



## STRATEGY OF IMPLEMENTING ZERO WASTE BUSINESS MODEL IN COFFEE UMKM IN CENTRAL ACEH DISTRICT TOWARDS A SUSTAINABLE CIRCULAR ECONOMY

Dedy Darmansyah<sup>1</sup>, Hartini<sup>2</sup>, Riki Yulianda<sup>3</sup>, Ina Yuyun<sup>4</sup>

<sup>1,4</sup> Faculty of Agriculture, Universitas Teuku Umar, Meulaboh

<sup>2</sup> Faculty of Economics and Business, Universitas Teuku Umar, Meulaboh

<sup>3</sup> Faculty of Social Sciences, Universitas Teuku Umar, Meulaboh

Corresponding E-mail: [dedydarmansyah@utu.ac.id](mailto:dedydarmansyah@utu.ac.id)

Received: 2024-10-28

Published: 2024-12-30

DOI: 10.54443/ijebas.v4i6.2326

Accepted: 2024-11-21

### Abstract

*This study was conducted in Central Aceh Regency, known as one of the largest coffee producers in Indonesia. Coffee is an important economic sector for the local community, but challenges related to waste management and environmental sustainability are still significant. This study aims to analyze the zero waste business model strategy in coffee MSMEs using SWOT analysis and Importance Performance Analysis (IPA). The results of IPA indicate that technology adoption, infrastructure development, coffee derivative products, and government policies are important aspects that require more attention. However, the understanding of business actors, technology adoption, and consumer awareness are considered good and need to be maintained. Stakeholder involvement is considered sufficient, while supply chain efficiency meets expectations but does not require high priority. The SWOT analysis reveals that the strengths of coffee MSMEs include resources and access to technology that support the zero waste business model. However, the main weaknesses include limited understanding of business actors, inadequate infrastructure, and suboptimal development of coffee waste-based derivative products. Opportunities include supply chain efficiency, minimal similar competitors, and high consumer interest in innovation. On the other hand, the main threat comes from less supportive government policies.*

**Keywords :** *Business Model, Coffee UMKM, Zero Waste*

### 1. INTRODUCTION

Coffee is one of the leading commodities in Indonesia, and Central Aceh Regency is one of the largest coffee producing areas in the country. The coffee sector not only plays an important role in the local economy, but also has significant social and environmental impacts on local communities. However, the growth of the coffee industry brings its own challenges, especially in terms of waste management and environmental sustainability. Unfriendly production practices often produce waste that is not managed properly, which has the potential to pollute the environment and reduce the quality of natural resources. Currently and perhaps in the future, environmental problems are increasingly endangering life and ecosystems on this earth.

The concept of zero waste has become a highlight in global efforts to address waste issues and improve economic practices. Zero waste circular economy comes from 2 interrelated concepts, namely zero waste and circular economy. Zero waste can be defined as the refinement of elements of society and industry that combine ethical practices and economic goals that recognize the principle of recycling and its limitations in order to transform a linear economic system into a circular economy. The circular economy that integrates economic activities and environmental welfare in a sustainable way has become a concern from environmental and social aspects and has inspired alternative business models that are a new approach to sustainability, where understanding

**STRATEGY OF IMPLEMENTING ZERO WASTE BUSINESS MODEL IN COFFEE UMKM IN CENTRAL ACEH DISTRICT TOWARDS A SUSTAINABLE CIRCULAR ECONOMY***Dedy Darmansyah<sup>1</sup>, Hartini<sup>2</sup>, Riki Yulianda<sup>3</sup>, Ina Yuyun<sup>4</sup>*

the concept of sustainability is the meeting point of economic, environmental, and social issues of society, [1]. The circular economy aims to maintain the value of products, materials, and resources in the economy for as long as possible, thereby reducing environmental impacts and increasing sustainability, [2]. One relevant approach in this context is the application of a zero waste business model, in the concept of "Cradle to Cradle," which emphasizes the importance of designing systems that do not produce waste, [3].

In the context of the coffee industry, Central Aceh is one of the districts that has the potential to implement a zero waste business model in the current coffee UMKM which is due to the coffee UMKM at the coffee production process stage not being optimized which can produce a little waste and also the environmental impact that occurs. The implementation of a zero waste business model in the coffee industry in Central Aceh can be an important step in supporting sustainable UMKM and protecting the environment towards the implementation of a circular economy. The existence of a circular economy aims to create an economic model that separates (decoupling) the use of resources from natural resources by reusing consumption and production waste as new input variables, thus making it sustainable for the development of production systems [4]. The aim of This study is to analyze the zero waste business model strategy in the current coffee commodity MSME business model towards the implementation of a sustainable zero waste business model.

**2. IMPLEMENTATION METHOD****Time and Location**

This research was conducted for 1 year in Central Aceh Regency, Aceh Province.

**Data collection technique**

Respondents in this study were coffee commodity business actors and consumers as well as the Technical Service in Central Aceh Regency. The method of determining respondents used purposive sampling, which is a sampling technique by deliberately selecting certain people who have been determined by the researcher, [5]. The respondents selected in this study were 3 respondents from the Technical Service and 30 respondents from coffee UMKM business actors and 30 Consumers.

**Method**

This study uses the SWOT analysis method and Importance Performance Analysis (IPA). SWOT analysis systematically describes and identifies the strengths, weaknesses, opportunities and threats that a company is facing, namely: (1) Strengths are the skills, advantages and resources that a company has compared to similar companies. (2) Weaknesses are deficiencies or limitations in the resources owned by the company which hinder capabilities and performance. companies to develop and compete with other similar companies. (3) Opportunities are profitable opportunities to be utilized in developing their business. (4) Threats are unfavorable situations that can even harm the company if not handled quickly. Threats come from various external environments of the company. [6]. In the data collection process, the SWOT Analysis method and importance-performance analysis (IPA) were carried out through semi-structured interviews.

The results of semi-structured interviews with open questions to UMKM coffee business actors and consumers in Central Aceh Regency. In this study, what will be assessed by business actors are the indicators of the UMKM business model, namely (1) Understanding and Knowledge, (2) Availability of Infrastructure Facilities, (3) Processes and Operations, (4) HR, (5) Development of Derivative Products, (6) Technology Adoption, (7) Government Policy, (8) Stakeholders, (9) Supply Chain Efficiency, (10) Consumer awareness, (11) Competitors. The importance performance analysis method maps each item of satisfaction measurement indicators into 4 quadrants. The first quadrant (concentrate these) is a quadrant that contains indicators of satisfaction measurement that the expectations of service recipients are very high because they consider these indicators to be very important in the service they receive. The second quadrant



(keep up the good work) is a section that contains service indicators that are considered important by customers. Satisfaction indicators in this quadrant are indicators of high satisfaction and the quality of service is also good. The third quadrant (low priority) is a section filled with satisfaction indicators that are considered less important by customers. The fourth quadrant (possible overkill) is a section that contains service indicators that are considered less important by customers, and are felt to be excessive because the quality of service provided is higher than customer expectations, [7].

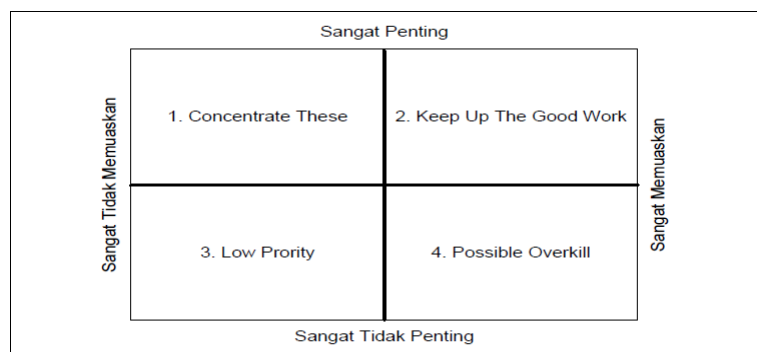


Figure 1. Importance-Performance Analysis Quadrant

### 3. RESULTS AND DISCUSSION

#### 3.1 Importance Performance Analysis

##### 3.1.1 Cartesian diagram of business actor perspective

The matrix results based on the 4 quadrants of Importance Performance Analysis (IPA) are as follows:

##### First quadrant (*concentrate these*)

Technology Adoption: With an Importance value of 5.00 and Performance of 4.95, this shows that business actors consider it important in the strategy of implementing a zero-waste business model towards a sustainable, environmentally friendly business and feel that their performance is good.

##### Second quadrant (*keep up the good work*)

- Derivative Product Development: With an Importance value of 5.36 and Performance of 4.82
- Government Policy: Importance value 5.59 and Performance 4.91. This shows that business actors consider government policies to be very important and needed in implementing the zero-waste business model in coffee MSMEs in Central Aceh Regency.
- Consumer Awareness: With an Importance value of 5.05 and Performance of 4.91

##### Third quadrant (*low priority*)

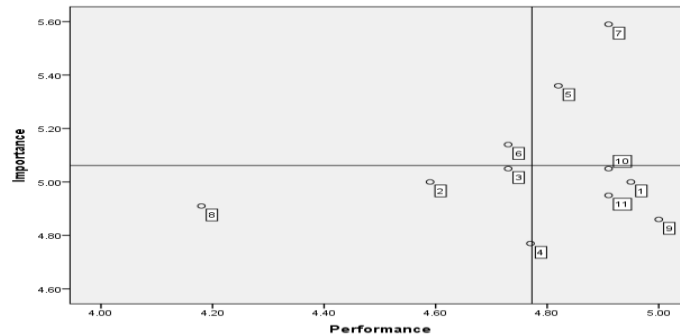
- Availability of Infrastructure Facilities: With an Importance value of 5.00 and Performance of 4.59
- Process and Operations: With an Importance value of 5.05 and Performance of 4.73
- Stakeholder: With an Importance value of 4.91 and Performance of 4.18

##### Fourth quadrant (*possible overkill*)

- Understanding and Knowledge: With an Importance value of 5.00 and Performance of 4.95
- Human Resources: With an Importance value of 4.77 and Performance of 4.77
- Supply Chain Efficiency: Although considered less important by business actors with an Importance value of 4.86, its performance is considered quite good with a score of 5.00. This suggests that there may be an over-emphasis on supply chain efficiency levels.
- Competitor Role: With Importance value of 4.95 and Performance of 4.9

**STRATEGY OF IMPLEMENTING ZERO WASTE BUSINESS MODEL IN COFFEE UMKM IN CENTRAL ACEH DISTRICT TOWARDS A SUSTAINABLE CIRCULAR ECONOMY**

Dedy Darmansyah<sup>1</sup>, Hartini<sup>2</sup>, Riki Yulianda<sup>3</sup>, Ina Yuyun<sup>4</sup>



**Figure 2. Cartesian Diagram of Business Actors IPA Method**

Information:

- |  |                            |
|--|----------------------------|
| 1. Understanding and Knowledge               | 7. Government Policy       |
| 2. Availability of Infrastructure Facilities | 8. Stakeholder             |
| 3. Process and Operations                    | 9. Supply Chain Efficiency |
| 4. Human Resources                           | 10. Consumer Awareness     |
| 5. Derivative Product Development            | 11. Role of Competitors    |
| 6. Technology Adoption                       |                            |

**3.1.2 Cartesian diagram of consumer perspective**

The results of the matrix based on the 4 quadrants of Importance Performance Analysis (IPA) on consumers are as follows:

**First quadrant (concentrate these)**

There are indicators of Infrastructure Facilities Availability, Derivative Product Development, and Government Policy. In the first quadrant which indicates that this indicator is very important, however, there is consumer expectation to improve the quality of service in coffee UMKM that are currently running in Central Aceh Regency.

**Second quadrant(keep up the good work)**

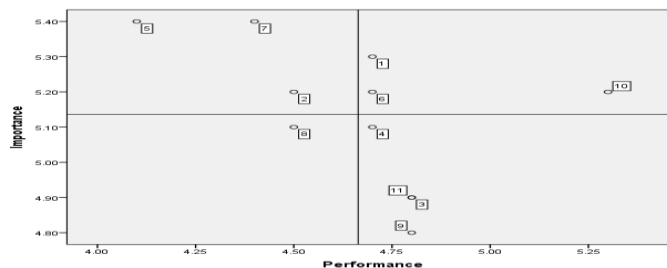
There is Understanding and Knowledge, Technology Adoption, and Consumer Awareness. In this quadrant, consumers have very high satisfaction and the quality of service is also good. Understanding and Knowledge, Technology Adoption, and Consumer Awareness must be maintained as a service advantage and maintain customer satisfaction for coffee commodity businesses in Central Aceh Regency.

**Third quadrant (low priority)**

In the third quadrant there is stakeholders where the indicators are important and consumers have high satisfaction but the quality of service needs to be improved.

**Fourth quadrant (possible overkill)**

There are Processes and Operations, Human Resources, Supply Chain Efficiency, and Competitor Roles. This indicator shows that consumers have high satisfaction, however, there is hope for improving the quality of service in coffee businesses in Central Aceh Regency.



**Figure 3. Cartesian Diagram of Consumers of the Science Method**



### Information:

1. Understanding and Knowledge
2. Availability of Infrastructure Facilities
3. Process and Operations
4. Human Resources
5. Derivative Product Development
6. Technology Adoption
7. Government Policy
8. Stakeholder
9. Supply Chain Efficiency
10. Consumer Awareness
11. Role of Competitors

### 3.2 SWOT Analysis

Based on the data obtained, the following are the results of the SWOT analysis:

#### STRENGTH

- Resource Availability: Business actors have resources that support the implementation of Zero Waste practices.

#### WEAKNESS

- Lack of Understanding and Knowledge: Many business actors still do not understand Zero Waste practices, which impacts their ability to implement these practices effectively.
- Infrastructure Limitations: There is a lack of infrastructure and facilities that support the implementation of Zero Waste, making it difficult to implement the Zero Waste strategy as a whole.
- No Zero Waste Coffee Process: Current coffee production does not have operational processes and practices that focus on Zero Waste.
- Minimal Zero Waste Coffee Product Development: There has been no coffee product development that specifically focuses on Zero Waste, thus limiting the marketing potential of sustainable coffee products.

#### OPPORTUNITY

- Supply Chain Efficiency: Increasing the efficiency of the coffee supply chain can support the implementation of Zero Waste
- Competitive Advantage: Currently, competitors have not yet leveraged the Zero Waste concept in their marketing strategies, thereby opening up opportunities for differentiation and market leadership in sustainability practices.
- Consumer Potential: Consumers still have the awareness and willingness to seek new information and have the opportunity to purchase Zero Waste coffee products.

#### THREAT

- Government policy: Existing policies do not yet emphasize the Zero Waste concept specifically for coffee, which may hinder the growth of sustainable coffee practices.
- Lack of Supporting Partners: Currently there is no network or partnership that supports the implementation of Zero Waste in the coffee sector, which could slow down development.

**Here are the strategies that can be taken to implement the Zero Waste Business Model in Coffee MSMEs in Central Aceh Regency towards a Sustainable Circular Economy:**

1. Focus on Technology and Infrastructure Development The strategies that can be taken are:
  - a. Accelerating the adoption of new technologies that support zero waste in the coffee production process.
  - b. Building or improving infrastructure facilities that support the implementation of zero waste at every stage of production.
  - c. Develop environmentally friendly coffee derivative products to maximize waste utilization.

**STRATEGY OF IMPLEMENTING ZERO WASTE BUSINESS MODEL IN COFFEE UMKM IN CENTRAL ACEH DISTRICT TOWARDS A SUSTAINABLE CIRCULAR ECONOMY**

*Dedy Darmansyah<sup>1</sup>, Hartini<sup>2</sup>, Riki Yulianda<sup>3</sup>, Ina Yuyun<sup>4</sup>*

2. Maintaining Excellence in Consumer Understanding, Knowledge and Awareness efforts are needed to:
  - a. Continuing education and outreach programs to business actors regarding zero waste practices.
  - b. Develop marketing strategies that emphasize sustainability values to increase consumer awareness.
3. Strengthening Relationships with Stakeholders The recommended strategies are:
  - a. Improve communication and collaboration with key stakeholders, including governments, partners and local communities to support zero waste business models.
  - b. Forming a partnership network that supports a circular economy, such as collaborating with waste processors or third parties that focus on recycling.
4. Optimizing Resource Usage and Supply Chain Efficiency Strategies that can be applied are:
  - a. Ensuring operational processes run efficiently while still adhering to the zero waste principle.
  - b. Optimizing the supply chain to minimize waste during the distribution and marketing process.

**4. CONCLUSION**

The conclusion of this study confirms that the application of a zero waste business model in coffee MSMEs in Central Aceh Regency has great potential in supporting a sustainable circular economy.

1. Based on the SWOT analysis, it was found that coffee SMEs have the strength in the form of resources and access to technology that are good enough to support the implementation of zero waste. However, there are several weaknesses, such as limited understanding of business actors, lack of adequate infrastructure facilities, and the undeveloped derivative products based on coffee waste. Opportunities that can be utilized are the efficiency in the supply chain, the lack of competitors adopting similar business models and consumers who are potential for new things. Although threats remain, especially related to government policies that are less supportive.
2. Importance-Performance Analysis (IPA) analysis shows that there are several areas that require more attention, such as technology adoption, infrastructure development, coffee derivative product development, and government policies. These aspects are considered important by consumers and business actors, but the quality of service still needs to be improved. On the other hand, business actor understanding, technology adoption, and consumer awareness are in good performance and need to be maintained. In addition, stakeholder involvement is considered quite good but not a top priority, while operational processes and supply chain efficiency have met expectations but do not require excessive attention.

**REFERENCES**

1. Abednego, I. A., Putri, E., Choiroti, N., & Aprilia, V. (2021). Prinsip Zero Waste dalam Pengelolaan Lingkungan di Kampung Kota ( Studi Kasus : Kampung Darmorejo ). 64–72.
2. Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198(June), 401–416. <https://doi.org/10.1016/j.jclepro.2018.06.240>
3. McDonough, W., & Braungart, M. (2002). *Cradle to cradle: Remaking the way we make things*. North Point Press.



4. Sinha, E. (2022). Circular Economy—A Way Forward To Sustainable Development: Identifying Conceptual Overlaps And Contingency Factors At The Microlevel. *Sustainable Development*, 30 (4), 771–783. <https://doi.org/10.1002/sd>.
5. Darmansyah, D., Faizin, R., & Mustika R (2022). Potensi Produk Turunan Tanaman Kopi Di Kabupaten Aceh Tengah Menggunakan Metode Analisis Swot. *Jurnal Pertanian Agros*, 24(3), 1138–1146.
6. (Strategi Pemasaran Bubuk Kopi Pada Ud. Nagan Roasting Di Desa Simpang Peut Kecamatan Kuala Kabupaten Nagan Raya Skripsi, 2022)
7. Nugroho YA, Purnamasari P. The importance of green business model toward sustainable tourism development: Evidence from Yogyakarta. *Journal of Economics, Business, and Accountancy Ventura*. 2019;22(3):422-432.