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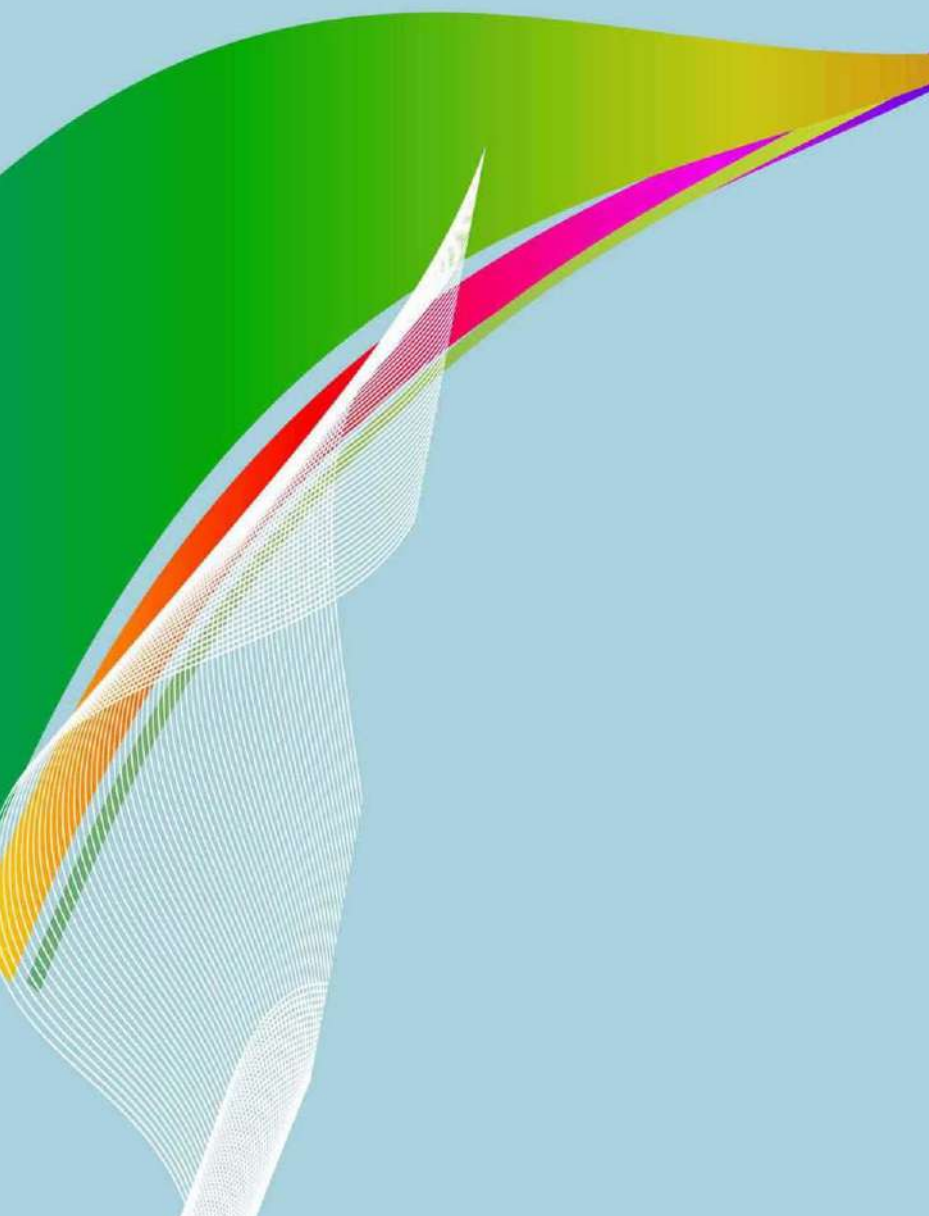
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Science and Technology for the Export Product of Small and Medium Sized Enterprise (UKM) Kotaraja Rattan

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**SCIENCE AND TECHNOLOGY FOR THE EXPORT PRODUCT
OF SMALL AND MEDIUM SIZED ENTERPRISE (UKM)
KOTARAJA RATTAN**

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Abstract

The objective of the Export Product Science and Technology Division (IBPE) is to boost the export growth of Small and Medium Sized Enterprises (SME) of rattan handicraft products in Aceh Besar Regency "Kotaraja Rotan" through improved management and product quality. The program also aims to accelerate the transfer of technology and management from STKIP Bina Bangsa Getsempena Banda Aceh as the implementer of IBP to SME "Kotaraja Rotan" as an industrial society as well as developing link and match between STKIP Bina Bangsa Getsempena Banda Aceh, SME, Aceh Besar District Government and large community. The method implemented is to provide assistance to the quality of raw materials, production processes, product quality, production management and marketing, quality of manpower, facilities and finance of SME. The conclusion of the program in this first year is the solution offered has successfully solved the problems faced by partners that are marked with the issuance of business license for partners, the availability of mill tools to guarantee the quality of products concerning the size and shape, availability of production space and good and clean showroom with partner needs. This IbPE program has encouraged the public spirit to be able to produce export products in order to compete in the international market.

Keywords: *Handicraft Products; SME; Export; Rattan; Quality.*



A. Introduction

Small and Medium Sized Enterprise (SME) that become a partner in the Science and Technology Program for Export Products (IBP) is SME in the field of rattan handicraft namely UKM "Kotaraja Rotan" which is located at Gang Sentosa Melati Village Lam Gaboh Village Lhoknga District, Aceh Besar District, Aceh Province, Indonesia. UKM "Kotaraja Rotan" produces craft made from rattan chaired by Mrs. Hammah which produces product like cover of food, basket of clothes, basket of wash meat, tampah, flower pot, swing, swing doll, parcel basket, shoe rack until placemat pot alias *reungkan*, and *kateng*.

1. Raw material

The raw materials needed to produce rattan handicrafts are the types of rattan slimit and rattan manau depending on the type of product will be produced. Recently, the supplies of raw materials are not experiencing many constraints. Suppliers of raw materials come from the Leupung and Lhong areas where in the sub-district farmers also planted slimit type rattan in their garden in order to gain more income. Selection of raw material quality tailored to the needs of the products to be produced according to costumers demand. Costumers' tastes determine the quality of raw materials. The raw materials are directly selected by the chairman of the SME or the person trusted by the Chairman of the SME.

2. Production

The equipment owned in order to support the production process is a knife for about 20 units, 3 units of rattan pliers, rattan cutting tool 1 unit. Products produced from the production process are handicraft products made of rattan, namely cover food, basket clothes and others. Production capacity from 2014 to 2016 is shown in Table 1.7 below.

Table 1. Production Capacity

No	Year	Production Capacity
1	2014	21500
2	2015	21650
3	2016	21820



Production capacity from 2014 to 2016 has increased. Nevertheless, the capacity is still included in the production capacity that is not yet optimal (not full capacity) so it still needs to be improved again, in order to meet the demand of domestic market and export market that so far showed an increase trend.

Control of production process is done by personnel who are assigned to the quality control and also assisted by the Chairman. Control of production processes that are done so far only identify the defective products or not, check whether the product is appropriate or not, but it still not yet reaches the control of production processes that use scientific-based management principles.

Some of the problems encountered in the production process include: production processes that have not yet implemented standards of size, organizational management and financial administration management.

3. Process

Lay-out production process is still less compiled of its flow, but according to the team proposer still need to be improved again in order to be better and to facilitate the workings. The flow chart of the production process is shown in the following figure.

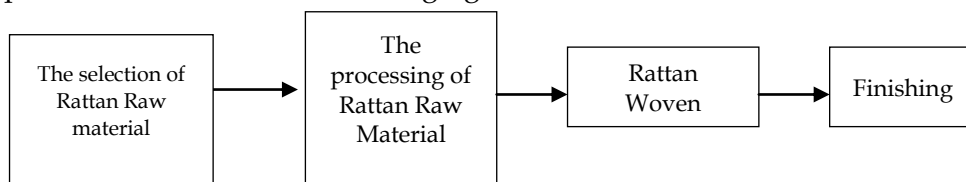


Figure 1. Flowchart of production process

Guarantee of product quality so far is done based on buyer or costumers demand. Besides, there is also guidance related to product quality assurance from the Department of Industry and Trade of Aceh Besar and PLUT Aceh Besar. However, it is necessary to improve the quality standard of its products in order to obtain SNI quality standard. The improvement of quality standards with the expectation of products for export will increase and be accepted in destination countries. Besides,



the improvement of product quality needs to be improved because there have been many complaints related to the quality of the products, especially the less finishing products in the finishing process.

4. Product

The products involve serving covers, baskets of clothing and others made from rattan in the form of craft for household and other needs. These products can be described as follows.



Figure 2. Some products of SME "Kotaraja Rotan"

The number of rattan handicrafts products for household needs and others from 2014 to 2016 is shown as in the table below:

Table 2. Number of Products

No	Year	Total Production
1	2014	21175
2	2015	21215
3	2016	21385

Specification of souvenir products particularly has an art value that is in demand by both domestic and overseas costumers. However, some product weaknesses still exist and need to seek for the specialty of products that have the advantage of competing products so that it adds its own interest, especially for overseas customers.

Product quality is a factor that is considered by the costumers before deciding to buy or not. Although the product design has met the

expectations of most costumers, but in terms of product quality still needs an increase.

5. Distribution of products to the hands of costumers

The methods used to sell their products abroad are not directly through brokers or agents (brokers) from Banda Aceh, Lhokseumawe and Medan. While the domestic market segment for SME products "Kotaraja Rotan" includes Aceh Barat, Aceh Barat Daya, Sigli, Banda Aceh, Lhoksemawe. The export sales from 2014 to 2016 are in the following table.

Table 3. Export Sales Data

No	Region of Agent Booking for Export	2014	2015	2016
1	Banda Aceh	54	59	70
2	Lhokseumawe	30	41	52
3	Medan	65	73	75
Total		149	173	197

The trend of export sales value has increased. Nevertheless there is a potential market (prospect market) that is still open and can be developed; Saudi Arabia which is currently ordering for the product in the form of souvenir.

6. Management

Production planning is still based on order (made to order) while production planning based on stock has not been done because the product is made only to fulfill orders either from domestic or foreign costumers. Even if the SME "Kotaraja Rotan" produces not because of the order, it only meets the stock in the showroom. Recording product planning is still done with manual records, or even if done with a computer and even then still not using a good production planning system.

Bookkeeping has been done but still not good and not in accordance with the rules of accounting so that required the design of a



system or procedures use of accounting rules in financial reporting. Financial records are limited to recap, sales and profit.

The process of auditing the current financial report is still done by internal auditors namely the Chairman of the SME herself. The existing and applied management patterns are not yet well organized. There are several things that need to be improved, such as the supervisory system, the division of tasks and the financial management and marketing.

For Intellectual Property Rights (HKI) the products of SME "Kotaraja Rotan" still do not exist. Based on interviews with Chairman of SME "Kotaraja Rotan" Mrs. Hamnah said that there is actually potential for patented products, but the product variations are many that the registration of patents cannot be done. Potential products of SME "Kotaraja Rotan" get a big HKI because it has a high artistic value.

Storage place in the form of raw materials is done in place of production while finished goods are placed in the showroom area and the spaces around the place of production. It causes unkempt and uncomfortable. Based on the survey, the condition of the storage area, whether the raw materials or finished goods has not been arranged and still needs to be increased capacity and quality of equipment. The storage of finished products is still mixed with the office and the storage of raw materials is still found mixed with the production activities.



Figure 3. Raw Materials Room and Showroom

7. Marketing

Marketing technique is needed by the company especially for Small and Medium Enterprises. Some of product marketing techniques have not been done due to limited knowledge and internet usage. In order

to expand its market coverage, SME "Kotaraja Rotan" always follow product exhibition both at district and provincial levels. Some local level of good exhibition that have been followed include: Exhibition at the Aceh Culture Week event.

Another marketing technique is cooperation with Aceh Besar Regency Government which SME "Kotaraja Rotan" sells its products in Show Room Center of Aceh Besar typical Souvenirs Since the types of products are quite varied so the price is also varied. For local market the cheapest price is Rp.15.000, - / unit and the most expensive price is Rp.400.000 / unit, while for the foreign market the cheapest price is Rp.30.000, - / unit and the most expensive price Rp.500.000, - / unit.

8. Human Resources

The number of workers employed directly as many as 20 people. Besides employing direct workers, SME "Kotaraja Rotan" also employs people indirectly by providing opportunities to residents around the business place totaling 10 people bringing products that require further processing to be done at home of their residents. Workmanship by indirect labor includes knitting process and fabric layer installation on clothes basket. Problems that arise is the achievement of target size and number of products finished on time, then the problem with the production work members also occur constraints that they often do not come to work at the time of the harvest season. They choose to work in the fields rather than coming to work so this causes the production capacity disrupted.

B. Method

The method employed in collecting the data was interviews and Focus Group Discussions (FGD). This was done to collect data about the production process from material input to product output. As for the data collected is all the problems faced by partners in the production process. After the data is collected then data processing was carried out by data reduction, data display, conclusion drawing and verification.



C. Research Finding

Based on the results of the data analysis, the data that becomes a priority is obtained and the solution data is offered to solve the problem.

Table 4. Partner Problem Priority Matrix

No	Aspect	"Kutaraja Rotan" SME
1	Raw Material	There is no problem for aspects of raw materials, but still maintain good relations with suppliers.
2	Production	<ol style="list-style-type: none"> 1. Production equipment is still lacking. 2. Most of the production process is still carried out in each member's house because of the lack of production space 3. Production capacity is not optimal
3	Process	<ol style="list-style-type: none"> 1. In the production process, no cost monitoring has been carried out at each process post. Efficiency can still be carried out in the production process activities. 2. The amount of production on time and quality is not optimal.
4	Product	<ol style="list-style-type: none"> 1. Product design still mimics other products 2. There has been no product standardization internally
5	Management	<ol style="list-style-type: none"> 1. Production Management: there is a lack of production equipment, the management of the production process is not maximized. 2. Financial & Accounting Management: classification of products, classification of costs and recording or bookkeeping done so far has not been classified as existing accounting rules. 3. Management of human resources does not pay attention to the work safety of members, such as not wearing gloves. 4. Potential IPR (Intellectual Property Rights) products but there is no management process towards IPR
6	Distribution	Export distribution is still through agents so that the export market is limited.
7	Marketing	<ol style="list-style-type: none"> 1. The participation of the exhibition is still limited. 2. Not having a documented customer database 3. Don't have a website to market products
8	Human Resources	<ol style="list-style-type: none"> 1. Members' commitment and work ethic need to be grown 2. The production engineering skills of members need to be improved 3. Do not have human resources specifically to design products 4. Not having HR specifically for e-commerce and export

No	Aspect	"Kutaraja Rotan" SME
		management
9	Facilities	<ol style="list-style-type: none"> 1. Production sites are still small / narrow 2. The storage of raw materials is not well organized 3. The work equipment storage area has not been arranged neatly and well 4. Show room lack of cleanliness and neatness
10	Financial	With the current business scale, there are financial problems in the form of lack of working capital, especially when the business grows to become large, additional working capital is very necessary, not having the ability to make bankable credit proposals.

Table 5. Solutions Matrix Offered

No	Raw Material	Producti on (Machiner y & Equipme nt)	Process	Produc t	Managemen t	Marketin g (Sales Volume Increase)	HR (Increase d Labor)
I	Establishing relations of rattan trade associations with suppliers	<p>The addition of production equipment still low</p> <p>Repairing of damaged production equipment</p>	Assistance in the preparation of Standard Quality Assurance	Training and product design assistance	<p>Training and mentoring production planning</p> <p>Training and financial administration assistance</p> <p>Assistance of HKI handling</p>	<p>Training and mentoring customer database creation</p> <p>Exhibition of export products in cooperation with Regional Export Training and Promotion Center (P3ED) and National Export Development</p>	<p>Production technical training for SME members</p> <p>Recruitment and training of special members of product design</p>



No	Raw Material	Production (Machinery & Equipment)	Process	Product	Management	Marketing (Sales Volume Increase)	HR (Increased Labor)
						Agency (BPEN) Participation in other exhibitions	
II	Strengthening the cooperation of rattan trade associations with suppliers	Manufacture of raw material processing tools Addition of production and finishing equipment	Assistance and quality control Assistance and layout arrangement	Assistance of product design	Assistance to production planning Assistance to financial administration Assistance of HKI handling	Exhibition of export products in cooperation with Regional Export Training and Promotion Center (P3ED) and National Export Development Agency (BPEN) Participation in other exhibitions	Training and technical assistance of production for SME members Assistance of special product design members Recruitment and training of specialized members of e-commerce and export management
II I	Strengthening the cooperation of rattan trade associatio	Addition of production and finishing equipme	Assistance and quality control Assistance	Assistance of product design	Assistance to production planning Assistance	Exhibition of export products in cooperati	Training and technical assistance of producti



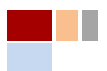
No	Raw Material	Production (Machinery & Equipment)	Process	Product	Management	Marketing (Sales Volume Increase)	HR (Increased Labor)
	ns with suppliers	nt Computer rejuvenation to support online website-based marketing	e and improvement of lay out		to financial administration Assistance of HKI handling	on with Regional Export Training and Promotion Center (P3ED) and National Export Development Agency (BPEN) Participation in other exhibitions Creating an Online Sales Website	on for SME members Assistance of special product design members Facilitation of special members of e-commerce and export management

D. Discussion and Result Research

The results achieved after the solution and work plan implemented are:

1. Raw material

The raw materials needed to produce rattan handicrafts are the types of rattan slimit and rattan manau depending on the type of product wanted to be produced. Supply of raw materials is no longer experiencing constraints due to raw material suppliers come from the District Leupung and District Lhong, Aceh Besar District which is about 13 KM from SME. Suppliers of raw materials have established cooperation with SME to



continue providing raw materials supply to SME. This raw material is processed into semi-finished material in the traditional way that is directly dried under the sun for 2-3 days. For the price of raw materials from the collector that is Rp.11.000, - per Kg has reached the location of production.

2. Production (Machinery and Equipment)

Availability of tools:

- a. Rattan splitters to make the standard size of rattan that will be in knitting.
- b. Knife to soften the outer layer of rattan.
- c. *Dandang* (steaming Pan) and cauldron to boil raw material of rattan into semi-finished material.
- d. Stove for rattan boiling process
- e. LPG as stove fuel.
- f. Scales to weigh product results before shipping products to customers.
- g. Pliers for production process.
- h. Compressors for product dyes.
- i. Sewing machine as an additional fabric material on bags and clothing products and other clothing products.
- j. Mall to produce rattan handicrafts to ensure Quality Standards for sizes and models.



Figure 5. Production tools

3. Process

With the implementation of Product Quality Assurance training, currently SME has done the production process using the mall so that the results have more quality standards for the size and shape and the time required in the process is shorter, saving time 60% than before. This quality assurance is very important to ensure the product is ready for export market.

4. Product

The increasing diversity of product design results from product design training is 2 new product designs. Prior to marketing, the new product is made prototype and experiences the market tested so that partners know the interest and quality of the product.



Figure 6. New product design

5. Management

- a. Establishment of Business License by SME as export requirement.
- b. Availability of a well-documented production planning system.
- c. Increased quality of financial administration, raw materials, finished products by partners.
- d. Implementation of registration process of IPR or patent for trademark.
- e. Availability of good and clean production space.
- f. Availability of showroom space is good and clean as needed.
- g. Availability of Labels, Brands and Brochures.



Figure 7. The product already has a hangtag and a brochure



6. Marketing

- Have an online website with domain <http://acehrotan.com>
- The Number of Costumers has increased via online and direct order.
- Has a web-based customer database.
- Followed the Craft Exhibition of Nusantara (Kriyanusa, 27 Sept-1 Oct 2017) at the Convention Hall, Jakarta Convention Center, Jakarta.



Figure 8. Online store website



Figure 9. Chairman of SME Kota Raja Rotan at Exhibition

7. Human Resources

- Increased work ethic of partner members
- Increased skills of partner members in production
- Have the ability to design the product



Before



After

Figure 10. Results of production space construction



Figure 11. Result of showroom space renovation

E. Conclusion

Kotaraja Rotan SME partners have the supply of raw materials that are met at all times and have complete production equipment that can increase the amount of the production and also product quality. Furthermore, Kotaraja Rotan SME partners have been able to save production time reaching 60%, and also already have new products based on the design results, have business licenses and are in the process of managing trademark patents, have monthly and annual financial reports and have a marketplace for product marketing.

As for the the solutions offered for this program have successfully solved the problems faced by SME partner Kotaraja Rotan, this is marked by the issuance of business license for partners, the availability of mall tools for quality assurance of products regarding size and shape, availability of production and showroom space is good and clean in accordance with the needs of partners, increased turnover 20% and assets 30% in 2017. IbPE Program is the beginning of the export management where for the first year is to ensure the production process in accordance with standards and procedures and produce products that have quality standards for export. And this IbPE program has encouraged the public spirit to be able to produce export products in order to compete in the international market.



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