

# Sirplus: The Market of Unshapen Food to Minimize the Food Loss

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## ABSTRACT

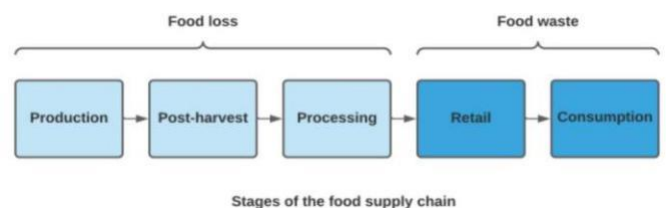
People usually doubt the quality of unshapen food and they believe it contains less nutrition. Two billion people were affected by hunger or did not have access to sufficient and nutritious food, on the other hand approximately one-third of edible food is lost or waster every year. The Sirplus market will sell the imperfect and rejected foods to the customer but still in good and edible conditions with lower price than the average similar products. The study is a quantitative method and the data analysis was carried out through model mapping. The targeted customers are the low to middle-income people and students. The market purposes are introducing healthy lifestyle with lower budget, helping people to save money for other priorities, and educating people about food loss management. The market provides customer service and loyalty card. The channel is through word of mouth and social media. The activities are selling the products directly, educating customer, and collaborating to social organizations and food vloggers. The suppliers are from farmers, sorting and grading plants, and supermarket. The products are raw fruits and vegetables, ready to eat foods, chips, and juices. The market needs a store, production machine, payment system, marketing, and workers.

**Keywords:** Business Idea, BMC, Food loss, healthy lifestyle

## 1. INTRODUCTION

Food is one of the primary needs of human life. The need for enough, acceptable, reliable, and good-tasting food can fulfill the basics of nutrition we need in our bodies [1]. The value of food depends on the customer's behavior towards prioritizing the rank of their needs. Taste, safety, price, and nutrition are the top four food values for People who come from both low and high incomes. A survey was being held to see how customers from different circumstances value food. The result for the low to middle-income people prioritizing price as their biggest consideration and followed by taste, safety, and nutrition. While for Middle to high-income taste, nutrition, safety, and price are the rank of their value for food. In a particular way for both of the customers the shape of the food also takes part in consideration of buying things, the stereotype of

unshaped or ugly fruits and vegetables is not a good choice to buy. People doubt the quality of unshaped food. They believe it contains different nutrition and is not worth buying for the same price as the good one.



**Figure 1.** The stages of the food supply chain associated with food loss and food waste

By the data in 2019, farmers leave up to 30% of their produce in the field because it isn't aesthetically pleasing enough to pick and sell [2]. According to FAO, this waste estimate contributes 14% of world food lost. In the same year, two billion People (25.9% of the global population) were affected by hunger or did not have access to sufficient, nutritious food [3]. On the other hand, approximately one-third of edible food (1.3 billion metric tons) produced for human consumption is lost or wasted along the food supply chain each year [4]. All participants including farmers, retailers, and customers in the industry have their responsibilities through this process. Current food waste reduction strategies based on a food waste hierarchy Include reducing the amount of food waste generated (prevention), redistribution of surplus food, the use of food waste in animal feed and industry, composting, anaerobic digestion, and disposal [5]. The step mentioned earlier is a form of accountability carried out by farmers. As retailers, we should promote more about this imperfect product. Based on the FAO report, the highest food losses occurred on root crops (40–50%) followed by fruit and vegetables as shown on the table 1 [11]. Motivating consumers to buy ugly fruits and vegetables could help maximize.

**Table 1.** Percentage of lost or wasted each commodity group from different region

	Roots and Tubers	Fruits and Vegetables	Cereals	Fish and Seafood	Meat	Diary Products
Europe	52%	46%	34%	31%	22%	12%
North America and Oceania	60%	52%	35%	49%	23%	20%
Industrialized Asia	48%	36%	34%	36%	21%	11%
Sub-Saharan Africa	45%	52%	19%	33%	27%	25%
North Africa, West and Central Asia	33%	56%	30%	30%	23%	20%
South and Southeast Asia	41%	52%	20%	35%	19%	22%
Latin America	39%	56%	26%	29%	21%	22%

The use of resources while decreasing food waste and shortages. As customers, we should be more tolerant of imperfect produce. Different shapes of produce are natural processes that can occur due to factors outside of control. The key to this continuous responsible step is information sharing with all participants. Rejection of imperfect produce happens because of asymmetric information along the value chain. Customer demand determines what product to produce and sell. It's not acceptable for most customers to buy unattractive produce. There is a wrong stigma and self-perception of their mind, that customers deserve the best produce and imperfect food belongs to lower creatures.

To support the continuous step from the farmers to customers we need an intermediary to improve the value chain by increasing knowledge about the produce. Process of redistribution of the surplus imperfect produce and sell them to the end customer.

## 2. MATERIALS AND METHODS

This research refers to secondary data of food waste problems and a survey of spending behavior during the pandemic in 2020. Sources of data were taken by other research related to the topic and global report of economy and agriculture industry. The data is then processed to produce a hypothesis. The hypothesis in this study is the existence of asymmetries information along with the value chain in the responsibility on the food waste problems in the agriculture sector. This study is using quantitative research with a descriptive approach. Quantitative research is a method that functions to describe or give an overview of objects studied through data or samples that have been accumulated. Data analysis was carried out through business model mapping. The tool used in this study is a business model canvas. A business model describes the rationale of how an organization creates, delivers, and captures value. Being developed through nine basic building blocks that show the logic of how a company intends to make money. The nine blocks cover the four main areas of a business: customers, offer, infrastructure, and financial viability. Business model is a blueprint or strategy to be implemented through organizational structures, processes, and systems [6].

## 3. RESULTS AND DISCUSSION

### 3.1. Customer Segments

Customer segments define the different groups of people or organizations an enterprise aims to reach and serve [6]. For the food industry especially grocery stores, segmentation of the product is focused on end customers. They buy the product to fulfill their needs. According to the idea, the customers can be everyone, housewives, students, workers, and labor. As already said before, low to Middle-income customers are very sensitive about pricing and aside from the nutrition factor of the food. They are not picky about what they eat, but as long as it's still good quality and good deals for them, they will buy it. For students who live abroad from their parents, saving money for food is one of the survival kits to live far away. These are going to be niche markets for this business idea. Affordable prices will help them to save their money for other priorities for their needs. The idea of increasing awareness and acknowledging food nutrition also be reconsideration for this business idea. Customers can get cheaper food and also keep maintaining their nutrition, so they not just get full but also understand the nutritional needs for their bodies.

The concern of this niche market segmentation is the increasing number of low to middle-income people during the pandemic. We also support them and they are struggling with what they did and will do for the future. These will affect the number of enrolment students in higher levels of education. For some institutions in November 2020, the common application estimated that applications from first-generation and low-income students decreased about 10% from the year before. If this happens in the long term, it will reduce the desire of students to compete in global opportunities. So with this situation, what we can do is support them by providing affordable and good deals.

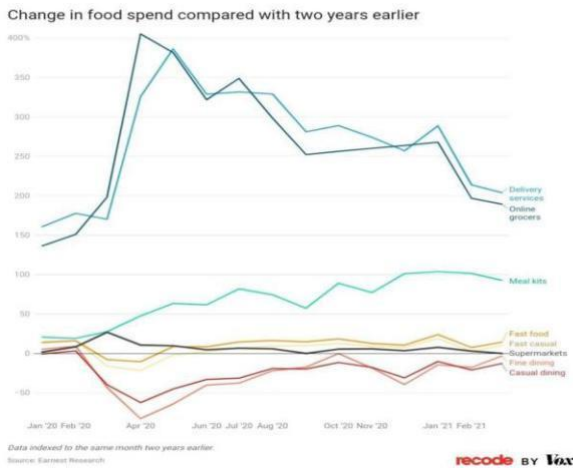


Figure. 2. The change in food spend compared with two years earlier.

### 3.2. Value Proposition

Value proposition describes the bundle of products and services that create value for a specific customer segment [6]. The value of the idea is to provide good living standards for low to middle-income people. According to the pandemic effect in 2020, there is increasing spending on groceries. Work from home situations pushes people to do their meals on their own. They did online shopping for groceries more often than before, lessening the chance to meet others to prevent the spread of the virus.

The trend of groceries shopping is estimated going to increase. Consciousness to start a healthier lifestyle to strengthen the immune encourages awareness to consume more nutritious foods. Nutritious foods like meats, fish, whole grains, dairy, legumes, nuts, and seeds are easily found in groceries. But the problem is the price of these high nutrient products is not for everyone. Low to middle-income people, who are most affected during this situation, high nutrient food like meats and fish are not wise enough to afford. Instead of pricey nutritious produce, they can choose the cheaper to save more money on other needs. Fruits and vegetables are examples. They still can save money and get the nutrients their bodies need.

The idea of Sirplus as imperfect groceries retailers comes along appears to answer the problems and phenomena that exist nowadays. Selling imperfect high nutrient produce at affordable prices will help reduce food loss and food waste at any level along with the supply chain system. This will also educate customers to accept imperfect produce that has the same nutrients as the perfect one and can support their budget to afford an appropriate and healthier lifestyle.

### 3.3. Customer Relationship

A loyalty card is a plastic card that some shops give to regular customers. Each time the customer buys something from the shop, points are electronically stored on their card and can be exchanged later for goods or services a swipe card issued by a supermarket or chain store to a customer, used to record credit points awarded for money spent in the store. The swipe card, which is also a loyalty card, automatically enters customers into the store's bonus system. Loyalty cards offer regular customers discounts on everything they buy in-store. Loyalty cards are one of the best ways to attract customers. It will give them a privilege or savings once customers have it or used it in every transaction to the store. And because of that we need to have customer care support to acknowledge every customer's concerns and complaints. So we can show to the valued customer that we care and understand them and we are always open to supporting the customer's needs.

### 3.4. Channel

Word of mouth is one of the free advertisements that we can get from each and every customer. It might be good and bad information but in the business industry I believe in the power of word of mouth. Customer service is one of the keys in having positive feedback that customers can share with all their neighbors, friends and relatives. Since customers can share their positive experiences to their love once these people will get an interest to buy in the store/shop.

While on social media platforms customers can share their good and bad experiences from the shop/store. It is a very critical platform because through social media customers can relay it to the shop. The impact and result of every customer's post will attack or a chance for the shop to shine and get a positive engagement to the society. Social media marketing is the use of social media platforms to connect with the audience to build your brand, increase sales, and drive website traffic. For example, Buffer is a platform of social media management tools, which can help you achieve success with your social media marketing. Through social media we can get free advertisement, more engagement and promote the brand and our product.

### 3.5. Key Activities

Selling is any transaction in which money is exchanged for a good or service. During a sales negotiation, the seller attempts to convince or "sell" the buyer on the benefits of their offer. If the buyer wishes

to strike a deal, they will give the seller an agreed upon amount of money in exchange for the seller's product/service. Put simply, selling is the act of persuading and being part of social organizations by supporting their projects and activities is one way to promote and get another type of sales.

### 3.6. Key Resources

Key resources is a part in the business model canvas that contains a list of resources that companies should plan and own to execute the value proposition [7]. Key resources describes the most important assets needed to make a business model work as through them to generate Value Propositions and Revenues [8]. The Sirplus market needs infrastructure such as the store, shelves, and the packaging for the products. The store is used as a place to put all the equipment, materials, and products that will be used in carrying out the key activities. The shelves are used to store all of the products ranging from raw to processed products such as raw fruits and vegetables, fruit or vegetable juices, chips, and catering. The packaging is needed to pack the products and it is expected to limit transpiration produced from agricultural products, both vegetables and fruits. Cardboard packaging and plastic baskets are the best packaging to protect fruits compared to plastic mesh sack packaging during storage [9] and the packaging for the juices are tetra packs.

The companies have to hire the workers with experience and knowledge in the specific area who are able to serve under that specific area in the company [8]. Human resources or workers that are needed for the market are the chef to cook or process the foodstuffs for catering and juices, the waitress to serve the buyers and sell the products in the market, and the administration to serve the buyers and customers for complaints in the customer care about the products and service.

### 3.7. Key Partnerships

Key partnerships are usually formed to reduce costs as companies are unable to neither own all resources nor perform every activity by themselves [8]. Key partnerships are the part that you can collaborate with, to support and optimize the allocation of resources, reduce risk and uncertainty of competition, and also improve performance. Key partnerships of the Sirplus market are the collaboration and the suppliers. The collaboration is an activity promoting the products to gain suppliers and customers by collaborating with influencers such as food vloggers and social organizations related to the purposes of the market to help people save money for other priorities, healthy living with lower budget, and educate customers about food loss and waste management. Social organizations are the perfect collaborators by campaigning the market's purposes to the society. Suppliers for the Sirplus market are from the farmers, sorting and grading plants, and supermarkets. Grading of fruits and vegetables based on physical characteristics like weight, size, color, shape, specific gravity, and freedom from diseases depending upon agroclimatic conditions. The

rejected ones from the common supermarkets will be transferred to the Sirplus market but still in good and edible condition [10].

### 3.8. Revenue Stream

The revenue stream of this business model is coming from the direct Selling of imperfect fruits and vegetables to customers. Sirplus can also be the supplier to support small restaurant and ghost kitchen businesses. On the other side, we also process our imperfect produce furthermore to be good deals food. The market of these ready-to-eat meals is social organizations that have a campaign or social movement to help others by donating or providing lunch in cooperation with SMEs restaurants. Instead of producing ready-to-eat meals, Sirplus also processes fruits to become juices and chips. For juices products, customers can order them just in time they arrive and for chips products, the process will give value-added and extend the age of the products. From this block, it will describe the company's way to generate cash flow. It is classified into two, primary and secondary income [12]. In this case, revenue came from both of them. The primary income comes from sale of the product itself, catering service, processed food production (chips from roots, fruits and vegetables), and commercial product sales. Secondary income comes from partner income, passive income from investments, and renting space for suppliers.

### 3.9. Cost Structure

For SMEs business, the cost structure block should be filled with budget arrangements that refer to necessity, a report according to profit and loss [13]. The cost of procuring materials from the supplier and employees (store manager, administrator, waiters, and chef) salary, are paid monthly. While at the beginning, the store needed to invest on machinery (air fryer, juicer, packaging machine), "Point of Sales" software license, and infrastructure (store building, shelves, sign board, table and chair, laptop).

## 4. CONCLUSION

Based on the results of the identification of BMC elements, Sirplus emerges from the problem based on the hypothesis. Asymmetric information among participants is anticipated by the spread of structural information to all participants involved in this business. Redistribution of imperfect produce from farmers and collected by retailers to sell it for the customers predicted can reduce waste. On the other hand, we also can contribute to support small and medium local businesses to grow. To the customers, Sirplus can help them to improve their living standard, especially for nutrient food. Sirplus also supports the 12th SDGs points regarding Responsible Consumption and Production. The group recommends for a further research on this Business Model Canvas of the market.

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