

Seaweed Business Conditions And Marketing Channels in Coastal District of Southeast Sulawesi

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ABSTRACT

This study was conducted in the coastal area of Southeast Sulawesi with the aim of: (1) To know the condition of seaweed business in coastal area of Southeast Sulawesi; (2) Knowing seaweed marketing channel in coastal area of Southeast Sulawesi. The populations of this study are all business actors (fishermen / farmers) of seaweed in coastal area of Southeast Sulawesi. Given the limited time and financing of this study conducted a sample on some districts that are considered to represent or represent the characteristics of the existing population. The type of data to be used in this study was primary data obtained from the respondents by using questionnaires. The analytical method used descriptive analysis. The results of this study indicated: (1) Seaweed business conditions in coastal areas of Southeast Sulawesi viewed from the aspect of cultivation technology is generally done is still based on experiences transmitted from relatives and cultivators who have first become a cultivator of seaweed. In addition, the technology obtained by self-taught so that the productivity / ha / crop cycle is still relatively low ie an average of about 1-2 dry tons / harvest cycle. (2) Seaweed marketing channel in coastal area of Southeast Sulawesi to form two marketing channel that is marketing channel of level I which involves two marketing institution that is collecting merchant and wholesaler; And second-level marketing channels involving a marketing agency that is a wholesaler other than a farmer / cultivator and factory / exporter.

Keywords: Seaweed business and marketing channel.

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I. Introduction

Indonesia has vast sea territory with the second longest coastline in the world after Canada. Indonesia's marine waters are waters rich in minerals and sunlight so it becomes a fertile ground for seaweed growth. The potential of distribution of seaweed in Indonesia is very wide, both naturally grown and cultivated in almost all areas of Indonesia such as Sumatra, Java, Bali, Nusa Tenggara, Kalimantan, Sulawesi and Papua (Anggodiredja, 2008) in la Nalefo (2013). The potential of Indonesia's marine resources makes marine resources a source of livelihood to increase the income and living standards of people living in coastal areas. Although seaweed commodity has a fairly bright market prospect in local market, inter island market, and overseas market (export), it is not fully able to improve the living standard and prosperity of coastal community. Seaweed farmers are still in low and poor income conditions so that their welfare and living standards are low. Meanwhile seaweed traders, especially exporters, have achieved an established economic resilience and seaweed farmers are economically fragile and socially unempowered.

Strategic area that can be used for seaweed cultivation in Indonesia of approximately 1.2 million hectares (DKP, 2006). From this wide potential, until 2010 Indonesia is only able to cultivate less than 5 percent of the existing land potential (Ministry of Marine Affairs and Fisheries, 2010).

The development of seaweed business besides aimed to increase the production and productivity of seaweed is also very important to increase income and living standard of society. In addition, the development of seaweed business based on community empowerment is expected to increase seaweed exports and state revenues revenue, the development of raw materials to meet the needs of various processing industries, and increase the economy through the expansion of employment opportunities and income increase. Development essentially aims to improve the lives and welfare of the people. Empirical facts show that the standard of living and the level of community welfare achieved today is not optimal. Natural wealth owned in coastal areas of Southeast Sulawesi, especially seaweed should have been able to provide better welfare for the community, especially

seaweed business actors. Based on the above description, it is deemed necessary to examine how the seaweed business and its marketing system in the coastal area of Southeast Sulawesi. This research aims to; (1) to know the condition of seaweed business in coastal area of Southeast Sulawesi, (2) to know seaweed marketing system in coastal area of Southeast Sulawesi

II. Literature review

2.1. Seaweed Business Development.

Indonesia has the potential of seaweed cultivation area of 1.2 million ha, with the potential for dry seaweed production an average of 16 tons per Ha. If all the land can be utilized it will be achieved 17,774,400 tons per year at a price of Rp.4, 5 million per ton. The range of production quantities and the price level will be valued at Rp.79.98 trillion (DKP, 2006). But from this vast potential area, Indonesia is currently only able to cultivate less than 5% of the existing land potential (Ministry of Marine Affairs and Fisheries, 2010).

Based on the data presented above, is still wide open business opportunities (cultivation) of seaweed. The business opportunity is getting bigger in line with the world demand for seaweeds which increased by an average of 5-10% per year. Nowadays, the demand of seaweed addressed to Indonesian exporters is indicated to have reached 6,000 tons of dried seaweed per year (DG Fisheries, 2011). According to DKP (2011) data that supply of seaweed on the world market shows an increasing deficiency of 67.3 million ton in 2006 to 109,000,000 ton in 2010. This shortage of supply is an opportunity that Indonesia needs to have potential land seaweed cultivation that is wide and has not been utilized optimally.

Potential seaweed cultivation business will continue to grow in line with the widespread use of seaweed as food, polymer and paper base materials and other industries. To take advantage of these market opportunities, the seaweed business is very potential to continue to be developed. Seaweed cultivation business classified as a labor-intensive business that is able to absorb a lot of manpower. Seaweed is one of the main commodities of aquaculture with high economic value with wide market opportunities, both National and Foreign (export). Seaweed can be cultivated in bulk to become one of the strategic commodities in the fisheries revitalization program launched by the Ministry of Marine Affairs and Fisheries.

2.2. Marketing Concepts

The most important aspect in the business world is marketing. This interest is very basic, because marketing is one process that can be done by a particular business that aims to achieve profit through the marketing system or from existing markets. Since the marketing system must be well managed, it is necessary to have an informed decision before determining a policy pertaining to the market itself and in an inter-market marketing effort in the form of attracting customers and customers.

Kotler and Keller in Bob Sabran (2012) put forward the definition of marketing as follows: "marketing is a social process whereby individuals and groups acquire what they need and want by creating, offering and freely exchanging valuable products and services with others" . Meanwhile, according to Djaslim Saladin (2007: 1) the term marketing can be interpreted as follows: "marketing is a total system of business activities designed to plan, determine the price, promotion, and distribute goods that can satisfy the desire and reach the target market and destination company".

This definition provides an understanding of marketing as one of the fulfillment process that begins with the emergence of needs and requests are responded by paying attention to a product to meet the demand where within the product is covered in the cost and the element of satisfaction that causes the emergence of transactions in the market between marketers and consumers. The products offered always have more value in the eyes of consumers.

On the other hand Swastha (2000) views marketing as an attempt to satisfy the needs of buyers and sellers through the exchange process. The definition implies that marketing is a process that provides answers to the needs and desires of consumers, or in other words can also be said that marketing activities created by sellers and buyers where both parties alike want to find satisfaction in this case, the buyer trying to meet his needs, While the seller trying to get a profit, then these two kinds of interests can be reunited by holding a mutually beneficial way.

Marketing is one of the main activities that need to be done by a company either a goods or service company in an effort to maintain its business survival. This is because marketing is one of the activities of the company, where directly related to the consumer. Marketing activities can be defined as human activities that take place in relation to the market. Kotler, (2001) suggests the definition of marketing means working with the target market to realize potential exchanges with the intention of satisfying human needs and wants. So it can be said that the success of marketing is the key success of a company.

According to Santon (2001), the definition of marketing is an overall system of business activities aimed at planning, pricing, promoting and distributing goods or services that satisfy the needs of both existing and

potential buyers. According to Kasmir and Jakfar (2004) suggests that: "marketing is a social and managerial process by which individuals and groups obtain what they need and want by creating and exchanging products with others."

Basically the marketing of a good includes the movement or flow of two things, namely the physical flow of the goods itself and the flow of transaction activity for the goods. The flow of transaction activity is a series of transaction activities ranging from sales by producers to end-consumer buyers. This series of activities takes place before the product reaches the end consumer.

III. Research methods

This research was conducted at grass production center in coastal area of Southeast Sulawesi. The populations of this study are all business actors (fishermen / farmers) of seaweed in coastal area of Southeast Sulawesi. Given the limited time and financing of this study conducted a sample on some districts that are considered to represent or represent the characteristics of the existing population. The sub-districts were selected as 2 sub districts, namely: Lembo and Wawolesea sub-districts. Every district elected or assigned another sample of 25 businesses units (fishermen / farmers) seaweed were selected intentionally (*purposive sampling*).

The type of data used in this study is secondary data and primary data, secondary data obtained from government agencies namely the Department of Marine and Fisheries, and data sourced from Central Bureau of Statistics (BPS) Sultra. Primary data obtained directly from the results of in-depth interviews, observations and documentation on seaweed farmers / farmers. Data obtained in the field in the analysis using descriptive statistical analysis techniques.

IV. Research result and discussion

4.1. Seaweed Business Conditions

The condition of seaweed business in coastal area of Southeast Sulawesi can be described as follows:

Method of Cultivation

Based on observations and interviews on the location of the research, it is known that this method of cultivation of seaweed that is used in the research area is the *long line* method or methods of exposition, this method is usually called the long line method.

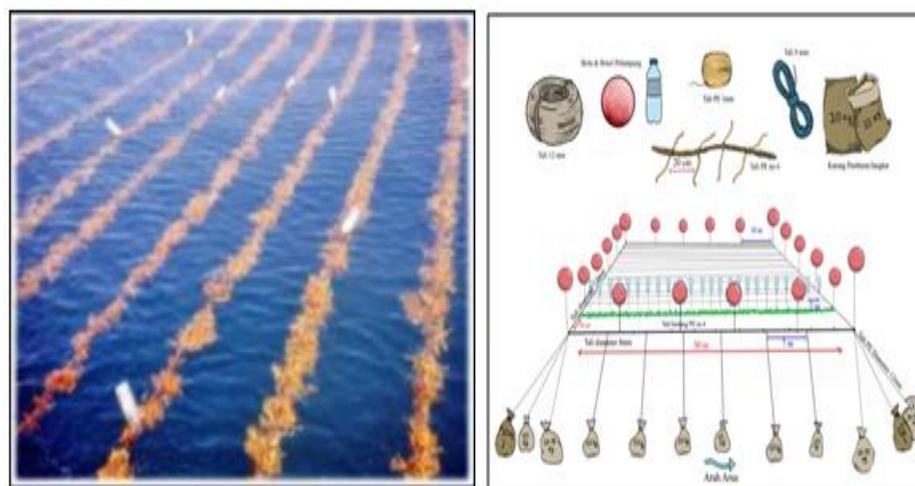


Figure 5.1. Seaweed Cultivation Method *Long Line* Method

Seaweed cultivation method is a method of cultivating *long line* using a rope lengths are typically 30, 50 or 100 meters at both ends by anchors and buoys. Every 25 meters is given a main buoy made of plastic drums or styrofoam. At any distance of 5 meters are given buoys in the form of pieces of styrofoam / rubber sandals or bottles aqua used 500 ml. The selection method by a *long line* of seaweed farmers community in the location of research due to the method of manufacture requires materials that are easily obtainable, practical and cheaper costs compared to other methods.

Long line method is in principle similar to the floating raft method, but not the use of bamboo as a raft float, but instead use plastic bottles float. The advantages of this method is the growth of seaweed more quickly, beside

more efficient material. In addition, according Soegiarto, (2005) that the cultivation of seaweed *Eucheuma* sp. the longline method which is not based on the base substrate surface waters, allowing *Eucheuma* sp. It is free from pigs, because this pest lives on the bottom of the muddy and rocky waters. Longline method is applied to coastal area which when low tide is low; its water base is still submerged in water.

II. Types of Seaweed Cultivated

In general, seaweed farmers in Southeast Sulawesi region cultivate seaweed *Eucheuma Cottonii*. *Eucheuma cottonii* is one species of red seaweed and changed its name to *Kappaphycus alvarezii* as carrageenan produced, including kappa-carrageenan fractions (Fausayana, 2014). Aslan (1998) and Anggadireja *et al* (2009) suggested that the characteristics of *Eucheuma* sp. , Ie cylindrical thallus; slippery surface; Cartilageneus (have cartilage / young) and bright green, olive green, and red chocolate. The thallus branches are pointed or blunt, overgrown with nodules (bumps) and soft / blunt spines to protect the gametangia.



Figure 5.2. Seaweed *Eucheuma cottonii* type

According to Mubarak *et al.*, (1990) and Meiyana *et al.*, (2001) suggested that one type of seaweed that has economic value and market opportunities are mainly *Eucheumagenus Eucheuma cottonii* (*Kappaphycus alvarezii*). This species has important economic value because the producer of carrageenan. In the world of industrial and trading carrageenan has the same benefits with agar and alginate, carrageenan can be used as raw material for pharmaceutical industry, cosmetics, food and others.

III. Seeds

Eucheuma seaweed seeds used by respondents in originating from their own seedlings and some rice from Tinanggea sub-district in Bungin and Roraya villages. Seaweed seed price in use of farmers is Rp.2000 / kg. Respondents buy seeds from the seller of seeds in cash and some others with the agreement paid later with a certain grace period. Seedlings are usually used continuously even up to 3 years of cultivation period. The process of providing the cultivators of grasses in the research location as the description above actually has weaknesses or weaknesses. The weakness of seed availability is one of the constraints in seaweed cultivation, the seeds used and developed by farmers in North Kolaka regency until now still obtained from the vegetative development that is by way of excluding the cultivated thallus of his own. According Hikmayani and Purnomo (2006) states that the seeds that are not qualified generally is a long line of breeds, this seedlings growth is slow and does not expand so that the production is low.

Technology Cultivation conducted by the cultivators in the coastal area of Southeast Sulawesi has been based on the experience of the transmitted relatives and cultivators who have first become the cultivation of seaweed. In addition, cultivation technology is acquired autodidactly so that the productivity / ha / crop cycle is still relatively low ie an average of about 1-2 dry tons / ha / harvest cycle.

IV. Pests And Disease

The problems encountered in seaweed cultivation in coastal areas of Southeast Sulawesi include diseases, plant pests and animal pests. It was as submitted by respondents that the cause of business damage is ice-ice disease, or better known as white disease among farmers. The cause of this disease is ocean currents and temperature changes. The seaweed that has been attacked by ice-ice disease is usually directly cut on the affected part and still healthy seaweed is harvested even though the plant age is less than 47 days. Besides, the damage is also caused by flea moss, turtle and baronang fish. Ice-ice disease usually occurs in areas with high brightness and temperature. Symptoms of this disease are the emergence of white spots or patches on some thallus. Over time

the spots will cause the thalys to lose color, turn white and easily break. The disease is thought to be caused by extreme environmental changes such as current, temperature and brightness

Post-Harvest Handling and Harvest

The important thing that should be a concern when harvesting seaweed is the age of cultivation and the purpose of harvest. This is closely related to the quality of seaweed and the resulting carrageenan content. Seaweed harvesting at the study sites shows that when harvesting is done for the purpose of sourcing, the new seaweed is harvested after the age of 23 - 25 days, but if it is aimed at harvesting, the harvest is done at the age of cultivation 45-50 days. Nevertheless farmers seaweed farmers often use seeds harvested for the sake of sale and used in part for seeds. The quality of good crops is when the carrageen content ranges in excess of 30-36%. According Sulistiyowati (2015) the physical quality of dried seaweed *Eucheuma cottonii* sp best, should be harvested at 45 days and then dried using para-para.

Post harvest handling process conducted by the respondent is (1) Seaweed after harvest is cleaned from dirt that stick as sand, mosses, etc. Then dried to dry (2) In good weather / hot, drying takes 3 days. Drying using a para-para shelf and and by using waring stretched in the yard. (3) Seaweed has been dried into a plastic bag to be sold or stored before selling. Interviews indicate that seaweed farmers sometimes sell wet seaweed to collecting traders due to weather uncertainty and an urgent need to earn money in faster time even though the price of wet seaweed is very low, which is around Rp2,000 - 3,000 per kg.

Business extents

The aquaculture used for seaweed cultivation in this study is in the range of 10-60 acres or between 100 m²-3600 m². The use of marine land in the research area for seaweed cultivation is not subject to rent or land tax. The location of the seawater for seaweed cultivation is not too far from the residence of the population making it easier in terms of monitoring, maintenance to harvesting.

Technical Production Aspect

Eucheuma seaweed species most widely cultivated in coastal areas of Southeast Sulawesi since geographically waters in this area have a good level of current protection. Small islands are widely found in coastal areas of this area to be protective so that the flow or movement of sea water becomes not too tight and does not damage the growth of seaweed cultivated.

As for the effects of seasonal changes and the cultivation of cultivated land, cultivators always increase their vigilance by continuously monitoring and cooperating with other farmers around them. For the successful cultivation of seaweed cultivation, farmer farmers always do maintenance during the maintenance period, not only to the crop itself but also the cultivation facilities used.

Based on the results of interviews with collectors traders, that seaweed cultivation business is very good to be developed, because it can empower the community more independently and can create jobs so that family income increases. Seaweed cultivation business can provide alternative business, both as a side and principal, because it is easy, does not require large capital, cheap and environmentally friendly.

4.2. Seaweed Marketing Channel

Marketing channels are persons or institutions that liaise in the process of transfer, ownership, and delivery of goods from producers to consumers. Fluctuations in the price are a marketing problem (*off-farm*) which is often expressed in seaweed farming. Such price fluctuations are often more detrimental to cultivators than to traders because farmers generally can not manage their sales time to get a more profitable sale price. Besides, high price fluctuations are also a system of opportunity for traders to manipulate price information at the farmer level so that the transmission of prices from the consumer market to the cultivator tends to be asymmetric in the sense that there is a price increase at the consumer level then the price increase is not passed on to the cultivator quickly and perfectly, And vice versa if there is a decrease in price. Supply and demand conditions or *supply and demand* in the market so the system is the main determinant of price fluctuations seaweed.

The marketing system is an organization of a product or marketing agency involved in the marketing process of a product and service, so that products and services become available for use or consumption by consumers. Many paths are used seaweed farmers and marketing agencies in the research area in marketing seaweed. Based on the results of interviews and observations in the field it is known that the distribution of seaweed from the production center to the final consumer as well as involving several marketing institutions. Seaweed marketing channels in the study area are as follows:

1. Farmer / cultivator P. Collector P. Large Factory
2. Farmers / cultivators P. Large Factory

Seaweed marketing institute in coastal area of Southeast Sulawesi formed two marketing channels of marketing channel of Level I which involves two marketing institutions namely collectors traders and wholesalers and

marketing channel of Level II involving one marketing institution that is big trader besides farmer / cultivator and factory / exporter. The function of each marketing agency that occurs in the coastal area of Southeast Sulawesi is as follows:

a. Farmers / cultivators

Farmers or seaweed farmers generally sell seaweed in dry form, although under certain conditions farmers can sell in wet form because of urgent needs or because of little crops. From the results of observations and interviews it is known that farmers can sell seaweed crops directly to collecting traders as well as to wholesalers. The choice in determining the place of sale depends on the source of capital used by farmers, if the capital used by farmers in seaweed cultivation comes from collecting traders, the farmers will sell the seaweed to the collecting traders, also if the source of capital comes from the big trader then the farmer will sell it to wholesalers. For farmers who use their own capital they are free to choose the place of sale. For farmers who use loan capital from wholesalers or collecting traders, the price of seaweed produced will be lower than the normal price.

Collector Dealer

Activities undertaken by collecting traders before seaweed obtained from farmers to wholesalers are:

b. Drying and Storage

Drying of seaweed at the collecting merchant level is done in accordance with seaweed conditions purchased from farmers. If the condition of seaweed is still not dry or the water content is still high (above 38%) then the collecting merchant will do the drying back selanjunya done storage. For seaweed that has dried the seaweed will be directly saved to a sufficient amount to be sent to the wholesaler. In the drying and storage process there are additional costs to be incurred by collecting merchants that include drying costs, storage costs and transportation costs.

c. Delivery

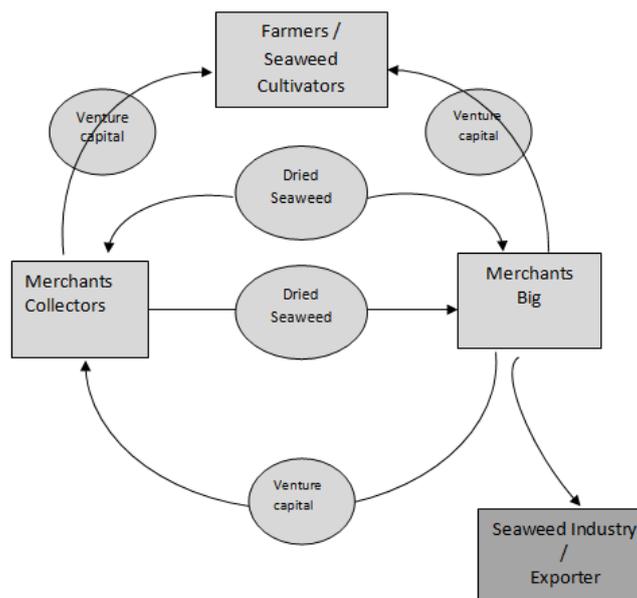
Merchant traders will sell seaweed to big traders in Kendari City. In this delivery the collecting merchant will do the packaging / packing and then make the shipment.

d. Wholesalers

In carrying out its activities, seaweed merchants will only accept seaweed with dry conditions. Prior to shipping to the company, wholesalers do storage and packing / packaging first.

The scheme of interrelationships between agencies involved in business systems and marketing of seaweed in coastal areas of Southeast Sulawesi is not different as the marketing system of seaweed in other areas where the source of cultivation of seaweed farmers is obtained from traders, both collectors and wholesalers, collectors Gain capital from wholesalers. In terms of marketing farmers will market seaweed directly to treader large or through collectors first. Here is agribusiness scheme seaweed as research Nuryadi, *et al* (2016):

Figure 4.1. Seaweed Agribusiness System



V. Conclusions and suggestions

Conclusion

Based on the results of research that has been stated above, it can be drawn conclusion as follows:

1. Seaweed business conditions in the territories of Southeast Sulawesi coast in terms of culture technology is generally done is based on the experience that is transmitted from relatives and farmers who have first me njadi seaweed farmers. In addition, the technology obtained by self-taught so that the productivity / ha / crop cycle is still relatively low ie an average of about 1-2 dry tons / harvest cycle.
2. Seaweed marketing channels in Southeast Sulawesi coastal territories forming two marketing channels that first-level marketing channel involving two marketing agencies, namely traders and wholesalers; and the marketer's channel level II which involves the marketing agency that wholesalers other than farmers / growers and millers / exporters.

2. Suggestion

Based on the results of the research that has been stated above it is advisable:

1. To increase the production still needs to be done cultivation technology training to seaweed business actors.
2. In marketing the crop, preferably seaweed business operators can select the channel timer ran level II which involves the marketing agency that wholesalers other than farmers / growers and millers / exporters.

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