

**SOCIOECONOMIC CONDITIONS OF BIVALVE COLLECTORS AND THEIR LIVELIHOOD RELATED ISSUES ASSOCIATED WITH ANAIWASALA AND DUTCH BAY AREAS IN PUTTALAM LAGOON IN SRI LANKA**

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**ABSTRACT**

The present study provides information about the current socioeconomic conditions and livelihood related issues of the Anaiwasala and Dutch bay area's bivalve collectors from July to August 2018. The highest percentage of bivalve collectors (34%) belong to the 31-40 age group and the lowest percentage in 11-20 and 61-70 age groups (03% each). Females (87%) and males (13%) were involved in bivalve collection, and all of them were married. Among the studied bivalve collectors 57%, 33%, and 10% of the bivalve collectors were Hindu, Christian, and Islam respectively. The present study shows that 37%, 40%, 20%, and 3% of the bivalve collectors have learned up to elementary level, junior secondary level, senior secondary level, and collegiate levels respectively. Families consisting of three members were dominant (37%) and most of them were (90%) nuclear families. During the July-August 2018 period, average monthly income per person per month was 14467 LKR. Among the studied bivalve collectors, 83% have own land and house and 73% of them were living in a partially completed house and 27% of them were lived in a completed house. According to the present study, 43% of the respondents don't have other income sources. Also, 47%, 7%, and 3% of the bivalve collectors were involved in fishing, labor works, and dry fish production as other income sources. Conflicts between bivalve collectors and lagoon fishers for the space, lack of income source when bivalve population is low in the lagoon, lack of institutional support and lack of stable price for their products were identified as the main livelihood related issues.

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**Introduction**

There are 45 lagoons on the entire coast of Sri Lanka (Silva, et al., 2013). Puttalam lagoon is one of the largest, ecologically, and economically important lagoon in the North-Western province of Sri Lanka. Puttalam lagoon is located in the Dry Zone of Sri Lanka, extending over 32,750 ha. Puttalam lagoon area gets rain mainly from the Northeastern monsoon. There is an extended dry season in other parts of the year (May – September). Kala Oya, Me Oya, and Moongil Ara are the main freshwater suppliers of the Puttalam Lagoon (IUCN, 2012). Puttalam lagoon is a shallow water body. Most of the places water

depth is about 1-2 m. But in deep canals within the lagoon water depth is around 4-5m. Puttalam district is divided in to eight fisheries inspector divisions for fisheries administration purposes; Vanatavillu, Puttalam, Mangalaeliya, Baththuluoya, Palakuda, Kandakuliya, Kalpitiya mainland, and Kalpitiya Island (DFAR, 2013). Anaiwasala and Dutch bay area belong to the Kalpitiya Divisional Secretariat of the Puttalam District (IUCN, 2012). The finfish (Marine and brackish water food fishes and ornamental fishes) and shellfish (shrimp, lobster, crab, bivalves, and gastropod) and sea cucumber are mainly harvesting from the Puttalam lagoon (DFAR, 2013). Several authors have mentioned the

bivalves and gastropods in the Puttalam lagoon. Research carried out by Dayaratne, et al. (1997 cited in IUCN, 2012, p.123) has reported six edible bivalve species and non-edible oyster species from the Puttalam lagoon. Edible bivalves are, Oyster (*Crassostrea madrasensis*), Mussel (*Modiolus auriculatus*), Cockles (*Gafrarium tumidum* and *Anadara antiquata*), and Clams (*Marcia opima* and *M. hiantina*). Window Pane oyster (*Placuna placenta*) has reported as non-edible oyster species. There is a big demand for Indian Chanks (*Turbinella pyrum*) in the Puttalam lagoon because they are exported for ornamental purposes (Long et al., 2010 cited in IUCN, 2012, p.123). Several authors have studied the socioeconomic condition, livelihood issues, and environmental issues of the lagoon fishers of the Puttalam lagoon (Gunathilaka, 2019, De Silva et al, 2017, DFAR, 2013, IUCN 2012, Dayananda, 2004). But the socioeconomic condition and related issues of the bivalve collectors were poorly studied. The Objective of the present study was to investigate the current socioeconomic conditions and associated issues of the bivalve collectors' community in Anaiwasala and Dutch bay areas in the Puttalam district of the North-Western province, Sri Lanka.

## Method and Materials

### Study Area and Data Collection

The study was conducted in the Anaiwasala and Dutch bay areas in the Puttalam district of the North-Western province, Sri Lanka during July and August in 2018. Randomly selected 30 bivalve collectors were interviewed with a semi-structured questionnaire. Data were collected on age, religion, gender, number of family members, education level obtained, experiences, nature of the occupation, fishing gear and craft ownership, type of fishing gears and crafts, bivalve selling methods, bivalve processing methods, average monthly income, other income sources, condition of the house, use of electricity and other electric equipment, available vehicles, drinking water source, sanitation facilities, training received, savings and bank usages, smoking, and liquor addiction, etc. Data on livelihood related issues were collected by discussions. Data were analyzed using simple statistical methods in Microsoft Excel 2013 version.

## Results and Discussion

According to the present study, the highest percentage of the bivalve collectors (34%)

belonged to the 31-40 age group and the lowest percentage belonged to 11-20 and 61-70 age groups (03% each). The results show poor interest of younger people for bivalve collection. The study shows, 87% of males and 13% of females were involved in bivalve collection, and all of them were married. The majority of the fishermen (57%) were Hindu, 33% were Christian and 10% were Islam. No other religions were found.

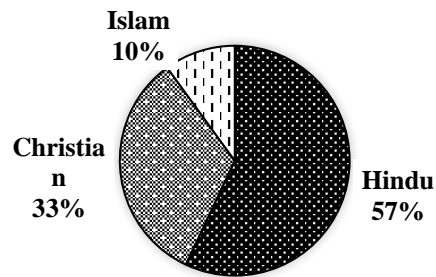


Figure 01: Religion of the studied bivalve collectors.

The present study shows that families with 03 members were dominant (37%) in the community. Families with 01 and 07 members showed less percentage (3% of each). The number of families with 2, 4, 5, and 6 members was showed 13%, 30%, 7%, and 7% respectively. According to the present study, 90% of them were nuclear families. About 37%, 40%, 20%, and 3% of the bivalve collectors have learned up to elementary level, junior secondary level, senior secondary level, and collegiate levels respectively. This shows the education level of the majority of the bivalve collectors is poor.

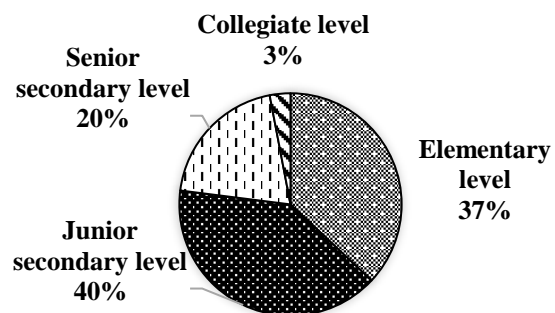
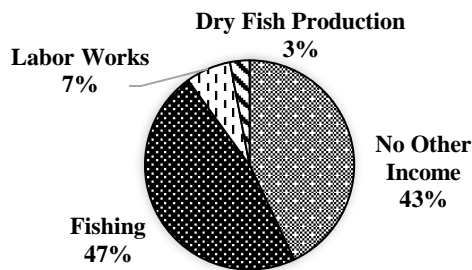


Figure 02: Education level of the studied bivalve collectors.

According to the present study, 7%, 33%, 57%, and 3% of the bivalve collectors have spoken Sinhala only, Tamil only, both Sinhala and Tamil, and Sinhala, Tamil, and English respectively. Also, 43% of the bivalve collectors were registered fishers. 100% of the bivalve

collectors have involved with this occupation full-time basis. 63%, 20%, 7%, and 10% of the bivalve collectors were involved in bivalve collection 1-10, 11-20, 21-30, and 31-40 years respectively. The study shows, 20% of the bivalve collectors have their fiberglass boats. All the bivalve collectors used hand picking method to collect bivalves. According to the bivalve collectors, Bivalves available from April to September in the Puttalam lagoon. This period is the dry season of this area during the South-West monsoon. When the water level decreases people involve with bivalve collection. During this period, they worked 08 hours per day and 17-18 days per month. Among the bivalve collectors, 100% were sold their product as a dry product. There was a high demand for dried bivalves in these areas. From July to August period, the average monthly income per person was 14467 LKR. During the present study it was found that 43% of the studied bivalve collectors don't have other income sources. Among rest of the bivalve collectors, 47% of them were involved in fishing activities and others were involved in labor works (7%), and dry fish production (3%) as other income sources.



**Figure 03:** Other income sources of the bivalve collectors.

The present study shows 83% of the studied bivalve collectors have their land and house. The area of the land ranged between 10-160 perch. Also, 73% of them were lived in a partially completed house and 27% of them were lived in a completed house. Among the respondents, 87% of them have electricity supply in their houses. Also, 73%, 37%, 3%, and 87% of the bivalve collectors have television, radio, land phone, and mobile phone respectively. Also, 50% of the bivalve collectors have foot bicycle and 13% of them have both motor bicycles and foot bicycles. The results of the present study show 90% of bivalve collectors were used purified water for drinking purposes and 10% were used water

supplied from the tap lines for drinking purposes. When consider about the sanitation facilities, 93% of the bivalve collectors have used their lavatory and 20% don't have their lavatory. This shows family wealth is at a satisfactory level. But, 37% of the bivalve collectors were smoked, 50% of them were consumed liquor and 33% of the bivalve collectors were smoked and consumed liquor. The present study shows that 37% of the studied community has health hazards such as high blood sugar levels, wheezing, gastritis, and appendicitis. According to the current study, 80% of the respondents have a bank account and 20% haven't. Also, 70% of the bivalve collectors have borrowed money from a bank or any other institutes. From the people who have borrowed money, borrowed amount range is 30,000-300,000 LKR. Most of them borrowed money to buy the nets, build the house, for businesses, and buy fishing crafts. None of them were participated in any training program related to fisheries and aquaculture. The present study shows, 100% the bivalve collectors were satisfied with the occupation. Conflicts between bivalve collectors and lagoon fishers for space was identified as a major issue. Lagoon fishers blame to the bivalve collectors because they think lagoon gets polluted because of the bivalve collection. Lack of income source when bivalves low in the lagoon, lack of stable price for their products, lack of institutional support for their occupation were identified as other livelihood related issues.

### Conclusion

Bivalve collectors' income is at low level. But, the majority of the bivalve collectors have other income sources as well. So that, they can manage their requirements. In the Puttalam lagoon bivalves available only during part of the year. During this period, there is a big demand for bivalves. It was suggested to introduce post-harvest techniques and processing methods for bivalve collectors with the support of relevant institutes. Also, relevant authorities should restore the issues found in these communities because they give at least a small contribution to the development of the fisheries sector of Sri Lanka.

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