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## STRATEGY FOR DEVELOPMENT OF MICRO/SMALL/MEDIUM ENTERPRISES (MSMEs) BASED ON A CIRCULAR ECONOMY (CASE STUDY OF MSMEs IN MATARAM CITY)

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### Abstract

This research examines 2 main issues, 1) strategies for developing Micro, Small and Medium Enterprises (MSMEs) in the City of Mataram, 2) supporting and inhibiting factors for the development of Micro, Small and Medium Enterprises (MSMEs) in the City of Mataram. This research uses a qualitative type using three types of data collection models, namely observation, interviews and documentation. The data analysis techniques used are data reduction, data presentation, and conclusion. Meanwhile, checking the validity of the data uses extended observations, increasing persistence and triangulation. From the research results, it was found that the development strategies for Micro, Small and Medium Enterprises (MSMEs) in the City of Mataram are different for each MSME. Some adopt all circular economy principles or several principles of the circular economy. The 5 principles are: *Reduce, Reuse, Recycle, Recover, Redesign*. Meanwhile, the supporting and inhibiting factors for the development of Micro, Small and Medium Enterprises (MSMEs) in Mataram City vary in the process of running the business. From the supporting factors for the development of MSMEs, it can be concluded that the important points are production materials, human resources and information technology. Meanwhile, business capital, regulations, resistance and new competitors are inhibiting the development of MSMEs.

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**Keywords:** *Circular Economy, MSMEs, Development Strategy*

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### 1. INTRODUCTION

MSMEs are not only interesting to study in terms of resilience, financing, obtaining loans or business management. Micro, small and medium enterprises (MSMEs) have an important and strategic role in national development, especially in terms of economic development. MSMEs must be able to survive amidst the onslaught of the global economy while living in the era of globalization, especially with economic integration in Southeast Asia, which makes Southeast Asia an economic community with a single production base. To do this, MSMEs must be able to compete and make products that everyone can accept, not just domestic (Indonesian) consumers.

In Indonesia, MSMEs are increasingly developing. Apart from being able to absorb a lot of labor, MSMEs move quickly so they can survive in unfavorable situations. Various types of creativity have been demonstrated by MSMEs throughout Indonesia. The innovations issued always try to follow market trends. So, many new MSMEs have emerged with increasingly attractive products.

The presence of MSMEs in society has a positive impact on economic growth, both community and national. The presence of MSMEs adds to increasingly healthy market competitiveness. This can be seen from the many activities of MSMEs that require creativity so that consumers become more interested in shopping. With such a large role of MSMEs in

supporting a country's economy, MSMEs can reduce the unemployment rate by absorbing a workforce that does not yet have a job. The development of micro businesses will open up more job opportunities, which in turn will increase people's income. Looking at it from there, it is very important to develop MSMEs so that their existence becomes stronger to support the country's economy. Stability of the country's economy can be realized if the development of MSMEs in each region can be carried out well.

Apart from focusing on developing MSMEs, something that must also be looked at is waste from MSME production. The development of MSMEs is certainly very good, but in this era of increasingly rapid globalization, the impact of production waste can pollute the environment and society. To minimize such impacts, recently the concept of a circular economy has emerged which aims to make resource use efficient. The emergence of the circular economy concept will shift the linear economy concept which does not emphasize resource efficiency as long as possible.

In the circular economy concept, MSMEs are required to utilize resources as long as possible in order to minimize social and environmental damage. So, it is not just economic stability that is felt by the community. However, environmental and social stability can also be felt by the community. In the linear economic model, products are made, used and thrown away (take-make-dispose principle). Thus, producers will continue to extract natural resources to produce new products. Differently in a circular economy, the useful value of a product can be maintained throughout its life cycle, thereby extending its useful life.

One of the many regions in Indonesia that has the potential for rapid development of MSMEs is Mataram City, West Nusa Tenggara. In Mataram City many houses produce various types of processed food products and others. Many MSMEs have emerged in Mataram City with various innovations and creativity to develop their business. Apart from focusing on developing MSMEs, Mataram City also applies the concept of a circular economy by utilizing leftover production into other products. So by applying this concept, we can maintain resources efficiently.

In this research, researchers took 6 MSMEs as samples to find out how the development of MSMEs in Mataram City is based on a circular economy. The development of MSMEs based on a circular economy in Mataram City is an interesting thing to study further. So that in its implementation, other MSMEs can follow suit. MSME development should be carried out based on a circular economy. This can optimize the resources owned by MSMEs. Apart from having a positive impact on the national economy, applying the circular economy concept to MSMEs has an impact on resource, social and environmental integrity. In Islam, maqashid sharia (purpose of sharia) contains five aspects: protection of religion, soul, mind, lineage and property. A circular economy must meet these goals, such as reducing negative impacts on the environment and society. For this reason, the implementation of a circular economy in MSMEs in Indonesia, especially in the city of Mataram, must be carried out in order to realize maqashid sharia.

## 2. METHODOLOGY

This research uses a qualitative approach which aims to explore problems that exist in society based on conditions, relationships and society's views on a phenomenon. To support data in qualitative research, researchers use two data sources, namely primary data and secondary data. Primary data in this research was obtained from business actors in Mataram

City. To be precise, 7 MSMEs will be the primary data in this research, namely Mataram Maggot Center (MMC), Tahu Bajang, Kerupuk kulit Seganteng Bik Mala, Fish Cultivation Group MINA Jaya, Poultry farming business, Nurul Aen Bakery and Kirana Bakery. Meanwhile, secondary data in this research comes from data or documents related to the development of circular economy-based MSMEs. Data collection was obtained from three techniques, namely observation, interviews, and documentation. Meanwhile, checking the validity of the data uses extended observations, increased persistence, and triangulation.

### 3. RESULT AND DISCUSSION

#### a. Development of Micro, Small and Medium Enterprises Based on Circular Economy in MSMEs in Mataram City

Micro, Small and Medium Enterprises in the City of Mataram have an important role in the local economy and have great potential in contributing to economic growth. Micro, small and medium enterprises (MSMEs) have the potential to become quite large trading businesses among the community which will make more and more people become entrepreneurs, so that the economy in a region will improve. MSMEs as part of the economy must also increase their competitiveness by innovating. Mataram City has the potential to encourage economic growth in West Nusa Tenggara Province because of the important role played by small businesses such as Micro, Small and Medium Enterprises (MSMEs) in Mataram City. These small businesses are very important for the economic growth of Mataram City and are one of the leading sectors capable of absorbing a large workforce. For this reason, the following is the number of MSMEs in Mataram City in September 2021:

**Table 1 Number and Scale of MSMEs Per District/City in NTB 2021**

No	District/City	Business classification			Total
		Micro	Small	Medium	
1	Mataram	15.746	6.194	533	22,473
2	West Lombok	16,635	366	0	17,001
3	North Lombok	4.820	173	5	4.998
4	central Lombok	309	11	3	323
5	East Lombok	14.356	6.390	284	21.030
6	West Sumbawa	7.780	49	-	7.829
7	Sumbawa	5.501	4	3	5.508
8	Dompu	2.261	5	4	2.270
9	Bima Regency	11.610	7	3	11.620
10	Bima City	7.904	2.293	411	10.608
	Total	86.992	15.492	1.246	103.660

Source: NTB Province Department of Industry, Cooperatives and MSMEs 2022

The table above shows that Mataram City has the largest number of small, micro and medium businesses in West Nusa Tenggara Province. With 22,473 units, or 22% of all formal MSMEs in West Nusa Tenggara Province, micro businesses account for 15,746 units, or 70%, and small businesses account for 6,194 units, or 2%. Meanwhile, the number of formal Small Micro and Medium Enterprises (MSMEs) in West Nusa Tenggara Province in September 2021

amounted to 103,660 units, with details of micro businesses amounting to 86,922 units, small businesses amounting to 15,119 units, and medium businesses amounting to 1243 units. The number of formal MSMEs in West Nusa Tenggara Province is dominated by the micro business sector with 84 percent, and small businesses with 15 percent.

The Mataram City Government continues to strive to support the development of MSMEs through various coaching, training and capital assistance programs. One of the advantages of MSMEs in Mataram City is the diversity of products produced, reflecting the rich culture and creativity of the local community. MSME products such as ikat weaving, woven crafts and traditional food have become icons of Mataram City and attract the interest of domestic and foreign tourists. Even though MSMEs in Mataram City have shown rapid development, they still face several challenges, such as access to capital, limited marketing, and obstacles in implementing technology and innovation.

MSMEs in Mataram City are projected to continue to grow and develop, strengthening the local economy and improving community welfare. By applying new economic concepts, MSMEs in Mataram City can innovate to extend the use of production materials which can benefit business income. This is a good thing for business people, because from one production material, it can be used to make various kinds of products from production leftovers. This economic concept is a circular economic concept which aims to use resources as effectively as possible so that there is no excess use of production materials. A circular economy is a model that seeks to extend the life cycle of existing products, raw materials and resources so that they can be used as long as possible. The main principles of a circular economy include:

1. Reduce: Reducing the use of raw materials from nature.
2. Reuse: Optimize the use of materials that can be reused.
3. Recycle: Use of materials resulting from the recycling process.
4. Recovery: Use of material resulting from the recovery process.
5. Repair: Repair damaged products.

By using these principles, a circular economy can reduce waste and pollution, keep products and materials in use for as long as possible, and regenerate natural systems. A circular economy can also increase competitive ability, reduce the environmental impact of production and consumption, and overcome the problem of resource scarcity that will arise in the future. The circular economy is an economic model that aims to maximize the use of resources and minimize waste and negative impacts on the environment. In this model, products are designed to be used, reused, repaired, reconditioned and recycled in such a way that product life cycles can be extended and waste minimized.

Implementing a circular economy requires commitment and cooperation from various stakeholders, from government, industry, to society. The government can encourage the transition to a circular economy through supportive policies, incentives and regulations. Meanwhile, industry needs to adopt environmentally friendly production and product design practices. Society also has an important role in changing consumption patterns and choosing sustainable products. With the widespread implementation of a circular economy, various benefits can be achieved, both from an environmental, economic and social perspective. Waste reduction, energy savings, job creation, and greener economic growth are some of the positive impacts that can be produced. Therefore, commitment and cooperation from all parties is very necessary to realize a more sustainable future through a circular economy.

In line with the provincial government program, namely NTB Zero waste, is one of the flagship programs of the NTB provincial government which aims to realize a waste-free NTB by 2023. Zero Waste is a waste management model that treats waste as a resource. Zero Waste is also the application of a waste management concept based on reducing the amount of waste, recycling waste, reusing waste, and the concept of a circular economy. Implementing a circular economy in MSMEs in Mataram City can also increase public awareness of the importance of responsible consumption and a more environmentally friendly lifestyle. MSMEs can become role models for local communities in developing recycled products, reducing waste, and implementing sustainable business practices. This can encourage changes in consumer behavior and transformation towards more sustainable development in the City of Mataram. The following are several circular economy-based MSMEs in Mataram City.

### **1) Maggot Mataram Center**

Maggot Mataram Center is one of the MSMEs under the auspices of the Mataram City DLH (Environmental Service) which applies the circular economy concept in its business development. In running its business, MMC utilizes renewable energy, such as solar energy, to operate most of its production processes. This allows them to reduce energy costs while reducing carbon. Apart from that, maggot MSMEs also strive to ensure that production waste can be recycled or reused. So that the waste produced can optimize energy use and efforts to recycle production waste to minimize waste. In the future, this can become a model for other MSMEs in developing sustainable and environmentally friendly businesses. Maggot MSMEs are an interesting example of implementing a circular economy in Mataram City. This company processes organic waste, such as food scraps and animal waste, into animal feed based on black soldier fly (maggot) larvae. By utilizing the potential of maggot larvae which are able to break down organic waste efficiently, these MSMEs not only create added economic value, but also reduce the volume of waste that goes to landfill. Recycling waste into animal feed is a concrete manifestation of circular economic practices implemented by maggot MSMEs. As we know, implementing a circular economy has five main principles, namely 5R which means reduction, reuse, recycling, recovery and repair (Reduce, Reuse, Recycle, Recovery and Repair).

Maggot MSMEs in Mataram City which implement a circular economic system have succeeded in implementing the 5R principles (Reduce, Reuse, Recycle, Recover, Redesign) thoroughly in running their business:

a) Reduce

In the Reduce aspect, this business is able to reduce the volume of organic waste entering landfills by utilizing black soldier fly larvae to decompose and convert food scraps and animal waste into animal feed. This shows appropriate efforts and reduction of waste generation.

b) Reuse

In the Reuse principle, maggot MSMEs seek to reuse production waste, such as making maggot skin as a livestock food supplement. This is a form of reusing available resources.

c) Recycle

In the recycling aspect, this business recycles waste that cannot be reused into other products that have economic value, for example processing production residues into organic fertilizer. This shows efforts to reuse waste into value-added products.

d) Recover

In the Recover principle, maggot MSMEs utilize renewable energy, such as solar energy, to operate most of their production processes. This is an effort to use more environmentally friendly energy sources.

e) Redesign

Pada aspek Redesign, usaha ini terus melakukan inovasi dan pengembangan produk untuk meningkatkan efisiensi, produktivitas, dan daya saing usahanya dalam menuju bisnis yang benar-benar berkelanjutan. Hal ini menunjukkan komitmen UMKM maggot dalam mengembangkan usaha yang berkelanjutan.

## 2) Tahu Bajang

Tahu Bajang is an MSME that operates in the food processing sector, especially in the production of tofu and other processed products. This MSME has been operating since 2015 and has 15 employees. Tahu Bajang has a business strategy that focuses on developing diverse products and improving product quality. This MSME has also carried out active marketing through social media and local events. Bajang tofu uses materials that can be reused in the production process. They use raw materials that can be reprocessed, such as soybeans, to make tofu and tempeh. In this way, these MSMEs can reduce the use of raw materials and reduce the waste produced. Bajang tofu businesses also still use firewood in the production process to save energy costs and reduce environmental impacts.

Based on observations of Bajang tofu MSMEs in Mataram City which have implemented circular economy principles, it can be concluded that in applying the Reuse principle, tofu MSMEs have succeeded in reusing tofu dregs into other derivative products, such as crackers, tempe gembus, or animal feed. In this way, companies not only reduce waste generation but also gain added economic value from the use of this waste. Furthermore, in the recycling aspect, MSMEs know that they have succeeded in recycling production liquid waste into organic fertilizer which can be reused for agriculture or plantations. This not only reduces the environmental burden, but also becomes an additional source of income for the company.

## 3) Poultry Farm

This farm implements a strict quality control process to ensure the highest quality standards for its products with a focus on improving the quality and productivity of livestock. This can be done through implementing good maintenance management, using superior seeds, and improving animal feed and nutrition. By increasing livestock productivity, farmers can increase production volume and income. Product diversity. Apart from selling livestock, farmers can develop derivative products that have added value, such as milk, eggs, processed meat and other by-products. Product diversity can increase income and reduce dependence on one type of commodity, establishing strategic partnerships. Farmers can collaborate with downstream companies, research institutions or the government to access technology, markets and financial support. Synergistic partnerships can help farmers expand networks, increase business scale and strengthen competitiveness. Farmers can optimize resource utilization, reduce waste, and recycle by-products into new sources of income. A circular economy approach is not only environmentally sustainable, but can also increase business profits in the long term.

In efforts to develop sustainable livestock businesses, the application of circular economy principles is becoming increasingly important. For this reason, in the observations and interviews that the researchers conducted, the application of the circular economy concept was carried out by;

- a) Reduced Resource Use: "We try to minimize the use of synthetic chemicals, such as antibiotics and veterinary drugs. Instead, we adopt a more natural maintenance approach utilizing herbal ingredients."
- b) Waste Recycling: "We process chicken manure into organic fertilizer which we sell to farmers. Apart from that, we also process waste water from the coop for irrigation of agricultural land around our farm."
- c) Derivative Product Innovation: "We not only sell broiler chickens, but also develop processed products such as chicken eggs. We try to use more environmentally friendly materials in the production process."

#### **4) Fish Cultivation Group MINA Jaya**

The Mina Jaya Fish Cultivation Group is a Micro, Small, and Medium Enterprise (MSME) that operates in the field of freshwater fish cultivation. This business was founded in 2018 by a group of young people in Pengempel Indah, Bertais Village, Sandubaya District, Mataram City. The beginning of establishment of Mina Jaya started from seeing the potential of natural resources in the form of abundant land and water sources, they took the initiative to start a freshwater fish cultivation business. Currently, Mina Jaya cultivates several types of fish, including catfish, tilapia and gourami. Fish production is managed collectively by group members, consisting of 20 people. Apart from that, the group also provides sales services for fish seeds, feed and cultivation accessories to the local community.

Mina Jaya Fish Cultivation in Implementing Circular Economy Principles As a fish cultivation business group, Mina Jaya has implemented several principles in circular economy to achieve business and environmental sustainability. One of the main initiatives is optimizing the efficient use of resources and reducing the waste generated. In the cultivation process, Mina Jaya utilizes water recirculation technology. This system allows repeated use of water by filtrating and treating waste water.

This not only reduces water consumption, but also prevents environmental pollution due to the disposal of used water. Apart from that, solid waste in the form of leftover feed and fish waste is processed into organic fertilizer which is then distributed to agricultural land around the cultivation location. Efforts to recycle and utilize waste not only have a positive impact on the environment, but also bring economic benefits to Mina Jaya. Selling organic fertilizer also increases the group's income and opens up opportunities for collaboration with farmers in the surrounding area. In this way, a mutually beneficial cycle is formed between fish cultivation, waste processing and agriculture.

Not only that, Mina Jaya also applies the principle of product diversification within a circular economy framework. Apart from selling fresh fish, this group also develops products from waste, namely maggots and chicken. Utilization of these by-products and products allows Mina Jaya to increase added value and expand market share. This is in line with the circular economy concept which encourages efficiency and waste minimization throughout the value chain.

Mina fish cultivation in Mataram City proves that a circular economy can bring multiple profits. In terms of circular economy, it means economic growth by maintaining the value of products, materials and resources as long as possible and minimizing social and environmental damage. In the practices carried out there are circular economic practices in Mina Jaya fish farming, farmers are successful in using waste to meet fish feed needs. From the results of field observations, the strategy implemented is quite significant, both from an environmental and economic perspective. This business can reduce resource use, reduce waste, while increasing income through the sale of organic fertilizer and processed fish products. Apart from that, it can also contribute to environmental sustainability around the business location.

## **5) Kirana Bakery**

In North Babakan, there is a bakery which is one of the main characteristics of this area. The Kirana bakery, which has been around for more than two decades, has become a destination for local residents who want to enjoy bread or resell it. Since the beginning, this shop has been managed by Mr. Sahlaen's family, who is widely known for his baking skills and consistent quality of bread. Mr. Sahlaen and his 20 employees started the production process. With recipes passed down from generation to generation, they make various kinds of bread, from plain bread, sweet bread, to stuffed bread. Apart from offering delicious taste, Kirana Bakery is also known for its affordable prices. Even though his business scale has expanded, Mr. Sahlaen tries to keep the selling price reasonable so that it can be enjoyed by people in Babakan and outside the area.

Their commitment to continuously maintaining quality and providing affordable prices has made this shop a must-visit for many people in the area. In the midst of competition with increasingly mushrooming bakery outlets, Kirana Bakery is still able to maintain its existence. This cannot be separated from the customer loyalty that has been built over the years, as well as the innovation carried out by Mr. Sahlaen's family in developing new bread variants to meet diverse market tastes. The strategic innovation carried out is circular economy principles in running its business. This can be seen from their efforts to optimize resource utilization, minimize waste, and create added value from each component produced. In the production process, Kirana Bakeri strives to minimize the use of raw materials.

On the other hand, Kirana Bakery also utilizes unsold leftovers from bread production. The pieces of bread are reprocessed into other products, such as bread pulp or bread crumbs which can be used as raw materials to make various kinds of cakes or snacks. In this way, the waste produced can be minimized and instead used as a source of additional income. Kirana Bakery's commitment to implementing a circular economy brings multiple benefits to their business. Apart from reducing production costs, this practice also allows them to increase income through selling products from leftover production materials. Not only that, Kirana Bakery also gets a positive image from customers who appreciate their efforts in preserving the environment.

## **6) Nurul Aen Bakery**

In Babakan, cake MSMEs have become one of the businesses that has grown rapidly in recent years. Various types of traditional and modern cakes can be found in a number of

shops and stalls spread along the main road in this area. One of the well-known cake MSMEs is Nurul Aen Cake Shop. This business, which has been established since 2010, offers a variety of wet and dry cakes with distinctive flavors. Not only selling finished products, several cake MSMEs in Babakan also offer special cake ordering services for certain events, such as birthdays, weddings or traditional events. This service is increasingly in demand by the people of Babakan and surrounding areas.

The existence of cake MSMEs has become an inseparable part of the lives of the Babakan people. Apart from providing employment opportunities, these businesses also help preserve the region's traditional culinary heritage. In the future, the potential for developing cake MSMEs in Babakan is still wide open as market demand grows and becomes increasingly diverse. Apart from the Nurul Aen Cake Shop, there are also other cake MSMEs that are no less interesting. Each has its own advantages, both in terms of taste, variety and attractive packaging.

This makes competition among cake MSMEs in Babakan even tighter, encouraging them to continue to innovate. One of the strategic innovations implemented is a circular economy-based development strategy. Nurul Aen Cake Shop has implemented various circular economy-based strategies which have proven to provide benefits for its business. One of the main initiatives is the use of leftover unsold cake slices. Instead of throwing away the waste. The shop owner, Mrs. Nurul Aen reprocesses it into leftover products, such as cake crumbs. These products are then used as raw materials to make various pastries and other snacks. In this way, Nurul Aen Cake Shop can not only minimize waste, but also get an additional source of income for its business. Overall, the application of circular economy principles has proven effective in developing the Nurul Aen Cake Shop cake business in a sustainable manner. In the future, the potential for developing cake MSMEs in Babakan is still wide open in line with the growth of increasingly diverse market demand.

## 7) Kerupuk Kulit (Skin Crackers) Seganteng Bik Mala

The Seganteng Skin Crackers MSME has become a local icon. This business was started by Mr Suparman, a genuine Seganteng leather cracker craftsman who started his business at home. Starting with limited capital, Mr. Suparman diligently developed a secret recipe for his local specialty skin crackers. Thanks to the consistent product quality and distinctive taste, Mr Suparman's skin cracker business is slowly becoming known among the local community. He diligently participates in various exhibitions and culinary events to promote his products. Effective marketing strategies and commitment to customer satisfaction are the main keys to the success of this MSME.

As time goes by, demand for Seganteng skin crackers continues to increase. To meet market needs, Mr. Suparman finally decided to expand his business by establishing a small factory in the Seganteng area in 2010. Currently, the Seganteng Skin Crackers MSME has around 5 employees involved in the production and distribution process. In developing its skin cracker business, Seganteng MSMEs have implemented several proven effective strategies. One of the main strategies is to focus on product quality. Mr Suparman, as the owner, always maintains the consistent taste and texture of skin crackers by using fresh raw materials and a hygienic production process. This has built consumer reputation and trust in Seganteng MSME products.

Apart from that, Seganteng MSMEs are also actively innovating in developing product variants. Not only do they produce original flavored skin crackers, they also offer a variety of flavor choices, such as spicy, barbecue and cheese. This product diversification strategy aims to meet increasingly diverse consumer tastes and increase competitiveness in the market. Seganteng Leather Crackers MSMEs not only focus on improving quality and product diversification, but have also implemented circular economy principles in developing their business.

One of the main initiatives is processing cowhide waste which is the main raw material for making leather crackers. Instead of throwing away the remaining pieces of cowhide, this MSME reuses them to make derivative products, such as rambak crackers and karak crackers. In this way, Seganteng MSMEs can minimize the amount of waste produced and increase the economic value of existing raw materials.

In implementing circular economy principles, Seganteng Leather Crackers MSMEs are guided by the 5R strategy: Reduce, Reuse, Recycle, Repair and Recovery. This strategy is implemented carefully to minimize waste, optimize resource utilization, and encourage long-term business sustainability. Seganteng MSMEs apply the Reuse principle by reusing unused cowhide scraps. This leather waste is processed into derivative products such as rambak crackers and karak crackers, so that their economic value is maintained. This strategy not only reduces waste, but also creates product diversification which can increase business income.

#### **b. Supporting and Inhibiting Factors for the Development of Small, Micro and Medium Enterprises (MSMEs) Based on a Circular Economy**

MSME development should be carried out and supported consistently. The prospects for Indonesian MSMEs are very large in the future. Specifically in the context of this research, namely in the city of Mataram. MSMEs in Mataram City are one of the areas that have great potential in Indonesia. Various products resulting from the community's creative ideas have become a special attraction supporting the rapid development of MSMEs in Mataram City.

With its great potential, it is only natural that MSMEs in Mataram City will use a lot of production materials to meet market needs. The better an MSME is, the higher the market demand will be. This will have an impact on the scarcity of production materials if it is not managed well by MSME players. The scarcity of production materials will certainly have an impact on MSMEs themselves, considering that production materials produce a product for sale. The absence of production materials can make MSMEs stop operating, because no products are produced. Seeing this, such a concept must be abandoned and use another concept that minimizes the use of production materials.

Until now, there are still many MSMEs in Mataram City that apply the "take-make-dispose" concept (known as the linear economic concept) in their production processes. Using this concept, raw materials are extracted, then processed into products, consumed, and finally disposed of as waste. The presence of waste means the existence of MSMEs can also be negative for the environment because it is polluted. The use of the linear concept must be replaced by MSMEs in Mataram City, especially MSMEs which produce a lot of production waste. Because this can pollute the surrounding environment and can damage the ecosystem in the area.

One of the newest concepts that has emerged to minimize the use of production materials so that they are not used arbitrarily is the concept of a circular economy. The circular

economy concept aims to generate economic growth by maintaining the value of products, materials and resources for as long as possible. So, this can minimize social and environmental damage. So it is appropriate for MSMEs in Mataram City who produce production waste to use the circular economy concept in order to maximize the use of resources.

In the process of developing circular economy-based MSMEs in Mataram City, of course there will be supporting and inhibiting factors that will be found. This is a normal condition for MSME players to find. Of the many MSMEs in Mataram City, there are 7 MSMEs that researchers took as samples because they apply the circular economy concept. The following are supporting and inhibiting factors for the development of circular economy-based MSMEs in Mataram City for each MSME:

### **1) Maggot Mataram Center**

Looking at the observation and interview data that researchers have conducted at the Maggot Mataram Center MSMEs, there are two supporting factors that support these MSMEs to be able to develop circular economy-based MSMEs, namely;

a. Maggot cultivation technology

Various research institutions and academics have produced various innovations in maggot cultivation technology, making it easier to adopt and apply at the field level. The available technology includes maintenance methods, feed handling, harvesting, and processing maggots into final products. Current technology is sufficient to support the development of maggot businesses, especially for MSMEs. This technology can increase efficiency and productivity, as well as guarantee product quality. However, adjustments and modifications are still needed to make this technology more affordable and easy for MSMEs to adopt

b. Availability of skilled labor.

The development of maggot cultivation requires workers who have specific skills and knowledge, such as in terms of maintenance management, feed handling, harvesting and maggot processing. Currently, various training and mentoring have been carried out to increase human resource capacity in this field. The main skills needed include knowledge about maggot rearing management, feed handling, harvesting, and the process of processing maggots into final products. Apart from that, the ability to operate cultivation and processing technology is also very important. The UMKM Maggot Mataram center has made several efforts, such as collaborating with vocational training institutions, providing regular internal training, and recruiting workers who have experience in animal husbandry or food processing. We also continue to encourage improvement in the competency of our employees through capacity development programs.

Apart from that, there are several factors that hinder the development of circular economy-based MSMEs by the Maggot Mataram Center MSMEs, including limited capital. Developing maggot cultivation requires quite a large initial investment, especially to build production infrastructure. Limited access to capital for MSMEs is an obstacle in developing business scale. The main challenge faced is limited capital, especially in the early stages of business development. The capital required to start a maggot business is quite large, starting from investment in infrastructure development, purchasing equipment, to daily operational costs, the impact is quite significant. Limited capital has an impact on the ability of Maggot Mataram Center MSMEs to invest in more efficient technology, expand production scale, and develop product innovation. This makes us have to walk at a slower pace.

## 2) Tahu Bajang

In developing circular economy-based MSMEs, of course Tahu Bajang MSMEs encounter supporting and inhibiting factors. The following are supporting factors for Tahu Bajang MSMEs in developing circular economy-based businesses, among others:

### a. Sustainable Raw Materials

Soybeans are the main raw material for making tofu and tempeh, two traditional food products that are very popular in Indonesia. The sustainable availability of soybeans is a key factor in implementing a circular economy in the tofu and tempeh business. Soybeans can be cultivated sustainably by utilizing renewable natural resources, such as fertile soil, water and solar energy. An environmentally friendly soybean cultivation process, with the use of organic fertilizer and good agricultural practices, can guarantee a consistent supply of raw materials without damaging the ecosystem. Apart from that, the leftovers from processing soybeans into tofu and tempeh can also be reused in a circular economy cycle. Tofu dregs, for example, can be processed into animal feed or organic fertilizer, thereby minimizing waste and supporting a more efficient production system. Utilizing these production residues not only reduces the environmental impact, but also creates added value for the tofu and tempe business. By utilizing sustainable raw materials and optimizing the recycling of production waste, tofu and tempeh businesses can contribute to the development of an environmentally friendly circular economy

### b. Simple Technology

The process of making tofu and tempeh generally uses simple technology that can be applied on a household or small industrial scale. This simple technology makes it easier to implement circular economy concepts, such as waste recycling and efficient use of energy. The process of making tofu and tempeh uses simple technology that can be applied on a household or small industrial scale. This simple technology makes it easier to implement circular economy concepts, such as waste recycling and efficient use of energy. The simple technology we use is not only more environmentally friendly, but also more in line with the culture and traditions of making tofu and tempeh in our region. Apart from that, this simple technology is also easier to maintain and operate by local workers who are familiar with traditional processes.

In the process, Tahu Bajang MSMEs do not always find supporting factors, but find inhibiting factors in the running of their business. The inhibiting factor for Tahu Bajang MSMEs in the process of developing circular economy-based MSMEs is regulations that are not yet comprehensive. There are still limitations in government regulations and policies that comprehensively encourage and facilitate the implementation of a circular economy in the tofu and tempeh business sector. A lack of clear incentives, guidance and legal enforcement can be a barrier for entrepreneurs in adopting circular economy practices. The government's role in providing adequate infrastructure is crucial for the sustainability and competitiveness of tofu and tempeh MSMEs. With good infrastructure, it can certainly increase efficiency, productivity and market reach. This will have a positive impact on business growth, adequate waste management is vital for the sustainability of tofu and tempeh MSMEs. Apart from complying with environmental regulations, this can also prevent pollution and preserve the environment around industrial centers. The role of local governments in providing affordable waste processing facilities for MSMEs is highly expected.

### 3) Poultry Farm

Supporting factors for developing circular economy-based MSMEs are as follows:

#### a. Potential for Processing Livestock Waste

MSMEs can use chicken manure as organic fertilizer or biogas raw material. Waste processing can reduce the burden of disposal costs and provide additional income. Livestock waste, especially chicken manure, has great potential to be processed and reused in business processes. Chicken manure is processed into organic fertilizer which is then sold to local farmers. Apart from that, it also uses chicken manure as raw material for biogas which is used as an energy source on farms.

#### b. Technological Innovation and Information Access

Technological advances enable MSMEs to optimize resource use and reduce waste. Easy access to information helps MSMEs learn and adopt circular business models. One of the supporting factors for chicken farming MSMEs in implementing a circular economy is the potential for processing livestock waste. Chicken manure, which has been considered waste, turns out to have added value that can be reused by farmers. The chicken farming entrepreneurs the researchers interviewed have developed a waste processing system on their farms. Chicken manure is processed into organic fertilizer which is then sold to local farmers. Apart from that, chicken manure is also used as raw material to produce biogas which is used as an energy source on farms. Utilization of this waste provides several benefits for livestock businesses. First, farmers can reduce waste disposal costs that previously had to be incurred. Second, selling organic fertilizer and using biogas provides additional income for their business. Third, breeders can minimize the environmental impact of livestock activities. In the future, farmers also plan to continue to increase the efficiency and capacity of their waste processing systems, by utilizing more modern technology. Apart from the use of livestock waste, other factors that support the implementation of a circular economy for chicken farming MSMEs are technological innovation and easy access to information. Technological developments have enabled farmers to adopt monitoring and automation systems that can control feed and water consumption, as well as more efficient waste processing technology. This helps them in minimizing wastage of resources and optimizing waste utilization. Easy internet access also helps them to continue learning and following the latest developments. In addition, the adoption of digital technology such as livestock management applications and online marketing also allows farmers to collect and analyze data better, so they can make more informed decisions to increase the efficiency and sustainability of their businesses.

The inhibiting factor for developing circular economy-based MSMEs is capital constraints. The development of waste processing systems and the adoption of new technology requires a fairly large initial investment for livestock MSMEs. Limited access to financing can be an obstacle for MSMEs to make these investments. From the results of interviews, researchers found that limited capital is the main obstacle for livestock MSMEs because the initial investment required to develop waste processing systems, recycling and the application of new technology is quite high. Meanwhile, most livestock MSMEs only rely on their own capital or loans from financial institutions with conditions that are difficult to fulfill. Access to appropriate financing schemes to support their efforts in implementing a circular economy is still limited. Apart from that, the lack of financial support from the government or related institutions is also an obstacle for livestock MSMEs. Incentives, subsidies or special funding

programs to encourage circular economy adoption are still very limited. This makes livestock MSMEs increasingly constrained in overcoming capital constraints and making the investments needed for business transformation. Limited capital also has an impact on the ability of livestock MSMEs to access technology and innovation that supports the implementation of a circular economy. They often find it difficult to adopt more sophisticated waste processing technologies or develop more efficient and environmentally friendly production processes. This complicates their efforts to implement the circular economy concept holistically.

Overall, limited capital is the main inhibiting factor for livestock MSMEs in switching to a more circular business model. These conditions limit their ability to make necessary investments, access enabling technologies, and develop infrastructure in line with circular economy principles. Adequate financial support is needed from various parties so that livestock MSMEs can have more freedom in implementing circular economy practices.

#### **4) Mina Jaya Fish Cultivation Group**

Supporting factors for developing circular economy-based MSMEs are as follows;

a. Business Community

The entrepreneurial culture that has been formed among members of the MINA Jaya Group is another important factor that supports the implementation of a circular economy. The spirit of innovation, adaptation and availability to continue learning possessed by members makes this group more open to adopting more sustainable circular economy practices. This culture encourages groups to proactively seek and implement innovative solutions for their fish farming businesses, including integrating circular economy concepts such as recycling, waste utilization, and increasing resource efficiency. An entrepreneurial culture characterized by a spirit of innovation, adaptation and availability for learning is an important factor that supports the MINA Jaya Group in implementing circular economy practices in their fish farming business. This culture encourages the group to be open and proactive in adopting innovative, more sustainable solutions.

b. Strong ties and cooperation between group members

Strong ties and cooperation among MINA Jaya Group members have proven to be an important factor that supports their efforts in implementing circular economy practices. The spirit of mutual cooperation and a high sense of ownership among group members facilitates the coordination and implementation of various initiatives related to the circular economy. They work together, share knowledge and resources, and work together to face challenges together. This high level of solidarity creates synergy and makes the group more effective in carrying out recycling practices, waste utilization, and efficient use of resources in their fish farming activities. Strong relationships and collaboration between members of the MINA Jaya Group are important supporting factors in implementing a circular economy. The spirit of cooperation, a high sense of ownership, and solidarity among members facilitate coordination, sharing of knowledge and resources, and facing challenges together, thereby supporting the effective implementation of circular economy practices.

Meanwhile, factors inhibiting the development of circular economy-based MSMEs include, although most members of the MINA Jaya Group are open and enthusiastic in implementing circular economy practices, of course there are obstacles from resistance shown by some other members. Some members are still reluctant to adopt changes and tend to be more comfortable with the old ways they are used to in fish farming. The reluctance to change

habits and learn new things related to circular economy solutions is a challenge for us. Groups must work extra hard to build understanding, persuade and encourage members to try and implement more sustainable practices. Apart from resistance from some members, Mina Jaya MSMEs also face challenges in terms of limited infrastructure and available technology. Some of the circular economy processes and solutions that you want to implement require equipment and systems that are not fully compatible with conditions in the field. For example, to process fish waste into organic fertilizer, you need to increase the capacity and efficiency of your composting unit. Meanwhile, investment costs to upgrade this infrastructure are still quite large. These kinds of technical obstacles limit the ability to adopt circular economy solutions more comprehensively.

Apart from internal resistance, the MINA Jaya Group also faces technical obstacles related to the suitability of the infrastructure and technology they currently have. For example, in an effort to process fish waste into organic fertilizer, this group needs a more efficient composting unit. However, the investment to upgrade this capacity is still quite large for the group's budget.

Overall, the MINA Jaya Group still has to work hard to overcome these various inhibiting factors so that it can implement a circular economy more comprehensively. Greater commitment, coordination and investment is needed to ensure all members can participate in and benefit from these more sustainable practices.

## 5) Kirana Bakery

Supporting factors for developing circular economy-based MSMEs are as follows;

### a. Waste Processing Potential

One of the supporting factors that bread MSMEs have in implementing circular economy principles is the potential for waste processing that can be utilized. In the bread production process, MSMEs produce various types of waste, such as dough scraps, bread crumbs and packaging. This waste actually still has use value that can be optimized if managed well. Leftover bread dough, for example, can be processed into economically valuable animal feed products. Simple composting technology can be used to convert leftover dough into organic fertilizer that can be reused in plant cultivation, both for production purposes and for own consumption. Apart from that, bread crumbs can also be processed into longer-lasting snacks or even further processed into fish and poultry feed. The circular economy perspective encourages bakery MSMEs to see waste not only as a problem, but also as an opportunity. By applying innovation and appropriate processing technology, bakery MSMEs can convert waste into new resources that have added value. This not only provides financial benefits, but can also contribute to preserving the surrounding environment

### b. Openness to Innovation

Bread MSMEs generally have a culture that is open to innovation. This can be an asset for them to learn and adopt circular economy practices in business processes. One form of innovation that bread MSMEs can adopt is the use of digital technology in the production and distribution process. For example, by using more sophisticated automation and monitoring systems, bakery MSMEs can optimize the use of raw materials, minimize waste, and increase overall production efficiency.

The inhibiting factor for the development of circular economy-based MSMEs, Kirana Bakery, is the large number of new competitors. The main challenge faced by bakery MSMEs

in implementing circular economy principles is the number of new competitors emerging in the market. This increasingly fierce competition is an obstacle for bread MSMEs in allocating the resources and investment needed to adopt circular economy practices.

The emergence of new bakery MSMEs offering similar products at lower prices has made consumers increasingly sensitive to prices. This forces existing bread MSMEs to reduce production costs to a minimum in order to compete. As a result, the investment required to change production processes and business models becomes more difficult to make. Apart from that, the large number of new players in the market also means that bread MSMEs have to work harder to maintain the market share they have achieved. Efforts to improve efficiency and product quality are a top priority, so initiatives to implement a circular economy often have to be developed.

On the other hand, new bread MSMEs that are still in the growth stage tend to be more flexible and agile in adapting to market changes. They can quickly adopt the latest technologies and practices, including those related to the circular economy. This is a challenge for established bread MSMEs to remain competitive. Therefore, bread MSMEs need to find the right strategy to overcome increasingly fierce competition, while still trying to gradually adopt circular economy principles. Collaboration with other players in the ecosystem, leveraging government incentives, and increasing productivity and efficiency can be important first steps.

## **6) Nurul Aen Bakery**

The supporting factor for developing circular economy-based MSMEs at the Nurul Aen Cake Shop is the development of product innovation. One important aspect in supporting the implementation of a circular economy in cake MSMEs is through the development of product innovation. Product innovation not only creates a competitive advantage for MSMEs, but can also strengthen their commitment to sustainability principles. By continuing to innovate, cake MSMEs can produce products that are more environmentally friendly, both in terms of raw materials, production processes and packaging. For example, using natural raw materials, reducing waste, or utilizing recycling. This not only reduces negative impacts on the environment, but can also be attractive to consumers who are increasingly aware of sustainability issues. Product innovation based on a circular economy can be a means for cake MSMEs to create differentiation and added value for consumers. Consumers are now increasingly appreciating products that pay attention to sustainability aspects, so that cake MSMEs that are able to offer this kind of innovation can gain a significant competitive advantage. Therefore, developing product innovations that are in line with circular economy principles is an important strategy for cake MSMEs in supporting the transition to a more sustainable business model. Collaboration with related parties, such as researchers, communities, or government, can help cake MSMEs to identify opportunities and develop innovative solutions that suit current market needs.

Meanwhile, the inhibiting factor for the development of circular economy-based MSMEs is simple financial management. The main challenge for cake MSMEs in implementing a circular economy is their limitations in systematic financial management. Most cake MSMEs still rely on simple financial systems, such as recording income and expenses manually. This can be an obstacle to implementing sustainability-oriented business practices. Simple financial management often does not provide accurate and comprehensive financial data and information. Cake MSME owners find it difficult to identify the costs associated with

implementing a circular economy, such as investing in recycling technology, waste processing, or using more environmentally friendly raw materials. Without adequate financial data, strategic decision making is limited.

Simple financial management systems also limit the ability of cake MSMEs to access financing sources that can support the transition to a circular business model. Financial institutions or investors tend to consider measurable and transparent financial performance, so that MSMEs with limited financial systems will experience difficulties in obtaining funding for sustainable investment. Another problem is the lack of understanding and skills of cake MSME owners in managing finances professionally. They often focus on production and marketing aspects, but pay less attention to financial management components that can support their business transformation towards a circular economy. Therefore, developing the capacity of cake MSMEs in more systematic and measurable financial management is very important. With a good financial recording and management system, cake MSMEs can more easily identify opportunities and calculate the costs and benefits of implementing circular economy practices. This will ultimately strengthen their ability to make strategic decisions that are in line with sustainability goals.

## 7) Kerupuk Kulit (Skin Crackers) Seganteng Bik Mala

The supporting factors for the development of circular economy-based MSMEs in Seganteng Bik Mala Skin Crackers are as follows:

### a. Potential Use of Local Raw Materials

One important factor that can support the implementation of a circular economy in skin cracker MSMEs is the potential use of local raw materials. The main ingredient for making leather crackers, namely cow or buffalo hide, is generally available locally in leather cracker production centers for MSMEs. Utilizing local raw material resources provides significant benefits for MSMEs in implementing the circular economy concept. The use of local raw materials can also support the sustainability of the supply chain for skin cracker MSMEs. By establishing close partnerships with local suppliers or breeders, MSMEs can ensure sustainable availability of raw materials. This is important to maintain production stability and minimize the risk of supply disruptions, in line with the circular economy principle of closing the material cycle. The use of local raw materials can provide added value to the regional economy. Skin cracker MSMEs can contribute to the economic empowerment of local communities through cooperation and absorption of raw materials from local farmers. This can create mutually beneficial synergies, in line with the circular economy concept which emphasizes more equitable economic development. Not only that, the potential for using local raw materials can also encourage innovation and development of more creative and sustainable skin cracker products. MSMEs can take advantage of the availability of various local cow/buffalo hides to create leather cracker products that are unique, different and more environmentally friendly. This can strengthen the competitiveness of skin cracker MSMEs and support the transition to a more advanced circular economy.

### b. Handicraft Tradition

Another factor that can support the implementation of a circular economy in skin cracker MSMEs is the handicraft tradition that is still preserved in the production process. Most of the SMEs of skin crackers still maintain manual and traditional manufacturing techniques, especially at the stage of forming and slicing the crackers. The skill of the workers' hands is

the main key in producing quality skin crackers that meet standards. Handicraft traditions also reflect sustainable values that are closely related to the circular economy. Hand skills passed down from generation to generation are a form of local wisdom that maintains the sustainability of the skin cracker production process. This knowledge and skills not only maintain production stability, but also enable more creative and sustainable product innovation in accordance with market demands. Therefore, the handicraft tradition in skin cracker MSMEs can be one of the main forces that supports the transition to a circular economy. This manual skills-based production approach is not only efficient, but also reflects sustainable values that are in line with the principles of recycling, waste minimization and optimal use of resources.

Apart from that, the inhibiting factor for developing MSMEs based on a circular economy is Seganteng Bik Mala Skin Crackers is limited access to financing. One of the factors that hinders MSMEs in implementing the circular economy concept is limited access to financing sources. The majority of MSMEs in this sector still face obstacles in obtaining sufficient capital to undertake the investment and innovation required in the transition to a more sustainable business model. Most skin cracker MSMEs operate with limited capital, most of which comes from personal savings or family loans. Their access to bank credit or other financing schemes is still very limited. This is due to quite strict requirements from financial institutions, as well as the limited structures owned by MSME players.

Capital limitations also have implications for the ability of skin cracker MSMEs to carry out better waste processing. The investment required to build recycling or waste processing facilities is often beyond the reach of the limited financial capabilities of MSMEs. Therefore, strengthening access to financing for skin cracker MSMEs is crucial to supporting the transition to a circular economy. More comprehensive support is needed from the government and financial institutions to expand credit schemes and other financing schemes that suit the needs of MSMEs. Apart from that, increasing financial literacy and financial management capabilities of MSMEs also needs to be improved so that they can make optimal use of available financing sources. Only with adequate financial support can skin cracker MSMEs invest in the technology, innovation and environmentally friendly practices needed for effective implementation of a circular economy.

#### **4. CONCLUSION**

The strategy for developing Micro, Small and Medium Enterprises (MSMEs) in Mataram City which applies the circular economy concept is different for each MSME. In essence, each MSME sampled in this research adopts all circular economy principles or several principles of the circular economy. The following are the strategies of each MSME sampled in this research; 1) Maggot Mataram Center implements the 5R principles (Reduce, Reuse, Recycle, Recover, Redesign) thoroughly in running its business. 2) Bajang Tofu applies the Reuse principle, by reusing tofu dregs into other derivative products, such as crackers, tempe gembus, or animal feed. 3) Poultry Farm carries out waste reduction, recycling and derivative product innovation. 4) The Mina Jaya Fish Cultivation Group emphasizes the use of resources, reduces waste, while increasing income through the sale of organic fertilizer and processed fish products. 5) Kirana Bakery optimizes resource utilization, minimizes waste, and creates added value from each component produced. 6) Nurul Aen Cake Shop uses the remaining unsold cake

pieces and then reprocesses them into leftover products such as cake crumbs. 7) Seganteng Leather Crackers Bik Mala processes cowhide waste which is the main raw material for making leather crackers, such as sweet potato crackers and rice crackers.

Meanwhile, the supporting and inhibiting factors for the development of Micro, Small and Medium Enterprises (MSMEs) in Mataram City vary in the process of running the business. From the supporting factors for developing MSMEs, it can be concluded that the important points are production materials, human resources and information technology. Meanwhile, the factors inhibiting the development of MSMEs are business capital, regulations, resistance and new competitors. The following are the supporting and inhibiting factors for each MSME sample in Mataram City; 1) Maggot Mataram Center; supporting factors are information technology and the availability of skilled labor. The inhibiting factor is limited capital. 2) Bajang Tofu; supporting factors are sustainable raw materials and simple technology. The inhibiting factor is regulations that are not yet comprehensive. 3) Poultry Farm; Supporting factors are the potential for processing livestock waste and technological innovation and access to information. The inhibiting factor is business capital constraints. 4) Mina Jaya Fish Cultivation Group; Supporting factors are an entrepreneurial culture that has been formed among group members, strong attachment and cooperation between group members. Inhibiting factors include resistance from some group members and technical obstacles related to the suitability of infrastructure and technology. 5) Kirana Bakery supporting factors are the potential for waste processing and openness to innovation. The inhibiting factor is the number of new competitors. 6) Nurul Aen Cake Shop; supporting factors, namely the development of product innovation. The inhibiting factor is simple financial management. 7) As Handsome as Bik Mala Skin Crackers; supporting factors are the potential use of local materials and handicraft traditions. The inhibiting factor is limited access to financing.

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