

# Operations and Economic Contributions of Selected Fish Sanctuaries in Surigao del Sur, Philippines

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**Abstract**-Fish sanctuaries had been established by the coastal communities with the end view of sustainable use of coastal resources, restoring ecological balance and food security. A progressive environmental movement as a response to climate change at the village or grassroots level instituted among the coastal communities. This research undertaking presented the operations of selected fish sanctuaries in Cortes Surigao del Sur which was being evaluated in terms of organizational structure, funding, linkages and economic impact. Its economic contributions had been perused in terms of providing livelihood interventions, promotion of local tourism and employment generation. It also covered the challenges encountered in its operation and its proposed recommendations across the four sites which included the following Barangays or villages: Balibadon, Uba, Mabahin, and Burgos. The study used a universal sampling method with one hundred twenty (120) respondents with the researcher-made questionnaire as the main instrument which underwent validation by the panel of experts. Results showed that the organizational structure is very much suited to the four sites and addresses the challenges of the fish sanctuaries. The type of organizational structure of the fish sanctuary being voluntary in nature and quasi-bureaucratic honed further the voluntarism of its members in the operation. The challenges or problems included the following: illegal fishing in the fish sanctuary, lack of foreign tourists, and lack of tourism amenities like hotels, eatery and the like, the honorarium of the volunteers are meager or minimal. The linkages and funding of the four fish sanctuaries also considered Very Much Effective. This is due to the fact that it received assistance in its operation from the Local Government Unit of Cortes, technical and livelihood assistance from BFAR, NGP of DENR, DOLE and technical assistance for capacity building from the fish project, Green Mindanao, Rear Pride and Haribon foundation during the duration of their projects in the sites. The contributions of the fish sanctuaries to environmental conservation was deeply valued by the communities and its members. It provided sustainable use of coastal marine resources both as a utility or natural resource and as a popular mechanism or strategy in environmental preservation.

**Keywords:** Sanctuary, Coastal, Communities, Linkages, Operation, Contribution

## INTRODUCTION

The Symbolic Interaction Theory provided an explanation of why a certain community or site supported a particular environmental movement such as the establishment of fish sanctuaries. In this study, the fish sanctuaries are a typical example of a social movement, a semi or quasi bureaucratic voluntary organization or association. On the other hand, the Functionalism Theory provided a paradigm or framework which illustrated the explanation for the reasons why social movements such as the fish sanctuaries' emerges as a popular tool for the conservationist while making it also as a form of utility to be used sustainably.

On the other hand, Social Learning Theory provided a panorama or framework for illustrating that the fish

sanctuaries are terrain for social learning for environmental conservation and for its sustenance amidst the growing consumption of marine products. The said sociological theories which are leading social theories [1] had been piously reviewed for looking on a framework of interactions of the communities and the desire for environmental protection while also promoting its sustainable use.

The rising tidal surges, destruction of coastal mangrove ecosystem and decline of fish catch in the different parts of the globe made the individual coastal states to indulge in coastal conservation measures. It is instituted to address the said challenges since it threatens coastal marine biodiversity and food security.

The challenges encountered in coastal conservation measures are enormous for this reason it needs concerted

effort not only by local government units, the fisher folks, the private sectors, and non-government organizations and the national government as well.

Fish sanctuaries or Marine Protected Area's (MPA's) is the number one strategy in coastal resource conservation. It is so effective because it employed participatory approaches in coastal conservation. Fish sanctuaries or otherwise known as Marine Protected Area refers to an area reserved by law or ordinances where fishing is not allowed or regulated with the end view of conservation and having a spawning area of the marine organism. In view of the foregoing allows the said organism to regenerate [2]. Fish sanctuaries or Marine Protected Areas (MPA's) can be considered as the highly esteemed method of coastal conservation adopted in the Philippines [2] and other coastal states. It is established with the aims of marine resources conservation, food security, the economic sustainability of the coastal communities and as a response to climate change.

Fish sanctuaries or Marine Protected Areas is a fishery management tool or approach and has been encouraged by regional, national and international environmentalist. It supplied realistic panorama or picture of holistic marine biodiversity administration in the country [3]. Fish sanctuaries or Marine Reserve, is one of the several fisheries coastal administration approaches in the Philippines, instituted to solve forthcoming challenges in coastal and livelihood security. It regularly not allowing fishing or control fish harvest in marine reserve areas to attain preservation goals [3].

Moreover, the fish sanctuaries in the sites of the study are SEC-registered which indulge in income generation activities like seaweed or "guso" production, indulging in different livelihood programs funded by the LGU, DOLE, NGP DENR and receiving assistance from the Local Government Units. The study was conducted in the selected fish sanctuaries in the town of Cortes Surigao del Sur which includes the following sites: Burgos, Tigao, Mabahin, and Balibadon.

Fish sanctuaries or marine reserved is a form of economic capital. The said resource could comprise consumptive and non-consumptive standards. The previous deals with values which can be taken commencing activities like consumption of resources from their natural environment [3]. Volunteers of the fish sanctuaries or Marine Protected Areas are the fisher folks and they are in charge of guarding the reserve, implementing its policies. As volunteers, they received a modest honorarium from the fish sanctuaries or MPA

operators. The aim of the modest honorarium is to encourage the members of the fish sanctuary or Marine Protected Area in doing their job with efficiency and dedication.

For this reason, guarding the fish sanctuaries or MPA's is volunteer work but it needs cooperation from various stakeholders such the Barangay, MLGU, BFAR, and Peoples Organization. Moreover, the Fish Sanctuaries or Marine Protected Area is quasi-economic institutions thus its members are incorporators of the organization which besides being SEC-registered organizations are also fisher's cooperatives and DOLE registered.

In view of that the fish sanctuary or Marine Protected Area (MPA) then is both a quasi-economic and quasi bureaucratic unit. With this whatever income the organization received will be shared by its members. As a quasi-economic and the bureaucratic unit, it received assistance from the local government units, BFAR, DENR, DOLE, and other government agencies.

Functionalism, this theory had been examined further, in this study as one basis of its theoretical underpinning. It is a social science, theory based on the premise that all aspects of social institutions, roles, norms, etc. serve a purpose and that all are indispensable for the long-term survival of society [4]. The functionalism theory was reviewed in this work for I considered the fish sanctuary as an economic and social an institution with the functions of promoting food security, ecological restoration and promoted voluntarism from its members. It is then a form of utility for promoting environmental conservation and economic well-being in the fishing villages such as the sites of the study.

Another theory that I reviewed in this work is the Symbolic Interaction Theory. I examined this theory as one of the study's theoretical underpinnings for the interactions of the members of the fish sanctuary which can be equated as symbolic interaction. Thus it endeavors to promote and harness the objectives of fish sanctuary both a form of utility and as an answer for ecological restoration. On the other hand, this theory is one of the leading theories in social sciences [5]. This theory refers to the meaning given by people in their natural and symbolic environments and interactions [5]. Symbolic interaction is the progression that livens up the mutual sense or understanding of relationships of symbols to human interactions and the importance of these symbols to human interactions [5].

An additional theory that I perused in this work is the Micro Theory [6]. This presumption intended in

accepting societal activities, including cherished socialization of persons and their connections [6]. Fish sanctuaries are a micro-social, economic and grassroots level of the environmental movement, for this reason, the micro theory was examined as one it's the theoretical basis or underpinning.

### **OBJECTIVES OF THE STUDY**

The study used both descriptive [6] and survey methods. These methods were intended to be complementary and each method could supply what the other is lacking to be able to gather as much likely the essential data of the inquiry. Further, in particular, the descriptive survey research methodology was employed to have an in-depth look at the operation of the selected fish sanctuaries in Cortes Surigao del Sur. The data were subjected to the following treatment for the problems encountered, operations and extent of economic contributions of the fish sanctuaries the Mean [7] was used. The analysis of variance [8] was used in the significant difference in the economic contributions of fish sanctuaries across sites. The researcher-made questionnaire underwent validation from the panel of experts and used five (5) point Likert scales [9].

Basing on the fact, that the survey questionnaire is researcher-made or self-constructed. I subjected it to content validation by the panel of experts. And Five experts validated the survey questionnaire. They have given their significant contributions or suggestions for improvement. The validation resulted in the Mean Value of 4.1 which has the descriptive equivalent of "Very Satisfactory" or "Very Good". After I collected the questionnaire from the panel of experts. I revised the portion which the panel of experts recommended to be modified.

For the reliability test, the results of the test and re-test were endorsed or given to the professional statistician for the treatment or computation of the reliability test. The Spearman Rank Correlation was used. Because the result of the reliability test was significant to all items or indicators. It illustrated that the instrument or questionnaire is acceptable or favorably in the aspects of understandability, acceptability, and readability. Then copies of the instrument were reproduced for the conduct of the study.

The questionnaire/checklist which was the main tool of the study composed of the following parts: first the operation of the fish sanctuary, second the economic contribution of the fish sanctuary, third the problems encountered in the operation of the fish sanctuary.

This work endeavors to have an inquiry on the following: first, determine the extent of operations of selected fish sanctuaries in Cortes, Surigao del Sur in terms of organizational structure; funding; linkages. Secondly, give the economic contributions of selected fish sanctuaries in terms of livelihood generation, promotion of local tourism; employment. Thirdly, examine if there is a significant difference in the economic contributions of the selected fish sanctuaries when analyzed in terms of livelihood generation, promotion of local tourism and employment. Further, find out what are the problems encountered of the selected fish sanctuaries in Cortes Surigao del Sur.

### **METHOD**

The researcher secured a permit from the Barangay Captains /village heads before the conduct of the study. After the approval, he proceeded to the sites and administered the questionnaire which is the main tool of the study and conducted the supplemental interview. The study used universal sampling [6] which the members of the fish sanctuary were the respondents. The table below is the distribution of the respondents.

For the reason that the study used universal sampling. All members of the fish sanctuaries were chosen as respondents. Thus all members were the respondents of the study as stipulated in Table 1. Since I used universal sampling it means or it can be deduced that the inclusion criteria of the research had been piously observed. Such they had been active in sanctuary volunteer work. They value more the vision and mission of the sanctuary and contributes regularly to the dues of the association.

On the other hand, free and informed consent was secured from one hundred twenty (120) respondents. In this view, confidentiality had been devoutly observed. And when the research was terminated the respondents were informed.

**Table 1. Distribution of the respondents of the selected fish sanctuaries in Cortes Surigao del Sur**

<b>Sites</b>	<b>Number of Respondents</b>	<b>%</b>
Balibadon	42	35
Burgos	30	25
Uba	30	25
Mabahin	18	15
<b>Total</b>	<b>120</b>	<b>100</b>

### **RESULTS AND DISCUSSION**

Table 2 revealed the operation of fish sanctuaries in Surigao del Sur in terms of organizational structure. It can be deduced from the table that provisions for election

are provided has the Mean of 5.00 and the description of Very Much Effective. There is no overlapping of functions of each officer has the Mean of 4.93 and the description of Very Much Effective. Line of authority and coordination was provided in the organizational structure has the Mean of 4.93 and the description of Very Much Effective. Have an elected official with define duties and responsibilities have the Mean of 4.48 and the description of Very Effective.

**Table 2. Distribution in the extent of operation of the selected fish sanctuaries in Surigao del Sur in terms of organizational structure.**

Indicators	Mean	Description
Provisions for election is provided	5.00	Very Much Effective
There is no overlapping of functions of each officer	4.93	Very Much Effective
Line of authority and coordination is provided in the organizational structure	4.93	Very Much Effective
Have an elected official with define duties and responsibilities	4.48	Very Much Effective
The Organizational structure is posted in the association bulletin board	4.17	Very Much Effective
Overall	4.70	Very Much Effective

The organizational structure is posted in the association bulletin board and has the description of Very Effective. It has the overall Mean or grand Mean of 4.70 with the overall description of Very Much Effective. The overall descriptive rating of Very Effective in the operation of selected fish sanctuaries were contributed by the following factors: supportive MLGU of Cortes which provided technical and financial assistance to the fish sanctuary management and the various linkages instituted or entered by the fish sanctuary management resulted to very effective management.

Table 3 revealed the extent of the operation of selected fish sanctuaries in Cortes Surigao del Sur in terms of the funding. It can be deduced from the table that funding from the BLGU is provided and has the Mean of 5.00 with the description of Very Much Effective. Financial Assistance from DOLE is provided has the Mean of 5.00 and the description of Very much Effective. Assistance from BFAR, NGP of DENR has also the Mean of 5.00 and the description of Very Much Effective. Funding from the MLGU is provided has the Mean of 4.89 and the description of Very Much

Effective. The income-generating activity of the fish sanctuary is provided has the Mean of 4.64 and the description of Very Much Effective. It has the overall or grand Mean of 4.91 with the general description of Very Much Effective. The Very Much Effective rating in the aspects of funding was due to the fact that the MLGU of Cortes provided financial assistance in the operation of the fish sanctuary. The same with DOLE which provided livelihood projects to the fishers.

**Table 3. Distribution on the extent of operation of the selected fish sanctuaries in Surigao del Sur in terms of funding.**

Indicators	Mean	Description
Funding from the BLGU is provided	5.00	Very Much Effective
Financial Assistance from DOLE is provided	5.00	Very Much Effective
Assistance from BFAR, NGP of DENR to the individual member is provided	5.00	Very Much Effective
Funding from MLGU is provided	4.89	Very Much Effective
Income generated activity of the fish sanctuary is provided	4.64	Very Much Effective
Overall	4.91	Very Much Effective

BFAR provided equipment /material and pump boats for fishing. NGP of DENR also provided assistance under the coastal forest component in a form of labor contracting scheme. On the other hand, in order to augment the income of the Fisher folk’s members of the fish sanctuary and the management of the reserve is also indulging in income-generating activities.

**Table 4. Distribution on the extent of operation of the selected fish sanctuaries in Surigao del Sur in terms of linkages.**

Indicators	Mean	Description
There is a strong linkage with the Haribbon foundation, Rear Pride, Fish Project, Green Mindanao	5.00	Very Much Effective
There is a strong linkage with the MLGU	4.95	Very Much Effective
There is a strong linkage with the DOLE, NGP of DENR, BFAR	4.93	Very Much Effective
There is a strong linkage with the academe and education sector	4.92	Very Much Effective
Overall	4.95	Very Much Effective

Table 4 revealed the extent of the operation of selected fish sanctuaries in Surigao del Sur. It can be deduced from the table that the indicator there is a strong linkage with the Haribon foundation, Rear Pride, Fish Project; Green Mindanao has the Mean of 5.00 and the description of Very Much Effective. There is a strong linkage with the MLGU has a Mean of 4.95 and the description of Very Much Effective. There is a strong linkage DOLE, NGP of DENR and BFAR has the mean of 4.93 and the description of Very Much Effective. The indicator that there is a strong linkage with the academe and educator sector has the Mean of 4.92 and the description of Very Much Effective. It has the overall Mean of 4.92 and the description of Very Much Effective. The table further revealed that the very effective result in the area of linkages illustrated of outstanding linkage of fish sanctuary management in order or with the end view of looking for effective partners in coastal conservation which the Cortes fish sanctuaries succeeded. It's strong the collaboration of the Haribon Foundation, Rear pride, Fish Project, and Green Mindanao was not only for technical or geared for capacity building assistance but support for various livelihood projects for the fisher folks. Similarly, the strong linkage with the government sectors such as the MLGU of Cortes, the BLGU of Uba, Mabahin, Burgos and Balibadon, NGP of DENR, DOLE and BFAR provided a very good effective linkage.

**Table 5. Distribution on the economic contribution of selected fish sanctuaries in terms of livelihood intervention.**

Indicators	Mean	Description
MLGU provided livelihood intervention	4.87	With a Very Huge Economic Contribution
NGO's provided livelihood intervention	4.87	With a Very Huge Economic Contribution
DOLE and NGP of DENR provided livelihood project	4.86	With a Very Huge Economic Contribution
BLGU provided livelihood intervention	4.80	With a Very Huge Economic Contribution
BFAR provided livelihood intervention	3.94	With a Very Huge Economic Contribution
<b>Overall</b>	<b>4.67</b>	<b>With a Very Huge Economic Contribution</b>

Table 5 revealed the economic contribution of selected fish sanctuaries in Surigao del Sur in terms of livelihood intervention. It can be deduced from the table that the MLGU provided livelihood intervention has the

Mean of 4.87 and with the description of With a Very Huge Economic Contribution. DOLE and NGP of DENR provided livelihood projects has a Mean of 4.86 and the description of With Very Huge Economic Contribution. BLGU provided livelihood intervention has a Mean of 4.80 and has the description of with a Very Huge Economic Contribution. BFAR provided livelihood intervention has a Mean of 3.94 and has the description of with a Very Huge Economic Contribution. It has the overall Mean of 4.67 with the grand description of with a Very Huge Economic Contribution. The varied livelihood assistance was given by the MLGU of Cortes, the different NGO's namely of Fish Project, Rear Pride, green Mindanao contributed to the increasing income of the fisher folks. The said assistance improves the economic earnings of the fisher folks and their families.

**Table 6. Distribution on the economic contribution of selected fish sanctuaries in the local/village economy.**

Indicators	Mean	Description
Contributed to job generation	4.93	With a Very Huge Economic Contribution
Increase fish catch	4.95	With a Very Huge Economic Contribution
Increase the harvest in the fish cages	4.91	With a Very Huge Economic Contribution
Increase the growth of seaweeds (guso)	4.92	With a Very Huge Economic contribution
Increase the number of a sari-sari store	4.95	With a Very Huge Economic Contribution
<b>Overall</b>	<b>4.93</b>	<b>With a Very Huge Economic Contribution</b>

Table 6 revealed the economic contribution of selected fish sanctuaries to the local economy. The indicator contributed to job a generation has the Mean of 4.92562, increase fish catch has the Mean of 4.94958, increase the harvest in fish cages has the Mean of 4.90678, increase the growth of seaweeds has the Mean of 4.923729, increase the number of the sari-sari store has the Mean of 4.949153. It has the overall Mean of 4.930972 and the overall description with a Very Huge Economic Contribution.

The contributions of selected fish sanctuaries in Surigao del Sur had been enormous. It contributed to job generation due to the hiring of "Bantay Dagat" or fish warden. It yields higher fish catch for it allowed more spawning areas of different species of reef fishes. Similarly, due to the higher yields of fish, it also resulted in the higher harvest of fish in cages due to the fact that fish sanctuaries improve the quality of coastal water for the reason that throwing/disposing garbage along the coast or in the open sea had been penalized. The excellent quality of seawater resulted in a good harvest of seaweeds (*guso*). Further, due to the presence of local tourists. It opens for avenues of the more *sari-sari* store in the sites in that view improves the local/village economy.

**Table 7. Distribution on the economic contribution of a selected fish sanctuary in terms of tourism development.**

Indicators	Mean	Description
Promoted or increase the arrival of local tourist	4.96	With a Very Huge Economic Contribution
Promoted or increase the arrival of the number of foreign tourists	3.06	Contributed Fairly
Increase tourism income of the BLGU	3.06	Contributed Fairly
Improve tourism facilities	3.05	Contributed Fairly
Increase tourism income of the MLGU	3.02	Contributed Fairly
<b>Overall</b>	<b>3.43</b>	<b>Contributed fairly</b>

Table 7 revealed the economic contribution of a selected fish sanctuary in terms of tourism development. It can be deduced from the table that the fish sanctuary promoted or increase the arrival of local tourist has the Mean of 4.96 and the description of with a Very Huge Economic Contribution. The indicator of promoted or increase the arrival of a number of foreign tourists has a Mean of 3.06.

On the other hand, the same item increase tourism income of the BLGU shares the same Mean. Improved tourism facilities have a Mean of 3.05 and increase tourism income of the MLGU has a Mean of 3.02. All of the said indicators have the description of contributing to the economy fairly. The table has the overall Mean of 3.43 and the overall description of contributing to the economy fairly. It can be deduced further from the table that the operations of the selected fish sanctuaries in Cortes Surigao del Sur had increased the number of local tourist arrivals. The said sanctuaries are suited for scuba

diving, snorkeling, skim boarding. Moreover, the sanctuaries have a lesser foreign tourist, it is for this reason that it has only contributed fairly. There are several reasons for this; first, there is limited use of BLGU's social media in promoting the fish sanctuaries. Secondly, the sites lack hotels, eatery which the foreign tourist considers in looking for tourism destinations. It is for this reason that, during the supplemental interview the respondents disclosed that there is a need to improve the tourism facilities.

**Table 8. Economic contribution of selected fish sanctuaries in terms of Employment Generation.**

Indicators	Mean	Description
Provide honorarium for the Bantay Dagat	5.00	With a Very Huge Economic Contribution
Provided for the honorarium of the fish sanctuary guard	5.00	With a Very Huge Economic Contribution
Hiring environmental workers /employees by the MLGU	5.00	With a Very Huge Economic Contribution
Hiring pump boat operators for guarding the fish sanctuary	5.00	With a Very Huge Economic Contribution
Hiring divers	5.00	With a Very Huge Economic Contribution
<b>Overall</b>	<b>5.00</b>	<b>With a Very Huge Economic Contribution</b>

Table 8 revealed the economic contributions of selected fish sanctuaries in terms of employment generation. It can be deduced from the table that the fish sanctuary management provided an honorarium for the "Bantay Dagat", honorarium for the fish sanctuary guard, hired environmental workers /employees by the MLGU were instituted. And hired pump boat operators for guarding the fish sanctuary and trained divers as well. The said indicators have the overall Mean of 5.00 and the overall description of a very huge economic contribution. It can be deduced further from table 8 that the selected fish sanctuaries in Cortes, Surigao del Sur has a very huge impact to the local economy such an area of employment generation for it provided honorarium to the fish wardens (*Bantay Dagat*), fish sanctuary guard, hired environmental employees paid by the MLGU of Cortes . It also hired pump boat operators for effective guarding of the reserve. In order to maintain the reef conditions, professional divers had been hired by the

MLGU of Cortes. With these, it illustrated further, that indeed the selected fish sanctuaries in Cortes promoted local job generation.

**Table 9. Distribution of the problems/challenges encountered in the fish sanctuaries across sites.**

Indicators	Mean	Description
Illegal fishing in the sanctuary	3.00	Prevailing Problem
Lack of foreign tourist	3.00	Prevailing Problem
Lack of tourism amenities like hotels, eatery and the like.	2.95	Prevailing Problem
Honorarium for the volunteers is very minimal	2.94	Prevailing Problem
Lack of NGO's for partnership	1.52	Not Prevailing problem
Limited of pump boat in guarding the fish sanctuary	1.10	Not Prevailing problem
Minimal of promotion of the fish sanctuaries to the tri-media	1.08	Not Prevailing problem
Lack of commitment of the officers of the fish sanctuary	1.08	Not Prevailing problem
Lack of Bantay dagat	1.00	Not Prevailing problem
Lack of commitment of the members of the fish sanctuary	1.00	Not Prevailing problem
<b>Overall</b>	<b>1.87</b>	<b>Less Prevailing problem</b>

Table 9 revealed the prevalence of the problems/challenges encountered in the fish sanctuaries across sites. That the prevailing problems include the following: illegal fishing in the sanctuary, lack of foreign tourists, Lack of tourism amenities like hotels and eatery and the like, honorarium for the volunteers is very minimal. Not prevailing problems included the following: lack of NGO's for partnership, limited of pump boat in guarding the fish sanctuary, minimal promotion of the fish sanctuaries in the tri-media, lack of commitment of the officers of the fish sanctuary, lack of "Bantay Dagat", lack of commitment of the members of the fish sanctuary. It has the overall Mean of 1.87 with the description of the less prevailing problem. Illegal fishing then is a prevailing problem due to the fact that

encroachment of the reserve or fish sanctuary had been reported and police files revealed on this. The illegal fishers were not residents of Cortes and in most the cases; they are coming from other municipalities. Lack of foreign tourist is also a prevailing problem and I found out it was due to the fact that the sites lack hotels, eatery. It is for this reason that the lack of tourism amenities contributed to the lesser number of foreign tourist arrivals in the sites.

**Table 10. Distribution of the significant difference in the economic contribution of selected sanctuaries across sites when analyzed in terms of economic distribution.**

Sources of Variance	P-value	Verdict
Livelihood intervention	0.071*	Accept Ho
Fish sanctuary contribution to the economy	0.0831*	Accept Ho
Fish sanctuaries contributions in tourism development	0.066*	Accept Ho
Fish sanctuaries contributions in employment generation	0.079*	Accept Ho

*\*No Significant difference Noted*

Table 10 revealed that there is no significant difference in the perception of the fisher folks on the economic contribution of the fish sanctuary. Across sites when grouped into the following indicators: livelihood intervention, fish sanctuary contribution to the local economy, fish sanctuaries contributions in tourism development and fish sanctuaries contributions in employment generation. This means that the perception of the fisher folks in the economic contributions of the fish sanctuary is more or less the same across sites. And for this reason, it does not vary accordingly. This is due to the fact that all fish sanctuaries in Cortes, Surigao del Sur had been connected into a network that's why its operations and economic contributions are more or less the same. This is due to the fact also that the sites received the same amount of assistance from the MLGU including other government agencies. It means further that it can be inferred that there are no significant differences noted in the economic contributions of the fish sanctuaries across sites when analyzed in terms of economic contributions. For this reason, it does not vary accordingly, and pertaining to this, the conclusion of no significant is accepted.

**CONCLUSION**

The organizational structure of the selected fish sanctuaries in Cortes Surigao del Sur has the overall

description rating of very much effective. This finding had been back up by several awards received by the LGU of Cortes Surigao del Sur manifesting that the said fish sanctuaries are well managed.

The funding in the operation of the fish sanctuaries has also the descriptive rating of very much effective. This is due to the fact that the said fish sanctuaries received financial assistance from the MLGU of Cortes, the respective villages or Barangay local government units, the BFAR, the enhanced National Greening Program of DENR, including the DOLE or the Department of Labor and Employment.

The extent of operation of the Fish Sanctuaries in terms of linkages has the descriptive rating of very much effective. This is due to the fact that one of its best practices is its strong linkage with the Haribon Foundation, Rear Pride, Fish Project, and Green Mindanao and other NGOs active in the four sites. These NGO's provided technical, scientific, and livelihood assistance to the fisher folks in the duration of their project.

The economic contribution of selected fish sanctuaries in terms of livelihood intervention and job/employment generation has the overall descriptive rating of a very huge economic contribution. The livelihood projects provided by the different NGO's in the sites, the BLGU's, the MLGU, BFAR, NGP of DENR and DOLE increased the income of fishers /members of the fish sanctuary. That's why the study yields a very huge economic contribution perception.

The descriptive rating of the economic contribution of the fish sanctuaries in terms of tourism development has the descriptive rating of contributed fairly. There were several reasons for the contributed fairly perception such: there were minimal foreign tourist arrivals in the four sites, the tourism infrastructure like hotels, eatery, and the like needs to be improved in order to increase the foreign tourist arrivals.

The problems/challenges encountered by the fish sanctuaries have a descriptive rating of less prevailing. This is due to the fact that the said problems/challenges could be not being rated as serious because it does not affect the performance of the fish sanctuary as an organization. On the other hand, the extent of the prevalence of the problems/challenges encountered when-compared according to sites has the descriptive rating of Less Prevailing Problem and does not affect its operation.

On the other hand, the study finds out that, there is no significant difference in the contribution of a fish sanctuary in the following indicators: livelihood

intervention, fish sanctuary contribution to the economy, tourism development and employment/job generation when compared across sites. All four sites have the same perception in the perceived economic contributions of the selected fish sanctuary under study.

Further, the study recommended the following: intensive promotion on the relevance of the fish sanctuary using the various platform of social media be used in order to increase the arrival of foreign tourists. On the other hand, closer linkage with the private sectors for possible collaboration in terms of linkages, funding be explored. And provide additional binoculars to be used for guarding the fish sanctuary.

The following topics are hereby recommended for future study: The impact of climate change to the management of fish sanctuaries, Eco-tourism potentials of fish sanctuaries and Community based organization involvement in fish sanctuaries governance.

In terms of linkages and funding, more private sector collaboration is needed, in the view of augmenting the sources of income of the fish sanctuaries as a quasi-bureaucratic and economic institution. More training is desired in the area of augmenting the income of the fish sanctuaries members, in this terrain will provide skills capacity building to its members. There is a need for promotion of the fish sanctuaries as a community-based tourism destination to increase the income of the member volunteers.

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