STRATEGY FOR DEVELOPING SME$_S$ AT FARMERS LEVEL TO INCREASE VALUE ADDED OF NATIONAL SEAWEED PRODUCTION

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Abstract

This paper focuses on strategies that can be done to improve the welfare of Indonesian seaweed farmers as well as to increase the value added of national seaweed production. Based on information obtained through the study of literatures and interviews about condition of seaweed farming in Indonesia, in current status quo we only manage 20% of total national seaweed production while 80% remaining is exported. The best way to go is by developing SMEs at farmers' level as the primary producer of seaweed. Now days, the lacking of financial capital, uneducated background of farmers, inability to use technology and managerial skill, as well as inability to market the products are becoming major problems why such SMEs at farmers level never exists. Thus, it needs the strategy to overcome all those problems as well as to stimulate the farmers to start up their own business by giving the value added of the seaweed. The strategies meant are proliferating government grants, providing financial assistants, land expansion, and developing the SMEs as well as to give them managerial skill especially to systemize their marketing strategy through Marketing Mix. The Strategies are expected to offer awareness to various stakeholders such as government, the experts, and academics society to develop SMEs in Indonesian seaweed industry. Thus, the expected target of Indonesia in producing 10 million tonnes of national seaweed production can be realized.

Keywords: value added, seaweed, SMEs, farmers, strategies

CHAPTER I

INTRODUCTION

1.1 Background

Indonesia is targeting to increase national production of seaweed into 5 million tonness by 2012, and into 10 million tonness by 2014. This is supported by the fact that the production of Indonesian Seaweed is steadily increasing. The Minister of Marine Affairs and Fisheries, Fadel Mohammad, stated that Indonesian production of seaweed was 2.57 million tonness in 2009 and increased into 3.08 million tonness in 2010, while on 2011 the production also increased into 3.50 million tonness (Did, 2011). The seaweed production mostly comes from South Sulawesi, Central Sulawesi, South East Sulawesi, East Nusa Tenggara, West Nusa Tenggara, Bali, East Kalimantan, Maluku, East Java, Banten, North Sumatera and other provinces located in the coastline and where brackish water broiler is prevalent. Aside from that, on 2010 Indonesia also became the largest exporter of seaweed in the world. the exported seaweed product was in the form of dried seaweed, carageenan, and jelly powder which valued for 126.177.521 kg or US$155.619.562 (Cocon, 2011).

Nevertheless, behind all the glory of seaweed industry in Indonesia, several obstacles become major threats for seaweed industry to contribute maximally for national economic development; one of those obstacles is the export potentiality of Indonesian seaweed product, which is far from optimum. Secretary general of Association of Indonesian Seaweed, Syamsu Alam stated that Indonesian main markets for its seaweed product are mainly overseas. Countries like China, Vietnam, Hongkong, Netherland, Japan, Spain, and US consume 80% of our national seaweed production while only 20% of the total production allocated for domestic usage. Whereas all those seaweed, in the form of raw product, can be processed into products that have more value added. This shows to us how we only have small number of domestic seaweed processing industry (Josephus, 2011).

Currently, the price of dried seaweed from genus *Gracillaria sp* is ranged at Rp6.000-Rp8.000 per kg, while dried seaweed from genus *Euchema cottonnesii* is ranged at Rp10.000-Rp13.000 per kg (Femi, 2010). If all the seaweed farmers are empowered to process seaweed into processed products such as lunkhead, candy, chips, and so surely they will gain more income as the selling value of processed seaweed products are higher than raw seaweed. Suwitno, a seaweed farmer from Kabupaten Nunukan, East Kalimantan confessed that 71 breadwinner out of 74 breadwinner in his region are seaweed farmers, yet throughout the years the welfare of the farmers has not significantly improved. Mainly because these farmers are unable to provide value added for the seaweed, therefore they can

only sell their seaweed at a low price (Rusman, 2011). This explanation shows how the seaweed farmers and the society around them are eager to raise their standard of living but at the same time face several barriers in order to become more productive. Thus, the development of small scale industry that can produce processed seaweed product is deemed as the solution for their wish to improve their standard of living.

The above explanation becomes the foundations why the writers chose to explore the topic of increasing seaweed farmers' welfare through micro, small, and medium scale industry aligning to improve the value added of national seaweed production. Further we also analyze the marketing strategy to increase the level of competitiveness of the micro, small, medium scale industry which also results into a long run sustainability of the industry.

1.2 Problem Identification

Based on the identified problems, these are the questions that should be answered in this research

1. What kind of strategy could be done to empower seaweed farmers to produce processed products that have higher value rather than solely selling raw seaweed products?
2. What are the marketing strategies that need to be implemented in order to compete with similar industries and achieve long term sustainability?

1.3 Research Purpose

The purposes of this research are :

1. To determine the efforts that could be done to empower seaweed farmers to produce processed products that have higher value rather than solely selling raw seaweed products
2. To determine the marketing strategies that need to be implemented in in order to compete with similar industries and achieve long term sustainability.

1.4 Benefits of The Research

The benefits of this research are :

1. As an academic contribution through simple research that are based on seaweed farmers' welfare
2. As a source of suggestion for government to keep the "pro job, pro poor, and pro growth" program by empowering SMEs, especially those that are in the seaweed related industry
3. As a form of support to Indonesia which will host International Seaweed Symposium XXI at Bali in 2013

CHAPTER II

LITERATURE REVIEW

2.1 Description of The Indonesian Seaweed Cultivation

The development of marine and fisheries based cultivation has a huge potential, especially seaweed cultivation (Central Sulawesi local government, 2008). Given Indonesia's marine condition that endorses seaweed cultivation, it is predicted that the seaweed will continue to flourish. According to the Department of Marine Affairs and Fisheries, there are 555 species of seaweed across Indonesian's sea that can be used as a source for the development of Indonesian's marine based industry. In Indonesia itself, the seaweeds that have the highest economic value are from genus *Euchema cottonnesii* and genus *Gracillaria sp*. Until 2009, the production of *Euchema cottonnesii* is 2.791.688 tonnes and 171.868 tonnes for *Gracillaria sp* (Directorate general of Fisheries Cultivation, 2011).

Euchema cottonnesii is the main genus of seaweed that produces carageenan which is the main ingredients for both cosmetic and pharmaceutical industry. However, this genus of seaweed can also be processed into lunkhead, chips, candy and whatsnot with a relatively more expensive price if we compare it with the same product but processed from different genus of seaweed because the *Euchema cottonnesii* genus has higher quality compare to other genus. This genus lives on the coast with huge area of coral reef such as as Central Sulawesi, South Sulawesi, East Nusa Tenggara, Bali, East Java, South East Sulawesi and West Nusa Tenggara (Directorate General of Fisheries Cultivation, 2011). Around 3200 – 3500 tonnes out of 4000-4500 tonnes production of this genus of seaweed is allocated for export and the rest goes to domestic consumption, any shortgage in meeting domestic demand will be fulfilled by importing the seaweed (Department of Marine Affairs and Fisheries, 2009). Carageenan products that being exported are still in the form of semi pure product that barely has the value added needed to boost its selling price.

On the other hand, seaweed from genus *Gracillaria sp* is the main producer of jelly powder that mainly used in food industry such as syrup, candy, pudding, lunkhead, jelly and whatsnot. *Gracillaria sp* is usually cultivated in brackish water in embankment. South Sulawesi, East Java, and East Nusa Tenggara are the main production centers of this genus (Directorate General Fisheries Cultivation, 2011).

Cultivation of seaweed across Indonesia is rapidly growing. By 2010, national seaweed production reached 32.57% and it was expected to be

continuously escalating. Indonesia's huge potential of seaweed alongside with a relatively fast reaping cycle, which ranged between 40-45 days for 1 reaping cycle, contribute the rapid growing of Indonesia's seaweed Industry (Fardiansyah, 2011).

2.2 Description of Small Medium Enterprise in Indonesia

A micro-enterprise venture to say if it has a net worth of up to Rp50,000,000 per year, excluding land and building or place of business has annual sales to Rp300.000.000. While the criteria for a small business is if the business is said to have a net worth of more than Rp50,000,000 per year to at most Rp500.000.000 per year, excluding land and building or place of business or it has annual sales of more than Rp300.000.000 up to at most Rp2.500.000.000 per year . Medium Business criterion is to have a net worth of more than Rp500.000.000 per year to at most Rp10,000,000,000 per year, excluding land and building or place of business or it has annual sales of more than Rp2.500.000.000 per year to at most Rp50.000.000.000 per year (UU No. 20 Tahun 2008).

2.2.1 Position of SMEs Processing Seaweed in Current Supply Chain

Basically, the Ministry of Maritime Affairs and Fisheries in collaboration with the Association of Indonesian Seaweed and agribusiness experts mapped the supply chain of seaweed processing from the level of farmers to the industry through the concept stage of cluster. Cluster zone concept is dividing into 3 regions, namely Zone 1 for the level of farmers, Zone 2 for the collectors or middlemen, and Zone 3 for the agent, SMEs, industry.

Based on these clusters system, we can conclude that the supply chain runs from the farmers who sell raw seaweed, both wet and dried then goes to the collectors or middlemen, whether brokers at level 1 (direct purchase from farmers), and the middlemen level 2 (buy dried seaweed from the first level middlemen) and subsequently the middlemen had been distributing raw seaweed to the industry or the exporter without adding value to raw seaweed (Directorate General of Aquaculture, 2011).

By 1998 there were only 22 recorded seaweed processing industry in Indonesia that spread across several areas, they were PT. Agarindo Bogatama (Tangerang), PT. Bantimurung Beautiful (South Sulawesi), PT. Galic Rathabahari (Cikarang), PT. Various Indoking, PT. Merlindo Rekatama (Bandung), PT. Ocean beaches, PT. Phoenix Mas (Mataram), PT. Satellite Sriti (Surabaya), PT. Seamatec, PT. Surya Indo Algae, PT. Partners Kreasindo (Peacock), PT. Image earrings Sea (Takalar). Of the 22 industry, 10 companies engaged in gelatin industrial, 4 companies engaged in agar industrial, 6 companies engaged in carageenan industrial, and a company engaged in the alginate industry. These

industries are basically classified as medium and large businesses. (Anonymous, 2008).

Besides medium and large industries, there are also micro and small scale industries related to seaweed processing. Based on information from the Head of Micro, Small and Medium Enterprises (SMEs), Samson Masengi, in Indonesia is currently recorded at least 1000 SMEs which cultivate seaweed. However, SMEs processing of seaweed that already exist today are in a different zone to the level of farmers. SMEs that produce processed foods seaweed usually get the raw materials of industry (in the form of powder carageenan) or usually directly from the middlemen (Anonymous, 2011).

It can be concluded that the current role of SMEs related to seaweed processing is still weak with marked evidence that only 20% of total national production of processed seaweed in the country, while the remainder is exported to overseas. That is why the government needs to encourage more SME development in Indonesia. (Josephus, 2011). Also, it can be concluded that there is no SMEs at the farmers level currently. So far farmers rely solely on income from production of raw seaweed, either wet or dried and directly distributing them to collectors or middlemen. And if farmers are able to open a small business products such simple food, we believe the farmers' income will increase, beyond their income from selling the raw seaweed. In addition, to make processed food products are actually not too difficult and the media used is very simple. (Anonymous, 2010).

2.2.2 Reasons Behind The Inexistence of SMEs at Farmers Level

The lacking of SMEs at the seaweed farmers level can be caused by several things, such as capital, skill, technology and background problems of farmers belonging to uneducated labor

Viewed from Capital Aspect

Limited sources of capital for seaweed farmers causing potential intensification of land and seeds to be blocked so that the seaweed production in terms of both quantity and quality is still not maximal. Based on statistical data from Ministry of Maritime Affairs and Fisheries 2011, there are at least 4.510.900ha area that can be managed to be the cultivation of seaweed, but only 2.1 million ha or about 46.6% of the total area potential already used (Setkab 2011). In Wakatobi, Southeast Sulawesi, for example, only 35% of the total 1.5 million hectares of land or 9,000 tonness per year potentially is being used (Reuters, 2011). Likewise with the Riau Islands, only 0.2% of the total potential of 435 Ha of land used for cultivation of seaweed (Rinovsky, 2011).

One of the reason behind the lack of capital resources for farmers seaweed is caused by the distrust of financial institutions such as banks and investors about the prospects of seaweed farming and the presence of collateral-based system that burdens farmers as potential capital borrowers, despite the fact that the government already guarantees 70% of money the loan (if borrowed through banks) and only 30% are the responsibility of (collateral) farmers. (DN, 2011). However, at this time has many cooperatives in the farm level that can help lend funds to its members without collateral system. Usually this cooperative formed by one of the collectors (middleman) seaweed, commonly called the group leader. Chairman of the group usually gives money equity loans with flexible repayment procedures and in accordance with an agreement between farmers and middlemen. Only drawback of this system is the existence of entanglement seaweed farmers to sell at a price that is cheaper to the head of the group (middleman) for a term which is not determined so that their income was to be relatively small. (Karim, 2012).

Apart from capital financing, other capital factors that cause low levels of business or home industries among farmers is the lack of technological capital. The technology needed by the farmers is to cultivate enumerator machine dried seaweed into carageenan from seaweed species cottonnesii so these limitations led to the farmer is only able to produce up phase dried seaweed and sell them to middlemen or industry. Though to make food products from processed seaweed is actually simple (Karim, 2012).

However, do not close the possibility that seaweed farmers can still process the raw seaweed into a simple food by no need to get the raw materials (carageenan) purchased from carageenan industry because it could also be produced for household scale by using a blender although the results are not as good as carageenan produced by industry. One example is the process of making pudding of raw seaweed, the process includes only after drying seaweed harvested, immersion in water followed by leaching with sulfuric acid or acetic acid, drying, softening, ripening, printing and packaging (Anonymous, 2010)

Viewed from The Labors Aspect

The background of most of the farmers who had not completed high school also raised laziness for the majority of seaweed farmers and farmers' inability to use the technology or more modern food formulations. Most farmers think that if just by selling wet or dried seaweed can increase the money they had, they felt it unnecessary longer to process seaweed into simple products, foods, or other products that have added value as compared to seaweed raw materials (Karim, 2012). They just simply do not know that if they are able to provide value-added or processed seaweed into simple or food products, such as the

lunkhead, agar-agar, and so it certainly will be higher resale value and it can increase farmers' income seaweed itself.

Then, the lack of management training, both in terms of simple bookkeeping, enterprising, and marketing also contributed in terms of the weakness of the welfare of seaweed farmers. So far, the seaweed farmers are simply blinded by the money exchanged for raw seaweed, both wet and dried which are bought by middlemen and industry. The industry or other consulting services, just give training on seaweed cultivation technicalities, without teaching them to give added value of the seaweed (YSPN, 2011).

Thus, we can conclude that the main problem of not-maximum contribution of seaweed farming on the national economy is the low sale value of the seaweed itself. So far, the seaweed farmers in Indonesia only produces raw seaweed, either wet or dry. Even the largest seaweed farming in Indonesia just like Central Sulawesi, South Sulawesi, NTT, NTB, Lombok, Madura only produce seaweed in the form of non and semi refined carageenan from seaweed species *Euchema cottonnesii* while for type *Gracillaria sp* is mostly formed into dried seaweed (Josephus , 2011).

2.3 Marketing System of Seaweed in Current Status Quo

Current marketing system on seaweed production is still having some problems. One of the obstacles is that there is no exact pricing as a result of the absence of a definite quality standard of the production of seaweed (Pratiwi, 2011). Even the Chairman of the Association of Farmers and Entrepreneurs Seaweed Indonesia (Aspperli) South Sulawesi, Arman Arfah hopes the Indonesian National Standard (SNI) for the production of seaweed Indonesia, but the real form of the program can not be ascertained (Anonymous, 2011). With the definitive standard for the production of seaweed should be able to increase the willingness of farmers to improve the quality of production so that farmers easily determine the price of their products.

Another issue concerning the marketing of seaweed is the absence of channels of marketing that allows farmers to distribute their products. So far, the farmers are like trapped in a pattern of distribution to the industry directly through middlemen and speculators. Even when there is discourse export restrictions for seaweed production, there are a variety of repulsion of the discourse. They thought that the domestic industry has not been able to absorb the seaweed production (Anonymous, 2011).

For some SMEs that use seaweed raw materials also have some problems related to the field of marketing. The evidence suggests that the low quality of the SME cause problems in the field of management, organization, technology and

marketing (Journal of Cooperatives and SME Studies, 2006). Limited information about the consumer needs and communication led to several problems of SMEs, namely the limitations of the potential market, low interest in purchasing the product due to incompatibility with the public taste, and the product did not sell due to not knowing people's purchasing power (Assessment Journal of Cooperatives and SMEs, 2006).

Some other facts that support the existence of problems in SMEs are known from the Central Bureau of Statistics (2003). Some problems in SMEs, including the lack of capital, difficulties in marketing, tight competition, the difficulty of raw materials, production and less technical expertise, lack of managerial skills, lack of knowledge of financial management and business claim less conducive (licensing, rules/regulations).

2.4 Description of Marketing Mix Concept

According to Kotler (2005), Marketing Mix is a set of marketing tools that companies use to continually achieve its marketing objectives in the target market. Marketing Mix was first introduced by Jerome McCarthy and has four important aspects in marketing, better known as the 4Ps, ie product, price, promotion, and place.

1. Product is anything that can be offered in the market and became a distinctive feature of the business so it can be distinguished from other business.
2. Price is the most important elements of the marketing mix, because this element is a source of income in the marketing mix.
3. Promotion is one form of marketing communication, ie marketing activities which seek causes of information, influence, persuade and or increase the target market or the company and its products on the market so that consumers or customers willing to accept, purchase, and loyal to the products offered.
4. Place is in connection with the distribution pattern made by a business, distribution channels used and the location of the business.

CHAPTER III

RESEARCH METHOD

3.1 Method of Data Collection

Data is the most essential thing to support the implementation of the writing of scientific papers that can be accounted for and correct the situation. In the writing of scientific papers, the authors used two methods of reseach, the method of interview and method of literature study.

3.1.1 Method of Interview

In the writing of this scientific papers, the authors conducted a live interview with one of the seaweed farmers in the village of Banten Tanara named Mr. Abdul Karim via phone to get the primary data needed.

3.1.2 Method of Literature Study

Besides conducting interview, the authors also conducted a study of literature that comes from academic journals, personal websites and websites of government agencies and other agencies associated with the discussion of the material in this paper.

3.2 Analysis of Problem Solution

After collecting data through interviews and literature studies, the authors further processing such data with a SWOT analysis. SWOT analysis was first introduced by Albert Humphrey in the 1960's and 1970's. SWOT is an acronym of Strength, Weakness, Opportunities, and Threats. SWOT Analysis is a strategic planning method that evaluates the internal factors (strength and weakness) and external factors (opportunities and threats) of a project being undertaken (Wikipedia, 2011).

In the writing of scientific papers, the SWOT analysis is used to determine the strengths, weaknesses, opportunities and threats in an effort to seaweed processing in Indonesia. This SWOT analysis will then be processed in the form of a SWOT framework which aims to plan what strategy should be linked to the condition of seaweed processing cases in Indonesia. The factors that are categorized as category opportunities will be utilized as a foundation problem-solving solutions which are supported by a factor of strengths, while weaknesses and threats would be the factors used as a reference for making the project preventive solutions, so expect solutions to problems that the authors offer in this scientific paper can be feasible and sustainable.

CHAPTER IV

ANALYSIS AND PROBLEM SOLUTION

4.1 SWOT Analysis

After conducting interview with source who experts in his field and do a literature study of various sources of literature on seaweed processing conditions as well as planning to open SME food processing of seaweed at the farm level, the authors sort out the points included in the categories of strength, weakness, opportunity, and threats in the SWOT matrix as follows.

Strength

1. Magnitude of the potential for seaweed cultivation in Indonesia that has not been used optimally as described in the previous chapter that there are at least 4.5 million ha area that can be managed to be the cultivation of seaweed, but only 2, 1 million ha or about 46.6% of the total area of potential already used which means ther is still about 54% of an untapped area. (S1)
2. Until now, Indonesia is still the largest supplier of seaweed in the world, proved that Indonesia exports seaweed typed *Gracilaria sp* and *cottonnesii* as number one in the world with export figures reached 80% of total seaweed production nationwide averaged 2.8 million tonness in 2011. (S2)
3. Easy processing of seaweed into simple food, such as the lunkhead, chips, syrups, puddings, and so on. (S3)
4. The high prices of seaweed food processed products as compared with the selling price of raw seaweed, both wet and dry so that it can be an incentive to stimulate farmers to begin to open a business. (S4)
5. Harvest cycle is relatively fast so that the availability of raw materials will remain constant and out of scarcity (quantity of consumers demand greater than supply quantity of the products). (S5)
6. The biotechnology development in terms of improving the quality of seaweed farming keeps developing. (S6)

Weakness

1. Currently seaweed commodities exported by Indonesia are still largely in the form of raw or carageenan so that the selling price is relatively lower compared with the finished product, such as food. (W1)
2. Still very few seaweed farmers who have enumerator machine to make dried seaweed type *cottonnesii* into carageenan, either in the form of chips or powder. (W2)
3. Lack of capital for farmers to develop seaweed cultivation and buy any tools that can process seaweed into products that have value added. (W3)

4. The background of most of the seaweed farmers are not educated, so they do not really understand and simply lazy to process dried seaweed into food products. Besides they are lacking of managerial capability in managing the business including the marketing activities of enterprises (W4)
5. The uncertainty of delicacy and well-textured of the products that will be made my the society around the coastal areas if compared to the products from existing SMEs. (W5)

Opportunity

1. Availability of labor in large quantities so that it can be utilized to develop seaweed processing business. Employees meants are seaweed farmers, farm women, and other local communities that can be used as business partners. (O1)
2. Still very few competitors in the domestic SMEs in Indonesia who are engaged in seaweed processing into food so that with the opening of business at the household scale farmers are expected to remain competitive with existing SMEs. (O2)
3. Consumer demand and curiosity of seaweed processed foods tend to increase. (O3)
4. Availability of agencies that are willing to provide technical and managerial training to farmers in developing aquaculture and seaweed business, such as the Ministry of Cooperatives and SMEs, consulting services, programs built from big industry, and so on. (O4)
5. The availability of loan capital from the government, such as the capital for land expansion, intensification of seeds, and so on. (O5)
6. At the macro level, Indonesia could increase seaweed exported commodities in its finished form, not only raw materials so that foreign exchange increases. (O6)

Threats

1. The existence of prudential principal by capital lending institutions which is reluctant and tend not to trust to provide capital to farmers. (T1)
2. The difficulty of small business marketing system at the farmers level due to locations around the coast or inland and far from the reach of the market. (T2)
3. Presence of major competitors from abroad who had already seen business development opportunities of processed seaweed. (T3)

4.2 Problem-Solving Strategies Framework

Based on the SWOT analysis has been made, the authors plan further problem-solving strategies in a framework form according to the SWOT analysis earlier. This framework is intended to ensure that problem-solving strategies that the author had planned not to deviate from the SWOT analysis so that the objectives of this study can be achieved.

No.	Problem Solving Strategies	Strength (S)						Weakness (W)					Opportunity (O)						Threat (T)		
		1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6	1	2	3
1.	Capital Financing Strategies																				
	a. Strengthening Government Grants																				
	b. Alternative Solution by Assistant System																				
2.	Land Expansion																				
3.	Product Intensification and Deveoping SMEs at Zone 1																				
4.	Marketing Mix Strategies																				
	a. Produk																				
	b. Price																				
	c. Promotion																				
	d. Place																				

4.3 Problem Solving Strategies

Problem-solving strategies that the authors propose in this scientific paper includes four ways, namely capital financing strategy, land extension, intensification of products, and marketing strategies. These four ways are run solely for making seaweed farmers become more productive by opening small-scale businesses as well as to increase the added value of the seaweed itself.

4.3.1 Financing Strategy to Overcome Inexistence of Capital on Farmers

Lack of capital at the farmers level to be productive and not dwell only in seaweed farming without adding value to the seaweed is because of financial inability to expand the land and cultivate it further. Through this paper, the authors make recommendations to the government as well as to create alternative solutions to assist the implementation of improvement programs on seaweed farming in Indonesia.

Strengthening Government Grants

Strategy for proliferating government bailout is planned because there are many opportunities given the fact the existence of government agencies and other capital lending institutions which are willing to lend capital to seaweed farmers (O5) so that it is expected that capital problems currently experienced by farmers (W3) can be solved .

One example of government programs is through the Ministry of Rural Development to channel funds to the 100 seaweed farmers in the district of Wakatobi, Southeast Sulawesi worth Rp500.000.000. The funds are provided to enhance the productivity of seaweed farmers in purchasing equipment such as seaweed farming operations, such as rafts, ropes reminder, nets, etc. (Reuters, 2011). In addition to the Wakatobi, the government also provides support in an effort to accelerate development of the area and increased production of seaweed in Sumenep in 2010 by allocating funds from the state budget for entrepreneurial program package. Especially in Sumenep allocated for seaweed farming activities as many as 75 packages and two packages for the procurement of seaweed nurseries. The package consists of 65 packages allocated for seaweed farming in the village of Tanjung Keok Sase'el Sapeken District and as many as 10 packages in the district of Bluto (DG Fisheries and Aquaculture, 2011).

Likewise with the Kolaka, Southeast Sulawesi, the government is planning the development of seaweed nurseries into 8 units, with a value of Rp520 million. So also with the construction of storage facilities, 15 units of seaweed, with a budget that had each of Rp75 million to Rp1,1 billion. In addition, local governments also provide increased budget for the procurement of machinery

katinting, development paths and boundaries of areas for seaweed cultivation in order to avoid conflict of use of area, prepare a budget for beginners seaweed farmer groups, and set aside capital strengthening the pattern of soft loans amounting to Rp 5 billion.

This suggests that in fact government agencies are willing to assist the procurement of capital to the seaweed farmers, it is just the realization that has not touched all corners of the seaweed farming in Indonesia. In addition, the farmers are also usually less aggressive in asking for assistance. For that reason, the authors urge the government to immediately provide such assistance to seaweed farmers, while the farmers also need to apply for financial assistance in this case move more actively through farmer groups, farmer cooperatives, and so on.

Alternative Solution Through Assistant System

In addition, other factors that cause a lack of capital giving program for farmers is due to the principle of prudence by banks and other lending institutions (T1) caused by the distrust of the financiers of the recipient's own capital. Thus, if we could convince the lender of capital or investors how prospective the business run by seaweed farmers is, we believes this capital would not be a problem, and national ideals to become the largest exporter of seaweed in the form of not only raw materials but finished products can also be realized (O6).

That's why, in addition to the strengthening capital provided by government agencies, the authors also propose that the government increase the value of collateral loan given by banks by launching assistance system. Today, the lenient willingness of banks to provide capital loans to farmers seaweed is that the precautionary principle held by the bank. The banks were not convinced by the prospect of seaweed culture run by the farmers resulting in the equity lending procedures, they apply the basic collateral where the borrower of capital must include a guarantee of certain property in the event of non-performing loan (NPL) or so-called credit crunch . Currently there have actually been government assistance to resolve the issue. The government has already pledged collateral worth 70% of total loans granted to farmers so they just need to sufficiently collateralize their assets worth 30% only. Nevertheless, the authors feel that the value is still quite large considering that the majority of seaweed farmers are still classified as lower middle so that they have no property to be pledged, even though they own property they are usually reluctant to pledge because it is the only valuable property they have. Real example, if a farmer wanted to borrow funds Rp 5,000,000 (estimated to begin cultivation of seaweed) from the bank, then the guarantee is covered by the government is worth Rp3.500.000 (excluding interest), while the remaining to be pledged by the farmer is worth Rp1.500.000 (excluding interest). The nominal still tends to incriminate the farmers because the

value is equal to their income in one crop. So, they just could feel the results of their efforts when they harvest the second time. Along that time, they must also meet the other necessities of life. Not to mention, they have to keep trying to cover fully the loan capital. Government guarantee only runs when a disaster or other major force happen.

Therefore, the authors urge the government to increase again the value of collateral that is covered by the government so that the value of collateral for farmers could be reduced or even the government can cover the loan at 100% but with the system include assistance. Assistance system meant is the provision of financial supervisors aimed to oversee the entire loan capital provided by the bank in order to run properly and there is no diversion of funds as feared by the bank during this time. In addition, the assistant is also authorized to advise the funding allocation by farmers to become more efficient. Assistant concerned can be partners designated by the bank or the government. However, the proposed assistance system should be collectively so that surveillance systems can be run effectively and efficiently. That is, banks do not need to provide funds to each farmer individually. Today, the majority of seaweed farmers in all regions in Indonesia already has its own farmers groups supported by the presence of Indonesian Seaweed Farmers Association so that the system only includes one assistant for some farmers' groups in each area only.

Thus, these assistance systems can provide a win-win solution to all parties, be it the farmers, banks, and government. Groups of farmers could easily get funding from banks without having to think of collateral so that their productivity in the cultivation of seaweed is increased. So also with the bank, the precautionary principle can continue to be held to include a system of assistance so that the use of funds can be guaranteed, even in case of disaster or major force that led to bad loans, the government would have budgeted funds. As for the government, with the increasing productivity of seaweed farmers, seaweed then the national production will increase so that the activities of seaweed exports and domestic production has increased and would be positive impact on state revenues in accordance with government's vision of promoting 10 million tonness of grass sea in 2014.

4.3.2 Land Expansion to Increase National Seaweed Production

This strategy of land expansion is made to realize the opportunity of the availability of the labors (O1) by maintaining the strengths of land potentiality (S1), exporting power (S2), and the rapid cycle of seaweed harvest (S5).

Finished with the problems of financing, then the next strategy that needs to be done is expansion. Expansion is an attempt to increase the quantity of

seaweed production through land expansion considering the not-maximum utilized land for seaweed cultivation in Indonesia. To support the implementation of small business seaweed processing at the level of Indonesian seaweed farmers, definitely requires a lot of raw material so that the seaweed production nationwide is not only used for export only, but it is distributed equally to domestic production.

As explained in the previous chapter that has been only 46.6% from 4.5 million ha of land or the potential worth of 2.1 million ha for seaweed cultivation is used. Means at least there is still another 2.4 million ha of land that has not been fully utilized while the Indonesian national seaweed production in 2011 is to reach 3.5 million tonnesnes of dried seaweed. Thus, it can be concluded that for every 1 hectare of land can produce 1.67 tonness of dry seaweed per year. In the long run, if the government is able to explore the potential land, then we will be able to produce dried seaweed to 7.5 million tonness. That number is likely smaller than the target of the Indonesian government in 2014, but it did not rule out the presence of food technology innovation, these targets can be achieved.

Expansion of land will provide a significant impact towards Indonesia's economy in general, and the level of welfare of farmers and surrounding communities in particular. For example, the quantity of dried seaweed production can be increased dramatically by more than 2-fold so that the income of farmers and local communities will increase. In addition, with the extension of this land then employment even bigger so it can reduce unemployment in the surrounding community areas for seaweed cultivation in Indonesia.

However, returning again to the writer's main purpose in this paper, namely to improve the welfare of farmers and the community around the seaweed cultivation of SMEs through programs at the farmers level, the increase in the quantity of dried seaweed production shall be used for the implementation of domestic production, particularly by farmers themselves so that farmers do not only distribute the dried seaweed that is harvested but also can provide added value to the seaweed by doing a simple way to process them into food through small-scale business activities with the empowerment of women farmers and local communities.

4.3.3 Intensification of Seaweed Production Through Developing SMEs at Farmers Level

This strategy is made by considering the opportunity of the availability of any institution that can give such assistance and managerial training for farmers (O4) in order to keep maintaining the easy process of producing seaweed processed products (S3) and also using the increase innovation in biotechnology (S6) so that we are not only about to export raw material (W1) and able to help

any farmers who have no incentive to use technology and other tools (W2) as well as to support the farmers who used to be lazy given the fact that they are uneducated (W4)

As explained in the previous section that the objective of increasing the quantity of dried seaweed production is not merely to increase the quantity of exports, but also to increase the quantity of domestic production given the fact that there are only fews SMEs engaged in the processing of seaweed into a simple meal, especially at farmers level.

Intensification program which the authors intended to say is to attempt to improve the quality of seaweed production in the country through providing added value to these raw seaweed so that it has higher selling value. The authors' proposes about the intensification of this program is through developing small-medium enterprises (SMEs) at the level of farmers so that farmers do not only produce dried seaweed but also able to process them into simple foods that have added value to increase the selling price as well as to increase farmers' income.

The concept of SMEs at the farmers level meant is to encourage farmers, women farmers, and other surrounding communities to work together to form a household scale industries. For example, one SME is made up of 10-20 people workforce. Labor's function was to process the raw seaweed into simple foods such as candy, lunkhead, pudding, mixed cendol, syrup, and so on then market it to consumers. However, the development of SMEs also need to be assisted by other parties such as the Ministry of Cooperatives and SMEs, expertise, etc., that aims to teach the farmers and the community around the seaweed cultivation about things that are managerial such as stationization production process, recording the cashflow entry and exit, the division of labor, and so given the fact that most farmers considered uneducated.

The author is optimistic that by opening up and developing SMEs in the level of farmers, the farmers' income will increase. It is not difficult due to the processing of seaweed itself is easy as well as the cost burden that is not too large considering the SMEs meant here using the concept of production sharing, where production costs or other capital uniformly charged according to the agreement to workers involved in these SMEs.

For example, to make 30 servings of raw material mixture cendol seaweed takes only about 1 kg of dried seaweed raw material only. If the selling price of a portion of ice cendol seaweed is about Rp8.000, then the selling price of 20 servings of ice cendol seaweed is worth Rp240.000, when to buy 1 kg of dry seaweed *Gracilaria sp* is only needed Rp6000-Rp8000 only. Although excluded other materials costs, seaweed SME business will still provide significant benefits. Another example is the manufacture of seaweed lunkhead, the main raw material

required is 1kg of dried seaweed species *Euchema cottonnii*, 1 kg of seaweed can be used to make 20pcs lunkhead seaweed. If the purchase price of 1 kg of dry seaweed type cottonnii is amounted to Rp10.000-Rp13.000 and the selling price 1 pcs lunkhead seaweed is Rp7.500-Rp10.000 then the revenue earned was Rp150,000-Rp200,000 and will remain profitable despite cut with other costs. For that reason, the developing of SMEs at the farmers level will provide a very significant impact to the welfare of farmers and surrounding communities.

4.3.4 The Implementation of Concept of Marketing Mix

To develop the marketing system of the processed seaweed in SMEs in order to compete with the seaweed industry that already exist on the market as well as sustainable, we tried to apply the concept of Marketing Mix, combined with the factual circumstances of the seaweed industry.

Product

Most processed seaweed products from the existing SMEs still have a poor quality (W5). Production of refined seaweed lunkhead for example tastes not really well and was experiencing rapid rancidity. According Suprayitno and Sulistiyati (2008), main factor that cause rancidity is the major composition of seaweed lunkhead itself such as dried seaweed, sticky rice flour, sugar and coconut milk. Coconut milk used contains high concentration (extracted with water 1:1), while milk contains vegetable fats with unsaturated fatty acid which will taste rancid when oxidized.

Actually rancidity in food can be caused by radical oxidation of unsaturated fatty acids (Winarno, 1997). Oxidation on fat can be inhibited by the addition of antioxidants. Antioxidants which are mostly used in food industry are BHA and BHT. The use of two or more antioxidants will cause a synergistic effect that is more effective in inhibiting the oxidation rate (Suprayitni and Sulistiyati, 2008).

Limited knowledge of the SMEs in producing a marketable product will cause the quality of these products tend to be poor and not durable. Otherwise, there are a lot of development of biotechnology in addressing the issue of production processing, including processing of seaweed production on how to guarantee the quality of the product.

Biotechnology experts are expected to provide knowledge to the farmers of seaweed SMEs in the process of increasing value added to the production of processed seaweed. With the improvement of the quality of processed seaweed, it is expected that products made by SMEs at farmers level can have its own uniqueness, especially on its taste so that it can attract consumers to always try and buy refined products made from raw seaweed provided by this SMEs.

Price

In the process of determining the selling price of processed seaweed, SMEs certainly have to consider the costs arising from any product produced. As already mentioned before that the seaweed farmers have difficulty in pricing because they do not have a definite standard products (Pratiwi, 2011). With the marketing efforts through improved product quality as described in the stage of "product", it is expected to help SMEs processed seaweed in pricing. In addition, government efforts that can be done in terms of protecting SMEs seaweed is through minimum pricing (price floor) policy for the processed seaweed. Therefore, the productivity of seaweed SMEs will increase especially for seaweed farmers themselves because there is a definitely high pricing of the processed seaweed (S4).

Promotion

Promotion in the SME business seaweed is still a major problem. Limited capital to SMEs seaweed in marketing their products make them all hard to sustain their business (Sagita, 2011). Surely in a promotional activity requires channel or medium to accelerate that. Thus, we have a concept that utilizes a relationship that has existed between the farmers in this regard as SMEs seaweed with the middlemen. When we see the partnership actors on seaweed farming Indonesia, especially among farmers and middlemen who then can be said as the relationship between suppliers with buyers generally fall into the category of customer relationship management, where trust and commitment to be a major factor that fosters loyalty between them, in running a business (Hatta et al, 2008).

According Budiarto (2010), there are five stages that must be done in the promotion process, Those are setting campaign goal, setting audiences, designing book promotion, selecting media promotion and promoting program evaluation. In the first stage, the purpose of promotion of SME business is to introduce seaweed products to the public and create awareness of the brand of processed products (Promotion Informative). Middlemen are not the the only channel in the promotion of seaweed processed products, but with partnership that has existed between farmers and middlemen, are expected to become an effective channel in the introduction of processed seaweed products so as to grow the awareness of the seaweed processed products for the surrounding community.

After promotional purpose is determined, the next stage is to establish an audience. In this stage, seweed SMEs can put the tourists both domestic or foreign as the target audiences (O3). By the concept of making the production of processed seaweed as one of the special souvenirs of a particular area like in Lombok and Banten, it can attract consumers to buy these products.The next stage

is to design promotional messages and media selection promotion. In designing promotional messages, the message designed will be effective when they fit with the character and needs of consumers. Therefore, at this stage of understanding the consumer needs becomes an important character. We offer the concept of promotional messages by disclosing all about seaweed itself on its packages, such as the benefits of seaweed, types of seaweed in Indonesia, etc. This will not be patronizing the public because the public's knowledge of seaweed is still very minimal. This indirectly will only make interest of society over the production of processed seaweed itself. While the media campaign in stages, it can be done through several approaches. Online media has become one of the media which is so effective in promotional activities, but there must be assistance from the government in order to promote the development of products related to the limited knowledge of seaweed SMEs (O2). In addition to online media, media promotion through word of mouth is also very effective. If SMEs seaweed was able to establish good relationships with some of the consumer or middleman as a promotional channel, indirectly, the promotion process will develop. Certainly, it must be balanced with government encouragement as making ads that expose the production of processed seaweed as well as to empower the free market considering currently the competitors are not no longer coming from domestic country but also from abroad (T3).

Place

Place is associated with the distribution pattern of the processed and the location of sale. Given the fact that most SMEs live in coastal areas which are far from urban centers (in this case SMEs are seaweed farmers), then the place became one of the bottlenecks in the process of marketing the production of processed seaweed (T2). To end that problem, we offer a strategy on which the place for selling such products still stays on coastal areas because the main target of this product is all tourists, what we need to do is only to design the place as unique as we can. Besides, to point the consumers that live in the city or central market of the trade, we encourage all those farmers that already form many groups in their areas to cooperatively build one central of marketing office in the uptown, that might also be helped by government in providing the proper places to empower any entreprises that newly begin their business.

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Based on the existing problems defined about the low level of seaweed farmers' welfare as a result of the lack of value added in production process and limited information to market the product, the authors provide the strategies to overcome these problems. The problem-solving strategies offered are strategies of capital financing, land extension, product intensification by developing SMEs, and marketing strategies through the Marketing Mix concept. The chosen strategies have been adapted to the factual conditions of seaweed cultivation that are obtained from SWOT analysis, literature study and interviews.

By all strategies offered, the authors hope that national production of seaweed will keep rising, not only to produce and export in the form of raw materials, but also to be able to give the value added of seaweed we produce as to support Indonesia's vision of producing 10 million tonnes of seaweed by 2014.

5.2. Social Recommendation

For Indonesian government, is expected to be more focused in terms of the developing activities of SMEs, especially at level of seaweed farmers. The government should stand as a party which can help the farmers in term providing the capital, managerial education, and marketing information for SMEs. Besides, Indonesian government is expected to be party that can protect Indonesian Seaweed SMEs in term of determining the price floor of seaweed.

For seaweed farmers are expected to be more active and optimistic in developing seaweed SMEs. With enough education of SMEs, seaweed farmers are expected to have a desire to open up SMEs business model. Coupled with the supports given by the government, the number of seaweed farmers that use SMEs business model as their business is hoped to increase.

Besides, we also expect the experts to keep conducting other innovative researches, especially in technology area to develop the quality of the seaweed SMEs' products. High-quality of products can indirectly improve the welfare of seaweed SMEs, pricing process will be easier. So, Indonesian seaweed SMEs' future will be better.

For academics society are expected to be a facilitator in research activities, research that focuses on the seaweed industry in particular. The academics' roles are expected can empower the young generations to deliver their insight and thoughts about seaweed industry through scientific research.

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