

Farming Practices of Oyster Farmers in Panay, Capiz, Philippines

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Abstract

Oyster farming has been practiced in the Municipality of Panay for a long time, however, the practices and other aspects of oyster farming has not been documented; hence this study characterized the oyster farmers and described their practices. The data gathered include demographic profile, traditional knowledge system; gender roles of men, women, and children; economic activities, particularly of the women pertaining to oyster culture. Focus group discussion and interview were conducted with 28 of the 33 oyster farmers using purposive sampling. Informants were earning below minimum wage and homogeneous in demographic characteristics. Broadcast method of oyster farming was the common practice of the farmers. Roles of both men and women were significant in the socio-economic activities of the farmers. They consider their oyster farm as a family enterprise where the couple equally contribute and children are involved in minor tasks. However, men have other sources of income such as fishing. Generally, the families are poor and dependent on the sea for their income and therefore are affected by climatic conditions and dwindling stocks. Both men and women consider oyster farming as a regular activity and means of living. Their artisanal farming practices provide not only income but also a sense of purpose to women and a sense of cohesiveness to the community.

Keywords: Capiz, coastal community, oyster farming

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Introduction

Capiz prides itself as the seafood capital of the country. Seafood is highly sought by restaurants catering to both local and foreign tourists. Some seafood products are taken to Manila and nearby provinces or sold to exporters. Among the most popular seafood being ordered in restaurants are the oysters. Coastal barangays in the Municipality of Panay are among the major sources of oysters however, oyster farming practices and the gender roles of oyster farmers have not been documented. Oyster farming contributes significantly to the economy. The Philippine Statistics Authority (2017) reported in Fisheries Situationer that the volume of oyster production during the first quarter of 2017 was estimated at almost 4,000MT but exhibited a drop of 11.61 percent from the same quarter in 2016.

This study aimed to characterize the oyster farmers and describe their farming practices in terms of the demographic profile, traditional knowledge systems in oyster farming gender roles, and economic activities of the community pertaining to oyster culture. The results may serve as a baseline for future studies on gender issues in coastal communities and form the basis for policy formulation in resource utilization. Furthermore, the results may serve as a guide to extension workers regarding the training needs of the community in which the university can assist.

Methodology

This study utilized the mixed methods research employing quantitative and qualitative approaches. Demographic profile and farming practices of oyster farmers were gathered in Sitio Bungcayao, Butakal, Panay, Capiz, Philippines. A letter was sent to the barangay Captain seeking permission to conduct the study. Focus group discussion and purposive interview with 28 informants, observation, and photo-documentation were done.

Data were gathered using the prepared questionnaire through interview and focus group discussion. Socio-demographic profile of the informants includes age, marital status, educational attainment, monthly income, family size, and other sources of income aside from oyster culture. The method of traditional oyster culture was also described including the materials that they used. Gender roles were determined while economic activities related to oyster culture and the contribution of women to the community was also described. Quantitative data were analyzed using Statistical Package for Social Sciences (SPSS) to obtain the frequency and means. Short narratives from accounts of respondents were also included in the qualitative data.

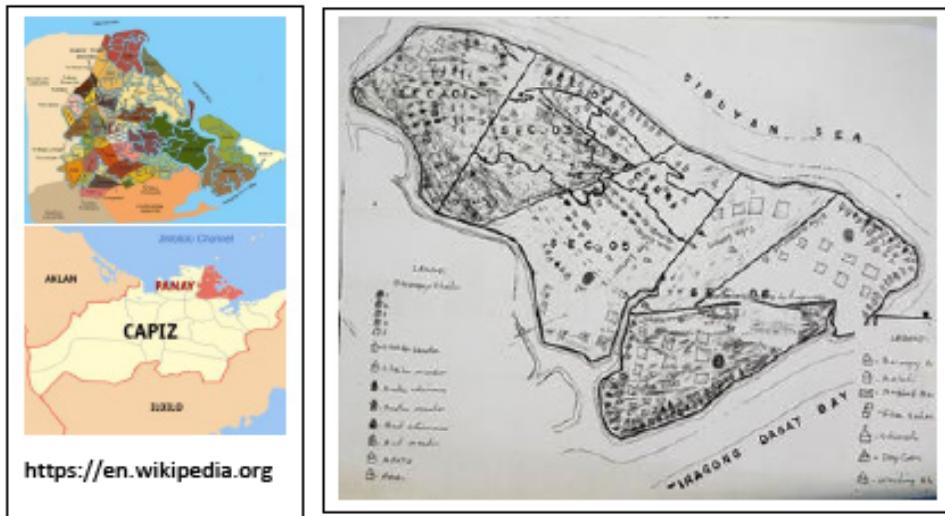


Figure 1. Map of Barangay Butakal, Panay, Capiz, Philippines showing the study area. (Source: Office of the Barangay Secretary)

Results and Discussion

Demographic Profile

The oyster farmers in Bungcayao, Butakal, Panay, Capiz are relatively old with a mean age of 54.39 years old (Table 1). The oldest is 83 and the youngest is 36 years old. Majority of the 28 informants are females (61%) and only 39 percent are males. Majority of them are married (93%). Nearly half (46%) of them have finished elementary school. Many of them have an average of two (2) children per family. Fortunately, they have recognized the importance of education in improving the economic condition and have sent their children to school. Having extended family members in the home is not common, but relatives usually live next to each other in their own homes. Generally, members of the community know almost everyone because they said they are related in one way or another.

As with most coastal inhabitants, income is sporadic. Having no stable and regular employment, people do not record their income whether negligible or substantial. For this reason, there is no exact amount that can be given except for the expenses incurred for buying spats and the selling price of oysters. The price per tray of oysters is fixed but the schedule of selling and the volume of orders are not regular. Essentially, only the husbands who go fishing almost every day are earning. The wives who mainly stay at home and periodically monitor the oyster plots are considered to have no individual source of income, as the proceeds from the oyster farm is attributed to family enterprise initiated by the couple where the woman plays

the secondary role. The wife spends a lot of time tending to the plots removing.

Table 1. Demographic Profile of Oyster Farmers in Panay, Capiz, Philippines.

Variable	Frequency	Percentage
Age		
43 and below (youngest informant – 32yo)	5	17.9
44 -54	9	32.1
55 - 65	9	32.1
66 – 76	4	14.3
77 and above (oldest informant -83yo)	1	3.6
Total	28	100
Mean: 54.439		
Sex		
Male	11	39.3
Female	17	60.7
Total	28	100
Marital Status		
Single	2	7.1
Married	26	92.9
Total	28	100
Educational Attainment		
Elementary Undergraduate	3	10.7
Elementary Graduate	8	28.6
High School Undergraduate	10	35.7
High School Graduate	1	3.6
College Undergraduate	6	21.4
Total	28	100
Spouse Educational Attainment		
Never been to School	3	10.7
Elementary Undergraduate	8	28.6
Elementary Graduate	10	35.7
High School Undergraduate	1	3.6
High School Graduate	6	21.4
Own Monthly Income		
2400 and below	9	32.1
4300 – 2300	13	46.4
6200 – 4200	5	17.9
8200 and above	1	3.6
Total	28	100
Mean: 3196.439		
Livelihood aside from Oyster Farming		
None	16	57.1
Fishing	3	10.7
HudHod	5	17.9
Taba	1	3.6
Panginhas	2	7.1
Employee	1	3.6

Table 1. Continued

Variable	Frequency	Percentage
Spouse Livelihood		
None	15	53.6
Fishing	2	7.1
Panginhas	2	7.1
Guyod	5	17.9
Oyster Farming	2	7.1
Employee	2	7.1
Total	28	100

epiphytes and sorting the marketable from the undersized shells. Family income is generally low, below the minimum wage (Table 1). Most of the women have no other source of income aside from oyster farming. Men, on the other hand, consider fishing as main livelihood and oyster-farming as an additional source of income. Some of them have push nets for catching fish, some use gill nets or tidal barriers while others just glean on the intertidal during low tide.

Traditional System of Oyster Farming

Oysters are considered among the major fishery resources of the Philippines (Asian Development Bank, 2014). These are important in the diet of Filipinos even in the past and up to the present. Way back in 1912, oysters were already available in the market in Manila (Seale, 1912). The most commonly farmed oyster in the Philippines and in the Province of Capiz is the slipper oyster *Crassostrea iredalei* (Ticar, 2015).

The most primitive, simplest and non-costly method is broadcast “sabog”, wherein collected spats are scattered on indigenous collectors such as empty oyster shells, logs, and stones, stable substrate or firm bottom. The shells are allowed to grow for six months to a year or until the shells reach marketable size of approximately 2.5in or bigger. The method requires very low financial input (mostly on the spats bought from a supplier) but is difficult to harvest and unsystematic. In Sitio Bungcayao, Butakal, Panay, Capiz, oyster farmers found this method favorable in the area because of the vast intertidal with a rather firm substrate and an accessible source of spats to culture.

The other three methods being used in other provinces such as Iloilo and Aklan are stake (tulos) with lattice, hanging (bitin or sampayan) horizontal, and tray” methods. These methods, however, entail more investments, thus are not being practiced in Panay. The oyster farmers prefer the broadcast or scatter method which requires low investment, thus, more feasible.

Environment-friendly sustainable aquaculture has been advocated by USAID (2013) to reduce social and environmental impacts of aquaculture. In a way, the traditional method of oyster culture may be a sustainable option. If done without removing the mangroves, seagrasses, coral reefs, and other coastal vegetation, the traditional culture method does not introduce a lot of structures and the culture period is longer giving the wild stocks ample time to reproduce. Moreover, oysters are filter feeding organisms, thus, no feed substances are introduced and no habitat alterations are necessary, hence, USAID (2013) considers small-scale oyster culture as environment-friendly. On the other hand, constant trampling by the oyster farmers may have an impact on other organisms in the substrate.

Oyster growers use different methods in oyster farming such as rafts and lines or bamboo poles where the organisms settle. A study conducted at SEAFDEC-AQD recommended the raft method in oyster farming for the following advantages: fast growth and higher survival, easy transplantation and thinning, higher production and no accumulation of silt, unlike the staking method in which the bamboo poles used as stakes act as barrier that gathers the silt (de Castro-Mallare, n.d.).

In Sitio Bungcayao, the community does not favor the raft method because it would necessitate considerable investment for the purchase of materials, and construction, and deployment of the raft. Furthermore, the vast intertidal would mean additional expenses for fuel to reach the culture area and the women can no longer monitor the oysters easily.

In Japan, oyster culture methods evolved from traditional stone-spreading technique to standing-pole culture; standing pole followed by bottom spreading; standing fence culture; simple hanging; raft-type hanging; and long line hanging type (FAO, n.d.). In Western Visayas raft and stake method are more favored (SEAFDEC-AQD, 1994).

Obtaining Oyster Plots

Generally, oyster farmers don't need any permit to start an oyster farm which is just a rectangular plot of usually 10 x 20 m² or 20 x 20 m² depending on the available area and terrain. The plot is obtained by consensus among community members wherein, almost every family maintains a plot next to a neighbor's or relative's plot. Most informants said that nobody convinced them to engage in the activity but seeing others earning income from it influenced them to have their own by putting stakes around a vacant lot next to the existing one with more or less similar size. It is usually the head of the family and the wife who initiate having the oyster plot.

Measuring, Plot Preparation and Marking the Boundaries

There is no sophisticated equipment or materials used to lay-out the oyster

farm as farmers don't measure the area, rather they estimate the dimension of their plots based on the adjacent plot and the capability of their family to tend. Bamboo stakes are used to mark the boundaries and sometimes discarded fishing nets are added to prevent the shells from being washed out during inclement weather.

Gleaning

Usually, the parents gather piso-size immature shells in the vast tidal flat which they scatter on their plot. Occasionally, young children would help in gathering the spats during weekends or holidays. Gleaning is done by picking without the aid of any tool or sometimes by the use a blunt bolo to dislodge shells from the substrate.

Location, Size, Quantity, and Source of Spats

Piso-size spats were commonly gathered from the nearby tidal flat. The oyster farmers cannot give a fixed volume or quantity of shells because they are not certain how much they can collect during low tide. However, all informants claimed that the wild stocks had declined which necessitates buying the spats/immature shells from a supplier in Manapao, Pontevedra, Capiz who sells the spats at Php40 or Php50 per tray or Php1200 per boat.

Monitoring, Harvesting, and Marketing

An old trowel or blunt bolo together with a pail is the commonly used tool in monitoring/sorting and harvesting of shells. During the harvest period, tray, sack, improvised gloves, and boots were used. Oyster farmers contacted the buyers directly through text messages and phone calls. However, some of these buyers come to the area to buy the harvested oysters at Php200 up to Php220 per tray. Higher demand was observed by informants when there are festivities in neighboring towns or in the city.

Gender Roles

It is a joint decision and responsibility of the husband and wife to engage in oyster culture. Through the influence of neighbors and relatives, the family obtains the plot by establishing rapport and consensus of the owners of the adjacent oyster farms. Both husband and wife help each other in all the activities in oyster culture. However, children help during weekends or holidays when there are no classes. Teenage sons are particularly requested to help during harvesting while younger children were involved in the gathering and scattering of spats as well as sorting of marketable-sized oysters. Women comprise 18.5 percent of oyster growers in the Philippines (Siar et al., 1995 & William, n.d.). This is an activity that women can easily engage in because of the proximity of the culture area to their home. The women mostly take care of their young children while the men go offshore to fish. When children are old enough, they help their mothers in gleaning (gathering of shells) for food or for culture. Because of oyster farming, women are able to contribute more

to their family income on a somewhat regular basis and still have time to tend to their homes.

In abalone fisheries, Prieto-Carolino et al. (2016) indicated that 13 percent of the workforce in the Philippines consists of women. They are involved in gleaning in the tidal flats, whereas, the men were doing all the diving. Women are confined to occupations that allow them to fulfill their household duties and responsibilities. Similarly, women in Panay, Capiz find oyster culture a convenient livelihood activity because it allows them to tend to their homes and at the same time contribute to the family income.

In Western Visayas, Siar et al. (1995) noted that the participation of women in the oyster fishery was mostly on harvesting and marketing. This is understandable because Filipinos, especially in rural coastal communities, still adhere to the traditional role of women whose priority is taking care of the family and tending to the household chores. However, women in Panay are involved not only in harvesting and marketing but in other activities from the very start of the farming process. In Sitio Bungcayao, women can still fulfill their duties at home because they only work for two hours in the oyster plots during low tide. They have ample time to take care of their family and tend to their homes.

Economic Activities of the Community

Most families have been farming oysters for more than 10 years and they maintain only one plot although occasionally a few would add another. Many of them started farming on their own initiative to have additional income.

Plots are usually approximately 200m² to 400m² with an average of 332m² (Table 2). Culture period takes 6-8 months with an average of 7 months, thus, when oyster shells were gathered in April, harvesting would start at about October or November and continue during successive months. Many would stock their plots during summer, usually in May just in time to harvest on Christmas season when the demand is high.

Two or more people maintain the oyster plots depending on the availability of family members during the low tide working for an average of 2 hours a day, an hour in the morning and another in the afternoon depending on the tide because the plots are regularly inundated.

An average of 17 sacks can be gathered from the plot on the first harvest and lesser on the succeeding months. The shells that have not reached marketable size are returned in the plot and left to grow together with the immature shells that are collected every now and then to increase the stocks. The farm gate price of an oyster is PhP 200 to PhP 220 per tray. There are two main harvests, however, farmers may be able to gather a considerable number of shells to sell the following month.

There are only two traders that frequent the area to buy the oysters. One of the traders is from Marita, President Roxas and another one is from Pontevedra although there is another oyster farmer who also acts as a trader because she buys the oysters of her neighbors and sells the oysters to her contact either in Pontevedra or in Roxas City.

The informants gave a very low amount of less than Php 2,000.00 as income from other sources; however, others gave a higher amount. The informants cannot give a regular amount because income from fishing is very erratic, nevertheless, the informants may have intentionally given a low amount thinking that the interviewers were giving capital to oyster farmers.

Table 2. Economic activities pertaining to oyster farming

Variables	Mean	Std. Deviation
Number of Plots Maintained	1.571	.997
Dimension of Plot	332.143	208.706
Oyster Culture period	7.071	1.152
Number of Persons Maintaining the Plot	2	1.206
No. of Hours Spent per day in Maintaining the Plot	2.286	.713
Number of Sacks of Oyster Harvested per Harvest	17.071	39.590
Price per tray of Oyster	207.857	9.947
Number of Harvest Per Year	2	.686
Number of Traders buying the Oyster per Harvest	2	.976
Income from other Livelihood/Month	1792.857	Range (1,000-5,000)

With the low income derived from artisanal oyster farming, there is a need to augment the income from other sources. It was observed that buri and pandan, as well as pasture grasses, are abundant in the locality which can be utilized as an alternative source of livelihood for the community.

In Gambia, a group of ethnic minority women belonging to the Jola tribe organized themselves into a formal association. They started as oyster gatherers but eventually expanded into shellfish aquaculture and mangrove protection to ensure better income and create a cohesive community which eventually grew into a formal association of 500 members assisted by USAID-funded sustainable fisheries. Having a formal organization, they were able to have a better harvest, bigger income and were able to expand their market and the group is looking forward to exporting their oyster harvest (Zaleski, n.d.). In Bungcayao, the oyster farmers are not organized into a formal association but they normally develop a kind of informal agreement among themselves as to boundaries, method, and pricing. Besides, there are 33 families that tend to 33 oyster plots in the locality. Nevertheless, the community is receptive to the idea of working together in a project as a group. Oyster farming may have played

an important role in the cohesiveness of the community since they work in adjacent areas.

Conclusions

The oyster farmers are relatively old and has low income below the minimum wage. They practice a primitive artisanal method of oyster farming which requires very low capital input. The dwindling wild stocks and unpredictable weather conditions affect their income.

The oyster farm is not only a joint venture of the husband and wife but a family enterprise where children also take part. Women contribute to the income of the family by taking part in oyster farming. Artisanal oyster farming has kept the community cohesive because they all have something to keep them busy together in a specific area which they have consensus to maintain without written rules or intervention of LGU.

Recommendations

To lessen the pressure on the natural stocks of oyster in Bungcayao, there is a need to introduce alternative livelihoods may be introduced since there are resources that are not being utilized (buri, pandan, pasture areas, and abundant empty shells). Policy on the establishment of sanctuary may be formulated to increase wild stocks. Training needs assessment may be conducted to identify a suitable intervention that will empower both men and women in the community.

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