Green Industry Business Model Design for Naura Kitchen Business Using Business Model Canvas Approach
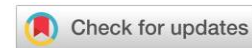
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ABSTRACT

Keywords :
Green Industry; MSMEs;Business Model Canvas; Waste

This study was conducted to design a green industry-based business model for Micro, Small, and Medium Enterprises (MSMEs) using the Business Model Canvas approach for Naura Kitchen. Waste is a significant issue in Bali Province. One of the waste-producing sectors is the home industry. Therefore, it is necessary to implement green practices in the MSME sector to reduce waste. The research method in this study uses a qualitative approach, grounded in the Business Model Canvas. Nine elements map the Naura Kitchen business model based on the green industry. The results of this study yield the concept of nine Business Model Canvas elements: main activities, primary resources, principal partners, distribution channels, customer relationships, customer segments, revenue streams, cost structures, and value propositions. This concept produces an overview of the implementation of the green industry in the Naura Kitchen business. The main activity in this business is the production of ecoprint colors from recycled materials.

ABSTRAK

Penelitian ini dilakukan untuk merancang model bisnis berbasis industri hijau untuk Usaha Mikro, Kecil, dan Menengah (UMKM), Naura Kitchen, menggunakan pendekatan Business Model Canvas. Sampah merupakan isu penting dan masalah utama di Provinsi Bali. Salah satu sektor penghasil sampah adalah industri rumah tangga. Oleh karena itu, perlu diimplementasikan industri hijau di industri UMKM untuk mengurangi sampah yang dihasilkan. Metode penelitian dalam studi ini menggunakan pendekatan kualitatif dengan pendekatan Business Model Canvas. Terdapat sembilan elemen yang memetakan model bisnis Naura Kitchen berbasis industri hijau. Hasil penelitian ini menghasilkan konsep sembilan elemen Business Model Canvas yang terdiri dari aktivitas utama, sumber daya utama, mitra utama, saluran distribusi, hubungan pelanggan, segmen pelanggan, aliran pendapatan, struktur biaya, dan proposisi nilai. Konsep ini menghasilkan gambaran umum implementasi industri hijau dalam bisnis Naura Kitchen. Aktivitas utama yang dilakukan dalam bisnis ini adalah produksi warna ecoprint dari proses daur ulang.

INTRODUCTION

Study This designed based on two issues main , namely issue related production increasing MSME waste increasing in Bali Province . Issue waste and garbage is issue serious that becomes problem waste in Bali Province and become attention institution related (Wira Utama, 2023). One of the producer sufficient waste big is industry food , where the industry This produce waste organic and non- organic (Swarnawati et al., 2023) . Two underlying issues study this is practice industry green moment this is the beginning applied by the perpetrator business For overcome impact environment caused by the waste produced from existence of the production process. Concept industry green considered capable overcome and change pattern operation industry For pressing impact damage nature caused by human activity man in operate business (Jaradat et al., 2024) .

Rubbish is issue serious at this time. This is a concern for stakeholders interests related to policy and stakeholders interests . The increase in waste volume in Bali continues increase Because a number of factors and complexity nature. The Bali Provincial Forestry and Environment Service (DLHK) noted increase in the volume of waste every year , which started from 2014 to 2018 (Sudirman, 2024). Data collected from DLHK noted that during 2024 the total was 1.2 million tons, while unmanaged waste reached ±3,400 tons per day (Kementerian Kehutanan dan Kementerian Lingkungan Hidup, 2024). There are a number of reason Why growth waste in Bali Province tends to increase every year . Cause First is Bali is provinces that become objective tour main Indonesian and foreign communities . With many tourists who come to Bali, level consumption will Keep going increased , which resulted improvement more trash big (Martini, 2024) .

Issue the second that causes improvement waste in Bali Province is growth the economy continues to grow increased . In 2023 after crisis economy Covid-19 pandemic , growth economy Bali Province is increasing of 5.86% (BPS, 2022) . With increasing economy in Bali Province , purchasing and consumption energy public can increase so that impact on growth which causes improvement amount garbage too (Tisnawati et al., 2024) . Therefore that , is necessary solution For all problem waste in Bali Province . This need remember that problem rubbish will impact wide for environment and society around . With consequence damage environment , improvement amount piled up rubbish risky for destination tour nature in Bali Province .

The examples for improvement amount rubbish will result in distribution rubbish sea (Dirgawati, 2024). Garbage sea can pollute oceans and cause distribution species invasive, destructive beaches in Bali Province (Putra, 2021) . Damage beaches and destinations tour natural will result in decline amount tourists and impact negative on the economy public around (Tallo, 2023) . The community that previously dependent on fisheries For eye livelihood they , like fishermen , will experience decline income

consequence damage sea caused by rubbish (Rindyani et al., 2024) . At the level extreme, trash sea can cause improvement poverty (Lestari et al., 2024) . This is Because ocean, as source eye livelihood, already damaged, and fishermen risky lost work they.

One of possible solutions For problem This is recycling repeat garbage, which involves processing return rubbish become products that have mark economic activities recycling repeat rubbish this also works For reduce the volume of waste. (Sampige et al., 2024) . More further, management waste this can also involving public around as effort For empowering economy local (Suwijik et al., 2024) . Another solution that can be used For overcome problem This is implementation draft industry green. Concept industry green considered as solution potential For problem This Because draft This is approach integrated industry principles efficiency energy and resources power, reduction emissions, and management waste to in all activity operational business (Sarker & Bartok, 2024). (Tsai, 2018). The main objective implementation draft This is For create a production process that is not only profit - oriented but also maintain sustainability environment (Sahoo & Jakhar, 2024) .

The implementation of Green Industry is not only relevant for large-scale industries but is also crucial for small and medium-sized enterprises (Sholeh, 2021). Small and medium-sized enterprises are considered crucial in implementing the green industry concept because the industrial structure in many countries is dominated by this industry (Lusiana et al., 2021) . Therefore, the implementation of green industry is very appropriate for small and medium-sized enterprises. One small industry that focuses on waste issues is Naura Kitchen Bali, a business that focuses on processing waste generated from the embe chili sauce industry in Bali Province. The product produced by Naura Kitchen Bali is embe chili sauce, where the waste generated from this production process is organic waste that can be recycled and reused to increase waste production. This waste can be recycled and used as fabric dye. Utilization of production waste aims to reduce waste volume and also increase the economic value of the resulting production waste (Sharma et al., 2021)

The implementation of the green industry concept in Naura Kitchen's small and medium-sized industries will undoubtedly impact the existing business model. Therefore, modifications to the existing business model are necessary. This article aims to redesign the existing business model into a green industry-based one. This will also impact Naura Kitchen's production patterns. This research will also design a production pattern for recycling the waste generated by Naura Kitchen.

LITERATURE REVIEW
Green Industry

The Green Industry concept is an industrial development approach based on resource efficiency, pollution reduction, and environmental sustainability. The basic

principle of green industry is to produce environmentally friendly products while maintaining the competitiveness of the products produced. The goal of implementing green industry is to increase energy efficiency, reduce carbon emissions, and strengthen the company's positive image in the eyes of consumers. Considering the current global condition, which is highly dependent on nature and the concept of sustainability, the green industry concept is an important strategy in addressing global challenges related to climate change and sustainability.

Micro, Small, and Medium Enterprises

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the economies of many developing countries, including Indonesia (Putro et al., 2023) MSMEs play a crucial role in economic growth, including job creation, income generation, and strengthening local competitiveness (Fartini, 2023) . However, many MSMEs face challenges in accessing capital, technology, and broader markets. In the context of sustainability, MSMEs also play a role in adopting environmentally friendly practices, although often constrained by resource constraints (Yunanda, 2023). Therefore, integrating Green Industry principles into MSMEs is crucial for achieving sustainable economic development (Kusmanto & Warjio, 2019) .

Business Model Canvas (BMC)

The Business Model Canvas (BMC) was introduced by Osterwalder & Pigneur (2010) as a visual framework for designing, analyzing, and developing business models. The BMC consists of nine main elements: customer segments, value propositions, distribution channels, customer relationships, revenue streams, key resources, key activities, key partners, and cost structures (Afandi, 2021). This framework helps companies, including MSMEs, design adaptive and innovative business strategies. The BMC can also be integrated with sustainability perspectives, such as green value propositions and ecological efficiency, making it relevant for the development of the Green Industry.

Waste

Waste is a significant environmental problem in the industrial and MSME sectors. Global solid waste is estimated to reach 2.01 billion tons per year, with significant contributions from industrial activities and household consumption. In the context of MSMEs, the waste generated generally consists of organic waste from the food sector and inorganic waste from packaging use. Waste management based on the 3Rs (Reduce, Reuse, Recycle) and a circular economy are solutions to reduce the negative impact of waste on the environment. Integrating waste management into a business model based on the Business Model Canvas allows for the creation of added value through product

innovation, cost efficiency, and improving the company's environmentally friendly image.

METHOD

This research uses a qualitative, descriptive, and analytical method. Qualitative methods can be defined as research methods that examine the conditions of natural objects, where the research results emphasize the meaning of the research (Dr. Sugiyono, 2020). Meanwhile, descriptive qualitative is a research strategy in which researchers investigate social events or phenomena and ask individuals to describe their lives. This information is then retold by the researcher in a descriptive chronology (Rusli, 2021). The purpose of using this method is to delve deeper into the design thinking process within the context of the business model canvas and its implementation in addressing the serious waste problem in Bali Province. The research location is Denpasar City and Naura Kitchen. Data collection techniques in this study are divided into three. The first is observation. Observations were conducted by directly observing the condition of the waste problem in Denpasar City and the waste management strategies found in the Naura Kitchen MSME industry. Interviews with the owner of Naura Kitchen indicate that production waste has been processed and recycled into fabric dye, however, Naura Kitchen does not yet have a business model related to *Green Industry* from waste recycling. In addition, the processing and recycling of production waste has not been systematically implemented, so a recycling process flow diagram is needed. The second data collection technique was through in-depth interviews with the founder of Naura Kitchen, whose industry is an industry that has begun to implement the green industry concept. The latest data collection technique is to conduct a literature study by studying a number of related documents and data on waste problems such as data from the Environmental Agency (DLHK) and data collected from several NGOs. The data in this study were analyzed using a thematic analysis model that is adjusted to the stages and processes in the business model canvas framework which consists of a number of stages, namely as follows:
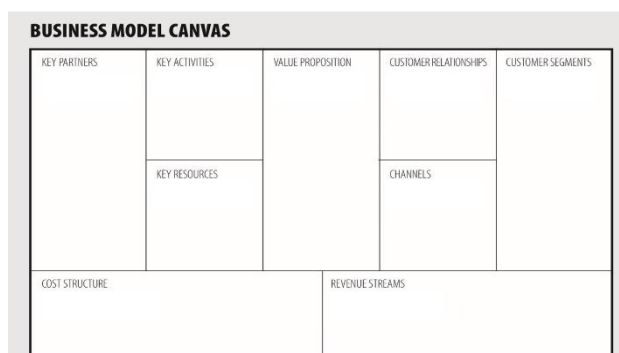
Source: Data Processed (2025)

Figure 1. Business Model Canvas Model

1. Key Partners: At this stage, researchers will identify partners or supporters who will be involved in the business model being designed and implemented. Several partners will be selected to determine which ones are most appropriate to support the proposed business.

2. Key Activities: This is the stage for the mapping activity. This will only be done once the business has been designed and implemented. The activities to be designed will naturally relate to the costs and revenues the business will generate.

3. Key Resources: This stage maps out the resources that can operate the activities in the business to be designed. Key activities can include standard resource materials or workforce.

4. Value Proposition: The value or benefit generated and derived from an activity. These are the elements a business offers to customers and the general public. A value proposition can also be defined as the added value that characterizes a business.

5. Customer Segments: This stage is the mapping stage. Only customers will be targeted. Mapping customer segments will generate targeted customers and influence the channels and relationships that will be built between the business owner and the existing customers who are selected and mapped.

6. Channels: A channel or customer pipeline is a business method for connecting sellers with buyers. Manufacturers and sellers must map out what can reach their selected and mapped existing customers.

7. Customer Relationships: The Stages: These are the stages that examine the relationships that arise from the existence of a business. This stage emphasizes the importance of the relationship between customers and the business.

8. Revenue Sources: The stages for map revenue. What will be earned solely from the business activities to be carried out.

9. Cost Structure: the stage for mapping expenses. Only one expense will be incurred in the business activity being undertaken. The cost structure must be minimized as much as possible to generate maximum revenue.

RESULTS AND DISCUSSION

Results

In facing the challenges of climate change and environmental impacts caused by industrial operational activities, the industry currently demands the implementation of business practices that are not only profit-oriented, but also consider aspects of sustainability. A concept that can be implemented is the green industry concept, where this concept does not only focus on profit, but also on the environmental impacts resulting from business operational activities. Kitchens as small and medium industries naturally produce production waste from business operational activities. The green industry concept is very appropriate if applied to small and medium kitchen industries that aim to

reduce production waste generated from business operational activities. The results of the study show that Naura Kitchen has recycled production waste in the form of fabric dyes, however, it still does not have a business model and production process flow diagram. As a result, recycled products have not sold optimally. In addition, Naura Kitchen does not yet have a segmented customer base for recycled production waste products. Therefore, Naura Kitchen requires a business model and green industry concept so that it can serve as a guideline in implementing a production waste recycling business.

Discussion

Naura Kitchen has essentially implemented the Green Industry concept, as evidenced by its waste recycling process. However, a comprehensive concept is needed to guide its implementation. Below, we outline a Green Industry concept that will serve as a guideline for Naura Kitchen. The green industry concept can be implemented with the following illustration:
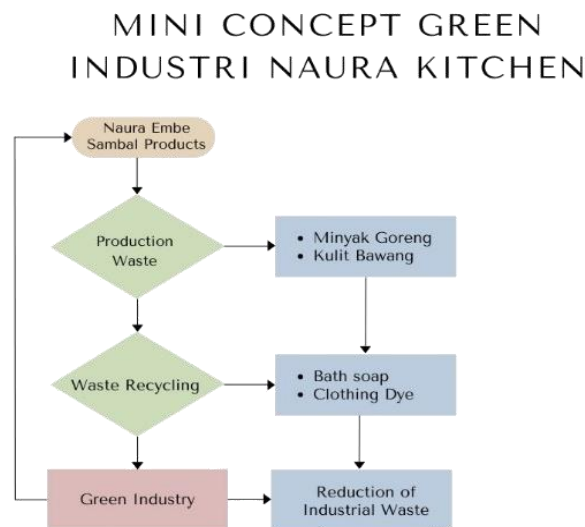

Figure 1 Basic Concept of Naura's Green Industry Kitchen

Green industry, or environmentally friendly industry, refers to a system of industrial production and management that prioritizes energy resource efficiency, the use of clean energy, and minimizes negative impacts on the environment. Implementing this concept is not only a moral responsibility but also a crucial strategy for the industry's sustainability and future competitiveness. Furthermore, the implementation of this green industry concept includes the use of local and organic raw materials, the reduction of plastic in packaging, energy efficiency in cooking, and sustainable waste management. These processes are considered to reduce the impact of business activities on the

environment. The implementation of the green industry at Naura Kitchen can be described as follows:

Naura Embe Sambal Products

Naura Kitchen's main product is soy sauce and chili sauce. This product is a Balinese specialty. The production process generates a significant amount of waste. If left untreated, this waste will increase the volume of waste in Denpasar. Therefore, waste management from the production process is necessary to ensure that the waste generated is not wasted and does not increase the volume of waste in Denpasar.

Production Waste (Production Waste)

The waste generated from the Embe chili sauce production process consists of two types: cooking oil and onion skins. The cooking oil is produced from frying onions, which are the standard ingredient in Embe chili sauce. The second type of waste is onion skins, which are produced from peeling the standard ingredient in Embe chili sauce.

Waste Recycling

The resulting waste is not immediately thrown away but recycled and reprocessed into new, branded products, such as bath soap. The cooking oil produced from the frying process is then processed with the addition of chemicals to create bath soap. The second waste product from the production process is onion skins. These onion skins are then extracted to produce clothing dye for ecoprint fabrics.

Green Industry

Through the recycling process, industrial waste becomes more environmentally friendly (*green industry*). Furthermore, this industry also supports the social Green Movement in reducing waste in the city of Denpasar.

The implementation of green industry at Naura Kitchen will certainly create new business operations. Initially, Naura Kitchen's activities only focus on the chili sauce production process, but with the green industry concept that applies a natural recycling design for production waste, it will generate new business operations, namely recycling production waste that aims to increase the economic value of the resulting production waste. The recycling of production waste at Naura Kitchen is carried out using an ecoprint design. The recycled production waste will be turned into dyed fabric that can be used in the ecoprint process. Furthermore, this fabric can become a trademark for sale from the processed waste.
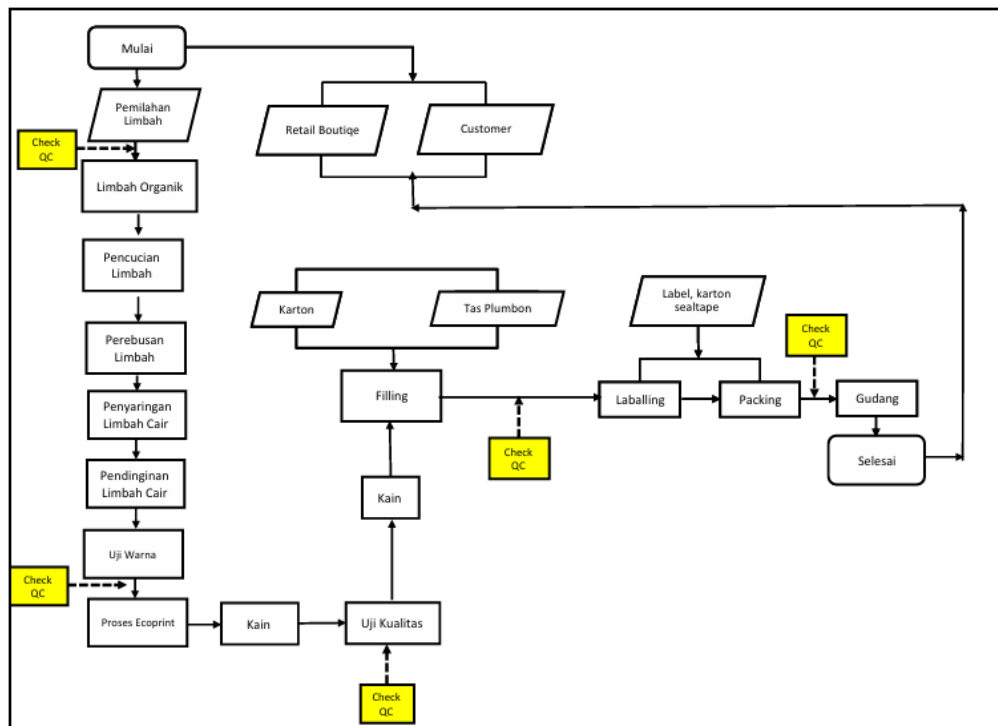
Figure 3. Flowchart of the Waste Recycling Production Process

Naura's kitchen waste recycling process based on the ecoprint concept begins with the waste sorting stage. The collected waste is then sorted and sorted through the Quality Control checking stage to ensure only organic waste is used. The first stage begins with the process of making dyed fabric through a number of stages. These stages are: First is the waste washing stage. Washing is carried out to maintain the quality of the waste and to produce hygienic and clean fabric colors because the dye will then be used to color the fabric. After washing is complete, the next step is boiling to produce a fabric dye liquid. Boiling production waste to produce dyed fabric is carried out for 1 hour at a temperature of 100°C. After becoming dyed fabric, the next step is the ecoprinting process. Where this process produces ecoprint fabric that makes the original production waste that was thrown away can be recycled and has economic value.

The process of recycling waste from the production process will naturally create a new business model. In this study, a business model will be designed using the business model canvas framework in the production waste recycling business. There are nine elements in the business model canvas that will map the Naura Kitchen business model. In addition, below will also be depicted the business model canvas in Naura Kitchen with the Embe chili sauce product and the business model of the production waste recycling business. The comparison of these two elements naturally serves to see the differences between the canvas business model of the Embe chili sauce product and the business model of the recycled waste product. The following is the business model canvas of the Embe chili sauce product:
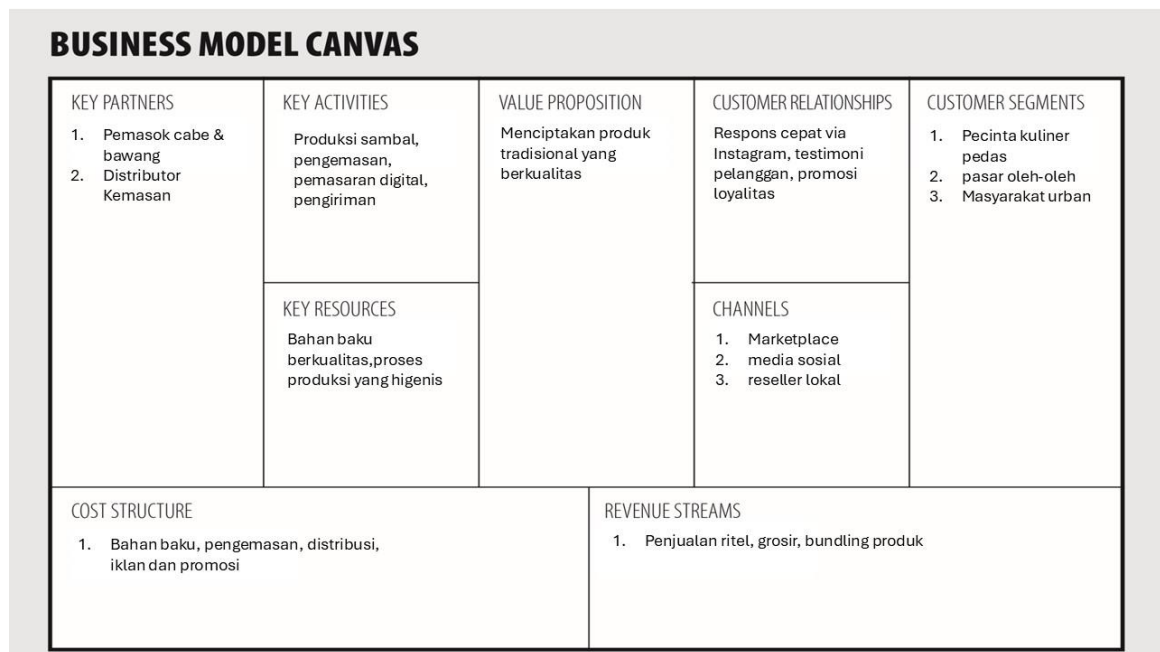
Figure 2 Sambal Embe Business Model Canvas

In running the Embe Naura chili sauce business, the primary role of partners is crucial in the production process. Key partners in business operations are chili and onion suppliers and packaging distributors who provide safe and attractive packaging for the products. This collaboration significantly impacts production activities and quality consistency. However, there are challenges in the role of partners in the Embe Naura chili sauce product, where raw material standards can increase at any time. This will naturally affect the main selling price. The main activities in this business include chili sauce production, packaging, and marketing of Embe chili sauce products. The Embe chili sauce production process is carried out hygienically and applies good food processing methods. The value proposition in this business is producing traditional quality products with local Balinese flavors. The market segmentation of this business is quite diverse, but the main market segmentation is spicy food lovers and lovers of traditional food products. The revenue or income from this business is from the sale of Embe chili sauce products. And the costs incurred are operational production costs.

Unlike the canvas business model for chili sauce products, which relies on product recycling, this canvas business model has its own differences. Some of the differences include key partners collaborating with non-governmental organizations (NGOs). This business model combines social and environmental sustainability elements with artistic creativity. Key partners in this business collaborate with MSMEs that provide waste production. Key partners in this business combine social stakeholders with business stakeholders, specifically Naura Kitchen as a business actor with NGOs and the

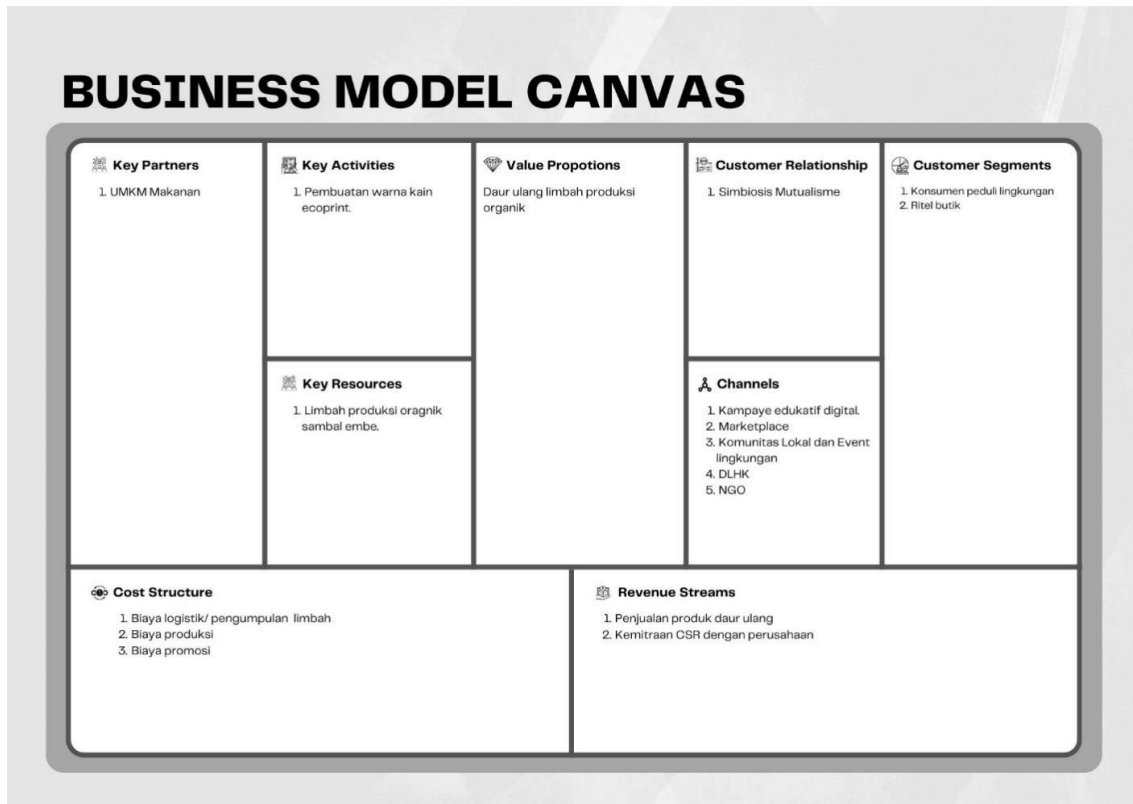Environment and Forestry Agency (DLHK) as social stakeholders and environmental legalization stakeholders.

BUSINESS MODEL CANVAS

🏯 Key Partners	🖥 Key Activities	💎 Value Propotions	📊 Customer Relationship	🔄 Consumer Segments
1. UMKM Makanan	1. Pembuatan warna kain ecoprint.	Daur ulang limbah produksi organik	1. Simbiosis Mutualisme	1. Konsumen peduli lingkungan 2. Ritel butik
	🏯 **Key Resources** 1. Limbah produksi oragnik sambal embe.		👤 **Channels** 1. Kampaye edukatif digital. 2. Marketplace 3. Komunitas Lokal dan Event lingkungan 4. DLHK 5. NGO	
⚙ **Cost Structure** 1. Biaya logistik/ pengumpulan limbah 2. Biaya produksi 3. Biaya promosi			📇 **Revenue Streams** 1. Penjualan produk daur ulang 2. Kemitraan CSR dengan perusahaan	

Figure 3 Naura Kitchen Business Model Canvas

This business activity (main activity) focuses on utilizing organic waste, specifically waste from Embe chili sauce production, to be processed into ecoprint fabric dye. Organic waste from Embe chili sauce is the main raw material in the processing of fabric dyes. The main value (value proposition) of this business model is the recycling of organic waste from repeated production into products that are not only aesthetic but also have environmental value. In this business, the relationship that occurs is a mutualistic symbiosis between Naura Kitchen and customers. Customer segments in this business are environmentally conscious consumers and retail boutiques. The channels that connect Naura Kitchen with customers are built through educational campaigns and marketplaces. The revenue stream or income from this business is the sale of CSR products and partnerships with companies. Costs incurred in this business include logistics costs, production costs, and promotional costs.

These two business models demonstrate the distinct differences between the Embe chili sauce and ecoprint business models. This green industry-based ecoprint product business is designed to address the waste generated during production. This issue is a serious concern faced by the Bali Provincial Government, particularly Denpasar Regency. It is hoped that this business model will address the waste problem and reduce

the volume of waste that is a significant problem in Bali Province. The implementation of the green industry concept on a MSME scale is expected to serve as an example for other MSME industries in Bali Province with varying levels of waste production.

CONCLUSION

The design of a green industry business model based on the Naura kitchen business using the Business Model Canvas approach produces nine elements. The difference between the Business Model Canvas and the Business Model Canvas for Embe chili sauce products and ecoprint products lies in their implementation. This industry also applies the concept of a mini green industry with repeated production waste recycling. Recycled waste is returned to the business. This includes the repeated recycling of organic waste into dyes for ecoprint fabrics. From this recycling process, the goal is to reduce the volume of organic waste disposed of into nature. The Business Model Canvas for ecoprint products consists of nine elements that cover key partners including the Environment Agency (DLH), NGOs, and MSMEs. The main activity carried out in this business is the production of ecoprint colors from a repeated recycling process. The main resource in this business is organic production waste. The value proposition offered is the repeated recycling of organic production waste. The customer relationship built is a mutualistic symbiosis, channels that can be connected through educational campaigns and markets. Customer segments in this business include consumer care, the environment, and retail boutiques, while the cost structure and revenue streams in this business are profits from product sales, recycling, and CSR partnerships.

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