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A feasibility study on Tiger Grouper (Black-Spotted Lapu-Lapu) production using floating fish cage in Mapaya, San Jose, Occidental Mindoro

Sanqui, Benedict Elijah E. ✉
Divine Word College of San Jose, Philippines (benedict.sanqui8888@gmail.com)
Tampol, Renato A.
Divine Word College of San Jose, Philippines (natoytampol@gmail.com)
Galay, Jenny A.
Divine Word College of San Jose, Philippines (jennygalay05@gmail.com)

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Abstract

Occidental Mindoro was awarded by Malacañang as the 1st Runner up in the GAWAD SAPAT ANI year 2000. It was the first presidential award for outstanding province on food security. To perpetuate this identity and potential of the province for it is an island province, surrounded by water, fishing industry should be acknowledged as a livelihood source of income for small fisherman. This feasibility study entitled Tiger Grouper (Black-Spotted Grouper) production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro was conceptualized. Grouper, otherwise known as Lapu-lapu, a first class seafood and the most expensive is raised in the wild. The possibility of raising it in fishpond will reach the top Municipal Fishery producers for the common good, will increase the income of the small farmers and contribute to the taxes due to the government and for the locality to be known for one of the largest supplier of Grouper. The fishpond is already equipped with the essential equipment needed for the smooth operation of this business partnership. The one managing the fishpond shall act as the holdover manager/consultant. Basically, this study was conducted to determine the feasibility and viability of Black-Spotted Grouper culture in Mapaya, San Jose, Occidental Mindoro. This proponent interviewed exporters for their willingness to accept as a grouper supplier to satisfy the demand in the market. This study found out that Tiger Grouper (Black-Spotted) or Lapu-lapu Culture in Mapaya, San Jose, Occidental Mindoro is an acceptable, feasible, viable, and profitable business and livelihood undertaking.

Keywords: Black-Spotted Grouper, first class seafood, feasibility study, viable, profitable, Occidental Mindoro

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1. Introduction

Aquaculture in the Philippines is a sustainable and profitable business, and it helps improve the living condition of the farmers. However, the global position of the Philippines in the aquaculture production has fallen steadily from 4th place in 1985 to 12th place nowadays (UNFAO,2020). Therefore, the technology "grouper culture in cages" is encouraged through the national technology commercialization program (NTCP) promoted by the Department of Agriculture- Bureau of Agriculture Research (DA-BAR) for enhancement of agriculture and fisheries technologies. In the Philippines, Aquaculture is one of the most sought in the fishing industry. As a potential source of increase production, technical development, and knowledge is therefore, in order. Grouper is the preferred species by small-scale fisherman and is usually caught by hook and line, grill-net and bamboo traps. It is being cultured in ponds and cages in Southeast Asia for the past years. The source of stock is still dependent on the wild, but collecting them is not a problem because they usually gather in coastal sea water, mangrove areas, and sea grass beds (https://businessdiary.com.ph/65/grouper-fish-farming/).

As of this date, supply of grouper fry for commercial capability of pond production still depends on the wild. Most often, available stocks are exported to Manila and surrounding provinces. Grouper also known as Lapu-lapu is our point of interest to address the "RICE AND FISH MEAL" eating habit of pinoys. Grouper is very popular and easy to use in any seafood recipe. It is nutritious and delicious. Other Asian nationalities also choose grouper as a favorite meal. Grouper is the important source of OMEGA-3 fatty acids. It is good for the heart and brain. Grouper is the mostly chosen delicacy due to its texture and taste. It is not only delicious but nutritious as well. Grouper is one of the most sought fish not only in the local market but more so in Hotels and Restaurants. Grouper popularly known as Lapu-lapu, is considered as 1st class and one of the most expensive fish rarely found in the market. Only 2 are properly cultivated at present. The orange spotted (EPINEPHELUS COINOIDES) and the black spotted (PINEPHELUS MALABARICUS) grouper also known as Tiger Grouper.

The black spotted grouper or known as Tiger grouper is chosen by this proponent over orange spotted grouper because the latter is more sensitive than the former, and the black spotted grouper (Tiger grouper) is more workable. On top of this, only black spotted (Tiger grouper) can be cultivated in ponds, because orange spotted cannot survive in this kind of habitat. Grouper is widely cultured in Palawan. The Island Sea Ranching Station (ISRS), one of the proposals of the Research Outreach Stations (ROS) of DA's Bureau of fisheries and Aquatic Resources (BFAR) in Region IV-B in Puerto Princesa, Palawan City. During the first presidential award for outstanding province on food security, Occidental Mindoro was the 1st runner-up acknowledge by Malacañang as GAWAD SAPAT ANI 2000 (certificate of recognition, 27th day of October 2000).

This identity and potential of the province surrounded by sea water is worth perpetuating by the aquaculture industry. With air, land, and water travel to surrounding provinces of MIMAROPA, the preservation of its aquatic resources, which includes fish of different species, is feasible. However, exportation of these resources deprives the province the necessary taxes due the government and it deprives the community the market supply it needs. San Jose is the hub of economic, financial, cultural, religious, and educational center of the province of Occidental Mindoro. It has the greatest number of commercial establishments and the major market for agricultural and commercial products. Mapaya with a lot of fishermen are culturing different kinds of seafoods but, few are into grouper culture. Guided by this verified facts, scenarios, and conditions, the Feasibility Study entitled Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro was conceptualized. This feasibility study likewise illustrated and exemplified the wisdom of Covey on Interdependence (Stephen, 2004.) as a value in building up a business partnership with the researcher's wife relatives who owned a fishpond in Mapaya, San Jose, Occidental Mindoro.

1.1 Objectives of the Study

The main objective of this study is to become an instrument to enhance the potential and identity of the province as Food Basket of MIMAROPA and address the economic desire to contribute to the needed supply and demand of this seafood for the common good and to identify the feasibility and viability of the proposed study. The Grouper Production using Floating Fish Cage in Mapaya is based on the four fundamental areas of management exemplifying the value of interdependence in a business partnership. The four objectives in areas of Management are: (1) To identify the target market of Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro to formulate and apply the marketing strategies and techniques for the success of this proposed business; (2) To determine the technical requirements of Tiger Grouper (Black-Spotted grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro to ensure the product safety and quality; (3) To evaluate the organization and management aspects of Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro and select the best form of business ownership; and (4) To calculate the amount needed for the establishment of Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage and prepare the projected financial statements for the first 5 years of operation.

1.2 Significance of the Study

The Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro will benefit the customers, owners/proponents, workers, government, and the community at large. The results of the study will benefit the following: First, for Customers, the self-satisfaction on the product produced; for Owners/Proponents, the business partners will own and manage the proposed business to give satisfaction to the profit earned by the proposed project. It will help them learn lessons in the operation of the business; for Workers, aside from the compensation earned, development of their skills and knowledge in this proposed project is enhanced; for Government, imposition of taxes and the possibilities of collecting taxes from exporting grouper will add to the government's expenditures and for Community, employment benefit and upliftment of the popularity of the community.

1.3 Sources of data

The Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, and Occidental Mindoro obtained through actual observation and interviews with existing grouper growers. The respondents of the interview were the existing grouper growers, and exporters.

2. Methodology

Descriptive method of research was used in Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro. Primary data will be obtained from interviews, while secondary data are from the different government offices like Municipal Agriculture Office, and Bureau of Fisheries and Aquatic Resources. The data obtained will be re-enforced by the information produced by internet. The cost of materials and equipment to be used for Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro is costing to P66,300.00 will be provided by the proponent. Each fish cage will contain 200 pieces of fingerlings. And there will be 5 (five) fish cages at the middle of the 3-hectare fish pond. In gathering the primary data the exporter will be interviewed for the supplies of grouper and the 6 (six) grouper growers for the overall management of the project. The processes and the technical aspects of this business were obtained from the internet and Articles. Likewise, unpublished feasibility studies were consulted and were used as guide in making this project proposal. The exporters signified their willingness to patronize the products if it is available for reasonable or affordable price. The existence of the growers is also considered.

The proposed project: Tiger Grouper (Black-Spotted Grouper) Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro will benefit local producers and the consumers will also have the chance to have first class fish. This proposed business will help generate income for the government through the imposed taxes and licenses. Availability of the product at affordable price is the great contribution of this business to the consumers.

3. Market Study

3.1 Market Description

San Jose with 38 barangays is one of the progressive municipalities in Occidental Mindoro. Mapaya which is near the town proper is into fish culture and land farming. The researcher's wife is a member of the family-owned fishpond in Mapaya comprising .3 hectare producing different types of fish for the province and the whole country in general. Grouper culture in Floating Cage is one of the business projects thought of by family to increase their income. Grouper culture in cages have been successful for the fishermen's association and multi-purpose cooperatives in the different parts of the country. Grouper culture is therefore another way of earning additional income for the fishermen (Sarian, 2019). Initially, the proposed business targeted, selected, and identified are famous to the consumers in general. Business engaged in exporting seafoods are the main target market considered. They exported seafoods including grouper not only in manila or some other parts of the country but also in some Southeast Asian countries (Sarian, 2019). With the above-named target market, the proposed business will make a name in the fishing industry not only in the province of Occidental Mindoro and the nearby provinces but also to the whole country.

3.2 Demand Analysis

San Jose as the most densely populated area in the province has a total population of 143,433 about 42% resides in the urban area and 58% are in the rural areas. According to Mrs. Alice Orosco Fisheries Technologist of Municipal Agriculture Office of San Jose, Groupers are considered as "High-Value Fishery Commodity" and being sold thru exporters and not circulating in the local market. Based on the primary data gathered the demand is shown in the following table; With the data seen in this table, the proponent of this project projected 5% increase annually.

Table 1

Projected Demand of existing Grouper Exporter in San Jose, Occidental Mindoro (2022-2026)

Year	Exporter I (in kilograms)	Exporter II (in kilograms)	Exporter III (in kilograms)	Total (in kilograms)
1	7,200	6,240	9,600	23,040
2	7,560	6,552	10,080	24,192
3	7,938	6,880	10,584	25,402
4	8,335	7,224	11,113	26,672
5	8,752	7,585	11,669	28,005

3.3 Supply Analysis

At least there are 6 (six) individuals who established farm cages for grouper in San Jose. There are wholesalers selling their products outside the municipality. The following tables shows the list of existing Lapu-lapu growers in Municipality of San Jose, Occidental Mindoro. Based on the assumption that the fish cages are used maximally, a 5% annual increase is the noted harvest of the various suppliers.

Table 2

Existing Lapu Lapu Growers in the Municipality of San Jose (Supply) As of 2022

Name of Lapu-lapu Grower	Average Harvest per Cage (in pieces)	Number of Cages	Average Weight per Piece (in Kilograms	Total Production per season (every 4 months in kilos)	Annual Production in kilos
Grower I	250	18	.50	2,250	6,750
Grower II	200	6	.50	600	1,800
Grower III	200	6	.50	600	1,800
Grower IV	200	5	.50	500	1500
Grower V	250	3	.50	375	1,125
Grower VI	380	2	.50	380	1,140
TOTALS		40			14,115

3.4 Demand- Supply Analysis

The project market share of the proposed business is shown on the following table.

Table 3

Demand-Supply Analysis, 2022-2026 (in kilograms)

Year	Demand	Supply	Gap	Unsatisfied Demand	Market Share (%)	In Kilograms
1	23,040	14,115	8,925	38%	33%	3,000
2	24,192	14,821	9,371	38%	33%	3,150
3	25,402	15,562	9,840	38%	33%	3,308
4	26,672	16,340	10,332	38%	33%	3,473
5	28,005	17,157	10,848	38%	33%	3,647

As shown in the table 3, there is a 33% market share for the first five (5) years estimated conservatively by the proponent. This was the projected market share because the proponent believes that it is quickly penetrating outside the municipality.

3.5 Marketing Strategies

To make the proposal feasible and viable the following strategies are used:

- *Products.* Grouper is the sought fish because it is delicious, nutritious, soft texture and sweet taste. It has brown or green skin with black spot or line. It is also rich in OMEGA-3 good, which is for the heart and brain (Masinfundise, 2016).
- *Price.* The price is directly bought from the floating cages. And it depends if the Lapu-lapu is Live or Fresh *Place*. The proposed project will be established in the family owned fish pond in Mapaya. A business partnership will be developed to organize and manage the five (5) floating cages in the .3 hectares fish pond.
- *Distribution strategies.* The proposed business Production of Grouper using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro is strategically located and near the town proper of San Jose. Exporters shall get the product directly from the fish cage.

4. Technical Study

4.1 Product Description

Grouper as a potential species in the aquaculture business is considered 1st class because of its texture and taste. Weighing 1kilogram per piece. It is also rich in OMEGA-3 vitamins which is good for the heart and brain. (Masinfundise, 2016). According to BFAR'S regional fisheries research and development center of region 4B MIMAROPA, there are about 40 cultivable species of grouper belonging to family SERRANIDAE but only 2 are popularly cultivated- The orange spotted (EPINEPHELUS COINOIDES) and the black spotted (PINEPHELUS MALABARICUS) grouper. (Abrera, Roberto R. Manager of BFAR's Regional Fisheries Research and Development Center, Region IV-B). The grouper to be cultured by this proponent is the black-spotted and green grouper which according to the experts in Lapu-lapu culture is less sensitive and easy to grow.

Production process. *The information is obtained from grouper culture in Floating fish Cage- BFAR lively-hood options for coastal communication, international institute of rural reconstruction and SMISLE publication.*

Step 1: Selection of Site. The grouper pond. The floating cages size is within .3 hectares fishpond of the proponent's in-laws in Mapaya. The fishpond is near the river and free for possible source of pollution. The cage frame is made up of bamboo and blue container and durable enough to withstand environmental calamities during the fish culture operation. 90 x 60 meters length and 40 meters width.

Selection and stocking. The size of grouper is five (5) centimeters. Fish should be stocked at 200 per cage. Figure below shows the actual picture of five (5) centimeters grouper fingerling.

Feeding. Finely chopped fresh fish should be given at the rate of 10% of the total body weight. For the first 2 months feeding is 2 kilos per cage per day, feeding is 3 kilos per cage 1 times a day. For the 3rd month. Figure below shows the actual feeding of grouper.

Monitoring. After 2 months grouper shall be sorted out according to size every week and transfer to cage with the same sized grouper. Figure below shows how the grouper is being monitored and sorted.

Harvesting. Starve the fish 24 hours before harvesting. Harvest depends on the demand of the exporters. Fish maybe removed with a hand-held net and transported as they are removed. Grouper maybe classified according to their weight: Good size is 450-1000 grams; Over size is over 1000 grams; Under size is below 449 grams.

The needed fish culture equipment, are itemized in the table that follow.

Table 4

Lapu-lapu Culture Equipment

Specification	Quantity	Unit cost	Total Cost
Bamboo post	120 pcs	50.00	6,000.00
Fish Nets	8 rolls	1,500.00	12,000
Nylon Rope	10 rolls	830.00	8,300.00
Weighing Scale	1 unit	1,500.00	1,500.00
Blue big container	20 pcs	1,300.00	26,000.00
Sub-total			53,800.00
Add: Labor for fish cage (2,500 per Cage)			12,500.00
		TOTAL	66,300.00

This itemized equipment is very much needed in the fish culture project.

Location. The proposed business is located at Imbarasan, Mapaya 1, San Jose, Occidental Mindoro. The figure below shows the vicinity map of the proposed business.

Capacity and Scheduling. With the acquired fishing equipment, fingerlings, and the number of workers in place the proponent is ready to start the project.

Table 5

Capacity and Scheduling

Number of Fish Cages	Average Harvest per Cage (in pcs)	Frequency/ Average weight is 1kg	Annual Harvest (in kilograms)
5	200	Every 4 months	3,000 kg

The Number of Fish Cages to be used is five (5) and it is projected that there is an average harvest of 1,000 (one thousand) pieces with an average weight of one (1) kilogram. The harvest is every four (4) months or three (3) times a year.

Waste Disposal System. Plastic bags and other waste used in the proposed project shall be disposed in accordance with the solid waste management program of the Municipality. Excess trash fish will be cooked as food for household pets such as cats and dogs.

5. Organization and Management Study

Form of Business Ownership. As family-owned fishpond, the proposed business will adopt the partnership form of business organization. The business relationship of interdependence by Covey as a value shall exemplify the business partnership among the relatives. Management shall be organized among and in between the relatives. This proposed project entitled Grouper Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro shall be considered a family enterprise. And received 20% of the profit at the end of the year, employees shall be opened to interested relatives with corresponding salary. The business will be named "Ezekiel's Grouper Farm". The business name is after the name of the proponent's son. The business focuses on the production and selling of Tiger Grouper (Black-spotted Grouper). *Personnel requirements.* Similar to any business operation the following are essentially needed: Manager, bookkeeper, and staff assistants. Bookkeeping shall be on consultancy basis as the need arise.

6. Financial Study

6.1 Source of Financing

The proposed business requires a total capitalization of Three Hundred Thirty Four Thousand Three Hundred Seventy Pesos (P334,370.00). The Total Cash of Two Hundred Thirty Five Thousand Three Hundred Seventy Pesos (Php 235,370.00) will be provided by the proponent from his own savings and the remaining Ninety Nine Thousand Pesos (P99,000.00) will be contributed by the proponent (laptop) and the partner (Fish Pond, Boat and Office Space) who shares 20 percent of the total profit of the business.

6.2 Project Cost

The initial cost and capitalization to establish the proposed business are as follows:

Organization Cost		
Feasibility Study	Php35,000.00	
Permit, Taxes and Licenses	Php5,020.00	
Other licensing expenses	Php3,000.00	Php 43,020.00
Acquisition of Property and Equipment,		
Fish Pond (Contributed by the Partner)	Php 80,000.00	

Fish Culture Equipment	Php 66,300.00	
Office Equipment (Contributed)	Php 19,000.00	Php 165,300.00
Working Capital (for the first Four Months of the operation)		
Purchases (1,000 pcs 5cm Fingerlings @ Php 30.00)	Php 30,000.00	
Feeds (1,125 kilos Small Tilapia @ Php 10.00 per kilo)	Php 11,250.00	
Salaries and Wages (Php 16,000/month)	Php 64,000.00	
Fringe Benefits (15% of Salaries)	Php9,600.00	
Office Supplies (Php 500.00 per month)	Php 2,000.00	
Communication (Php 300.00 per month)	Php 1,200.00	
Fuel and Oil (Php 1,000 per Month)	Php 4,000.00	
Miscellaneous Expenses (Php1,000 per month)	Php 4,000.00	Php 126,050.00
TOTAL PROJECT COST		Php 334,370.00

6.3 Basic financial assumptions

Sales. It is projected that the total production of 1,000 fingerlings will be sold completely. The black spotted grouper is the easiest grouper to raise. The proponent will sold all its product to exporters, and they promise to cater purchase of the whole production, together with the statistic demand for the product which is greater than the supply, with gap of thirty eight percent (38%). The Annual sales is projected to increase by 5% annually due to inflation it is computed as follows: Total production per season (in pcs) 1,000*;* multiply by number of Harvest/ per annum (3)*;* Total Annual Production (in pcs) 3,000*;* Average weight per piece per kilo(1kilo); Total Annual Production in Kilos (3,000); Average Price/Kilo (Exporters buying rate) Php 450.00; Total Sales per Annum (Php 1,350,000.00).

Purchases. The black spotted grouper fingerlings which measures at 5 centimeter or bigger is being sold at a price of Php 180.00 per 6pcs of fingerlings, which can be priced at Php 30.00 per piece of fingerling. The proponent will prepare 5 cages for the groupers and estimate that 200 pieces of grouper is the maximum capacity per cage to achieve its desired growth thus the total purchase is computed as follows: Total Production per season (in pcs) (200 x5= 1,000)*;* Multiply be number of harvest per annum (3)*;* Total Annual Fingerlings Production*;* Requirement in (pcs) 3,000*;* Cost per Fingerling (Php 30.00)= Total Purchases per Annum (Php 90,000.00).

Feeds. The proponent will be utilizing small tilapia as the only feed for the grouper production. The small tilapia cost Php 10.00 per kilo. To attain the projection production project it requires the following feed consumption:

Number of Cages:			5 cages	
Feed consumption per cage:				
1st Month:	1/2 kilo per cage/per day	=	75 kilos	
2nd Month:	2 kilos per cage/per day	=	300 kilos	
3rd month:	5 kilos per cage/per day	=	750 kilos	
Total Consumption in kilos				1,125 kilos
Price per kilo of the Small Tilapia				Php 10.00
Total expenses for feeds per harvest				Php 11,250.00

Accounts Receivables. The proponent and the exporters agreed that the payment for the product would be done on Cash basis; therefore, no Accounts receivable is recorded.

Inventory. No ending Inventory is allotted. It is projected that 100% of production will be sold on or before the end of the year. However, periodic and regular assessment and evaluation of the culture process and operation is essential to ensure the desired level of sustainability of the business venture.

Pre-Payments. The total Amount of Php 43,020.00 used as organizational cost is expended during the 1st year of operation.

Accounts Payable. All financial obligations will be settled during the year of operation, aside from the taxes payable which is to be paid on or before April 1 of the following year.

Management/Operating and Other Expenses. The Following annual expenses are projected to increase every year by 5%. Except for the salaries which is assumed to increase at 10% every two years:

Salaries and Wages	Php 192,000.00
Fringe Benefits	38,400.00
Communication	3,600.00
Permit and Licenses	5,000.00
Fuel and Oil	12,000.00
Office Supplies	6,000.00
Repairs and Maintenance	5,000.00
Miscellaneous Expenses	12,000.00
TOTAL	Php 274,000.00

The proponent and the exporter agreed that the exporter would be the one responsible for the harvest of the product. Thus, there is no delivery and harvesting expenses to be incurred.

Depreciation Expenses. The proponent used straight line method of depreciation, it is expected that all of the equipment will have no value at the end of their useful life. The detail of the computation are as follows:

Table 6

Schedule of Depreciation

Fixed Assets	Cost	Useful Life	Annual Depreciation
Small Boat	Php 4,000.00	5	Php 800.00
Laptop	Php 15,000.00	5	Php 3,000.00
Fish Culture Equipment	Php 66,300.00	5	Php 13,260.00
Annual Depreciation Expenses			Php 17,060.00

6.4 Projected Financial Statements

The projected financial statements include the income statement, cash flow, and balance sheet. The projected income statement is composed of all income and expenses recognized during the specific period. The net income after tax is Php 748,519.00 on the first year, Php 820,900.67 on the second year, Php 849,153.89 on the third year, Php 895,754.08 on the fourth year, Php 926,943.49 on the fifth year are shown on the projected income statement, respectively.

6.5 Financial Ratios and Analysis

$$\text{Net Profit Margin} = \frac{\text{Net Income after tax}}{\text{Total Sales}}$$

Year 1:	748,519.00/1,350,000.00	=	55%
Year 2:	820,900.00/1,417,500.00	=	58%
Year 3:	849,154.00/1,488,375.00	=	57%
Year 4:	895,754.00/1,562,794.00	=	57%
Year 5:	926,943.00/1,640,933.00	=	56%

Net Profit Margin measures how much net income is generated as a percentage of revenue or sales receive. It measures the profitability of the business after considering all sales and expenses. The business registered more than 50% of Net profit margin throughout the five years with the first year being lowest because the bulk of expenses usually happens during the conception of the business. This shows that the project is very feasible and profitable. The second year is the highest with 58% due to same percentage increase on the first year, which is 5 percent. Year 3 and 4 have slight decrease due to increase in salaries and wages of 10% every two years, and also a decrease in the 5th year also due to increase in Salaries and wages.

Average Return on Investment = Average Net Income / Cost of Investment

848,254.00/334,370.00 = 254%

Return on owner's Investment (ROI) tells you how much money you will gain when you invest in this project. The 254 percent of Return on Investment means that when you invest money to the project it is guaranteed that you will receive 254% of your investment in five years' time. This show that the project have superior efficiency in generating profit.

Payback Period = Total Project Cost – Annual Cash inflow

Year 1 = 334,370.00 – 1,098,000.00 = (763,630.00)

Payback Period signifies that the cost of the project would fully recovered during the 1st season of harvest. That there will be excess on the 1st year that can be distributed to the proponent and the partner as part of their Return on Investment.

7. Socio-economic aspects

Grouper farming/culture is a very interesting business venture because of its high demand in the local and international market. The product itself is indeed popular among suppliers and exporters in local and international aspects particularly in Asian countries. It will help the people/fishermen residing in San Jose, Occidental Mindoro, and nearby barangays by means of uplifting their socio-economic condition through possible employment or implementing this business. It will help to generate the availability of the product at low price. It will help and improve the aquatic resources in the locality, and help the locality of San Jose to attain the identity as the main source or supplier of Grouper (Lapu-lapu) in Region IV-B. In addition, the beneficiaries of the proposed study/business are as follows:

(1) Owner, the first recipient of the proposed study/business is the owner not only in terms of income he will gain but, also as way of implementing his entrepreneurial and managerial capabilities;

(2) Employees, the proposed business will aid unemployment. Staff/workers will receive appropriate salaries that will help them support their family and needs. It can also help them to advance their knowledge in aqua culture business;

(3) Government, the proposed business will help the government to generate funds through the taxes and other regulatory fees/licenses that will be paid by the owner. These, will be used for infrastructure projects for the development of the community;

(4) Exporters, the exporters can buy a good quality of Tiger Grouper (Black-Spotted Grouper) quickly available in the market that will give them absolute satisfaction in their needs.

(5) Grouper Farmers/Growers, the income that they can generate will be their initiative to engage in grouper farming.

8. SWOT and potential problem analysis

This Chapter discusses the Strengths, Weaknesses, Opportunities, and Threats of the proposed study/business. At the end however, the proponent made an extensive analysis that will account for the SWOT analysis. The Swot analysis is built in the topics presented in this chapter.

Strengths **-** Since Grouper or Lapu-lapu is considered as first-class fish and one of the favorite dishes of every Filipino. The proponent will enumerate the strengths of Tiger grouper (Black-Spotted Grouper) production using Floating Fish Cage. First, the availability of the site. Second, is the good environment and climate which is very important to the production process. Third, is the type of business which the partnership employs to lessen the possible expenses in grouper culture. Fourth, is the availability of the raw materials and last is the large demand of grouper in the locality and international market. The expertise of the staff and a good strategic management and techniques also contributes to the business reputation and build a good foundation for the business and consumers. In addition to that, increase of demand could also be anticipated during typhoon seasons that will be the major advantage towards other grouper growers in San Jose, Occidental Mindoro because the proponent's business will be established in a man-made pond near river and will use floating fish cages that can prevent the possible destruction of the net cages.

Weaknesses **-** For this type of business, there are also different weaknesses being seen by the proponent. First, is the limited supply of fingerlings; next is the limited technology and lastly the possible disease that can affect the production.

Opportunities **-** The opportunities of the proposed study/business are the continuous increase of demand in the local and international market which is shown between the supply and demand. On the other hand continuous training of the owner and the manager, additional knowledge in technology can improve the quality of the product. And to be known as the grouper capital of the Philippines.

Threats **-** Any type of business is visible to threats. The obvious threats to business are prices, competition, and environment due to climate change and natural calamities. Lastly, the unexpected disease which may contaminate the grower in the process of production.

Potential Problem and Action Recourse **-** As any other businesses, this specific business is challenged with various potential problems, especially during the first few years of operation. On top of this potential problems is getting the interest of consumers to patronize the proposed product. Since they are already familiarized and attracted to existing outside suppliers. Today, Region IV-B ranked as the 2nd top Municipality Fisheries producers unlike before Region IV-B ranked as the 1st top producers in the country in 2017. Quality of the product is the most powerful way to get the interest of the consumers, quality assurance plays a crucial role in providing world class satisfaction to attain the loyalty of the consumers. To aid this issue, the proposed business will apply a collaboration of traditional farming system with modern approach and techniques. In terms of short supply of fingerlings, the proponent and the other grouper growers already agreed to share their outside supplier of fingerlings that can help to boost the production of MIMAROPA (Region IV-B) to regain the number (1) one spot of top Municipality Fisheries Producers.

9. Summary of findings, conclusion and recommendation

Summary of Findings **-** Grouper Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro as the proposed business provides the needed supply in the local and national market. The surveys conducted proved the demands and supply of the product are found out to be satisfactorily. And the customers found out that the taste and accessibility of grouper is acceptable. The proposed business is accessible to the public. The capitalization amounting to Three Hundred Thirty-Four Thousand Three Hundred Seventy Pesos (Php334,370.00), The Total Cash of Two Hundred Thirty Five Thousand Three Hundred Seventy (Php235,370.00) will be provided by the proponent from his own saving and the remaining Ninety Nine

Thousand Pesos (Php99,000.00) will be contributed by the proponent (laptop) and the partner (Fish Pond, Boat and Office Space) who shares 20 percent of the total profit of the business. covered the necessary equipment, production equipment. The form business is partnership because it is easy to organize, and the value of interdependence is exemplify. Building up a relationship in anything we do in life is a welcome gesture to success.

Conclusions **-** Grouper Production using Floating Fish Cage in Mapaya, San Jose, Occidental Mindoro proved to be feasible and viable. Operation is simple and profitable.

Recommendations **-** Based on the above reasons and justifications, the proposed business is highly recommended for implementation and expansion to provide a source of income for the workers and Owners. It also provides the needed satisfaction of the consumers. The proposed business applied and formulated the marketing strategies and shows a positive outcome having Two Hundred Fifty-four (254) percent average return of investment. Having a partnership type of ownership also have a huge impact in minimizing the cost of proposed business and the technical requirements needed. Creating a multi-purpose cooperative will help grouper farmers to lessen the liability for members, sustain and maximize the supply of grouper fingerlings, and lessen the price of the grouper for the common good.

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