contribution of reef gleaning to food and nutrition security of coastal households. In Women in Fisheries Information Bulletin (Issue 29, pp. 34–40). SPC.nnDENR, BFAR, & DILG. (2001). Philippine coastal management guidebook No. 8: Coastal law enforcement. Coastal Resource Management Project, Cebu City, Philippines.nDepartment of Agriculture, Bureau of Fisheries and Aquatic Resources. (2018, September 4). Fisheries administrative order no. 198-1, series of 2018: Amended rules and regulations on registration and licensing of commercial fishing vessels, fishing gears, and fishworkers. Department of Agriculture.nDepartment of Agriculture, Bureau of Fisheries and Aquatic Resources. (2021, August). Philippine IUU fishing assessment report 2021. Department of Agriculture. https://www.bfar.da.gov.ph/wp-content/uploads/2022/08/Philippine-IUU-Fishing-Assessment-Report-2021.pdfnDepartment of Agriculture, Bureau of Fisheries and Aquatic Resources. (2023, December). Philippine IUU fishing assessment report 2023. Department of Agriculture. https://www.bfar.da.gov.ph/wp-content/uploads/2024/12/Philippine-IUU-Fishing-Assessment-Report-2023-300dpi-1.pdf DILG. (2023, January 18).

Department of Economic and Social Affairs, Population Division. (2024). World Population Prospects 2024: Ten key messages.

DILG. (2023) Memorandum Circular No. 2023-012: Guidelines in the enactment and/or updating of the municipal/city fisheries ordinance of coastal local government units https://dilg.gov.ph/PDF_File/issuances/memo_circulars/dilg-memocircular-2023119_ca3d912db2.pdf

DILG. (2023). 2023 Fisheries Compliance Audit Narrative Report. Department of Interior and Local Government.

DILG. (2024, November 26). Regional summary: Number of provinces, cities, municipalities, and barangays by region, as of September 30, 2024. https://dilg.gov.ph/PDF_File/issuances/memo_circulars/dilg-memocircular-2023119_ca3d912db2.pdf

Elvidge, C.D., Ghosh, T., Baugh, K., Chi Hsu, F. & Zhizhin, M. (2019) Rating the effectiveness of fishery closures using VIIRS boat detection data. The 40th Asian Conference on Remote Sensing (ACRS 2019), 14-18 Oct 2019, Daejeon, Korea.

EO No. 116, Reorganizing the Ministry of Agriculture and Food into the Ministry of Agriculture, integrating all offices and agencies whose functions relate to agriculture and fishery into the Ministry, and for other purposes. (1987, January 30). The LawPhil Project. https://lawphil.net/executive/execord/eo1987/eo_116_1987.html

EO No. 967, Renaming the Ministry of Agriculture as the Ministry of Agriculture and Food, transferring to it certain agencies engaged in food production and for other purposes. (1984, June 30). The LawPhil Project. https://lawphil.net/executive/execord/eo1984/eo_967_1984.html

Esmas, C. R., Gonzales, J. M. M., & Patricio, J. H. P. (2021). Marine law enforcement in selected coastal municipalities in the Philippines: An analysis of Bantay Dagat initiatives. Philippine Journal of Science, 150(5), 1321–1332.

Espectato, L. N. (2022). Factors for sustainability of inter-governmental alliance on coastal resource management [Dissertation]. University of the Philippines Visayas.

Espectato, L. N., et al. (2016). Perceived effects of marine protected areas on the well-being of coastal communities in the Philippines. Journal of Coastal Conservation, 20(3), 195–208.

Espectato, L. N., Napata, R. B., & Baylon, C. (2017). The value of marine protected areas: through the eyes of community members. Asian Fisheries Science, 30S. https://doi.org/10.33997/j.afs.2017.30.s1.008

Espectato, LN. 2022. Factors for sustainability of inter-governmental alliance on coastal resource management. A Dissertation submitted to the University of the Philippines Visayas.

Ferrer, A. J. G., Eisma-Osorio, R., Calvan, D., & Guidote, M. N. (2024). Securing the rights of Small-Scale fishers and their communities in the context of fisheries management areas in the Philippines. In MARE publication series (pp. 53–71). https://doi.org/10.1007/978-3-031-56716-2_4

Ferrer A.J.G., Francisco H.A., Hopanda J.C., Carmelita B.M.M., Predo C.D. (2022) Mariculture Parks in the Philippines Push Small-Scale Fishers Out of, or Far into, the Waters. In: Jentoft S., Chuenpagdee R., Bugeja Said A., Isaacs M. (eds) Blue Justice. MARE Publication Series, vol 26. Cham: Springer, 469–488. https://doi.org/10.1007/978-3-030-89624-9_25

Ferrer, A. J., Perez, M., Roxas, A., & Avila, E. (2014). Expanding Roles of Men and Women in Aquatic Agricultural Systems in the Philippines. Asian Fisheries Science, 27S, 185–194. https://www.asianfisheriessociety.org/publication/downloadfile.php?id=1034 &file=Y0dSbUx6QXhPRFkxT1RZd01ERTBNVGcyT1RZek1EUXVjR1Jt

Ferrer, A.J., Guzman, A.M., Monteclaro, H., Napata, R., Regalado, J., Buendia, D.L., Ramirez, P.J., & Zamora, G. (2017a). Impact assessment of the closed fishing season policy for sardines in the Visayan Sea [Report submitted to DOST-PCAARRD].

Ferrer, A.J., Monteclaro, H.M., & Hopanda, J. (2017b). Economic cost of bottom trawling in northern Iloilo, Philippines [Report submitted to Oceana Philippines]. University of the Philippines Visayas Foundation, Inc.

Ferrer, AJ, AM Guzman, H Monteclaro, R Napata, J Regalado, DL Buendia, PJ Ramirez, and G Zamora. 2017a. Impact assessment of the closed fishing season policy for sardines in the Visayan Sea. A report submitted to DOST-PCAARRD.

Ferrer, AJG, HM Monteclaro and J Hopanda. 2017b. Economic cost of bottom trawling in northern Iloilo, Philippines. A report submitted to Oceana Philippines. University of the Philippines Visayas Foundation, Inc.

Ferrer, Alice & Eisma-Osorio, Rose-Liza & Calvan, Dennis & Guidote, Marlito. (2024). Securing the Rights of Small-Scale Fishers and Their Communities in the Context of Fisheries Management Areas in the Philippines. 10.1007/978-3-031-56716-2_4.

Ferrer, Alice Joan & Pomeroy, Robert & Akester, Michael & Muawanah, Umi & Chumchuen, Watcharapong & Lee, Wen Chiat & Hai, Phung & Viswanathan, K.Kuperan. (2021). COVID-19 and Small-Scale Fisheries in Southeast Asia: Impacts and Responses. 34. 99-113. 10.33997/j.afs.2021.34.1.011.

Ferrer, Alice Joan. (2016). Fisheries Management Options for Visayan Sea, Philippines: The Case of Northern Iloilo. 10.1007/978-981-10-0141-3_14.

Food and Agriculture Organization of the United Nations. (1995). Code of conduct for responsible fisheries. FAO.

Novio, E. 2020.Webinar report: Farmers, fisherfolk lament limited aid, logistical challenges brought by COVID19. https://www .greenpeace.org/philippines/story/9589/webinar-report-farmersfisherfolk-limited-aid-logistical-challenges-covid19/ (Accessed 17 December 2020)

Ocampo, A., & Binondo, J. (2022). Exploring Gender Dynamics in Rural Tuna Fishing Communities in the Lagonoy Gulf, Philippines. Journal of International Women's Studies, 23(6), 8.

Oceana. (2023). Mission and Objectives. One Ocean. http://oneocean.org/textver/about_crmp/what_we_do.html Pauly, D., Ingles, J., 1981. Aspects of the growth and natural mortality of exploited coral reef fishes. Proceedings of the 4th International Coral Reef Symposium, Manila, vol. 1. pp. 89- 98.

Paunlagui, M. (2016). Knowledge, attitude, and perception of fishers and sardine factory workers on the closed fishing season policy for sardines in Zamboanga Peninsula (Region IX). UPLB Center for Strategic Planning and Policy Studies.

PD No. 461, Reorganizing the Department of Agriculture and Natural Resources into Two Departments, Namely: Department of Agriculture and Department of Natural Resources, Amending for This Purpose Chapter I, Part VIII of the Integrated Reorganization Plan. (1974, May 17). Supreme Court E-Library.

Pleños, M. C. F., et al. (2020). Influence of marine protected areas on fish catch productivity and seasonality in selected sites in the Philippines. Unpublished manuscript.

Pollnac, R. B., et al. (2001). Factors influencing community-based MPAs. Ocean & Coastal Management, 44(11–12), 683–710.

Prieto-Carolino, A., Mediodia, H.J., Pilapil-Anasco, C., Gelvezon, R. P., & Gabunada, F. (2016). Gendered spaces in abalone fisheries in the Philippines. Asian Fisheries Science, 29(1). https://doi.org/10.33997/j.afs.2016.29.1.001 PSA. (2025, January 2). 2022 Census of Agriculture and Fisheries: Capture fishing operation.

PSA. (2025a, January 2). 2022 Census of Agriculture and Fisheries Agricultural Population with Ownership or Secure Rights Over Agricultural Land (SDG 5a.1). Philippine Statistics Authority. https://psa.gov.ph/statistics/caf

PSA. (2025b, March 31). Poverty Incidence Declined from 2021 to 2023 in Ten Basic Sectors. Philippine Statistics Authority.

Rawlins, D. (2009). The marine protected area network of Batangas Province, Philippines: An outcome-based evaluation of effectiveness and performance. Ritsumeikan Journal of Asia Pacific Studies, 25, 55–75.

Republic Act No. 10654, An Act to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing. (2015, February 27). Official Gazette of the Republic of the Philippines. https://www.officialgazette.gov.ph/2015/02/27/republic-act-no-10654/

Republic Act No. 11038, Expanded National Integrated Protected Areas System Act of 2018. (2018, June 22). Official Gazette of the Republic of the Philippines.

Republic Act No. 177, Bureau of Fisheries Act of 1947. (1947, June 20). The LawPhil Project.

Republic Act No. 3512, An Act Creating a Fisheries Commission, Defining Its Powers, Duties and Functions, and Appropriating Funds Therefor. (1963, March 20). The LawPhil Project.

Republic Act No. 7160, Local Government Code of 1991. (1991, October 10). Official Gazette of the Republic of the Philippines. 121

Republic Act No. 7586, National Integrated Protected Areas System Act of 1992. (1992, May 31). The LawPhil Project.

Republic Act No. 8425, Social Reform and Poverty Alleviation Act. (1997, December 11). Supreme Court E-Library.

Republic Act No. 8550, Philippine Fisheries Code of 1998. (1998, February 25). Official Gazette of the Republic of the Philippines. https://www.officialgazette.gov.ph/1998/02/25/republic-act-no-8550/

Rola, A., Naguit, M., Narvaez, T., & Cervantes, C. (2016). Social benefit-cost analysis of the closed fishing season policy of sardines in Zamboanga Peninsula, Philippines. UPLB Center for Strategic Planning and Policy Studies.

Rola, A.C., Narcaez, T.A., Naguit, M.R.A., Elazegui, D.D., Brillo, B.B.C., Paunlagui, M.M., Jalotjot, H.C., & Cervantes, C.P. (2020). Zamboanga Peninsula's seasonal fishing closure for sardines: Opening the sustainability frontier. CSPPS Policy Brief, 6.

Rola, A.C., Narvaez, T.A., Naguit, M.R.A., Elazegui, D.D., Brillo, B.B.C., Paunlagui, M.M., et al. (2018). Impact of the closed fishing season policy for sardines in Zamboanga Peninsula, Philippines. Marine Policy, 87, 40–50.

Samonte, G. P., et al. (2016). MPA effects on fishers' income. Journal of Ocean and Coastal Economics, 3(1), 2.

Santos, M. D., Barut, N. C., & Bayate, A. D. (Eds.). (2017). National Stock Assessment Program: The Philippine Capture Fisheries Atlas. Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute.

Santos, M. J. (2024, January 3). DA-BFAR SAAD Program Phase 2 Celebrates First Year Success. Bureau of Fisheries and Aquatic Resources. https://www.bfar.da.gov.ph/da-bfar-saad-program-phase-2-celebrates-first-year-success/
Segi, S. (2014). Neoliberal conservationist MPAs in the Philippines. Human Ecology, 42, 565–575.

Silvestre, G., Regalado R., and Pauly, D. 1986. Status of Philippine demersal stocks – inferences from underutilized catch rates data. Resources Management and Socioeconomics of Philippines Marine Fisheries. Pauly D., Seager J., and Silvestre, G. (eds), UPV College of Fisheries, Dept. Mar. Fish Tech. Rep. 10, 47-96.

Sino Cruz, I. R. (2020, April 2). Oceana reports possible illegal fishing in municipal waters. Cebu Daily News. https://cebudailynews.inquirer.net/299299/oceana-reports-possible-illegal-fishing-in-municipal-waters

Stiepani, J., Sandig, A., & Blicharska, M. (2023). The Where, the How, and the Why of the gleaning fishery: Livelihoods, food security, threats and management on the island of Malalison, Philippines. Ocean & Coastal Management, 244, 106806.

Suyo, J. G. B., & Altamirano, J. P. (2018). Mapping gendered spaces for sandfish resource management in Guimaras, Philippines. Fish for the People, 16(2), 20–25.

Torell, E., Castro, J., Lazarte, A., & Bilecki, D. (2020). Analysis of gender roles in Philippine fishing communities. Journal of International Development, 33(1), 233–255. https://doi.org/10.1002/jid.3520

Travassos Tolotti, M., Guillotreau, P., Forget, F., Capello, M., & Dagorn, L. (2022). Unintended effects of single-species fisheries management. Environment, Development and Sustainability, 25, Article 24. https://doi.org/10.1007/s10668-022-02432-1 1

Tupper, M., et al. (2015). Evaluating MPA management effectiveness. Marine Policy, 56, 33–42.

Ungkakay-Bagsit, F., Monteclaro, H.M., & Griffith, D.C. (2023). Local Perspectives Matter: The Case of the Seasonal Fishery Closure in the Visayan Sea, Philippines. Society & Natural Resources, 36(6), 660–679. https://doi.org/10.1080/08941920.2023.2183444 United Nations,

United Nations. (1994). United Nations Convention on the Law of the Sea of 10 December 1982: Overview and full text. United Nations Division for Ocean Affairs and the Law of the Sea.

Villarta, K., Del Norte Campos Del Norte Campos, A. G., & Burgos-Nuñeza, L. (2021). Reassessment of the mollusc gleaning fishery in Malalison Island, Antique Province, West Central Philippines. Asian Fisheries Science, 34(3). https://doi.org/10.33997/j.afs.2021.34.3.004

Vista, E. B., & Salvador, R. C. (2014). Socioeconomic status of artisanal fishers in the two major rivers in Northern Samar. In Second International Conference on fisheries Sciences 2014 (p. 16).

White, A. T., & Lopez, N. (1991). Coastal Resources Management Planning and Implementation for the Fishery Sector Program of the Philippines. Coastal Zone ’91, 762–775. https://cedb.asce.org/CEDBsearch/record.jsp?dockey=0071392

White, A. T., et al. (2002). Experience in MPA planning and management. Coastal Management, 30(1), 1–26.

Yoshioka, Nagisa & Era, Marlon & Sasaki, Daisuke. (2021). Towards Integration of Climate Disaster Risk and Waste Management: A Case Study of Urban and Rural Coastal Communities in the Philippines. Sustainability. 13. 10.3390/su13041624.

Zhuang, J., de Dios, E., & Lagman-Martin, A. (2010). Governance and institutional quality and the links with economic growth and income inequality: With special reference to developing Asia (ADB Economics Working Paper Series No. 193