ANALYSIS OF MANGROVE FRUIT PROCESSING DEVELOPMENT STRATEGIES INTO VARIOUS PRODUCTS AS AN ALTERNATIVE SOURCE OF INCOME FOR COASTAL COMMUNITIES IN KARAWANG REGENCY, WEST JAVA

Abubakar, Faculty of Agriculture University of Singaperbangsa Karawang Indonesia

ABSTRACT

This study aims (a) to analyze the Development Strategy of Mangrove Fruit Processing into Various Products at the level of women from coastal communities who are members of the Joint Business Group (KUB) (b) to analyze the Development Strategy of Mangrove Fruit Processing into Various Products at the government level.

This research method uses a descriptive method of policy-making stakeholders. These respondents will be involved in Focused Group Discussion (FGD) activities, and interviews that are guided by the previously created questionnaire. The analysis carried out is a SWOT analysis. In this analysis, internal and external analysis can be carried out, both strengths, weaknesses, opportunities and threats. In making a SWOT analysis, an Internal Factor Evaluation (IFE) Matrix and an External Factor Evaluation (EFE) Matrix are first made. The IFE matrix summarizes and evaluates the internal key factors in the form of major strengths and weaknesses in various functional areas in a business. This matrix can be used as a basis for identifying and evaluating relationships among these areas. The EFE matrix makes strategic planning able to summarize and evaluate the key external factors of activities in the development of mangrove forests (David 2009); Rangkuti, F. (2011)

Strategies that can be carried out at the level of women from coastal communities who are members of the Joint Business Group (KUB) are as follows (1) Improving the ability of human resources through continuous training and coaching with a score of 2.17; (2) Improving cooperation with relevant stakeholders for product development with a score of 1.74 and (3) strengthening the organization and distinctive products with a score of 1.70. While the strategies that can be carried out at the level of relevant agencies or government services are: (1) Application of government skills and policies for coastal tourism areas with a score of 1.94; (2) Develop organization and infrastructure with a score of 1.68 and (3) Build Product and Equipment Marketing Partnerships with a score of 1.63

Keywords: Strategy, Development, Various products, Mangrove, Income, Coastal Zone.

INTRODUCTION

Mangrove forest is a transitional forest ecosystem between land and sea which is known to have many benefits. Based on ITTO (2012) data, the area of mangrove forests in Indonesia is 3,189,000 hectares. The area of mangrove forests in West Java Province is 34,321.12 hectares.

Of this area, there are 165 hectares on the south coast of West Java in Pangandaran Regency, and 34,156.12 hectares on the north coast of West Java such as in Bekasi, Karawang, Subang, Indramayu, Cirebon and Cirebon City Regencies (BPS West Java, 2018). While the area of mangrove forest in Karawang Regency based on 2012 data is 9,979.93 hectares with damaged conditions covering an area of 5,400.31 hectares, medium conditions covering an area of 3,953.96 hectares and those with good conditions only covering an area of 625.66 hectares. Efforts to replant have been carried out by the community, especially around the location of the use of mangrove forests as tourist areas, such as in Tangkolak Barat Hamlet and Sedari Cibuaya.

The potential of the mangrove forest ecosystem includes physical, economic and ecological potential. The physical potential of mangrove forests is to prevent seawater intrusion into land, expand land towards the sea and prevent pond water pollution. The ecological potential of mangrove forests is as a spawning ground, nursery ground, feeding ground for surrounding organisms and a provider of food for marine biota, such as shrimp and crabs. Mangrove forest products, both wood and non-timber, are used by the community as food and firewood so that they contribute to efforts to improve the economic condition of the community (Kustanti, 2011 in Ria Indrian Ariftia, Rommy Qurniati, and Susni Herwanti, 2014). various processed products such as lunkhead, syrup, jam, candy and soap can be made (Abubakar, Sulandjari, K. and Sari, DA, 2020)

The results of Mayudin's research (2012) which only calculated the economic value of ponds in Pangkajene Regency obtained a value of Rp. 1,607,600,070.00 per year. Research results Ariftia, R.I.; et al., 2014 show that the total economic value of the mangrove forest in Margasari Village, Labuhan Maringgai District, East Lampung Regency is IDR 10,530,519,419.00 per year. The economic value has not been added to the community's income from the processed mangrove fruit. If this can be done, it will boost the economic value of mangrove forest products.

Although the partial or total economic benefits in other coastal areas such as Lampung and Pangkajene districts have developed, in Karawang district their utilization has not been optimal. The identification results in Tangkolak, Sukakerta Village, Karawang, West Java, showed that the community's utilization of mangrove forests was not optimal. Its utilization is still limited to physical, economic and ecological use, while the utilization of mangrove fruit (Pidada) into various food products, beverages and health products is still very limited and has never been done. Whereas the existence of mangrove fruit is very useful as an alternative source of new income for coastal communities. This utilization is not well developed. To develop it, it is necessary to approach the strengths and opportunities for the economic development of coastal communities as well as the development of sustainable tourism. Therefore, the study of "Strategy Analysis of Mangrove Fruit Processing Development into Various Products as Alternative Income Sources for Coastal Communities in Karawang Regency, West Java" becomes very important to do.

This study aims to (a) analyze the Development Strategy of Mangrove Fruit Processing into Various Products at the level of women from coastal communities who are members of the Joint Business Group (KUB) (b) analyze the Development Strategy of Mangrove Fruit Processing into Various Products at the government level.

RESEARCH METHOD

This study uses descriptive methods, primary data collection methods through in-depth interviews and structured interviews. Descriptive research method is a data collection activity in

order to answer questions or test hypotheses concerning the current state of the subject of a study (Sevilla et al., 2006). In descriptive research, it can be in the form of symptoms, events, events that occur at this time with a single variable or more than one variable (Junaeni, N. and Abubakar, 2020).

The coastal area that became the research location was Tangkolak Hamlet, Sukakerta Village, Cilamaya Wetan, Karawang, selected by purposive sampling because in this location there was replanting of mangrove forests and the Mitra Bahari Community Social Institution (NGO) as mangrove forest manager. Stakeholders involved in the research are those who are related to mangrove forest area management policies. This research involves elements of government, universities and social institutions. The number of stakeholders is 20 people which include Village Elements 2 (two) people (Village Head, Village Secretary), NGOs 2 (two) people, joint business group 3 (three) people, Fisheries KCD Cilamaya Wetan District 3 (three) people, Dinas Fisheries and Marine Affairs Karawang Regency 2 (two) people, Forestry Service 1 (one), Tourism Office 3 (three) people, Industry and Trade Office 2 (two) people and 2 (two) other people are stakeholders of the Faculty of Agriculture Unsika . These respondents have been involved in Focused Group Discussion (FGD) activities, and interviews based on the previously created questionnaire.

The analysis carried out in this study is SWOT Analysis (Almasi, M., et al., 2018; Genta, Muhammad, et al., 2018). This can be done internally and externally on the Strengths, Weaknesses, Opportunities, and Threats (Mondal, Md and Sanaul Haque, 2017). In making a SWOT analysis, an Internal Factor Evaluation (IFE) Matrix and an External Factor Evaluation (EFE) Matrix are first made. The IFE matrix summarizes and evaluates the internal key factors in the form of major strengths and weaknesses in various functional areas in a business. This matrix can be used as a basis for identifying and evaluating relationships among these areas. The EFE matrix makes strategic planning able to summarize and evaluate the key external factors of activities in the development of mangrove forests (David 2009); Rangkuti, F. (2011).

RESULT AND DISCUSSION

SWOT analysis was carried out to determine the strategy for developing a mangrove fruit processing business in Tangkolak Sukakerta Karawang on each internal factor and external factor. Weighting is carried out on all elements on internal and external factors from the results of problem identification through interviews with respondents. The average value of the comparison between each element is based on the respondent's assessment, then the weight value is obtained which is multiplied by the rating so that the score for each element can be determined. Based on the results of the analysis and rating of each of these elements, a matrix can be made. The internal factor evaluation matrix (EFI) is presented in Table 1.

TABLE 1
MATRIX OF EVALUATION OF INTERNAL FACTORS STRENGTH IN PRODUCT DEVELOPMENT OF PROCESSED MANGROVE FRUIT IN TANGKOLAK SUKAKERTA KARAWANG IN 2020

NO.	POWER FACTOR (S)	WEIGHT	RATING	SCORE
1.	Ladies have a passion for developing processed products from marine products and mangrove forests	0.08	3	0.25
2.	Mothers have very good skills in fish processing business	0.10	4	0.33
3.	There are joint business groups and Maritime Partners	0.07	4	0.29
4.	There is potential for providing capital assistance in the form of money and goods from the agency service	0.06	3	0.21
5.	This product has the peculiarity of supporting tourism development in coastal areas	0.10	4	0.40
6.	The designs and models of the processed products produced are adjusted to market tastes	0.08	4	0.30
TOTAL		0,49	22	1,78

Based on Table 1 (one) above, the uniqueness of the product in the coastal area is the most dominant as a strength factor with a score of 0.40 in addition to the other dominant being that mothers have excellent skills in fish processing business with a score of 0. ,33. The skills possessed by the mothers are the impact of the counseling activities carried out by the university and related agencies. Factors that influence the sustainability of mangrove forest management include the existence of mangrove management counseling activities, management agencies, application of institutional rules, the existence of role models, facilitation and community assistance in management. mangrove forest ecosystem, strengthening and increasing local community participation in management activities, conflicts over the use of mangrove resources and local wisdom (Kusmana, Cecep; Iswahyudi; Hidayat, Aceng; Noorachmat, Bambang P, 2020). This is an opportunity in the development of processing mangrove fruit into various processed products. In developing this business, one must also follow designs and models that are adapted to market tastes with a score of 0.30.

The weakness factor in the development of processing mangrove fruit into various processed products, the most prominent is the absence of good business management, both for processing fish and processing mangrove fruit into various processed products with a score of 0.16. Furthermore, the next weakness factor is that the resulting product is not widely known by the public with a score of 0.15. The main obstacle faced is the lack of capital and modern equipment to manufacture products in large quantities so that these products can be known in general by the public. In addition, the weakness factor in making various processed products from mangrove fruit is the skill that is still very lacking with a score of 0.14. In detail the weakness factors can be seen in Table 2 (two).

In addition to the analysis of internal factors in the SWOT analysis, an analysis of external factors in the form of opportunities and threats was also carried out in the development of processing mangrove fruit into various processed products at Tangkolak Sukakerta Cilamaya Wetan Karawang. External factors are factors that can support or are problems beyond the strengths and weaknesses of the mangrove fruit processing business by the women of the

coastal community. For matrix evaluation of external factors Opportunities for product development of processed mangrove fruit can be seen in Table 3 (three).

TABLE 2
MATRIX OF EVALUATION OF INTERNAL FACTORS WEAKNESSES IN PRODUCT DEVELOPMENT OF PROCESSED MANGROVE FRUITS INTO VARIOUS PRODUCTS IN TANGKOLAK SUKAKERTA KARAWANG IN 2020

NO.	WEAK FACTORS (W)	WEIGHT	RATING	SCORE
1.	Skills for making processed products are still very lacking	0.08	2	0.14
2.	Mastery of new technology is still lacking	0.06	1	0.07
3.	Innovation for processed products is still lacking	0.07	1	0.09
4.	Lack of access to sources of capital in business development	0.06	1	0.07
5.	There is no well-managed business management	0.08	2	0.16
6.	The resulting product is not widely known by the public	0.08	2	0.15
7.	There is very little support from the relevant agencies in processing mangrove fruit into various processed products produk	0.07	1	0.09
TOTAL		1	10	2,54

The existence of support from the government for the development of coastal tourism is a pretty good opportunity with a score of 0.39. Tourism development, especially coastal tourism, is not only limited to coastal tourism actors but is also followed by government support in promotional activities, transportation facilities, and other support in product development activities.

TABLE 3
MATRIX OF EVALUATION OF EXTERNAL FACTORS OPPORTUNITIES FOR DEVELOPMENT OF PIDADA FRUIT PROCESSED PRODUCTS IN TANGKOLAK SUKAKERTA KARAWANG

NO.	OPPORTUNITY FACTOR (O)	WEIGHT	RATING	SCORE
1	Existence of outreach efforts from the government related to technology transfer	0.11	2	0.25
2	Efforts by the Unsika Research and Community Service Institute (LPPM) to foster coastal communities	0.12	3	0.32
3	There is support from the private sector in distributing CSR (Corporate Social Responsibility) funds for the empowerment of coastal communities	0.09	4	0.34
4	There is support from the agency (government) in the development of coastal tourism	0.10	4	0.39
5	People are very interested in distinctive and unique products	0.09	4	0.32
TOTAL		0,51	17	1,62

The limited capital experienced by the women's group can be solved through the participation of capital sourced from Corporate Social Responsibility (CSR) in companies, both state-owned companies such as Pertamina, government-owned banks and others as well as many private companies in Karawang Regency such as company's cars, motorcycles, and companies in the industrial area of Karawang Regency. This is in accordance with the results of the evaluation of external factors for the opportunity to develop products from processed mangrove fruit with the second highest score of 0.34.

The external factor of the opportunity for the development of processed mangrove fruit in this area is the participation of the Institute for Research and Community Service (LPPM) at Singaperbangsa Karawang University (UNSIKA) to foster coastal communities and potential communities who are very interested in special and unique products. This is indicated by their respective scores of 0.32. Even though this score is in third place, it is very useful for the development of processing mangrove fruit into various processed products.

The most prominent threat factor is the dependence on marketing of processed mangrove fruit products to outsiders. The results showed that the group of mothers who wanted to develop the processing of this fruit with an average of low education, namely graduating from Elementary School (SD) to Junior High School (SMP) or the equivalent who generally were in limitations regarding marketing both offline and online. on line. This is indicated by the highest score in the external threat of developing mangrove fruit processing into various processed products with a score of 0.44. According to Indriyani (2006) in Junaeni, N. et al. (2015) that the marketing strategy should be carried out is marketing through the internet with e-commerce systems and social networks. Making a website or blog will make it easier for the outside world to buy or learn about new products in the industrial era 4.0 (four point zero). The existence of the internet makes geographical boundaries almost meaningless. The internet era gave rise to a company calling itself an E-Business company. According to Abubakar (2010) product marketing is a determining factor in the success of a business. Even Mosher, AT. (1965) has long stated that there are 5 (five) absolute requirements for agricultural development, namely (1) the existence of a market for farming products, (2) technology that is constantly evolving, (3) the availability of materials and production tools locally, (4) there is a production incentive for farmers, (5) the availability of smooth and continuous transportation.

TABLE 4
MATRIX EVALUATION OF EXTERNAL FACTORS THREATS TO PRODUCT DEVELOPMENT OF PROCESSED MANGROVE FRUIT IN TANGKOLAK SUKAKERTA KARAWANG IN 2020

NO.	THREAT FACTORS (T)	WEIGHT	RATING	SCORE
1	Transportation facilities and infrastructure to and from the Mangrove Tourism Area are very limited	0.12	3	0.37
2	Marketing dependence on other parties both offline and online	0.13	3	0.44
3	Lack of adequate ports for marketing	0.11	3	0.33
4	Limited equipment assistance for the development of product processing from mangrove fruit and fish	0.13	2	0.27
TOTAL		0,49	11	1,41

The second external factor that stands out is that transportation facilities and infrastructure to and from mangrove tourism areas are very limited. The score value of this external factor is 0.37. It is quite reasonable that to reach the location of this tourist area the road is narrow and damaged. As a result, if two four-wheeled vehicles cross paths, they must find a road width that allows them to pass each other. In addition, there is no adequate parking space if many tourist vehicles visit tourist sites (Abubakar et al., 2020).

The third threat factor is the unavailability of a sea port that allows transportation of both marine products and processed mangrove fruit products if at this time these products are growing rapidly so they can reach markets outside Karawang such as inter-island markets and export markets. The score value of the external factor of the threat to the development of processed products of mangrove fruit in the form of the absence of an adequate port for marketing is 0.33. External threat factors can be seen in detail in Table 4 (four).

The results of the evaluation of internal factors (EFI) and evaluation of external factors (EFE) were then analysed using the SWOT technique to determine a strategy for developing mangrove fruit processing into various processed products. The strategy is prepared by taking into account the strength factor with opportunity (SO) which is using all strengths to seize opportunities, the strength factor with threats (ST) is using all strengths to overcome threats, weaknesses with opportunities (WO) factors are minimizing weaknesses to take advantage of existing opportunities. and the weakness factor with the threat (WT), namely minimizing the weakness to avoid threats (Rangkuti, F., 2011). The elements of each of these factors are combined and a strategy is determined based on the results of the overall SWOT analysis. The results of the overall SWOT analysis can be seen in Table 5 (five).

TABLE 5
SWOT ANALYSIS OF PRODUCT DEVELOPMENT OF PROCESSED MANGROVE FRUIT IN TANGKOLAK SUKAKERTA KARAWANG IN 2020

Internal factors / **External Factors**	**(Strength=S)**	**(Weaknesses=W)**
	1. Ladies are excited to develop processed products from marine products and mangrove forests hutan 2. Women who are skilled in fish processing and other businesses 3. There are joint business groups and Maritime Partners 4. There is potential for providing capital assistance 5. Typical products for coastal areas 6. Product designs and models are tailored to market tastes	1. Skills are very lacking 2. Mastery of new technology is still lacking 3. Innovation of processed products is still lacking 4. Lack of access to capital 5. There is no well-managed business management 6. The resulting product is not widely known by the public 7. Very minimal support from the agency related to the management of mangrove fruit into various processed products
(Opportunity=O) 1. There is an outreach effort from the agency service 2. LPPM Unsika's efforts to foster coastal communities 3. There is support for CSR (Corporate Social Responsibility) funds	**Strategy -SO** 1. Improve HR capabilities through continuous training and coaching (S1,S2,S5, S6,O1,O2, O5) 2.17 2. Increase cooperation with relevant stakeholders for product development (S1,	**Strategy -WO** 1. Training of typical product design skills, use of technology and innovation in products (W1, W2, W3, W6, O1, O2) 1.02 2. Inviting cooperation with LPPM and new investors (W1,

4. There is support for coastal tourism development 5. People are very interested in distinctive and unique products	S2, S3, S4, O2, O3) 1.74 3. Strengthen organization and distinctive products (S3, S5, S6, O4, O5) 1.70	W4, W5, W6, W7, O2, O4) 1.32 3. Increase CSR support for capital and skills (W1, W2, W3, W4, W5, O3) 0.87
(Threat=T) 1. Transportation facilities and infrastructure to and from the Mangrove Tourism Area are very limited 2. Marketing dependence on other parties both offline and online 3. Lack of adequate ports for marketing 4. Limited equipment assistance for the development of product processing from mangrove fruit and fish	**Strategy -ST** 1. Application of skills and government policies Coastal tourism areas (S1, S2, S5, S6, T1, T3) 1.98 2. Develop organization and infrastructure (S3, S4, T1, T2, T3) 1.64 3. Build Product and Equipment Marketing Partnerships (S2, S3, S6, T2, T4) 1.63	**Strategy -WT** 1. 1. Management improvement for tourism product and area development (W1, W2, W3, W5, T1, T2, T4) 1,54 2. Expand access to technology information (W1, W2, W3, T1, T2) 1.11 3. Expand market access (W5, W6,W7, T1, T2. T3) 1.54

From the table, a strategy for developing mangrove fruit processing products is made into various processed products that must be carried out both by the government and by the mothers of KUB members with the following formula:

1. SO1 = S1,S2,S5, S6,O1,O2, O5) --- SO1 score formula from strength and probability formula
2. SO2 = (S1, S2, S3,S4, O2, O3) --- SO2 score formula from the strength and probability formula
3. SO3 = (S3, S5, S6, O4, O5) --- SO3 score formula from strength and probability formula
4. ST1 = (S1, S2, S5, S6, T1, T3) --- ST1 score formula from strength and threat formula
5. ST2 = (S3, S4, T1, T2, T3) --- ST2 score formula from strength and threat formula
6. ST3 = ((S2, S3, S6, T2, T4) --- ST3 score formula from strength and threat formula
7. WO1 = (W1, W2, W3, W6, O1, O2) --- WO1 score formula from weakness and opportunity formula
8. WO2 = (W1, W4, W5, W6, W7, O2, O4) --- WO2 score formula from weakness and opportunity formula
9. WO3 = (W1, W2, W3, W4, W5,O3) --- WO3 score formula from weakness and opportunity formula
10. WT1 = (W1, W2, W3, W5, T1, T2, T4) --- WT1 score formula from weakness and threat formula
11. WT2 = (W1,W2, W3, T1, T2) --- WT2 score formula from weakness and threat formula
12. WT3 = (W5, W6, W7, T1, T2. T3) --- WT3 score formula from weakness and threat formula

From the results of the SWOT analysis with the formulation, various strategies can be obtained to develop the business of processing mangrove fruit into various processed products. The development strategy can be divided into two major strategies, namely (a) strategies that can be carried out by mothers of coastal communities who are members of KUB and (b) strategies that can be carried out by both central and regional governments. The strategy was developed jointly between various related parties, both stakeholders (relevant agencies, groups of women from coastal communities).

Policy Strategy for Business Development of Mangrove Fruit Processing into Various Products in Tangkolak Sukakerta Karawang

There are two policies that can be taken, namely (1) policies taken by coastal communities as potential entrepreneurs, namely women in Sukakerta Village, Cilamaya Wetan Karawang District and (2) policies that can be carried out by the local government of Karawang Regency, West Java and the central government. represented by the Ministry of Maritime Affairs

and Fisheries, the Ministry of Environment and Forestry and the Ministry of Industry and Trade of the Republic of Indonesia.

Strategy for Business Development of Mangrove Fruit Processing Into Various Products by KUB members

Strategies that can be carried out at the women's level for the development of mangrove fruit processing businesses into various products in Tangkolak Sukakerta Cilamaya Wetan Karawang are as follows: The first priority is to improve the ability of human resources through continuous training and coaching with a score of 2.17. The second priority is to increase cooperation with relevant stakeholders for product development with a score of 1.74 and the third priority is to strengthen the organization and distinctive products with a score of 1.70. Priority Strategy for Mothers of the Coastal Community For the development of the business of processing mangrove fruit into various processed products in Tangkolak, Sukakerta Village in 2020, the full details can be seen in Table 6 (six).

TABLE 6
PRIORITY STRATEGIES BY KUB MEMBERS TO DEVELOP MANGROVE FRUIT PROCESSING BUSINESSES INTO VARIOUS PROCESSED PRODUCTS IN 2020

No	Strategy Priority	Code	Score
1.	Improving HR capabilities through continuous training and coaching	SO1	2,17
2.	Increase cooperation with relevant stakeholders for product development	SO2	1,74
3.	Strengthen organization and distinctive products	SO3	1,70

Furthermore, to develop the business of processing mangrove fruit into various processed products, it is inseparable from increasing human resources through training. This increase in human resources starts from their knowledge of mangrove fruit processing, business management, business feasibility, packaging, marketing both online and offline.

Conduct and enhance cooperation with other stakeholders, especially marketing institutions, starting from the local sub-district, district, provincial, as well as national and international levels. This collaboration is not limited to marketing but also in product manufacture, packaging and also procurement of raw materials and auxiliary materials. Increasing this collaboration is very important, especially things that can arouse the enthusiasm of coastal women in the utilization of mangrove fruit into various processed products.

These women in coastal areas are members of the newly formed Jaya Joint Business Group (KUB) with a total of 20 members. This KUB member has enthusiasm and enthusiasm in processing mangrove fruit into various processed products. In general, their backgrounds are housewives, small businesses in processing fish caught by their husbands, and other activities.

This organization is seen from the time of its establishment, it was only 2 years old. All activities still rely on fish and mangrove fruit processing activities. Experience is still very limited so that efforts are needed to strengthen the organization both in increasing broad participation among KUB members to carry out organizational management functions as well as building cooperation with other parties outside KUB.

Strengthening the organization can not only be done by itself, but really requires the participation of outside parties, especially related agencies such as the Department of Fisheries, the Office of Cooperatives and Micro, Small and Medium Enterprises and the Faculty of Agriculture, Unsika.

Government Level Mangrove Fruit Processing Business Development Strategy

TABLE 7
PRIORITY OF GOVERNMENT STRATEGY FOR DEVELOPMENT OF MANGROVE FRUIT PROCESSING BUSINESS INTO VARIOUS PROCESSED PRODUCTS IN TANGKOLAK SUKAKERTA VILLAGE IN 2020

No	Strategy Priority	Code	Score
1.	Application of skills and government policies Coastal tourism areas	ST1	1,98
2.	Organizational and infrastructure development	ST2	1,64
3.	Membangun Kemitraan Pemasaran Produk dan peralatan	ST3	1,63

Mangrove fruit processing is a new idea to get the benefits of mangroves. Mangrove fruit can be processed into lunkhead, syrup, jam, candy and soap. This product is still a prototype so to introduce it requires the involvement of stakeholders, namely the government, universities and the private sector which Curley, M. and Salmelin, B., (2017) refer to as the Quadruple Helix. Quadruple helix, in this context, means to add to the triple helix of government, university, and industry a "fourth helix" that we identify as the "media-based and culture-based public." This fourth helix associates with "media," "creative industries," "culture," "values," "lifestyles," "art," and perhaps also the notion of the "creative class."

The strategy that can be done by the government is to apply skills and make government policies regarding coastal tourism areas. This requires training activities to make processed mangrove fruit into various products as souvenirs for tourists, inviting universities and the private sector to participate. As a consequence, the government must provide training funds, efforts to promote mangrove forest natural tourism, hold events or events that can influence people to want to visit tourist areas and other efforts that can stimulate the spirit of traveling to mangrove forests. This strategy is the first priority strategy that the government can do with a score of 1.98.

The KUB Jaya organization is a group that is just growing, so government efforts are needed in its development. Along with the development of the KUB organization, the government can build infrastructure such as roads that connect the tourist forest area with the main road in Cilamaya Wetan District, build roads in the mangrove forest area, build shelters, build parking lots and other facilities that can complete all facilities for tourists. This strategy is the second priority strategy that the government can do with a score of 1.64.

The next strategy is to build a Product and Equipment Marketing Partnership with a score of 1.63. The equipment used by KUB members is still very simple in the form of kitchen utensils that are used daily. With this tool the volume of activities is still small, the results are also small. To increase the volume of activity results, it is necessary to have larger equipment, shorter time, more effective and more efficient. Relying on the existing equipment is very difficult for mothers to develop the processing of mangrove fruit into various processed products so that the active role of the government in assisting the equipment is very important. At the same time, the government can bridge the relationship between the members of KUB Jaya and other parties so that there is a partnership in the development of mangrove fruit processing.

CONCLUSION

From the results of the study, the following conclusions can be drawn:

Strategies that can be carried out at the level of women from coastal communities who are members of the Joint Business Group (KUB) are as follows (1) Improving human resource capabilities through continuous training and coaching with a score of 2.17 (2) Increasing collaboration with relevant stakeholders for development products with a score of 1.74 and (3) Strengthening the organization and distinctive products with a score of 1.70. While the strategies that can be carried out at the government level are: (1) Application of skills and policies for developing coastal tourism areas with a score of 1.94 (2) Developing organization and infrastructure with a score of 1.68 and (3) Building product and equipment marketing partnerships with a score of 1. 1.63

From the research results, it can be suggested as follows: (1) Government parties such as Marine and Fisheries Service, Environment and Forestry Service, Tourism Office routinely and programmatically provide training to Joint Business Groups (KUB) on the development of mangrove fruit processing, area management and development. Coastal areas as mangrove tourism areas (2) Capital and equipment assistance programs are needed for members of Joint Business Groups (KUB) (3) Development of supporting infrastructure for the development of mangrove forest coastal tourism areas is required (4) Product marketing partnerships for joint business groups are required (KUB).

ACKNOWLEDGMENT

The authors thank the Chancellor of UNSIKA, Head of the Institute for Research and Community Service UNSIKA for the funding assistance for this research. Thanks are also expressed to the Dean of the Faculty of Agriculture UNSIKA for the support and motivation during this research. Thanks are also conveyed to all stakeholders from the Office of the relevant agencies, Village Heads, Maritime Partners Community Social Institutions, Lecturers of the Agribusiness Study Program, Faculty of Agriculture UNSIKA, students for their assistance in interviews, discussions and other facilities so that research can be completed as planned.

REFERENCES

Abubakar. 2008. Efisiensi Pengelolaan Kawasan Tambak Udang Dan Dampaknya Terhadap Aspek Ekonomi Sosial dan Ekologi di Wilayah Pesisir Kabupaten Dompu, NTB. Sekolah Pasca Sarjana Institut Pertanian Bogor. Bogor. Indonesia

Abubakar, Sulandjari, Kuswarini and Sari, Dessy Agustina, 2020. Prospek Pemanfaatan Hutan Mangrove Sebagai Sumber Pendspatan Alternatif Masyarakat Pesisir Kabupaten Karawang.

Ariftia, R.I.; *et al*. 2014. Nilai Ekonomi Total Hutan Mangrove Desa Margasari Kecamatan Labuhan Maringgai Kabupaten Lampung Timur. Journal Sylva Lestari Vol. 2, No.3, September 2014.

Arikunto. 2011. Prosedur Penelitian. Rineka Cipta. Jakarta.

Benu, O. L, Timban, J., Kaunang, R., Ahmad, F. 2011. Valuasi ekonomi sumberdaya hutan mangrove di Desa Palaes Kecamatan Likupang Barat Kabupaten Minahasa Utara. Jurnal. Volume 7 Nomor 2: 29-38.

Curley, M. and Salmelin, B., 2017. Innovation, Technology, and Knowledge Management. Open Innovation 2.0 The New Mode of Digital Innovation for Prosperity and Sustainability (e-book). Elias G. Carayannis School of Business George Washington University Washington, D.C., USA.

Hiariey, L.S., 2009. Identifikasi Nilai Ekonomi Ekosistem Hutan Mangrove Di Desa Tawiri, Ambon. Journal Organisasi dan Manajemen, Volume 5, Number 1, March 2009, p 23-34.

Jafari, Mahtab. 2019. Investigating the role of tourism in the conservation and sustainable development of the environment: A Geographic Approach. International Journal of Information, Business and Management; Chung Li Vol. 11, Iss.4, (Nov 2019): 193-211

Johari, H. I.. 2007. Analisis nilai ekonomi total mangrove di Kabupaten Lombok Timur Bagian Selatan Nusa Tenggara Barat. Artikel Pendidikan. Universitas Muhammadiyah Malang

Junaeni, N., Abubakar and Sudarmin, 2015. Priority Assisment for Developing Bamboo Woven Craft Products in Lombok Island, West Nusa Tenggara. Eminence Journal of Management, Universitas Pancasila Jakarta Indonesia, Volume 3 (1), p. 30-37.

Junaeni, N. dan Abubakar, 2020. Analisis Strategi Pengembangan Produk Kerajinan Anyaman Bambu di Pulau Lombok, Nusa Tenggara Barat. Journal Agrimanex. Vol. 1 nomor 1, September 2020, p. 19-27.

Rangkuti, F. 2011. SWOT Balanced Scorecard : Teknik Menyusun Strategi Korporat yang Efektif Plus Cara Mengelola Kinerja Risiko, Gramedia Pustaka Utama. Jakarta

Mayudin, A. 2012. Kondisi ekonomi pasca konversi hutan mangrove menjadi lahan tambak di Kabupaten Pangkajene Kepulauan Provinsi Sulawesi Selatan. Journal. Volume 8, Nomor 2: 90-104

Rahadian, A.; Prasetyo, L. B., Setiawan, Y. dan Wikantika, K. 2019. Tinjauan Historis Data Dan Informasi Luas Mangrove Indonesia. Media Konservasi Vol. 24 No. 2 August 2019: p 163-178.

Sofian, A. 2012. Valuasi ekonomi dan pengelolaan hutan mangrove Desa Penunggul, Kecamatan Nguling, Kabupaten Pasuruan. Tesis. Universitas Brawijaya. Malang