



# Development of Sea Gulp Caulerpa Sp Culture in The Ytr Letman Tour Islands of Central Maluku

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**Abstract:** To maintain the cultivation of sea grapes while developing the tourism potential of the YTR area, an effort is needed to develop a sea grape cultivation area that provides unique value and new experiences to visitors or tourists how to learn to love the environment, especially aquatic ecosystems through educational tourism. The goal is to conserve sea grape resources that have economic value for the community and increase public awareness of the availability of resources in nature, train students to apply the knowledge gained in lectures to the community and build an entrepreneurial spirit from an early age. The training provided to the community consisted of: 1). Entrepreneurship counselling; 2). Training on making cultivation containers (quadrant nets) and sea grape cultivation (lat) to support educational tourism in the YTR area. The construction of sea grape cultivation containers in the form of frames / quadrants was carried out by Polikant students, then the results were socialised to the Letman community and the YTR Pokdarwis group and then worked together at the cultivation site in the YTR tourist area. The evaluation results showed positive feedback from the community and the product was developed into one of the souvenirs of the YTR Letman tourist.

**Keywords:** Sea Gulp; Entrepreneurship counseling; Cultivation; Community.

## Introduction

Coastal areas are transitional areas between land and sea. When viewed from the aspect of the coastal line, the coastal area has two boundaries, namely the boundary parallel to the coastline (long shore) and the boundary perpendicular to the coastline (cross shore). The development of coastal tourism is focused on the characteristics of the ecosystem as a basic strength possessed by each region, such as scenery, art, and community characteristics. According to Yusiana (2013), tourism development of an area begins with determining the objects and tourist attractions available and then assessing the potential for development. The results showed that the beach is not only utilised as a natural tourist attraction, but can also be utilised as a

marine biota cultivation area that has the potential as a tourist attraction (Fahrudin, 2013).

White sand beach is one of the attractions of Southeast Maluku Regency which has the potential to be developed into sustainable tourism (Sustainable Tourism) because the beaches in Southeast Maluku have a beautiful attraction. Yeer Teran Retut (YTR) Letman Beach, is a coral island with white sand which is the bottom of the water. It is located in Ohoi Letman, 15 km from the capital of Langgur district. The YTR area offers a flying fox tourist attraction, a beautiful beach view seen from the rock hill (YTR peak). The YTR area is not only used as a natural tourist attraction, but can also be used as a seaweed cultivation area, this is because the coastal waters of YTR are optimised for the growth of Caulerpa sp seaweed or sea grapes. Seaweed cultivation

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has been one of Southeast Maluku's leading commodities since 2014, but only focused on *Eucheuma cottonii* seaweed cultivation.

*Caulerpa* sp seaweed, classified as green algae in the local language of Kei known as "lat" is still not developed cultivation efforts and only rely on taking from nature as a community food need. Based on interviews with the people of Letman Village, the waters around the coast of YTR used to be grown by sea grapes, but as time progressed and the population increased and the community's food needs increased due to continuous collection by the surrounding community, this type was no longer found around the waters but was found far outside the waters of Letman Village. To minimise the extinction of lats in the Kei Islands, cultivation efforts are being made by the Southeast Maluku Tourism Office in the YTR tourism area. This is supported by the selling price of sea grapes (lats) between 10,000 / stack (about 250 gr) so that every day the community takes to meet market demand, which in a day one sea grape collector (lat) can sell 250 kg - 500 kg / day.

According to Tasci, et al (2013), community-based tourism is a form of sustainable tourism that prioritises active community participation and provides education to local communities and visitors that prioritise the protection of local culture and the environment and provide economic benefits to the community. To maintain the cultivation of sea grapes (lat) while developing the tourism potential of YTR, an effort is needed to develop a sea grape cultivation area that can provide unique value and new experiences to visitors or tourists how to learn to love the environment, especially aquatic ecosystems through educational tourism. Based on the above problems, it is necessary to transfer knowledge in the form of training and empowerment to the community. The transfer of knowledge in this activity is carried out in the form of counselling and training to the community, the aim is to empower the community in making cultivation containers and applying sea grape cultivation methods (lat) as an ecotourism development location in the YTR area.

## Method

### *Time, Location and Target Group*

The community service activities carried out by the Tual State Fisheries Polytechnic Research Team were carried out from September to December 2022. The location of the activity was in the Yeer Teran Retut (YTR) Letman tourist area. Administratively, this area is included in the Ohoi / Letman Village area of Southeast Maluku Regency (Figure 1). The target groups in this study were a group of sea grape collectors and sellers (lats) and the YTR Pokwardis group.

This activity is part of the Matching Fund Vocational 2022 research in collaboration with the Southeast Maluku Regency Tourism Office as the implementing partner, Letman village community, Pokdarwis group of Letman YTR tourism area and Polikant Tual students. This activity targets community groups, Pokdarwis and students. The aim is to conserve marine grape resources which are an economic resource for the community and increase community awareness of the availability of resources in nature and train students to apply the knowledge gained in lectures to the community and build an entrepreneurial spirit from an early age. Communities and Pokdarwis groups are expected to develop the potential of sea grapes through cultivation activities and develop product diversification through processing to develop the potential of their wilayah through ecotourism activities of sea grape cultivation (lat) so as to increase community income.

### *Methods*

The method used in this activity is the active participation method, which is a method where all components involved in the activity, including the community, Pokdarwis group and students, play an active role in all stages of the activity. This programme consists of several stages, namely: Socialisation stage; Student briefing stage; Counselling stage; Training and mentoring stage and Evaluation stage.

Debriefing to student groups involved in the activity was given in the form of training in making cultivation containers and processed products from sea grapes. The community of Letman village and the YTR Pokdarwis group were given counselling, training and mentoring. The training provided to the community consisted of: 1). Entrepreneurship counselling; 2). Training on making cultivation containers (quadrant nets) and sea grape cultivation (lat) to support educational tourism in the YTR area.

## Result and Discussion

### *Construction of Freme/Quadrant Cultivation Containers*

The training and development of ecotourism through seaweed cultivation educational tourism begins with the formation of a group of students who are trained to make the construction of sea grape cultivation containers from rectangular netting material from paralon pipes. The construction of this cultivation container is combined with sea grape cultivation activities (lats), where students who are trained provide transfer of science and technology to community groups and pokdarwis together with lecturers and technicians where the results of sea grape cultivation will then be

processed into processed products in the form of sea grape jam and sauce.

The initial training activities carried out by Polikant students began with the process of making freme/kaudran for *Caulerpa sp* cultivation containers. The method of making freme/kaudran nets for *Caulerpa sp* maintenance cultivation containers, is as follows: PVC pipe diameter  $\frac{1}{2}$  ince cut with a size of 1 metre as many as 4 parts, then put a mixture of semesn and sand on the pipe as a weight on the framework of

the freme used, close one part using a cork, the pipe is dried in the sun for 1-2 days.

Then after drying, sand the edges of the pipe using 100 mm sandpaper, apply pipe glue to the sanded part of the PVC connection (keni / L) with a size of  $\frac{1}{2}$  inch. The net on the freme uses a mesh size of 1.5 PE. The method of making the net is cut with a size of 1.35 cm after which it is sewn on the freme / quadrant pipe using a diameter 1 rope using a sack needle (Figure 1).



Figure 1. Manufacturing process of PVC mesh freme

Making a frame cover is very important, the aim is that during maintenance/cultivation, the lats placed in the frame maintenance container are not carried away by the current but remain attached to the substrate. The technique for making the frame cover is as follows: cut bamboo with a size of 1.5 metres, then split the bamboo with a width of 1.5 cm, after that the bamboo is cleaned

at the bamboo segment, then the bamboo is tied in the form of a box. The binding is done at the ends of the bamboo so that it resembles a wicker (para-para / local name) with a distance of 1.5 cm between bamboo with the number of bamboo needed is 20 pieces of bamboo split with a size of 1.5 cm (Figure 2).



Figure 2. Freme Cover Making Process

#### *Training on the Technique of Making Sea Grape Cultivation Containers (Lat) *Caulerpa sp*.*

The training for students was conducted at the Tual Polyculture Mariculture Laboratory, then the results of the construction of sea grape cultivation containers in the form of frames/quadrants were then socialised to

the community and Pokdarwis of the YRT tourist area in the form of training. This training was attended by the community and students who produced the construction of cultivation containers in the form of frames/quadrants for the maintenance/cultivation of sea grapes (lat) in the YTR tourism area. The construction of cultivation containers in this training



was carried out jointly between the community, Pokdarwis and students, and then planting or cultivating sea grapes or lats (*Caulerpa sp*) in the waters

of the YTR tourist area by the community and students (Figure 3).



Figure 3. Sea Grape Cultivation Training in the YTR Area

## Conclusion

Based on the results of the implementation of community service in the YTR Letman tourist area in Southeast Maluku, it can be concluded that: (1) The community service of the Tual State Fisheries Polytechnic was carried out using counselling and training methods involving students, the Letman ohoi community and Pokdarwis (widata awareness group) of the YTR Letman tourist area in Southeast Maluku; (2) Counselling and training by the Polikant Team included counselling and training on techniques for making aquaculture containers and cultivation techniques for sea otter (lat); (3) The results of the training are directly applied by the ohoi Letman community through the cultivation of sea grapes (lat) in the YTR tourist area.

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