

## The Analyzing of Social Economic Impacted By Optimalization Of Recycling Waste As Supported For Circular Economy On Community-Based Tourism In Pasaran Island

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### Abstract

*Pasaran Island's waste has increased significantly from year to year as a result of an increase in population. In 2022 the amount of waste on Pasaran Island will reach 504.8 kg per day. Indirectly this has an impact on various issues such as social, environmental, and health. This is marked by the emergence of various local initiatives to solve environmental problems and have an impact on the emergence of various alternative livelihoods, especially for women who live on the island. One of the efforts made has an economic impact on households. In this study, this effort is seen as a form of optimizing the potential of plastic and organic waste in increasing people's income and changing the social and environmental conditions of people on Pasaran Island. This study uses a qualitative approach with the Participatory Action Research (PAR) method, which is a method that actively involves research subjects. Data collection in this study was carried out for 1 year from March 2022 to March 2023. The key informants consisted of 5 community groups and the other key informants are village officials and women's representatives who are local initiatives. The results of this study indicate that waste management, both organic and non-organic, has a significant impact on potential alternative livelihoods, especially for women (housewives). Based on the calculation of the potential economic profit from each product produced, it reaches 50% (profit). This potential can be optimized through integration with the community-based tourism model currently being developed on Pasaran Island. These conditions indirectly impact socially, economically, and environmentally*

**Keywords:** Waste, Recycle, Circular Economy, Island's Community

### Abstrak

Sampah Pulau Pasaran mengalami peningkatan dari tahun ke tahun secara signifikan yang merupakan dampak dari peningkatan jumlah penduduk. Pada tahun 2022 jumlah sampah Pulau Pasaran mencapai 504,8 kg per harinya. Secara tidak langsung hal tersebut berdampak pada berbagai persoalan seperti sosial lingkungan dan kesehatan. Hal tersebut ditandai dengan munculnya berbagai inisiatif lokal untuk menyelesaikan persoalan lingkungan serta berdampak pada munculnya berbagai alternatif mata pencaharian terutama bagi perempuan yang tinggal di Pulau. Salah satu upaya yang dilakukan memberikan dampak ekonomi bagi rumah tangga. Pada penelitian ini, upaya tersebut dilihat sebagai bentuk optimalisasi potensi sampah plastik dan organik dalam meningkatkan pendapatan masyarakat dan merubah kondisi sosial dan lingkungan masyarakat di Pulau Pasaran. Penelitian ini menggunakan pendekatan kualitatif dengan metode Participatory Action Research (PAR) yaitu metode yang melibatkan subjek penelitian secara aktif. Pengambilan data dalam penelitian ini dilakukan selama 1 tahun sejak Maret 2022 hingga Maret 2023. Informan kunci terdiri dari 5 kelompok masyarakat dan informan kunci lainnya adalah aparat desa dan perwakilan perempuan yang merupakan inisiatif lokal. Hasil penelitian ini menunjukkan bahwa pengelolaan sampah baik organik dan non organik memberikan dampak signifikan terhadap potensi alternatif mata pencaharian terutama bagi perempuan (ibu rumah tangga). Berdasarkan perhitungan potensi keuntungan ekonomi dari setiap produk yang dihasilkan mencapai 50% (profit). Potensi tersebut dapat dioptimalkan melalui integrasi dengan model pariwisata berbasis masyarakat yang sedang dikembangkan di Pulau Pasaran. Kondisi tersebut secara tidak langsung berdampak secara sosial, ekonomi dan lingkungan.

**Kata kunci:** Sampah, Daur Ulang, Ekonomi Sirkular, Masyarakat Pula

## INTRODUCTION

Solid waste management is a challenge in some places in Indonesia. The total rate of urban solid waste growth is faster than urbanization (Ziraba et al, 2016). Urbanization is a phenomenon that is rapidly growing and associated with waste generation. Solid waste management includes managing activities associated with the collection, transportation, treatment, and disposal of solid waste in an environmentally compatible manner with due consideration of the principles of economy, aesthetics, energy, and conservation (Mani and Singh, 2016). By the data, more than 50% of waste collected is a biodegradable organic material that can be used for composting or use for generating biogas, and the other waste is reusable and recyclable that constitute 18-20% of total waste (Mani and Singh, 2016). The waste that is useful as a source for recycling is raw materials such as metal, glass, and textiles that have been collected before and put to a new use (Nelles et al, 2016).

The circular economy (CE) is one of the concepts that product, material (and raw materials) should remain in the economy for as long as possible and waste should be treated as secondary raw material that can be recycled to process and re-use (Ghisellini et al, 2016). The circular economy is a concept that promotes the sustainable management of materials and energy by minimalizing the amount of waste generation and their reuse as secondary material. The main reasons for implementing a circular economy include limited availability of raw materials, market volatility, and decreasing competitiveness economy (Neczaj and Grosser, 2018).

One of the problems of the degradation of the environment is plastic pollution. Degradation of the environment is because of the linear economy mechanism by the fossil fuels industry, resource, depletion, and waste pollution (Pain and Hansen, 2019). Plastic become a problem because cheap plastic packaging materials are accessible even in

remote places (Geyer et al, 2017). Pasaran Island is one of the islands located in Bandar Lampung City and is well known as a center for producing salted fish (BPS, 2018). As one of the megapolitan areas in Lampung Province, Pasaran Island has made various efforts to increase the existing economic movement through various appropriate technologies. The main objective is to increase the income of the people living in the Pasaran Island Area. The existence of Pasar Island as a marine tourism area utilizes a variety of fishery, and marine products and is supported by a diversity of flora and fauna such as various coral reefs and ornamental fish species (Ali, 2015).

The huge potential of Pasaran Island is also accompanied by various environmental damage challenges such as the high water pollutants entering the island due to the pollution of various rivers that flow downstream and enter Pasaran Island (Nuraini & Ujjani, 2022). This condition is exacerbated by the amount of waste generated by Pasaran Island residents daily and thrown into the sea. The amount of waste generated on Pasaran Island and thrown into the sea reaches 504.8 kg per day from the island's total population (Islami, 2022). The large potential for island waste and the condition of seawater with a high level of pollution impact not only environmental damage but also other social problems such as health and the impact on the growth of toddlers (stunting).

Environmental issues have an impact that cannot be separated from human life, both socially and economically. The low awareness of the Island community regarding proper household waste management has exacerbated the damage that has arisen in the area. Waste is explained as residual material (waste) from various activities carried out by humans (Putri, 2018). Waste in this case cannot be separated from human life and indirectly has an impact on human life itself. Environmental changes have had a significant impact on the economic

conditions of residents on Pasaran Island. One of the impacts is the reduced catch of fishermen from time to time. This condition indirectly affects changes in the income of the people who live on Pasaran Island. This can be explained as an indirect causal factor as a result of an increase in pollutants in water caused by garbage or other water pollution factors.

One of the areas that have been prepared as a Tourism Village, Pasaran Island is a pilot area that is also included in the Tourism Village Award (ADWI) in 2022 by the Ministry of Tourism and Creative Economy (Kemenparekraf). As a fisheries center, it is supported by various potentials for catching fish, cultivating fish, the unique culture of the community, the ability to build boats, and the potential for mangrove communities which are the main attraction for marine tourism on Pasaran Island (Noor, 2021). The location which is close to the provincial capital is the main attraction of the island. In addition, easy access, especially the existence of a bridge that connects the island with the city, is another driving factor for Pasaran Island as a tourist village (Ali, 2015).

Increasing the potential of Pasaran Island as a marine tourism destination will increase bargaining power, income, and opportunities for people living around the island. Increasing the role of the community in tourism management is important or better known as the concept of community-based tourism. Increasing the active role of local communities is important in tourism management. The development of the concept of community-based tourism management cannot be achieved without looking at the potential obstacles that arise, one of which is the existence of island waste. The magnitude of the opportunities from the existence of village tourism is accompanied by the magnitude of the challenges from island waste.

The amount of waste in Pasaran Island reaches 0.5 tons per day, consisting of organic and non-organic waste. The high potential for waste has an impact on potential sources of material that can be processed into other

products and have a sale value. Based on research data, shows that the percentage of waste on Pasar Island reaches 40% non-organic of the total waste. This is a problem because plastic, as the dominant material of existing waste, takes up to 400 years to decompose. The existence of these plastics has an impact on soil and plant pollution problems and contributes to warming air temperatures over time (Suryani et al, 2021).

Plastic pollution in water resources can be impacted the quality and stability of water resources because of the macro and microplastic that transports. The quality of water resources will impact by plastic contaminants (Groh et al, 2018). In island communities like Pulau Pasaran, plastic pollution is a widespread environmental threat to water bodies carried by wind and rain and ends up in rivers, creeks, and at the beach that can ultimately add to the issue of marine littering (Asari et al, 2019) (Ferronato and Torreta, 2019). Plastic waste is one of the most type of common and easy to find in society. Efficiently and ensuring that plastic supports people's lives, plastic waste can be used to create commercially viable goods and innovative services not only during use but also after use (Nurhalisa and Nawawi, 2023). The potential for using plastic waste and creating something useful without causing new environmental problems has the advantage of being able to improve the community's economy so that it can prosper the people's live themselves as well as awareness that eliminates everything that is used and made in the potentially dangerous environment (Nurhalisa and Nawawi, 2023).

One of the concepts used to process plastic waste is the circular economy concept. The circular economy is a concept that aims to process the resources that are produced so that they are still used and do not become garbage and are wasted in landfills. The potential plastic waste generated by the people on Pasaran Island can be processed through recycling to become new products that are of value and can support tourism on Pasaran Island. Based on this, the study in this study analyzes the socio-economic impacts of waste recycling as part of a circular

economy in tourism areas managed by the community (community-based tourism).

The circular economy is an economic concept that aims to produce various products that can be developed by maintaining the value of products, materials, and resources in an economic system so that the potential for social and environmental damage can be minimized compared to implementing a linear economic system (Mac Arthur, 2013).

The production economic antithesis emphasizes the number of products based on economic growth and seeks to reduce pressure due to continuous production from the existing economic system (Korhonen et al, 2018). The circular economy concept is an attempt to optimize the use-value of resources, waste, emissions, and various energy so that it is not wasted but extend product life, design innovation, maintenance, reuse, and recycling into other products that have value-for-money. The main objective of the circular economy is to change the concept of the linear economy into a circular economy so that the potential for a resource to be wasted and accumulate in landfills can be reduced. The circular economy is one of the opportunities to be able to support local tourism, especially community-based tourism or what is often referred to as community-based tourism. The concept of community-based tourism is one of the big opportunities in tourism development because the business scale is small but the management is carried out by the community so the impact is generally much smaller.

The active involvement of the local community to develop the region (area), increase participation in decision-making processes, and increase the distribution of benefits received by the whole community (Febriandhika & Kurniawan, 2019). The community-based tourism approach enables the sustainability of tourism because it optimizes economic benefits for the community. In the circular economy context, the potential for a lot of waste can be reduced through the recycling model and the results can be a driving force for increasing the

value of village tourism, especially on Pasaran Island.

This study is focusing on the analysis of the implementation circular economy at Pasaran Island. The difference between this study and previous studies is how the concept of circular economy can be the solution to the waste problem on the island. And how this method can be sustainable by a community development-based approach.

## **RESEARCH METHODOLOGY**

This study uses a descriptive qualitative approach. The emphasis on changing the paradigm of society with various interventions, both social and economic, is a learning process for the community. The data collection method in this study is Participatory Action Research (PAR). The use of the PAR method as a research method, in this case, emphasizes participation among members of the public in a community to be actively involved in change (transformation) and have full rights to income with the ultimate goal being changed for the better (Rahmat & Mirnawati, 2020). As a PAR research method, it is used to carry out assessments related to individuals (self) and organizations that emphasize the participation of research subjects and active collaboration with researchers from the beginning of the research until the end of the research and a process of discussion and follow-up is carried out to resolve the issue (McNiff & Whitehead, 2002).

Data collection in this study used several methods, namely in-depth interviews and focus group discussions (FGD) with several community groups such as fisherman groups, women's groups, youth groups, and local village officials. The key informants in this study consisted of the main group, namely sea mama, a pilot group that did waste recycling, and representatives of the Pasaran Island community in initiating a tourism village. This research was conducted for one year from March 2022 to March 2023 and is located on Pasaran Island - Bandar Lampung City, Lampung Province. This

research starts by collecting information from all key informants with the FGD methods approach. After that PAR approached the women's group. This approach simultaneously involves members of women's groups as research subjects that can provide input and information by implementing circular economy-based waste management with a community empowerment approach.

## RESULTS AND DISCUSSION

Island communities have particular geographical restrictions and without a solid waste management sector, plastic pollution leakage into the marine environment is inevitable. Traditional waste management systems, based on mixed waste collection and landfilling prevail among rural communities around the world (Mihai, 2017). A circular economy would aim to prevent plastic pollution by using a multi-tiered approach to address the source of plastic waste, the management of plastic material, and the potential release of plastic (end-of-pipe release) into the environment (Cordier and Uehara, 2019). In opposition to the linear economy, a circular economy aims to prevent waste generation and mitigate environmental impacts throughout the life cycle of a product. Circularity measures could be implemented to reduce the number of plastic waste, design plastic for optimal reuse, recycling, or composting, and recovered plastic for use in new products (Mihai et al, 2021).

The implementation of a circular economy in a rural area could address multiple facets of the plastic economy and plastic usage from the manufacture of plastic to their eventual disposal, including :

1. Eliminating the manufacture and import of unnecessary plastic with suitable alternatives;
2. Replacing conventional plastics with reusable, renewable, and biodegradable alternatives that provide a suitable function and can be handled by local recycling and/or composting infrastructure;
3. Redesigning products with optimal recyclability, reuse, and repair in mind;

4. Promoting reuse and return schemes by providing local infrastructure and incentives (refilling schemes, deposit–refund system, zero waste shops) and enforcing Extended Producers Responsibility (EPR) policies regarding plastic packaging waste;
5. Collecting and recycling plastic through informal and formal waste collection schemes;
6. Recovering released or polluting plastic for the creation of new, local products as in a decentralized circular economy (see below)
7. Promoting creative recycling practice (upcycling) at household and community levels.

Pasaran Island is one of the islands in Teluk Betung Barat District, Bandar Lampung City. This area is one of the main centers of salted fish. Based on the results of observations in 2022 the number of people living on Pasaran Island will reach more than 1500 people and there will be 354 families. The density of people living on the island reaches 195 people per km<sup>2</sup>. The high level of population density is caused by several pull factors that exist on the island, including 1) easy access to work, namely as a salted fish sorter; 2) Access to transportation because Pasar Island has a bridge that vehicles can pass through; 3) The location of the island which is still included in the City of Bandar Lampung and has an impact on various access to information that is easy to obtain.

However, on the other hand, there are negative impacts from the high population density, including 1) The amount of waste generated by the community every day and low awareness so that Pasaran Island looks dirty and unclean; 2) The management of village tourism is not yet optimal so that the potential for increasing income is still limited; and 3) during various environmental problems, the people of Pasar Island are significantly affected by the various damages such as reduced number of fish in the sea, many diseases that attack at certain times and air and water pollution due to garbage. Fish processing fishermen are the livelihood of more than 50% of the people living on Pasaran Island. As a fish processing center, significant

waste generated from fish production and from salted fish processing workers can be seen around the island. Garbage accumulation in shipyards (places for drying salted fish) consisting of ice-plastic waste and various snacks reaches 0.4 kg per day generated from individuals (Mahasari et al., 2014). Low public awareness is one of the negative opportunities that arise from the existence of waste, namely as material for the reclamation of island areas. For generations, the community has been accustomed to disposing of waste in one place (location) which will be used as new land, if the amount of waste is deemed sufficient, the location will be buried in the ground and become a new land area. This hereditary habit causes various problems such as air pollution, water pollution, and health problems.

However, this condition has gradually disappeared in recent times. Various efforts by the government and various organizations in the vicinity have become a trigger for changes in people's perceptions of waste management and waste functions. The initiative to initiate Pasar Island as a tourism pilot area has also become the impetus to change people's perceptions. In a circular economy, waste management is carried out by both producers and consumers. Based on research on waste management in Germany, the circular economy aims to turn waste management into resource management. The raw material used for the industry are obtained from treated waste built a waste treatment plant, opened up job opportunities, and succeeded in getting big industries to participate in their waste management. Circular models like this provide benefits not only for humans but also for the environment (Purwanti, 2021).

According to Kirzherr et al (2017), the circular economy is an economic system with the end of the product life cycle with the main concept of reducing, reusing, and improving material in the process of production/distribution and consumption. This activity can be carried out at the micro level (company, consumer), meso level (eco-industrial area), and macro level (city region country) to achieve a sustainable economy, creating good

environmental quality, economic prosperity, and justice social. The circular economy can be made possible by creating new business models and responsible consumer behavior.

### **Economic Potential Waste Recycling**

Recycling-based waste management has been widely carried out by the people of Pasaran Island. However, limited product marketing, inconsistency in product manufacturing, and the absence of standardization of the products produced have resulted in sub-optimal income from recycling. The economic potential of waste recycling is very large because the main ingredient is waste, so what is needed is energy and creativity so that the product is attractive for sale and has an identity. This study will calculate the potential economic value that can be generated from various waste-based recycling products that have been carried out by the people on Pasaran Island.

- a. Various handicraft products made from sachet packaging (wallets, bags, carpets)

Wallets, bags, or carpets are products that absorb quite a lot of sachet plastic waste. The main ingredient of this product is plastic (sachet) and other additives are sewing, zipper, buttons, or other additions. The price of additional materials is generally less than IDR 20,000. The total basic price of an item until it becomes a product is generally between Rp.30,000 to Rp.50,000 depending on the type of product and additional materials needed. This product is generally marketed at certain exhibitions. Some craftswomen stated that sales through the marketplace were also carried out or based on orders because not many people knew about recycled products like this or they had not yet become a product that a large number of people liked;

- b. Craft products "basket's glass" and plates

Other handicraft products are drinking baskets and plates made from recycled materials. Not much different from the basic ingredients for making bags, baskets, and plates, they also need the main ingredients, namely sachets and glass drinks which have a hard material structure.

The manufacturing process is not much different, generally requiring additional materials in the form of glue, scissors, or iron wire (to make baskets). The production cost for each product is generally less than IDR 50,000. Not much different from recycled products, the sale of drinking craft products is also based on certain orders or activities related to climate or environmental awareness;

#### c. Ecobrick craft products

Ecobrick is a plastic waste disposal technology that is made from used plastic bottles that have been filled with various kinds of dirty plastic and then compacted until it becomes hard. The bottles can be filled and hardened to make a tower, benches, tables, and other structures. And alternatives to traditional bricks for buildings with eco brick (Nurhalisa and Nawawi, 2023). Ecobrick craft products are an effort to deal with sachet and plastic waste. This effort has also been initiated by the people on Pasaran Island, but its management and creativity are still limited. Ecobrick crafts made by people today are generally still simple, namely putting small pieces of plastic waste into bottles of various sizes. However, the production of other creatures, such as tables and chairs, is still limited in terms of capital and materials, as well as the ability to make them. This is because most of the crafts are done by housewives who do not have the expertise to make tables or chairs from eco brick. However, when viewed from the economic potential, eco-bricks have great economic opportunities and can increase people's income.

#### d. Ecoprint craft products

Another craft product is eco print. Ecoprint craft is the process of making batik by utilizing dry leaves so that the colors that appear are natural colors from existing plants. Some people in the community make eco prints and are given the name "leaf trail". The production capital for this craft product consists of basic materials, namely plain cloth, generally white, with prices ranging from Rp. 50,000 to Rp. 70,000, depending on the type of fabric. The long process of making this craft makes the

selling price of 1 sheet of eco brick cloth reach IDR 150,000 per sheet. If it is in the form of clothes, headscarves, or products that are ready to use, the selling price reaches IDR 250,000. Based on this, the additional income opportunities that the community gets from eco-brick production are very potential. The main challenge is the limited market and models resulting from this production.

#### e. Organic waste products (eco enzyme)

Another product produced by the local community is processed products from organic waste, namely coenzymes. Economically, ecozym is used for daily needs such as dish soap or as an antiseptic when mopping, which has an impact on reducing household consumption of these two products. However, other preparations of coenzymes that are processed into soap can have a sale value. The capital for coenzyme soap production reaches Rp. 20,000 to Rp. 30,000 which can produce 6 to 8 pieces of soap with a selling price of Rp. 10,000 to Rp. 25,000 per fruit. This product, known as organic soap, has been widely sold through various marketplaces and can be a great opportunity to increase people's income.

Significantly the community has not been able to provide an overview of the benefits of recycled products that have been produced so far. This is because, product sales do not take place regularly (there is demand), but only based on requests, and orders for certain events, and only to meet daily needs (no need to buy goods, just make them based on materials available House). On the other hand, recycled products have a very large and potential market potential. The main advantage of Pasaran Island is the potential for developing village tourism where these recycled products can be used as island entrance tickets and souvenirs so that the identity of the island as village tourism can develop not only tourism for anchovy-producing fishing communities but also education and awareness of waste management.

## Impact of Circular Economy Recycling Waste

A circular economy is a new approach that is used to increase public awareness regarding waste management and increase the use of production goods through the process of converting waste (non-value goods) into useful-value goods. Various products produced through the recycling process are part of the circular economy implementation by the people of Pasaran Island. There are several circular economic impacts of recycling waste, including:

### 1. Social Impact

The circular economy concept has a significant impact on improving environmental quality and increasing public awareness of waste management. Through the implementation of the circular economy, some people are forced to make lifestyle changes, one of which is by changing behavior. Apart from that, alternative income through the production of recycled goods also has a positive impact on the circular economy. One of the interview excerpts from this research explains that the positive impact of the changes in society is that young mothers or women who live on Pasaran Island have useful activities such as making crafts or routinely carrying out various island cleaning activities. The formation of institutions at the local level is also one of the drivers of significant change as well as a positive impact on the circular economy, the following is a quote from the statement:

“...thank God, the people on Pasaran Island are now experiencing changes little by little. When compared to the condition of the island long ago, now the condition is very clean, young women and mothers have many useful activities, not just hanging out and gossiping but now when gathering chili sauce to do something or gain knowledge about something...” (Mr. ZD, 50 years old)

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certain orders or activities related to climate or environmental awareness;

### 5. Ecobrick craft products

Ecobrick is a plastic waste disposal technology that is made from used plastic bottles that have been filled with various kinds of dirty plastic and then compacted until it becomes hard. The bottles can be filled and hardened to make towers benches, tables, and other structures. And alternatives to traditional bricks for buildings with eco brick (Nurhalisa and Nawawi, 2023). Ecobrick craft products are an effort to deal with sachet and plastic waste. This effort has also been initiated by the people on Pasaran Island, but its management and creativity are still limited. Ecobrick crafts made by people today are generally still simple, namely putting small pieces of plastic waste into bottles of various sizes. However, the production of other creatures, such as tables and chairs, is still limited in terms of capital and materials, as well as the ability to make them. This is because most of the crafts are done by housewives who do not have the expertise to make tables or chairs from eco brick. However, when viewed from the economic potential, eco-bricks have great economic opportunities and can increase people's income.

### 6. Ecoprint craft products

Another craft product is eco print. Ecoprint craft is the process of making batik by utilizing dry leaves so that the colors that appear are natural colors from existing plants. Some people in the community make eco prints and are given the name "leaf trail". The production capital for this craft product consists of basic materials, namely plain cloth, generally white, with prices ranging from Rp. 50,000 to Rp. 70,000, depending on the type of fabric. The long process of making this craft makes the selling price of 1 sheet of eco brick cloth reach IDR 150,000 per sheet. If it is in the form of clothes, headscarves, or products that are ready to use, the selling price reaches IDR 250,000. Based on this, the additional income opportunities that the community gets from ecobrick production are very potential. The main

challenge is the limited market and models resulting from this production.

#### 7. Organic waste products (eco enzyme)

Another product produced by the local community is processed products from organic waste, namely coenzymes. Economically, ecozym is used for daily needs such as dish soap or as an antiseptic when mopping, which has an impact on reducing household consumption of these two products. However, other preparations of coenzymes that are processed into soap can have a sale value. The capital for coenzyme soap production reaches Rp. 20,000 to Rp. 30,000 which can produce 6 to 8 pieces of soap with a selling price of Rp. 10,000 to Rp. 25,000 per fruit. This product, known as organic soap, has been widely sold through various marketplaces and can be a great opportunity to increase people's income.

Significantly the community has not been able to provide an overview of the benefits of recycled products that have been produced so far. This is because, product sales do not take place regularly (there is demand), but only based on requests, and orders for certain events, and only to meet daily needs (no need to buy goods, just make them based on materials available House). On the other hand, recycled products have a very large and potential market potential. The main advantage of Pasaran Island is the potential for developing village tourism where these recycled products can be used as island entrance tickets and souvenirs so that the identity of the island as village tourism can develop not only tourism for anchovy-producing fishing communities but also education and awareness of waste management.

#### **Impact of Circular Economy Recycling Waste**

A circular economy is a new approach that is used to increase public awareness regarding waste management and increase the use of production goods through the process of converting waste (non-value goods) into useful-value goods. Various products produced through the recycling process are part of the

circular economy implementation by the people of Pasaran Island. There are several circular economic impacts of recycling waste, including:

##### a. Social Impact

The circular economy concept has a significant impact on improving environmental quality and increasing public awareness of waste management. Through the implementation of the circular economy, some people are forced to make lifestyle changes, one of which is by changing behavior. Apart from that, alternative income through the production of recycled goods also has a positive impact on the circular economy. One of the interview excerpts from this research explains that the positive impact of the changes in society is that young mothers or women who live on Pasaran Island have useful activities such as making crafts or routinely carrying out various island cleaning activities. The formation of institutions at the local level is also one of the drivers of significant change as well as a positive impact on the circular economy, the following is a quote from the statement:

“...thank God, the people on Pasaran Island are now experiencing changes little by little. When compared to the condition of the island long ago, now the condition is very clean, young women and mothers have many useful activities, not just hanging out and gossiping but now when gathering chili sauce to do something or gain knowledge about something...” (Mr. ZD, 50 years old).

The people of Pasaran Island, with their communal characteristics, have great potential for positive social impacts. Increasing community knowledge about processing waste into valuable goods is carried out communally and changing the habits of the community which initially only gathered, social gathering, or chatting but now is filled with various activities that are useful and can generate additional

sources of income in the future. The formation of a group of women craftsmen is a forum for aspirations for women on Pasaran Island to be actively involved in various productive activities and it is hoped that they will have the ability to be actively involved in conveying their opinions and thoughts in the public sphere.

#### b. Economic Impact

The economic impact of the process of selling recycled waste by the community is not significant. This is because the identity of Pasaran Island as a tourist village is still not optimal so creative crafts from local people are still being sold on a limited basis or only on request. Efforts to optimize the economic potential that can be expanded will have an impact when there is an era of integration between strengthening the potential of Pasaran Island as a tourist village and developing community handicrafts as alternative products that can be brought home (). The development of village business potential will be able to provide benefits in various sectors starting from the formation of village tourism administration (entrance tickets, parking fees, snack/stalls businesses, tour packages and educational tour packages, souvenirs, and various other economic potentials that can develop).

This can be an opportunity for the community but can also be a challenge when there is no good administration system in the community. One of the excerpts from the interview regarding the condition of Pasaran Island and its development potential is as follows:

"... the current condition of Pasar Island with many programs that have entered has changed very much, especially now that mothers have started to make recycling creativity and that is very good, that Pasaran Island is also being proclaimed as a tourist area which is our hope from group representatives community is this can be a turning point for changes in the island not only in

environmental conditions but changes in people and their income too...." (Mr. TO, 45 years old)

The economic impact of the circular economy will be optimally felt by the people on Pasaran Island if there is synergy with various other potentials that can be developed. One way is through community-based tourism management.

### **Optimization Of Recycling Waste to Support Community-Based Tourism**

One of the concepts of community-based tourism is the community-based tourism approach which has a holistic and sustainable concept through integration with various other aspects such as the environment, economy, politics, culture, and society through exploiting the potential for community dependence within it (Febriandhika and Kurniawan, 2019; Richards and Hall, 2000). The community has a significant role in the realization of sustainability as a basis for developing village tourism which has a close relationship with the benefits that can be received by the community, both economic benefits and social and cultural benefits. Therefore, it is important to apply principles related to sustainable tourism such as ecological sustainability, minimization of environmental impacts, sustainability of social and cultural identity, economic sustainability, and various elements of education related to sustainable tourism, involving local participation, and applying conservation elements (Mowforth et al, 2019).

Pasaran Island already has several tourism potentials as explained by Ali (2015), including 1) adventure tourism to catch anchovies which is carried out while studying the life of capture fishermen up to the processing of anchovies on board; 2) squid fishing and mangrove crab fishing tours where tourists can be invited to catch crabs directly or use traps; 3) fish and shellfish farming tourism in floating net cages (KJA) including tourists can also buy fish

directly; 4) anchovy processing educational tour; 5) shopping tours for various fishery products; 6) mangrove tourism; and 7) cultural tourism including the social economy of the people on Pasaran Island.

Various emerging tourism potentials on Pasaran Island can be integrated with increased public awareness and better tourism management. Increasing awareness about business opportunities from the presence of tourists can be supported by improving infrastructure, holding regular festivals, and promoting tourism on Pasaran Island. This form of optimizing the introduction of Pasaran Island as a tourist village can encourage optimizing the introduction of recycled products produced by the community. There are several efforts to optimize, including:

- a. Strengthening promotional media or digital media; Digitalization facilitates the promotion process, one of which is village tourism promotion. Strengthening promotions through digital media and social media can increase the number of island visitors while at the same time introducing the tourism potential and culture of the people.
- b. The culture of the people who are aware of the environment is an attraction for tourism coupled with various recycled handicraft products produced by the local community. Optimizing this potential can increase business opportunities and new livelihoods for the community.
- c. Building cooperation with the tourism agency; Collaboration with government agencies, especially the tourism agency, is important so that Pasaran Island can become a tourist destination in Lampung. This collaboration can also increase the promotion of products produced from these tours such as food and various handicraft products.

Based on this, it is important to improve the quality of the product and ensure control of the product produced. Apart from that, building a brand is also one of the efforts that can be

made to optimize the circular economy and encourage community-based tourism on Pasaran Island. The people of Pasaran Island, with their communal characteristics, have great potential for positive social impacts. Increasing community knowledge about processing waste into valuable goods is carried out communally and changing the habits of the community which initially only gathered, social gathering, or chatting but now is filled with various activities that are useful and can generate additional sources of income in the future. The formation of a group of women craftsmen is a forum for aspirations for women on Pasaran Island to be actively involved in various productive activities and it is hoped that they will have the ability to be actively involved in conveying their opinions and thoughts in the public sphere.

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## CONCLUSIONS

The increase in the amount of waste on Pasaran Island has increased significantly from year to year. Currently, the amount of waste generated by the people on Pasaran Island reaches 504.8 kg per day. This will have a significant impact on the emergence of various social, environmental, and health problems. The emergence of various local initiatives to solve environmental problems also has an impact on the emergence of alternative livelihoods, especially for women or women who live on Pasaran Island. One of the alternatives to overcome the waste problem and generate value is to manage recycled products from waste plastic, eco print, and eco enzyme. When the product is a community initiative to increase awareness regarding waste management and the environment as well as optimize the potential for plastic waste and organic waste as a selling value product or to be used to reduce household consumption of soap and replace it with the eco enzyme.

Waste management, both organic and non-organic, has a significant impact on potential alternative livelihoods, especially for women (housewives). Based on the calculation of the potential economic profit from each product produced, it reaches 50% (profit). This potential can be optimized through integration with the community-based tourism model currently being developed on Pasaran Island. These conditions indirectly impact socially, economically, and environmentally. Improving the quality of life and increasing community awareness that encourages local initiatives are part of the positive social impacts that a circular economy generates. These impacts indirectly affect the quality of the environment and generate economic potential for households and women on Pasaran Island. This research is limited to the initiation of a circular economy based on waste management by the community and the economic benefits obtained by the communities. However, the issue of sustainability has not been studied. In addition, this study has not measured the economic

impact of reducing waste as an impact of climate change. It can be researched for the next studies.

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