JPB JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194

IMPLEMENTATION AND TRIAL OF BASIC POWDER TO INCREASE FISHING RESULTS IN THE WATERS OF LHOK PAROY, ACEH BESAR

Muhammad [1*] , Syamsul Rizal [2] , Zulfan [3] , Syarifuddin [4] , Zulkarnain [5] , Rizwan [1] , Tasya Aspia [1]

[1] Department of Utilization of Fishery Resources, Faculty of Marine and Fisheries , Universitas Syiah Kuala, Indonesia
[2] Department of Marine Science , Faculty of Marine and Fisheries , Universitas Syiah Kuala, Indonesia
[3] Department of Sociology , Faculty of Faculty of Social and Political Sciences, Universitas Syiah Kuala, Indonesia
[4] Department of Law , Faculty of Law , Universitas Syiah Kuala, Indonesia
[5] Department of Physics, FMIPA , Universitas Syiah Kuala, Indonesia

Corresponding author: muhammad@usk.ac.id

ABSTRACT

Bubu is one type of fishing gear that operates passively on the bottom of the water. In general, bubu is classified as a catching device in the form of a cage or a closed room, where the fish that enter it cannot come out again. This dedication program aims to apply and test the bottom trap construction that is operated in the waters of Lhok Paroy, as well as evaluate its effectiveness in increasing the catch of local fishermen. This activity was carried out in July-August 2023, located in Paroy Village, Lhoong District, Aceh Besar Regency. The method used is a test method (experimental fishing) by operating a trap directly in the location. The result of the dedication shows that the construction of the trap used has a length of 1.5 m, a width of 1.0 m, and a height of 0.5 m, with a mesh size of 2 inches, additional weights tied to the rope of the branch, and a buoy as a marker of the presence of the trap . As many as 6 species of fish were identified in the catch of bubu, namely red snapper (Lutjanus malabaricus), grouper fish (Epinephelus coioides), chicken fish (Balistoides viridescens), pomace fish (Platax teira), gaga snapper (Lutjanus rivulatus), and treacherous fish (Lutjanus johnii). The total number of fish caught was 16 from 3 trips, with a total weight of 13,474 grams. This result shows that the application of this basic trap has the potential to increase the catch of fishermen in the waters of Lhok Paroy, Aceh Besar.

Keywords : application of bubu; the catch ; lhok paroy waters .

INTRODUCTION

Aceh Besar Regency is located in the region of North and West Aceh Waters, with a coastline length of 344 km and an area of sea waters of around 2,796 km². The region also has 21 islets, including the two outermost islets (Muchlisin et al., 2012). Biodiversity on the coast and sea of Aceh Besar is very high, one of which is shown by the coral reef ecosystem covering an area of 1,155 hectares (DKP Aceh Besar, 2011).
The coral reef ecosystem functions as a habitat with high productivity and a home for various types of economically valuable fish. This biodiversity makes coral reef waters a prime location for fishing activities, especially for coastal communities, including communities living around the waters of Lhok Paroy, Lhoong District, Aceh Besar Regency.

JPB JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194

In order to maintain the sustainability of fish resources and maximize the potential of fishermen's catch, this dedication program focuses on the application of environmentally friendly fishing gear design, namely the base trap. Bubu is a fishing tool that operates passively on the bottom of the water. This device is shaped like a cage or a closed room, where the fish that enter cannot get out (Gordon & Djonler, 2015). Bottom lures are designed specifically to catch demersal fish or fish that live around coral reefs by trapping; fish can enter easily, but it is difficult to get out (Sitangang, 2012).

The effectiveness of the trap as a fishing tool is influenced by various factors, such as bait, the presence of biota, fish behavior, operating methods, and the form of construction of the trap itself. However, the construction of traps used by fishermen currently still has the potential to be further developed through scientific research, in order to increase the effectiveness and productivity of fishing. Therefore, this service program aims to apply an environmentally friendly bottom trap design in the waters of Lhok Paroy and conduct trials to evaluate its effectiveness in increasing the catch of local fishermen. It is hoped that the application of this basic trap can be an alternative solution for more efficient and sustainable fishing activities, as well as supporting the improvement of the well-being of fishermen in the waters of Lhok Paroy, Aceh Besar.

METHODS

Time and Place

The implementation of this service was carried out from July to August 2023, located in Paroy Village, Lhoong District, Aceh Besar Regency.

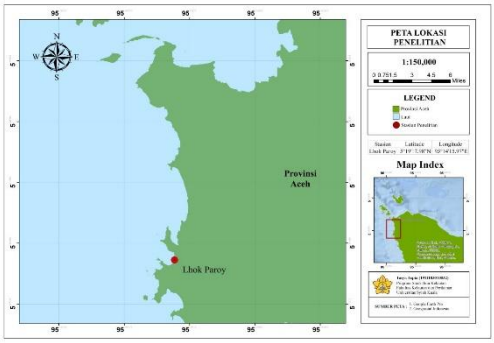


Figure 1. Location

The method applied in this service program is a trial method (experimental fishing) by directly operating a trap at the location. The trial was carried out in three trips, each of which involved the operation of seven bubu units. The purpose of this experimental fishing method is to collect catch data obtained during the activity. The catch obtained is then calculated based on the number of individuals, weight (in grams), and species identification from the catch.

The data analysis used in this devotional program is a descriptive analysis. The descriptive method is an approach to data collection through survey and direct observation in the field, with a focus on intensive and detailed data collection related to a case. This aims to obtain a comprehensive picture as a result of the collection and analysis of data in a certain period of time and limited to a certain area (Nasir, 2003). Data analysis is done by describing the general construction of the trap in detail. In addition, the analysis also focuses on the catch,

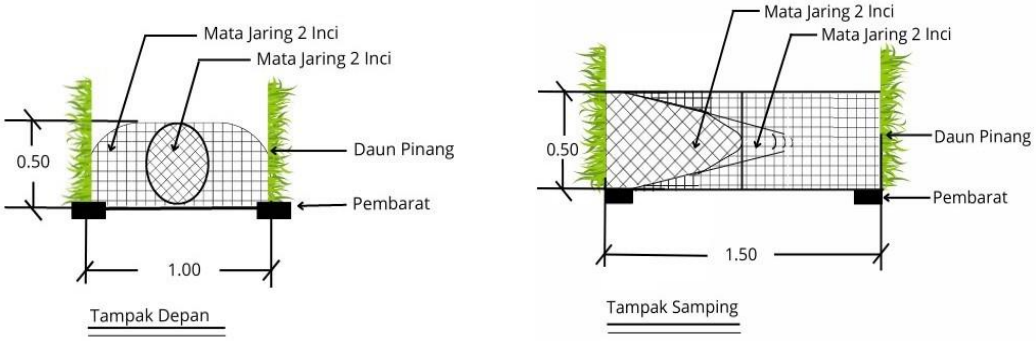
JPB JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194

which includes type, amount, and weight. The results of the catch during the activity are presented in the form of tables and diagrams to illustrate the productivity of the catch. The data analysis process also utilizes Microsoft Excel software to simplify data processing.

RESULTS AND DISCUSSION

1. Bait Catcher Specifications

The specifications of the tools and reconstruction materials used in this dedication consist of iron wire (galvanized), rattan, rope, wood, areca leaves, kali stones, buoys, premium raffia rope, and bricks.



Picture 2. Bubu construction

2. **Procedur Making Pubu**

As for the steps of making bubu done as follows:

1. Measured wire mesh and cut it using cutting pliers with a size of 60 x 40. The cutting box is done in the middle of the mesh wire eye (MKB).
2. Rolled and joined the two parts of the 40 MKB wire body using combination pliers to connect (lock) the pieces of wire. Leave 9 MKB that are not connected for the mouth part of the mouth. In this step , the wire will be like a tube shape .
3. Shape the wire into a 20 x 40 x 10 MKB beam by pressing and bending the wire with both hands. Make sure one of the side ribs is 40 x 20 MKB
4. Cut the part of the wire that is not locked in the middle of the 10th MKB and leave only the base part. Then, the base part is attached to the upper part which functions as a cover for the back of the bubu.
5. The rest of the piece of bubu wire is used for the mouth of the bubu, the left and right sides are cut in the middle of the 3rd MKB. Cutting is done in a zig-zag fashion, the rest of the pieces are joined with two wires and then connect the rest of the pieces of wire as many as 3 rows of boxes.
6. Join both the left and right sides of the wire by tying 4 points of the wire, namely on MKB to 3,4,5 and 6 (as shown in the picture). Then, cover the roof of the bubu's mouth with a square wire measuring 5 x 5 MKB.
7. Cut 2 pieces of coiled wire measuring 4,5,6 MKB each. Then, one part of the end of the wire is rolled like a fishing hook that works as a hook.
8. Attach the pieces of wire to MKB to 7,8, and 9 with the winding wire sequence from short to long. Tie the coiled wire and mouth of the mouth using polyethylene raffia rope
9. Attach the mouth of the mouth to the front of the body of the mouth. Cut 2 bubu wires with

JPB JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194

10 x 8 MKB, then attach them to the right and left sides of the bubu to cover the open part

10. Install 4 100 cm middle base sticks on the bubu base, at the time of installation leave a space of 10 MKB in the middle of the base for the entangled fish intake door. Tie the wood to the bubu using polyethylene raffia rope in the middle, right and left. Then install 2 side base sticks measuring 150 cm on the right and left side of the bubu base and tie back using raffia rope.
11. Cut the wire in the middle of the bubu base in a rectangular shape without a base measuring 14 x 7 MKB. Insert a 100 cm stick between the 150 cm stick and the dowel.
12. Install and tie 3 pieces of rattan on the right side to the left side of the bubu. 1 cane at the back, 1 cane at the front and one at the end of the mouth of the mouth . Tie the mouth of the mouth with a cane on it to raise the mouth of the mouth.
13. Install a brick as an additional weight on each bottom corner of the right and left sides of the block. Tie the bricks using raffia rope with a fishnet knot . Then put the areca leaves on the right side , the left side and the bubu roof , tie using raffia rope .
14. Cut the PE rope with a measurement of 3 m and 5 m. Tie the two corners of the base of the mouth using both ends of the 3 m rope and make a knot in the middle of the 3 m rope to connect the 5 m rope. Then, connect the two ropes and tie a weight stone to the end of the 5 m rope. Then, cut back the rope with a measurement longer than the depth of the water where the trap will be installed. Tie a weight stone with one end and one end tie a float.

Picture 3. Bait used

3. Composition of Bait Catch Based on Weight

Based on the activities in the field, the bubu fishing gear shows that each catch during this activity varies. The total catch on the first trip to the third trip on the bubu fishing device was 13,474 grams. Therefore, on the fishing gear, it can be seen that the highest catch is on the first trip. It can be seen more clearly in the table

Table 4.2. Composition of Bait Catch

Trip	No	National Name	Latin name	Min	Max	Number of Individuals	Total (grams)
	1	Red snapper	*Lutjanus malabaricus*	423	1,074	10	6,330
1	2	Grouper	*Epinephelus coioides*	1,066	1,066	1	1,066
	3	The	*Balistoides viridescens*	1,418	1,418	1	1,418

JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194

		chickens					
	4	pom pom	*Platax teira*	207	207	1	207
2	5	Snapper gaga	*Lutjanus rivulatus*	692	692	1	692
	6	Treachery	*Lutjanus johnii*	911	911	1	911
3	7	pom pom	*Platax teira*	2,850	2,850	1	2,850
Total Bait Catch 13,474							

(Source : Processed data).

The average total weight of the fish caught on the bait is in the range of 207 - 2,850 grams. The fish with the highest total weight is pomace (*Platax teira*) trip 3 while the fish with the lowest weight is pomace (*Platax teira*) trip 1. The comparison of bubu catches can be seen in picture 4 below.

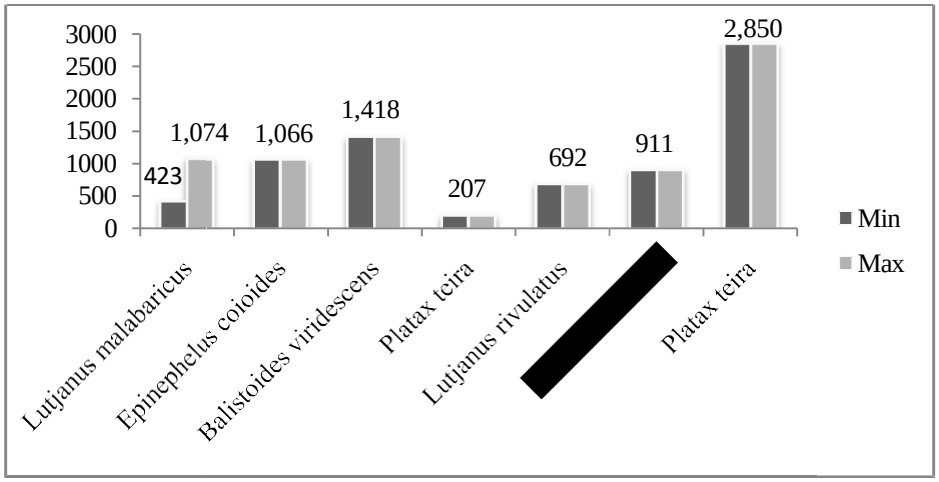
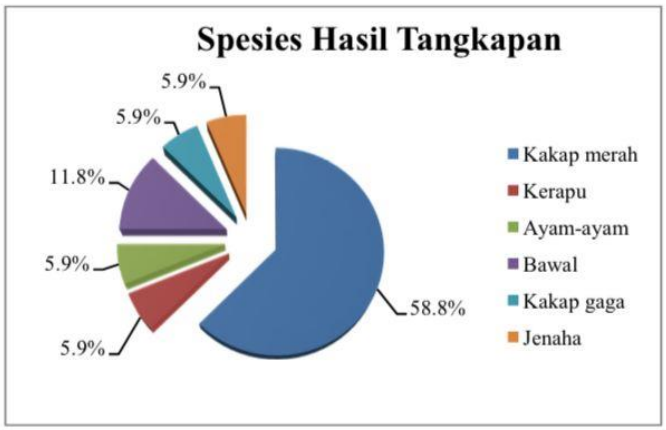


Figure 4. Comparison of bubu catches based on weight

4. Composition of Bait Catch Based on type

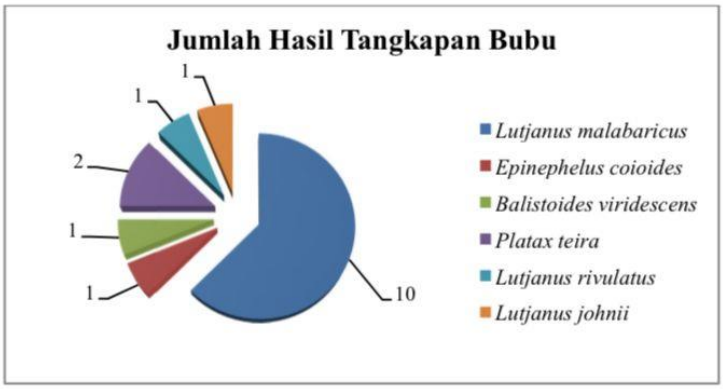
Based on the identification of the results during 3 trips, it shows that the dominant catch on the bubu fishing gear is red snapper at 58.8%, followed by pomfret at 11.8% and then followed by grouper, chickens , gaga snapper and jenaha respectively . amounting to 5.9%. The total catch of traps based on the type of species can be seen in picture 5 below .

JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194



Picture 5. Total Bubu catch based on species type .

The catch from the trap that has been operated based on the results, there are 6 species including 10 red snapper (Lutjanus *malabaricus)* , 1 grouper (Epinephelus *coioides)* , 1 chicken (Balistoides *viridescens)* , pom pom (*Platax teira*)) 2 tails, snapper (*Lutjanus rivulatus*) 1 tail, and jenaha (*Lutjanus johnii*) 1 tail . More details can be seen in picture 6.



Picture 6. Total Bubu catch based on the number of species.

CONCLUSION

Based on the activities that have been carried out , it can be concluded that the bubu construction used has a length of 1.5 m, a width of 1.0 m and a height of 0.5 m, *a mesh size of* 2 inches and additional weights that have been tied to the branch ropes and floats as markers of the existence of the bubu. . The results of the catch using the bait fishing gear identified 6 species consisting of red snapper (*Lutjanus malabaricus*), grouper fish (*Epinephelus coioides*), chicken fish (*Balistoides viridescens*), pomace fish (*Platax teira*), gaga snapper (*Lutjanus rivulatus*). and treacherous fish (*Lutjanus johnii*). The total number caught on the trap is 16 fish from the results of 3 trips with a total weight of 13,474 grams.

BIBLIOGRAPHY

DKP Aceh Besar. 2011. Aceh Besar Regency Marine and Fisheries Department Statistics Year 2010. Aceh Besar Regency Marine and Fisheries Department, Jantho.

JURNAL PENGABDIAN BANGSA
Vol 4 No 1 Tahun 2025, pp. 1 – 7 | ISSN: 2964-1772 | DOI: https://doi.org/ 10.61992/jpb.v4i1.194

Fachruqi W, Muhammad Kurnia, Musbir. 2019. Study on the Utilization of *Light Emitting Diode* (LED) Lights Underwater as a Fish Lure Tool on Lure Catchers. Proceedings of the National Marine and Fisheries Symposium VI, Hasanuddin University (8 pages). Makassar.

Mizwar E. 2015. Modification of folding traps for lobster utilization [thesis]. Bogor (ID): Bogor Agricultural Institute.

Muchlisin, ZA, N. Fadli, AM Nasution, R. Astuti, Marzuki, D. Amuni. 2012b. Analysis of non-fuel fishery subsidies in Aceh Besar Regency, Aceh Province. Depik, 1(3): 172-178.

Sitanggang, LP (2012). Bubu Fishing Development For The Sustainability Of Sibolga Fishermen [Thesis]. bogor agricultural institute.

Natsir, (2003). Quantitative, Qualitative, and R&D Research Methods. Alphabet, Bandung.