

PRODUCTION PRICE MAKING AN ENVIRONMENTALLY FRIENDLY HANDSOAP MADE FROM LIME AS A STEP IN PREPARING INDEPENDENT ENTREPRENEURS FOR STUDENTS OF SMAN 2 RANGKASBITUNG

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ABSTRACT

We carried out this community service activity at SMAN 2 Rangkas Bitung in partnership with the Local Government of Lebak Banten with the theme ‘Production Price of Making Environmentally Friendly Handsoap Made from Lime as a Step in Preparing Independent Entrepreneurship for Students of SMAN 2 Rangkas Bitung’. The targets in this activity are teachers and students of SMAN 2 Rangkas Bitung, they are given knowledge, training, and direct practice in making handsoaps. The PkM team will also provide assistance until the product can actually be marketed. The initial target of the product will be used alone and sold in the school environment and then the next target will be sold to the community. The objectives to be achieved are to foster an entrepreneurial spirit, be able to calculate production costs for the products produced and contribute to marketing and selling the products produced. The results of these activities are in the form of increased knowledge and welfare for teachers and students obtained from product sales. Also for students after graduation, they can be entrepreneurs, both students who continue their studies and those who are not permanent can make these products.

Keywords: COGS, Eco-friendly Products, Handsoap, Entrepreneurship

1. INTRODUCTION

SMAN 2 Rangkasbitung is an educational institution located on Jl. Siliwangi Kampung Pasir Ona Kelurahan Rangkasbitung Timur Kecamatan Rangkasbitung Kabupaten Lebak, Banten Province which is engaged in formal education. SMAN 2 Rangkasbitung is one of the senior high schools with state status located in the area of Kecamatan Rangkasbitung, Kab. Lebak, Banten. SMAN 2 Rangkasbitung was established on 22 November 1985 with the Establishment Decree Number 0601/O/1985 under the auspices of the Ministry of Education and Culture. In learning activities, the school which has 1,114 students is guided by 50 teachers who are professional in their fields. The current Principal of SMAN 2 Rangkasbitung is Mr Wahyudi Widodo, M.Pd. The existence of SMAN 2 Rangkasbitung is expected to contribute in educating the nation's children in the area of Kec. Rangkasbitung, Kab. Lebak. The school has activities and media of communication, information and education about school sanitation. Activities carried out such as hand washing, hygiene and health, maintenance and care of toilets.

The Vision and Mission of SMAN 2 Rangkasbitung are:

Vision:

To be an Excellent, Competitive and Environmentally Sound School Based on Faith and Taqwa.

Mission:

1. Develop a reliable and quality management system.
2. Improving Quality and Efficient Learning System.
3. Improving the Condition of the School Environment that is Conducive and Religious.
4. Forming learners who have faith and piety.
5. Improving the Professionalism of Human Resources with Faith and Piety.
6. Developing Learning Based on Faith and Taqwa, Science and Technology and Noble Character.
7. Realising a clean, beautiful, safe and comfortable school.

In line with the vision and mission as well as the development of SMAN 2 Rangkasbitung, it is not only focused on formal scientific factors alone but it is necessary to arrange and hone the soft skills and entrepreneurship spirit of the academic community. The activities carried out so far and have been running in relation to health, so supporting factors are needed so that the programme is sustainable and continues to run. The high need for soap is certainly important to be followed up, where the product is obtained not only by buying but far from that is how to produce it and in the long run it can be improved to be traded both in the internal SMAN 2 Rangkasbitung and in the surrounding community.

The priority problems that become the basis for the implementation of community service activities at SMAN 2 Rangkasbitung for the theme of the cost of production of making environmentally friendly handsoaps made from lime as a step in preparing independent entrepreneurs in the field of production are understanding and knowledge of how to calculate to get the cost of production of a product so that it is expected that the products produced will have

economic value and when the product is sold it will be competitive with similar products. In addition, expertise is needed for prospective entrepreneurs who will make products how to produce these products from preparing the materials needed, to the production process carried out. For this reason, in this community service activity, there are two activities carried out, namely providing participants with an understanding of how to calculate the cost of production and then how to carry out the production process so that the product results will be able to have a competitive value if marketed.

On the basis of the problems described above, we intend to conduct community service activities in the form of providing knowledge and training on the cost of production of making environmentally friendly handsoaps made from lime as a step in preparing independent entrepreneurs for students of SMAN 2 Rangkasbitung in order to improve the welfare of teachers and prepare independent entrepreneurs for students of SMA N 2 Rangkasbitung."

This Community Service activity that we organised aims to provide knowledge, counselling, training, manufacturing practices, and determining the cost of production in making environmentally friendly handsoaps made from lime as a step in preparing independent entrepreneurs for students of SMAN 2 Rangkasbitung. Where the products produced can be used by themselves or sold in the internal and external environment of SMAN 2 Rangkasbitung, so that they can become a source of income. This is expected to improve the welfare of the teachers and can be a provision of knowledge for students to be entrepreneurs when they graduate from school. This Community Service activity involves students, because the participation of students becomes one of the activities outside the campus and enriches their knowledge. Students will gain independence and freedom in Merdeka Belajar Kampus Merdeka (MBKM) activities.

The implementation of Community Service is one of the duties and responsibilities of educators called the Tridarma of Higher Education. In addition to activities carried out in internal universities such as the implementation of teaching, an educator is also required to carry out activities outside the university. One of the activities carried out outside the College is community service activities. Educators must be able to see the situation and conditions of the surrounding environment where this is expected to be able to contribute and out way the various problems that arise in society that must be able to be synergised with the academic world so that it will be able to provide input and information and improvements that need to be made. This is in line with Key Performance Indicator (KPI) 3 which requires an educator to carry out off-campus activities.

2. METHOD

The implementation method used in this activity is in the form of product manufacturing, training debriefing and mentoring. The location of activities ranging from manufacturing, training and mentoring at SMAN 2 Rangkasbitung, Lebak-Banten. The PkM team went directly to the location both during the opening, presentation of material, training, manufacturing process and mentoring. In order for this program to be carried out smoothly, before all activities began, socialisation was carried out to related parties, including the Principal & Team, School Committee, and other Teacher Advisors of SMAN 2 Rangkasbitung who had an interest in the sustainability of this program. With this socialisation, it is hoped that all related parties will fully support this programme both institutionally, materially, and morally. To provide solutions to the problems raised, partners will prepare various tools that will be used in this service activity and facilitate participants who will take part in PkM activities in addition to the contribution of activities in the form of inkind such as the provision of venues/activity rooms and other supporting facilities both in exposure and training activities. Each person will carry out their respective duties to succeed the intended activities both from the internal team and partners. For students involved in this activity will get a certificate recognition that has SKP value, included in the publication of PkM articles carried out.

The stages of the activity can be seen in table 1 below:

Table 1. Activity Stages

No	Time	Activity
1	January 2025	Ordering of Tools and Materials
2	February 2025	Design and printing of Brand Stickers
3	March 2025	Ordering of Jrigen and Bottle packaging
4	April 2025	Technical meeting (Lecturer and Student Team)
5	April 2025	Delivery of Tools and Materials
6	April 2025	PkM Activities
7	May – June 2025	Monitoring to Partners

Meanwhile, the method for calculating the cost of goods produced is by calculating the initial raw material inventory plus the total factory costs (raw material costs, labor costs, factory overhead costs) minus the final raw material inventory (Dina; Vina: 2020) and for methods used in marketing strategies can be determined by analyzing the products produced, namely by using the 7-P Marketing Mix analysis method. Marketing Mix 7-P analysis is a set of

marketing tools used by companies to achieve their marketing objectives in the market (Murtini, Zamhari, & Oktalina, 2019).

3. RESULTS AND DISCUSSION

The location of this community service activity was at SMAN 2 Rangkasbitung Jl. Siliwangi Kampung Pasir Ona Kelurahan Rangkasbitung Timur Kecamatan Rangkasbitung Kabupaten Lebak Province Banten. The implementation time of this community service took place on 23 April 2025 from 08:00 - 14:00 WIB. This activity was attended by the Head of the Lebak Regency Education and Culture Office Branch Office Gugun Nugraha S.Pd., M.Pd, Principal of SMAN 2 Rangkasbitung, Bp. Wahyudi Widodo, M.Pd., PkM Lecturer Team of Universitas Mercu Buana and 29 students of SMAN 2 Rangkasbitung.

Overall, the handsoap making training went well and smoothly. In the early stages of this activity, an analysis was carried out regarding knowledge of handsoap making training, after it was known that not many people knew about making environmentally friendly handsoap made from lime, so socialisation activities were carried out in the form of handsoap making training along with cost analysis in conducting production which is expected to be a business opportunity in the future.

Eco-friendly soaps are made from natural ingredients that are biodegradable, do not pollute water, and are safe for skin and the environment, made from vegetable oils (as soap base). These oils serve as the main ingredients in the saponification process (soap making reaction):

- Coconut oil: provides abundant lather, naturally antibacterial.
- Olive oil: gentle on the skin, suitable for sensitive skin.
- Castor oil: produces a soft, moisturising lather.
- Essential oil: natural fragrance ingredient extracted from lime.
- Additional ingredients: natural colouring from free fatty acids and food grade foombuster

The process of making this lime-based eco-friendly handsoap uses TTG tools as shown below:



Figure 1: TTG Tool

The following is the calculation of the Cost of Goods Manufactured (COGS) of making lime-based environmentally friendly handsoap, based on the method:

$$\text{COGS} = (\text{Initial Raw Material Inventory} + \text{Raw Material Purchases} + \text{Labour Costs} + \text{Factory Overhead Costs}) - \text{Final Raw Material Inventory}$$

Table 2. Raw Material Data & Price

Raw Material	Quantity	Price per Kg/L (Rp)	Total Price (Rp)
Coconut oil	10 L	25.000	250.000
Olive oil	5 L	80.000	400.000
Castor oil	2 L	60.000	120.000
Lime essential oil	0,5 L	250.000	125.000
Natural colours (free fatty acids)	0,2 Kg	100.000	20.000
Foombuster food grade	0,1 L	150.000	15.000
Total Raw Material			930.000

Table 3. Production Cost Calculation

Component	Amount (Rp)
Beginning Raw Material Inventory	-
Purchase of Additional Raw Materials	930.000
Subtotal Raw Material	930.000
Ending Raw Material Inventory	-
Raw Material Costs Used	930.000
Direct Labour Costs	100.000
Factory Overhead Costs	60.000
Total Production Costs	1.090.000

Table 4. Packaging Cost

Component	Number of Units	Cost per Unit Rp)	Total (Rp)
125ml bottle	200	750	150.000
Liquid soap label	200	250	50.000
Total Packaging Costs			200.000

Table 5. Total Final Cost of Goods Manufactured

Component	Amount (Rp)
Total Production Cost	1.090.000
Packaging Cost	200.000
Total COGS 200 Bottles	1.290.000
COGS per Bottle (125 ml)	6.450

From the calculation of the cost of production above, the COGS is obtained at IDR 6,450 (125ml) so that the products produced can be resold at a price range of IDR 8,500 - IDR 10,000. As for the marketing strategy, it can be determined by analysing the products produced using the 7-P Marketing Mix analysis method. to identify it. Marketing Mix 7-P analysis is a set of marketing tools used by companies to achieve their marketing objectives in the market (Murtini, Zamhari, & Oktalina, 2019).

The following is the analysis:

1. Product

Producing environmentally friendly handsoap made from lime, this soap is a liquid that is bottled and labelled. This soap has a lime scent and is used to wash hands. It is proven that this soap is environmentally friendly and hygienic, so it is an advantage for this product.

2. Price

This handsoap has a competitive production price, which affects the selling price. This environmentally friendly handsoap product can be sold at a price range of IDR 8,500 - IDR 10,000. This price is very competitive in the market because considering the excellent quality, hygienic, and environmentally friendly soap but sold at a fairly cheap price.

3. **Place**
This production site is located at SMAN 2 Rangkasbitung, Lebak-Banten. The place is quite simple and clean because it is always cleaned so as not to get dirty and messy.
4. **Promotion**
To promote this handsoap product can use social media such as Whatsapp, Instagram, Tiktok or Facebook. In addition, other promotions are in the form of spreading information by word of mouth. It is still fairly simple and conventional promotion of this product, but this does not affect the number of existing buyers. In addition, buyers who buy in large quantities will get a discount. Usually, these buyers order a lot for souvenir purposes in their events. In addition, promotions are carried out at bazaars or exhibitions so that the target buyers become more numerous.
5. **People**
The experts to make this environmentally friendly handsoap product are students of SMAN 2 Rangkasbitung who are trained and coached to make and produce good environmentally friendly handsoap products. Most buyers are also students of SMAN 2 Rangkasbitung and the surrounding community in need.
6. **Process**
The process of making this environmentally friendly handsoap is quite easy. The following is the manufacturing process:
 - a. Prepare materials and tools to make handsoap, such as coconut oil, olive oil, castor oil, lime essential oil, natural colouring, food grade foombuster, gloves.
 - b. After the ingredients and tools are prepared, pour them one by one into the TTG tool or stirrer.
 - c. Then pour little by little using a funnel according to the size into the bottle and label it to make it attractive.
 - d. The handsoap is ready to be used or distributed to the customer.
7. **Physical Evidence**
The handsoap production site is very clean, cosy and minimalist, offering a warm atmosphere for the workers. This handsoap product is also very environmentally friendly and the aroma is evocative so that it can attract consumers.

In accordance with the results of the analysis above, the author proposes a marketing strategy for lime-based environmentally friendly handsoap products on social media platforms such as Whatsapp, Instagram, Tiktok or Facebook, namely as follows:

1. **Compilation of an Attractive and Informative Store Profile.**
The initial stage is important to do by building an attractive store profile, a clear description of the advantages and quality of lime-based environmentally friendly handsoap products is key. Upload attractive product photos and informative descriptions so that consumers get a comprehensive picture of the product.
2. **Effective Pricing and Sales Strategy.**
Pricing that is competitive but still provides a decent profit needs to be considered. Start by offering an initial price or promo that attracts consumers' attention. Discounts when purchasing a certain amount or package of products can also be an effective strategy.
3. **Utilisation of Promotional Features.**
Promotional features such as flash sales, vouchers, and cashback programmes can be utilised to reach more consumers. Prompt responses to consumer queries and reviews are also important to build trust in the product.
4. **Stock Availability and Proper Delivery**
Maintaining stock availability of lime-based eco-friendly handsoap is very important. Good stock management will avoid running out of products when there is demand. A fast and reliable delivery process is also necessary to fulfil customer satisfaction.
5. **Data Analysis and Strategy Adjustment**
Analysing sales performance and consumer response is an important step. Data from product reviews and responses to promotions should be analysed regularly. From the results of these analyses, marketing strategies can then be adjusted so that the store can improve performance and better respond to consumer needs.

By implementing this strategy, it is expected to increase product appeal, expand consumer reach, and ultimately, increase sales of lime-based environmentally friendly handsoap products on social media platforms so that future business sustainability opportunities can be developed even better.



Figure 2: Eco-friendly Handsoap

4. CONCLUSION

The results of the analyses conducted show that social media platforms have strong internal advantages and are able to respond well to external factors. Overall, the strategic position of social media allows the platform to optimise its growth potential and success in the e-commerce market. Education to managers at SMAN 2 Rangkasbitung regarding the utilisation of e-commerce in marketing lime-based environmentally friendly handsoap products is a strategic step to expand the product's reach. The proposed marketing strategies that include the preparation of an attractive store profile, effective pricing strategy, utilisation of promotional features, proper stock and delivery management, and data analysis for future strategy adjustments, will provide a strong foundation for the marketing of lime-based eco-friendly handsoap products on social media platforms. With the implementation of these strategies, it is expected to increase product appeal, expand the consumer base, and ultimately, increase sales of lime-based eco-friendly handsoap products.

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