

# Dissemination of Assistance Technology for Making Green Products Based on Waste Cooking, and Socializing the Legality of Brands

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## ABSTRACT

The increase in consumption of cooking oil is directly proportional to the increase in post-consumption used oil or also known as used cooking oil. This increase is not matched by an increase in public awareness of the negative impact on health and the environment. Used cooking oil can damage the environment if it is disposed of carelessly. Used cooking oil should be managed by processing it into useful products, such as recycled soap. By processing used cooking oil into recycled soap, it not only provides benefits for their own needs, but even has the opportunity to become a small and medium enterprise (UMKM). Therefore, this community service activity aims to provide training to the community, ranging from how to make used cooking oil into recycled soap, marketing strategies and legality; trademark registration, terms, fees and others. The implementation of this activity is by giving lectures on the importance of managing used cooking oil, marketing strategies, brand legality, and product manufacturing practices. The manufacture of products is guided by resource persons, followed by the community by participating in direct practice. The results of this activity are expected to increase public awareness and awareness of the negative impact of used cooking oil on health and the environment. Become a new business opportunity for the community that can be developed into MSMEs, understand marketing strategies, and the importance of making brands, and understand brand legality.

## KEYWORDS

Green behaviour;  
Brand;  
Product;  
Brand;  
Brand Legality



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## 1. Introduction

Environmental pollution is still a problem that needs attention from all parties [1]. This is because environmental pollution can have a negative impact and interfere with the survival of humans and other living creatures such as animals and plants [2]. A polluted environment is an environment that has been contaminated by substances, energy or components so that the environment is the result of human behavior or natural factors [3]. However, pollution due to human behavior is more numerous than natural factors [4]. There are three types of pollution, namely soil, air, and water pollution [5]. The occurrence of soil pollution can be caused by the disposal of chemical substances as well as non-organic waste that cannot be decomposed [6]. Meanwhile, the cause of air pollution or pollution is due to the presence of substances or pollutants that enter the atmosphere which can reduce the function and quality of the air [7]. Meanwhile, the disposal of waste originating from households, industries or factories can cause water pollution [8]. These three types of pollution make the environment unbalanced, and disrupt human life and the environment, including animals and plants [9].

Environmental pollution [10], especially water and soil originating from household waste is throwing used cooking oil into waterways [11]. Used cooking oil [12] is cooking oil that has been used for frying food ingredients, then stored for some time, then used again for frying or discarded. Waste cooking [13] which is discharged into waterways can cause a foul odor and pollute the waterways [2]. Not only that, the effect it causes, furthermore the contaminated water can flow into the rice fields or into the river so that the water in the fields or rivers becomes polluted [9]. This pollution can cause microorganisms and

living things to not be able to live in it [14]. That's because the nature of the oil floating on the surface of the water, can block the entry of sunlight and air into the water.

In addition to polluting the environment, repeated use of used cooking oil can also be harmful to health [15]. Used cooking oil contains saturated fatty acids. Saturated fatty acids are high, so it is very dangerous for the body and can trigger various diseases such as heart disease and stroke [16]. Even consuming foods that are processed with used cooking oil in the long term can cause cancer. Although it can harm the environment and health, the use of used cooking oil in the community still exists, both on a business or industrial scale, as well as households. The need for cooking oil, especially palm oil in the food category, nationally in 2019 reached 9.86 million tons, or an increase of 49 percent from the previous year. This amount represents the total consumption of industrial and household scale. Consumption at the household scale also increased by an average of 4.72% from 1.94 million tons in 2014 to 2.32 million tons in 2019. The increase in consumption of palm cooking oil from year to year was due to public consumption and the food industry. It uses a lot of cooking oil in its processing. This has the potential to produce more used cooking oil or used cooking oil [17]. Used cooking oil or used cooking oil [18] is vegetable edible oil that has been used for frying and is usually discarded after the color of the oil turns dark brown. Based on research conducted by the International Council on Clean Transportation (ICCT), Indonesia has the potential to produce 157 million liters of used cooking oil from restaurants, hotels and schools in urban areas [19]. For a household scale, it can reach 1,638 million liters. This is due to an increase in population, which causes an increase in consumption of cooking oil, which in turn has the potential to produce high used cooking oil. Used cooking oil [20] can actually be managed to become a source of value that provides many benefits, including being able to be reprocessed to become alternative fuels, soap, carboic acid, aromatherapy oil, and biodiesel. Therefore, it is necessary to carry out outreach activities to the community that aim to increase knowledge about chemicals in order to improve efforts to maintain the quality of the living environment around the household. Understanding the negative impacts that arise due to carelessly dispose of used cooking waste, as well as repeated consumption, efforts are needed to overcome them.

Efforts to prevent environmental pollution due to used cooking oil are to process it into useful products, such as recycled laundry soap, floor cleaner, aroma therapy, and biofuel fuel [21]. Processing used cooking oil into various products can not only reduce negative effects on the environment and health but also provide economic benefits for the community. Recycled laundry soap can be categorized as an environmentally friendly product/green product [22]. Green products are defined as products produced by environmentally sound processes [23]. Another definition of green product according to the European Community Commission is a product that uses fewer resources, has a lower impact and risk on the environment and prevents the generation of waste at the conception stage. Businesses must ensure that whatever production process they put into the environment is less damaging to the environment, therefore they are responsible for reducing environmental pollution [24]. This definition emphasizes the importance of creating environmentally friendly products from the conceptualization stage [25]. Based on these two definitions, green products are products that must pay attention to matters relating to environmental friendliness from conception to product even after the product is used [26]. Green products have characteristics that non-green products do not have. The characteristics of green products include recycling, long durability, biodegradability, renewal, low emissions, local production and energy efficiency [27]. The characteristics of green products [28] are products that produce less pollution, energy and resource efficient production processes, products that are developed and designed using less materials (reduce), use recycled materials, can be reused, and are easily decomposed (decompose). Green products are believed to improve economic performance, therefore they need to be developed. A green brand is defined as a particular group of brand attributes and benefits associated with minimizing the environmental impact of a brand and its perception of a healthy environment. This definition means that green brands must be able to provide more benefits to consumers in order to become more

environmentally conscious [29]. An eco-friendly brand strategy needs to offer tangible environmental advantages that other brands don't have and aim at consumers who value and care about environmental issues. This means that an environmentally friendly brand must communicate with its target group, or a group of people who are concerned about the environment. These people are called green consumers [30]. Green brands have a special market segment, namely green consumers. Consumers who have confidence in ecological or environmentally friendly performance will have a positive attitude towards the brand.

Sumberejo Village is a village located in Way Jepara District, East Lampung Regency. The villagers did not know about the dangers of disposing of used cooking oil on environmental damage. People also do not know if used cooking oil can be managed into a useful product. In addition, they do not know about the importance of brands and the process of brand legality for a product. Therefore, it is necessary to hold a mentoring activity, namely socialization and training in order to provide solutions to these problems. The contribution of this activity is specifically aimed at women and housewives in Sumberejo Village. The intended participants are women, not without reason, because according to women they are more likely to have a concern for the environment than men.

## 2. Method

This mentoring activity began with field observations, by visiting residents' homes, and conducting interviews. The goal is to find out the problems faced by residents. The survey results show that the villagers do not yet have knowledge about the bad effects of used cooking oil, how to purify it and reprocess it into useful products. In addition, they do not understand the importance of registering a brand for products.

Based on the results of the survey, an activity was then designed, including forming a team to participate in the training. The activity plan was submitted to the Head of the RT in the village, in order to establish cooperation to organize training activities for residents. After obtaining a cooperation agreement, the team held a meeting whose agenda was to determine the day, date and time of the activity. In addition to doing preparations, practice materials and training materials.

The method of implementing this service activity is lectures and product manufacturing practices. Training and assistance to partners is prioritized for: 1) providing insightful material on the negative impacts of waste cooking oil, and marketing strategies 2) providing information about the economic potential of used cooking oil waste into soap products 3) mentoring soap-making practices, 4) mentoring brand urgency materials for product, and brand licensing.

### Materials and Equipment

#### Soap Making Practice Material

- Cooking Oil
- NaOH
- Water
- Ground Coffee
- Wood charcoal

#### Equipment:

- Plastic basin/bowl
- Wooden stirrer

- Gloves
- Mask
- Mold

The implementation of activities regarding environmental insight and soap-making practices is divided into three stages, namely:

### **2.1. Before Activities**

The resource person has several times practiced making soap from used cooking oil at home. Soap products were made beforehand by the resource persons as an effort to understand and master the technique of making soap from used cooking oil. The practice of making recycled soap has been carried out several times, to get maximum results. After doing it repeatedly, and the sources have also proven the benefits of recycled soap, it is effective in cleaning stubborn clothes stains. In addition, recycled soap is useful for washing household furniture, such as plates, spoons, pans and other utensils. Equally important, the resource persons succeeded in proving that recycled soap was safe for the skin, and did not cause side effects. This experience has made the informants feel confident that the science of making recycled soap deserves to be shared with the community, so that the benefits can be felt by a wider circle of people. It is even worthy of being developed into a worthy product and a business.

### **2.2. Activity Implementation**

The implementation of Community Service (PKM) activities is divided into 3 stages, namely:

- Providing material on the bad effects of throwing used cooking oil in any place. Then proceed with the practice of purifying used cooking oil using wood charcoal.
- The practice of purifying used cooking oil is carried out with the aim of training the community, especially housewives, to be skilled at cleaning used cooking oil using wood charcoal. This cleaning activity is expected to provide knowledge and motivation to the community to change people's behavior in disposing of used cooking oil carelessly, and using used cooking oil in the right way. The output expected by the community is not to throw away used cooking oil again, but to be able to manage it properly, by being clarified, before being processed into a product.
- The Practice of Making Soap from Cooking Oil.
  1. Resource persons are assisted by the committee in preparing the necessary materials and equipment
  2. Ingredients are divided into 4 portions
  3. Participants are divided into 4 groups, each group gets 1 portion of ingredients
  4. The resource person showed directly how to make soap from preparation to the material ready to be printed
  5. Soap dough material that has been printed cannot be used immediately, you have to wait approximately one month

### **2.3. After Implementation of Activities**

The characteristics of recycled used cooking oil soap are that it takes a long time, namely at least one month. This prompted the resource persons to make a return visit after one month, with the aim of seeing the results of the practice. The soap has been removed from the mold and can be used. Soap was

distributed to participants and used for various purposes. The soap produced is not perfect, it still takes several times to get the desired results.

### 3. Results and Discussion

The training activity was carried out on Saturday, January 09, 2021, at the house of Mrs. Umi Haniah who is a resident of Sumberejo Village RT/RW 08/04, East Lampung Regency, Lampung province as shown in Fig. 1. The figure shows that the activities were carried out by two resource persons and team. The first resource person explained the negative impact of indiscriminate disposal of used cooking oil, also provided training on how to purify used cooking oil with wood charcoal, and make soap products. Complementing the activity, it was also explained the importance of environmentally friendly packaging, and its marketing strategy. While the second informant was socializing about the importance of brands for products, brand legality including how to register brands and others.

The flow of activities is carried out by providing an explanation of the adverse effects of disposing of used cooking oil in any place. Then proceed with the practice of purifying used cooking oil using wood charcoal. The practice of purifying used cooking oil is carried out with the aim of training the community, especially housewives, to be skilled at cleaning used cooking oil using wood charcoal. This cleaning activity is expected to provide knowledge and motivation to the community to change people's behavior in disposing of used cooking oil carelessly, and using used cooking oil in the right way.

It is hoped that this activity will change the habit of disposing of used cooking oil or using it repeatedly. People understand the dangers of used cooking waste so they don't throw away used cooking oil anymore, but can manage it well, by purifying it, before it is processed into a product.



Fig. 1. Socialization of Cooking Oil Management

#### 3.1. Materials on Environmentally Friendly Behavior and Product Strategy

The definition of consumer behavior is an action that is directly involved in obtaining, consuming, and using a product/service, including the processes that precede and follow the action. Theory Planned Behavior (TPB) is that humans behave in a conscious way and consider all available information. Based on this theory a behavior is carried out or not carried out is determined by one's intentions. Meanwhile, the intention to perform or not to perform a certain behavior is influenced by two basic determinants, namely, first, matters relating to attitude (attitude towards behavior) and the second, matters relating to social influences, namely subjective norms.



The difference between TRA and TPB is the addition of a variable perceived behavioral control (perceived behavioral control), this variable did not exist before in TRA. The purpose of adding this behavioral control perception variable is to better understand the limitations that individuals have in carrying out certain behaviors. That is, whether or not a behavior is carried out is not only determined by subjective attitudes and norms but is also determined by the individual's perception of the control that can be carried out and is based on self-confidence in that control (control beliefs). Referring to the two theories, it is hoped that the community, especially the residents of Sumberejo Village, will have environmental awareness, and are willing to change negative behavior that pollutes the environment into positive behavior.

In marketing management, it is known as the marketing mix strategy, namely product, distribution, promotion and price, there is also an opinion that there are 10 components of the marketing mix, namely product, price, place, promotion, people, process, physical evidence, packaging, partnership, and policy perspective. However, this assistance activity only focuses on one component, namely the product. The product elements, starting from the manufacture, shape, size, aroma, and color of the soap are shown in Fig. 2. The picture shows that the colors use natural ingredients, such as suji leaves for green, red from teak leaves, or you can also use beets. Purple uses dragon fruit, yellow with turmeric rhizome, and other natural and safe ingredients. Aroma soap, can use natural ingredients such as ginger, pandan leaves, lemongrass, coffee, rose, jasmine and other natural scents. Understanding these things is believed to help marketing to be more effective. In order for soap to have a selling value, various additional ingredients are needed, such as essences with various aromas, packaging, and promotions.



**Fig. 2.** Waste Cooking Oil Recycling Soap

### **3.2. Brand Urgency Socialization, and Registering a Brand**

In the socialization, the function of trademark registration and the function of using a mark is shown in Fig. 3. The figure shows that trademark registration is used as evidence for owners who are entitled to a trademark, as a basis for rejecting the same mark as a whole, and as a basis for preventing people others wear the same brand overall. The use of a mark is used for identification so that it can distinguish the results of production, as a promotional tool, as a guarantee of the quality of goods, and indicates the origin

of the goods and/or services produced. Regarding the tariff for trademark registration, refer to PP No. 28 of 2019 concerning Types of Tariffs on Types of PNBP that there is a difference in mark registration rates for MSMEs and non-UMKM or general, namely for MSMEs of Rp. 500,000, - (five hundred thousand rupiah) and general Rp. 1.800.000, - (one million eight hundred thousand rupiah). The difference in rates is very significant, which aims to provide relief for MSMEs in managing brand licensing used in their business.



**Fig. 3.** Brand Urgency Socialization

Also presented in the socialization activity regarding collective brands that can be used as alternative solutions for MSMEs in order to increase competitiveness is shown by a group photo in Fig. 4. According to Law no. 20 of 2016 concerning Marks and Geographical Indications Article 1 paragraph (4) that collective marks are marks used with the same characteristics including characteristics, nature, and quality which are traded by individuals or legal entities jointly to distinguish them from goods and/or other services. The collective brand can be used by MSMEs or a combination of MSMEs as a joint business group that has standards and supervision of product quality.

For MSMEs, fulfilling permits is very important as business legality because they can get a number of benefits including access to financing, access to business assistance, obtaining empowerment assistance from the government, and getting facilities in the form of reduced trademark registration fees. Trademark registration is carried out online at the DJKI by submitting several requirements including a brand label, applicant's signature, and an MSME certificate if the applicant is an MSME.



**Fig. 4.** Resource Person with Participants and Team

#### 4. Conclusion

This community service activity has various benefits, namely increasing public insight and knowledge about the negative effects of used cooking oil waste for the environment. Helping the community to have new skills in utilizing waste cooking oil. Creating new business opportunities based on environmental awareness and creating products with economic value. Opening public awareness and changing people's behavior to participate in reducing environmental pollution by not throwing used cooking waste carelessly. Improving public health by not consuming used cooking oil repeatedly. In addition, this activity is beneficial for the community regarding how to market recycled products, especially used cooking oil soap, starting from product design, manufacture, packaging, branding, product promotion and sales. It even increases public knowledge about the importance of brands for MSMEs, the process of trademark registration for products produced by MSME businesses, as well as brand registration. In many ways it proves that brands can increase profits, besides that brands are useful for product identity. The public's understanding of the urgency of the brand will be very useful, especially for starting and developing businesses. Understanding the many benefits of this activity, it is hoped that in the future this activity can be increased and carried out in other areas. Thus the benefits of this activity will be wider.

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#### Author Contribution

All authors contributed equally to the main contributor to this paper. All authors have read and agreed to the published version of the manuscript.

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#### Conflict of Interest

The authors declare no conflict of interest.

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