

Assistance in Processing Seaweed Cultivation into Souvenir Products of South Sulawesi Province

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ABSTRACT

Indonesia is one of the largest seaweed producers in the world. Indonesia's seaweed production reached 9.12 million tons in 2021. Seaweed is one of the leading exports of Indonesian fishery products. South Sulawesi produced 3.79 million tons of seaweed in 2021, making South Sulawesi as the province in Indonesia with the largest seaweed production. Fishery resources in the Makassar Strait waters have many advantages. If the fishery resources were optimally developed, they will become a source of new economic growth for Indonesia in the future. Various products derived from processed seaweed produced by small and medium enterprises (SMEs) range from food to seaweed soap. The obstacle faced in marketing these products abroad is the regulations set by the destination country related to standardization of product quality. These constraints indicate the need for various trainings needed by SMEs craftsmen to improve the quality of products derived from processed seaweed so that they can meet the quality standard requirements in the destination country. With the development of SMEs in the seaweed cultivation sector, these enterprises can make a significant contribution to employment, income, and regional development in a sustainable manner.

Keywords: *Community Development, seaweeds, SMEs*

A. INTRODUCTION

Seaweed is a chlorophyll plant that grows in shallow waters with sandy, slightly muddy bottom conditions, or a mixture of both. Seaweed grows by attaching to certain substrates such as coral, mud, rocks, sand, or hard objects in shallow waters. Seaweed has a variety of useful ingredients that make seaweed commodities have very high economic values (Marine and Fisheries Service of the Provincial Government of Bali, 2020). Seaweed has been used by humans for centuries as food and medicine by nations in East Asia and the Roman Empire. Local people who live on coastal areas of Indonesia consume seaweed as vegetables.

The sea area in Indonesia reaches 62% of the total national area. Indonesia has a coastline length of 110,000 km and an ocean area of 6,400,000 km². Indonesia has a tropical climate; hence Indonesia is a suitable area for the growth of various types of seaweed. There are 555 types of seaweed from around 8,000 species in the world that can grow well in Indonesia. Given favorable geographical and climatic conditions, Indonesia has a high potential to become a major producer of seaweed in the world (Ministry of Maritime Affairs and Fisheries, 2019).

Indonesia is one of the largest seaweed producers in the world. Indonesia's seaweed production reached 9.12 million tons in 2021. South Sulawesi produced 3.79 million tons of seaweed in 2021, making South Sulawesi as the province with the largest seaweed production in Indonesia (DataIndonesia.id, 2022). Following the contribution of seaweed production that reached 41% of national wide production, South Sulawesi becomes a major contributor to national seaweed production. FAO 222 data showed that Indonesia is the second largest seaweed producing country in the world after China. Indonesia controlled 12.3% share of the world seaweed market in 2021, making seaweed as one of the leading exports of Indonesian fishery products (East Java Provincial Communication and Information Service, 2022).

Fishery resources in the Makassar Strait waters have many advantages. If the fishery resources were optimally developed, they will become a source of new economic growth for Indonesia in the future. However, there are several problems encountered in the development of these potentials. Among other things, production infrastructure is not yet optimal, limited facilities and infrastructure for fishery production, weak competitiveness of fishery products, and low utilization of seaweed and coastal spatial planning.

The waters of the Makassar Strait are fertile waters and with supportive environmental factors, the Makassar Strait waters have the potential for abundant amount of

shrimp, fish, shellfish, and seaweed (National Standardization Agency, 2017). The seaweed from South Sulawesi has penetrated market in China, Malaysia, and Thailand. Various products derived from processed seaweed produced by small and medium enterprises (SMEs) range from food to seaweed soap. The obstacle faced in marketing these products abroad is the regulations set by the destination country related to standardization of product quality. These constraints indicate the need for various training needed by SMEs craftsmen to improve the quality of products derived from processed seaweed so that they can meet the quality standard requirements in the destination country.

Improving the quality of products produced by SMEs craftsmen is intended to increase protection for consumers, business actors, workers, and the wider community from the point of view of security, safety, and preservation of environmental functions. Furthermore, by improving the quality of their products, SMEs craftsmen will be able to create fair business competition in the market (Setiawan et al., 2019). Marine resources have an important role in Indonesia's economic development in the future. Marine resources are renewable resources if they are managed in an environmentally friendly way. The wealth of marine resources can support sustainable economic development (Baransano & Mangimbulude, 2011).

The strategy of the Indonesia's Ministry of Maritime Affairs and Fisheries (KKP) in developing a reliable seaweed industry aims to increase sustainable competitiveness, so that the potential of Indonesian seaweed can be further optimized. The first phase starts from the process of improving the quality of seedlings through the development of a tissue culture laboratory, development of a seaweed nursery, and technical and management guidance for private nurseries. The second phase is the development stage of seaweed cultivation centers and development of seaweed villages. One of the centers of this seaweed area is in the province of South Sulawesi. The third stage is to provide support for infrastructure and the

development of cultivator group clusters. The fourth stage is providing technical assistance by extension workers, training for seaweed cultivators and improving group institutions (East Java Provincial Communication and Information Service, 2022).

Community Development (PKM) activities can give a major contribution to the fourth stage of the seaweed industry development strategy carried out by KKP. The development of the national seaweed industry starts from the process of seaweed nursery, development of seaweed cultivation centers, processing, and marketing of seaweed products. Nurseries are responsible for producing superior quality and sufficient availability of seaweed seeds. At the development stage, adequate infrastructure and cultivation facilities are needed to meet production targets, access to capital, trained and tenacious human resources, availability of extension workers, as well as innovative and environmentally friendly cultivation technologies.

KKP hopes that seaweed-derived products can become superior products that attract the local market in South Sulawesi and the export market. SMEs are a sector that has an important role in the economic growth of the Indonesian people (Sondakh *et.al.*, 2021). With the development of SMEs in the seaweed cultivation sector, these enterprises can make a significant contribution to employment, income, and regional development in a sustainable manner.

Seaweed

South Sulawesi is one of the largest seaweed producing areas in Indonesia. The potential of South Sulawesi as a major contributor in seaweed production shows that the potential for seaweed in South Sulawesi is very large and can improve the economy of fishing communities by cultivating seaweed in the South Sulawesi area. The Indonesian

government has identified the seaweed industry as a priority and recognized its potential role in poverty reduction nationwide (Brooks, 2021).

Seaweed is used as a commodity for food products, medicines, various cosmetic products, textiles, and the biochemical industry because of the unique biochemical content of seaweed. One of the high value seaweed derivative products is hydrocolloid, which can be used as an additive in food and non-food products (Ministry of Maritime Affairs and Fisheries, 2019). Hydrocolloids are polymeric components derived from vegetables, animals, microbes, or synthetic components which are soluble in water, capable of forming colloids, and can thicken or form gels from a solution. The characteristics of hydrocolloids make hydrocolloids a very useful material in various industries such as food and beverage, textiles, pharmaceuticals, paints as a mixture in gel formation, thickeners, emulsifiers, adhesives, stabilizers, and film forming (Herawati, 2018).

SMEs in Seaweed Processing

The high potential of seaweed in South Sulawesi has grown the number of SMEs in seaweed processing. With appropriate training for small and medium-sized enterprises, SMEs in seaweed processing will be able to boost the economy of fishing communities and seaweed cultivators. Currently there are more than 35,000 households in the province of South Sulawesi who rely on seaweed cultivation as their livelihood (Brooks, 2021). Currently there are more than 700 seaweed cultivators who are members of the South Sulawesi Seaweed Center (RLC), originating from various regions in South Sulawesi such as Pinrang, Luwu, Palopo, and Bulukumba. (National Standardization Agency, 2017). The development of a reliable, competitive, and sustainable seaweed industry will increase Indonesia's seaweed potential.

B. METHODS OF IMPLEMENTATION

PKM activities will be given to SMEs craftsmen who are members of the RLC in the South Sulawesi region, who are partners in this PKM activity. The flow of PKM activities is carried out through five stages as illustrated in Figure 1. Implementation of PKM activities will begin with socialization of various trainings that will be given to seaweed cultivation craftsmen to RLC. The purpose of this activity is to obtain information about SMEs that are members of the RLC. Socialization and registration of PKM program participants will be carried out through the RLC. The implementation of the training will be carried out at the RLC Secretariat office for three days.

Given the activities and time limitation of the SME's craftsmen, as well as the far distance location where the craftsmen are located, the PKM mentoring activities will be carried out in two online meetings via Zoom application. The period between training and mentoring activities will be two weeks.

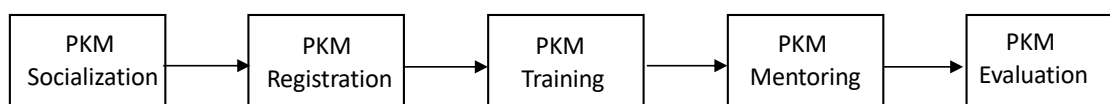


Figure 1. Flow of PKM Activities

PKM Trainings

The PKM training program consists of six topics of training, namely Product Innovation, SNI ISO 9001 Quality Management, Packaging Design and Product Branding, Marketing in the Digital Era, Communication through Social Media, and Financial Management. This program is expected to provide comprehensive benefits for seaweed cultivation craftsmen.

1. Product Innovation Training

Product innovation is an attempt to create a new product by improving and improving the quality of existing products, or developing products produced by SMEs craftsmen. The

aim of innovating products is to follow the development of consumer interest and increase business competitiveness. Product innovation is usually carried out to improve product quality, meet consumer needs, and create new markets in society. The benefit of product innovation for SMEs craftsmen is the ability of craftsmen to continue to innovate so that they are able to excel and beat their competitors (Saputra et al., 2022).

2. Quality Management Training SNI ISO 9001

This training is aimed at building SMEs awareness of the importance of the Indonesian National Standard (SNI). This training is also intended to assist SMEs in preparing the necessary documentation and records in the standard implementation process. SMEs are encouraged to apply product quality standardization in order to improve the quality of products, to have high competitiveness, and to be able to enter the global market (Setiawan et al. 2019).

3. Packaging Design and Product Branding Training

Competition in marketing is not only limited to creating good quality of products. In addition to product quality, consumers will be attracted to the product because of its packaging design and product branding. Packaging design and product branding will build consumer perceptions of the products offered. Attractive packaging designs and product brands will make it easy for consumers to remember the products offered to them. In this training, SMEs craftsmen will be given training to make packaging designs that look visually attractive. Visual appeal will be related to graphic elements. In addition, the design of daily packaging provides effectiveness, efficiency, and various conveniences so that the packaging will protect the product, easy to display, open, carry, and so on.

4. Marketing in the Digital Age Training

Digitalization is a must for all businesses, one of which is to carry out various marketing activities using digital technology. For this reason, this training is intended so

that SME's craftsmen can continue to improve their abilities and capacities to carry out their marketing activities digitally. In addition, this training can provide benefits and contribute to increasing the productivity and welfare of SMEs.

5. Communication Through Social Media Training

Advances in information and communication technology make it easy for humans to access information. The purpose of communication training through social media is to improve abilities and skills in managing social media to communicate with consumers. One of the uses of social media is to market or promote a product through internet media so that it can reach consumers and potential customers within a very short time. Social media is in great demand by consumers because it can disseminate information very quickly via Instagram, Facebook, Twitter, YouTube and WhatsApp. The use of social media is very efficient because information can be accessed by consumers through devices owned by consumers and is more economical because the costs are much cheaper than mass media in general.

6. Financial management Training

The purpose of this training is to provide knowledge and skills regarding Financial Management to seaweed farming SME craftsmen in the South Sulawesi region. Lack of knowledge in conducting Financial Management will cause failure in the SME craftsman business. This training will focus on making business financial reports and conducting financial analysis. The method used in the training uses mentoring methods, discussions, workshops and technical guidance in making simple financial reports.

SME Mentoring

All facilitators and trainers for PKM activities are expected to be able to provide mentoring for SMEs in seaweed cultivation that are members of the RLC in the South

Sulawesi region. Given the time limitation and activities of the UKM craftsmen, as well as the far distance location where the craftsmen are located, the PKM mentoring for SMEs will be carried out in two online meetings via Zoom media. The time between the training and each mentoring activities is two weeks.

PKM Evaluation

The PKM evaluation activity will be performed two weeks after the 2nd Mentoring online activity via Zoom media was carried out. This activity will evaluate all progress in the implementation of PKM based on the assessment given by the training participants.

C. SUMMARY

A series of trainings given to SMEs seaweed cultivation craftsmen is aimed to encourage and support SMEs so that they can progress and develop their enterprises. These trainings will also assist local residents in developing processed seaweed so that their products will have higher selling value. Marketing in the Digital Era training materials and Communication Through Social Media training are targeted at expanding online marketing by utilizing marketplaces, social media and a number of e-commerce applications in Indonesia.

The benefits that will be obtained by SMEs participating in these trainings include training materials, experienced trainers, as well as discussion tools that are very helpful and useful for training participants in improving the economy of SMEs producing seaweed cultivation.

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