

# ANCHOR 2021

ISSN: 2599-395X



Vol. 6 No. 1



THE OFFICIAL RESEARCH PUBLICATIONS OF

# NIPSC

NORTHERN ILOILO POLYTECHNIC STATE COLLEGE



# RESEARCH AND DEVELOPMENT SERVICES

## VISION

The RDS hopes to be the real instrument of NIPSC in attaining its noble objective of uplifting the socio-economic condition of the people in the service area by developing and generating technologies that can be transformed into livelihood opportunities.

It intends to provide information and technology that will be the basic for wise planning, development and management of the country's resources.

It intends to develop a multi-disciplinary, multi-sectoral approach to research program that will cater the needs of the individual sectors of the community.

It intends to handle research activities geared towards the improvement of instruction of solving problems, providing inputs to policy making and facilitates the adoption of appropriate technologies.

## MISSION

The RDS is committed to transform its service area into economically progressive, socially stable and ecological sound communities through its development-oriented research programs and projects.

## GOALS, OBJECTIVES and CONCERNS of RDS

Research and development plays a significant role in the development of any country. The information and technology generated through research provide the basic for the rational management of the resources for the continued use and benefits for the people. Technological breakthroughs have directly and indirectly endure economic development. It is the source of information needed for the wise planning, development and management of the country's resources.

As a support services, research is vital to NIPSC's effort in attaining its noble objective of uplifting the socio-economic condition of the people in the service area not only by providing them quality education but also by developing and generating technologies that can be transformed into livelihood opportunities. It is research activities that will geared towards the improvement of instruction, of solving social and economic problems and will provide input to policy making and will facilitate the adoption of technologies. As such NIPSC research shall aim to:

1. Enhance instruction through original contribution in specialized discipline thereby encouraging students to become themselves creative, innovative and productive individuals.
2. Develop and generate technologies which can be transformed into livelihood opportunities.
3. Support and enhances both instruction and extension program.
4. Establish and implement RDS policies and guidelines.
5. Acquired patent for developed technologies.
6. Increase number of faculty and staff engaged in research development.
7. Enhance research and development facilities to meet minimum standards.
8. Disseminate research results, matured technology and other research information.
9. Strengthen linkages with government and non-government agencies, LGUs and foreign funding organizations for resource generation.
10. Develop monitoring and evaluation mechanism for research programs, projects and activities.

**TABLE OF CONTENTS**

- THE DELIVERY OF INSTITUTIONAL AND ACADEMIC SERVICES IN NIPSC BAROTAC VIEJO CAMPUS: ARE STUDENTS SATISFIED?**  
by: Eva Joy C. Palma, DM ..... **2-27**
- LEVEL OF MASTERY IN THE USE OF SUBJECT-VERB AGREEMENT OF BACHELOR OF SECONDARY EDUCATION PRACTICE TEACHERS IN AJUY, ILOILO, PHILIPPINES**  
by: Sharon O. Calimpong ..... **28-44**
- INITIATIVES FOR ECONOMIC DEVELOPMENT IN AFFECTED BARANGAYS OF THE IGANG BAY MARINE SANCTUARY IN GUIMARAS, PHILIPPINES**  
by: Bryden Bone and  
Jose Maria S. Superio ..... **45-59**
- SOLID WASTE MANAGEMENT PRACTICES AMONG STUDENTS IN A TEACHER EDUCATION INSTITUTION**  
by: Alex B. Facinabao, Ed.D. and  
Rizzamila R. Superio, Ph.D. .... **60-81**
- THE SILVER LINING ON THE EXPERIENCES OF WOMEN IN ARMED STRUGGLE**  
by: May C. Peracullo, PhD and  
Nancy S. Surmieda, PhD ..... **82-105**



---

**INITIATIVES  
FOR ECONOMIC  
DEVELOPMENT IN  
AFFECTED BARANGAYS OF  
THE IGANG BAY MARINE  
SANCTUARY IN GUIMARAS,  
PHILIPPINES**

---

**MR. BRYDEN BONE**

**John B. Lacson Foundation Maritime  
University (Arevalo), Inc., Sto. Niño Sur,  
Arevalo, Iloilo City, Philippines**

**JOSE MARIA S. SUPERIO**

**John B. Lacson Foundation Maritime  
University (Arevalo), Inc., Sto. Niño Sur,  
Arevalo, Iloilo City, Philippines**

**ABSTRACT**

This qualitative study utilized a descriptive-survey to determine the livelihood programs in Barangays surrounding the Igang Bay Marine Sanctuary, Guimaras, Philippines. Thematic Content Analysis was utilized as a basis of conclusions and findings. The respondents are fisher folks of the surrounding barangays or communities, i.e., Poblacion, Igang, Sto. Domingo, Magamay, and Pandaraonan who were affected by the implementation of the Igang Bay Marine Sanctuary. A researcher-made questionnaire validated by experts in the field was used as research instrument. It comes with the consent of the participants and the Community Extension Services of the school. It is designed to cull out information such as demographics, economics, income generating activities, alternative livelihood options. Semi-structured interviews were administered using key informant sampling. Qualitative data analysis software was used to analyze each interview. This study revealed that 100% of the respondents' main source of income is fishing or any livelihood related to it. Some are fishermen, fish vendors, or business owners whose income or sales are connected with fishing, directly or indirectly. Most of the respondents who are fisher received various forms interventions and livelihood options through the local government initiatives such as boats, nets, and fishing equipment. The study revealed that livelihood options made a strong impact to those who were benefited. Thus, the people living near the area of Igang Bay, preferred interventions that are easy to manage and people are already familiar with such as fish culture and vending, native chicken raising, home crafts, and souvenir making.



## INTRODUCTION

The global environmental crisis has gotten worse in recent years which caused ecosystem degradation and significant biodiversity loss and habitats (Maestro et al., 2019). These conditions affected most of the fishing villages anywhere in the world, most especially in the Philippines (DeYoung, 2005).

In response to these conditions, Marine Protected Areas (MPAs) were established. Marine protected areas are spaces with clearly defined boundaries in the marine or coastal environment that are afforded special protection by legal or other effective means (Edgar et al., 2007). They can be created for various purposes including the protection of fisheries resources, maintenance of important habitats, conservation of cultural aspects, and other reasons depending on the legislation used in establishment (Laffoley et al., 2019). They are regarded as an important conservation tool, acting to protect entire ecosystems, associated habitats, communities, and genetic resources while providing buffer zones against uncertainty (Fox et al., 2012).

Local support is an integral factor in the success of MPAs, especially those that are small and community-driven (Bennett & Dearden, 2014). Support can be garnered by involving surrounding communities in management and planning; and establishing the protected area according to local values (Presseya et al., 2014). Another important factor includes limiting the economic impact of a new MPA and offering alternative opportunities for economic development stemming from the protected space (Presseya et al., 2014).

The Igang Bay Marine Sanctuary (IBMS) was established in 2010 in a partnership with the foremost maritime school in Iloilo City, John B. Lacson Foundation Maritime University (JBLFMU), and the local government of the Municipality of Nueva Valencia, Guimaras (Kim, 2014). The marine area, including the protected



space, was utilized by approximately 650 fishers and others from the surrounding barangays of Poblacion, Igang, Sto. Domingo, Magamay, and Pandaraonan before MPA establishment.

This study was conducted to offer an update on the various alternative livelihood opportunities that were proposed during the establishment of IBMS and the perceptions of the individuals in the community regarding future alternative livelihood activities.

This study aimed to determine the livelihood opportunities and implementation in barangays surrounding the Igang Bay Marine Sanctuary, Guimaras, Philippines.

Specifically, this study sought to answer the following questions:

1. What are the sources of livelihood of the respondents prior to the implementation of the IBMS?
2. What were the interventions or alternative livelihood options which were extended on them during the implementation of the IBMS?
3. What interventions or alternative livelihood options were extended on them during the implementation of the IBMS?
4. What livelihood initiatives for economic development would the respondents prefer if there will be any in the future?

## METHODS

### *Research Design*

Survey as a research design was used in this study. A descriptive survey uses the same set of questions for a large number of individuals (Fraenkel & Wallen, 2010) as in this study.

### *Respondents*

The respondents to this study include fisher folks of the surrounding barangays or communities, i.e., Poblacion, Igang, Sto. Domingo, and Magamay and Pandaraonan, affected by the implementation of the IBMS. Also included are the members of the Bantay Dagat, employees of Villa Igang Resort and members of the Poblacion-Villa Igang Multi-Purpose Cooperative based in JBLFMU Training Center facilities in Villa Igang Resort. The selection of the interviewees was made to make sure that each area was represented.

### *Instrument*

The instrument used was the researcher-made questionnaire which experts in the field validated. It comes with the consent of the participants and the Community Extension Services of the school. It is designed to cull out information such as: 1. Demographics, asked about the participants' age, gender, civil status, residence, educational level, means of livelihood, and household income. 2. Economics, includes the data on the breakdown of income generating activities, how their income is affected by the marine sanctuary. 3. Income generating activities include their means of income prior to the implementation of the IBMS, their reasons for engaging in the same after the implementation, how these activities were affected and their willingness to be trained and engage in other job options. 4. Alternative livelihood options contain questions regarding their



depth of involvement in IBMS meetings and information sessions, specifically, asked about their work, how these were affected by the project, and how it changed their lives. 5. Other questions asked about their opinion on the volume of fish catch and other questions such as whether they would the interview to be known to other stakeholders and how it would be presented.

### ***Data Collection***

Semi-structured interviews were administered using key informant sampling (current and former fishers, Poblacion Nueva Valencia Multi-Purpose Co-operative or PNVMPK employees, IBMS Bantay Dagat, and those that are currently involved in other alternative livelihood opportunities) and supplemented by snowball sampling based on the convenience of the interviewers and the interviewees. Qualitative data analysis software was used to analyze each interview. Interview questions were field-tested and reviewed before the study has commenced ensuring relevancy. Completed interviews with the fisherfolks were entirely recorded transcribed as verbalized. All identities were kept confidential via pseudonyms and data were coded and secured in password protected files. A local language translator was present at each interview to ensure accuracy and will conduct the transcription and translation.

### ***Data Analysis***

Data were categorized as to their theme. Thematic content analysis was utilized as a basis of conclusions and findings. Several themes emerged during our research synthesis. These themes were discussed in answering the specific problem statement of this study.



## RESULTS AND DISCUSSION

### *Sources of Livelihood Prior to the Implementation of the IBMS*

This study revealed that 100% of the respondents' main source of income is connected with fishing, either as fishermen, fish vendors, or they own business whose income or sales are connected with fishing, directly or indirectly. In fact, during the interview, one fisher folk expressed: "may ara ako baroto nga naga gamit sang gill net kag may ara man ako mekanikal" (I have two boats, one is used for gill net fishing and the other one is for mechanical fishing). Simon indicated when asked about volume of his catch:

"Depende sa pagsulod sang isda. Kon makatsamba kon kis-a sang lobster ukon kasag ti enjoy kami eh. Ti kay dakudako gawa ang mabaligya sang lobster kay tag 2,200 ang kilo. Pero kon wala man ok lang kay makadapli ka guid bisan kasag lang ukon isda kon aga" (It all depends on luck. Sometimes, we are lucky to catch lobsters or crabs as the lobster could fetch as much as 2,200 pesos per kilo. But, still fine for us even if we don't have a good catch because we still have crab or fish as viand especially in the morning.)

This may be attributed to Igang Bay being considered as a rich fishing ground and abundant with all variety of reef and coral dwelling fishes (Uy Bagarinao, 2014). Furthermore, this is supported by the study which showed that soft and hard corals are present at Igang Bay, Nueva Valencia, Guimaras (CRUZ et al., 2012). The results showed that soft corals found in Igang Bay include the genera Lobophyllum, Radianthus, Sarcophyton, Sinularia, and Xenia. Hard corals belong to Acropora, Coeloseris, Coscinaraea, Favia, Favites, Fungia, Lonophyllia, Millepora, Montipora, and Porites genera. It is a known fact that the richness of coral variety is indicative of fish volume and diversity.



***Interventions or Alternative Livelihood Options which were Extended on Them during the Implementation of the IBMS***

The study showed that most of the respondents who are fisher folks received various forms of interventions and livelihood options from the government through the local government initiatives in the forms of boats, nets, and fishing equipment. Additionally, respondents said they had received intervention and livelihood options in the form of seeds, hog fattening, and the opportunity to be a member of a cooperative. Surrounding areas of Igang Bay were greatly affected by the implementation of IBMS as they were forced to look for options to enhance their source of income.

The result is true because providing livelihood alternatives in replacement of the lost one is imperative especially in critical local communities.

Recognizing the irregularity in the work pattern brought by seasons and the adjustments that have to be made as a result thereof on the livelihood. In consideration the limitations on the utilization and the access on the old fishing grounds will adversely affect the fishing patterns (Petreson & Stead, 2011). This statement was also shown in a study which that the fundamental precept of the approach is that it seeks "to identify what the poor have rather than what they do not have" and to strengthen people's own inventive solutions, rather than substitute for, block or undermine them (O.N.Moser, 1998).

During the interview, one respondent said, "nakabulig ang Cooperative sa paghatag kapital sa akon tiangge kag naka amat-amat ako pundar sang amon balay" (The Cooperative help me initiate a small store and finance for the completion of my house). Another interviewee mentioned, "sang una gina saligan ko lang ang salary ko, sang pagtukod ang marine sanctuary, ga income ako sa tour guiding. Ga baton ako 200 to 500 sa island hopping (arkila sa baroto)" (Before, I used to rely on my salary alone. Due



to the opening of the Marine Sanctuary, I get additional income in tour guiding. I usually earn Php 200 for that and Php 500 for island hopping (boat rental). This livelihood option is only available during summer and others do not have many options due to limited skills. Thus, many of them would resort to other options like hog and chicken raising. This is true when one respondent said, "waay man ko iban nga extra-han magluwas na lang abi sa pagsagod sang baboy... may duha ako ka nayon" (I do not have any other source of income except for the two sows that I am raising).

These findings showed that the fisherfolks undertook several livelihood options near the areas of Igang Bay to support their income as affected by the implementation of IBMS.

### ***Economic and Social Impact***

The study revealed that livelihood options made a strong impact in the locality. The volume of visitors improved in and around IBMS, where the fisher folks are working as they are doing extra jobs/services, like driving, food vending, tour guiding, bangka rentals, and other functions. Hence, they are provided to earn more. However, the help extended by the Nueva Valencia Multi-Purpose Cooperative was not availed by other fisherfolks due to some reasons such as location, having not enough money for the membership fee, and exclusivity of the membership for the people of población area. This is stated in the statement of one respondents who lives in Pandaraonan, when she said that, "malayo kag kalabanan sa mga taga diri, wala sang inug umpisa, dungangan pa guid nga daw kadamo na sang taga-Poblacion, daw nahuya na lang kami magpa miembro" (The distance is such a bother for most of us here; it is hard to come up even for a capital; and we are ashamed knowing that almost all members are from the Poblacion area).

The result is valid for the fact that it is a recognized government policy that sustainable to have a strong impact on



the economic and social aspects of the people in the community (Sati & Vangchhia, 2017).

### ***Preferred Livelihood Options***

The study revealed that in terms of livelihood programs, the people living near the area of Igang Bay, preferred interventions that are easy to manage and people are already familiar with. This may include fish vending business (panting), native chicken raising, home crafts, and souvenir making.

Looking at the preferred livelihood options, fish vending business is of top priority because these people are accustomed to the nature of the trade. As fishing is a seasonal livelihood and during the period when fish are scarce, fisherfolks would suggest for the following options: fish preservation, drying and canning, fish culture, and fish cages. Finally, fisherfolks would also like to venture into chicken raising and souvenir making to help maintain livelihood alternatives to ensure sufficient food supply and chances to generate income. One respondent said that, "tani sa pagdakup sang isa more sa culture kag indi sa capture" (When catching fish, one should focus more on culture instead of just capture). This means that fish production ensures fish availability when they are needed (Ellis & Allison, 2001). Fish culture offers not just an alternative way for captured fishing but could also provide for a more abundant harvest as they could be readily available and therefore offer a solution for market needs (Goldburg & Naylor, 2005).



## CONCLUSION

Based on the findings of the study, the researchers offer the following conclusions:

The Igang Bay has rich soft and hard corals that provide breeding places for fishes, thereby offering countless livelihood opportunities regarding fishing activities. The protection and restoration of the Igang Bay and its streams and rivers are essential to a healthy and vibrant economy. Furthermore, working to restore this vital resource helps spur job growth and protect countless livelihoods. Equally important is to capitalize in investing in clean-water technology creates various livelihood options, generates economic activity, and provides for the needs of the community in the long run.

The surrounding areas of the Igang Bay, Guimaras, were affected by the implementation of the Igang Bay Marine Sanctuary. To enhance the sources of income of the fisherfolks, several interventions and livelihood options were offered to them. However, non-governmental and government agencies, both local and national, should ensure that what they will offer are sustainable in nature. Sustainable livelihood programs for the fisherfolks should build upon the strengths and understanding how they can use these to achieve positive livelihood outcomes.

Livelihood options for the fisherfolks in the surrounding areas of the Igang Bay have great impact on the social and economic aspects. These are offered to the fisherfolks in order to improve their socio-economic aspects and conditions and must increase participation among the community to establish a kind of ownership of their development.

There are livelihood options that are more attractive to the fisherfolks of surrounding areas of the Igang Bay. These livelihood options are chosen considering the innate ability of the person and the resources available in the area. Furthermore, to



secure a more sufficient income for their needs, fisherfolks are willing to engage in various income generating activities.

## RECOMMENDATIONS

Based from the conclusions of the study, the following are hereby recommended:

Policy-making Bodies should move for the protection and restoration of the Igang Bay because this will ensure a healthy and vibrant economy especially to the people living in the area. To ascertain that this program/initiative would be realized Government/Non-government Agencies ought to provide Sustainable Livelihood Programs (SLP) to ensure sufficient and adequate income for the fisherfolks living near the areas of the Igang Bay. Fisherfolks near the surrounding areas of the Igang Bay should understand that livelihood options are essential to making sources of income which requires them to fully participate, cooperate, and commit to the goals and objectives livelihood options that will be offered to them.

For the purpose of research, future researchers can make use of this study as baseline data for further studies. They can do this by developing a program for a more engaging livelihood programs for the fisherfolks not only in the surrounding areas of the Igang Bay but also in areas where there is an implementation and management of marine sanctuaries.



## REFERENCES

- Bennett, N. J., & Dearden, P. (2014). From measuring outcomes to providing inputs: Governance, management, and local development for more effective marine protected areas. *Marine Policy*, 50(PA), 96–110. <https://doi.org/10.1016/j.marpol.2014.05.005>
- CRUZ, M. J. L. D. LA, FLORES, J. R. P., MAGRAMO, M. M., MADAS, C., & TERUNEZ, M. (2012). Macrobenthic Composition of Sea Water Associated with Seagrass in East and West Portions of the Igang Bay, Nueva Valencia, Guimara. *JPAIR Multidisciplinary Journal*, 7, 106–118.
- DeYoung, M. S. B. (2005). Cascading effects of overfishing marine systems. *Trends in Ecology and Evolution*, 20(11), 579–581. <https://doi.org/10.1016/j.tree.2005.08.018>
- Edgar, G. J., Russ, G. R., & Babcock, R. C. (2007). Chapter 19 Marine protected areas. In *Marine Ecology* (Issue September). [https://www.researchgate.net/profile/R\\_Babcock/publication/284222610\\_Marine\\_protected\\_areas/links/57eaf01508aeafc4e88a5864/Marine-protected-areas.pdf](https://www.researchgate.net/profile/R_Babcock/publication/284222610_Marine_protected_areas/links/57eaf01508aeafc4e88a5864/Marine-protected-areas.pdf)
- Ellis, F., & Allison, E. H. (2001). The livelihoods approach and management of small-scale fisheries. *Marine Policy*, 25(5), 377–388.
- Fox, H. E., Mascia, M. B., Basurto, X., Costa, A., Glew, L., Heinemann, D., Karrer, L. B., Lester, S. E., Lombana, A. V., Pomeroy, R. S., Recchia, C. A., Roberts, C. M., Sanchirico, J. N., Pet-Soede, L., & White, A. T. (2012). Reexamining



the science of marine protected areas: Linking knowledge to action. *Conservation Letters*, 5(1), 1–10. <https://doi.org/10.1111/j.1755-263X.2011.00207.x>

Goldburg, R., & Naylor, R. (2005). Future seascapes, fishing, and fish farming. *Frontiers in Ecology and the Environment*, 3(1 SPEC. ISS.), 21–28. <https://doi.org/10.2307/3868441>

Kim, T. (2014). Study on Public Awareness of establishing Marine Protected Areas – Case Study of Guimaras Province, Philippines using Contingent Valuation Method. *Korea Science*, 38(6), 663–672. <https://doi.org/10.5394/KINPR.2014.38.6.663>

Laffoley, D., M.Baxter, Day, J., Wenzel, L., Bueno, P., & KatherineZischka. (2019). Marine Protected Areas. *World Seas: An Environmental Evaluation (Second Edition)*, III, 549–569. <https://doi.org/10.1016/B978-0-12-805052-1.00027-9>

Maestro, M., Pérez-Cayeiro, M. L., Chica-Ruiz, J. A., & Reyes, H. (2019). Marine protected areas in the 21st century: Current situation and trends. *Ocean and Coastal Management*, 171(September 2018), 28–36. <https://doi.org/10.1016/j.ocecoaman.2019.01.008>

O.N.Moser, C. (1998). *World Development*. Elsevier, 26(1). [https://doi.org/10.1016/S0305-750X\(97\)10015-8](https://doi.org/10.1016/S0305-750X(97)10015-8)

Petreson, A. M., & Stead, S. M. (2011). Rule breaking and livelihood options in marine protected areas. *Environmental Conservation*, 38(3).



Presseya, R. L., Horiguea, V., & Robert, A. P. M. (2014). Evaluating management performance of marine protected area networks in the Philippines. *Ocean & Coastal Management*, 95, 11–25. <https://doi.org/10.1016/j.ocecoaman.2014.03.023>

Sati, V. P., & Vangchhia, L. (2017). Sustainable Livelihood Approach to Poverty Reduction. *March*, 93–100. [https://doi.org/10.1007/978-3-319-45623-2\\_9](https://doi.org/10.1007/978-3-319-45623-2_9)

Uy Bagarinao, T. (2014). Marine Biodiversity at the SEAFDEC/AQD Research Stations in Iloilo and Guimaras, Philippines. *PROCEEDINGS | International Workshop on Resource Enhancement and Sustainable Aquaculture Practices in Southeast Asia*.