



STRENGTHENING COORDINATED ACTION AMONG SMALL FARM COOPERATIVES IN ROMANIA

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An Interactive Qualifying Project to be submitted to the faculty of
Worcester Polytechnic Institute



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IN ROMANIA

An Interactive Qualifying Project to be submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science in cooperation with Coopertiva SolBun.

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ABSTRACT

Small farming cooperatives are an integral part of the local food supply chain in Romania, but they can often struggle with communication and coordination between member farms. The goal of our project was to establish a system that facilitated easy communication and coordination among producers within Cooperativa SolBun, for smoother production and distribution of their food boxes. Through a combination of interviews and surveys, we determined their current management system cannot support a growing audience for the food box. With order forms and organizational spreadsheets, SolBun can anticipate and coordinate production, add common management roles, and streamline their food box production.

EXECUTIVE SUMMARY

Agriculture has been a central occupation in Romania, preserving traditions, culture, and heritage, while contributing significantly to the nation's economy (Doriana, 2022). Despite the agricultural sector accounting for 10% of Romania's GDP and providing employment for 30% of the population (Polimeni, 2018), poverty and social exclusion continue to affect 8 out of 10 rural inhabitants (Tebaldi, 2018). Communist collectivization and industrialization led to large monocrop farms dominating 60% of Romania's agricultural market—despite accounting for less than 1% of Romania's agricultural holdings—creating challenges for small farms to compete and attract labor. To mitigate financial insecurity, many small farms join cooperatives, which are democratic associations or businesses where members combine resources to generate income and improve market sustainability to achieve a common goal (Giagnocavo, 2018; Mitra, 2014). Cooperatives provide an alternative by allowing producers to diversify their income and pool their resources.

Global concerns about food quality and sustainability have helped to aid small farms in Romania (Gajdić, 2018; Vecchio, 2010; Dovleac, 2017). Farmers' markets have emerged as a popular platform for cooperatives to showcase their locally sourced products, however, the COVID-19 pandemic decreased attendance at in-person markets (PR Newswire, 2021; UC Sustainable Agriculture, 2017). This led to the development of new systems to increase food access, such as deliverable food boxes. While beneficial for small cooperatives, limitations such as communication, organization, and employee shortages hinder their ability to get their products to markets quickly and efficiently (Dovleac, 2017; Gajdić, 2018; Paciarotti,

Torregiani, 2018; Polimeni, 2022; Stępień, 2022).

The goal of our project was to improve communication and coordination among producers within Cooperativa SolBun for smoother production and distribution of their food boxes. Cooperativa SolBun is a small farming cooperative established in 2020, in Braşov, Romania. Their goal is providing local food to their community as well as strengthening relationships between producers and consumers. In 2021, they launched a weekly delivered food box to increase accessibility, but face challenges in coordinating and communicating among producers. Consequently, collaboration among the cooperative was affected, impeding the food box's success. To address these challenges, we created the four following objectives:

1. Determine SolBun's current organizational and distribution practices
2. Identify challenges that limit coordination among producers in the SolBun Cooperative
3. Investigate US farms and cooperatives for business practices that can benefit SolBun
4. Assess consumer preferences on deliverable food boxes

To collect our data, we conducted in-person interviews with SolBun board members to gain insight into their day-to-day operations and distributed written interview questions to producers in the cooperative to identify coordination challenges. Additionally, we distributed two surveys to assess consumer preferences and opinions of SolBun's food box: one for current customers on SolBun's Facebook page and another for potential customers in the Braşov area. To find beneficial business practices, we contacted eight US farms that had similar products or

had a weekly food box service and analyzed their responses.

FINDINGS

CURRENT METHODS OF FOOD BOX ORDERING AND DELIVERY CANNOT SUPPORT A GROWING AUDIENCE

Through our interviews with the board members of SolBun we learned that the cooperative's primary responsibilities involve organizing and distributing weekly food boxes to their customer base. Every Friday during production season SolBun announces the contents of the food box on Facebook. Customers contact SolBun via WhatsApp to place an order. Currently there is only one producer who manages all the WhatsApp orders as well as all the food box deliveries, resulting in them feeling overwhelmed with the 18-22 orders placed each week. This producer explained in our interview how, "...it's getting a bit scary to increase the demand beyond the capacity that we can cover at the moment" (A. Moga, *personal communication*, March 23, 2023). The lack of a centralized order management system, customer database, and non-producer labor hinders SolBun's ability to efficiently package and deliver food box orders.

LACK OF A BOOKKEEPING SYSTEM MAY LEAD TO INACCURATE PRICING OF THE FOOD BOXES

The producers we interviewed within the SolBun cooperative highlighted issues in bookkeeping and tracking expenses. Not only do the producers find tracking expenses to be too time-consuming, four out of five producers stated they did not value the information learned from tracking expenses. One of the producers we surveyed explained that before

joining the cooperative, they had "sporadic sales," which made it "impractical to track every kilogram sold." Additionally, since they had a predictable income year after year, there was little motivation to record transactions because they already had a general idea of their earnings. Interviews with the three board members of SolBun clarified that when income and expenses were tracked, the producers tended to combine their personal and business accounts, further increasing the difficulty in accurately assessing their financial situation. In our interview with Dan Bucur, a vegetable producer and board member of the cooperative, he stated "[In] the beginning [I] was writing down the volume of sales...from selling products, but then [I] stopped doing that." Gauging demand and pricing of products becomes difficult since most producers no longer keep records of their product quantities. Another producer for SolBun mentioned in a written survey "I don't keep written records and I don't know how." Without accurate records, producers cannot accurately adjust pricing or production levels to match changes in demand.

INCREASING COORDINATION AMONG PRODUCERS CAN INCREASE PRODUCT DIVERSITY

Data gathered from interviews with the three board members indicated that there is currently no system in place to manage product anticipation and communication regarding each farms' contribution to the food box. The absence of a structured approach has led to an excess of single crop production, reducing the variety of products available in the food box. As Mr. Bucur stated, "we had the situation last year where two producers had too much green beans...[I] had to share some with [my] pigs." Another producer also mentioned this, saying "Sometimes we have overlap in products," when asked about the

difficulties in communication. A lack of product diversity could also discourage customers from wanting to purchase a food box. In written surveys, four of the five producers reported that there is a lack of communication regarding what each producer is growing and planning to put in the food box. The lack of communication and coordination between farms may be resulting in insufficient production to meet the consumers' demand.

LACK OF COMMUNICATION CAN LEAD TO A LACK OF A UNIFIED GOAL

Effective communication is essential for promoting inclusive and transparent decision-making processes that encourage engagement and collaboration among all members. The lack of coordination among members is due to an inefficient communication system, as noted by the producers. Despite SolBun's current business structure allowing six members to have voting rights, there is no established mechanism for discussing and deliberating cooperative decisions with other members. From the written surveys, four out of five of the official producers highlight that the existing communication systems do not foster a shared sense of purpose and cooperation among members. Additionally, one producer explained that "decisions are made without asking everyone", which highlighted the shared sentiment that the lack of meetings have made some producers feel excluded from decision making. Inconsistent communication has led to disunity and hindered progress. In our interview with Farm Fresh Rhode Island, they recommended that communication be the main focus for small cooperatives. Current methods of communication include reaching out or hearing from a board member via WhatsApp. These interactions are generally handled on a two-party basis, with two of the board members being the

main points of contact. Collaborating can help producers address difficulties and reach consensus on managing unexpected crop outcomes and contingency plans for produce that cannot be delivered.

MANAGEMENT STRUCTURES OF US FARMS IMPROVE THEIR BUSINESS ORGANIZATION

SolBun currently does not have a management structure to guide individual producers towards organizing and planning the contents of the food box and facilitating coordination among producers. Five of the eight US farms we interviewed emphasized the importance of having designated managers occur employees responsible for organizing and managing the farms, explaining that it can help streamline communication and ensure all members share the same goals and objectives. These managers collaborate with farmers to plan and coordinate crop schedules, manage inventory, and ensure diverse produce is packed into food boxes. Some cooperatives we interviewed also noted that organizing a food box requires full time and attention, which cannot be done by a producer because of their many other responsibilities. At Coonamesett Farm, there is a dedicated CSA manager who is responsible solely for the CSA program. Farm Manager, Stanwood Ingram, stated "We have a CSA manager who takes care of the majority of the harvest, gets it ready, sets up and maintains the pick-up, [and] interfaces with the customer." To assist with product anticipation, many farm managers create a list of what each producer must bring for the box each week, taking the obligation out of the producer's hands. A Food Hub manager from New Entry Food Hub stated that "pre-season planning...[helps] make a general plan for the contents of the weekly box and coordinate amongst the farmers to each focus on a few

different crops to provide a diversity of produce throughout the season.” They also explained that at the beginning of each season, each producer provides the manager with an intent-to-grow list, to better anticipate the available products for later coordinating contents of the food box. A lack of clearly identified roles and responsibilities leads to disorganization among the cooperative and its members. Instead, to facilitate producers’ undivided attention towards production, the organizations we interviewed recommended establishing more non-producer roles to take away some of the stress on producers.

RECOMMENDATIONS

Through our analysis, we created three recommendations for SolBun:

RECOMMENDATION 1

We recommend the implementation of a simple and user-friendly order form to replace the current WhatsApp ordering system. The adoption of a centralized ordering system simplifies the gathering and organization of customer data, reducing the burden of handling numerous orders on WhatsApp and of searching through previous conversations for vital details. This results in a more efficient and less time-consuming ordering process. The order sheet additionally compiles customer email addresses, allowing SolBun to establish a cooperative email list as another means of communication to retain customers.

RECOMMENDATION 2

We recommend that SolBun adopt an additional non-producer role to assist

with task delegation, coordinating activities, tracking resources, and maintaining accountability among members. To alleviate stress on producers, SolBun should hire a Cooperative Manager to oversee food box production and distribution. Incorporating another non-producer role into the cooperative will help alleviate some of the stress the producers face, by allowing them to focus on only farming. To assist this manager, we have created an “intent to grow” sheet in a Google Form to help the manager anticipate the quantity of specific products and to prevent under or over-producing. This form is easily accessible and eliminates the hassle of each producer having to fill out a spreadsheet. The cooperative manager should ensure that each producer fills out their produce anticipation form every three months. We also recommend having a non-producer responsible for tracking the cooperative’s expenses through QuickBooks.

RECOMMENDATION 3

We recommend the cooperative establish a forum for communication by holding bi-weekly meetings. From our interviews with US farms, they made it clear that taking time each month to gather the producers, and discuss upcoming harvests, updates on their progress, and general cooperative news is essential to maintaining communication within the cooperative. To guarantee that everyone has a role in the cooperative’s success, it is crucial to highlight the value of work delegation throughout these meetings. Having a consistent form of communication ensures that there is a unified goal among the cooperative.

Small farming cooperatives, like SolBun, are a vital part of the local food supply chain in Romania, providing fresh, locally grown produce to communities. However,

the cooperative faces limitations in communication and coordination, which restricts its ability to function smoothly. To overcome these obstacles and maintain its customer base, SolBun can greatly benefit from the three recommendations we have made. By

following these recommendations, SolBun can improve their operational efficiency, increase their chances of long-term success, and create a more cohesive and effective team.

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1. INTRODUCTION

Having access to fresh, locally grown produce is not only eco-friendly, but also a crucial aspect of many cultures, offering a sense of community and promoting consumer health (Vecchio, 2010). Nonetheless, producers providing these goods often face financial struggles (Marius 2022). In response, producers form cooperatives to collectively access the market and connect with consumers. By pooling their resources together, producers can achieve higher production levels and greater business success than they would individually (Sabate-Wheeler, 2002). As production increases, producers can meet the need for fresh, local food.

In Romania, small farms attempting to compete in a larger market are often reluctant to join cooperatives due to the lasting effects of communism (Popescu, 2022; Wolz, Möllers, and Micu, 2019). During communism, the government controlled agricultural cooperatives causing producers to have very little freedom, and many people to experience food shortages (Sabates-Wheeler, 2002). Negative perceptions and distrust have continued to persist, making producers wary of joining cooperatives even after the fall of communism. As a result, producers continue to manage small farms on their own, but are constrained by their size.

Established in 2020, Cooperativa SolBun is a Romanian cooperative comprised of five farms in Braşov county that aims to provide the community with local produce using sustainable farming practices. In addition to selling at farmers' markets, they have broadened their market and increased sales by implementing a food box distribution system. However, SolBun is facing obstacles in communication and coordination during the startup phase, resulting in challenges with the food box. The goal of our project was to es-

tablish a system that facilitated easy communication and coordination among SolBun cooperative farms, for smoother production and distribution of their food boxes.

Our background provides information on the history of cooperatives under both communism and, more recently, capitalism and how they impact local producers' ability to expand their market beyond subsistence farming. To clarify the challenges with forming cooperatives and providing access to local food, we discuss the importance of cooperatives in relation to the history of Romanian agriculture. Next, our team evaluates several business operations employed daily by US farms and cooperatives, while recognizing the challenges encountered during implementation. Finally, we introduce our collaborator, Cooperativa SolBun, and their role in this context.

The methods outline the objectives and data tools necessary to accomplish our project goal. Our team interviewed SolBun board members and US farms and cooperatives, as well as surveyed SolBun producers and current and potential customers of their food boxes. Following the methodology, our report introduces the findings of our research. We divided the findings into three sections: organization of Solbun's business and distribution models, challenges faced in coordination and communication among Solbun producers, and comparative analysis of operating systems from United States farms and farming cooperatives. Our team developed a user-friendly order form for customers and email templates that can be employed by the SolBun cooperative. The team also recommends implementing a more organized management structure that includes task delegation, coordinating activities, tracking resources, maintaining accountability among

members, and bi-weekly meetings to improve communication and coordination within the cooperative. Finally, we conclude

our report with thoughts on the project's overall impact on the cooperative.

2. BACKGROUND

For 2,000 years, agriculture has been the central occupation for many Romanians (Doriana, 2022). Not only is it essential to preserving the traditions, culture, and heritage of the country, the agricultural sector makes up 10% of Romania's GDP and represents 30% of the employment (Polimeni, 2018). However, of the 3.4 million agricultural holdings in Romania, more than 97% are small farms (less than 10 hectares) which are family owned, subsistence farms that struggle to survive (Popescu, 2022). Furthermore, in rural areas, where most of Romania's poor earn their living from agriculture, 8 out of 10 people are at risk of poverty and social exclusion (Tebaldi, 2018).

As a means of combating financial insecurity, many small farms opt to join cooperatives (coops). A cooperative is a democratic association or business comprised of members who combine their resources to generate income and improve market sustainability to achieve a common goal (Giagnocavo, 2018; Mitra, 2014). Despite the benefits producers have by forming a cooperative, several challenges remain.

2.1 LEGACY OF COMMUNISM

Romania became a communist country in 1947 and quickly implemented policies that consolidated small, privately owned farms into large, state-run, collective farms, sometimes called cooperatives. The forced consolidation policies suppressed individual initiative and entrepreneurship and had negative consequences, including widespread food shortages due to over-exportation of

crops by the Romanian government (Sabates-Wheeler, 2001).

After the fall of the communist regime in 1989, Romanian land reform policies disbanded large collective farms and gave farmers the freedom to take control of their own land and make their own managerial decisions. However, inadequacies in land and resources left many farmers unable to make a living, and they became wary of joining cooperatives due to their memories of collectives during communism (Sabates-Wheeler, 2001). Their fear and mistrust of cooperatives, combined with the lack of land resources, hindered the economic progress of the individual farms.

Despite these challenges, the Romanian government established a legal framework for cooperatives to exist through the "Act on Purchasing Cooperatives for Small Farmers" of 2004, which promoted the livelihoods of small-scale producers by providing them with the means to work together and improve their economic prospects. Without this law in place, there was no way for cooperatives to engage in collective activities such as purchasing inputs, selling outputs, and accessing credit (Wolz, Möllers, and Micu, 2019). However, even after the passage of the law, cooperatives fell victim to "double taxing" where both the cooperative as a whole and its individual members were taxed on the profits. This made it economically impractical for small-scale producers to join a cooperative. It was not until 2018, when a revised fiscal policy and revisions to the law exempted cooperative members from paying taxes on sales marketed through their coop

for the first five years and exempted individual members of cooperatives from income tax (Stanciu, 2016).

2.2 LARGE SCALE VERSUS SMALL SCALE COMMERCIAL AGRICULTURE

One of the prevailing effects of communist collectivization and industrialization are large monocrop farms that control 60% of the total market share of farms in Romania. By streamlining their production to a single crop, large-scale farms can outproduce smaller farms that grow a wider variety of produce but struggle to find a defined market to sell to while having a limited supply of each product (Bennet, 2014; Bijman, 2014; Popescu, 2022). While increased mechanization also allows farms to increase their output of produce while reducing the work of their employees, small farms have difficulty gaining funding for mechanization (Micu, 2022). Despite representing less than 1% of the total farms in Romania, large farms own 52% of the utilized agricultural area, providing them the revenue to invest in mechanization and additional workers (Factsheet, 2018). Furthermore, small farms struggle to find workers due to low wages, leading to a workforce shortage and difficulty competing with large farms. The average agricultural worker in Romania makes about a quarter of what agricultural workers in nearby EU countries make, causing an exodus of working-aged people from farming communities (Tebaldi, 2018).

2.3 HELPING SMALL FARMS THROUGH COOPERATIVES

Cooperatives allow the production of more diverse products, enabling producers to diversify their income and protect against the

dangers of becoming too reliant on a single crop. Pooling resources also increases mechanization because multiple farms can share tools and equipment to increase their collective output. The increase in negotiating power with banks, pooling of resources, and reduction in transaction costs that come with the formation of cooperatives help producers to address market failures (Giagnocavo, 2018; Marius, 2022).

Cooperatives tend to incorporate democratic elements into their organizational structure, allowing members to vote on various aspects related to cooperative operations, such as electing leaders or writing legislation. However, small producers may lack business expertise, and not fully comprehend what they are voting for or its consequences (Bennett, 2014; Gajdić, 2018). Regardless of the size of the cooperative, organization remains a key issue among members (Bennett, 2014; Gajdić, 2018).

The revision of the double tax legislation in 2018 played a part in the rise in popularity of farming cooperatives in Romania. The resulting establishment of umbrella organizations for agricultural service cooperatives (ASCs) has gained momentum in recent years and increased their influence on the public, parliament, and government. (Wolz, Möllers, and Micu, 2019). As a result, cooperatives are becoming more prevalent in the Romanian agricultural landscape.

2.4 BUSINESS OPERATIONS WITHIN COOPERATIVES

Following the rise of coops, global consumers' growing concerns about food quality, taste, production methods, sustainability, and health led to increased attention on promoting short food supply chains (SFSCs) for small farms (Gajdić, 2018; Vecchio, 2010; Dovleac, 2017). To qualify as a short

food supply chain, there must be minimal intermediaries or relatively short distances between the farm and the consumer. SFSCs provide opportunities for product diversification, increased product value, and sustainable income, making direct sale appealing to producers (Dovleac, 2017). There are many kinds of direct sale within SFSCs ranging from older methods, like farmers' markets to newer, more innovative methods, like food box systems and community supported agriculture (CSA) (Kebir and Torre, 2013). Regardless of the method, SFSCs usually involve local producers working together to pool resources and support each other. These partnerships, like coops, are beneficial to boosting the rural economy and creating new ways of selling local produce to a variety of customers.

2.4.1 MODELS OF FOOD DISTRIBUTION WITHIN COOPERATIVES

Farmers' markets provide coops with an opportunity to display their unique, locally sourced products to a wider audience, as customers seek out high-quality produce, that they cannot find in large grocery stores (UC Sustainable Agriculture, 2017). This exposure can expand the coop's network and increase sale opportunities (Curtis, 2009). Aggregating products from multiple producers can also lead to better pricing negotiations, drawing consumers away from overpriced supermarket produce (Bachmann, 2008). Moreover, maintaining relationships with other farms and markets can foster new products, partnerships, and public interest in local food and producers.

Additionally, farmers' markets offer consumers a unique and intimate experience with vendors, who are motivated by the direct relationship with their customers (Gajdić, 2018). One study found that most producers

rated having a direct relationship with their customers as their most motivating factor for selling at farmers' markets (Brown, 2008). Feedback from consumers can also lead to tailored products, creating loyal customers who recommend the market to others (Curtis, 2009; Hinrichs, 2007).

The COVID-19 pandemic reduced attendance at farmers' markets, encouraging producers to develop new, accessible food systems, like deliverable food boxes (PR Newswire, 2021). In Romania, the pandemic led to Military Ordinance No. 1, which limited direct customer contact and direct deliveries, but allowed the delivery of agri-food products (Butu, 2020). While food delivery became more common during the pandemic, it proved to be advantageous for additional reasons: providing access to food for those who were unable to grocery shop, were too busy to shop, or who live in rural areas far from any grocery stores (Sitaker *et al*, 2020).

Most food box models rely on customers paying a fee in exchange for a food box every week. While some cooperatives have a fixed pick-up location, delivered food boxes are increasing in popularity due to their convenience. Delivered food boxes allow small businesses to expand their market, grow a loyal customer base, and create another source of income (Sitaker, 2020). Cooperatives can stand out in the marketplace because they can diversify box contents across several producers. Despite the many benefits food boxes provide to producers and consumers, food delivery and distribution often pose challenges for producers and distributors in terms of planning and coordination.

2.4.2 CHALLENGES WITHIN SFSCS

Farmers' markets and food boxes benefit small producers (Polimeni, 2022), but there are limitations that make it difficult to

succeed, mainly due to a lack of communication and organization in areas such as coordinating deliveries, managing inventory, and responding to consumer demands. (Dovleac, 2017; Gajdić, 2018; Stępień, 2022). Integrating into other markets is difficult when there is a lack of cooperation in the supply chain (Gajdić, 2018). Meeting consumer needs and regulating produce stability during transportation and display is also challenging for small farms. Additionally, competition at farmers' markets can lead to consumers being unaware of producers and products, resulting in losses. Research suggests that small-scale farms in Central and Eastern Europe must increase market integration (joining farmers' markets, CSAs, box schemes, etc.) and exhibit better organization to produce higher incomes, reduce transaction costs, and eliminate competition in the market (Stępień, 2022).

Another considerable issue small farms face in executing a short supply chain is a lack of employees or lack of an established order management system, which hinders their ability to fulfill consumer demand for food delivery (Paciarotti, Torregiani 2018). Direct-to-consumer food boxes can increase profits but require capital and resources to do so (McLaughlin, 2005). In Italy, a survey among 100 small farms found that 97% of fruit and vegetable farms used a cellphone for order management but acknowledged the need for a more efficient online system. The lack of a sustainable ordering system is a struggle that many small farms are seeking to improve, due to its role in creating a successful delivery system (Paciarotti, Torregiani 2018).

2.5 STRENGTHENING COORDINATED ACTION WITHIN SOLBUN

In Romania, much of the direct market transactions occur at local farmers' markets where producers and consumers can interact face-to-face (Gajdić, 2018). Due to Romania's rich history of agriculture, local markets have been able to uphold their popularity (Polimeni, 2022). In utilizing their deep-rooted culture, traditional farming methods, and shared resources, farming cooperatives have benefited from joining farmers' markets by gaining more visibility and outreach, better prices, and increased community engagement (Curtis, 2009; Gale, 1997; Gajdić, 2018; UC Sustainable Agriculture, 2017).

Cooperativa SolBun makes use of farmers' markets and food box deliveries to provide their community with farm-fresh, local foods. They face challenges when it comes to creating and managing an organizational system to improve coordination among the producers within the cooperative. More information on Cooperativa SolBun can be found in Appendix A. Our aim was to assist SolBun in facilitating coordination for easier production of their food box service that supplies produce to local consumers. By studying effective small farm business models, and identifying obstacles with coordination, we proposed a system to enhance their food box model organization.

3. METHODS

The goal of this project was to establish a system that facilitates easy planning, communication, and coordination among producers in Cooperativa SolBun to enable smoother production and distribution of their food boxes. To do this, the team carried out the following objectives:

1. Determine SolBun's current organizational and distribution practices
2. Identify challenges limiting coordination among producers in the SolBun Cooperative
3. Investigate US farms and cooperatives for business practices that can benefit SolBun
4. Assess consumer preferences on deliverable produce boxes

On-site research allowed the team to inquire with producers in the cooperative, board members of SolBun, and potential and current customers of the food box. Collectively, these inquiries allowed us to gather information on their existing methods for coordination and production, the obstacles they face, and how consumers believe SolBun can improve its business, all of which have helped to create viable strategies to address these challenges.

3.1 OBJECTIVE 1: DETERMINE SOLBUN'S CURRENT ORGANIZATIONAL AND DISTRIBUTION PRACTICES

To evaluate the practices of the organization, a detailed assessment was necessary, focusing on small farming cooperatives facing unique challenges in implementing alternate business models. Our team attended a four-hour workshop and visited two of the farms in the cooperative to orient ourselves

with the organization and how it functions. After observing the inner workings of the company, we conducted interviews to aid in our assessment of SolBun's organization and methods of distribution. This allowed us to develop a comprehensive understanding of their strengths and weaknesses and make informed recommendations for improvement.

3.1.1 INTERVIEWS WITH SOLBUN BOARD MEMBERS TO UNDERSTAND CURRENT METHODS OF PRODUCTION AND DISTRIBUTION

We conducted interviews with SolBun board members to understand their current methods of production and distribution. We chose semi-structured interviews with the three board members of SolBun to allow for follow-up questions. The team asked questions regarding the current methods of production and distribution to assess individuals' perspectives on the company's operations (see Appendix B). Through the interview, the team determined the methods by which SolBun anticipates their produce and handles its distribution. Cross-referencing information from the three interviews enabled the team to develop a comprehensive understanding of the company's operations. The interviews proved critical in our assessment of Cooperativa SolBun's organizational and distributional practices.

3.2 OBJECTIVE 2: IDENTIFY CHALLENGES LIMITING COORDINATION AMONG PRODUCERS IN THE SOLBUN COOPERATIVE

A review of the literature allowed the team to acquire a comprehensive understanding of challenges that small farming cooperatives often encounter when pursuing alternate business ventures. To identify the obstacles hindering the coordinated actions amongst SolBun’s producers, we interviewed six different members of the SolBun Cooperative. The responses given from the interviews helped the team determine areas of the business that require the most support.

3.2.1 INTERVIEWS WITH SOLBUN BOARD MEMBERS TO DETERMINE THEIR CHALLENGES IN COORDINATION

Researchers have found that interviews can be a valuable means of collecting information because they offer valuable perspectives, experiences, and attitudes of individuals (Ryan, 2009). To obtain insights on SolBun, the team conducted three 45-minute, semi-structured interviews with the three board members. Prior to beginning the interviews, the team presented all interviewees with the Statement of Informed Consent seen in Appendix C. The team asked about SolBun’s main goal and challenges regarding production and distribution of their produce. These interviews enabled the team to gather perspectives from professionals working on the business and planning aspects of the operation, which helped us formulate appropriate questions for the producers in the cooperative. Appendix C contains the questions asked by the team to gain a deeper understanding of the needs of SolBun to advance their food box system.

3.2.2 SOLBUN PRODUCER SURVEYS

To understand the challenges from the producer’s perspectives, the team distributed written, qualitative surveys to five producers of SolBun for the purpose of maintaining confidentiality and avoiding team difficulties with language barriers. The surveys presented questions about each farmer’s level of commitment, produce planning and anticipation, food box contents, and cooperative challenges (Appendix D). Responses were then translated by the receptionist at our accommodations to ensure anonymity for the producers. The team then conducted a content analysis by grouping responses to questions related to the challenges each producer faces in coordination and organization.

3.3 OBJECTIVE 3: INVESTIGATE US FARMS AND FARMING COOPERATIVES FOR BUSINESS PRACTICES THAT CAN BENEFIT SOLBUN

The team compiled a list of farms and farming cooperatives that bear some resemblance to SolBun and met at least one of the following requirements: they are a farming cooperative, produce similar products to SolBun, or use a food box delivery system. We utilized this list of farms and cooperatives to develop appropriate interview questions by reading through FAQ pages to gain insight into practices that these organizations employ.

3.3.1 INTERVIEWING FARMS FROM THE UNITED STATES

The team distributed written interview questions via email with eight farms and farming cooperatives from across the United

States because the time of this research coincided with production season for producers, so they preferred to have the ability to answer on their own time. Interview questions covered topics such as existing business practices each cooperative has in place, desired changes, and factors influencing the organization of the farms in the cooperatives, their finances, and order fulfilment (Appendix E). We developed an understanding of the practices used by other farm cooperatives, as well as their views on effective strategies and areas of improvement. From the results of our interviews, we analyzed and qualified the data by categorizing responses and identifying prevalent themes across cooperatives. This analysis helped identify business strategies to incorporate into SolBun.

3.4 OBJECTIVE 4: ASSESS CONSUMER PREFERENCES ON DELIVERABLE FOOD BOXES

Assessing consumer preferences on food box system required the team to survey both potential SolBun customers in the Braşov area and existing customers. Gathering consumer opinions allowed for possible improvements that SolBun can make to improve upon their current practices. The main limitation of the current customer survey was low response rates. We attempted to address this by posting the potential customer survey on 23 local Facebook pages and reposting the current customer survey on the SolBun Facebook page.

3.4.1 SURVEYING CONSUMERS

To learn what consumers prefer, we created two cross-sectional surveys. One survey assessed SolBun customer preferences on the current food box system, while the other targeted a wider audience of potential customers regarding what they would like to see in a food box if they were to buy one. Conducting these two surveys allowed us to determine which features of the food box helped retain customers, what customers disliked about the current system, and what could be changed to attract new customers (see Appendix F for the questions asked on the surveys).

The survey contained several types of questions such as multiple choice, rank order, text entry, and slider questions. The survey for current customers of SolBun received five completed responses, and presented questions regarding how they feel about the quality, quantity, and variety of produce as well as the process of ordering the food box. There was also additional space left for further comments. When we surveyed 63 prospective food box consumers, we asked questions regarding features they would like to see such as preference between opt-in systems or subscription-based systems and preference on type of food included in the box (see Appendix F). These surveys provided valuable insights into the preferences of both current and prospective customers of SolBun, and their responses helped inform recommendations for improving their food box system.

4.0 FINDINGS AND ANALYSIS

In this chapter, we discuss the insights gained from seven weeks of research and how they impacted the development of our recommendations for SolBun. The team has classified these findings into three primary themes:

1. Organization of SolBun's Business and Distribution Models
2. Challenges Faced in Coordination and Communication Among SolBun Producers
3. Analysis of Operating Systems from United States Farms and Farming Cooperatives

4.1 ORGANIZATION OF SOLBUN'S BUSINESS AND DISTRIBUTION MODELS

To describe SolBun's business structure, we first explain what a cooperative structure looks like in Romania. Later findings highlight the challenges SolBun faces with organization, their distribution models to reach customers, and the difficulties in delivering to their customers.

4.1.1 LIMITED MANAGEMENT POSITIONS IN SOLBUN HINDER ITS ORGANIZATION SYSTEM

At the beginning of the term, the team met with the President of SolBun, Raluca Barbu, to gain insights into the organizational structure of cooperatives in Romania and to

learn more about SolBun's structure. Ms. Barbu explained that to establish a legally recognized agricultural cooperative in Romania, there must be at least five official members, three of which must be board members. SolBun currently meets these requirements. It is comprised of five official members. As shown in Figure 4.1, official members possess voting rights, through which they can select board members. Currently, the three board members consist of Dan Bucur – a vegetable producer, Anca Moga – a producer of goat based dairy products, and Raluca Barbu – the president of SolBun, and the only non-producing member of the cooperative. The three current board members are responsible for major executive decisions, such as the hiring and dismissal of members and establishing relationships with customers. This also includes organizing and distributing weekly food boxes to their customer base, establishing and maintaining restaurant partnerships, and being present at farmers' markets. Outside of the board and official members are five associated members – producers, who must apply in writing, undergo a one-year trial, and pay an annual contribution with the goal of becoming a member of the cooperative. Additionally, there are external collaborating producers that can contribute to SolBun's sales, but their products are limited to a maximum of 30% of the cooperative's total sales, and they do not pay the annual contribution. External collaborating producers benefit by selling their produce through the cooperative, thus increasing their overall output.

Structure of the SolBun Cooperative

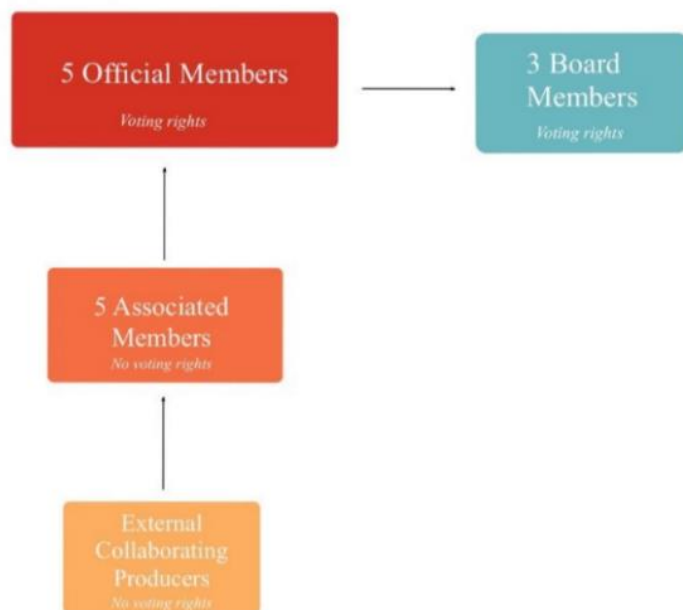


Figure 4.1: The structure of the SolBun Cooperative adapted from a diagram provided by Raluca Barbu.

As a cooperative, SolBun's primary responsibilities involve organizing and distributing weekly food boxes to their customer base. This includes receiving products, packaging, and distribution, as well as bookkeeping and paying expenses. The board members explained to the team that there is currently no centralized management system to guide individual producers towards organizing and planning the contents of the food box and facilitating communication among producers. This delegates responsibilities to individual producers who must decide what to produce and what to contribute to the weekly food box, causing each farm to act independently, rather than cooperatively. Without a centralized system to oversee and manage production, there is also the risk of over/under production, leading to wasted resources, unfulfilled orders, or a lack of product diversity

within the food boxes (R. Barbu, *personal communication*, April 4, 2023).

4.1.2 SOLBUN'S DISTRIBUTION AND CUSTOMER OUTREACH ARE FOCUSED ON ACCESSIBILITY

The coop's main method of distribution is through food boxes, however, they also maintain a presence at farmers' markets, and sell directly to restaurants. Rather than negatively impacting the daily operations of SolBun, farmers' markets and direct sale to restaurants help maintain a loyal customer base and sell excess produce not used in the food box. These secondary methods of sale are much smaller time commitments that require less coordination as Ms. Barbu handles all restaurant interactions, and the producers sell their own produce at the farmers market under the SolBun name (R. Barbu, *personal communication*, April 4, 2023).

Ms. Barbu explained that SolBun made the food box their highest priority to emphasize their main objective of increasing the accessibility of local produce in urban areas. In the past, they have delivered food boxes to farmers' markets once per week, but after feedback from customers stating that this method was inconvenient, they shifted to delivering to customers' homes. SolBun ensures that it fulfills all food box orders before reserving products for the farmers' markets and restaurant orders. When receiving restaurant orders, SolBun requests a list of desired produce and provides any available produce left over from the food boxes.

Currently, Ms. Barbu estimates there are 40 returning customers, the majority of which are higher income residents of Braşov. To maintain their customer outreach and relations, SolBun relies on publicity from local farmers' markets and promoting their coop-

erative on Facebook. For their returning customers, they stay in touch and manage orders through WhatsApp. The cooperative opted for these platforms because they are widely used and known in Romania.

Maintaining customer relations through Facebook and WhatsApp allows SolBun to easily share updates, promotions, and information about their food boxes, as well as directly communicate with customers for inquiries and feedback. Raluca Barbu and Anca Moga run the cooperative's Facebook page, where they promote SolBun products, farmers' markets, and local events. Customers use WhatsApp for submitting food box orders and delivery information, providing feedback, and asking questions. The primary method of contact between board members and producers within the cooperative is also through WhatsApp, where they schedule times to meet at the farmers' markets and share cooperative updates.

Farmers' markets are the cooperative's primary place to directly connect with potential customers, showcase their high-quality produce, and build a loyal customer base. In a discussion with Raluca Barbu, Dan Bucur, and Anca Moga they made note that farmers' markets offer an opportunity for feedback, partnerships with other farmers' and businesses, and increased exposure. It is a unique opportunity for SolBun producers "to have a more dynamic and closer relationship with the clients" (A. Moga, *personal communication*, March 23, 2023).

4.1.3 CURRENT METHODS OF FOOD BOX ORDERING AND DELIVERY CANNOT SUPPORT A GROWING AUDIENCE

In an interview with Ms. Barbu, she explained how a customer orders a food box, along with how SolBun manages these orders. Every week, each producer confirms

what they can contribute to the food box, depending on their product yield for the week. According to Dan Bucur, SolBun announces their food box and its contents on Facebook each Friday during production season, which runs from April to October. Customers who are interested in purchasing a food box for that week contact SolBun via WhatsApp to place an order. Ms. Moga is responsible for all the WhatsApp interactions, however, with 18-22 orders submitted on average each week, she often gets overwhelmed. Ms. Moga noted that "[I] was afraid of switching on [my] phone because [I] was under the pressure of seeing how many boxes there were...and it was beyond [my] capacity."

Despite Ms. Moga's frustrations with the current ordering system, customers tend to be satisfied with the ordering process overall. However, through our survey with SolBun's customers, we found that on average, the customers rated the ease of ordering as 3.6 out of 5, where 1 is extremely dissatisfied and 5 is extremely satisfied. While customers are generally satisfied with the ease of ordering, it is clear that there is room for improvement. The ease of payment was rated as a 4.25 out of 5, leaving their general satisfaction with the overall ordering process rated as a 4 out of 5. We also asked customers about their satisfaction with the timing and handling of deliveries. The customers were generally satisfied, with a 4 or above in both categories. One deficit of the current ordering system is the lack of customization options available to the customers. Our survey of potential customers of SolBun revealed that the majority of consumers preferred being able to choose their own delivery day and time, and 94% preferred to personally select the contents of their food box. Though this may not be feasible, catering to the needs of current and potential consumers can enhance overall satisfaction with the ordering and delivery process. The results of the surveys can be found in Figure 4.2 and 4.3 respectively.

Consumer Preferences on Delivery Method

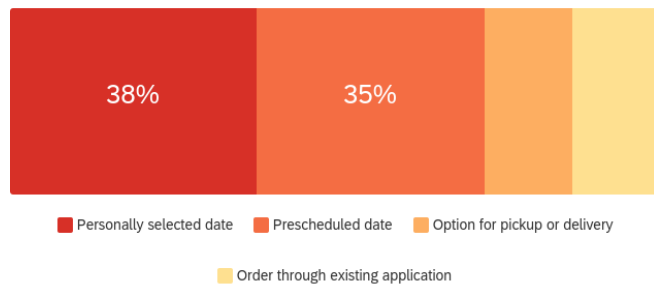


Figure 4.2: Analysis of consumer preferences on food box delivery.

Consumer Preference on Food Box Content

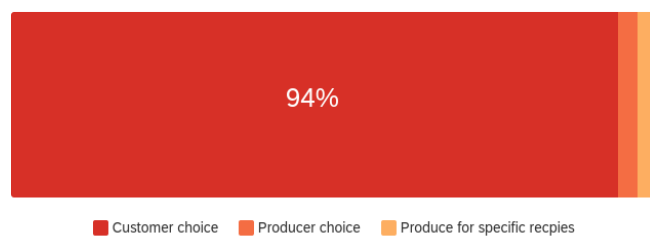


Figure 4.3: Analysis of preferences on food box content.

On Wednesdays, producers who contribute to the food boxes meet at STAR Market, a local farmers’ market, to bring their products and package the food boxes. After packaging, Ms. Moga is responsible for delivering the food boxes to the customers’ doors. (D. Bucur, *personal communication*, March 23, 2023). Ms. Moga described that currently, she is the only one responsible for these deliveries. Additionally, SolBun does not own any type of refrigerated vehicle, therefore, the cooperative only delivers to Braşov. Mr. Bucur explained to us that efficiency in delivery routes is incredibly important to ensure freshness, as his crops can begin to deteriorate as soon as three hours after harvest. The process of transporting the produce, packing it into boxes, and delivering it can take up to six hours, furthering the need for efficient delivery. In an interview with Anca Moga she mentioned, “That’s why we didn’t take the promotion too big because it’s

getting a bit scary to increase the demand beyond the capacity that we can cover at the moment.”

As Ms. Barbu reported to us, the lack of centralized customer data causes the food box packing process to be less efficient overall. Time has to be taken to compile addresses from multiple Whatsapp interactions. She made it clear that the current methods for managing and delivering orders are unsustainable if SolBun were to grow. Having producers manage both systems creates more stress and takes their time away from farming. With deliveries, there are only so many food boxes that can be delivered in a day with only one driver and no refrigeration. If the number of food boxes per week increases, SolBun will need a new approach to order management and delivery.

4.2 CHALLENGES FACED IN COORDINATION AND COMMUNICATION AMONG SOLBUN PRODUCERS

After identifying SolBun’s business structure and distribution models, we were able to further examine the issues that stem from their current practices. Based on our observations of members day-to-day actions, their current methods of communication include occasional group messages through WhatsApp and individual communication between board members and producers. Our findings highlight two key areas for improvement that relate to coordination and communication amongst the members of the cooperative.

4.2.1 LACK OF A BOOKKEEPING SYSTEM MAY LEAD TO INACCURATE PRICING OF THE FOOD BOXES

The producers we interviewed within the SolBun cooperative highlighted issues in bookkeeping and tracking expenses. Not only do the producers find tracking expenses to be too time-consuming, four out of five producers stated they did not value the information learned from tracking expenses. This may be due to previous habits developed prior to the producers joining the cooperative. One of the producers we surveyed explained that before joining the cooperative, they had “sporadic sales,” which made it “impractical to track every kilogram sold.” Additionally, since they had a predictable income year after year, there was little motivation to record transactions because they already had a general idea of their earnings. Interviews with the three board members of SolBun clarified that when income and expenses were tracked, the producers tended to combine their personal and business accounts, further increasing the difficulty in accurately assessing their financial situation. In our interview with Mr. Bucur, he stated “[In] the beginning [I] was writing down the volume of sales...from selling products, but then [I] stopped doing that.” Gauging demand and pricing of products becomes difficult, since most producers no longer keep records of their product quantities. As Raluca Barbu mentioned, it “is a habit that we inherited in the cooperative.” Another producer for SolBun mentioned in a written survey “I don’t keep written records and I don’t know how.” Without accurate records, producers cannot accurately adjust pricing or production levels to match changes in demand.

On average, SolBun sells 18-22 boxes per week at 80-100 RON (\$18-22 USD). In a survey conducted by SolBun in 2020, they

found the average monthly salary of their customers is 5,000 RON (\$1,113 USD). When our team surveyed potential customers in the Braşov area, we found that the leading cause as to why respondents have not purchased a box is due to the perceived high cost, which is displayed in Figure 4.4.

While the quality and quantity of the produce in the boxes is a factor in the pricing, Ms. Barbu stated in our interview that the lack of record-keeping by the producers regarding their expenses, time spent, and product inventory can lead to difficulties in pricing the boxes because there is no accurate way to judge trends in the producers’ income.

4.2.2 INCREASING COORDINATION AMONG FARMERS CAN INCREASE PRODUCT DIVERSITY

Data gathered from interviews with the three board members indicated that there is currently no system in place to manage product anticipation and communication regarding each farms’ contribution to the food box. The absence of a structured approach has led to an excess of single crop production, reducing the variety of products available in the food box. As Mr. Bucur stated, “we had the situation last year where two producers had too much green beans...[I] had to share some with [my] pigs.” Another producer also mentioned this, saying “Sometimes we have overlap in products,” when asked about the difficulties in communication. A lack of product diversity could also discourage customers from wanting to purchase a food box. In our survey among potential customers, 25% of the respondents said they did not buy a food box because they did not like the contents.

Understanding Factors That Deter Food Box Sales

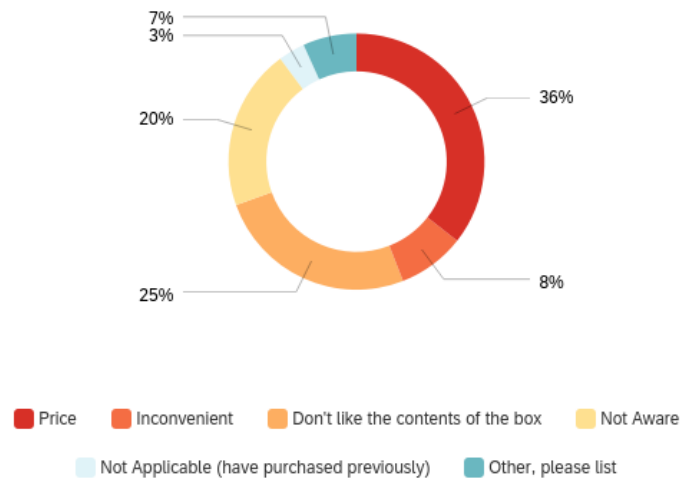


Figure 4.4: Analysis of deterring factors from purchasing a food box.

The results can be seen in Figure 4.4. In written surveys, four of the five producers reported that there is a lack of communication regarding what each producer is growing and planning to put in the food box. However, only one of the five producers said they would be willing to fill out a spreadsheet in order to coordinate their product inventories. Interviews with Ms. Barbu made it clear that the five producers prefer to focus on cultivating specific products to meet high-quality standards and diversify food box contents. However, the lack of communication and coordination between farms may be resulting in insufficient production to meet the consumers' demand.

Based on interviews with the three board members, we found that coordinating communication between farms to ensure product diversity can be a significant challenge in agriculture. The producers have different schedules and production capabilities, which often results in farmers producing similar products or focusing on a single crop, reducing the diversity of agricultural products available to consumers. Effective communication, trust, and resource-sharing among

farmers can increase the range of products offered (D. Bucur, *personal communication*, March 23, 2023).

4.2.3 LACK OF COMMUNICATION CAN LEAD TO A LACK OF A UNIFIED GOAL

One contributing producer explained in their written survey that “decisions are made without asking everyone.” The cooperative’s decision-making process does not involve input from all members, resulting in some members feeling excluded or disenfranchised. As one member stated, they “would like to enter the market in Braşov city together with SolBun Cooperative, as they currently are unable to attend the markets with the other producers. They made it clear that they faced difficulties in coordinating with the other producers and often miss out on group opportunities. Despite the current business structure allowing six members to have voting rights, there is no established mecha-

nism for discussing and deliberating cooperative decisions with other members. From the written surveys, four out of five of the official producers highlight that the existing communication systems do not foster a shared sense of purpose and cooperation among members. Overall, the producers shared the thought that they felt collaboration among the producers was lacking and hindering the progress of the cooperative. As one producer said, for the cooperative to make progress there needs to be "...better coordination and collaboration among the members." When surveying the producers about their opinions on changes they would like to see in the cooperative, there were differing ideas among the members. For some members farming is something they do because they enjoy it, and do not care much about the expansion of the business. Other members desired changes that were focused on increasing the business' sales. Two members mentioned how they would like to feel more involved in the cooperative by being incorporated in the decision-making process. The lack of consistent group communication has led members to feel as though their opinions are not heard and has split the cooperative, creating disunity amongst members.

4.3 OPERATING SYSTEMS FROM UNITED STATES FARMS AND FARMING COOPERATIVES

After identifying the challenges SolBun has faced in coordinating and distributing produce for their food boxes, we interviewed a variety of farm organizations, ranging from cooperatives containing 600 farms to small, local farms. Our goal was to learn how other farms manage produce, distribution, and delivery systems. Some of the farms we interviewed employed similar food box delivery to SolBun, while others used a Community Supported Agriculture (CSA) model.

The findings highlight widely used systems and processes that address some of the challenges that SolBun faces.

4.3.1 MANAGEMENT STRUCTURES OF US FARMS IMPROVE THEIR BUSINESS ORGANIZATION

In our interviews with eight US farm organizations – Cabot Creamery, Coonamessett Farms, Farm Fresh Rhode Island, Maine Produce Alliance, Three River Farmers Alliance, New Entry Food Hub, Steve Norman-ton Farms, and Vernon Family Farms – we discovered that each of them, including the small individual farms, have managers or employees who are responsible for organizing and managing the farms. Cabot Creamery, due to its large size (over 600 member farms), has managers dedicated to coordinating the actions of farms in each region of the US. Similarly, the Maine Produce Alliance has a single manager who organizes and delegates tasks to producers, aligning with the scale of their cooperative. The owner of The Maine Produce Alliance noted that managers can collaborate closely with the farmers to plan and coordinate their crop schedules, manage inventory, and ensure that food boxes are packed with a diverse selection of produce. At Coonamessett Farm, there is a dedicated CSA manager who is responsible solely for the CSA program. Farm Manager, Stanwood Ingram, stated "We have a CSA manager who takes care of the majority of the harvest, gets it ready, sets up and maintains the pick-up, [and] interfaces with the customer." He also mentioned this frees up other farm members to focus on harvesting wholesale. This is important because it ensures consistency in the quality and quantity of the produce that is offered to customers. Five of the eight farms specifically noted that a

Table 4.1. Date established and size of the farm organizations the team interviewed.

	Coonamessett Farm	Maine Produce Alliance	Three Rivers Farmers Alliance	Cabot Creamery	Farm Fresh Rhode Island	Vernon Family Farm	New Entry Food Hub	Steve Normanton Farms
Date Established	1982	2019	2014	1919	2004	2014	2005	2009
Farms In Organization	1	42	50+	600+	28	1	26	1

designated person in charge can help streamline communication and ensure all members share the same goals and objectives. Ultimately, having a designated manager or employee working for the coop can enhance the efficiency and success of the cooperative. Table 4.1 demonstrates that several farms vary in size and may be more established coops. Hence, we recognize that some of the recommendations we propose for SolBun may not be immediately feasible, but valid options for a future plan.

Some cooperatives – like Maine Produce Alliance, Coonamessett Farm, Cabot Creamery, Three River Farmers Alliance, and Vernon Family Farm – emphasized that having a producer responsible for organizing the food box could be restrictive, because the responsibilities required for organization require the full time and attention of the organizer. Instead, to facilitate producers’ undivided attention towards production, the farms we interviewed recommended establishing more non-producer roles because, as Kristin Abbott, the bookkeeper from Coonamessett Farm, stated, “...there needs to be someone coordinating all aspects.” A farmer from the Maine Produce Alliance explained her *ideal* cooperative structure (outside of producers) as being: one person in charge of marketing and outreach, one person coordinating

weekly orders among farms and handling payment, two people responsible for packaging orders and overseeing inventory, three delivery drivers, and one person to manage them all. Like Maine Produce Alliance, SolBun does not currently have enough employees to achieve this goal, yet a similar system of delegating tasks would greatly help SolBun in facilitating smoother production of their food box.

Communication is imperative to create more inclusive and transparent decision-making processes that promote engagement and collaboration among all members. When interviewing the Hunger Relief manager from Farm Fresh Rhode Island, she noted that “for a small coop, I would recommend putting a lot of focus on communication (between growers, administrators, customers).” She also stated that they utilize two-hour, in person meetings, where they discuss “the parameters of [the meeting], how [each producer] can benefit, ...logistics, and what’s required of them.” She also emphasized the importance of allowing comments and questions at the end of the meeting. By communicating, producers can address difficulties and reach consensus on matters such as managing unexpected crop outcomes and having a contingency plan to manage it, or if a participant

cannot get their box, then what to do with the produce so it does not go to waste.

4.3.2 IMPLEMENTING BUSINESS AND FARMING SOFTWARE HELPS ORGANIZE PRODUCE AND EXPENSES

Many US farming cooperatives rely on software designed specifically for farmers and food delivery. Our interviews with US farms revealed that a popular choice for this is the subscription-based software Barn2Door. From correspondence with an associate from Barn2Door, they revealed that the software provides a wide range of functions, including a platform for customers to place orders, promotional pages for farms, sales and inventory tracking, and email list organization. Barn2Door is currently not offered in Romania, however, these features can serve as inspiration in developing a similar system for SolBun.

In addition to using Barn2Door, Maine Produce Alliance, Vernon Family Farm, and Steve Normanton Farms emphasized the importance of using accounting software, such as QuickBooks, for tracking all expenses and income. As Nicole Moore from Maine Produce Alliance said, “QuickBooks is a lifesaver for expenses.” QuickBooks is an especially useful tool in keeping track of a business’s expenses, taxes, payroll, sales, and executing simple accounting functions. Keeping proper bookings is essential to ensuring a business’s stability and profitability. Upon inspection of the QuickBooks website, we found that it specifically caters itself to small businesses by simplifying the accounting process for individuals. They also offer resources such as guides for creating budgets, balance sheets, and business plan templates.

4.3.3 DEVELOPING A SYSTEM FOR PRODUCT ANTICIPATION AIDS THE COORDINATION OF FOOD BOXES

Coordination amongst producers is an arduous task that cooperatives must consider. In interviews with individuals from the Maine Produce Alliance, New Entry Food Hub, and Coonamessett Farm, they agreed it was essential to have one person whose sole task was to oversee the food box coordination and determine food box contents. Each week, that person creates a list of what each producer must bring for the box, taking the obligation out of the producer’s hands. They also explained that at the beginning of each season, each producer provides an intent-to-grow list, so the cooperative can better anticipate the available products. A Food Hub manager from New Entry Food Hub stated that “pre-season planning...[helps] make a general plan for the contents of the weekly box and coordinate amongst the farmers to each focus on a few different crops to provide a diversity of produce throughout the season.”

4.3.4 ENFORCING DELIVERY GUIDELINES HELPS STREAMLINE DELIVERY PROCESSING AND SCHEDULING

Our research of eight farm organizations uncovered that the majority of customer orders were placed online, either through the farm’s website, social media pages, or third-party markets like Barn2Door. The standard online purchase process involved selecting products, adding them to a cart, and choosing from different delivery or pickup dates/times offered by the farm. However, not all farms provided both delivery and pick-up options. In our interview with Stanwood Ingram, he stated “The [food box] model takes

on many variations as growers customize to their situation and that of their clients...On site pickup works for us but I do know of farms that do site drop offs and have a site coordinator distribute the shares at each site.” Our interviews with Maine Produce Alliance and Farm Fresh Rhode Island revealed how they plan the packaging of orders, as well as criteria for the food boxes’ packaging. The Hunger Relief associate from Farm Fresh RI (FFRI), stated that for them the “boxes [are] planned to contain around 5-7 items each, and would include produce valued at \$20.00.” Nicole Moore explained that she packages all the boxes herself, following her own “set of rules”. To ensure consistency and fairness in a food box, having clear guidelines and a standardized process in place is paramount. The Hunger Relief associate from FFRI also made it a point to mention that their guidelines help streamline their system and allow them to pack and deliver upwards of 500 boxes each week, between a team of 20 people.

4.4 CONSIDERATIONS

We decided to distribute written surveys to the individual farmers of SolBun, which would be translated later. This led to

several limitations including an inability to ask follow-up questions to gain further clarity. To manage this, we had to craft questions that were direct and precise to eliminate room for interpretation; however, this led to relatively short responses that lacked the kind of elaboration needed for robust analysis.

We also encountered difficulties collecting responses for our survey directed towards SolBun’s current customers. While it was posted twice on SolBun’s Facebook page, the response rate remained very low, with only five total responses. We also proposed sending the surveys directly to SolBun’s customers via WhatsApp, however, SolBun had concerns about invasiveness and overstepping communication boundaries with their customers.

Given that the spring season is extremely busy for farmers and there was a seven-hour time difference between the US farms we contacted and our location in Romania, we expected a low response rate. To increase our chances of getting responses, we cut down our list of questions, so that the interviews would only take 5-10 minutes. The questions we initially wanted to ask had to be altered to be clear and precise in their meaning, to avoid room for greater interpretation.

5.0 RECOMMENDATIONS

The following recommendations are offered based on our work accomplished in researching ways to improve coordinated action among small farming cooperatives.

5.1 RECOMMENDATION 1

We recommend the implementation of a simple and user-friendly order form to replace the current WhatsApp ordering system. With the new system we created, customers can input their information into a Google Form to order a food box. Once this form is submitted, responses are automatically organized and recorded into a Google Sheet. The customers' data is then emailed back to them with a printable order confirmation form (see Appendix G). More specifically, the Google Form solicits necessary customer information, such as their name, contact details, delivery address, and order details, as well as a question asking if they would like to receive weekly updates for future food boxes. This will provide SolBun's board members with an efficient system to manage their orders as all of the customer's input data will be stored in one centralized location every week.

Implementation of this form helps tackle multiple difficulties with SolBun's current ordering system. First, providing customers with an order confirmation can help improve the customers' overall ordering experience. Additionally, centralizing the customer data can help make order packing more efficient because board members do not have to sift through previous WhatsApp interactions to find customer information. Having a question asking customers if they would like to receive weekly updates will help SolBun stay in contact with their customers on a weekly basis. In the spreadsheet, there is a

custom-made menu option that exports customers' emails to an email list where SolBun can advertise their upcoming food boxes. Upon selection of this menu option, the spreadsheet compiles the email addresses of individuals who responded "yes" into a list. In the subsequent weeks, if a customer places an order, the script verifies whether their email address is already included in the list; if so, it will not be added again. However, if a customer changes their response from "yes" to "no", their email will be removed from the list. This email list can be used in conjunction with their current Facebook post system to increase customer retention. The email list can be managed through Mail Chimp, a platform that will allow SolBun to easily send out emails to a large number of people for free. By implementing an order form, the order management becomes a much more organized, standardized process for the cooperative, improves customer experience, and increases SolBun's chances of long-term success. All code for the Google form can be found in Appendix H.

As Ms. Moga stated, the current ordering system through WhatsApp is cumbersome and difficult to manage effectively. However, by implementing the Google Form we developed, SolBun can eliminate these challenges. The use of a centralized system for customers to place orders streamlines the process of collecting and organizing customer information. This eliminates the pressure of managing multiple orders on WhatsApp and sorting through past conversations to locate essential information, making the entire ordering process more efficient and less time-consuming.

5.2 RECOMMENDATION 2

We recommend SolBun hire a Cooperative Manager, to oversee task delegation, coordinate activities, track resources, and maintain accountability among members. The manager will be elected by the official members of the cooperative and be responsible for overseeing all aspects related to the production and distribution of food boxes. To assist the manager, we have created an “intent to grow” sheet in a Google Form, enabling producers to anticipate the quantity of specific products to prevent under or over-production (see Appendix G). Producers can input their intended crop amount by kilogram every three months, covering each month of the growing season (March – November). The cooperative manager will ensure that each producer completes the produce anticipation form every three months, and the responses will be automatically uploaded to a spreadsheet, providing an overview of each producer’s plan each month. This will assist SolBun in identifying potential shortages or surpluses and adjust their production accordingly.

As mentioned in our findings, 80% of the producers expressed their opposition to keeping records, citing concerns about the time and effort required. While we recognize this obstacle, Ms. Barbu noted that as a result of the team’s work on the project, each official member of the cooperative has found the inspiration to begin making changes in their habits. The implementation of a Google Form to localize each producers’ anticipated produce, eliminates the hassle and need for individual spreadsheets. The form created is easily accessible and quick to fill out, allowing the farmers to access and submit the form on their phone, while tending the farm. This centralized system is crucial to organizing SolBun’s food box.

To track expenses and income within the cooperative, we recommend that SolBun

utilizes QuickBooks or similar accounting software, which three of the eight US farms use for its capabilities in tracking expenses, budgeting, invoices, and sales data. QuickBooks can aid SolBun in making informed business decisions, track company performance, and properly gage the pricing of the food box week to week. After conversations about the potential expenses of an accounting service, Ms. Barbu noted that because of our collaboration with her and Coopertiva SolBun, they have already factored in the potential expenses of such software and have started searching for a part-time cooperative manager, with the hope of generating enough revenue to employ a full-time manager.

5.3 RECOMMENDATION 3

Finally, **we recommend the cooperative hold bi-weekly meetings to encourage communication and work delegation among members.** From our interviews with US farms, regular meetings are essential for discussing upcoming harvests, progress updates, and general cooperative news. By delegating tasks, members can work more efficiently toward achieving the cooperative’s objectives. Delegation of specific tasks not only reduces the burden on board members but also provides an opportunity for other cooperative members to participate actively. This approach enables them to assume additional responsibilities, such as assigning each producer’s crop for the upcoming season. We suggest holding these meetings on the same day, at the same time, every two weeks to minimize time commitment, but allow for urgent matters to be addressed. As recommended by the Hunger Relief manager from FFRI, meetings can last two to three hours to cover current challenges, successful areas, and general discussion about their produce. Through this, all members can be made aware of one another’s actions and are able to collaborate to improve the cooperative, where

members act as a single entity and participate in making choices for organization.

From our findings, it was clear that a number of challenges were hindering the progress of the cooperative. The current decision-making process does not involve input from all members, and the existing communication system, via WhatsApp, does not foster a shared sense of collaboration. These difficulties become emphasized as there is an inefficient method for discussing cooperative decisions with other members. Providing a space for producers to come together and express their thoughts fosters a more inclusive decision-making process that facilitates participation and collaboration from all members.

CONCLUSION

Small farming cooperatives, like SolBun, are a vital part of the local food supply chain in Romania. However, limited delivery range, inaccurate prices, and order volume pose challenges. To overcome these obstacles and maintain their customer base, SolBun can greatly benefit from the three recommendations we've made. By following these recommendations, SolBun can improve their operational efficiency, increase their chances of long-term success, and create a more cohesive and effective team. In coordinating the producers and creating a more organized ordering system, we are helping SolBun achieve their goal of increasing their communities' access to fresh, local food.

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7. APPENDICES

APPENDIX A: COLLABORATOR DESCRIPTION

SolBun is a small-scale farming cooperative founded amidst the COVID-19 pandemic. During a workshop organized by SolBun's primary coordinator Raluca Barbu, several producers got together to form the coop to strengthen their businesses. The cooperative is now comprised of five producers who farm locally to Braşov. SolBun's values lie in providing locally grown and produced food to citizens in the Braşov area, while promoting short supply chains and smaller businesses. While they would like to grow their sales and improve their business practices, they are also focused on building trust, community, and making meaningful change. They began distributing at local farmers' markets and having customers pick up their produce on a weekly basis. Recently, SolBun has begun prototyping a food box delivery system in hopes to emphasize the short food supply chain and provide convenience for their customers.

APPENDIX B: SOLBUN BUSINESS COORDINATORS INTERVIEW

1. What is the current organizational structure if both SolBun as a whole and each of the farms? (i.e. how many members of management, how many producers, any other supporting roles within the business)
2. How many returning customers does SolBun have?
 - a. How frequently do they purchase food boxes?
3. How often does SolBun sell at farmers' markets?
 - a. How many people purchase products at a farmers' market?
 - b. What products seem to do very well at farmers' markets?
4. What are the contents of a typical food box (quantity, variety, etc.)?
5. How are orders managed for the weekly food box?
 - a. Are orders ever left unfulfilled or delayed?
6. How do you manage delivery?
 - a. What is your delivery radius?
 - b. Is an outside party responsible for deliveries or is it within SolBun?
 - c. Are all boxes delivered within the same day?
 - d. How is the food kept fresh during transport?
 - e. How are delivery routes planned?
7. How do producers plan what to plant for upcoming seasons, in terms of both quantity and type of produce?
 - a. What kinds of factors may disrupt these plans?
 - b. Does the consumer demand ever exceed what the farm can produce?
8. What online and/or social media platforms does SolBun have?
 - a. Who is tasked with managing these platforms, and what do they do?
9. How would you describe the current methods of communication and coordination between management and producers of SolBun?
 - a. If there are difficulties, what are they?
 - b. What areas of the current system could be improved and what areas work well?
10. What would you like to see from the producers, in terms of communication and coordination?
11. What would you like to see, in terms of communication, between SolBun and its customers?
 - a. Have you received customer feedback before? If so, what was it?
12. What challenges have you faced in distributing the food boxes? How have you addressed them in the past?
13. Can you share any plans or goals that you have for the cooperative in the future?

 INTERVIEW CONSENT

As students from Worcester Polytechnic Institute in Massachusetts, USA, we are collaborating with Coopertiva SolBun to establish a system that facilitates easier planning, communication, and coordination among the farms in the SolBun cooperative. To gain firsthand insights into how to enhance the food box system, we are conducting interviews with key individuals from the cooperative. This interview will last approximately 30 minutes, and your participation is voluntary. You have the right to decline answering any questions or stop the interview at any time. We guarantee confidentiality, and your name or any identifying information will not appear in any project reports or publications unless you give us permission to do so. We will be recording the interview for transcription purposes, and if we intend to use the recording for any other purposes beyond note-taking, such as in a podcast or documentary, we will obtain your consent beforehand. Should you have any questions or concerns upon completion of this interview, we can be reached at gr-solbun-d23@wpi.edu. For more information about this research or about the rights of research participants, please contact Ruth McKeogh at rmckeogh@wpi.edu or irb@wpi.edu. (Verbal)

Do you consent to this interview?

Do you consent to having this interview recorded?

Current and Prospective Customer Survey Consent: English

As students from Worcester Polytechnic Institute in Massachusetts, USA, we are collaborating with Coopertiva SolBun to establish a system that facilitates easier planning, communication, and coordination among the farms in the SolBun cooperative. The purpose of this survey is to assess the strengths and weaknesses of the current food box model, and to gather feedback on what you the consumer would like to see from the food box. This survey will last approximately 5 minutes, and your participation is voluntary. You have the right to decline answering any questions or stop the interview at any time. Please remember that your answers will remain anonymous, and your name or any identifying information will not appear in any project reports or publications. Your participation is greatly appreciated. Should you have any questions or concerns, we can be reached at gr-solbun-d23@wpi.edu. For more information about this research or about the rights of research participants, please contact irb@wpi.edu.

Current and Prospective Customer Survey Consent: Romanian

În calitate de studenți de la Institutul Politehnic Worcester din Massachusetts, USA, colaborăm cu Coopertiva SolBun pentru a stabili un sistem care facilitează planificarea, comunicarea și coordonarea mai ușoară între fermele din cooperativa SolBun. Scopul acestui sondaj este de a evalua punctele forte și punctele slabe ale modelului actual de cutie pentru alimente și de a aduna feedback cu privire la ceea ce dvs., consumatorul, ar dori să vedeți din cutia de alimente. Acest sondaj va dura aproximativ 5 minute, iar participarea dumneavoastră este voluntară. Aveți dreptul de a refuza să răspundeți la orice întrebări sau de a opri interviul în orice moment. Vă rugăm să rețineți că răspunsurile dvs. vor rămâne anonime, iar numele dvs. sau orice informații de identificare nu vor apărea în niciun raport sau publicație de proiect.

Participarea dumneavoastră este foarte apreciată. Dacă aveți întrebări sau nelămuriri, putem fi contactați la gr-solbun-d23@wpi.edu. Pentru mai multe informații despre această cercetare sau despre drepturile participanților la cercetare, vă rugăm să contactați irb@wpi.edu.

Farmer Survey Consent: English

As students from America, we are collaborating with Coopertiva SolBun to understand the difficulties that each of these farms encounter and how the current system affects their ability to coordinate with SolBun. Please fill out these questions to the best of your ability. You have the right to decline answering any questions or stop the interview at any time. *We guarantee confidentiality – your name, any identifying information, and the transcript will not be shared with members of Coopertiva SolBun.* Should you have any questions, concerns, or additional private comments upon completion of this interview, we can be reached on WhatsApp at +1 (413) 539-4288 or email at gr-solbun-d23@wpi.edu. For more information about this research or about the rights of research participants, please contact irb@wpi.edu.

Your responses are not required to be written. If you prefer to email your responses, please send them to gr-solbun-d23@wpi.edu. If you would like to send your responses via WhatsApp, we can be reached at +1 (413) 539-4288. By sending your responses electronically you consent to and understand the information above.

Farmer Survey Consent: Romanian

În calitate de studenți din America, colaborăm cu Coopertiva SolBun pentru a înțelege dificultățile cu care se confruntă fiecare dintre aceste ferme și modul în care sistemul actual afectează capacitatea lor de a se coordona cu SolBun. Vă rugăm să completați aceste întrebări la cele mai bune de capacitatea dumneavoastră. Aveți dreptul de a refuza să răspundeți la orice întrebări sau de a opri interviul în orice moment. *Garantăm confidențialitatea – numele dvs., orice informații de identificare, iar transcrierea nu va fi partajată cu membrii Coopertiva SolBun.* Dacă aveți întrebări, nelămuriri sau comentarii private suplimentare la finalizarea acestui interviu, putem fi contactați pe WhatsApp la +1 (413) 539-4288 sau e-mail la gr-solbun-d23@wpi.edu. Pentru mai multe informații despre această cercetare sau despre drepturile participanților la cercetare, vă rugăm să contactați irb@wpi.edu.

Răspunsurile dumneavoastră nu trebuie să fie scrise. Dacă preferați să trimiteți prin e-mail răspunsurile dvs., vă rugăm să le trimiteți la gr-solbun-d23@wpi.edu. Dacă doriți să trimiteți răspunsurile dumneavoastră prin WhatsApp, putem fi contactați la +1 (413) 539-4288. Prin trimiterea electronică a răspunsurilor dumneavoastră sunteți de acord și înțelegeți informațiile de mai sus.

APPENDIX D: SOLBUN PRODUCER SURVEY

1. How long have you been farming?
 - a. How did you get started farming?
 - b. What do you like and dislike about it?
2. What types of products do you produce?
3. Is farming a full-time job for you?
 - a. What does your typical day/week look like?
 - b. Who else is involved with maintaining the farm? How are they involved?
4. Are you willing to use an interactive spreadsheet to track production and distribution of your produce?
5. What is the process of how you track and record the harvest of each crop?
6. What crops do you typically grow in each season?
 - a. How do you determine what to grow?
7. How do you determine which crops to include in the food boxes each week?
 - a. How do you ensure that you meet the demand for the food boxes each week?
 - b. What challenges may prevent you from meeting the demand?
8. What criteria do your products have to meet to be considered acceptable for sale?
 - a. How do you ensure that you meet these standards?
9. How would you describe the current methods of coordination between you and the rest of SolBun? (i.e. communication between you and SolBun, determining what produce to sell each week, how you manage deliveries, etc.)
 - a. If there are difficulties, what are they?
 - b. What areas of the current system could be improved and what areas work well?
10. What changes would you like to see, in terms of communication and coordination, from SolBun ?
11. What challenges have you faced in distributing the food boxes? How have you addressed them in the past?

1. How long have you been working for _____, and what is your current role there?
 - a. Tell me a bit about _____ farm.
 - i. How long has it been in operation?
 - ii. What kinds of products do you sell?
 - iii. What values and principles are most important to this cooperative?
 - iv. How many employees and/or producers are a part of the coop?
2. Is there a loyal customer base?
 - a. How many returning customers?
3. What business models is the cooperative currently using? (i.e., food boxes, a retail store, producers markets, CSAs, food delivery, etc.)
 - a. How have these models changed over the years, if at all?
 - b. What kind of impact did the change in models have on both customers and employees?
4. What kinds of challenges do these business models present, if any?
 - a. How does the cooperative address these challenges?
5. How do you manage orders? (Applies only to CSAs and food boxes/deliveries)
 - a. Do customers pay a per item fee or a subscription?
 - b. Is there software that keeps track of customer orders?
 - c. What is the policy if a customer cancels an order?
6. How do you manage food delivery?
 - a. Do you use an outside party to deliver, or does the cooperative itself deliver?
 - b. How far do you deliver?
 - c. How do you ensure that food stays cold/fresh?
 - d. Are there ever delivery issues (orders left unfulfilled or delayed)?
7. How do you expand your outreach for new customers?
 - a. Do you have a presence on websites or social media platforms?
 - b. How do you maintain/monitor these online platforms? Are there employees tasked with this?
8. What kinds of improvements or changes will possibly be made in the future?
9. For a startup cooperative that is facing business side challenges, what advice would you offer to help overcome these obstacles? (maybe add some context like “for example...”)
 - a. Can you provide suggestions or strategies that may assist the cooperative in improving its business operations?

POTENTIAL CUSTOMER SURVEY

1. How long have you lived in the Braşov area?
2. How often do you purchase local produce?
3. How do you typically purchase your produce?
4. If you were to purchase a produce box, how would you like the delivery of the box to be scheduled? Rank the following options from top to bottom:
 - a. Personalized delivery schedule
 - b. Pre-scheduled, on-time delivery
 - c. Option for pick up or delivery
 - d. Order through existing application (Glovo, Bolt, etc.)
5. How would you like the contents of the produce box to be chosen? Rank the following items from top to bottom:
 - a. Chosen by customer
 - b. Chosen by producer
 - c. Produce for specific recipes
6. Why might you not have purchased a produce box in the past?
 - a. Price
 - b. Inconvenient
 - c. Don't like the contents of the box
 - d. Not aware
 - e. Not applicable (have purchased one previously)
 - f. Other, please list
7. Any important aspects we may have missed that you would like to see incorporated?
8. Any additional comments, questions, or concerns?

CURRENT CUSTOMER SURVEY

1. How many food boxes have you purchased from SolBun?
2. How satisfied are you with the ordering process for your food box in the following areas?
 - a. Ease of ordering
 - b. Ease of payment
 - c. Overall satisfaction
3. How satisfied are you with the delivery of your food box in the following areas?
 - a. Timing
 - b. Tracking
 - c. Handling
 - d. Overall satisfaction
4. How satisfied are you with the quality of the produce in your food box in the following areas?
 - a. Freshness

- b. Taste
 - c. Appearance (bruises, blemishes, etc.)
 - d. Overall satisfaction
5. How do you feel about the quantity of produce in your food box?
 6. How satisfied are you with the variety of produce in your food box?
 7. What produce would you like to see included in the box?
 8. How likely are you to recommend SolBun's food box to a friend or colleague?
 9. What improvements would you suggest for SolBun?
 10. Any additional comments, questions, or concerns?

SolBun Food Box Order Form

tsantopadre7@gmail.com [Switch account](#)

* Indicates required question

Email *

Your email

First Name

Your answer

Last Name

Your answer

Delivery address

Your answer

Would you like to receive weekly email reminders on upcoming foodboxes?

Yes

No

Submit [Clear form](#)

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Google Forms

View of the SolBun order form on Google Forms.

Cooperativa SolBun order confirmation for Troy Santopadre | 04/22/2023 Inbox x



tsantopadre7@gmail.com
to me ▾

2:31PM (0 minutes ago)

Dear Troy Santopadre,

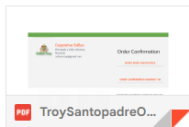
Thank you for your purchase with Cooperativa SolBun! You can find your order confirmation information below.

Deliver to: Troy Santopadre
Address:100 Institute Rd, Worcester MA, 01609
Order confirmation #18
Order date: 04/22/2023

Enjoy!

Cooperativa SolBun

One attachment • Scanned by Gmail ⓘ



View of the Customer Confirmation email after submitting the Google Form.



Cooperativa SolBun
Principala 1133A, Harman,
Romania
solbuncoop@gmail.com

Order Confirmation

Order Date: 04/22/2023

Order Confirmation Number: 18

Payment expected in cash on delivery

Personal Information

Troy Santopadre

Ship To

Troy Santopadre

tsantopadre7@gmail.com

100 Institute Rd, Worcester MA, 01609

View of order confirmation PDF provided in Customer Confirmation email.

```

1 function onOpen() {
2   const ui = SpreadsheetApp.getUi();
3   const menu = ui.createMenu('Email List');
4   menu.addItem('Generate Email List', 'autoEmailList');
5   menu.addItem('Reset Email List', 'resetEmailList');
6   menu.addToUi();
7 }

```

Establishes a custom button in the Spreadsheet UI.

```

9 function autofillReceipt(e) {
10   var timestamp = e.values[0];
11   const date = Utilities.formatDate(new Date(timestamp), "GMT-4", "MM/dd/yyyy");
12   const email = e.values[1];
13   const firstname = e.values[2];
14   const lastname = e.values[3];
15   const address = e.values[4];
16   const ordernumber = SpreadsheetApp.getActiveSheet().getLastRow();
17
18   const templateFile = DriveApp.getFileById("1Vo-YVQd7JPMxsNGApKcHrm7k1YL2DHLQ06VRZinL6s");
19   const templateResponseFolder = DriveApp.getFolderById("1K77B6-tJx6-26VqJK9RgT2gdHthueCY");
20   const pdfFolder = DriveApp.getFolderById("1VqNOKnt1AObn6wICJ2qZv15H3N3zyiyx");
21
22   var copy = templateFile.makeCopy(firstname + lastname + 'OrderConfirmation', templateResponseFolder);
23   const doc = DocumentApp.openById(copy.getId());
24
25   var body = doc.getBody();
26
27   body.replaceText("{firstName}", firstname);
28   body.replaceText("{lastName}", lastname);
29   body.replaceText("{address}", address);
30   body.replaceText("{email}", email);
31   body.replaceText("{date}", date);
32   body.replaceText("{orderNumber}", ordernumber);
33
34   const blob = doc.getAs(MimeType.PDF);
35   doc.saveAndClose();
36   const pdf = pdfFolder.createFile(blob).setName(firstname + lastname + "OrderConfirmation.pdf");
37
38   const subject = `Cooperativa SolBun order confirmation for ${firstname} ${lastname} | ${date}`;
39   const message = `<span style="font-family:garamond;font-size: 22px">Dear ${firstname} ${lastname}, </span>
40 |<span style="font-family:garamond;font-size: 22px">Thank you for your purchase with Cooperativa SolBun! You can find your order confirmation information below.</p>
41 |<p style="font-family:garamond;font-size: 18px">Deliver to: ${firstname} ${lastname}<br> Address: ${address} <br> Order confirmation #${ordernumber} <br> Order date: ${date}</p>
42 |<p style="font-family:garamond;font-size: 22px">Enjoy!</p>
43 |<span style="font-family:garamond;font-size: 22px">Cooperativa SolBun</span>`;
44   MailApp.sendEmail({
45     to: email,
46     subject: subject,
47     htmlBody: message,
48     attachments: [blob.getAs(MimeType.PDF)]});
49 }

```

Generates Confirmation Email and Printable PDF.

```

51 function autoEmailList() {
52   const ss = SpreadsheetApp.getActive().getSheetByName('OrderForms');
53   const rows = ss.getDataRange().getValues();
54   const savesheet = SpreadsheetApp.getActiveSpreadsheet().getSheetByName('EmailList');
55   var emailrows = savesheet.getDataRange().getValues();
56   var i = 1;
57   //savesheet.clearContents();
58   //Utilities.sleep(3000);
59
60   rows.forEach(function(row,index) {
61     var emails = row[1];
62     var check = 0;
63     if (index === 0) return;
64     //Add Names
65     if (row[5] === 'Yes'){
66       emailrows.forEach(function(x,y){
67         var m = x[0];
68         if (emails === m) {
69           check = 1;
70         }
71       })
72       if (check === 0) {
73         savesheet.getRange(i, 1).setValue(emails);
74         i = i+1;
75         emailrows = savesheet.getDataRange().getValues();
76       }
77       check = 0;
78     }
79     //Remove names
80     if (row[5] === 'No'){
81       var j = 1;
82       Logger.log(emailrows[1,0]);
83       emailrows.forEach(function(x,y){
84         var n = x[0];
85         if (emails === n) {
86           check = 1;
87         }
88         if (check != 1) {
89           j = j+1;
90         }
91       })
92       if (check === 1) {
93         savesheet.getRange(j, 1).setValue('');
94         emailrows = savesheet.getDataRange().getValues();
95       }
96       check = 0;
97     }
98   })
99   deleteBlankRows();
100 }

107 function deleteBlankRows() {
108   const savesheet = SpreadsheetApp.getActiveSpreadsheet().getSheetByName('EmailList')
109   var lastRow = savesheet.getLastRow();
110
111   for (var i = lastRow; i > 0; i--) {
112     var range = savesheet.getRange(i,1);
113     var data = range.getValue();
114     if (data == '') {
115       savesheet.deleteRow(i);
116     }
117   }
118 }

```

Creates an email list in a separate sheet.


```
102 function resetEmailList(){
103     const sheet = SpreadsheetApp.getActiveSpreadsheet().getSheetByName('EmailList')
104     sheet.clearContents();
105 }
```

Clears the email list sheet.