SOUTHEAST ASIAN JOURNAL OF SCIENCE AND TECHNOLOGY

Volume 2, Issue 1, 2017
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

Production Techniques of Native Cultured Lapu-lapu in Selected Municipalities in Western Pangasinan

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Abstract *– This study sought to identify the production of fish cage industry, specifically in the Production of Native Cultured Lapu-lapu in Selected Municipalities in Western Pangasinan, to help avoid casualties that affect the production. The study used the survey and interview method being the most appropriate method to attain the objective of the study which covers 78 respondents. The researchers identified that majority of the producers were in their early adulthood. Only men were involved in the production in which majority of them were married. Most of them were elementary undergraduates and were already into production for the span of 5 to 8 years. Each of the producers was the sole owner. Raising native cultured Lapu-lapu needs one caretaker per cage for a normal capital of ₱10,000 to ₱20,000. Accordingly, the producers used the traditional technique of utilizing a 5x5 meter fish cage with 200 to 300 pieces of fingerlings, with the size of 2 to 3 inches, which were fed only with trash fish up to harvest. From the viewpoint of the researchers, producers must assure and maintain the effectiveness of operation by considering best practices in Lapu-lapu production and take areas of development. Furthermore, the researchers recommend that producers should seek support from the government to avail services like financing, providing trainings to the producers and conducting seminars which include modernization and development or much proper way of production especially on feeding and cleanliness of cage that leads to higher profit. The support of the government to the producers to improve their production will at the same time bring a positive impact on the economy.*

Keywords *– production techniques, grouper fish, cultured Lapu-lapu, fisheries, aquaculture*

INTRODUCTION

Aquaculture, since 1990's, expanded rapidly in the Asia-Pacific, both in terms of area and number of people engaged in the sector. The rapid growth has impacted the ecosystems, regional economies and social relations. Literature supports the argument that aquaculture is a source of livelihood, food security and provides employment benefits to the poor. Some express concern at the marginalization of the poor in the process of rapid expansion and unsustainable growth in Aquaculture sector in the Asia-Pacific. The "Bangkok Declaration and Strategy for Aquaculture Development Beyond 2000", recognizes that a large part of aquaculture production comes from developing countries and that aquaculture from these countries will continue to impact peoples' livelihoods, food security, trade, income generation, employment and poverty (Sekhar, 2006)

The Philippines is an archipelagic country with about 7,100 islands. As such it has more water than it has land. With a total territorial water of 2,200,000 km2, it only has 299,735 km2 of land area of which 102,984 km2 or 34% is agricultural. About 94% of the total land area is contained in the eleven largest islands of which Luzon in the north and Mindanao in the south are the two largest. The thousands of islands endow the Philippines with a total coastline of 17,460 km. Within its landmasses are freshwater and brackish water swamplands, lakes, rivers and reservoirs.

Fishery is a very important industry in the Philippines. Its importance is underscored by the fact that as of 1995 the Philippine ranks twelfth among the largest fish producer in the world and ranks fourth in terms of aquaculture production based on figures from FAO Yearbook, 1995. In terms of contribution to the national Gross Value Added (GVA) in Agriculture, Fishery and Forestry in 1997, fisheries contributed 18.5 percent, at constant prices, as against livestock and poultry which contributed only 12.1% and 10.3% respectively. Fisheries were exceeded only by agricultural crops which contributed 54.1% (Food and Agriculture Organization of the United Nations, 2016).

Fishing industry plays a vital role in solving the socio-economic problems of the country. It can improve the socio-economic status of the country because this can help increase the country's dollar reserves in case of exportation of cultured Lapu-lapu. The demand for fish

Volume 2, Issue 1, 2017
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

and fish products is unevenly distributed. People in industrialized countries (about one fifth of the world's population), consume 40% of the global fish catch. But fish is especially important in the diet of people in developing countries, supplying them with a large share of their animal protein needs. With increasing population and income in developing countries, global demand for fish and fish products can be expected to grow steadily (Codur and Harris, n.d.) Likewise, the production of cultured Lapu-lapu would also increase the income of the producers. Native cultured Lapu-lapugrowth would strive to increase and improve their farm yield. More and better quality breeding will lead product cost return or capital investment.

OBJECTIVES OF THE STUDY

The researchers attempted to study a commonly cultured fish variety in Pangasinan, particularly the western part of the province. This research sought to identify the production of cultivating native Lapu-lapu in selected municipalities in Western Pangasinan. This may also help the producers to avoid the unnecessary things that may affect their production. Also, it seeks to help them learn the best way to produce a quality product.

Specifically, it sought to answer the following questions:

1. What is the profile of Lapu-lapu producers in terms of:

A. Profile of Respondents:
- a.1. Age;
- a.2. Sex;
- a.3. Civil Status;
- a.4. Educational Attainment?

B. Business profile of Lapu-lapu producers:
- b.1. Years of Operation;
- b.2. Size of fish cage area;
- b.3. Nature of ownership;
- b.4. Location of Production;
- b.5. Number of caretaker/worker;
- b.6. Capital/Investment per harvest;
- b.7. Number of Fingerlings?

2.) What are the techniques used by the respondents in producing native cultured Lapu-lapu?

3.) What are the problems encountered by the producers in the production of native cultured Lapu-lapu?

MATERIALS AND METHODS

This study used the descriptive survey and interview method which is the most appropriate method to be considered to attain the objective of the study. This method sought to describe the nature, the situation, as it exists at a given time of the study. The results were tallied, described, analyzed and interpreted.

The study covered seventy-eight producers who engaged in the said business. They are having their production of native cultured Lapu-lapu in selected municipalities in Western Pangasinan including Alaminos, Anda, Bolinao where the study was conducted.

The researchers made a plan procedure to gather the needed data of the study. First, the researcher asked the list or the number of producers of lapu lapu in Pangasinan Agricultural Office (PAO). Second, the researchers secured a written permission from the office of the municipal agriculture of each selected town in Western Pangasinan where the study was conducted. Then the researchers will administer the questionnaire personally to the lapu lapu producers. After that, the results will be retrieve, analyze and interpret accordingly.

The researchers used the stratified sampling technique in order to identify the number of respondents to choose in every municipality. There are 136 producers in selected municipalities in Western Pangasinan, using the Slovin's formula the researchers get the 78 number of respondents.

The researchers used the survey and interview method with the questionnaire - checklist as the major instrument in gathering the needed data which determine the production of lapu- lapu in selected municipalities in Western Pangasinan. The instrument was divided into three parts. First part was concerned with the collecting information about the profile of Lapu-lapu producers and the business profile of the respondents. Second was to find out the techniques used by the respondents in producing native Lapu-lapu and the last part was the problems encountered by the Lapu-lapu producers.

RESULTS AND DISCUSSION

The following finding serves as a background for business related to fish cage industry to help them improve and avoid unnecessary things that may affect their production.

Volume 2, Issue 1, 2017
P-ISSN: 2672-2984
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The significant findings on the profile of native cultured Lapu-lapu producers were summarized based on the following areas of concern:

Profile of the Respondents

Majority of the respondents were in their early adulthood. From the age range of 35 years old to 75 years old, the researchers identified that the majority of the producers involved in the production were at the age ranging from 46-55 years old.

Only men were actively involved in raising native cultured Lapu-lapu. Though the involvement of women in the production of native cultured Lapu-lapu is not prohibited, the operation is dominated or solely operated by men.

Majority of the respondents were married and that their families are dependent on the production of native cultured Lapu-lapu as their primary source of income to sustain their daily living.

Majority of the respondents were not able to finish their primary schooling. Most of them were elementary undergraduate who preferred to produce and culture Lapu-lapu to earn instead of going to school due to financial problem.

Business Profile

Majority of the respondents were already engaged in raising native cultured Lapu-lapu for the span of 5 to 8 years. The exhaustive and toilsome work done in production is evitable that some of the producers slowly stop after the lapse of 5 to 8 years of being active in operation.

From the range of 5x5 meters to 10x10 meters fish cage, producers have prescribed that the use of 5x5 meters fish cage is the most advisable. Accordingly, to the producers, the use of 5x5 meters size of fish cage is the most appropriate to contain just enough pieces of fingerlings.

None of the producers neither leased nor a tenant of the fish cages they operate. Each producer solely owned, financed and operates their production.

The locale of production is equally sub-divided from three municipalities. It is located in the municipalities of Alaminos, Anda and Bolinao. These municipalities surround the body of water where the fish cages are structured.

Producers work at the ratio of one worker to one fish cage. Raising native cultured Lapu-lapu only need one caretaker or worker per cage. Each producer takes responsibility for individual fish cages from start to end of operation.

A shift to a capital investment above the range of 10, 000 to 20, 000 pesos is not permitted because of financial problem experience by most of the producers.

Since the majority of the producers utilize a 5x5 meters size the most appropriate. Accordingly, putting fingerlings below that range will lessen their harvest and while putting fingerlings above that range will overload the fish cage that will eventually cause fish kill.

Techniques Used by the Respondents in Producing Native Cultured Lapu-lapu

Fish Cage Size and Capacity

Producers of native cultured Lapu-lapu utilize fish cages that were made of nets and bamboo poles. The sizes of fish cages range from a 5x5 meter to a 10x10 meter cage. Based on the 78 respondents, all of them agreed that the normal size of fish cages is 5x5 with a capacity of accommodating 200-300 pieces of fingerlings. The respondents said that this is the most appropriate size of fish cage that can accommodate a normal piece of fingerlings.

Timing and Feeding Native Cultured Lapu-lapu.

In raising native culture Lapu-lapu, it is important to consider the timing and frequency of feeding. It is an essential factor that affect the growth of the fingerlings rom the day that they are put in the fish cage until they are ready to harvest.

According to the respondents, feeding depends upon the size of lapu-lpau. They started feeding fingerlings with a size of 2 to 3 inches for 3 to 4 times a week. As they grow feeding becomes more frequent. For 3 to 4 times a week becomes every day until the time that the Lapu-lapu is ready for harvest and stop feeding a day before harvesting the Lapu-lapu.

Trash Fish for Native Cultured Lapu-lapu.

Grouper (Lapu-lapu) is one kind of fish which is carnivorous. They eat any kind of fish or any fish that they can swallow. Because of that Lapu-lapu is carnivorous, they eat each other, they swallow as much as they can. This is why if you put 300 pieces of fingerlings there is a possibility that at the time of harvesting you will be shock that you only got 200 pieces of Lapu-lapu. To avoid that, they sort and separate them from smaller to bigger size.

According to the 78 respondents, they give trash fish as food of Lapu-lapu. This is because they

Volume 2, Issue 1, 2017
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

believe that this is the only food that makes Lapu-lapu become healthier and stronger. Trash fish normally cost 8 to 20 pesos per kilo which the producers bought from nearby barangays who have a surplus of fish. Sometimes, the produces save costs because some of their friends give those trash fish for free.

Other Food Product as a Food Supplement

Aside from trash fish used by the respondents as the main food, there are no other food products used as food supplement. For the producers, trash fish is enough to raise and support the nutrition needs of Lapu-lapu up to the point of harvest. They do not rely on the use of algae, commercial feeds for fish, and other food products in their operation.

Harvest Period for Native Cultured Lapu-lapu.

In order to maintain the proper flow of the operation, it is important to monitor the time spend in the production. Producers must be aware of how long would it take to harvest their product. Knowing the length of the harvest period helps the producers to establish a better time frame for their operation. Producers spend 5 to 7 months of feeding, physical effort, and time in raising native cultured Lapu-lapu. Knowing that 5 to 7 months' period, therefore, allows the producers to plan when is the right time to start operation, and the timing of increasing the frequency of feeding. Through this, the producers will be able to save time, cost, and efforts spend in the production.

Market Place for Native Cultured Lapu-lapu.

Unlike livestock's which are directly through slaughter houses and bangus or tilapia which are sold through consignation, producers of Lapu-lapu have no specific market place to sell their harvest. Producers sell their harvest to a direct buyer who goes immediately to the production area to pick up the product. This mode of operation allows savings to the producers because there is no need for them to transport their product, therefore, eliminating transportation cost.

Market Price of Native Cultured Lapu-lapu.

In every end of operation, producers of native cultured Lapu-lapu determine how much they could sell their product. They will now match the revenue against cost to know whether the outcome of operation is favorable or not. According to the respondents, selling price of Lapu-lapu depends on their sizes. Native cultured Lapu-lapu is normally sold for 400 to 500 pesos and goes up to 550 to 600 pesos during December.

Seminars and Organizations of the Respondents.

Among the 78 respondents only 18 or 23.08% of them are member of "Sama - Sama Organization" which is sometimes having their seminars or workshop with the help of Bureau of Fisheries and Aquatic Resources (BFAR). Some of the respondents who are not a member of the said organization attended workshops and seminars weather they are not a member. Although they are having a seminar from BFAR they do not avail any support coming from the said aquaculture agencies.

The producers implement a traditional technique of raising native cultured Lapu-lapu. Since only few of them are active in joining seminars, most of them are not aware of modern techniques that will help them to improve their operation. It is important to the producers to learn and employ some interventions in the fish cage industry, specifically in raising native cultured Lapu-lapu, to improve their quality of production.

Problems Encountered by the Producers in Raising Native Cultured Lapu-lapu

The problems encountered by the producers in raising native cultured Lapu-lapu are: Water pollution, lack of capital, lack of dissolved oxygen for the fish, poor weather condition and low profit.

CONCLUSION AND RECOMMENDATION

With the findings with regards to the operation of the producers in Producing Native Cultured Lapu-lapu in Western Pangasinan, the researchers concluded that:

Majority of the producers are composed of men in their early adulthood who are not able to finish their primary schooling and that producers are sole owners who were engage in production for 5 to 8 years with a capital investment of ₱10,000 to ₱20,000 for a 5x5 meter fish cage.

The producers only make use of traditional techniques in their operation. Producers failed to actively participate in seminars relating to their operation which will bring possible updates in the use of modern and advanced method to improve their production.

The producers encountered some problems in operation caused by poor weather condition, water

Volume 2, Issue 1, 2017
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

pollution, lack of dissolved oxygen for the fish, lack of capital, and low profit.

Lapu-lapu producers should active in joining seminars to find out some modern techniques in the light of improving their production. Through actively joining seminars, the producers will be updated in new ways to improve the operation. They will be able to learn an advanced and cheaper methods in production.

Use fish feeds as food supplement rather than solely relying on trash fish. Producers must be mindful of food alternatives in such a case where there will no supply of trash fish. It would be of great help in such a way that feeding is uninterrupted.

Clean the fish cage occasionally to allow the continuous flow of water and prevent it from being stagnant that cause water pollution. Water quality is crucial in fish cage industry. Most producers suffer loss clue to fill kill caused by water pollution.

The government, through the LGU's provide proper trainings to the producers. Government aids promote the development of its people. The support of the government to the producers to improve their production will at the same time bring a positive impact in the economy.

Communicate with companies who are engaged in exporting fish product to acquire a larger market and increase their profit. Since, producers will not solely rely on a single buyer, they may now be able to have various markets to sell the products with higher price.

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Volume 2, Issue 1, 2017
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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