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Participation of the deputized implementers in the preservation of the aquamarine resources in the coastal town of Cagayan

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Abstract

In total, more than 20 government units exercise separate management powers and mandate over coastal uses and sectors. Other government bodies also serve as advisory and recommendatory councils. Bantay Dagat / Fishwarden originated as a volunteer, community based organization to assist in coastal law enforce. Bantay dagat members may be deputized as fishwardens after receiving coastal law enforcement training. This study determined and analyzed the organizational services in the organizations where the deputized implementers belong. The end-goal is to define ways of revitalizing the deputized implementers' role in preserving the aquamarine resources. The data were categorized, interpreted and analyzed using descriptive statistics such as frequency counts, percentages, weighted means and rank order. A Five-point Likert scale was used to analyze the level of participation of the deputized implementers in the preservation of aquamarine resources. Under the fishery laws, there are agencies and organizations that were deputized to implement the different activities or program of the government in the preservation of the aqua marine resources. This study sought to assess the level of participation of the deputized implementers in the preservation of aqua marine resources. From the study, it was found that majority of the deputized implementers are male; most of them have 50 to 56 age range; majority of them are married; they are mostly college graduates; most of them receive a monthly family income of 5,000 and below; most belong to the Municipal Fish wardens/ Bantay Dagat; most are fisherfolks; and most of them had just served for one to seven years. On the deputized implementers' level of perception on their level of participation on the activities undertaken in the preservation of aquamarine resources, results revealed that the respondents have high level of participation in the implementation of enforcement activities, information education campaign, search and rescue operation activities, and source of funding activities. In terms of the deputized implementers' perception on the level of danger brought by specific activities, they perceived that some specific activities are neutrally dangerous, problems on manpower; equipment, funding, and socio-political factor are serious problems. On test of differences on the deputized implementers' level of perception on their level of participation when grouped according to organization, it was found that the PNP Maritime group has the highest implementation level of enforcement activities. On the other hand, the Philippine Coastguard has the highest implementation level on information, education campaign and search and rescue operation activities while the Fish warden/ Bantay Dagat has the highest implementation level on source of funding activities.

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Introduction

Some of the world's richest ecosystems composed of extensive coral reefs, sea-grass beds, and dense mangrove forests—can be found in the waters of the Philippine Islands. The country's coastline, including 7,107 islands, is one of the longest in the world. Communities on the coastline are heavily dependent on these waters for fish and other resources yet habitat loss, unsustainable fishing practices, and continuing trade in endangered marine species are increasingly threatening coastal biodiversity and livelihoods. Philippine coastal waters contain some of the world's most diverse ecosystems considered as the center of marine biodiversity in the world. It is characterized by extensive coral reefs, sea grass beds, dense mangrove forests, and pristine and beautiful beaches. The country stretches 2,000 kilometers from north to south and consists of 7,107 islands with a total coastline of 36,289 kilometers, one of the longest in the world. The coastal and marine resources have significant economic value. Healthy coastal and marine ecosystems can provide the Philippines a sustainable supply of goods such as fish and related products, seaweeds, algae and salt—and services, such as shoreline protection, maintaining water quality, sustaining biodiversity, transportation, and recreation.

The basic framework for coastal resources management and preservation can be found in already existing national laws and regulations. The 1987 Constitution provides for the right to a balanced and healthy ecology and specifically mandates the Philippine government to conserve the nation's aquamarine resources. Statutes and regulations concerning coastal management have existed for decades. They clearly demonstrate, however, the lack of a single law or administrative decree directly related to integrated aquamarine resources management and preservation. Under current legislation, sectors and activities affecting the coastal environment are regulated through fragmented legislative mandates. These mandates are as follows: The 1991 Local Government Code (RA 7160) provides local government units (LGUs) with broad

governmental powers to manage fisheries and aquatic resources within municipal waters; The 1998 Fisheries Code (RA 8550) is the primary legislation for fisheries management; The 2004 Clean Water Act (RA 9275) aims to protect the country's water bodies from pollution; The 2001 Wildlife Conservation Act (RA 9147) governs the conservation and protection of wildlife species and critical habitats; and The 1997 Indigenous Peoples' Rights Act (RA 7942) recognizes the concept of ancestral waters. Other legislations are Public Land Act, Coast Guard Law, Marine Pollution Decree, Philippine Mining Act, Philippine Environment Code, and Forestry Reform Code. There are also International Treaties such as Convention on Biological Diversity, Agenda 21, RAMSAR, UNCLOS, CITES, FAO Code of Conduct for Fisheries, Cartagena Protocol on Biosafety, and The Bonn Convention. In total, more than 20 government units exercise separate management powers and mandates over coastal uses and sectors. Other government bodies also serve as advisory and recommendatory councils.

This paper would then assess the bantay dagat program in the selected coastal towns in Cagayan which are Aparri, Gonzaga, Sta. Ana, Claveria and Santa. Praxedes.

Materials and methods

Research design

The study will employ the descriptive- correlational method of research. The profile of the deputized implementers as to rank or position, length of service, age, sex, civil status, educational attainment and family income will be described. Moreover, the activities undertaken by the deputized implementers in the preservation of aquamarine resources and problems encountered in the implementation of activities will also be determined. Also, the study will describe the level of participation of the deputized implementers in the preservation of aquamarine resources.

On the other hand, this study will also determine whether there is a significant relationship between the level of participation of the deputized

implementers in the preservation of aquamarine resources and their profile variables, which will make use of the correlational technique.

Respondent and sampling procedure

The respondents of the study were randomly selected deputized implementers in the preservation of aquamarine resources. The respondents are the PNP Maritime Group, Philippine Navy, Philippine Coastguards Fish Warden (Bantay Dagat) composed of Fisherfolks Organization officers, BFAR, NGO's, Barangay officials, and LGU (Table 1).

Table 1. Respondent and sampling procedure

| Organization/Agency | (Total number =161) |
|-----------------------------|---------------------|
| PNP-MARIG | 32 |
| Philippine navy | 21 |
| Philippine coast guard | 11 |
| BFAR municipal fish wardens | 97 |

Research instrument

A structured questionnaire from the Implementation of the Coastal Resource Management Project No. 492-0444 was adopted by the researcher and was modified and developed to sought in the situation of the area of the study, which will serve as the principal data gathering instrument for this study. The questionnaire consisted of four (4) parts. Part I gathered information about the profile of the deputized implementers in terms of agency, rank/position, length of service, age, sex, civil status, highest educational attainment and average monthly income. Part II consisted of items that determine the activities conducted by the deputized implementers in the preservation of aquamarine resources. Part III elicited information on the problems encountered by the deputized implementers in the implementation of activities for the preservation of aquamarine resources and Part IV determined the level of participation of the deputized implementers in the preservation of aquamarine resources.

Data gathering procedure

A written request to seek permission for the conduct of the study was first sought from the Organization

Administrators of PNP Maritime Group, Philippine Navy, Philippine Coastguards, LGU, Fisherfolks Association, NGO' and BFAR for the floating of questionnaires and the conduct of informal interviews, focused group discussion and document analysis.

Statistical treatment of data

The data was categorized, interpreted and analyzed using descriptive statistics such as frequency counts, percentages, weighted means and rank order.

A Five-point Likert scale was used to analyze the level of participation of the deputized implementers in the preservation of aquamarine resources. The following scales with their adjectival values were used:
 4.20-5.00: All the time/Very participative
 3.40-4.19: Most of the time/Participative
 2.60-3.39: Sometimes/ Moderately participative
 1.80-2.59: Seldom/Somewhat participative
 1.00-1.79: Never/Not participative

The Chi-square test was used to determine the relationship between level of participation of the deputized implementers in the preservation of aquamarine resources and their profile variables.

Results and discussion

Profile of the deputized implementers in the preservation of the aqua marine resources in the coastal town of Cagayan

Sex

Apparent in Table 2 is the profile of the deputized implementers in terms of sex. Majority of the respondents are male with the frequency of 132 or 82 percent while 29 or 18 percent are female. This means that the male is more dominant than female. This further implies that the deputized implementers are male dominated professions. Further supported by sex ratio stands at 102 males for every 100 females of the 92.1 million household populations in the Philippines, 50.4 percent were males and 49.6 percent were female. This resulted in a sex ratio of 102 males per 100 females. NSO Reference Number: 012-066

Table 2. Profile of the deputized implementers in terms of sex

| Sex | Frequency (n=161) | Percentage |
|--------|-------------------|------------|
| Male | 132 | 82 |
| Female | 29 | 18 |

Age

The frequency and percentage distribution of the profile of the deputized implementers is shown in Table 3. It shows that majority of the respondents are aged 50 to 56 as shown by the frequency of 32 and 20 percent. There are 31 respondents or 19 percent who are aged 36 to 42. There are 30 respondents or 19 percent who are aged 29 to 35. There are 25 or 16 percent who are aged 22 to 28. There are 18 or 11 percent who are aged 43 to 49 and 57 to 63 respectively. There are also seven (7) respondents or four (4) percent having an age of 64 to 70.

Table 3. Profile of the deputized implementers in terms of age

| Age (in years) | Frequency (n=161) | Percentage |
|------------------------|------------------------|------------|
| 64 to 70 | 7 | 4 |
| 57 to 63 | 18 | 11 |
| 50 to 56 | 32 | 20 |
| 43 to 49 | 18 | 11 |
| 36 to 42 | 31 | 19 |
| 29 to 35 | 30 | 19 |
| 22 to 28 | 25 | 16 |
| Mean = 42.94 years old | S.D. = 12.28 years old | |

The mean age of the respondents is 42.94 years old with a standard deviation of 12.28 years old. This implies that the respondents are in their median age relatively they are in their productive years, and data on age commensurate with the work of a fish warden needed able-bodied individuals to carry out their task especially at seaborne activities.

Table 4 presents the profile of the deputized implementers in terms of civil status. There are 121 or 75 percent of the deputized implementers who are married. Thirty three (33) or 21 percent are single. Five (5) or 3 are live in as married and two (2) or 1 percent is widow. Of the 161 respondents mostly are married. This implies that the respondents tend to be

more productive in their task since married individuals should be more responsible.

Table 4. Profile of the deputized implementers in terms of civil status

| Civil status | Frequency (n=161) | Percentage |
|--------------------|-------------------|------------|
| Married | 121 | 75 |
| Single | 33 | 21 |
| Live in as married | 5 | 3 |
| Widow/er | 2 | 1 |

Highest educational attainment

Table 5 illustrates the deputized implementers in terms of the highest educational attainment. The respondents are mostly college graduate (80 or 49 percent) and only one is doctorate degree holder. Further as seen in the table that a significant number of respondent who did not graduate in college (Fish Warden/ Bantay Dagat as they come primarily in the community. This implies that due to the nature of their assigned task which is to patrol at seas, the respondents hardly have time to continue their studies for advancement.

Table 5. Profile of the deputized implementers in terms of highest educational attainment

| Highest educational attainment | Frequency (n=161) | Percentage |
|---------------------------------|-------------------|------------|
| Doctorate graduate | 1 | 1 |
| Masters graduate | 1 | 1 |
| With units in a master's degree | 2 | 1 |
| College graduate | 80 | 49 |
| College level | 27 | 17 |
| High school graduate | 40 | 25 |
| Elementary graduate | 10 | 6 |

Monthly income

In Table 6, frequency and percentage distribution of respondents according to the average monthly income is summarized. There are 46 deputized implementers or 29 percent who are receiving a monthly income of 25,001 to 35,000. Majority (73 or 45 percent) of the monthly income of the respondents is below P5,000.00. This implies that these (primarily the fish wardens) have difficulty in coping with their everyday needs as they rely only in their catch to support their families. PSA published that the monthly income to survive is more or less 10,000 pesos.

Table 6. Profile of the deputized implementers in terms of monthly income

| Monthly income (in pesos) | Frequency (n=161) | Percentage |
|-------------------------------------------|-------------------|------------|
| 45,001 and above | 7 | 4 |
| 35,001 to 45,000 | 4 | 3 |
| 25,001 to 35,000 | 46 | 29 |
| 15,001 to 25,000 | 10 | 6 |
| 5,001 to 15,000 | 21 | 13 |
| 5,000 and below | 73 | 45 |
| Mean = Php 16,292.29 S.D. = Php 14,843.68 | | |

Organization

Table 7 presents the number of respondents as to the agency or organization they are belonging to; whereas, majority of the respondents come from the BFAR Municipal Fish Warden (Bantay Dagat) with (97 or 60 percent) of the total number of respondents. Philippine Coast guard has the least number of respondents with a frequency of 11 and 7 percent. The Maritime Group has frequency of 32 or 20 percent and Philippine Navy has frequency of 21 or 13 percent. This implies that the number of fish warden dominated the over-all number of respondents because multipliers were needed to enforce laws and regulation which are accessible to the area near the seashore.

Table 7. Profile of the deputized implementers in terms of organization

| Organization/ Agency | Frequency (n=161) | Percentage |
|-----------------------------|-------------------|------------|
| PNP-MARIG | 32 | 20 |
| Philippine navy | 21 | 13 |
| Philippine coast guard | 11 | 7 |
| BFAR municipal fish wardens | 97 | 60 |

Rank or position

The profile of the deputized implementers in term of rank or position is shown in Table 8. As shown, majority are fisherfolks which is comprised of a frequency of 47 and 40 percentage. There are also 31 or 20 percent who are police non-commissioned officers. There are 24 or 29 percent who are barangay officials.

Majority of the respondents do not belong to the uniformed personnel. This implies that most of the deputized implementers belong to the community or

what we call multipliers for their task is to secure the coastal areas and reports all activities which will destroy the aquamarine marine resources.

Table 8. Profile of the deputized implementers in terms of rank or position

| Rank/ Position | Frequency (n=161) | Percentage |
|--------------------------------------|-------------------|------------|
| Police commissioned officers | 1 | .10 |
| Police non-commissioned officers | 31 | 20 |
| Navy commissioned officers | 1 | .10 |
| Navy non-commissioned officers | 20 | 12 |
| Coastguard non-commissioned officers | 11 | 7 |
| Fisherfolks | 47 | 40 |
| Barangay officials | 24 | 29 |
| NGO's | 14 | 9 |
| LGU | 7 | 4 |
| DA-BFAR | 5 | 3 |

Length of service

On the Table 9 below frequency and percentage distribution of the deputized implementers in terms of length of service is summarized. Majority or 87 or 54 percent of the respondents have been in the service for at least 1 to 7 years, 46 or 28 percent of the respondents have been in the service for at least 8 to 14 years, which implies that the respondents are still in their productive years in portraying their responsibilities in their respective organizations.

Table 9. Profile of the deputized implementers in terms of length of service

| Age (in years) | Frequency (n=161) | Percentage |
|-------------------------------------|-------------------|------------|
| 29 to 35 | 3 | 2 |
| 22 to 28 | 6 | 4 |
| 15 to 21 | 19 | 12 |
| 8 to 14 | 46 | 28 |
| 1 to 7 | 87 | 54 |
| Mean = 8.60 years S.D. = 6.51 years | | |

Perceptions of the deputized implementers on their level of participation on the activities undertaken in the preservation of the aquamarine resources

Implementation and enforcement

The data in Table 10 present the weighted mean perception of the deputized implementers on their level of participation in the enforcement activities to preserve aquamarine resources.

Table 10. Perceptions of the deputized implementers on their level of participation in the enforcement activities to preserve aquamarine resources

| SL | Activities | Weighted mean | Descriptive value |
|----|-------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| 1 | Reduction of marine pollution and debris from land-based activities | 3.97 | Often |
| 2 | Promoting sustainable exploitation of marine resources | 3.96 | Often |
| 3 | Halting the destruction of marine resources especially through acidification | 3.34 | Sometimes |
| 4 | Eliminating harmful subsidies that promote fishing overcapacity | 3.35 | Sometimes |
| 5 | Ensuring full implementation of regional and national regimes in the preservation of aquamarine resources | 4.15 | Often |
| 6 | Protecting aquamarine resources in areas beyond national jurisdiction, including by establishing marine protected areas | 3.98 | Often |
| 7 | Encouraging sustainable small-scale fisheries | 4.05 | Often |
| 8 | Helping in the full implementation of legal codes in the preservation of aquamarine resources | 4.23 | Always |
| 9 | Banning destructive fishing gears | 4.19 | Often |
| 10 | Implement vessel monitoring measures for all commercial fishing vessels | 3.80 | Often |
| 11 | Strengthening linkages that preserve aquamarine resources | 4.15 | Often |
| 12 | Aiding in the ending up of dynamite fishing | 4.05 | Often |
| 13 | Supporting the creation of a department in the preservation of aquamarine resources | 4.20 | Always |
| | Overall weighted mean | 3.96 | Often |

There are respondents who rated some items as not applicable for them.

The statement revealing that the deputized implementers are helping in the full implementation of Legal Codes in the preservation of aquamarine resources was rated always with a mean 4.23 likewise, they support the creation of a Department in the preservation of aquamarine resources was rated always with 4.20. This implies that the respondents perceived that the creation of a department would help in the strengthening of the implementation of the legal codes in the preservation of the aqua marine resources as such they always participate in doing such.

The over-all weighted mean of the level of perception of the deputized implementers on their level of participation in the enforcement activities to preserve aquamarine resources is 3.96 with a descriptive value of “often”. This further implies that the deputized implementers have high level of participation or highly participative in this area. This further means that the deputized implementers are exemplifying their responsibilities to preserve the aquamarine resources.

Table 11. Perceptions of the deputized implementers on their level of participation in the information education campaign activities to preserve aquamarine resources

| SL | Activities | Weighted mean | Descriptive value |
|----|----------------------------------------------------------------------------------|---------------|-------------------|
| 1 | Conducts Seminar for fisherfolks | 3.63 | Often |
| 2 | Continuous IEC program through orientation program | 3.84 | Often |
| 3 | Conducts seminars on the proper use of gears | 3.63 | Often |
| 4 | Community education to support and understand coastal ecosystems and MPA's | 3.85 | Often |
| 5 | Support campaign to educate the polluter | 3.91 | Often |
| 6 | Conducts workshop on first aid | 3.35 | Sometimes |
| 7 | Encouraging sustainable small-scale fisheries through pulong- pulong sa barangay | 3.79 | Often |
| 8 | Provide pamphlets on preservation drive | 3.58 | Often |
| 9 | Create program on the waste management | 3.86 | Often |
| 10 | Promoting sustainable exploitation of marine resources | 3.97 | Often |
| | Overall weighted mean | 3.74 | Often |

Information education campaign

Table 11 presents the Perceptions of the deputized implementers on their level of participation in the

information education campaign activities to preserve aquamarine resources. It can be gleaned in the table that the respondents rated all items in

the information education campaign with mean ranges 3.63 to 3.97 with a descriptive value of “often”. This finding can also be seen in the over-all weighted mean of 3.74 with a descriptive value of “often”. This means that the respondents have favorable perceptions on the different items on information

education campaign but needs to conduct more workshops to have better understanding on the impact of the activities. Yet, the deputized implementers are highly participative in the information education campaign activities to preserve the aquamarine resources.

Table 12. Perceptions of the deputized implementers on their level of participation in the search and rescue operation activities to preserve aquamarine resources

| SL | Activities | Weighted mean | Descriptive value |
|----|-------------------------------------------------------------|---------------|-------------------|
| 1 | Help in locating missing person at sea | 3.85 | Often |
| 2 | Assist in arresting violators of fishery law | 3.82 | Often |
| 3 | Seaborne patrol | 3.69 | Often |
| 4 | Checking vessels capacity | 3.88 | Often |
| 5 | Search of vessels for contraband | 3.47 | Often |
| 6 | Protection of aquamarine life especially endangered species | 4.08 | Often |
| 7 | Maintenance of MPA | 4.06 | Often |
| 8 | Screening of crew in the vessels | 3.60 | Often |
| 9 | Checking compliance of sea vessels | 3.82 | Often |
| | Overall weighted mean | 3.81 | Often |

Table 13. Perceptions of the deputized implementers on their level of participation in the source of funding of the activities to preserve aquamarine resources

| SL | Activities | Weighted mean | Descriptive value |
|----|------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| 1 | Licenses for operation of fishing vessels of 3GT or less | 3.78 | Often |
| 2 | Bangus fry concessions | 3.56 | Often |
| 3 | Auxiliary invoices for transfer of fish and fishery products | 3.35 | Sometimes |
| 4 | Licenses for operation of small and medium scale fishing vessels within 10.1-15 km of the municipal waters | 3.49 | Often |
| 5 | IRA of the municipality /city | 3.89 | Often |
| 6 | Fun Run to preserve the environment | 3.20 | Sometimes |
| 7 | Established linkages to NGO’s for support | 3.53 | Often |
| | Overall weighted mean | 3.54 | Often |

Search and rescue operation

Table 12 discusses the perceptions of the deputized implementers on their level of participation in the search and rescue operation activities to preserve aquamarine resources. All items are rated with a descriptive value of “often” with a mean range from 3.82 to 4.08 by the respondents. Likewise, the overall weighted mean of 3.81 still means “often”. This implies that the perceptions of the respondents are relatively equal in terms of their level of participation on the search and rescue operation.

There is quite higher rating on items 6 and 7, more so because the deputized implementers fully understand the impact of the protection of aquamarine life especially endangered species which herd in the Marine Protected Areas (MPA). But based on the overall weighted mean,

the result means the deputized implementers have high level of perception with regard to the conduct of rescue operation activities.

Sources of funding

The data in Table 13 present the perceptions of the deputized implementers on their level of participation in the source of funding of the activities to preserve aquamarine resources. The following are perceived by the respondents as often participated by them particularly on their level of participation on licenses for operation of fishing vessels, bangus concessions, licenses on small scale fishing vessels, IRA of the municipality and establishing linkages to NGO’s. Items 3 and 7 are rated sometimes by the respondents with the overall weighted mean of 3.54 having a descriptive value of often.

Table 14. Perceptions of the deputized implementers on the level of danger to aquamarine resources brought about by the specific activities

| SL | Activities | Weighted mean | Descriptive value |
|----|-------------------------------------------------------------|---------------|-------------------|
| 1 | Throwing waste in the rivers, seas , etc. | 2.56 | Medium danger |
| 2 | Cutting tree/mangrove | 2.33 | Medium danger |
| 3 | Industrial pollutants | 2.45 | Medium danger |
| 4 | Sand extraction | 2.31 | Medium danger |
| 5 | Building structures in foreshore | 2.15 | Medium danger |
| 6 | Intrusion of the commercial fishing in the municipal waters | 2.22 | Medium danger |
| 7 | Conversion of mangrove areas into fishponds | 2.24 | Medium danger |
| 8 | Rapid increase in population of mankind | 2.29 | Medium danger |
| 9 | Over fishing | 2.42 | Medium danger |
| 10 | Oil spill | 2.43 | Medium danger |
| 11 | Exporting corals | 2.42 | Medium danger |
| 12 | Dynamite fishing | 2.49 | Medium danger |
| 13 | Use of obnoxious substances | 2.45 | Medium danger |
| 14 | Use of active gears in fishing | 2.39 | Medium danger |
| | Overall weighted mean | 2.37 | Medium danger |

Table 15. Problems on manpower encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources

| SL | Problems | Weighted mean | Descriptive value |
|----|-----------------------------------------------------|---------------|--------------------|
| 1 | Lack of operation officers | 3.32 | Moderately serious |
| 2 | Lack of training in specialized seaborne activities | 3.51 | Serious |
| 3 | Inadequate knowledge for rescue and search at sea | 3.56 | Serious |
| 4 | Lack involvement for policy formation | 3.37 | Moderately serious |
| 5 | Lack of support for law enforcement | 3.50 | Serious |
| 6 | Lack or little support from force multipliers | 3.53 | Serious |
| 7 | Multi- tasking of officers | 3.50 | Serious |
| | Overall weighted mean | 3.47 | Serious |

The different perceptions of the respondents in their level of participation in the source of funding in the preservation of aqua marine resources suggest a more intensive effort exerted by the concerned organization to provide a funding system in preservation of aqua marine resources. The overall weighted mean of the deputized implementers' level of perception on their participation in funding activities is 3.54 with a descriptive value of "often" which further means that they have high level of participation in this area.

Perceptions of the deputized implementers on the level of danger brought about by specific activities to aquamarine resources

The perception of the deputized implementers on the level of danger to aqua marine resources brought by the specific activities is presented in Table 14. The respondents were asked to give their perceptions on the level of danger to aqua marine resources brought by the specific activities. Table 13 clearly shows that all the items are rated by the respondents with a descriptive scale of medium danger with a weighted

mean of 2.15 to 2.56 respectively. The overall mean 2.37 also has a descriptive scale of medium danger for all the respondents. This implies that all the respondents perceive the different specific activities that brought danger to aqua marine resources in same manner and their perception on the dangers brought by specific activities are "neutrally" perceived by them.

Problems encountered by the deputized implementers on the implementation of the activities undertaken for the preservation of the aqua marine resources

Manpower

Table 15 shows the extent of the problems on manpower encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources.

As shown in the table, the following problems: lack of training in specialized seaborne activities, inadequate knowledge for rescue and search at sea,

lack of support for Law Enforcement, lack or little support from force multipliers, multi- tasking of officers are rated serious and lack of operation officers and lack of involvement for policy formation were rated by the respondents as moderately serious with an overall mean of 3.47 with a descriptive value as “serious”. Despite of the underlying policies and regulations formulated by the Local Government

Unit to address the problems in participation in the preservation of the aquamarine resources the respondents encountered these problems. This implies that there still a need for the organizations involved to give more priority in the preservation of aqua marine resources. Also, generally, problems in terms of manpower were perceived as “serious” by the deputized implementers.

Table 16. Problems on equipment encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources

| SL | Problems | Weighted mean | Descriptive value |
|----|----------------------------------------------------------------------|---------------|-------------------|
| 1 | Lack of aluminum motorized boat for seaborne patrol | 3.56 | Serious |
| 2 | Lack of life jacket for rescue operation | 3.50 | Serious |
| 3 | Lack of jack truck | 3.47 | Serious |
| 4 | Lack of floating life ring for search and rescue operation | 3.57 | Serious |
| 5 | Lack of rubber boat for seaborne patrol operation | 3.69 | Serious |
| 6 | Lack of vehicle for transporting victim | 3.73 | Serious |
| 7 | In adequate laboratory supplies for testing chemical | 3.66 | Serious |
| 8 | Lack of high powered arms to dominate the situation during operation | 3.53 | Serious |
| | Overall weighted mean | 3.59 | Serious |

Table 17. Problems on funding encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources

| SL | Problems | Weighted mean | Descriptive value |
|----|---------------------------------------------------------------------------------|---------------|-------------------|
| 1 | Lack of support for monitoring and evaluation | 3.59 | Serious |
| 2 | Lack of support on IEC for leaders and people | 3.58 | Serious |
| 3 | Lack of community support and trust | 3.43 | Serious |
| 4 | Lack of sustainable mechanisms for financing | 3.60 | Serious |
| 5 | Lack or limited funds | 3.58 | Serious |
| 6 | Lack of government support/ administrator support(logistics) | 3.64 | Serious |
| 7 | Lack of integrated aquamarine resources management plan in LGU development plan | 3.55 | Serious |
| | Overall weighted mean | 3.57 | Serious |

Equipment

Table 16 discloses the extent of problems on equipment encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources. All items on problems on equipment encountered by the deputized implementers on the implementation of the activities, the lack of aluminum motorized boat with a mean of (3.56), life jacket (3.50), jack truck (3.47), floating life ring (3.57), rubber boats (3.69), vehicles for transporting victim (3.73), high powered arms to dominate in the situation (3.53) and inadequate laboratory supplies for testing chemicals (3.66) were rated “serious” with an overall mean of (3.59) with a descriptive value of serious. This implies that all the respondents perceive the problems in equipment

which would impede the implementations of activities of the deputized implementers which will lead to slower response or worst is to risk not only the life of the victims but also the implementers.

Funding

The Table 17 depicts the problems in funding encountered by the implementers on the implementation of the activities to preserve aquamarine resources. All items in the problems in funding rated serious by the respondents with the weighted mean of 3.57with the descriptive value of serious. Item 6 lack of government support/ administrator support(logistics) with the highest mean (3.64) followed by item 4 lack of Sustainable Mechanisms for Financing (3.60), lack of support for

monitoring and evaluation (3.59), lack of support on IEC for leaders and people and limited funds (3.58), lack of integrated aquamarine resources management fund (3.55) and lack of community support (3.43). As shown in the overall mean of 3.57 with a descriptive value of serious, the problems on funding

encountered by the deputized implementers were perceived as greatly affecting their implementation of activities for the preservation of aquamarine resources; thus, which should be immediately addressed by the concerned organization to promote the preservation of the aquamarine resources.

Table 18. Problems on socio-political factors encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources

| SL | Problems | Weighted mean | Descriptive value |
|----|--------------------------------------------------------------|---------------|--------------------|
| 1 | Padrino System to illegal fishers | 3.66 | Serious |
| 2 | Political intervention in the conduct of arrest of violators | 3.56 | Serious |
| 3 | Violation of the fishery laws are tolerated by the community | 3.47 | Serious |
| 4 | Illegal/ Unreported fishery violations | 3.50 | Serious |
| 5 | Lack of Political will by the barangay officials | 3.50 | Serious |
| 6 | Lack incentives given to law enforcers | 3.61 | Serious |
| 7 | Unwillingness of the administration to support multipliers | 3.34 | Moderately serious |
| | Overall weighted mean | 3.52 | Serious |

Table 19. Differences on the level of participation on enforcement activities of the deputized implementers by agency

| | Sum of Squares | Df | Mean Square | F-ratio | Prob. | Statistical inference |
|----------------|----------------|-----|-------------|---------|-------|-----------------------|
| Between groups | 21.796 | 3 | 7.265 | 9.502 | 0.000 | Significant |
| Within groups | 120.050 | 157 | 0.765 | | | |
| Total | 141.847 | 160 | | | | |

| Agency | Mean | S.D. | Mean difference (* Significant) | | |
|--------------------------|------|------|---------------------------------|-------|-------|
| | | | MARIG | PCG | PN |
| PNP- Maritime (MARIG) | 4.49 | 0.56 | - | - | - |
| Phil. coast guard (PCG) | 4.00 | 1.58 | 0.486 | - | - |
| Phil. navy (PN) | 3.89 | 0.91 | 0.595* | 0.110 | - |
| BFAR fish wardens (BFAR) | 3.55 | 0.85 | 0.938* | 0.452 | 0.342 |

Socio-political factor

Table 18 shows the problems on socio-political factors encountered by the deputized implementers on the implementation of the activities to preserve aquamarine resources. Padrino system to illegal fishers, political interventions, violations of the fishery laws are tolerated, unreported fishery violation, lack of political will and lack of incentives given to law enforcers were rated “Serious” while unwillingness of administration to support is rated “moderately serious”. The overall weighted mean of the respondents’ perception on the level of seriousness of problems encountered by the deputized implementers is 3.52 with a descriptive value of “serious”. This implies that despite of the willingness and dedication of the enforcers to participate in the implementation activities to

preserve the aqua marine resources by the respondents the mentioned problems impede them to do so. The need of monitoring and support of the administration or the organization to intervene in this matter is highly appreciated.

Differences on the level of participation by agency Enforcement

As shown in the Table 19 below, there is a significant difference on the participation level of the deputized implementers in terms of enforcement of activities when grouped according to agency as reckoned by the F-ratio of 9.502 with an associated probability of 0.000.

Post hoc analysis using LSD reveals that the Maritime Group and PCG have the highest participation level

with means of (4.49 and 4.00); and with S.D. of (0.56 and 1.58) suggested by the mean difference of 0.486. It is however, statistically higher than that of PN with a mean of (3.89) and S.D. of (0.91) while BFAR Fish Warden / Bantay Dagat with a mean of (3.55) and S.D. is significantly the lowest level of enforcement.

This implies that PNP Maritime Group and Philippine Coast Guard has the highest level of participation when it comes to enforcement seemingly because the primary role of the PNP Maritime Group is to enforce law of the land as stipulated in the mandate of RA 8551 and RA 10564 amendments of the Fishery law RA 8550.

Table 20. Differences on the level of participation on information education campaign activities of the deputized implementers by agency

| | Sum of Squares | df | Mean Square | F-ratio | Prob. | Statistical inference |
|----------------|----------------|-----|-------------|---------|-------|-----------------------|
| Between groups | 24.634 | 3 | 8.211 | 10.162 | 0.000 | Significant |
| Within groups | 126.870 | 157 | 0.808 | | | |
| Total | 151.504 | 160 | | | | |

| Agency | Mean | S.D. | Mean difference (* Significant) | | |
|-----------------------------------------|------|------|---------------------------------|--------|-------|
| | | | PCG | MARIG | PN |
| Phil. coast guard (PCG) | 4.29 | 0.85 | - | | |
| PNP- Maritime (MARIG) | 4.26 | 0.56 | 0.032 | - | |
| Phil. navy (PN) | 3.55 | 0.94 | 0.739* | 0.707* | - |
| BFAR fish wardens / Bantay Dagat (BFAR) | 3.36 | 0.98 | 0.930* | 0.899* | 0.192 |

Tested at 0.05 level of significance

PNP Maritime Group is vested with authority to perform all functions over Philippine territorial waters and rivers, coastal areas from the shoreline to “one mile inland to include ports and harbors and small islands of two mile in length with 1,000 population “In areas where there are no prosecutions PNP Maritime officers may act as public prosecutor. Many police functions of the Philippine coastguards are absorbed by the PNP (section 24 & 35, RA6975). In the other hand the Philippine Coast Guard were deputized to assist in the different activities involving enforcement, search and rescue, maritime security etc.

Information education campaign

As also shown in the Table 20 below, there is a significant difference on the participation level of the deputized implementers in terms of (Information Education Campaign) when grouped according to agency as reckoned by the F-ratio of 10.162 with an associated probability of 0.000.

Post hoc analysis using LSD reveals that the Philippine Coastguard and PNP Maritime Group have the highest participation level in the implementation of Information Education Campaign Activities with a means of (4.29 and 4.26); and with

S.D. of (0.85 and 0.56). Philippine Navy is significantly higher than Bantay Dagat/Fish Warden with a mean of (3.55) and S.D. of (0.94) and BFAR Fishwarden / Bantay Dagat with a mean of (3.36) and S.D. of (0.98). BFAR Fishwarden / Bantay Dagat / Fish warden with the mean of (3.550 and s.d. of (0.94) and BFAR Fishwarden/ Bantay Dagat with a mean (3.36) and S.D. of (0.98) has the lowest level of participation in the IEC. This implies that the Coast guards are responsible on enforcement of Philippine environmental laws on the high seas and ensure safety at sea. It also ensures the enforcement of Marine anti- pollution Laws on high seas. The function of the PCG still include the enforcement of maritime laws applicable laws on all bodies of water in the Philippines jurisdiction tribunals and high seas (R.A.5173) The PCG has five functions: marine safety, administration, marine environmental protection, marine search and rescue, maritime law enforcement and maritime operations.

Result herein further means that the coast guards as compared to the other group of deputized implementers have stiffer means in the implementation of activities on information education campaign.

Table 21. Differences on the level of participation on search and rescue operation activities of the deputized implementers by agency

| | Sum of Squares | df | Mean Square | F-ratio | Prob. | Statistical inference |
|----------------|----------------|-----|-------------|---------|-------|-----------------------|
| Between groups | 91.466 | 3 | 30.489 | 22.226 | 0.000 | Significant |
| Within groups | 215.364 | 157 | 1.372 | | | |
| Total | 306.830 | 160 | | | | |

| Agency | Mean | S.D. | Mean difference (* Significant) | | |
|---------------------------------------|------|------|---------------------------------|--------|--------|
| | | | PCG | MARIG | PN |
| Phil. coast guard (PCG) | 4.56 | 0.88 | | | |
| PNP-Maritime (MARIG) | 4.53 | 0.53 | 0.028 | | |
| Phil. navy (PN) | 4.02 | 1.00 | 0.540 | 0.512 | |
| BFAR fish wardens/Bantay Dagat (BFAR) | 2.86 | 1.37 | 1.699* | 1.671* | 1.159* |

Tested at 0.05 level of significance

Search and rescue operations

As shown in the Table 21 below, there is a significant difference on the participation level of the deputized implementers in terms of (Search and Rescue Operations) when grouped according to agency as reckoned by the F-ratio of 22.226 with an associated probability of 0.000.

Post hoc analysis using LSD reveals that the Philippine Coastguard have the highest participation level with a mean of (4.56); and with S.D. of (0.88), but it is statistically equal to the participation level of the PNP Maritime and Philippine Navy with a mean

of (4.53) and with an S.D. of (0.53) and (4.02) and with an S.D. of (1.00) as suggested by the mean difference of 0.028. It is however, statistically higher than that of Philippine Navy with a mean of (3.89) and S.D. of (0.91) and BFAR Fishwarden / Bantay Dagat with a mean of (3.55) and S.D. of (0.85) as suggested by the mean difference of 0.595 and 0.938 respectively.

This means that the Philippine Coast guards likewise has the highest participation level in the implementation of search and rescue operations activities to preserve the aquamarine resources.

Table 22. Differences on the level of participation on source of funding activities of the deputized implementers by agency

| | Sum of Squares | df | Mean Square | F-ratio | Prob. | Statistical inference |
|----------------|----------------|-----|-------------|---------|-------|-----------------------|
| Between groups | 107.182 | 3 | 35.727 | 28.823 | 0.000 | Significant |
| Within groups | 194.608 | 157 | 1.240 | | | |
| Total | 301.790 | 160 | | | | |

| Agency | Mean | S.D. | Mean difference (* Significant) | | |
|---------------------------------------|------|------|---------------------------------|--------|--------|
| | | | PCG | MARIG | PN |
| Phil. coast guard (PCG) | 4.21 | 0.91 | | | |
| PNP-Maritime (MARIG) | 3.93 | 0.79 | 0.279 | | |
| Phil. navy (PN) | 3.60 | 0.95 | 0.609 | 0.330 | |
| BFAR fish wardens Bantay Dagat (BFAR) | 2.22 | 1.24 | 1.984* | 1.705* | 1.375* |

Tested at 0.05 level of significance

Source of funding

As shown in the Table 22 below, there is a significant difference on the participation level of the deputized implementers in terms of funding activities when grouped according to agency as

reckoned by the F-ratio of 28.823 with an associated probability of 0.000.

Post hoc analysis using LSD reveals that the Philippine Coastguard, PNP MARIG and Philippine

Navy have the highest participation level with a means of (4.21, 3.93 and 3.93); and with S.D. of (0.91, 0.79 and 0.95) higher than BFAR Fishwarden/Bantay Dagat with a mean of (2.22) and S.D. of (1.24) is significantly the lowest.

Relationship between deputized implementers' level of participation and their profile

Table 23 shows the relationship between the deputized implementers' level of participation and their profile in terms of age when tested at 0.05 level of significance. The table reveals that the highest educational attainment and the monthly income of the deputized implementers directly and significantly relate to their level of participation in the implementation of activities in the preservation of aquamarine resources while the age of the deputized implementers inversely yet significantly relates to their level of participation on the implementation of activities in the preservation of aquamarine resources.

As reckoned from the computed value of r which is -0.238 with 0.002 probability, this means that the younger the deputized implementer, the higher his or her level of participation in the implementation of activities in the preservation of aquamarine resources. This result is due to the reality that younger deputized implementers are physically equipped for implementation of activities.

In opposite manner, the higher the highest educational attainment of the deputized implementer and the higher his or her income, the higher his or her level of participation in the implementation of activities for the preservation of aquamarine resources. These results mean that with more knowledge and with more financial resources, the deputized implementers aided in their participation on implementation of activities in the preservation of aquamarine resources.

Table 23. Relationship between the deputized implementers' level of participation and their profile

| Variables | Correlation coefficient | Probability | Statistical inference |
|--------------------------------|-------------------------|-------------|-----------------------|
| Level of participation | | | |
| Profile | | | |
| Sex | 0.045 | 0.568 | Not significant |
| Age | -0.238 | 0.002 | Significant |
| Civil status | -0.076 | 0.340 | Not significant |
| Highest educational attainment | 0.367 | 0.000 | Significant |
| Monthly income | 0.506 | 0.000 | Significant |
| Length of service | 0.119 | 0.131 | Not significant |

Tested at 0.05 level of significance

Conclusion

From the findings, it is concluded that the younger the deputized implementer, the higher his or her participation in the implementation of activities for the preservation of the aquamarine resources.

On the other hand, deputized implementers with higher educational attainment and higher monthly income have also higher level of participation in the implementation of activities for the preservation of aquamarine resources.

Recommendation(s)

On the basis of the conclusions, the following are recommended:

Other organizations that were found to be having low participation level in the implementation of activities for the preservation of aquamarine resources should find means to improve their level of participation.

As found to improve their level of participation, the deputized implementers should find ways to have advancement in studies as it would follow that they would have higher monthly family income.

Other agencies that should be involved in the preservation of aquamarine resources should work hand in hand.

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