



The Use of Rumpon: Fish Aggregate Device (FAD) Made of Artificial Boat for Fishing Activities in Pasar Sorkam Village, Central Tapanuli Regency, North Sumatera Province

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Abstract. Pasar Sorkam Beach, Binasi Village is an area with many large coastal areas with an area of 3.85 km², with a population of 1262 people and an average livelihood as a fisherman, with a total catch of 40234.7 tons. Based on information from POKMASWAS and temporary fishing groups, there are problems, that is the decline in fish catches due to damage to the ecosystem caused by illegal fishing and fishing that is Harmful to the environment, so that a solution is needed to solve this problem, namely by making fish aggregate device (FAD) called Rumpon that support sustainable fisheries so that it is in line with Sustainability Development Goals (SDGs) number 14. The method of implementing this activity is the educational method with demonstrations and counseling through four stages, preparation of activities, field practice, socialization, monitoring and evaluation. The results and discussions obtained were that preparation of activities was carried out after site surveys and literature studies with experience in using Rumpon, construction planning and determining the release of Rumpon, field practice was carried out by releasing Rumpon by all activity participants and accompanied by the Indonesian Navy, the release is intended as a new fishing ground for fishermen, socialization of activities attended by all participants, monitoring and evaluation, monitoring through the head of POKMASWAS, evaluation using a questionnaire with 15 questions about the condition of fishermen, community service activities are conducive and fishing group mitra are very enthusiastic about this activity.

Keyword: Fish Aggregate Device, Rumpon, Sorkam

Abstrak. Pantai Pasar Sorkam, Kelurahan Binasi merupakan daerah dengan banyak kawasan pantai yang cukup luas dengan luas wilayah 3,85 km², dengan jumlah penduduk 1262 jiwa dan rata-rata bermata pencaharian sebagai nelayan, dengan hasil jumlah tangkapan 40234,7 ton, Berdasarkan informasi POKMASWAS dan kelompok nelayan sementara ini terdapat permasalahan yaitu hasil tangkapan ikan menurun disebabkan rusaknya ekosistem diakibatkan penangkapan illegal dan penangkapan yang tidak ramah

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lingkungan, sehingga diperlukan solusi untuk mengatasi permasalahan ini yaitu dengan membuat fish aggregate device (FAD) yang disebut Rumpon rangka kapal sebagai alat bantu penangkapan ikan yang mendukung perikanan berkelanjutan sehingga sejalan dengan Sustainability Development Goals (SDGs) nomor 14. Metode pelaksanaan kegiatan ini ialah metode edukasi dengan demonstrasi dan penyuluhan melalui empat tahapan, persiapan kegiatan, praktik lapangan, sosialisasi, monitoring dan evaluasi. Hasil dan diskusi yang didapatkan persiapan kegiatan dilakukan setelah survey lokasi dan studi literatur dengan pengalaman penggunaan Rumpon,, perencanaan konstruksi dan penentuan pelepasan Rumpon, praktik lapangan dilakukan dengan pelepasan Rumpon oleh seluruh peserta kegiatan dan didampingi oleh TNI Angkatan Laut, pelepasan diperuntukan sebagai fishing ground baru bagi nelayan, sosialisasi kegiatan dihadiri oleh seluruh peserta, monitoring dan evaluasi, monitoring melalui ketua POKMASWAS, evaluasi menggunakan angket dengan 15 pertanyaan seputar kondisi nelayan, kegiatan pengabdian masyarakat berjalan kondusif dan mitra nelayan sangat antusias dengan kegiatan ini.

Kata Kunci: *Fish Aggregate Device, Rumpon, Sorkam*

Received 20 August 2022 | Revised 24 August 2022 | Accepted 26 June 2023

1 Introduction

Pasar Sorkam Beach, Binasi Village is an area with large coastal areas with an area of 3.85 km², which has a population of 1262 people and an average livelihood as a fisherman [1]. with a total catch of 40,2347 tonnes in 2017[2]. type of fish caught, tuna mata besar (big eye tuna), madidihang (yellowfin tuna), albacora (longfin tuna), and cakalang (skipjack tuna) [3]. But on the other side, the number of jobs available in the region is not commensurate with the number of youth.

Fishermen groups in the Binasi sub-district, with Those potential formed a community monitoring group (POKMASWAS), which is located in Pasar Sorkam village, West Sorkam District, Tapanuli Regency, North Sumatera Province. consists of a group of fishermen called the mackerel fishing group which is still classified as traditional. The formation of POKMASWAS has been recorded in the notary deed on January 25, 2022, So it can be said that POKMASWAS is still new and needs support from the local government and academics in the North Sumatera region.

Based on information from POKMASWAS and the fishermen's groups, there is currently a problem, that is the declining fish catch, caused by illegal fishing and fishing practices using potassium poisons and explosives, resulting in damage to coral reefs and loss of function of aquatic ecosystems in fishing ground areas, As a result of this activity, the production of catches is decreasing and it is difficult for fishermen to find fish in the nearest waters. Seeing the conditions and situation in Pasar Sorkam village, West Sorkam District, Central Tapanuli Regency, Seeing the conditions and situation in Pasar Sorkam village, West Sorkam District, Central Tapanuli Regency, the USU community service team took the initiative to offer solutions to problems that occurred in mitra areas, by making a Rumpon made of artificial boat that are no longer operating as boat , it is hoped that it can become a fish stock, making it easier for groups of fishermen for fishing operations to determine fishing grounds and fishermen to reach closer

waters without incurring large costs, and linear with the priority of Sustainability Development Goals (SDGs) number 14, which is to conserve and sustainably utilize marine and oceanic resources for sustainable development.

2. Methodhs

The implementation method used to overcome mitra problems is the educational method with demonstrations and counseling to POKMASWAS Mitra, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency. North Sumatera Province. Through four stages, that is preparation of activities, field practice, socialization of material exposure to fishermen in support of Fisheries Management Areas (WPPRI), where fishermen can utilize, maintain and supervise fish resources so that they are managed properly, responsibly and sustainably. The presentation of the material was carried out using a sharing session system, followed by monitoring and evaluation using a questionnaire system given to fishermen to find out the comparison of catches before and after the application of rumpon made of artificial boat, All stages of applicative activities in the field are carried out by mitra, communities, students and service teams who have competence in their respective fields accompanied by supervisors from The Indonesian Navy, Pasar Sorkam Village Village, West Sorkam District, Central Tapanuli Regency.

3. Result and Discussion

3.1 Activity Preparation

The preparation of the activity was carried out after a site survey and literature study, then the community service team with mitra POKMASWAS, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province was Conducted direct visits to outreach locations, followed by Mitra interviews regarding the used of previous Rumpon, planning for Rumpon construction, and determining Rumpon made of artificial boat release locations as strategic fishing ground areas for fishing groups, the results of the preparation of activities can be seen in table 1.

Tabel 1. Activity Preparation

No	Activities	Information
1	Preparation and Provision of tools and materials to support community service	Community service team and mitra
2	Preparation for making FAD(Rumpon) by working together	Mitra
3	Preparation of time adjustment for community service implementation with POKMASWAS and fishing group	Community service team and mitra
4	Preparation of training sites, with materials on upgrading and skills in making FAD(Rumpon)	Community service team and mitra

5	Preparation of educational materials and percentage theory (LCD, stationery and questionnaire)	Community service team and mitra
6	Preparation of facilities and infrastructure for releasing FAD (Rumpon) into the sea (fishing ground area)	Community service team and mitra

The community service team prepares the tools and materials needed in making rumpon made of artificial boat, which is using an inoperable artificial boat with a size of 4m x 1.5m modified by adding coconut tree, lontar or thatch as an attractor that serves to lure fish to gather [4]. Then given a concrete ballast using cast, it takes approximately two weeks to complete, and involves POKMASWAS working together. The results of the Rumpon made of artificial boat construction can be seen in Figure 1.



Figure 1. Construction of Rumpon made of artificial boat ; a) from concrete mold, b)concrete mold activities, and c) FAD Rumpon

3.2 Field Practice

Implementation of field practice activities for releasing rumpon made of boat artificial by the Universitas Sumatera Utara community service team, POKMASWAS Mitra, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province and supervisors from The Indonesian Navy. the activity was carried out with all participants using 8 fishing boats, the location of the release of Rumpon for FAD(Rumpon) truss at coordinates

1°29'21.4"LU 98°19'29.0"BT. The distance to the location point takes 4 hours to travel by fishing boat, the length of the distance is due to unfavorable weather factors and high sea waves.



Figure 2. Activities to release of Rumpon made of artificial boat

The process of releasing rumpon is carried out in strategic location for fishermen which will later become fishing ground areas by fishermen, he released of Rumpon is carried out by 4 fishing boats in stages: releasing Rumpon truss, releasing for concrete, and marking rumpon attractors. Function of rumpon is to make it easier for fishermen to catch fish and fishermen can reach closer waters without requiring large costs. The use of rumpon for fishing activities has improved the effectiveness and efficiency if compared with other fishing gear [5]. Besides that, the purpose of installing this rumpon is to make it easier for fishermen to find places to operate their fishing gear, prevent destructive fishing caused by explosives and poisons and increase fishermen's catches. Fishermen are frequently returned to sea with little results, especially in the absence of technological application [6].



Figure 3. Released of the FAD(Rumpon) made of ship truss

3.3 Activity Socialization

Presentation of Activity Socialization materials to POKMASWAS Mitra, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province. Socialization Activities carried out after the release of rumpon made of artificial boat, presented in the form of

a sharing session with the material Fisheries Management Areas (WPPRI), where fishermen can utilize, maintain and supervise fish resources so that they are managed properly, responsibly and sustainably. explained by the community service team, the presentation of the material was carried out at the POKMASWAS secretariat location, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province. Socialization This activity was attended by 26 participants consisting of fishermen's groups.



Figure 4. Socialization of Activities to POKMASWAS Mitra, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province.

3.4 Monitoring and Evaluation

The monitoring implementation carried out follow-up evaluations based on questionnaires data and observations through POKMASWAS fishermen, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province. The evaluation process is carried out using a questionnaires, there are 15 questions contained in the questionnaire, to describe the condition of fishermen before the release of FAD Rumpon , FAD(Rumpon) made of ship truss, The overall description of the points given is the total catch production of fisherman, fisherman effort costs and fisherman's production margins. This is to compare the data before and after using the Rumpon. So that this Rumpon can be considered effective in increasing fish catches and maintaining the availability of fish in fishing areas.



Figure 5. Questionnaires for Monitoring and evaluations

4. Conclusion

The University of North Sumatera community service team consisted of four lecturers, one supervisor from The Indonesian Navy, five students and attended by POKMASWAS partners, Pasar Sorkam Village, West Sorkam District, Central Tapanuli Regency, North Sumatera Province. All planned community service activities can be completed conductively, fishing group mitra were very enthusiastic about the programs provided, programs that accommodate the aspirations of fishermen, with this program, can provide support to POKMASWAS partner fishermen in solving problems in the village.

5. Acknowledgment

This article is one of the result of community service program ABDIMAS TALENTA USU 2022. Funded by the Universitas Sumatera Utara Number: 319/UN5.2.4.1/PPM/2022. The authors would like to thank the Rector of the Universitas Sumatera Utara, LPPM USU, POMASWAS, fisherman, all students and all participants in this activity.

REFERENCES

- [1] Badan Pusat Statistik, "Kecamatan Sorkam Barat Dalam Angka 2021," *Badan Pusat Statistik Tapanuli Tengah*, 2021. [Online]. Available: <https://tapanulitengahkab.bps.go.id/>. [Accessed: Aug. 7, 2022].
- [2] Badan Pusat Statistik, "Produksi Perikanan Laut dan Harga Ikan Menurut Jenisnya di Kabupaten Tapanuli Tengah 2017," *Badan Pusat Statistik Tapanuli Tengah*, 2021. [Online]. Available: <https://tapanulitengahkab.bps.go.id/>. [Accessed: Aug. 7, 2022].
- [3] *sdgs.bappenas.go.id*. (2019, april 28). Retrieved Agustus 07, 2022, form <https://sdgs.bappenas.go.id/tujuan-14/>.
- [4] Pitriadi, P. 2020. Kegiatan konservasi lingkungan dengan pelepasan FAD(Rumpon) di desa wanasari Kecamatan Sungai Loban. *Jurnal Pengabdian Kepada Masyarakat*. 1(4):300-306.
- [5] Yusfiandayani,R. 2013. Fish aggregating devices in Indonesia: Past and present status on sustainable capture fisheries. *Galaxea, Journal of Coral Reef Studies*. 1(15): 260-268.
- [6] Manurung, V.R., Khairunnisa., Siregar, R.F., Dewinta, A.F., and Hasibuan, J.S. 2022. Education of Fish Detection Tools (Fish Finder) to Fishermen in Dusun XI Percut Sei Tuan Village, Deli Serdang Regency. *Jurnal Pengabdian Masyarakat ABDIMAS TALENTA*. 1(7):139-144.