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Research Article

Community Compliance with Fishing Ordinances in the Coastal Municipalities of Bohol Province

Justeofino Hinlayagan, Mhel Jeric De Torres, Joel Pagkaliwangan, Ian Christian Filipino, Johnnyboy Itcay, Reynante Malvar, Grace Alincastre, Princess Beronica Esteban, Antonio Flores Jr., Elizabeth Villa*

De La Salle University-Dasmarinas, Philippines

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**Corresponding author:*
E-mail:
esbuena@dlsud.edu.ph

ABSTRACT

Illegal, unreported, and unregulated (IUU) fishing continues to threaten marine biodiversity, coastal food security, and local governance across the Philippine archipelago. While national laws such as Republic Act No. 10654 outline strict penalties for destructive fishing practices, localized enforcement challenges continue to be significant at the municipal level, where daily compliance and implementation are directly tested. Employing a quantitative descriptive-correlational research design, this study targeted various stakeholders across the 30 coastal municipalities of Bohol. Data were collected via a validated structured survey questionnaire administered to local chief executives; Municipal Environment and Natural Resources Office (MENRO) personnel; military/uniformed law enforcement officers (via convenience sampling); and community residents (via proportionate selection or complete enumeration). While institutional enhancements like the Police Environment Desk exist, actual ordinance compliance is heavily constrained by operational deficiencies—including inadequate patrol boats, insufficient fuel, limited manpower, and fragmented multi-agency communication—alongside economic pressures and awareness gaps among small-scale fisherfolk. Effective local fisheries management relies on an interdependent ecosystem of legal authority, enforcement capability, and civic alignment. Simply enacting ordinances is insufficient to deter violations. To bridge these compliance and implementation gaps, the study proposes a responsive, multi-tiered action plan focused on strengthening local seaborne patrol visibility, upgrading logistical support for first responders, solidifying inter-agency collaboration channels, and enhancing community-driven conservation education.

Keywords: *Illegal, Unreported, and Unregulated (IUU) Fishing, Fisheries Law Enforcement, Coastal Governance, Municipal Fisheries Management, Marine Conservation Compliance*

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Introduction

Illegal, unreported, and unregulated fishing remains a serious concern in coastal communities because it affects marine resources, food security, livelihood, and local governance. At the international level, IUU fishing has been recognized as a continuing threat to sustainable fisheries because it allows fishing activities to occur outside lawful monitoring, reporting, and regulatory systems. The Food and Agriculture Organization's International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing defines IUU fishing as activities that violate applicable national, regional, or international fisheries rules. Previous studies further explain that IUU fishing is often driven by economic incentives and may be associated with weak governance, inadequate monitoring systems, corruption, organized criminal activity, and exploitative labor conditions (FAO, 2001; Mackay et al., 2020; Bondaroff et al., 2015).

Although illegal fishing is widely discussed in international literature, its local implementation context remains important. Studies have examined fisheries enforcement in different countries and regions, including national enforcement systems, inter-state cooperation, and the alignment of fisheries laws with international legal instruments (Fajardo, 2022; Stolsvik, 2019; Hanafi, 2019; Sulistyawan, 2020; Nakamura et al., 2020; Arif, 2017). However, enforcement problems are still strongly felt at the municipal level, where local governments and law enforcement agencies directly deal with daily violations. In this regard, the issue is not limited to the existence of laws and ordinances. It also involves actual compliance, enforcement capacity, logistical support, community cooperation, and coordination among responsible agencies.

In the Philippines, the problem of illegal fishing is especially significant because the country's archipelago composed of 7,641 islands and is surrounded by major bodies of water. The country's territorial waters, including its Exclusive Economic Zone (EEZ), cover approximately 2.2 million square kilometers, while its coastline extends to about 36,289 kilometers. The Philippines is also located within the Coral Triangle, which is known for its rich marine biodiversity, including numerous fish and coral species (Carpenter & Springer, 2005; SEAFDEC, 2022). These conditions make fisheries protection a national concern, but they also make monitoring and enforcement highly challenging.

The Philippine fisheries sector is generally divided into commercial fisheries, municipal fisheries, and aquaculture. Commercial fisheries involve fishing vessels above three gross tons operating beyond municipal waters, while municipal fisheries involve fishing vessels of three gross tons or less, or fishing without boats, within 15 kilometers from the shoreline. Aquaculture, on the other hand, refers to fish farming in inland and coastal waters. The Bureau of Fisheries and Aquatic Resources, under the Department of Agriculture, is responsible for the management, conservation, and development of fisheries and aquatic resources in the country (SEAFDEC, 2022). Despite this institutional structure, illegal fishing activities continue to persist due to the vastness of maritime areas, limited resources, and uneven implementation of fisheries policies.

Illegal fishing in the Philippines commonly includes destructive and prohibited practices such as dynamite fishing, cyanide fishing, the use of modified Danish seine or hulbot-hulbot/liba-liba, and the operation of commercial fishing vessels within municipal waters. Republic Act No. 10654, which amended the Philippine Fisheries Code, strengthens the legal basis for preventing, deterring, and eliminating illegal fishing. It also provides penalties for prohibited acts and supports the protection of municipal waters reserved for small-scale fisherfolk. However, the implementation of these laws depends heavily on the ability of national and local agencies to monitor fishing activities, conduct patrols, apprehend violators, and sustain coordination among enforcement units (Chavez, 2021).

Government initiatives have sought to improve fisheries monitoring and law enforcement. The Bureau of Fisheries and Aquatic Resources has strengthened its monitoring, control, and surveillance capacity through patrol boats, multi-mission vessels, and coordination with the PNP Maritime Group. A memorandum of agreement between BFAR and the PNP

Maritime Group was intended to support seaborne patrol operations, law enforcement, and investigation, while BFAR continues to serve as the primary agency in enforcing fisheries and marine conservation laws (Lagniton, 2021). Similarly, the implementation of Vessel Monitoring Measures and the Electronic Reporting System under Fisheries Administrative Orders No. 260 and No. 266 aims to improve the monitoring of commercial fishing vessels through vessel monitoring systems and automatic location communicators (Miraflor, 2020).

The Integrated Marine Environment Monitoring System has also been introduced to enhance the government's capacity to monitor fishing vessels and strengthen action against illegal, unreported, and unregulated fishing. This system integrates communication, licensing, and law enforcement functions, allowing authorities to monitor Philippine-flagged fishing vessels in real time. Reports further indicate that commercial fishing vessels have begun installing vessel monitoring transceivers in compliance with the relevant fisheries' administrative orders (PNA, 2021). In addition, the Philippine IUU Fishing Index and Threat Assessment Tool was developed to assist local government units in identifying and assessing IUU fishing threats within their jurisdictions and in formulating appropriate local responses (Bunani, 2022).

Despite these developments, illegal fishing remains a continuing concern. Reports have indicated that a significant portion of fish harvested in the Philippines may still come from illegal sources, with estimated economic losses reaching billions of pesos annually (Miraflor, 2021; Bello, 2021). Enforcement reports also show apprehensions involving illegal fishing vessels, municipal boats, and prohibited fishing equipment in various regions of the country (Aglibot, 2022; Lagniton, 2021). These figures suggest that illegal fishing continues to challenge both national regulatory systems and local enforcement mechanisms.

In Bohol, coastal resources are especially important because many communities depend on fishing for daily subsistence and livelihood. The province's marine resources provide food, income, and environmental protection to local families. However, these resources are vulnerable to destructive and unlawful fishing practices. Illegal activities such as the use of compressors, fine mesh nets, liba-liba, baling, palakaya, sagiwsiw, and fishing inside protected areas or sanctuaries continue to threaten fish stocks, coral reefs, seagrass beds, and other coastal habitats. Earlier studies have emphasized that healthy coral reefs and mangrove areas support fish production, food supply, shoreline protection, and other ecological services, but these resources are severely affected by destructive human activities (Alcala, 1981, 1988; White & Savina, 1987; Alcala & Russ, 1990; Christie & White, 1994; White & Cruz-Trinidad, 1998).

The urgency of the issue is clearly reflected in local enforcement records. In the Province of Bohol, police blotter entries from different police stations recorded 1,340 incidents of illegal fishing from 2019 to 2024. These incidents resulted in the arrest of 4,308 fishermen allegedly engaged in illegal fishing activities. The recorded violations involved the use of compressors and fine mesh nets, including liba-liba, tapile net, baling, palakaya, and sagiwsiw, as well as fishing in protected areas and fish sanctuaries. These data show that illegal fishing is not an isolated or occasional problem in the province. Rather, it remains a recurring enforcement concern affecting different coastal municipalities.

In response, the Bohol Police Provincial Office, together with the Municipal Environment and Natural Resources Office, fish wardens, and other concerned agencies, has regularly conducted seaborne patrols in municipal waters. These efforts show that local enforcement mechanisms are already being carried out. However, the continued occurrence of illegal fishing indicates that enforcement activities alone may not be sufficient. The persistence of violations points to the need to examine how illegal fishing ordinances are implemented, how fisherfolk and communities comply with these ordinances, and what problems are encountered by enforcement personnel.

One recent development in Central Visayas is the creation of the Police Environment Desk in police stations. In Bohol, all 48 police stations have been required to establish such desks and designate Police Environment Desk

Officers. These officers serve as direct and accountable focal persons for environmental law enforcement concerns and coordinate with agencies such as the DENR, BFAR, and other law enforcement bodies. This development reflects an institutional effort to strengthen environmental protection at the local police level. However, the effectiveness of this mechanism depends on actual implementation, interagency coordination, community support, training, and sufficient logistical resources.

The implementation of illegal fishing ordinances requires the participation of different agencies. The Local Government Unit has a central role because municipal waters fall within its jurisdiction. At the same time, the Philippine National Police, Philippine Coast Guard, Bureau of Fisheries and Aquatic Resources, Department of Environment and Natural Resources, PNP Maritime Group, fish wardens, and barangay officials also participate in enforcement. This shared responsibility makes coordination necessary. Without clear coordination, enforcement actions may become fragmented, delayed, or inconsistent.

From a law enforcement perspective, illegal fishing is both an environmental violation and a governance issue. The existence of ordinances does not automatically ensure compliance. Some fisherfolk may continue violating regulations because of economic need, lack of awareness, weak monitoring, limited enforcement visibility, or the belief that penalties are not consistently imposed. On the other hand, enforcement personnel may also experience limitations, including inadequate patrol boats, fuel, communication equipment, manpower, training, and operational funds. These limitations may affect the actual implementation of coastal and fisheries ordinances.

The researcher's interest in this study is anchored on direct professional exposure to coastal law enforcement. As a police officer assigned in the Province of Bohol, the researcher has observed that illegal fishing cases continue to occur despite the presence of ordinances and enforcement activities. These observations provided the practical basis for examining the level of compliance with illegal fishing ordinances and the problems encountered in their implementation. Thus, the study does not merely discuss illegal fishing in general terms; it focuses on the actual conditions of coastal municipalities in Bohol.

This study is significant to the Philippine National Police because its findings may help strengthen environmental law enforcement strategies in coastal areas. The results may provide a basis for improving seaborne patrol operations, coordination with partner agencies, and community-based prevention measures. Since police officers are often among the first responders to local illegal fishing incidents, understanding implementation gaps may help them design more responsive and evidence-based interventions.

The study is also relevant to Local Government Units because they are primarily responsible for managing municipal waters and enforcing local ordinances. The findings may help LGUs assess whether existing ordinances are properly implemented and whether enforcement units are adequately supported. The results may also guide local officials in improving policy implementation, budget allocation, logistical support, and community education programs related to illegal fishing prevention.

The Department of Environment and Natural Resources, Bureau of Fisheries and Aquatic Resources, fish wardens, barangay officials, and other partner agencies may likewise benefit from the study. Since illegal fishing requires a multi-agency response, the findings may help identify areas where coordination can be strengthened. The study may also clarify the operational challenges that prevent enforcement personnel from fully carrying out their duties.

For local communities, the study emphasizes that compliance with illegal fishing ordinances is both a legal obligation and a shared responsibility. Coastal resources provide food, livelihood, and environmental protection. When these resources are damaged, the effects are felt not only by enforcement agencies but also by families and future generations who depend on the sea. Therefore, community cooperation is necessary in sustaining local fisheries and protecting marine ecosystems.

In view of these concerns, this study assesses the level of compliance with illegal fishing ordinances in the coastal municipalities of

Bohol and identifies the problems encountered in their implementation. By focusing on local data, actual enforcement experiences, and the perspectives of concerned respondents, the study aims to provide a practical basis for improving the implementation of illegal fishing ordinances in the province.

Theoretical Framework of the Study

This study is anchored on the legal and governance principles embodied in the Philippine Fisheries Code of 1998, or Republic Act No. 8550, as amended by Republic Act No. 10654, otherwise known as An Act to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. These laws provide the primary legal foundation for understanding the regulation, conservation, management, and enforcement of fisheries and aquatic resources in the Philippines. In the context of this study, the amended Fisheries Code serves as the guiding framework for examining the level of compliance with illegal fishing ordinances and the problems encountered in their implementation in the coastal municipalities of Bohol.

Republic Act No. 8550, as amended by Republic Act No. 10654, emphasizes that fisheries management must balance ecological sustainability, economic productivity, and social equity. This means that the use of marine resources should not only support livelihood and food security but should also ensure the long-term protection of aquatic ecosystems. The law recognizes that unregulated and destructive fishing practices may result in overfishing, habitat destruction, loss of biodiversity, and depletion of fishery resources. Thus, the prevention of illegal fishing is not merely a law enforcement function but also a necessary strategy for sustainable coastal resource management.

The amended Fisheries Code strengthens the role of the State in preventing, deterring, and eliminating illegal, unreported, and unregulated fishing. It provides stricter penalties, promotes monitoring and surveillance mechanisms, and supports systems such as Vessel Monitoring Measures, Catch Documentation, and Traceability. These mechanisms are intended to ensure that fishing activities are properly monitored and that fishery products are legally sourced. In relation to the present study, these provisions provide the basis for assessing whether local enforcement mechanisms are effectively implemented and whether stakeholders comply with existing illegal fishing ordinances.

This study is also guided by the principles of sustainable fisheries governance. This perspective emphasizes that the protection of marine resources requires the integration of environmental protection, livelihood concerns, and institutional accountability. In coastal municipalities, illegal fishing cannot be addressed by enforcement alone. It requires a governance system where laws are clearly implemented, communities understand their responsibilities, and agencies work together toward the preservation of marine resources. Therefore, the study examines compliance not only as obedience to ordinances but also as participation in the broader goal of protecting municipal waters for present and future generations.

Another important foundation of this study is the principle of collaborative governance. The implementation of illegal fishing ordinances involves several institutions, including the Local Government Units, Philippine National Police, Bureau of Fisheries and Aquatic Resources, Department of Environment and Natural Resources, Philippine Coast Guard, PNP Maritime Group, fish wardens, barangay officials, and coastal communities. Since enforcement responsibilities are shared among these actors, effective implementation depends on coordination, communication, resource-sharing, and collective accountability. Weak coordination among agencies may result in delayed response, inconsistent enforcement, duplication of functions, or gaps in monitoring.

The role of Local Government Units is particularly significant because municipal waters fall within their territorial jurisdiction. Under Section 16 of Republic Act No. 7160, or the Local Government Code of 1991, LGUs are mandated to promote the general welfare of their constituents. This includes the promotion of health and safety, maintenance of peace and order, preservation of ecological balance, and protection of the comfort and convenience of the people. In relation to fisheries management, LGUs are expected to enforce fishery laws, rules, regulations, and valid local

ordinances within their respective jurisdictions. This legal mandate supports the present study's focus on local ordinance implementation and compliance in the coastal municipalities of Bohol.

The study is further supported by the principle of deterrence and regulatory compliance. From this perspective, people are more likely to comply with laws when rules are clear, enforcement is visible, penalties are consistently applied, and authorities are perceived as capable and legitimate. In the case of illegal fishing, compliance may be influenced by the level of awareness among fisherfolk, the frequency of seaborne patrols, the availability of enforcement resources, the seriousness of penalties, and the consistency of apprehension procedures. If enforcement is weak, irregular, or poorly supported, some individuals may continue to violate ordinances despite knowing that such practices are prohibited.

In the local context of Bohol, the implementation of illegal fishing ordinances must be understood through the interaction of law, enforcement capacity, institutional coordination, and community cooperation. The presence of ordinances does not automatically result in compliance. Local enforcement units may face operational problems such as lack of patrol boats, insufficient fuel, limited manpower, inadequate communication equipment, and difficulty monitoring large coastal areas. At the same time, some fisherfolk may continue illegal practices due to economic need, lack of awareness, or the perception that enforcement is inconsistent. These realities justify the need to assess both the level of compliance and the problems encountered in implementation.

Thus, the theoretical framework of this study assumes that effective implementation of illegal fishing ordinances depends on the combined influence of legal authority, institutional capacity, inter-agency coordination, enforcement consistency, and community participation. Republic Act No. 8550, as amended by Republic Act No. 10654, provides the national legal basis; Republic Act No. 7160 supports the local governance mandate; sustainable fisheries governance explains the ecological and social purpose of compliance; collaborative governance explains the need for multi-agency participation; and deterrence and regulatory compliance explain why enforcement visibility and consistency affect obedience to fisheries regulations.

Through this framework, the study analyzes how coastal municipalities in Bohol implement illegal fishing ordinances and how stakeholders comply with them. It also provides a basis for identifying the problems encountered by enforcement personnel and local authorities. Ultimately, the framework supports the development of recommendations that may strengthen fisheries law enforcement, improve local governance, and promote the sustainable protection of coastal and marine resources.

Conceptual Framework of the Study

Figure 1 presents the conceptual framework of the study. The framework follows the Input-Process-Output (IPO) model, which provides a systematic guide for examining the implementation of illegal fishing ordinances in the coastal municipalities of Bohol. It shows how the profile of the respondents, the level of compliance with illegal fishing ordinances, and the problems encountered in implementation are processed through quantitative analysis to develop a responsive and evidence-based action plan.

The input component includes the major variables considered in the study. First, it covers the profile of the respondents in terms of age, sex, occupation or community role, length of service or residence, and educational attainment. These profile variables are included to determine whether respondents' characteristics may influence their assessment of ordinance compliance and implementation challenges.

The input component also includes the assessment of compliance with illegal fishing ordinances in terms of four key areas: Arrest and Prosecution, Logistical Support, Local Government Coordination, and Community Cooperation. These areas were selected because they represent essential aspects of fisheries law enforcement. Arrest and prosecution reflect the enforcement and legal response to violations. Logistical support refers to the availability of patrol boats, fuel, communication equipment, manpower, and other operational

resources needed for implementation. Local government coordination pertains to the cooperation among LGUs, law enforcement agencies, and other concerned institutions. Community cooperation refers to the participation, support, and compliance of fisherfolk and coastal residents in preventing illegal fishing.

In addition, the study examines the problems encountered in the implementation of illegal fishing ordinances. These problems may include limited enforcement resources, weak coordination among agencies, lack of community participation, insufficient awareness of fisheries laws, and difficulties in monitoring coastal areas. The study also determines whether there are significant differences in the respondents' assessments when grouped according to their profile variables. Furthermore, it examines whether there is a significant relationship between the level of compliance with illegal fishing ordinances and the problems encountered in their implementation.

The process component involves the use of a quantitative-descriptive research method. The process begins with the preparation, validation, and distribution of a structured survey questionnaire to qualified respondents. The gathered responses are then encoded, tabulated, organized, and subjected to appropriate statistical treatment. Descriptive statistics are used to determine the respondents' profile, level of compliance, and extent of problems encountered. Inferential statistics may also be used to determine significant differences and relationships among the study variables.

Through this process, the researcher is able to analyze and interpret the data in a systematic manner. The results provide a clearer understanding of how illegal fishing ordinances are implemented, how stakeholders comply with them, and what factors hinder effective enforcement. This stage ensures that the findings are not based on assumptions but on the actual responses of individuals who have knowledge, experience, or involvement in the implementation of illegal fishing ordinances.

The output component of the framework is the development of a proposed Action Plan. This action plan is based on the findings of the study and is intended to address the identified gaps and challenges in the implementation of illegal fishing ordinances. It may include strategies for improving enforcement operations, strengthening logistical support, enhancing coordination among LGUs and enforcement agencies, increasing community awareness, and promoting stronger participation among fisherfolk and coastal residents.

The framework also includes a feedback mechanism, which shows that the output of the study may be used to improve future implementation efforts. The findings and proposed action plan may serve as a reference for reviewing existing policies, strengthening local enforcement systems, and improving community-based strategies against illegal fishing. This feedback process emphasizes that ordinance implementation is not a one-time activity but a continuing process that requires monitoring, evaluation, and adjustment.

Overall, the conceptual framework demonstrates that effective implementation of illegal fishing ordinances depends on the interaction of respondent characteristics, enforcement practices, logistical support, government coordination, and community participation. By examining these components, the study aims to generate evidence-based recommendations that can contribute to stronger fisheries law enforcement and sustainable coastal resource management in Bohol.

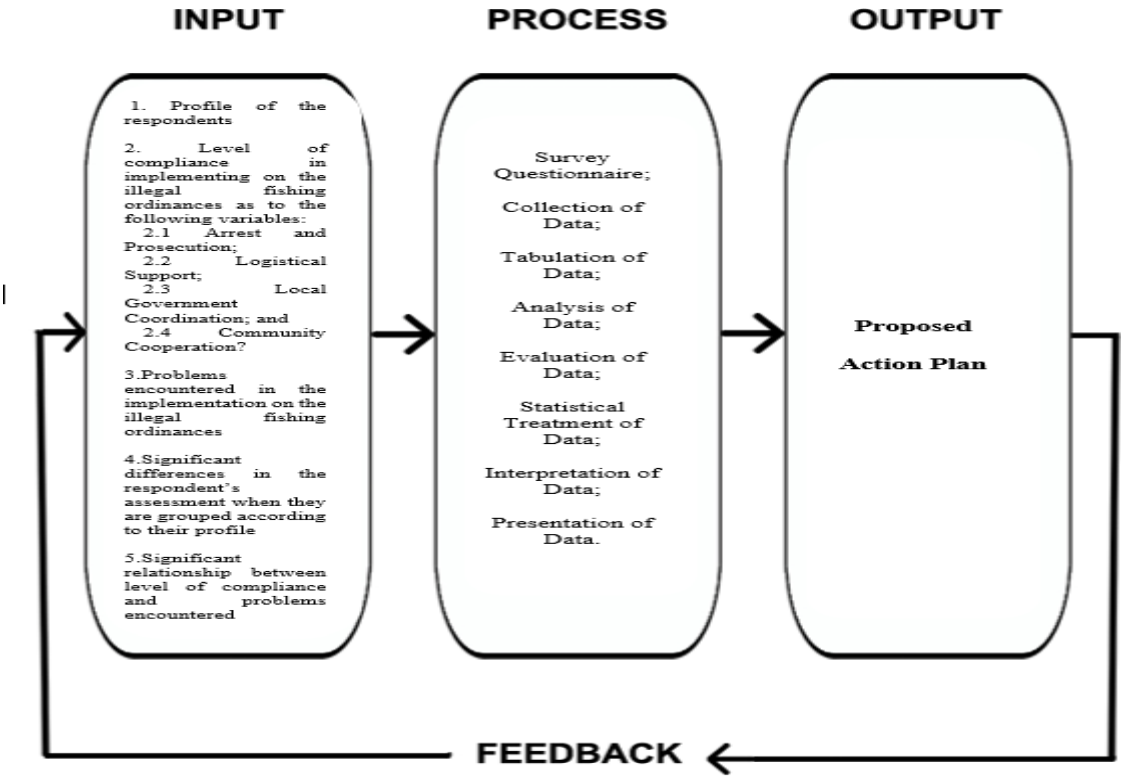

Figure 1. Conceptual Framework of the Study

Statement of the Problem

This study aims to determine the compliance on the illegal fishing ordinances in the coastal municipalities in the Province of Bohol as well as the underlying factors on the non-compliance to the established policies.

Specifically, it seeks to answer the following sub-problems:

1. What is the profile of the respondents in terms of:
   1.1 Age;
   1.2 Gender;
   1.3 Civil Status;
   1.4 Highest Educational Attainment;
   1.5 Monthly Income; and
   1.6 Category of the Respondent
2. What is the level of compliance in implementing on the illegal fishing ordinances as to the following variables:
   2.1 Arrest and Prosecution;
   2.2 Logistical Support;
   2.3 Local Government Coordination; and
   2.4 Community Cooperation?
3. What are the problems encountered in the implementation on the illegal fishing ordinances as to the above-mentioned variables?
   3.1 Arrest and Prosecution;
   3.2 Logistical Support;
   3.3 Local Government Coordination; and
   3.4 Community Cooperation?
4. What is the significant differences in the respondent's assessment when they are grouped according to their profile?
5. What is the significant relationship between level of compliance and problems encountered in the implementation on the illegal fishing ordinances?
6. What action plan maybe proposed based on the results of the study.

Hypotheses

H1. There is no significant difference on the respondents' assessment of the problems encountered when they are grouped according to their profile.

H2. There is no significant relationship between level of compliance and problems encountered in the implementation of the fishing ordinances.

Scope and Limitation of the Study

The scope of the study covered the thirty (30) coastal municipalities in the Province of Bohol. Specifically, the municipalities of Albuquerque, Anda, Baclayon, Bien Unido, Buenavista, Calape, Candijay, Clarin, Cortes, Dauis, Dimiao, Duero, Garcia Hernandez, Getafe, Guindulman, Inabanga, Jagna, Lila, Loay, Loon, Mabini, Maribojoc, Panglao, Pres. Carlos P. Garcia, Tagbilaran City, Talibon, Trinidad, Tubigon, Ubay, and Valencia served as the study areas. These municipalities were included because they were classified as coastal municipalities directly affected by fisheries governance, coastal law enforcement, and issues related to illegal fishing and marine resource protection.

The study specifically examined the level of compliance of the residents with existing fishing ordinances and identified the underlying factors contributing to noncompliance. It also covered the socio-demographic profile of the respondents to determine the relationship between sociological factors and the level of compliance or non-compliance with fisheries policies and regulations. The inclusion of socio-demographic variables enabled the study to provide a more comprehensive analysis of behavioral, social, and governance-related factors influencing community compliance with fishing ordinances.

The study was limited only to the identified coastal municipalities in the Province of Bohol. Consequently, it did not include municipalities that were not categorized as coastal municipalities. These excluded municipalities included Sagbayan, Danao, San Miguel, Alicia, Sierra Bullones, Pilar, Dagohoy, Catigbian, San Isidro, Antequera, Balilihan, Sikatuna, Sevilla, Bilar, Loboc, Corella, Batuan, and Carmen. These municipalities were excluded because they were not directly engaged in coastal fisheries management and were not primary areas affected by marine resource enforcement concerns relevant to the objectives of the study.

Methodology

Research Design

A quantitative descriptive-correlational research design was employed in this study. This approach is appropriate as it facilitates the assessment of the extent of fishing ordinance implementation, the level of community compliance, and the relationships between enforcement-related factors and compliance behavior. The descriptive component presents existing conditions, practices, and respondents' perceptions regarding ordinance implementation, enforcement practices, logistical support, community cooperation, and arrest and prosecution processes. The correlational component is suitable for determining whether significant relationships exist among these variables without manipulation.

The use of a quantitative design is justified as the study relies on numerical data collected through a structured survey questionnaire. These responses can be measured, summarized, compared, and statistically analyzed to yield objective findings. Descriptive-correlational research is particularly suitable for describing existing conditions and determining the degree of association among variables, especially in governance, public administration, and law enforcement contexts (Rahi, 2017). In this context, the design facilitates the identification of compliance patterns and the examination of significant associations between implementation-related factors and community compliance with fishing ordinances.

Population and Sampling Scheme

The study was conducted in the thirty coastal municipalities of the Province of Bohol. These municipalities were selected because they were directly involved in the implementation and enforcement of fishing ordinances and were significantly exposed to issues related to illegal fishing, coastal resource degradation, and marine environmental protection. The selection of the study locale was considered appropriate because these municipalities represented areas where fisheries governance and coastal law enforcement mechanisms were actively implemented. As such, the study area provided a relevant setting for examining the extent of ordinance implementation, enforcement effectiveness, inter-agency coordination, and community compliance with fisheries regulations.

The study employed a quantitative-descriptive research design. This research design was deemed appropriate because it enabled the

systematic collection, measurement, and analysis of quantitative data regarding the implementation of fishing ordinances and the level of community compliance within the coastal municipalities of Bohol. Quantitative-descriptive research is appropriate for studies that aim to describe existing conditions, identify patterns, and analyze relationships among variables through the use of statistical techniques (Creswell & Creswell, 2021). The utilization of this research design allowed the study to generate objective, measurable, and generalizable findings concerning enforcement practices, logistical support, coordination mechanisms, and compliance behavior among stakeholders involved in fisheries governance.

Convenience sampling was utilized for Local Chief Executives, Municipal Environment and Natural Resources Office (MENRO) personnel, and military or uniformed personnel. This sampling technique was adopted because the respondents were selected based on their accessibility, availability, and direct involvement in the implementation and enforcement of fishing ordinances. Convenience sampling was considered appropriate because the targeted respondents possessed specialized knowledge, technical expertise, and firsthand experience relevant to the research problem. Moreover, this approach was justified in situations where respondents were difficult to gather simultaneously due to operational functions and field responsibilities (Rahi, 2017). The use of convenience sampling enabled the study to obtain relevant and reliable information from institutional actors directly engaged in fisheries law enforcemen and coastal resource management.

For community residents, complete enumeration or proportionate selection was utilized depending on the identified population categories representing municipalities with high, average, and low population densities. This approach was justified because residents constituted the primary stakeholders directly affected by fishing ordinances and coastal law enforcement activities. Their inclusion was necessary in assessing the level of awareness, cooperation, participation, and compliance within the community. The utilization of proportionate representation among population categories strengthened the representativeness and inclusiveness of the study, thereby enhancing the validity of the findings.

The respondents were selected based on their direct relevance to the objectives of the study. Local Chief Executives were included because they exercised authority over local governance, policy implementation, resource allocation, and enforcement support within their respective municipalities. MENRO personnel were included because they were directly responsible for environmental protection, coastal monitoring, implementation of environmental management programs, and enforcement coordination. Military or uniformed personnel were included due to their participation in seaborne patrol operations, law enforcement activities, apprehension procedures, and interagency coordination related to fisheries protection. Community residents were included because they represented the sector primarily affected by the implementation of fishing ordinances, and their compliance behavior was central to the objectives of the study.

The inclusion of these respondent groups was justified because the study examined fisheries ordinance implementation from both institutional and community-based perspectives. The integration of responses from government authorities, enforcement personnel, and community members enabled the study to generate a more comprehensive and multidimensional assessment of enforcement effectiveness, logistical capability, coordination mechanisms, and community compliance. This multi-sectoral approach strengthened the analytical rigor of the study by incorporating perspectives from both implementers and beneficiaries of fisheries governance initiatives.

Table 1.
Distribution of Respondents

Respondents	Frequency	Percent
Local Chief Executives	300	26.00
MENRO Personnel	300	26.00
Military or Uniformed Personnel	180	15.00
Residences	384	33.00
TOTAL	**1,164**	**100**

Research Instrument

The primary data gathering instrument utilized in the study was a structured survey questionnaire. The questionnaire was designed to obtain quantitative data regarding the implementation of fishing ordinances, enforcement strategies, logistical support systems, interagency coordination, and community compliance. A four-point Likert scale was utilized to measure the respondents' perceptions and assessments of the identified variables. The use of a Likert scale was considered appropriate because it facilitated the systematic quantification and interpretation of attitudes, perceptions, and levels of agreement in a measurable and standardized manner.

To establish content validity, the research instrument was subjected to expert validation by specialists in criminology, fisheries law enforcement, environmental governance, and research methodology. The validators evaluated the questionnaire in terms of relevance, clarity, coherence, organization, and alignment with the objectives and variables of the study. Necessary revisions and modifications were incorporated based on the recommendations of the validators to improve the quality and appropriateness of the instrument. The conduct of expert validation ensured that the instrument adequately measured the intended constructs and accurately reflected the objectives of the study, thereby strengthening the validity and credibility of the gathered data.

To establish reliability, pilot testing was conducted prior to the actual administration of the questionnaire. The responses obtained during the pilot testing phase were subjected to Cronbach's Alpha analysis to determine the internal consistency and reliability of the instrument. A Cronbach's Alpha coefficient of 0.70 or higher was considered indicative of acceptable reliability and consistency (Taber, 2018). Reliability testing was necessary to ensure that the instrument consistently measured the variables of the study and generated stable and dependable results across respondents.

The study utilized both descriptive and inferential statistical tools for data analysis. Frequency and percentage distribution were employed to summarize and describe the demographic characteristics of the respondents and other categorical variables included in the study. Weighted mean was utilized to determine the extent of implementation of fishing ordinances and the level of community compliance, enforcement effectiveness, logistical support, and coordination mechanisms. The weighted mean was considered appropriate because it facilitated the interpretation of respondents' assessments based on the established Likert scale categories.

Inferential statistical tools, including Analysis of Variance (ANOVA) and correlation analysis, were likewise utilized to analyze relationships and differences among variables. ANOVA was employed to determine whether significant differences existed in the assessments of the various respondent groups regarding the implementation of fishing ordinances and

community compliance. Correlation analysis was utilized to determine the degree of relationship between enforcement-related variables and the level of community compliance with fisheries ordinances. The application of inferential statistical techniques enhanced the analytical depth and methodological rigor of the study by enabling the identification of statistically significant patterns, associations, and variations among the variables examined.

Data Gathering Procedure

With the approval given by the adviser and the Graduate School Research Committee after the presentation of the research proposal, the researcher incorporates the suggestions and remarks of the adviser and members of the panel of experts.

Before using the survey questionnaire for this study, the researcher drafts a letter requesting approval to use the instrument and sends it via email to the author. Upon receiving the author's approval, the researcher proceeds with the validation of the instrument to ensure its relevance and appropriateness to the nature of the respondents in the study locale, with the help of three experts.

A letter of request is submitted to the appropriate office to seek permission to distribute the questionnaires. Once the letter is approved and the "go" signal is given, the researcher proceeds with the distribution of the questionnaire.

On the day of distribution, the researcher explains the purpose of the study and assures the respondents of the confidentiality of their responses. The anonymity of the respondents is respected throughout the study. All data gathered are used solely for the purposes of this research. The researcher retrieves the accomplished questionnaires and analyses the data using appropriate statistical tools.

Statistical Treatment of Data

Percentage. This refers to the itemized summation of the percentage of the frequency of responses for each questionnaire item, based on the arithmetical percentage of the frequency distribution relative to the total number of responses.

$$P\,(\%) = \frac{F}{n} \times 100$$

Where:

P – Percentage
F – Value of a Part
N – The total of the part that make up the whole
100 – The Constant

Weighted Mean. This measures the respondents' assessment by computing the weighted average of responses. Each frequency in a group or category is multiplied by its corresponding weight. The sum of these products is then divided by the total number of responses.

The formula is:
WM = computed Weighted Mean
Σ = symbol for summation
F = frequently of number of cases
W = weighted point in a given scale
N = Total Population

Rating Scale. The four-point numerical Rating Scale was used in the presentation and analysis of the responses of the respondents.

Scale	Verbal Description	Verbal Interpretation	Numerical Rating
4	Very High	VH	3.26-4.00
3	High	H	2.51-3.25
2	Low	L	1.76-2.50
1	Very Low	VL	1.00-1.75

Scale	Verbal Description	Verbal Interpretation	Numerical Rating
4	Very Serious	VS	3.26-4.00
3	Serious	S	2.51-3.25
2	Less Serious	LS	1.76-2.50
1	Not Serious	NS	1.00-1.75

Analysis of Variance (ANOVA). was used to determine whether there were significant differences in the assessment of the respondents when grouped according to their profile variables such as age, educational attainment, occupation or community role, years of service or residence, and other relevant characteristics. This statistical tool was appropriate because the study sought to compare the mean responses of three or more groups in relation to

the level of compliance with illegal fishing ordinances and the problems encountered in their implementation.

The formula for ANOVA is:

$$F = \frac{MSB}{MSW}$$

Where:
F = computed value of ANOVA
MSB = mean square between groups
MSW= mean square within groups

The level of significance was set at 0.05. If the computed probability value or p-value was less than or equal to 0.05, the null hypothesis was rejected, which means that there was a significant difference in the respondents' assessment. However, if the p-value was greater than 0.05, the null hypothesis was accepted, which means that there was no significant difference in the respondents' assessment.

Ethical Considerations

This study strictly adhered to the ethical principles governing research involving human participants. Prior to the conduct of the study, the researcher secured the necessary approvals and permissions from the concerned authorities and institutions to ensure that the data gathering procedures complied with established ethical and academic standards.

The respondents were informed of the nature, objectives, and significance of the study before their participation. Informed consent was obtained from all participants, ensuring that their involvement was voluntary and based on their full understanding of the purpose of the research, the procedures involved, and their right to withdraw from the study at any stage without penalty or negative consequences.

The researcher ensured the protection of the respondents' privacy, anonymity, and confidentiality throughout the entire research process. Personal identities and sensitive information were not disclosed in any part of the study. Codes and numerical identifiers were utilized instead of respondents' names to maintain anonymity during data analysis, interpretation, and presentation of findings. All collected data were treated with strict confidentiality and were used solely for academic and research purposes.

Special attention was given to the formulation of the survey questionnaire to ensure that the items were appropriate, non-discriminatory, culturally sensitive, and free from offensive or biased language. The researcher remained sensitive to ethical concerns related to age, gender, social status, educational background, and cultural differences among the respondents.

To maintain the integrity and reliability of the study, the researcher personally administered and monitored the data gathering process following the approved research procedures. All gathered data and supporting documents were properly organized, secured, and preserved to ensure accuracy, consistency, and accountability in the conduct of the study.

Furthermore, the researcher upheld the principles of honesty, objectivity, transparency, and academic integrity throughout the conduct of the research. Proper acknowledgment and citation of all sources and references used in the study were strictly observed in accordance with APA 7th edition standards.

Results and Discussions

Sub-problem No.1. Profile of the respondents.

Table 1 presented the demographic composition of the 780 respondents from the 30 coastal municipalities of Bohol, namely Albuquerque, Anda, Baclayon, Bien Unido, Buenavista, Calape, Candijay, Clarin, Cortes, Dauis, Dimiao, Duero, Garcia Hernandez, Getafe, Guindulman, Inabanga, Jagna, Lila, Loay, Loon, Mabini, Maribojoc, Panglao, Pres. Carlos P. Garcia, Tagbilaran City, Talibon, Trinidad, Tubigon, Ubay, and Valencia. The demographic profile provided an important contextual basis for interpreting the level of compliance with fisheries regulations and local fishing ordinances. Since compliance was influenced not only by the existence of policies but also by the characteristics, capacity, and lived experiences of those involved in governance and enforcement, the profile of the respondents helped explain why certain municipalities or sectors reported higher or lower levels of ordinance compliance.

Table 1.1
Profile of the Respondents in Terms of Gender
N = 780

Gender	Frequency	Percentage
Male	615	78.85%
Female	162	20.77%
LGBTQIA	3	0.38%
Total	**780**	**100.00%**

Table 1.1 presents the profile of the respondents in terms of gender. Out of the 780 respondents, the majority were male, with a frequency of 615, representing 78.85% of the total respondents. This was followed by female respondents, with a frequency of 162, equivalent to 20.77%. Meanwhile, 3 respondents, or 0.38%, identified as LGBTQIA.

The findings show that the respondent group was predominantly male. This may be attributed to the nature of fishing-related activities, which are commonly male-dominated due to the physical demands of fishing, seaborne operations, enforcement-related tasks, and direct involvement in coastal livelihood activities. The high proportion of male respondents suggests that men remain the most visible participants in fisheries-related concerns and local fishing ordinance implementation.

However, the presence of female and LGBTQIA respondents indicates that fishing ordinance compliance is not only a concern of male fishers but also involves other members of the community. Women may participate in fish vending, processing, household decision-making, community organizing, and coastal resource management activities. Likewise, the inclusion of LGBTQIA respondents reflects a more inclusive respondent profile, although their representation remains minimal.

Recent literature supports this finding. Santos et al. (2021) emphasized that fisheries and coastal livelihood systems in the Philippines are often gendered, with men commonly involved in capture fishing while women participate in post-harvest work, marketing, household-based fisheries activities, and community support roles. This explains why male respondents are usually more numerous in studies involving fishing communities and ordinance compliance.

Similarly, Kleiber et al. (2021) noted that women's contributions in fisheries are often underrepresented because their work is commonly associated with informal, unpaid, or post-harvest activities rather than direct fishing operations. This supports the present finding where female respondents were fewer than male respondents, although their role remains significant in coastal and fisheries governance.

In relation to fisheries management, Harper et al. (2022) stressed that gender-inclusive fisheries governance is important because men and women experience fisheries issues differently and contribute to resource management in different ways. This means that while the respondent profile is male-dominated, the perspectives of women and other gender groups remain important in understanding community compliance with fishing ordinances.

Furthermore, Bennett et al. (2021) argued that inclusive governance improves environmental management because policies become more responsive when different community sectors are represented. In the context of this study, the inclusion of female and LGBTQIA respondents, although limited, contributes to a broader understanding of community participation in the implementation of fishing ordinances.

Overall, the findings imply that the respondents were largely male, reflecting the traditional gender composition of fisheries-related activities. Nevertheless, the participation of female and LGBTQIA respondents shows that fishing ordinance implementation involves diverse community members. This suggests that local fisheries programs should continue to promote gender-responsive and inclusive participation in consultations, enforcement support, livelihood programs, and coastal resource management activities.

Table 1.2
Profile of the Respondents in Terms of Civil Status
N = 780

Civil Status	Frequency	Percentage
Married	542	69.49%
Single	182	23.33%
Widow/er	56	7.18%
Total	**780**	**100.00%**

Table 1.2 presents the profile of the respondents in terms of civil status. Out of the 780 respondents, the majority were married, with a frequency of 542, representing 69.49% of the total respondents. This was followed by single respondents, with a frequency of 182, equivalent to 23.33%. Meanwhile, 56 respondents, or 7.18%, were widow/er.

The findings show that most respondents were married. This implies that a large proportion of the respondents may have family responsibilities and household obligations that are directly affected by fishing livelihood, income stability, and the sustainability of marine resources. Since fishing is commonly a family-based livelihood in coastal communities, married respondents may have stronger concern for the implementation of fishing ordinances because these policies influence food security, household income, and the longterm availability of fishery resources.

The presence of single respondents also indicates that younger or unmarried individuals are involved in fishing-related activities and community concerns. Their participation may reflect the role of youth and working-age community members in fishing, fish vending, coastal monitoring, or local livelihood support. Meanwhile, the widow/er respondents, although fewer in number, may represent older members of the community who have long-term experience and knowledge of local fishing practices, coastal conditions, and changes in marine resources.

The result is consistent with recent literature emphasizing that fisheries and coastal livelihoods are strongly connected to household welfare and family survival. Kleiber et al. (2021) explained that small-scale fisheries often involve household-based labor, where fishing, processing, selling, and resource management responsibilities are shared among family members. This supports the finding that many respondents were married, as fishing-related decisions and compliance with ordinances are often influenced by family livelihood needs.

Similarly, Harper et al. (2022) emphasized that fisheries contribute not only to income but also to household food security and community welfare. In this sense, married respondents may have a direct interest in the protection of fisheries because the decline of marine resources can affect their families' daily food consumption and economic stability.

In relation to governance, Bennett et al. (2021) noted that marine and coastal management becomes more effective when policies consider the social realities of local communities, including household dependency, livelihood vulnerability, and community participation. This means that the civil status of respondents is relevant because family responsibilities may shape how individuals view compliance with fishing ordinances and conservation measures.

Moreover, the Bureau of Fisheries and Aquatic Resources (2022) recognized in the Comprehensive National Fisheries Industry

Development Plan 2021–2025 that fisheries development must address livelihood sustainability, community participation, and the welfare of fishing households. This supports the present finding because most respondents, being married, may represent households that depend on coastal and fishery resources for economic and social survival.

Overall, the findings imply that the respondents were predominantly married, suggesting that fishing ordinance implementation is closely related to family livelihood and household security. The participation of single and widow/er respondents also shows that compliance with fishing ordinances involves different sectors of the community. Therefore, LGUs should consider family-based livelihood concerns, household dependency, and community welfare when designing fisheries enforcement, information campaigns, livelihood assistance, and coastal resource management programs.

Table 1.3
Profile of the Respondents in Terms of Age
N = 780

Age	Frequency	Percentage
21–25	20	2.56%
26–30	70	8.97%
31–35	105	13.46%
36–40	140	17.95%
41–45	165	21.15%
46–50	115	14.74%
51–55	70	8.97%
56–60	52	6.67%
61 and above	43	5.51%
Total	**780**	**100.00%**

Table 1.3 presents the profile of the respondents in terms of age. Out of 780 respondents, the largest group belonged to the 41–45 age bracket, with a frequency of 165, representing 21.15% of the total respondents. This was followed by respondents aged 36–40, with 140 respondents or 17.95%, and those aged 46–50, with 115 respondents or 14.74%. Respondents aged 31–35 accounted for 105 respondents or 13.46%.

Meanwhile, respondents aged 26–30 and 51–55 both had 70 respondents, equivalent to 8.97% each. Those aged 56–60 accounted for 52 respondents or 6.67%, while respondents aged 61 and above had 43 respondents or 5.51%. The smallest group came from the 21–25 age bracket, with only 20 respondents, representing 2.56% of the total.

The findings show that most respondents were within the middle-adult age groups, particularly from 36 to 50 years old. This suggests that the respondents were generally mature, economically active, and likely to have substantial experience in fishing-related activities, coastal livelihood, and community participation. Since fishing and coastal resource use often require practical knowledge, physical capacity, and long-term familiarity with local waters, the dominance of respondents aged 36–50 may indicate that the study captured the views of individuals who are actively involved in fishing, enforcement support, or community-based fisheries concerns.

The relatively low percentage of respondents aged 21–25 may suggest limited participation of younger adults in fishing-related activities or community compliance processes. This may be due to migration, education, employment outside the fishing sector, or reduced interest among younger generations in traditional fishing livelihoods. On the other hand, the presence of respondents aged 56 and above indicates that older community members remain involved or knowledgeable in fisheries-related matters, possibly contributing experience-based insights on changes in fishing practices, ordinance implementation, and marine resource conditions.

Recent literature supports this finding. Nash et al. (2022) emphasized that small-scale fisheries are shaped by demographic characteristics such as age, experience, and livelihood dependence. Older and middle-aged fishers often possess long-term ecological knowledge, which can influence how they understand fisheries regulations and compliance. This supports the result that many respondents belonged to mature age groups, as they may have deeper familiarity with local fishing practices and changes in marine resources.

Similarly, Mbaru and Barnes (2021) noted that age and fishing experience affect participation in fisheries management and compliance behavior. More experienced fishers may better understand the consequences of illegal fishing, resource depletion, and weak enforcement. In the present study, the dominance of respondents in the 36–50 age range may therefore strengthen the reliability of responses because these age groups are likely to have practical exposure to municipal fishing ordinances and local enforcement activities.

In the Philippines, the Bureau of Fisheries and Aquatic Resources (2022) recognized that fisheries development must consider the role of fishing households, fisherfolk organizations, and community stakeholders in sustaining municipal fisheries. Since many respondents were in productive adult age groups, they may represent household heads, active fishers, or community members directly affected by fishing regulations. This implies that their perceptions are important in evaluating the actual level of compliance with fishing ordinances.

Moreover, Barboza et al. (2024) emphasized that small-scale fisheries management requires attention to the social characteristics of fishing communities, including age, livelihood dependence, and community participation. Their study suggests that fisheries governance becomes more effective when management strategies are responsive to the demographic profile of local resource users. This supports the importance of analyzing age as part of the respondent profile because age may influence awareness, participation, risk perception, and willingness to comply with fishing ordinances.

Overall, the findings imply that the respondents were mostly from the middle-adult and economically active age groups, particularly those aged 36–50 years old. This suggests that the responses were largely drawn from individuals who may have direct experience in fishing livelihoods and community-level ordinance implementation. However, the low representation of younger respondents indicates the need to encourage youth participation in fisheries governance, environmental education, and coastal resource management programs. Involving both experienced adults and younger community members may strengthen longterm compliance with fishing ordinances and promote sustainable fisheries management.

Table 1.4
Profile of the Respondents in Terms of Educational Attainment
N = 780

Educational Attainment	Frequency	Percentage
College Graduate	423	54.23%
College Units	97	12.44%
High School	116	14.87%
Elementary	41	5.26%
Vocational	55	7.05%
Masteral Units	36	4.62%
Doctoral Degree	12	1.54%
Total	**780**	**100.00%**

Table 1.4 presents the profile of the respondents in terms of educational attainment. Out of 780 respondents, the majority were college graduates, with a frequency of 423, representing 54.23% of the total respondents. This was followed by respondents who reached high school, with 116 respondents or 14.87%, and those with college units, with 97 respondents or 12.44%.

Meanwhile, 55 respondents or 7.05% had vocational education, while 41 respondents or 5.26% had elementary-level education. Respondents with masteral units accounted for 36 respondents or 4.62%, while those with a doctoral degree had the lowest frequency of 12 respondents, equivalent to 1.54%.

The findings show that the respondents were generally educated, as more than half of them were college graduates. This implies that many respondents may have sufficient literacy, awareness, and capacity to understand fishing ordinances, enforcement procedures, and community-based resource management programs. Their educational background may help them interpret the importance of compliance, conservation, and sustainable fishing practices.

The presence of respondents with college units, vocational education, and graduate-level education further suggests that the respondent group had varied educational backgrounds. This diversity may enrich the findings because respondents may interpret fishing ordinance implementation from different perspectives, including livelihood, governance, enforcement, community participation, and environmental protection.

However, the presence of respondents with high school and elementary education also indicates that information campaigns and ordinance implementation strategies should remain simple, accessible, and community-based. Fisheries-related policies must be communicated in understandable language so that all community members, regardless of educational background, can participate meaningfully in compliance and enforcement efforts.

Recent literature supports the relevance of education in fisheries compliance and coastal governance. Mbaru and Barnes (2021) emphasized that social characteristics, including knowledge, awareness, and access to information, can influence participation in conservation and resource management activities. This supports the present finding because respondents with higher educational attainment may have greater capacity to understand fisheries regulations and participate in ordinance implementation.

Similarly, Bennett et al. (2021) explained that inclusive and effective marine governance requires attention to social equity, participation, and access to information. Their study emphasized that conservation policies become more responsive when communities are properly informed and when different sectors are able to participate. This is relevant to the present table because educational attainment may affect how respondents understand ordinances, report violations, and cooperate with local enforcement initiatives.

In the Philippine, the Bureau of Fisheries and Aquatic Resources (2022) emphasized in the Comprehensive National Fisheries Industry Development Plan 2021–2025 that fisheries development requires capacity-building, stakeholder participation, and institutional support. The plan recognizes that fisherfolk and community stakeholders must be equipped with knowledge and skills to support sustainable fisheries management. This supports the finding that educational attainment is important in strengthening compliance with fishing ordinances.

Moreover, Barboza et al. (2024) noted that small-scale fisheries management in the Philippines requires approaches that consider the social and educational characteristics of fishing communities. Their review emphasized that effective fisheries governance must not focus only on regulation but also on awareness, participation, and capacity-building among local resource users. This supports the interpretation that respondents with higher educational attainment may be more prepared to engage in fisheries governance, while those with lower educational levels may require more accessible information and training support.

Likewise, the Philippine IUU Fishing Assessment Report 2023 highlighted the need to strengthen local capacity in addressing illegal,

unreported, and unregulated fishing. Since enforcement and compliance depend partly on community awareness and understanding of fishing rules, educational attainment becomes relevant in promoting responsible fishing behavior and community cooperation (Bureau of Fisheries and Aquatic Resources, 2024).

Overall, the findings imply that the respondents were largely college-educated, which may positively influence their understanding of fishing ordinances and their role in coastal resource protection. However, since some respondents had high school, elementary, and vocational backgrounds, LGUs should ensure that information dissemination, training, and enforcement-related education are inclusive and easy to understand. Strengthening fisheries education, community orientations, and barangay-level awareness campaigns may further improve compliance with fishing ordinances across all educational groups.

Table 1.5
Profile of the Respondents in Terms of Monthly Income
N = 780

Monthly Income	Frequency	Percentage
Below ₱10,000	110	14.10%
₱10,001–₱20,000	160	20.51%
₱20,001–₱30,000	117	15.00%
₱30,001–₱40,000	138	17.69%
₱40,001–₱50,000	52	6.67%
Above ₱50,000	203	26.03%
Total	**780**	**100.00%**

Table 1.5 presents the profile of the respondents in terms of monthly income. Out of 780 respondents, the largest group earned above ₱50,000, with a frequency of 203, representing 26.03% of the total respondents. This was followed by those earning ₱10,001–₱20,000, with 160 respondents or 20.51%, and those earning ₱30,001–₱40,000, with 138 respondents or 17.69%.

Meanwhile, 117 respondents or 15.00% earned ₱20,001–₱30,000, while 110 respondents or 14.10% earned below ₱10,000. The smallest group consisted of respondents earning ₱40,001–₱50,000, with 52 respondents, equivalent to 6.67%.

The findings show that the respondents came from varied income groups. The highest proportion belonged to those earning above ₱50,000, suggesting that a considerable number of respondents may have relatively stable or multiple sources of income. This may include income from fishing, business, employment, trading, remittances, or other livelihood activities connected to coastal communities. Their higher income level may also indicate greater access to fishing equipment, business capital, education, and participation in local governance activities.

However, the data also show that a significant portion of respondents belonged to lower-income groups. Respondents earning below ₱10,000 and ₱10,001–₱20,000 together accounted for 270 respondents, or 34.61% of the total. This suggests that many respondents may still experience economic vulnerability. In the context of fishing ordinance compliance, income is an important factor because economically vulnerable fisherfolk may be more affected by fishing restrictions, seasonal income changes, fuel costs, market fluctuations, and enforcement actions against illegal fishing.

Recent literature supports the relevance of income in fisheries compliance and coastal governance. Bennett et al. (2021) emphasized that marine conservation and fisheries governance must consider social equity because resource

users differ in income, livelihood security, and capacity to adjust to regulations. This supports the present finding because respondents with lower income may need livelihood support and fair access to fisheries programs to comply with ordinances without experiencing excessive economic burden.

Similarly, Barboza et al. (2024) explained that small-scale fisheries management in the Philippines requires attention to social and economic realities, including livelihood dependence, poverty, market access, and household vulnerability. Their study suggests that fisheries policies become more effective when enforcement is balanced with livelihood-sensitive interventions. This is relevant to the present findings because income variation among respondents may influence their ability and willingness to comply with fishing ordinances.

In the Philippine, the Bureau of Fisheries and Aquatic Resources (2022) emphasized in the Comprehensive National Fisheries Industry Development Plan 2021–2025 that fisheries development should promote inclusive growth, livelihood improvement, and sustainable resource management. The plan recognizes that fisherfolk and coastal communities require capacity-building, livelihood assistance, and institutional support to improve their economic condition while protecting fisheries resources. This supports the interpretation that income profile is an important consideration in implementing fishing ordinances.

Moreover, the Philippine IUU Fishing Assessment Report 2023 highlighted that illegal, unreported, and unregulated fishing remains a governance and livelihood concern in municipal waters. Since fishing communities may depend heavily on marine resources for daily income, enforcement measures should be accompanied by education, alternative livelihood programs, and community-based support to reduce incentives for illegal fishing (Bureau of Fisheries and Aquatic Resources, 2024).

Furthermore, Maderazo (2025) emphasized that small-scale fisheries governance in the Philippines is closely linked to tenure security, livelihood rights, and local institutional support. This means that compliance with fisheries regulations cannot be separated from the socioeconomic condition of coastal communities. Respondents with lower income may require stronger government assistance, while higher-income respondents may have more capacity to invest in legal and sustainable fishing practices.

Overall, the findings imply that the respondents represented different economic levels, with the largest group earning above ₱50,000, but with a substantial number still belonging to lower-income categories. This indicates that fishing ordinance implementation should be both regulatory and livelihood-sensitive. LGUs should strengthen enforcement while also providing livelihood assistance, financial literacy programs, fisherfolk training, market support, fuel or equipment assistance, and alternative income opportunities. Such interventions may help ensure that compliance with fishing ordinances does not become a burden to low-income fishing households but instead contributes to sustainable livelihood and marine resource protection.

Table 1.6
Profile of the Respondents in Terms of Respondent Category
N = 780

Respondent Category	Frequency	Percentage
MENRO	300	38.46%
Uniformed Personnel	180	23.08%
LGU Officials	300	38.46%
Total	780	100.00%

Table 1.6 presents the profile of the respondents in terms of respondent category. Out of the 780 respondents, MENRO personnel and LGU officials had the highest and equal frequency of 300 respondents each, representing 38.46% respectively. Meanwhile, uniformed

personnel accounted for 180 respondents, equivalent to 23.08% of the total respondents.

The findings show that the study included major institutional actors involved in the implementation of fishing ordinances. The equal representation of MENRO personnel and LGU officials suggests that the study gave strong attention to both environmental management and local governance perspectives. MENRO personnel are directly involved in environmental protection, coastal resource management, monitoring, and technical support for local environmental programs. LGU officials, on the other hand, are responsible for policy implementation, budget support, local coordination, and administrative decision-making related to fisheries enforcement.

The inclusion of uniformed personnel also strengthens the respondent profile because they are commonly involved in enforcement-related activities such as patrol assistance, apprehension of violators, public safety support, and coordination with local enforcement teams. Although they had a lower percentage compared with MENRO personnel and LGU officials, their participation remains important because fishing ordinance implementation requires both administrative support and law enforcement action.

The distribution of respondents indicates that the study was able to capture the perspectives of those who are directly connected to fisheries governance, environmental management, and enforcement. This is significant because compliance with fishing ordinances does not depend on one sector alone. It requires coordination among LGUs, environmental offices, law enforcement units, barangay officials, Bantay Dagat, and fishing communities.

The Bureau of Fisheries and Aquatic Resources (2022) emphasized in the Comprehensive National Fisheries Industry Development Plan 2021–2025 that sustainable fisheries management requires coordination among national government agencies, LGUs, enforcement bodies, fisherfolk organizations, and local communities. This supports the present respondent distribution because MENRO personnel, LGU officials, and uniformed personnel represent key actors in local fisheries implementation.

Similarly, the Philippine IUU Fishing Assessment Report 2023 highlighted that illegal, unreported, and unregulated fishing must be addressed through local and national enforcement cooperation. The report recognized the role of LGUs and enforcement units in monitoring municipal waters, identifying violations, and strengthening compliance mechanisms (Bureau of Fisheries and Aquatic Resources, 2024). This is relevant to the present table because the inclusion of uniformed personnel allows the study to consider the enforcement dimension of fishing ordinance implementation.

Moreover, Maderazo (2025) emphasized that fisheries governance in the Philippines depends on the interaction of local institutions, community-based enforcement groups, and government actors. The study explained that municipal fisheries management requires support from local officials, technical offices, and enforcement partners. This supports the inclusion of MENRO personnel and LGU officials as major respondent groups because they are directly involved in planning, coordination, and implementation of fisheries-related policies.

In addition, Barboza et al. (2024) noted that small-scale fisheries management in the Philippines requires a holistic governance approach involving ecological, social, economic, and institutional dimensions. This supports the present respondent composition because MENRO personnel provide environmental and technical perspectives, LGU officials provide governance and policy perspectives, and uniformed personnel provide enforcement and compliance perspectives.

Likewise, Bennett et al. (2021) argued that inclusive marine governance is strengthened when different stakeholders and institutions are represented in decision-making and policy implementation. This means that gathering data from various respondent categories helps produce a more balanced understanding of fishing ordinance compliance. The participation of different institutional actors also improves the credibility of the findings because the responses reflect administrative, environmental, and enforcement experiences.

Overall, the findings imply that the respondents were composed of key actors in fishing ordinance implementation. The strong

representation of MENRO personnel and LGU officials suggests that the study captured the governance and environmental management dimensions of compliance, while the inclusion of uniformed personnel contributed the enforcement perspective. This distribution strengthens the study because implementation of fishing ordinances requires integrated action among policy makers, environmental managers, and law enforcement personnel.

Sub-problem No. 2. Level of compliance in implementing on the fishing ordinances as to the Arrest and Prosecution; Logistical Support; Local Government Coordination; and Community Cooperation.

Table 2 showed the weighted mean results of the thirty (30) coastal municipalities and illustrated clear patterns in the level of compliance with RA 10654 and anti-illegal fishing activities in the Province of Bohol. The indicators were categorized into four major variables: Arrest and Prosecution, Logistical Support, LGU Coordination, and Community Cooperation, with one overall compliance score for each municipality. The grand means across these variables provided an integrated understanding of performance trends, implementation gaps, and persistent challenges affecting the enforcement of fisheries regulations and local fishing ordinances.

Table 2.1
Level of compliance in implementing on the fishing ordinances in terms of Arrest and Prosecution.

Municipalities	Arrest and Prosecution	Interpretation
Alburquerque	2.38	Low
Anda	3.19	High
Baclayon	3.19	High
Bien Unido	2.93	High
Buenavista	2.93	High
Calape	2.90	High
Candijay	3.35	Very High
Clarin	2.79	High
Cortes	2.74	High
Dauis	2.80	High
Dimiao	2.70	High
Duero	2.65	High
Garcia Hernandez	3.22	High
Getafe	2.95	High
Guindulman	3.13	High
Inabanga	2.38	Low
Jagna	3.02	High
Lila	3.19	High
Loay	3.13	High
Loon	3.25	High
Mabini	3.25	High
Maribojoc	2.62	High
Panglao	3.42	Very High
Pres. Carlos P. Garcia	3.70	Very High
Tagbilaran City	3.00	High
Talibon	3.14	High
Trinidad	2.68	High
Tubigon	2.94	High
Ubay	2.37	Low
Valencia	3.18	High
Grand Mean	2.97	High

Legend:

Range	Interpretation
3.26 – 4.00	Very High
2.51 – 3.25	High
1.76 – 2.50	Low
1.00 – 1.75	Very Low

Table 2.1 presents the level of compliance of the coastal municipalities of Bohol in implementing fishing ordinances in terms of arrest and prosecution. The results show a grand mean of 2.97, interpreted as High. This indicates that, in general, the municipalities demonstrate a satisfactory level of compliance in enforcing fishing ordinances through apprehension of violators, filing of cases, and prosecution-related actions against illegal fishing activities.

Among the municipalities, Pres. Carlos P. Garcia obtained the highest mean of 3.70, interpreted as Very High, followed by Panglao with 3.42 and Candijay with 3.35, both also interpreted as Very High. These results suggest that these municipalities have stronger enforcement mechanisms in terms of arresting violators and pursuing legal action. Their higher ratings may indicate better coordination among enforcement units, clearer implementation of municipal fishery ordinances, and more active participation of local authorities in responding to illegal fishing cases.

Most municipalities obtained ratings within the High category, including Anda, Baclayon, Bien Unido, Buenavista, Calape, Garcia Hernandez, Guindulman, Jagna, Lila, Loay, Loon, Mabini, Talibon, Tubigon, and Valencia. This implies that arrest and prosecution mechanisms are generally being implemented, although there may still be areas requiring improvement, particularly in case documentation, regular monitoring, inter-agency coordination, and sustained prosecution of offenders.

However, Alburquerque and Inabanga both obtained a mean of 2.38, while Ubay obtained 2.37, all interpreted as Low. These results indicate weaker compliance in the arrest and prosecution aspect. This may suggest difficulties in apprehending violators, limited enforcement personnel, insufficient evidence-gathering, lack of logistical support, or challenges in pursuing cases after apprehension. In the context of fisheries enforcement, low compliance in arrest and prosecution may weaken deterrence because offenders may continue illegal fishing activities when the risk of apprehension and legal consequences is perceived to be low.

The finding that the overall compliance is High supports the view that law enforcement remains a central mechanism in fisheries governance. Under Republic Act No. 10654, which amended the Philippine Fisheries Code, illegal, unreported, and unregulated fishing is addressed through strengthened penalties, enforcement provisions, and regulatory measures intended to prevent and deter illegal fishing activities. This legal framework emphasizes that arrest and prosecution are necessary components of fisheries protection and resource conservation.

This result is consistent with the study of Catedrilla et al. (2022), which found that fisheries law enforcement and compliance improved when enforcement agencies were organized, supported, and actively involved in filing cases against violators. Their study in Iloilo Province emphasized that the increase in fisheries violation cases filed was associated with strengthened enforcement operations, suggesting that visible arrest and prosecution efforts can improve compliance with fishery laws and municipal ordinances.

Similarly, Labutap-Noble (2024) stressed that compliance with fishery laws requires stronger enforcement capacity, adequate resources, and consistent policing of fishing communities. The study highlighted that weak enforcement may reduce adherence to fishery regulations, while active monitoring and enforcement help promote sustainable marine resource management. This supports the present finding that municipalities with higher ratings may have more functional enforcement systems, while those with low ratings may need institutional strengthening.

The findings also relate to Terry (2024), who noted that illegal, unreported, and unregulated fishing remains difficult to control when enforcement agencies face operational challenges, including limited resources, coordination problems, and difficulties in implementing legal sanctions. This implies that arrest and prosecution do not depend only on the existence of ordinances but also on the actual capacity of local authorities to detect violations, apprehend offenders, gather evidence, and pursue cases.

Moreover, Binobo et al. (2024) explained that surveillance and enforcement are major governance responses to illegal fishing in the Philippines, but fisheries governance also depends on institutional linkages and resource availability. This means that municipalities with high compliance may have better institutional cooperation among the LGU, Bantay Dagat, police, BFAR, and other enforcement actors, while municipalities with low compliance may experience gaps in coordination or resources.

Overall, the results imply that while the coastal municipalities of Bohol generally demonstrate high compliance in arrest and prosecution, enforcement remains uneven across municipalities. The very high ratings of Pres. Carlos P. Garcia, Panglao, and Candijay may serve as examples of stronger local implementation, while the low ratings of Alburquerque, Inabanga, and Ubay suggest the need for targeted intervention. Strengthening arrest and prosecution mechanisms should include improved evidence documentation, regular seaborne patrols, training of enforcement personnel, better coordination with prosecutors, and stronger logistical support for fishery law enforcement operations.

Table 2.2
Level of compliance in implementing on the fishing ordinances in terms of Logistical Support.

Municipalities	Logistical Support	Interpretation
Alburquerque	2.29	Low
Anda	3.00	High
Baclayon	2.90	High
Bien Unido	2.31	Low
Buenavista	2.31	Low
Calape	2.03	Low
Candijay	2.92	High
Clarin	2.33	Low
Cortes	2.28	Low
Dauis	2.41	Low
Dimiao	2.29	Low
Duero	2.30	Low
Garcia Hernandez	3.08	High
Getafe	2.67	High
Guindulman	2.56	High
Inabanga	2.29	Low
Jagna	2.44	Low
Lila	2.90	High
Loay	2.60	High
Loon	2.72	High
Mabini	2.71	High
Maribojoc	2.34	Low
Panglao	3.20	High
Pres. Carlos P. Garcia	3.43	Very High
Tagbilaran City	2.69	High
Talibon	2.78	High
Trinidad	2.73	High
Tubigon	2.66	High
Ubay	2.92	High
Valencia	3.00	High
Grand Mean	**2.63**	**High**

Legend:

Range	Interpretation
3.26 – 4.00	Very High
2.51 – 3.25	High
1.76 – 2.50	Low
1.00 – 1.75	Very Low

Table 2.2 presents the level of compliance of the coastal municipalities of Bohol in implementing fishing ordinances in terms of logistical support. The table obtained a grand mean of 2.63, interpreted as High. This indicates that, overall, the municipalities have generally complied with the logistical requirements needed for the implementation of fishing ordinances. However, compared with arrest and prosecution, the result suggests that logistical support remains a more vulnerable area because several municipalities were rated Low.

Among the municipalities, Pres. Carlos P. Garcia obtained the highest mean of 3.43, interpreted as Very High. This implies that the municipality has a stronger capacity to provide or access logistical resources such as patrol boats, fuel, communication equipment, enforcement materials, operational funds, and other support mechanisms needed for fishery law enforcement. This may also indicate better local government prioritization of fisheries protection and stronger support for coastal enforcement activities.

Several municipalities obtained High compliance ratings, including Anda, Baclayon, Candijay, Garcia Hernandez, Getafe, Guindulman, Lila, Loay, Loon, Mabini, Panglao, Tagbilaran City, Talibon, Trinidad, Tubigon, Ubay, and Valencia. These findings suggest that these municipalities have sufficient logistical capacity to support the implementation of fishing ordinances, although the ratings also imply that improvement is still necessary to reach a very high level of implementation.

On the other hand, many municipalities were rated Low, including Alburquerque, Bien Unido, Buenavista, Calape, Clarin, Cortes, Dauis, Dimiao, Duero, Inabanga, Jagna, and Maribojoc. The lowest rating was obtained by Calape with a mean of 2.03, interpreted as Low. This suggests that some municipalities may still experience limitations in enforcement resources, such as inadequate patrol vessels, lack of fuel allocation, insufficient monitoring equipment, limited personnel mobility, and weak operational funding. These logistical gaps may affect the regularity of patrols, speed of response, and ability of authorities to apprehend illegal fishing violators.

The result shows that although the overall rating is High, logistical support is uneven across municipalities. This means that some LGUs may have adequate enforcement resources, while others may struggle to sustain actual field implementation. In fisheries enforcement, ordinances cannot be fully implemented through legal provisions alone; they require operational capacity. Without sufficient boats, fuel, communication tools, surveillance equipment, and trained personnel, enforcement agencies may find it difficult to monitor municipal waters and respond to violations.

This finding is supported by the Food and Agriculture Organization, which emphasized that fisheries law enforcement is essential in addressing illegal, unreported, and unregulated fishing in the Philippines. The FAO also highlighted the importance of strengthening local enforcement partners, including Bantay Dagat teams, because enforcement operations require training, equipment, and operational support to become effective.

Similarly, the Philippine IUU Fishing Assessment Report 2023 identified illegal fishing gears and other illegal fishing practices as continuing threats in municipal waters. This implies that local governments need sufficient logistical support to conduct monitoring, surveillance, and enforcement operations. Without adequate resources, illegal fishing activities may continue despite the presence of ordinances and national laws.

The result is also consistent with the discussion of Maderazo (2016), who explained that the Bantay Dagat program serves as a community-based enforcement mechanism that supports the detection and enforcement of illegal fishing in coastal waters. However, since Bantay Dagat members often operate at the community level, their effectiveness depends heavily on institutional support, legal backing, and logistical assistance from local government units.

Further, the National Fisheries Law Enforcement Operations Action Plan emphasized that increasing BFAR presence in municipal waters can help municipal governments combat illegal, unreported, and unregulated fishing. This supports the present finding because local logistical support alone may not be sufficient in

all municipalities; coordination with national agencies such as BFAR is necessary to strengthen enforcement capacity.

Overall, the findings imply that the coastal municipalities of Bohol demonstrate a generally High level of compliance in logistical support, but this area requires serious attention because a considerable number of municipalities still fall under the Low category. Municipalities with low ratings may need stronger budget allocation, additional patrol boats, fuel support, communication equipment, safety gear, and training support for enforcement personnel. Strengthening logistical support is necessary because effective implementation of fishing ordinances depends not only on the existence of laws but also on the actual capacity of local enforcement units to operate in coastal and municipal waters.

Table 2.3 presents the level of compliance of the coastal municipalities of Bohol in implementing fishing ordinances in terms of LGU coordination. The table obtained a grand mean of 3.11, interpreted as High. This indicates that, generally, the local government units demonstrate effective coordination in the implementation of fishing ordinances. The result suggests that LGUs are actively involved in coordinating with enforcement bodies, barangay officials, Bantay Dagat, fishery councils, and other concerned agencies in addressing illegal fishing activities.

Among the municipalities, Anda obtained the highest mean of 3.62, interpreted as Very High, followed by Valencia with 3.61, Pres. Carlos P. Garcia with 3.59, and Garcia Hernandez with 3.44. These results indicate strong interagency and local-level coordination in the enforcement of fishing ordinances. Municipalities with very high compliance may have more organized enforcement structures, clearer reporting systems, active municipal agriculture or fisheries offices, and stronger collaboration between the LGU and community-based enforcement groups.

Table 2.3
Level of compliance in implementing on the fishing ordinances in terms of LGU Coordination.

Municipalities	LGU Coordination	Interpretation
Alburquerque	2.75	High
Anda	3.62	Very High
Baclayon	3.29	Very High
Bien Unido	2.79	High
Buenavista	2.79	High
Calape	3.11	High
Candijay	3.25	High
Clarin	2.87	High
Cortes	2.95	High
Dauis	3.11	High
Dimiao	3.10	High
Duero	2.81	High
Garcia Hernandez	3.44	Very High
Getafe	2.91	High
Guindulman	3.17	High
Inabanga	2.75	High
Jagna	3.02	High
Lila	3.29	Very High
Loay	2.95	High
Loon	3.22	High
Mabini	3.21	High
Maribojoc	2.97	High
Panglao	3.36	Very High
Pres. Carlos P. Garcia	3.59	Very High
Tagbilaran City	3.04	High
Talibon	3.36	Very High
Trinidad	3.32	Very High
Tubigon	2.90	High
Ubay	2.75	High
Valencia	3.61	Very High
Grand Mean	**3.11**	**High**

Legend:

Range	Interpretation
3.26 – 4.00	Very High
2.51 – 3.25	High
1.76 – 2.50	Low
1.00 – 1.75	Very Low

Other municipalities that obtained Very High ratings include Baclayon, Lila, Panglao, Talibon, and Trinidad. This implies that these municipalities may have established stronger linkages among local officials, enforcement personnel, and coastal stakeholders. Effective LGU coordination is important because illegal fishing is not addressed by one agency alone. It requires cooperation among municipal governments, barangay councils, law enforcement units, fisherfolk organizations, and national agencies such as the Bureau of Fisheries and Aquatic Resources.

The remaining municipalities were rated High, including Alburquerque, Bien Unido, Buenavista, Calape, Candijay, Clarin, Cortes, Dauis, Dimiao, Duero, Getafe, Guindulman, Inabanga, Jagna, Loay, Loon, Mabini, Maribojoc, Tagbilaran City, Tubigon, and Ubay. This shows that coordination mechanisms are generally present and functional across municipalities. However, since their ratings did not reach the very high level, there may still be gaps in communication, joint planning, monitoring, resource sharing, or consistent participation of concerned agencies.

It is also notable that no municipality was rated Low or Very Low in terms of LGU coordination. This is an important finding because it suggests that coordination is one of the stronger dimensions of fishing ordinance implementation among the municipalities. While logistical support in the previous table showed several low ratings, LGU coordination appears to be more consistently implemented. This may mean that even municipalities with limited resources still maintain communication and collaboration with partner agencies and local stakeholders.

The plan recognizes that combating illegal, unreported, and unregulated fishing requires stronger institutional coordination, enforcement support, and local participation (Bureau of Fisheries and Aquatic Resources (BFAR), 2022). This supports the present finding that municipalities with high LGU coordination are better positioned to implement fishing ordinances effectively.

Similarly, the Philippine IUU Fishing Assessment Report 2023 reported that IUU fishing assessments covered 213 local government units and fisheries management areas, showing the importance of LGU participation in identifying risks, enforcement gaps, and governance vulnerabilities. The report highlights that local governments play a direct role in monitoring municipal waters and addressing illegal fishing activities through coordinated local and national enforcement efforts (BFAR, 2024). This is consistent with the high rating of LGU coordination in the present table because the implementation of fishing ordinances depends strongly on the ability of LGUs to coordinate enforcement and monitoring activities.

In relation to community-based enforcement, Maderazo (2025) emphasized that fisheries management in the Philippines depends on the working relationship among municipal governments, local fishery officers, and community-based structures. The study noted that local fisheries implementation is affected by the availability of resources, institutional support, and the ability of municipal authorities to coordinate programs at the community level. This supports the result of the present study, particularly the finding that municipalities with very high ratings may have stronger coordination between LGU offices and coastal enforcement groups.

Further, Juan (2025) explained that community fish landing centers and community-based coastal resource management initiatives contribute to sustainable fisheries by strengthening local participation and coordination. The study emphasized that local communities become more empowered when fisheries programs are implemented through collaborative mechanisms involving LGUs, fisherfolk, and other stakeholders. This supports the interpretation that LGU coordination contributes to stronger compliance because community participation becomes more organized when local institutions actively coordinate fisheries-related programs.

The findings are also supported by the study on Bantay Dagat volunteers in Bangui, Ilocos Norte, which highlighted the role of community-based coastal law enforcement in protecting marine ecosystems and preventing illegal fishing. The study emphasized that Bantay Dagat groups are more effective when they are supported by local government units and

integrated into wider enforcement structures. This relates to the present finding because LGU coordination strengthens the function of community-based enforcement groups in monitoring coastal waters and reporting violations (Global Scientific Journal, 2025).

Overall, the findings imply that the coastal municipalities of Bohol have a high level of compliance in terms of LGU coordination. This means that coordination among LGUs, barangays, enforcement groups, and fisheries stakeholders is generally practiced in the implementation of fishing ordinances. However, municipalities rated only as high may still improve by institutionalizing regular inter-agency meetings, strengthening barangay-level reporting systems, creating shared enforcement databases, improving documentation of violations, and developing joint patrol and monitoring plans. Strong LGU coordination remains necessary because fishing ordinance implementation requires collective action, shared responsibility, and sustained cooperation among local and national actors.

Table 2.4
Level of compliance in implementing on the fishing ordinances in terms of Community Cooperation.

Municipalities	Community Cooperation	Interpretation
Alburquerque	2.65	High
Anda	3.48	Very High
Baclayon	2.79	High
Bien Unido	2.72	High
Buenavista	2.72	High
Calape	2.81	High
Candijay	3.03	High
Clarin	2.61	High
Cortes	2.87	High
Dauis	2.87	High
Dimiao	2.86	High
Duero	2.62	High
Garcia Hernandez	3.25	High
Getafe	2.75	High
Guindulman	2.83	High
Inabanga	2.65	High
Jagna	2.79	High
Lila	2.79	High
Loay	2.83	High
Loon	2.83	High
Mabini	2.83	High
Maribojoc	2.91	High
Panglao	3.23	High
Pres. Carlos P. Garcia	3.40	Very High
Tagbilaran City	3.05	High
Talibon	3.27	Very High
Trinidad	3.54	Very High
Tubigon	2.74	High
Ubay	2.65	High
Valencia	3.48	Very High
Grand Mean	**2.92**	**High**

Legend:

Range	Interpretation
3.26 – 4.00	Very High
2.51 – 3.25	High
1.76 – 2.50	Low
1.00 – 1.75	Very Low

Table 2.4 presents the level of compliance of the coastal municipalities of Bohol in implementing fishing ordinances in terms of community cooperation. The table obtained a grand mean of 2.92, interpreted as High. This indicates that the communities in the selected municipalities generally cooperate in the implementation of fishing ordinances. The result suggests that fisherfolk, coastal residents, barangay officials, and community-based groups participate in activities related to monitoring, reporting, information dissemination, and support for anti-illegal fishing efforts.

Among the municipalities, Trinidad obtained the highest mean of 3.54, interpreted as Very High, followed by Anda and Valencia with

3.48, Pres. Carlos P. Garcia with 3.40, and Talibon with 3.27. These findings suggest that these municipalities have stronger community participation in fisheries enforcement and coastal resource protection. Their very high ratings may indicate active fisherfolk involvement, stronger community awareness, better cooperation with Bantay Dagat or local enforcement teams, and greater willingness of residents to report illegal fishing activities.

The remaining municipalities were rated High, including Alburquerque, Baclayon, Bien Unido, Buenavista, Calape, Candijay, Clarin, Cortes, Dauis, Dimiao, Duero, Garcia Hernandez, Getafe, Guindulman, Inabanga, Jagna, Lila, Loay, Loon, Mabini, Maribojoc, Panglao, Tagbilaran City, Tubigon, and Ubay. This means that community cooperation is generally present across the coastal municipalities. However, since most municipalities did not reach the very high level, there may still be areas needing improvement, particularly in sustained participation, reporting of violations, attendance in coastal management activities, and community support for prosecution of offenders.

It is notable that no municipality was rated Low or Very Low in terms of community cooperation. This implies that community participation is a strong component of fishing ordinance implementation in Bohol. The findings suggest that coastal residents may recognize the importance of fisheries protection, especially because illegal fishing directly affects livelihood, food security, marine resources, and the sustainability of municipal waters.

The Comprehensive National Fisheries Industry Development Plan 2021–2025 emphasizes that fisheries development and management require participatory consultation and collaboration among fisherfolk, LGUs, national agencies, and other fisheries stakeholders. The plan recognizes that sustainable fisheries governance cannot rely only on formal enforcement but must include the participation of communities that directly depend on coastal and marine resources (Bureau of Fisheries and Aquatic Resources [BFAR], 2022). This supports the present finding that high community cooperation strengthens the implementation of fishing ordinances.

Similarly, the Philippine IUU Fishing Assessment Report 2023 highlights the role of local government units and communities in identifying risks, monitoring municipal waters, and addressing illegal, unreported, and unregulated fishing. Since IUU fishing often occurs within areas where local residents and fisherfolk have direct knowledge of fishing activities, community cooperation becomes important in reporting violations and supporting enforcement operations (BFAR, 2024). This is consistent with the high grand mean obtained in the table, as community participation improves local surveillance and compliance.

The finding is also supported by Warguez et al. (2023), who examined community participation in coastal resource management in Lupon, Davao Oriental. Their study found that community involvement is important in local coastal management because residents are directly connected to coastal habitats and are affected by the outcomes of resource protection efforts. This supports the interpretation that community cooperation contributes to the successful implementation of fishing ordinances because local stakeholders are not only beneficiaries but also partners in enforcement and conservation.

In relation to community-based enforcement, a 2025 study on Bantay Dagat volunteers in Bangui, Ilocos Norte emphasized that community-based sea patrols play an important role in safeguarding municipal waters and marine protected areas. The study explained that Bantay Dagat volunteers contribute to marine protection through community monitoring, reporting, and enforcement support. This finding supports the present result because strong community cooperation can strengthen the work of local enforcement units and help deter illegal fishing activities.

Moreover, Maderazo (2025) described Bantay Dagat as a community-based institution of coastal law enforcement in the Philippines. The study emphasized that community-based enforcement mechanisms contribute to fisheries protection because they bring local knowledge, community presence, and direct participation into coastal law enforcement. This supports the high compliance rating in community cooperation, as local involvement

increases the capacity of municipalities to monitor fishing activities and promote voluntary compliance.

Likewise, Barboza et al. (2024) noted that small-scale fisheries management in the Philippines requires a holistic approach that includes social, economic, cultural, and biological considerations. Their review emphasized that fisheries sustainability depends not only on regulation but also on the participation of local communities and resource users. This supports the finding that community cooperation is necessary because fisherfolk and coastal residents are central actors in achieving sustainable fisheries management.

Overall, the results imply that the coastal municipalities of Bohol demonstrate a high level of compliance in terms of community cooperation. The very high ratings of Trinidad, Anda, Valencia, Pres. Carlos P. Garcia, and Talibon show that community participation is particularly strong in these areas. However, municipalities rated only as high may still improve by strengthening information and education campaigns, encouraging fisherfolk reporting mechanisms, supporting Bantay Dagat volunteers, increasing barangay-level participation, and building trust between enforcement authorities and coastal communities. Community cooperation remains essential because fishing ordinances become more effective when local residents actively participate in protecting municipal waters.

Sub-problem No. 3. Problems encountered in the implementation on the fishing ordinances as to Arrest and Prosecution; Logistical Support; Local Government Coordination; and Community Cooperation.

Table 3 discuss the overall results of the 30 municipalities in the Province of Bohol yielded a grand mean of 2.48, indicating a generally low to moderate level of compliance with the local fishing ordinances. This suggests that while enforcement mechanisms and inter-agency systems are in place, the implementation remains inconsistent from the selected municipalities.

The capability to apprehend violators and pursue legal action is generally low. This reflects challenges such as limited manpower, delays in case follow-up, political interference, and the reluctance of law enforcers to pursue prosecution due to risks of harassment or retaliation. Many coastal municipalities remain dependent on external enforcement support (PNP Maritime, BFAR), which weakens local prosecution efficiency.

Table 3.1
Problems encountered in the implementation on the fishing ordinances in terms of Arrest and Prosecution.

Municipalities	Arrest and Prosecution	Verbal Interpretation
Alburquerque	2.47	Less Serious
Anda	1.88	Less Serious
Baclayon	2.65	Serious
Bien Unido	2.45	Less Serious
Buenavista	2.45	Less Serious
Calape	2.18	Less Serious
Candijay	2.09	Less Serious
Clarin	2.36	Less Serious
Cortes	2.22	Less Serious
Dauis	2.34	Less Serious
Dimiao	4.10	Very Serious
Duero	2.39	Less Serious
Garcia Hernandez	2.88	Serious
Getafe	2.27	Less Serious
Guindulman	1.97	Less Serious
Inabanga	2.38	Less Serious
Jagna	2.42	Less Serious
Lila	2.65	Serious
Loay	2.45	Less Serious
Loon	2.15	Less Serious
Mabini	2.15	Less Serious
Maribojoc	2.18	Less Serious
Panglao	1.88	Less Serious
Pres. Carlos P. Garcia	2.34	Less Serious
Tagbilaran City	2.07	Less Serious
Talibon	2.02	Less Serious
Trinidad	2.04	Less Serious
Tubigon	2.27	Less Serious
Ubay	2.47	Less Serious
Valencia	1.88	Less Serious
Grand Mean	**2.34**	**Less Serious**

Legend:			
Range	**Interpretation**		
3.26 – 4.00	Very Serious	1.76 – 2.50	Less Serious
2.51 – 3.25	Serious	1.00 – 1.75	Not Serious

Table 3.1 presents the problems encountered in the implementation of fishing ordinances in terms of arrest and prosecution. The table obtained a grand mean of 2.34, interpreted as Less Serious. This means that, in general, the municipalities did not consider problems related to arrest and prosecution as highly severe. The result suggests that most municipalities may have functioning mechanisms for apprehending violators, documenting violations, coordinating with enforcement units, and initiating appropriate legal action against illegal fishing activities.

Among the municipalities, Dimiao obtained the highest mean of 4.10, interpreted as Very Serious. This result is notable because Dimiao is the only municipality that reached the very serious level. This suggests that Dimiao may be experiencing significant challenges in arrest and prosecution, such as difficulty in apprehending violators, weak evidence documentation, limited witness cooperation, inadequate coordination with prosecutors, lack of trained enforcement personnel, or delays in case filing. This finding indicates the need for focused intervention in Dimiao, especially in strengthening enforcement procedures and case-building capacity.

Meanwhile, Garcia Hernandez obtained a mean of 2.88, while Baclayon and Lila both obtained 2.65, all interpreted as Serious. These municipalities may also experience notable concerns in arrest and prosecution, although not as severe as Dimiao. Their ratings suggest that some enforcement-related barriers may still affect the successful implementation of fishing ordinances, particularly in relation to the transition from apprehension to actual prosecution.

Most municipalities were interpreted as Less Serious, including Alburquerque, Anda, Bien Unido, Buenavista, Calape, Candijay, Clarin, Cortes, Dauis, Duero, Getafe, Guindulman, Inabanga, Jagna, Loay, Loon, Mabini, Maribojoc, Panglao, Pres. Carlos P. Garcia, Tagbilaran City, Talibon, Trinidad, Tubigon, Ubay, and Valencia. This indicates that these municipalities generally encounter manageable problems in arrest and prosecution. However, even if the problems are less serious, LGUs should not ignore them because weak arrest and prosecution mechanisms may reduce deterrence and encourage repeated violations.

The findings imply that while arrest and prosecution concerns are generally less serious across the municipalities, the presence of very serious and serious ratings in some areas shows that implementation is not uniform. Effective prosecution of illegal fishing cases requires proper documentation, preservation of evidence, accurate reports, cooperation of witnesses, and coordination among LGUs, Bantay Dagat, uniformed personnel, BFAR, and prosecutors. Without these, apprehension may not lead to successful case resolution.

Kuemlangan et al. (2023) explained that illegal fishing cannot be addressed only through legislation or fisheries management programs. Their study emphasized that both administrative and criminal sanctions are necessary, and serious fisheries violations require strong legal responses. This supports the present finding because arrest and prosecution remain important enforcement tools, especially in municipalities where problems are rated serious or very serious.

Likewise, the Bureau of Fisheries and Aquatic Resources (2024) reported in the Philippine IUU Fishing Assessment Report 2023 that illegal, unreported, and unregulated fishing remains a continuing concern in Philippine municipal waters. The report highlights the need for evidence-based local enforcement, municipal fisheries ordinances, and coordination among local governments and enforcement bodies. This relates to the present table because weaknesses in arrest and prosecution may allow illegal fishing activities to continue despite the existence of ordinances.

The findings are also consistent with Labutap-Noble and Diagsay-Aguja (2024), who found that fishery law adherence in selected

fishing communities is affected by enforcement capacity, resource availability, community cooperation, and the ability of authorities to implement fishery regulations. Their study emphasized that illegal fishing continues to threaten food security and coastal livelihoods, which means that weak prosecution mechanisms may have broader effects on local communities.

Furthermore, the Comprehensive National Fisheries Industry Development Plan 2021–2025 identifies illegal, unreported, and unregulated fishing as a major issue affecting the fisheries sector. The plan emphasizes the need for stronger enforcement, institutional coordination, and local capacity-building to protect fisheries resources. This supports the need to strengthen arrest and prosecution systems in municipalities where problems are still serious.

In addition, the Philippine Institute for Development Studies (2025) reported that weak regulatory enforcement and the presence of unregistered fishers contribute to overfishing and coastal inequality. This supports the present interpretation because arrest and prosecution problems, even when generally less serious, may still weaken compliance if not addressed through consistent enforcement and proper legal action.

Overall, the findings show that problems encountered in arrest and prosecution are generally Less Serious among the municipalities, as reflected in the grand mean of 2.34. However, the very serious rating of Dimiao and the serious ratings of Garcia Hernandez, Baclayon, and Lila indicate the need for targeted enforcement improvement. LGUs should strengthen case documentation, provide training on evidence handling, improve coordination with prosecutors, support Bantay Dagat and enforcement teams, and ensure that apprehended violations proceed to appropriate legal action. These measures may help improve deterrence and strengthen the overall implementation of fishing ordinances.

Table 3.2
Problems encountered in the implementation on the fishing ordinances in terms of Logistical Support.

Municipalities	Logistical Support	Verbal Interpretation
Alburquerque	2.65	Serious
Anda	2.25	Less Serious
Baclayon	2.62	Serious
Bien Unido	2.65	Serious
Buenavista	2.65	Serious
Calape	2.81	Serious
Candijay	3.11	Serious
Clarin	2.71	Serious
Cortes	2.77	Serious
Dauis	2.69	Serious
Dimiao	4.62	Very Serious
Duero	3.09	Serious
Garcia Hernandez	2.92	Serious
Getafe	2.66	Serious
Guindulman	2.16	Less Serious
Inabanga	2.29	Less Serious
Jagna	2.82	Serious
Lila	2.62	Serious
Loay	2.85	Serious
Loon	2.52	Serious
Mabini	2.52	Serious
Maribojoc	2.70	Serious
Panglao	2.38	Less Serious
Pres. Carlos P. Garcia	2.80	Serious
Tagbilaran City	2.45	Less Serious
Talibon	2.49	Less Serious
Trinidad	1.91	Less Serious
Tubigon	2.66	Serious
Ubay	2.65	Serious
Valencia	2.25	Less Serious
Grand Mean	**2.68**	**Serious**

Legend:

Range	Interpretation
3.26 – 4.00	Very Serious
2.51 – 3.25	Serious
1.76 – 2.50	Less Serious
1.00 – 1.75	Not Serious

Table 3.2 presents the problems encountered in the implementation of fishing ordinances in terms of logistical support. The table obtained a grand mean of 2.68, interpreted as Serious. This indicates that logistical support is a notable problem in the implementation of fishing ordinances among the coastal municipalities. Unlike arrest and prosecution, which was generally rated as less serious, logistical support appears to be a more pressing operational concern.

Among the municipalities, Dimiao obtained the highest mean of 4.62, interpreted as Very Serious. This indicates that Dimiao experiences the most severe logistical problems in implementing fishing ordinances. These problems may include inadequate patrol boats, limited fuel allocation, lack of communication equipment, insufficient monitoring devices, lack of protective gear, shortage of trained personnel, and limited budget for regular coastal enforcement activities. Since effective fisheries enforcement requires actual field operations, a very serious logistical problem may greatly affect the municipality's ability to monitor municipal waters and respond to illegal fishing incidents.

Several municipalities obtained ratings interpreted as Serious, including Alburquerque, Baclayon, Bien Unido, Buenavista, Calape, Candijay, Clarin, Cortes, Dauis, Duero, Garcia Hernandez, Getafe, Jagna, Lila, Loay, Loon, Mabini, Maribojoc, Pres. Carlos P. Garcia, Tubigon, and Ubay. These findings suggest that many municipalities face considerable logistical constraints. Although they may have existing ordinances and enforcement personnel, implementation may be weakened if there are not enough resources to support patrol operations, surveillance, apprehension, documentation, and coordination.

On the other hand, Anda, Guindulman, Inabanga, Panglao, Tagbilaran City, Talibon, Trinidad, and Valencia were interpreted as having Less Serious logistical problems. This suggests that these municipalities may have relatively better access to enforcement resources or more manageable logistical concerns. However, even less serious logistical problems should still be monitored because resource limitations can worsen if budgetary support, equipment maintenance, and operational planning are not sustained.

The findings imply that logistical support is one of the major challenges in the implementation of fishing ordinances. Even when LGUs have policies and enforcement structures, the absence or insufficiency of boats, fuel, radios, safety equipment, surveillance tools, and operating funds can limit actual enforcement capacity. In coastal municipalities, enforcement is highly dependent on mobility and readiness. Without adequate logistical support, authorities may be unable to conduct regular seaborne patrols, respond quickly to reported violations, or gather evidence necessary for prosecution.

The Comprehensive National Fisheries Industry Development Plan 2021–2025 emphasized that one of the continuing challenges in Philippine fisheries governance is the need to strengthen monitoring, control, and surveillance systems. The plan recognizes that enforcement against illegal, unreported, and unregulated fishing requires adequate facilities, equipment, human resources, and institutional support from both national agencies and LGUs (Bureau of Fisheries and Aquatic Resources BFAR, 2022). This supports the present result because logistical limitations directly affect the capacity of municipalities to implement fishing ordinances.

Similarly, the Philippine IUU Fishing Assessment Report 2023 reported that illegal fishing remains a continuing concern in municipal waters and that enforcement risks are affected by gaps in monitoring, reporting, and local capacity. The report emphasizes the importance of strengthening local enforcement systems, which necessarily includes logistical resources for patrolling, surveillance, and response (BFAR, 2024). This aligns with the serious rating in the present table because weak logistical support can reduce the effectiveness of local anti-illegal fishing operations.

The finding is also supported by Labutap-Noble and Diagsay-Aguja (2024), who noted that adherence to fishery laws is influenced by enforcement capacity, resource availability, and support from local institutions. Their study indicated that the implementation of fishery laws becomes difficult when enforcement units lack the necessary resources to conduct

monitoring and response activities. This supports the present finding that logistical support problems are serious because enforcement personnel cannot perform effectively without adequate operational resources.

Moreover, Barboza et al. (2024) explained that small-scale fisheries management in the Philippines requires a holistic approach that considers institutional capacity, resource limitations, and local governance conditions. Their review suggests that fisheries regulations become less effective when communities and local authorities lack the operational capacity to implement them. This is relevant to the present table because logistical support is a basic requirement for translating fishing ordinances into actual enforcement action.

Likewise, Maderazo (2025) emphasized that local fisheries governance and community-based enforcement mechanisms such as Bantay Dagat depend heavily on support from LGUs. The study noted that local fisheries enforcement cannot be sustained without institutional backing, operational assistance, and adequate resources. This supports the finding that municipalities with serious logistical problems may need stronger local budget allocation, equipment provision, and coordination with national agencies.

Overall, the findings show that problems encountered in logistical support are generally Serious, as reflected in the grand mean of 2.68. This means that logistical limitations remain a major barrier to effective fishing ordinance implementation. The very serious rating of Dimiao and the serious ratings of many municipalities indicate the need for urgent operational support. LGUs should prioritize the provision of patrol boats, fuel, communication devices, safety equipment, enforcement documentation tools, and regular budget allocation. Strengthening logistical support is necessary to ensure that fishing ordinances are not only written and approved but also effectively implemented in municipal waters.

Table 3.3 presents the problems encountered in the implementation of fishing ordinances in terms of LGU coordination. The table obtained a grand mean of 2.41, interpreted as Less Serious. This indicates that, in general, problems related to coordination among local government units and other concerned agencies are manageable and not highly severe. The result suggests that most municipalities have existing coordination mechanisms for implementing fishing ordinances, such as communication among municipal officials, MENRO, barangay officials, Bantay Dagat, uniformed personnel, and other enforcement partners.

Among the municipalities, Dimiao obtained the highest mean of 4.24, interpreted as Very Serious. This means that Dimiao experiences the most severe coordination-related problems. These may include weak communication among offices, unclear assignment of responsibilities, lack of regular coordination meetings, poor reporting mechanisms, limited interagency support, or delays in responding to illegal fishing incidents. Since LGU coordination is essential in implementing fishing ordinances, this very serious rating suggests the need for immediate institutional strengthening in Dimiao.

Table 3.3
Problems encountered in the implementation on the fishing ordinances in terms of LGU Coordination.

Municipalities	LGU Coordination	Verbal Interpretation
Alburquerque	2.37	Less Serious
Anda	2.25	Less Serious
Baclayon	2.34	Less Serious
Bien Unido	2.42	Less Serious
Buenavista	2.42	Less Serious
Calape	2.12	Less Serious
Candijay	2.68	Serious
Clarin	2.51	Serious
Cortes	2.55	Serious
Dauis	2.36	Less Serious
Dimiao	4.24	Very Serious

Duero	2.60	Serious
Garcia Hernandez	2.85	Serious
Getafe	2.22	Less Serious
Guindulman	2.31	Less Serious
Inabanga	2.75	Serious
Jagna	2.35	Less Serious
Lila	2.34	Less Serious
Loay	2.39	Less Serious
Loon	2.32	Less Serious
Mabini	2.32	Less Serious
Maribojoc	2.48	Less Serious
Panglao	1.91	Less Serious
Pres. Carlos P. Garcia	2.79	Serious
Tagbilaran City	2.05	Less Serious
Talibon	1.91	Less Serious
Trinidad	1.71	Not Serious
Tubigon	2.22	Less Serious
Ubay	2.37	Less Serious
Valencia	2.25	Less Serious
Grand Mean	**2.41**	**Less Serious**

Legend:

Range	Interpretation
3.26 – 4.00	Very Serious
2.51 – 3.25	Serious
1.76 – 2.50	Less Serious
1.00 – 1.75	Not Serious

Several municipalities obtained ratings interpreted as Serious, including Candijay with 2.68, Clarin with 2.51, Cortes with 2.55, Duero with 2.60, Garcia Hernandez with 2.85, Inabanga with 2.75, and Pres. Carlos P. Garcia with 2.79. These results suggest that although coordination systems may be present, these municipalities still encounter notable challenges in sustaining cooperation among local offices and enforcement actors. Problems may arise from overlapping functions, insufficient documentation, inconsistent communication, limited sharing of resources, and weak follow-through after enforcement operations.

Most municipalities were rated Less Serious, including Alburquerque, Anda, Baclayon, Bien Unido, Buenavista, Calape, Dauis, Getafe, Guindulman, Jagna, Lila, Loay, Loon, Mabini, Maribojoc, Panglao, Tagbilaran City, Talibon, Tubigon, Ubay, and Valencia. This indicates that coordination-related concerns are generally present but not severe enough to significantly weaken ordinance implementation. These municipalities may have working communication channels and collaborative arrangements among local officials, environmental offices, enforcement groups, and coastal communities.

It is also notable that Trinidad obtained the lowest mean of 1.71, interpreted as Not Serious. This indicates that problems related to LGU coordination are minimal in this municipality. The result may suggest that Trinidad has clearer coordination systems, stronger communication among offices, and more organized participation of relevant stakeholders in implementing fishing ordinances.

The findings imply that LGU coordination is generally not a major obstacle in the implementation of fishing ordinances among the municipalities, as reflected in the grand mean of 2.41. However, the serious and very serious ratings in some municipalities show that coordination challenges are not entirely absent. Since fishing ordinance implementation requires cooperation among multiple actors, even moderate coordination problems can affect patrol planning, violation reporting, evidence documentation, prosecution support, and community participation.

The Bureau of Fisheries and Aquatic Resources (2022) emphasized in the Comprehensive National Fisheries Industry Development Plan 2021–2025 that fisheries management requires strong collaboration among national agencies, LGUs, enforcement bodies, fisherfolk organizations, and local communities. This supports the present finding because weak coordination can affect the ability of municipalities to implement ordinances consistently and respond effectively to illegal fishing activities.

Similarly, the Philippine IUU Fishing Assessment Report 2023 stressed that addressing illegal, unreported, and unregulated fishing requires coordinated monitoring, control, and

surveillance systems. The report recognizes the important role of LGUs in municipal waters and highlights the need for improved local enforcement cooperation (Bureau of Fisheries and Aquatic Resources, 2024). This is relevant to the present table because coordination problems, even when generally less serious, may still weaken enforcement if communication and institutional linkages are not sustained.

In addition, Maderazo (2025) explained that small-scale fisheries governance in the Philippines depends on the working relationship among local officials, community-based enforcement groups, and fisheries stakeholders. The study emphasized that community-based enforcement mechanisms such as Bantay Dagat require support and coordination from LGUs to function effectively. This supports the finding that municipalities with serious coordination problems may need clearer institutional arrangements and stronger support systems.

Moreover, Barboza et al. (2024) noted that small-scale fisheries management in the Philippines requires a holistic and integrated governance approach. Their review emphasized that fisheries management should consider ecological, social, economic, and institutional dimensions. This means that coordination among LGUs, enforcement agencies, and communities is necessary because illegal fishing is not only an enforcement issue but also a governance and livelihood concern.

Likewise, Bennett et al. (2021) argued that inclusive marine governance is strengthened when different institutions and stakeholders are meaningfully involved in decision-making and implementation. This supports the present result because LGU coordination allows different sectors to participate in planning, enforcement, monitoring, and resource protection. When coordination is weak, fisheries governance may become fragmented and less responsive to local conditions.

Overall, the findings show that problems encountered in LGU coordination are generally Less Serious. This suggests that most municipalities have functional coordination mechanisms in implementing fishing ordinances. However, Dimiao requires immediate attention due to its Very Serious rating, while municipalities rated Serious may need institutional improvement. LGUs may strengthen coordination by conducting regular inter-agency meetings, clarifying roles and responsibilities, improving barangay-level reporting systems, creating joint patrol schedules, documenting enforcement activities, and establishing shared communication channels among MENRO, LGU officials, Bantay Dagat, uniformed personnel, and fisheries stakeholders.

Table 3.4

Problems Encountered in the Implementation of Illegal Fishing Ordinances in Terms of Community Cooperation

Municipalities	Community Cooperation	Verbal Interpretation
Alburquerque	2.67	Serious
Anda	1.95	Less Serious
Baclayon	2.42	Less Serious
Bien Unido	2.66	Serious
Buenavista	2.66	Serious
Calape	2.45	Less Serious
Candijay	2.66	Serious
Clarin	2.72	Serious
Cortes	2.64	Serious
Danis	2.35	Less Serious
Dimiao	4.16	Very Serious
Duero	2.73	Serious
Garcia Hernandez	2.77	Serious
Getafe	2.28	Less Serious
Guindulman	2.25	Less Serious

Inabanga	2.47	Less Serious
Jagna	2.51	Serious
Lila	2.42	Less Serious
Loay	2.54	Serious
Loon	2.39	Less Serious
Mabini	2.39	Less Serious
Maribojoc	2.58	Serious
Panglao	2.08	Less Serious
Pres. Carlos P. Garcia	2.58	Serious
Tagbilaran City	2.25	Less Serious
Talibon	2.31	Less Serious
Trinidad	1.88	Less Serious
Tubigon	2.28	Less Serious
Ubay	2.67	Serious
Valencia	1.95	Less Serious
Grand Mean	**2.49**	**Less Serious**

Legend:

Range	Interpretation	Range	Interpretation
3.26 – 4.00	Very Serious	1.76 – 2.50	Less Serious
2.51 – 3.25	Serious	1.00 – 1.75	Not Serious

Table 3.4 presents the problems encountered in the implementation of illegal fishing ordinances in terms of community cooperation. The table obtained a grand mean of 2.49, interpreted as Less Serious. This indicates that, in general, problems related to community cooperation are present but not severe. The finding suggests that most municipalities still receive a workable level of support from community members, fisherfolk, barangay officials, and coastal residents in the implementation of illegal fishing ordinances.

Among the municipalities, Dimiao obtained the highest mean of 4.16, interpreted as Very Serious. This result shows that Dimiao experiences the most serious problem in terms of community cooperation. This may indicate weak community participation, reluctance of residents to report violations, fear of conflict with violators, limited awareness of fishing ordinances, poor trust in enforcement authorities, or lack of sustained involvement of fisherfolk organizations. Since community cooperation is essential in detecting and reporting illegal fishing, this very serious rating suggests the need for immediate community-based intervention in Dimiao.

Several municipalities were rated Serious, including Alburquerque with 2.67, Bien Unido with 2.66, Buenavista with 2.66, Candijay with 2.66, Clarin with 2.72, Cortes with 2.64, Duero with 2.73, Garcia Hernandez with 2.77, Jagna with 2.51, Loay with 2.54, Maribojoc with 2.58, Pres. Carlos P. Garcia with 2.58, and Ubay with 2.67. These findings suggest that these municipalities experience notable difficulties in securing full community participation in the implementation of illegal fishing ordinances. The problems may involve limited reporting of violations, low attendance in community consultations, resistance from some fisherfolk, weak information dissemination, or lack of community confidence in enforcement actions.

On the other hand, many municipalities were rated Less Serious, including Anda, Baclayon, Calape, Dauis, Getafe, Guindulman, Inabanga, Lila, Loon, Mabini, Panglao, Tagbilaran City, Talibon, Trinidad, Tubigon, and Valencia. This means that problems in community cooperation are generally manageable in these areas. The lower ratings may suggest stronger community awareness, better communication between LGUs and residents, more active barangay participation, and greater willingness of local stakeholders to support enforcement efforts.

The grand mean of 2.49, although interpreted as Less Serious, is close to the threshold of the Serious category. This indicates that community cooperation should still be treated as an area for improvement. Even if the overall problem is not severe, weak community participation can reduce the effectiveness of illegal fishing ordinance implementation. Illegal fishing often occurs in areas where community members are the first to observe violations. Therefore, the willingness of residents to report illegal fishing, cooperate with authorities, and

support conservation measures is essential in strengthening enforcement.

The Bureau of Fisheries and Aquatic Resources (2022) emphasized in the Comprehensive National Fisheries Industry Development Plan 2021–2025 that sustainable fisheries management requires the participation of fisherfolk, LGUs, national agencies, and local communities. This supports the present finding because illegal fishing ordinances are more effectively implemented when communities are actively involved in monitoring, reporting, and supporting local enforcement activities.

Similarly, the Bureau of Fisheries and Aquatic Resources (2024) reported in the Philippine IUU Fishing Assessment Report 2023 that illegal, unreported, and unregulated fishing remains a continuing threat in municipal waters. The report highlights the role of LGUs and local stakeholders in identifying enforcement risks and improving compliance. This relates to the present table because weak community cooperation may limit the capacity of local authorities to detect violations and respond to illegal fishing incidents.

In addition, Maderazo (2025) explained that community-based fisheries governance in the Philippines depends on the relationship between local institutions, fisherfolk, and enforcement groups such as Bantay Dagat. The study emphasized that community-based enforcement mechanisms require local participation and LGU support to function effectively. This supports the finding that problems in community cooperation, particularly in municipalities rated serious or very serious, may weaken the implementation of illegal fishing ordinances.

Moreover, Barboza et al. (2024) emphasized that small-scale fisheries management in the Philippines requires a holistic approach that considers social, economic, institutional, and ecological dimensions. Their review suggests that fisheries governance cannot be sustained through enforcement alone; it also requires community trust, participation, and livelihood-sensitive strategies. This supports the present result because community cooperation problems may arise when residents do not fully trust enforcement mechanisms or when compliance is perceived as a threat to livelihood.

Likewise, Bennett et al. (2021) argued that inclusive marine governance improves conservation outcomes when communities are meaningfully involved in decision-making and implementation. In the context of illegal fishing ordinances, this means that local residents should not only be treated as subjects of enforcement but also as partners in monitoring, reporting, and protecting marine resources. This supports the need to strengthen community engagement in municipalities where cooperation problems are serious.

Overall, the findings show that problems encountered in community cooperation are generally Less Serious, as reflected in the grand mean of 2.49. However, because the score is near the serious range and several municipalities obtained serious ratings, community cooperation remains an important concern. Dimiao requires immediate attention due to its Very Serious rating, while municipalities rated Serious may need stronger community mobilization programs. LGUs should strengthen information campaigns, fisherfolk consultations, barangay reporting systems, Bantay Dagat support, witness protection mechanisms, and livelihood-sensitive enforcement strategies. Improving community cooperation is essential because illegal fishing ordinance implementation becomes stronger when coastal residents actively participate in protecting their municipal waters.

Sub-problem No. 4. Significant differences in the respondent's assessment when they are grouped according to their profile.

Table 4 presents the results of the one-way analysis of variance (ANOVA) conducted to determine whether the respondents' assessment of the problems encountered in the implementation of illegal fishing ordinances varies significantly when they are grouped according to their personal profile.

Table 4.

Significant differences in the respondent's assessment when they are grouped according to their profile.

Profile Variable	df_1	df_2	F-value	p-value	Significant at 0.05?
Gender	2	127	4.418	0.01397	Significant
Age Group	8	121	2.489	0.01552	
Civil Status	2	127	4.591	0.01188	
Educational Attainment	4	125	13.129	0.0000000059	
Monthly Income Range	4	125	10.180	0.000000363	
Category of the Respondents	2	127	4.726	0.01048	

The results reveal that all six profile variables: gender, age group, civil status, educational attainment, monthly income range, and position show statistically significant differences at the 0.05 level. The analysis showed a significant difference across gender groups ($F(2,127) = 4.418$, $p = 0.01397$). This finding suggests that male, female, and LGBTQIA respondents do not share the same level of perception regarding the seriousness of the problems encountered, with at least one group rating the issues more critically than the others. The respondents' assessment varied significantly across age groups ($F(8,121) = 2.489$, $p = 0.01552$). This indicates that age influences how respondents perceive the challenges in fisheries law enforcement, possibly reflecting differences in experience, exposure to field operations, or length of involvement in community-based enforcement. Civil status, the results ($F(2,127) = 4.591$, $p = 0.01188$) demonstrate that married, single, and widowed respondents differ in their assessment of the problems encountered. This could be attributed to differences in personal responsibilities, perspectives, or social roles that shape how individuals evaluate institutional and community-level enforcement challenges.
highly significant difference was also found in terms of educational attainment ($F(4,125) = 13.129$, $p < 0.001$). Respondents with varying levels of education perceive the problems differently, with the statistical result suggesting that higher educational backgrounds are associated with a more critical and informed assessment of the issues related to fishing ordinances enforcement. The analysis of monthly income range yielded a significant result ($F(4,125) = 10.180$, $p < 0.001$). This implies that socioeconomic status influences the way respondents view the seriousness and extent of the problems encountered, possibly due to differences in job roles, responsibilities, or engagement in fisheries-related activities. A significant difference was observed across positions held by respondents ($F(2,127) = 4.726$, $p = 0.01048$). This means that Local Chief Executives, MENRO personnel, and military or uniformed personnel do not share uniform perspectives regarding the problems encountered in fishing ordinances enforcement. Those holding operational and frontline positions may have greater exposure to enforcement gaps and thus perceive higher levels of difficulty.

The findings indicate that respondents' perceptions of the problems encountered are not homogeneous and are influenced by their demographic and professional characteristics. This highlights the importance of designing targeted interventions, training programs, and policy adjustments that account for differences in experience, background, and roles among stakeholders involved in the enforcement of fishing ordinances.

Research on environmental governance and fisheries enforcement suggests that individual background factors influence perceptions of institutional performance. Mozumder et al. (2023) explain that stakeholders involved in fisheries management such as government officials, enforcement personnel, and community members often have different levels of exposure to operational challenges. As a result, their assessments of enforcement problems tend to vary depending on their professional

roles, experience, and level of involvement in policy implementation.

Similarly, studies on coastal resource management emphasize that age and experience influence perceptions of environmental enforcement. Older and more experienced personnel often have greater exposure to institutional limitations, bureaucratic delays, and resource constraints, which may lead them to assess enforcement problems more critically. This aligns with the finding that age groups differ significantly in their evaluation of implementation challenges.

Educational attainment is also a major factor affecting perception. Individuals with higher levels of education tend to demonstrate greater awareness of environmental policies, legal procedures, and governance standards. According to Song et al. (2020), stakeholders with stronger educational backgrounds are more likely to recognize regulatory gaps, enforcement weaknesses, and the broader impacts of illegal fishing on sustainability. This explains the highly significant differences observed among respondents with varying educational levels in Table 4.

Socio-economic status likewise influences how individuals perceive enforcement challenges. Alvarico and Cuevas (2021) found that income levels and livelihood conditions affect attitudes toward illegal fishing and regulatory compliance. Individuals with higher incomes or more stable employment are generally more supportive of enforcement initiatives, while those economically dependent on fishing may perceive enforcement efforts as restrictive or problematic. This supports the finding that monthly income range significantly affects respondents' assessment of enforcement problems.

In terms of occupational roles, governance literature consistently notes that frontline personnel often perceive greater operational challenges than administrative officials. Doddema et al. (2018) explain that enforcement officers directly involved in monitoring and apprehension are more exposed to logistical shortages, coordination issues, and community resistance. Consequently, they tend to provide more critical evaluations of enforcement effectiveness compared to policymakers or administrative staff. This observation corresponds with the significant differences found among respondent categories, such as LGU officials, MENRO personnel, and uniformed personnel.

Gender and civil status have also been linked to variations in perception due to differences in social roles, responsibilities, and experiences. Studies in organizational behavior and community governance indicate that demographic factors influence attitudes toward institutional performance and risk perception. Individuals with greater family responsibilities or social roles may exhibit heightened concern for community welfare, environmental protection, and enforcement effectiveness. Overall, the literature suggests that perceptions of enforcement problems are not uniform across stakeholders. Instead, they are shaped by a combination of demographic characteristics, socio-economic conditions, educational background, and professional exposure. These factors influence how individuals interpret the effectiveness, challenges, and limitations of fishing ordinances enforcement.

The findings in Table 4 therefore align with existing studies, which indicate that differences in background, experience, and institutional roles significantly affect stakeholders' assessments of governance and enforcement issues. This underscores the importance of designing targeted interventions, capacity-building programs, and policy strategies that consider the diverse perspectives and needs of different stakeholder groups involved in fisheries law enforcement.

Sub-problem No. 5. Significant relationship between level of compliance and problems encountered in the implementation on the fishing ordinances.

Table 5 presents a Pearson product–moment correlation was computed using the overall compliance scores of the 30 municipalities from Table 2 (Level of Compliance) and Table 3 (Problems Encountered). Sample size (n) = 30 municipalities. Level of significance: $\alpha = 0.05$.

Table 5.
Significant relationship between level of compliance and problems encountered in the implementation on the fishing ordinances.

Variables Compared (Level of Compliance vs Problems Encountered)	Pearson r	p-value	Decision ($\alpha = 0.05$)	Interpretation
Arrest & Prosecution	**–0.245**	0.596	Fail to Reject Ho	Not Significant
Logistical Support	**–0.254**	0.588	Fail to Reject Ho	Not Significant
LGU Coordination	**–0.110**	0.781	Fail to Reject Ho	Not Significant
Community Cooperation	**–0.413**	0.512	Fail to Reject Ho	Not Significant

The variables correlation analysis revealed negative relationships across all four implementation dimensions, indicating that higher compliance tends to correspond with lower levels of problems encountered. The strongest association was observed in community cooperation (r = –0.413), followed by logistical support (r = –0.254) and arrest and prosecution (r = –0.245), while LGU coordination showed only a very weak relationship (r = –0.110). However, all computed p-values exceeded the 0.05 level of significance, indicating that the relationships were not statistically significant. Thus, the null hypothesis is not rejected, and the findings suggest that compliance levels in specific enforcement areas do not have a statistically significant association with the problems encountered across municipalities.

The strongest inverse relationship is observed in community cooperation, followed by logistical support and arrest and prosecution, while LGU coordination shows only a very weak association. Despite these patterns, the lack of statistical significance suggests that the level of compliance alone does not fully explain the problems encountered in the enforcement of fishing ordinances.

This finding is consistent with the literature emphasizing that illegal fishing is a complex, multi-dimensional problem influenced not only by enforcement compliance but also by structural, institutional, and socio-economic factors. Mackay et al. (2020) and Bondaroff et al. (2015) note that illegal fishing operations are often driven by economic incentives and exploit weak governance systems, which limits the effectiveness of enforcement mechanisms even when regulations are in place.

Similarly, Doddema et al. (2018) explain that enforcement in small-scale fisheries is often hindered by the state's limited capacity to manage distant or poorly monitored fishing activities. In such contexts, compliance levels may not directly translate into reduced operational problems because enforcement systems themselves remain structurally weak.

Song et al. (2020) further argue that illegal fishing persists across many regions due to the widespread disregard of fisheries regulations and the lack of formal recognition of customary or community-based governance systems. This indicates that compliance is influenced by social and institutional contexts, which may explain the absence of a statistically significant relationship in the present study.

At the operational level, Mozumder et al. (2023) emphasize that challenges in manpower, logistics, coordination, and governance structures significantly affect the implementation of fisheries policies. These factors often operate independently of formal compliance indicators, reinforcing the notion that enforcement problems may stem from systemic limitations rather than compliance levels alone.

Moreover, community-based perspectives on illegal fishing highlight the role of social acceptance, economic dependency, and risk perceptions among fisherfolk. Alvarico and Cuevas

(2021) found that many fishermen view illegal fishing through the lens of livelihood necessity rather than criminal intent, which complicates enforcement and weakens the relationship between compliance mechanisms and actual operational problems.

Overall, the findings of this study align with existing literature indicating that the success of fisheries law enforcement is shaped by a combination of governance capacity, community engagement, institutional coordination, and resource availability. While higher compliance tends to correspond with fewer problems, the relationship is not statistically significant, suggesting that enforcement challenges are influenced by broader structural and socioeconomic conditions beyond the scope of compliance indicators alone.

Sub-problem No. 6. Proposed action plan based on the results of the study.

Based on the findings of this study, the following intervention plan was being proposed.

Rationale

The proposed intervention plan directly emanates from the findings of the study, particularly the identified problems on low logistical support, coordination gaps among implementing agencies, and weak community participation in the implementation of illegal fishing ordinances in the coastal municipalities of Bohol Province. The results indicate that effective enforcement of coastal laws cannot rely solely on the presence of ordinances, but requires strengthened operational resources, active inter-agency coordination, and sustained community involvement. Hence, this plan is formulated to address the specific gaps revealed in the study and to provide practical strategies that may improve ordinance implementation, fisherfolk compliance, and coastal resource protection.

MENRO officers should be trained in public and community relations to become more effective in implementing coastal laws and municipal ordinances related to fishing. They should exert greater effort in conducting educational awareness activities on fisheries laws and ordinances among coastal communities and schools.

Moreover, the evaluation of the level of compliance in terms of information campaign and crime prevention shows the need to enhance the capabilities of MENRO officers and other concerned implementers. Strengthening their skills, coordination mechanisms, and community engagement strategies is necessary to achieve a more effective level of implementation.

Hence, this program is designed to enhance the capabilities of MENRO officers and other stakeholders involved in the enforcement of coastal laws and municipal fishing ordinances.

Description of Program

This intervention plan consists of specific programs, activities, time frames, and assigned offices or persons responsible for implementation. It is developed to address the problems encountered in community compliance with fishing ordinances in the coastal municipalities of Bohol Province, particularly those related to logistical support, coordination, information dissemination, and community participation. Its overall purpose is to strengthen the enforcement capacity of MENRO officers, improve collaboration among local government units and enforcement agencies, and encourage active participation of coastal communities in the protection and sustainable management of marine resources.

Conclusions

Based on the findings of the study, the following conclusions are drawn:

1. The respondents are primarily composed of individuals from local government, environmental, and uniformed sectors who possess the educational and professional background necessary to assess the implementation of fishing ordinances.
2. The overall level of compliance across the thirty (30) coastal municipalities of Bohol is rated Capable, indicating that enforcement mechanisms are generally functional. However, logistical support registers the lowest rating, reflecting resource-related limitations in enforcement operations.
3. The problems encountered in the implementation of fishing ordinances are assessed as low to moderate, with logistical

constraints emerging as the primary challenge, followed by issues in coordination and community participation.

4. There are statistically significant differences in respondents' assessments of the problems encountered when grouped according to gender, age, civil status, educational attainment, income, and respondent category, indicating that perceptions vary across demographic and professional groups.
5. There is no statistically significant relationship between the level of compliance and the problems encountered in the implementation of fishing ordinances, suggesting that enforcement challenges are influenced by broader structural and institutional factors beyond compliance levels alone.

Recommendations

1. Improve logistical support. LGUs should provide sufficient funds for patrol boats, fuel, communication equipment, and other enforcement needs.
2. Strengthen inter-agency coordination. MENRO, LGUs, BFAR, PNP Maritime Group, PCG, and barangays should conduct joint patrols, regular meetings, and information sharing.
3. Enhance community participation. Municipalities should intensify awareness campaigns, fisherfolk dialogues, school-based education, and barangay involvement to improve compliance.
4. Provide alternative livelihood programs. LGUs and partner agencies should offer sustainable livelihood support to reduce dependence on illegal fishing.
5. Conduct capacity-building activities. MENRO officers, fish wardens, and enforcement personnel should receive regular training on fisheries laws, enforcement procedures, and community relations.
6. Standardize enforcement practices. Provincial and municipal authorities should adopt uniform guidelines, reporting systems, and monitoring tools.
7. Conduct further research. Future studies may examine leadership, political support, organizational capacity, and socioeconomic factors affecting compliance with fishing ordinances.

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