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'Egg that tastes like egg': An ethnographic and economic inquiry into the assets and challenges of the organic farming market in the Canary Islands

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Abstract

The development of self-sufficient organic food systems has become an important focus in the Canary Islands, where reliance on imported foods and conventional agriculture are predominant. This study examines the main challenges and opportunities in the market through eleven on-site, semi-structured interviews combined with participant observation. Thematic analysis was conducted and findings were organized using Barney's Firm Resources and Sustained Competitive Advantage Theory as well as Kahan's Entrepreneurship in Farming framework, to place the results within the broader literature on agri-food entrepreneurship. This research highlights key challenges to sustainable local production, including unstable demand, limited institutional support, high entry barriers, and a lack of consumer recognition of organic product quality. While exploratory, these insights highlight areas—such as tourism partnerships, expanded government incentives, and direct-to-consumer marketing—that could be further examined as possible ways to support organic farming.

Author Summary

Sustainable food systems depend not only on environmentally responsible farming practices but also on the social and economic conditions in which farmers operate. This study examines the organic farming sector in the Canary Islands, a geographically isolated region that relies heavily on imported food and tourism. Through interviews and field observation with organic farmers across four islands, we explored the opportunities and challenges shaping this emerging market. Farmers described barriers such as limited institutional support, complex regulations, and inconsistent consumer demand. At the same time, they highlighted important strengths, including strong collaboration among producers, high product quality, and a shared commitment to environmental stewardship. By bringing together perspectives from public

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health, sustainability research, and entrepreneurship studies, this work demonstrates how farmer experiences can help explain why sustainable food systems succeed or struggle. These findings may help inform policies and community initiatives aimed at strengthening local food production in the Canary Islands and in other regions facing similar structural challenges.

1. Introduction

1.1 Background

Organic farming within food systems can generate significant environmental, economic, and public health benefits. Environmentally, organic practices support nutrient cycling, reduce erosion and runoff pollution, maintain microbial biodiversity, and lower global warming potential by 22% per hectare compared to conventional farming.(1),(2) Economically, organic farms tend to hold higher property values, contribute to rural development by employing 13–43% more workers per acre at higher wages, and reduce federal spending on commodity subsidies.(3),(4),(5) Public health also benefits, as organic farming limits exposure of farmworkers, consumers, and surrounding communities to synthetic chemicals linked to Parkinson’s disease, non-Hodgkin’s lymphoma, and various reproductive and neurodevelopmental disorders.(6) Reducing synthetic agrochemical use may further help lower the estimated 385 million annual cases of unintentional acute pesticide poisoning worldwide, including 11,000 related deaths.(7) Despite these well-documented advantages, many regions continue to face challenges in integrating organic farming into their food supply chains.

The Canary Islands, an archipelago of seven islands located approximately 1,400 kilometers southwest of mainland Spain, provide a valuable case study of a region struggling with these challenges.(8) As part of the European Union’s Outermost Regions (EUORs) and a Spanish

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autonomous community, the archipelago has fertile soils, unique fruit and vegetable varieties, mild year-round climates, and longstanding water-optimization practices- factors that make it highly suitable for continuous agricultural production.(9),(10) Reflecting this potential, the Canary Islands rank as the seventh-largest organic market among Spanish provinces, with 2,572 registered producers.(11) Organic producers must follow strict European Union regulations—rules that do not apply to conventional farmers—which require detailed records on growing conditions, sanitation, transport, processing, labeling, and quality control.(12) Even though organic producers consistently meet these high assurance standards, the conventional market still dominates the region's food system.

Conventional farming in the Canary Islands relies heavily on synthetic agrochemicals, and the region spends more on these inputs than any other autonomous community in Spain.(11,12) Studies have measured contamination of farmland with multiple pesticide compounds, posing risks to both human health and biodiversity.[11-18] In one study, 99% of sampled residents tested positive for pesticide residues in their blood—far exceeding international benchmarks of 47–73%.(18),(19),(20) These findings identify public health considerations related to conventional agriculture and point to organic farming as an area for additional attention and study.

1.2 Socioeconomic Context

Between 2022 and 2023, Spain's organic sector grew by 4.73%, yet government subsidies remain limited and primarily support conventional production.(21) The Canary Islands are eligible for only three of 150 possible agricultural subsidies that are available to mainland producers, and none are destined specifically towards organic production. This limited political-economic support adds to the standard challenges faced by EUORs in the development of regional supply chains, including limited external investment, dependence on imports, difficulties in exporting, and small

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local markets.(22),(23),(24) Meanwhile, imported food products receive subsidies, further competing with local production.(25),(26)

Beyond economic and political disadvantages, the Canary Islands also contend with the long-term consequences of historical isolation and poverty. During the 1940s post-war period and beyond, the region experienced disproportionately higher food scarcity than mainland Spain.(27),(28),(29) Findings from local ethnographers Juan Cruz, David Conde-Caballero, Borja Rivero-Jiménez, and Lorenzo Mariano-Juarez, indicate that these experiences with rationing and hunger shape contemporary consumption behaviors, fostering preferences for quantity, versatility, and flavor over nutritional quality.(29),(30) The region has also faced decades of farmworker exploitation and rural poverty, which have driven mass emigration and land abandonment over the past fifty years.(31),(32) Both the collective memory of famine and enduring hardships in the agricultural sector contribute to a persistent negative perception of local products—referred to here as social stigma—and a preference for imported goods.(30),(31),(32)

The region's focus on low-cost mass tourism further disadvantages the organic market by shifting value away from local production systems.(26) Of the 14.1 million annual tourists, 44% choose all-inclusive stays, which pressures suppliers to prioritize cost over quality, undermines local small businesses, and discourages investment in sustainable infrastructure.(33),(34) This dynamic not only erodes local economies but also contributes to environmental degradation.(33),(34)

1.3 Theoretical Frameworks

This study drew on Barney's universalistic 'Firm Resources and Sustained Competitive Advantage' theory and Kahan's industry-specific 'Entrepreneurship in Farming' framework to develop the interview guide, inform potential solutions, and contextualize emergent themes within

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the existing literature. (35) These frameworks were selected for their relevance to the study sample and alignment with the study's underlying assumptions.

Barney proposes three resource categories critical to success: physical, human, and organizational capital.(36) Applying this framework to organic farming, physical capital can be understood to encompass production technology, land quality, and growing conditions. Human capital includes producers' training, experience, judgment, and professional networks, while organizational capital refers to production planning and informal commercialization strategies.(36) Each resource category can be further characterized by its value (ability to exploit opportunities), rarity (difficulty of implementation), and imperfect imitability (difficulty of replication).(36) Barney's theory assumes that firms and their resources are heterogeneous, a condition reflected in this study, where producers differed in size, yield, production strategies, and product offerings.(36)

Kahan's Entrepreneurship in Farming model extends Barney's framework specifically to agriculture, highlighting patterns common among farmer-entrepreneurs, such as reliance on trial-and-error and network-building as problem-solving strategies.(37) Kahan identifies key barriers, including unsupportive laws and regulations, limited financial support, socio-cultural pressures, insufficient training opportunities, and lack of expert guidance—all factors relevant to this study's context.(37) To address these challenges, Kahan recommends that farmers enhance their value chain through differentiation and post-harvest processing, improve production efficiencies, adopt new technologies and innovations, prioritize soil stewardship, foster group entrepreneurship, and develop long-term growth strategies.(37)

2. Methods

2.1 Study Design and Sampling Strategy

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This study followed a qualitative thematic analysis approach to explain the challenges faced by producers and the strategies employed to overcome them.(38) Findings from this inductive "open-coding" process were subsequently contextualized using Barney's Firm Resources and Sustained Competitive Advantage theory and Kahan's 'Entrepreneurship in Farming' frameworks. (39),(40),(41) Data were collected via open-ended interviews designed to capture strengths, weaknesses, opportunities, and adaptive strategies within the organic market across all levels of the Socioecological Framework.

Participants were selected through purposive sampling in collaboration with a local expert, who recommended interviewees based on variability in farm size, industry experience, production strategies, crop diversity, and geographic location. This approach was employed to attempt to have the sample reflect the range of realities in the market.

2.2 Data Collection Methods and Technologies

The first author conducted face-to-face, semi-structured interviews and participant observation at each participant's production location over a three-week period in July 2023. No participants refused to participate nor dropped out, no repeat interviews were conducted, and no one other than the first author was present during the interviews. Interviews were 30 to 120 minutes long and followed the pilot-tested interview guide in Table 1.

Table 1. Sample Interview Questions

1	What was the process of beginning your production like? What resources were available and what obstacles did you face?
2	What are the biggest challenges that currently hinder your growth? How could you receive more support?
3	What are the greatest professional alliances you have built? How have these helped establish and maintain your production?
4	What is your clientele, and how did you make these connections?
5	What have been key factors in the growth of your operations?
6	How do you compete with conventional producers? How was it been made possible to produce organically despite the elevated obstacles present in the market?

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Eleven interviews were digitally audio-recorded and transcribed using Sonix.ai.(42) Each transcript was read at least three times, and each recording was listened to at least once, before drafting analytic memos that captured reflections, questions, and insights. Transcripts were not returned to participants for comment and/or correction out of consideration for their time and difficulty of reach.

2.2.1 Ethical Considerations

Participants were briefed on the study purpose, and consent forms were distributed and signed to ensure transparency and establish direct contact with the research team as needed. The study protocols were approved by the University of North Carolina at Chapel Hill's Institutional Review Board. Personal identifiers were removed from transcripts.

2.2.2 Data Processing and Analysis

Insights from analytic memos were categorized according to the principles of the chosen theoretical frameworks to develop a preliminary codebook. This draft was first applied to a single transcript, then revised for clarity and conciseness. The finalized codebook (see Figure 1) was applied to all transcripts by the first author, and a code summary report was generated using MAXQDA software.(43)

Emerging themes from the code summary report were compared between "successful" and "unsuccessful" participants, determined based on interviewee's expressed confidence in their ability to grow despite market pressures. System-wide diagrams (Appendix 2–4) were constructed using software-derived code co-occurrences, analytic memo insights, and code summary notes to illustrate positive and negative causal loops in the market. These diagrams and codes were participant-checked by the local expert to ensure that market strengths, weaknesses, opportunities,

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and adaptive strategies were accurately represented. Code frequencies and extracted quotes were tracked across transcripts to ensure equitable representation of participants.

2.2.3 Positionality

The first author, Julian Goldner, was a student in the Gillings School of Global Public Health's Department of Environmental Sciences and Engineering of Latin American descent fluent in Spanish, and may have been favorably positioned to build rapport with participants through his cultural and language overlap, as well as having been introduced to participants through a trusted local expert (although no relationship was established prior to study commencement). Prior to the study, the author had limited technical knowledge of organic farming, prompting participants to explain industry basics and practices in detail, although he did have experience in qualitative research and conducting interviews. As a foreigner unaffiliated with any competing firm or institution, the author may have gained candid insights from participants without fear of negative repercussions. The author presented as male, which facilitated access to the industry's male-dominated environment. The researcher communicated to interviewer participants that the study would not be used for commercial purposes, and that his motivation for the study was due to interest in continuing an academic career within sustainable food systems research.

2.3 Participant Characteristics

The interview sample (Table 2) consisted of eleven producers from the Canary Islands' organic sector, an amount chosen based on the sample sizes of comparable studies and the geographic, demographic, and strategic diversity of the sample.(44),(45),(46),(47) Participants ranged in age from 42 to 68 years, with 5 to 19 years of market experience; ten held bachelor's degrees, though only one in a field related to their profession. According to the success classification described in Section 2.3.2, four producers self-identified as "unsuccessful" and seven

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as "successful." Interviews were conducted across four of the seven main Canary Islands (Tenerife, Lanzarote, La Palma, and El Hierro).

Production size was determined by each producer's ability to supply large-scale industrial contracts sustainably and reliably. Large producers achieved high yields and maintained production stability; medium producers could achieve both but lacked sufficient resources and support; small producers faced significant challenges in yield and stability. The sample captures a diverse range of experiences, geographies, adaptation strategies, and production types, sufficient to reach data saturation.

Table 2. Participant Demographics

Participant ID	Gender	Time in Industry (years)	Production Size	Determined success
T1	Male	16	Small	No
T2	Male	6	Small	Yes
T3	Male	9	Small	Yes
T4	Female	19	Large	Yes
T5	Male	21	Large	Yes
T6	Male	13	Medium	Yes
T7	Male	14	Small	Yes
T8	Male	13	Medium	No
T9	Male	12	Medium	No
T10	Male/Female	13	Small	No
T11	Male	11	Medium	Yes

3. Results

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3.1 Difficulties of organic production in the Canary Islands

This section explores the most salient obstacles to the sustainable success of the organic market by identifying key system-wide challenges reported by producers.

3.1.1 Barriers in Production

A theme present among all participants was the lack of information and resources available to them as early market disruptors and innovators. All participants linked production difficulties with a lack of accessible technical information on organic production methods and insufficient institutional support. Participant T8 describes this challenge within the context of the initial transition to organic production: "*The change is […] dramatic. You need to relearn a new set of tricks that don't develop at the speed of your other bag of tricks*. *I mean I could add a fertilizer and change the outcome of a crop in conventional farming. But I can't do that in organic.*" Nine producers emphasized that, unlike conventional farming, local governments and networks did not provide theoretical, experiential, or institutional guidance.

In addition to lacking tangible information that could directly help production, the theme of industry-wide stigma around organic consumption, mainly by other conventional producers, was prevalent. All participants reported challenges associated with being early adopters of organic practices in a market with few social support nets, including costly mistakes, complex bureaucratic processes, financial risk, and social opposition. Participant T4 recalled: "*When I transitioned to organic agriculture […], I was called crazy. People said: 'That woman is going to ruin her husband's investments'*". Five producers highlighted that this social layer, in addition to the technical challenges of organic production, left them feeling more isolated and unsupported than their conventional counterparts. Producers felt the need to downplay their struggles to the

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consumer to protect an already damaged reputation, even during the widespread systemic stressors of the COVID-19 pandemic: *"I felt embarrassed to have to elevate prices that way. So, what did I do? I reduced my own profit margins, but I can't continue this way"* remarked participant T2. By being disruptors in the Canarian organic industry, producers faced the universal hardships of entrepreneurship while simultaneously deciphering the challenges of organic production in a stigmatized context.

In tandem with the perceived lack of social support, the theme of bureaucratic processes interfering with firm efficiency was present in all transcripts. Complying with EU organic regulations and quality standards similarly exhausted financial and human capital, resulting in producers that felt neglected by the same regulations they adhered to. Producer T11 stated: *"The support always gets lost along the way and the taxes are always greater than the alleged aids. […]. Our time is sparce and we need to comply with so many bureaucratic processes, so many unnecessary taxes. [...] Between processes and taxes, they have taken away the same amount of help that they have given."* Producers perceived that their obedient adherence to the extensive administrative processes of organic production should come with benefits that could incentivize and reward their compliance, instead they felt overlooked and insufficiently resourced.

Lacking the support they felt they needed, producers reported an inability to scale their operations and invest in the technologies, resources, and strategies that could potentially maximize production efficiency and ease. When discussing the frustration of being unable to scale, producer T8 said: *"We're really underfunded. We don't have the tools to be what we want to be. We don't have the tools to be great at our jobs. We're just getting by."* The greater efficiency that would come with costly technologies available to large-scale producers was not financially attainable for small-scale producers, and institutional aid was insufficiently able to reconcile this gap.

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This combination of insufficient institutional support systems and production expertise often led producer to rely on costly and inefficient trial-and-error processes, as noted by all participants. Participant T8 mentioned: "*I made a lot of mistakes that (I wish) someone would have told me 'We don't grow that this time of the year. We don't do this or we don't do that'. I reinvented the wheel so many times. [...] I don't feel like I've learned what is right. I've learned what is wrong. And I avoid that*." These inefficient and time-consuming processes added economic strains that siloed producers' limited resources and inhibited sustainable market entry and growth.

Additionally, high investment costs in raw materials, technology, and labor posed significant risks due to unpredictable production conditions and unstable demand. Small producers lacked the financial and technological resources to mitigate crop yield variations: *"The math is done, but as soon as you apply it on livestock or agriculture, it does not fit. And these blunders are not the same year by year, season by season. You need to rely on logic, practice, and experience to secure production, and you need to try them every year and in every moment",* mentioned T11. Only large producers with machinery, financial resources, and production teams could secure bigger contracts, leaving small producers vulnerable.

Long-term growth was similarly constrained, with participant T7 noting: *"We had to pray that the money we made was enough for a second planting and so on and so forth. [...] I mean, we're one bad crop away from going broke. Because we don't have a cushion."* High perceived risk from unpredictable markets led to farmers avoiding potentially beneficial investments, limiting growth and allowing conventional farms to preserve their competitive advantage.

3.1.2 Barriers in Consumption

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As previously discussed, consumers' negative perception of the organic market isolates producers and introduces added production strains. However, this same stigma also impacts consumption by resulting in inconsistent and insufficient demand.

Ten participants expressed that the local consumer base was generally biased against local organic consumption. Whether customers assumed markedly higher prices, unappealing flavor profiles, strictly vegetarian product offerings, or inferior quality, producers suffered the economic repercussions of this stigma. Producers blamed uncomprehensive organic product labeling and insufficient public awareness as explanations for the lower demand they faced, even when offering high-quality products.

Participant T3 explained: *"I remember the first three years when I opened my organic restaurant, people would say that it was food for sick people. That you should go to another place. Why? Because they did not understand the concept."* Participants T10 mentioned: *"People understand certain terms very well. They know what a vegan is, a vegetarian, but the term 'organic' is still hurt."* These excerpts highlight the role stigma has in reducing local demand in a population already impacted by the socioeconomic effects of geographical isolation.

Geographic isolation further restricts the potential consumer pool. Participant T8 explained: *"There's two million people that live in the Canary Islands, but they live in seven islands. And after those two million people, I don't have a single customer. My customers are an ocean away. [...] If I were in mainland Spain, I'd have access to 44 million customers [...] so there is a ceiling that can't be broken."* Every producer emphasized the need to educate both locals and tourists about the importance of supporting local consumption not only as a tool for achieving economic resiliency, but also in furthering the environmental and public health benefits of organic food systems.

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Although seasonal tourist influxes reportedly supported producers, reliance on tourists was neither sustainable nor reliable. Producer T10 stated: *"We still have a very high percentage of tourists that visit us more than locals. [...] We have a product offering centered on the value and quality of our product, but the tourists are still the ones that push us. They are our engine."* However, tourist support did not align with crop seasonality: "*(Tourists) leave to their country of origin, and the schools close as well. [...] So suddenly, you just do not know what to do with your merchandise. You can't have consistency",* remarked participant T2.

Despite the region's year-round tourist season, the typical Canary Island tourist is uninterested in organic consumption. Producers report that local governments support tourism focused on low-cost, all-inclusive packages that diminish visitors' interest in food system quality: *"Canary Islands is the King of the All-Inclusive. In the way that the person that comes here comes because their parents pay for everything, because it is one of the cheapest (places) in Europe",* said participant T10. This excerpt revealed how supporting a tourism model that prioritizes quantity over quality is incompatible with the sustainable growth parameters of the organic sector, and that opportunities exist for restructuring the tourism industry to better support its local producers.

However, difficulties with positioning organic products in mainstream markets was reported as a barrier for increasing consumption among both tourists and locals. Local organic consumption was reported by all participants both as insufficient and highly variable, meaning that small producers lacked large, recurring contracts that could guarantee financial stability. Small producers were instead forced to rely on their social networks to create their own commercialization routes, a time intensive and logistically cumbersome feat. The tedious nature of locating markets and developing professional relationships can be seen in the following extract

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by participant T9: *"I could not see the market. I had no access to see what was being demanded and when […]. I would find out two weeks later than everyone from someone who had found out what some store needed and would tell me […]. We would lose a lot of time and energy in the process."* Although helpful for keeping small producers afloat, reliance on social networks for direct-to-consumer sales was reported as an unsustainable and time-consuming strategy.

Even with increased demand, limited commercialization strategies and poor product placement restricted growth. Despite offering high product quality, all producers reported being outcompeted by conventional vendors that could afford multiple retail locations in highly-trafficked areas: *"when faced with this issue, people opt for a mall, for a large retail surface or a supermarket where there is sufficient parking",* remarked participant T11. Breaking into these spaces and markets was viewed as impossible since producers felt outcompeted and underfunded.

3.2 Market Assets and Adaptations

This section explores the market's characteristic assets and how producers have leveraged them to overcome challenges. Market strengths can be categorized by product qualities, commercialization strategies, and shared characteristics that support production team success.

3.2.1 Quality Product Offering

The Canary Islands' natural resources and climatologic conditions permit year-round production of high-quality organic goods that outcompete European counterparts in terms of freshness, taste, and uniqueness. Successful producers further capitalized on these conditions by pursuing niche value propositions that dramatically enhanced product quality and attracted consumption. Main strategies are outlined in Table 3.

Table 3. Strategies for Creating Added Value

Strategy	Definition	Examples

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Product Superiority	The process of perfecting each firm's primary products to ensure inimitability	*T1: "This product is first class worldwide."* *T2: "My offering has always been quality. […] There is always a niche in the market, a part of the public, that searches for and wants that superior quality."* *T3: "If you do something that goes slightly out of the ordinary, but you have a coherence and a quality and you go to a specific sector, people will search for it and value it."*
Circularity	Strategies of resource maximization that make firms as self-sufficient and environmentally-friendly as possible	*T7: "We had an issue with chicken waste, which we had to eliminate. We had two options: take it to a landfill, or implement it ourselves. And we found a way to capitalize on the waste and make compost."* *T4: "We make the products with what we have. Everything is our own."* *T10: "Everything is very artisanal. We make our own tomato paste, our own soy sauce, basically everything."*
Diversification	The strategy of identifying specific market needs to broaden market share	*T6: "The strategy was to have things that had never been in the Canary Islands. We did not have organic meat. So, we got organic meat. […] The success was in having all aspects of organic nutrition in one same spot. And what has happened is that people that are interested in organic, but also in waste free, vegan, or bulk consumption come to us."* *T9: "We plant around 70 products every year because I do not like just growing broccoli and living from broccoli, but also because in the end, I would not be able to survive off of one product."* *T4: "We have guided tours where we explain the banana harvest and then have a tasting on the farm's products. I also began preparing parts of the farm to host events. That way we complement production and balance out revenue"*

At the core of each quality-generating strategy was an effort to attract new consumers and reshape public perception of the organic market by countering stigma through image rebranding. Differentiating products through exceptional quality widened producers' consumer base, enabled flexible pricing strategies, and positioned offerings in the higher-end market segment.

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In addition to product excellence, six producers pursued direct market rebranding strategies. Daily business activities often emphasized quality assurance, including meticulous attention to cleanliness and presentation, aimed at positively surprising skeptical customers. Participant T11 noted: *"Ten years ago, organic products were associated with something bad. Something ugly. We would go to stores and organic products were all on the ground in cardboard boxes."* They added: *"We need our shop to be aesthetically pleasing […] because all producers want a place where their things are well-presented."*

Investing in image-building proved effective. Four producers reported that these efforts drew attention from third-party organizations, which publicized their businesses and expanded their consumer base. Many leveraged niche regional identities—such as Lanzarote's artisanal agriculture and endemic specie varieties—to enhance market visibility and profit.

Even without robust rebranding strategies, the exceptional product quality producers achieved consistently attracted and retained customers. Producer T1 noted: *"I took a costumer (some products) and she asked if there was a way that she could buy them for her store because 'it was egg that tasted like egg'. She said that the taste was unlike anything else they have consumed."* Such experiences were common across all participants, demonstrating that quality drove customer loyalty despite market pressures.

Regardless of price or inaccessibility, customers that understood the organic market's superior quality were willing to travel to purchase them, as shown in the following excerpt from T6:

> *"One day I got a call from a physical therapist in Lanzarote that wanted my meats so that their clients could heal better. I answered that it was impossible, […] we were in opposite extremes of the Canary Islands. But he said that if you want it, you can get it. He facilitated*

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some parts, some processes, I collaborated with others, and through this collaboration we were able to send the first meat shipments."

These loyal consumers contributed to the market's resilience by recognizing quality and building strong partnerships that supported continued growth.

3.2.2 Social Networks and Mutualistic Relationships

The Canary Islands' small size and geographic isolation facilitates the development of strong professional relationships among producers and stakeholders, enabling access to growth opportunities in production and consumption.

All producers reported that synergistic relationships minimized costs and improved profit margins. Informal networks between farmers, shops, and restaurants helped overcome logistical and financial barriers. Participant T1 described collaboration in supply importation: *"When I am going to import feed, I always talk with a partner. 'Do you need anything?' Even if it's not chicken feed, we can share a container's worth of things."* This example demonstrates the practical benefit of relationships in combatting production barriers related to geographic isolation and cost.

Additionally, ten of eleven producers highlighted the role of social networks in navigating production challenges, bureaucracy, and social stigma. Such connections provided informal mentorship, reducing trial-and-error and information gaps. Participant T9 explained: *"We have a deal that when I have strawberries and the season comes, I call him. The rest of the year we barely talk, unless somethings happens and we find ourselves in a tough spot. But he also knows a lot about agriculture and I can ask him things at any time."* This example shows how professional relationships generated informal sales contracts and connected producers with valuable information they might not have otherwise accessed.

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Despite its limitations, the small size of the Canary Island's organic market was also described as an asset because it provided the conditions for the development of empathetic professional relationships. Producers all reported a culture of cooperation, generosity, and support that at times helped combat greater logistical or financial burdens for the continued success of the market as a whole. Stakeholders were aware of the market's fragility, and understood that supporting each other through difficulties was mutually beneficial. Participant T9 mentioned: *"I have some clients that gave me a hand in the beginning. They realized that I was left alone, and they said 'let's help him out. Let's buy a few more things as well.' And I was able to begin producing more."* The industry's characteristic collaborative mindset was hence an asset that protected producers from market failures.

Additionally, relationships between organic producers provided critical motivation and strengthened persistence, helping producers overcome challenges. *"We have a strong sense of association that comes from fighting together against the enemies of organic agriculture",* noted participant T5. This quote not only highlights the emotional benefits of community-building, but also its potential in reducing social stigma and its associated downstream effects.

3.2.3 Human Capital

This section analyzes the ethical and behavioral traits, such as intrinsic motivation, leadership, and resourceful group dynamics, that successful producers exhibited.

All transcripts highlighted values-driven motivation. Producers described working extra hours, forgoing salaries, investing personal savings, and taking on debt to ensure both the success of their production and the positive impact it would generate in their local environments. Participant T1 stated: *"I'm here because of principle and because I like it. [...] At the end of the day, I work even if there is no benefit for myself. I like what I do. That is the motivation."*

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This drive reportedly contributed to success by motivating producers through market difficulties and the emotionally and financially burdensome trial-and-error process. Participant T1 stated:

"When you don't have someone to lean on, you need to learn yourself and build your own life a bit. And the mistakes? You pay out of pocket. But I think about the land. I'm like 'Oh, it's getting better.' It's getting better. This is going to be higher quality. [...] We're part of the land. We're part of that, we're integrated. We're not apart from it. We're not bypassing it. We're in it."

Time invested in the trial-and-error learning process thus encouraged a sense of responsibility and pride that solidified producers' drive for success.

Beyond strong work ethics, all producers expressed a sense of stewardship rooted in ancestral involvement in agriculture. Codes for 'personal sacrifice' and 'legacy' were closely linked, demonstrating a positive correlation between generational involvement and motivation. Participant T2 stated: *"I do this, and this is what my grandfather did, and my great grandfather. This is magic. [...] I always have had roots and a sense of responsibility towards the countryside because it has a big identity component and because I have seen it since I was little."* Legacy in farming provided practical assets like land and knowledge on resource maximization, but also intrinsic motivation needed to confront the difficult entrepreneurial environment.

This value-driven motivation extended beyond the individual, as seven producers felt like they had successfully instilled their own sense of motivation into their production teams, improving efficiency, problem-solving, and scalability. Building teams was crucial for production, as they provided manpower, facilitated scalability, and reduced uncertainty around generational transfer. Among the four 'unsuccessful' producers, insufficient teams were a key concern; among

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the seven 'successful', team efficiency was central to success. Producer T8 stated: *"It is clear that the first step is to have a good team. If not, you will not produce anything. This has taken me a lot of time to build."* Teams facilitated knowledge sharing, maintained quality, and countered social stigma by demonstrating the viability of organic production beyond just the individual.

3.3 Market Opportunities

This section identifies strategies producers use to overcome production and consumption barriers, highlighting avenues for sustainable solutions.

3.3.1 Institutional Guidance

Limited access to support systems elevated the inherent risks of farmer-entrepreneurship. Producer T1 noted: *"The costs are extremely elevated and when you're a small production, all manual, time goes by easily[...].You're very limited, and we simply don't have more time to spend."* Being spread so thin, producers demonstrated need for comprehensive technical and logistical support to alleviate operational strains and maximize efficiency. However, all producers criticized current agricultural institutions as deficient and bureaucratic. This sentiment is found in participant T6's quote:

> *"The place where I go for professional assessments is a small agricultural institution. But there are things that slip their mind because it's a new topic for them. They would come back and say that they had to do things differently, and change another thing, and I would end up learning with the punches as a result of stumbles that I know were not intentional but that still impacted me."*

Given their compliance with the strict regulations explored in section 1.1, all producers expressed a desire for governmental support systems that reciprocated the professionalism and effort they themselves were allocating.

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3.3.2 Financial Support

Nine producers reported feeling neglected by policies favoring conventional agriculture and foreign supply chains. The lack of subsidies and incentives for organic production was criticized by all 11 producers, and clearly exemplified in participant T8's statement: *"There's so much more about farming than farming. I feel like we don't get money for the things that we do outside of farming. I'm improving the soil and the ecosystem in my region… who's paying me for that? I'm making that part of the island better."* Producers advocated monetizing the positive externalities of organic farming through subsidies and consumer credits to increase financial capital and stabilize demand.

3.3.3 Cooperatives

The need for resilient production schedules, improved access to industry experts, and streamlined commercialization strategies was expressed by all producers: all opportunities potentially addressed through building and strengthening formal cooperatives. Participant T2 provides a diverse perspective as the only cooperative member, stating: *"Sometimes you view your neighbor as your greatest enemy. The (cooperative) has managed to break that stereotype. They help in everything, from digital management for who needs it to picking up merchandise and commercializing it at a standard price for everyone that is also competitive."* Formalizing the already existing social networks helped reduce logistical burdens, enhance market access, and coordinate production while decreasing individual risks.

3.3.4 Public Awareness

All producers emphasized the need to increase public awareness of the environmental, socioeconomic, and health benefits of organic consumption. Producer T3 explained:

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"It's important that people have the information to know what they are eating. And based on that, they can decide. If they want to continue consuming (conventional), or they can't consume (organic) for any reason whether economic, well... But do you know what you're eating? Are you conscious about it?"

Producers believed demand would rise once consumers fully recognized the superior quality and value of organic products, particularly given the loyalty of existing customers.

Table 4. Summary of the Strengths, Weaknesses, and Opportunities of the Canary Islands' Organic Farming Market and their Relation to Theoretical Frameworks.

	Themes	Subthemes	Theoretical Application	Examples from Data
Strengths	Quality Product Offering	Product Superiority, Circularity, Diversification, Image Rebranding, Customer Loyalty	Resource Rarity, Product Diversification, Capturing Value	*T10: "People come here looking for something of quality. (Our product) is good, and they do not care if it's organic or not. We just insist that it's an added value."*
	Social Networks and Mutualistic Relationships	Cost Reduction, Expert Guidance, Market Stability, Motivation	Market heterogeneity, Imperfect Resource Imitability	T11: "*We are a bridge between producer and consumer. It's a short bridge. In this way, the links and connections that we encourage among the network are truly vital."*
	Human Capital	Personal Sacrifice, Legacy, Team Building	Human Capital, Group Entrepreneurship	*T1: "The perseverance to stay in the same spot regardless how difficult it is. It does not matter if a boulder falls on me, but I will not let myself be flattened."*
Weaknesses	Barriers in Production	Information and Resource Gap, Social Stigma, Bureaucracy, Insufficient Support, Financial Risk, Market Unpredictability	Barriers to Farming-Entrepreneurship	*T6: "When something starts, the professionals aren't there or you're not professional yet because you don't have the knowledge."*
	Barriers in Consumption	Social Stigma, Limited Consumer Base, Mass	Barriers to Farming-Entrepreneurship	T1: "*There's a certain customer that buys organic. And that's it. So, we need*

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		Tourism, Decentralized Demand, Inaccessibility		*more customers. There's just not enough."*
Opportunities	Institutional Guidance	N/A (market opportunities directly stated by by participants)	Broadening Management Skills	*T8: "We don't have the tools to be what we want to be. We don't have the tools to be great at our jobs. We're just getting by."*
	Financial Support	N/A (market opportunities directly stated by by participants)	Impact of Technology	*T10: "After ten years, which is a long time for a business here, there is no certainty or security and that makes it so that you don't take risks or take the next step to invest in something that could be beneficial."*
	Cooperatives	N/A (market opportunities directly stated by by participants)	Long-term planification	*T6: "If one or two of your strong clients fail, you might as well dedicate your time to something else. […] If they fall, we're going with them. The reality is the reality, we depend on each other."*
	Public Awareness	N/A (market opportunities directly stated by by participants)	Market Access	*T7: "We have sensed a rise in awareness over the environment and in nutrition, but this has not yet been transformed into informed consumption."*

4. Discussion

The Canary Islands' organic market relies on the characteristically high quality of its product offering, a strong collaboration between market stakeholders, and producers' robust dedication to the social and environmental benefits of organic production as strategies to overcome significant challenges. These tactics may be contextualized under Barney's theory as tangible examples of exploiting imperfect resource inimitability and resource rarity to secure competitive advantages, hence demonstrating the applicability of his framework to this study's results. Similarly, although the geographic isolation, regulatory and governmental neglect, unsustainable tourism industry, and social stigma against the Canary Islands' organic sector are unique obstacles

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the market faces, the consumption and production barriers are consistent with those challenges that farmer-entrepreneurs generally experience according to Kahan's framework.

4.1 Implications of Findings

The following sections explore evidence-based tactics that have been employed across other European organic markets, tailored specifically to the opportunities extracted from this study's sample.

4.1.1 Tourism Reform: Capitalizing on Opportunity for Public Awareness and Institutional Guidance

Given the market's characteristic strengths, this study highlights the potential the Canary Islands has in becoming a global example of a locally-sourced, self-sufficient, high-quality food economy. To make this a reality, value must be collectively placed on the region's natural resources and local communities.(24) Reducing the region's backing of unsustainable, low-quality supply chains destined for tourist consumption is a first step in this process, as expressed by the sample's criticism of the tourism sector and its desire for greater institutional support, public awareness, and stable demand.

Reducing reliance on mass tourism and reimagining the industry to benefit local production may help increase demand for high-quality organic products, evidenced by the growing support towards sustainable tourism models in recent Canarian tourist data. (48) 34.6% of surveyed tourists demand pristine natural environments, 26.9% prioritize quality gastronomical offerings, and access to local products was recognized as a top priority.(48) Likewise, 59.1% of surveyed tourists are willing to increase spending to minimize environmental impacts.(48) The United Nation's sustainable food procurement guidelines similarly encourage the development of locally-

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sourced supply chains to help address organic markets' need for greater demand while still benefiting tourism industries.(49)

The Canary Islands would not be the first highly-frequented tourist destination to emphasize sustainable food system development. Prioritizing environmental protection, cultural heritage, and local supply chains has been shown to increase willingness-to-pay among tourists in Hawaii, and 76% of travelers worldwide are increasingly prioritizing sustainability when choosing destinations.(50,51) In Lanzarote, marketing campaigns that emphasize cultural preservation, low-emission transportation, and local consumption has led to its recognition as a Responsible Tourism Biosphere, becoming the third most visited Canary Island.(52) These reforms benefited local organic production by incentivizing demand and stimulating the creation of a successful cooperative that coordinates commercialization, guarantees fair pricing, and provides expert insights.(53),(48)

Centering local, organic producers in the tourism industry's procurement strategy could help address the sample's stated need for stable, high-volume demand while capitalizing on the opportunity for greater public awareness. As organic producers become larger stakeholders in the tourist offering, the sample's expressed need greater institutional support could also be addressed given tourism is already an economic priority for island leadership.(26)

4.1.2 Subsidies and Strategic Partnerships: Addressing need for Cooperatives, Institutional Guidance, and Financial Support

As emphasized by all participants, greater assistance from government institutions and formal organizations is crucial for providing producers with the financial, technological, and logistical support needed to overcome production and consumption barriers.

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Restructuring the current agricultural subsidy system has the potential to stimulate both organic production and consumption. Reducing subsidies for the conventional market alone would force their prices to more accurately reflect their production cost and make them comparable to (if not more expensive than) organic products.(54) Additionally, introducing organic subsidies for farmers would facilitate access to capital, machinery, and essential production technologies (such as water and soil sensors), allowing producers to scale efficiently and increase margins.(55) Similarly, studies reveal that subsidies for organic retailers helps encourage social responsibility in consumption while stimulating organic producers through significantly increased demand.(56),(57)

Expanding public-sector investments in the organic market may address the stated need for greater demand and help ease production instability. EcoComedores is an initiative funded by the Canarian Institute for Agri-food Quality that aims to secure a minimum percentage of organic products in government-contracted food systems.(58) Expanding these programs, as exhibited in other EU countries, could reduce fluctuation in demand and provide producers with lucrative long-term contracts.(59) Additionally, these partnerships educate younger generations on the socioeconomic and environmental benefits of organic consumption, addressing the sample's stated need for increased public awareness.(58) Green procurement may also involve compensating producers that hire farmworkers from marginalized communities, expanding the social impact of organic farming while securing the valuable production teams on which this sample emphasized relying.(60),(61) Promising first programs of the type in La Palma island see local governments benefiting from poverty reduction and reduced welfare spending, allowing funds to be destined towards the development of socially-beneficial organic farms.(61)

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Addressing the information gap in organic production and the desire for increased expert guidance, the Canarian government must encourage the creation of mentorship programs that facilitate producer access to technical expertise. Enabling personalized consulting and assistance for both new and existing producers could help navigate bureaucratic processes, maximize production efficiency, mitigate risk, and reduce industry production barriers as seen in similar programs.(62,63) The small size and social-interconnectedness of the Canarian organic market may expedite access to personalized attention by more easily connecting producers with well-trained advisors. Although current producers had limited institutional support themselves, their accumulated expertise makes them invaluable advising candidates for the producers of the future.

4.1.3 Expanded Marketing: Increasing Public Awareness by Communicating Market Strengths

Governmental institutions must also prioritize the creation of environmental public health marketing campaigns, as successful green marketing techniques have shown to stimulate sustainable food system development and organic sector consumption.(64),(65) Prioritizing more efficient messaging may support the Canarian organic market specifically by attracting more consumers with the characteristic high loyalty profile demonstrated in the sample.

While the effort for increasing environmentally conscious consumption develops, communicating product quality in terms of *taste* may similarly garner demand. Organic-sector consumers consistently respond positively to taste-based marketing campaigns, and the observed appreciation of product quality in the Canarian market suggests similar success.(66) Additionally, the sociological profile explored in section 1.2 reiterates that Canarian populations exhibit a distinctively high affinity to taste-based consumption patterns: a characteristic the organic sector may capitalize on with its superior product quality.(29)

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Further sociological analysis suggests that leveraging the islands' long-standing agricultural history may similarly increase consumption. Highlighting the agricultural roots of modern Canarian culture and communicating that organic production methods are not a novelty, but an institution, can appeal to Canarian patriotism and identity.(67),(30) Psychologist Manuel Alemán explains that emphasizing the existence of experientially-sensed elements unique to the islands helps develop a sense of 'canariety' that is central to Canarian culture.(30) In fact, the Canarian banana industry relies on 'canariety' by marketing its conventionally-grown bananas as 'the taste of the Canary Islands', successfully positioning itself as a leader in Spanish produce sales.(68) Adopting a similar approach may thus prove beneficial for the organic sector.

Similarly, generating perceived intimacy between producers and consumers by highlighting producers' stories and personal experiences may increase customers' willingness to pay.(69) Given producers' reiterated emphasis on social networks as a vehicle for securing consumer loyalty, personalizing organic sector products in marketing would encourage greater interconnectedness and consumption. Generating reports that quantify organic sector positive impacts and conventional sector detriments may similarly sway consumption and support.(65)

4.2 Limitations and Further Research

Although this study's sample extended to four of seven main islands, a majority of producers were based on Tenerife. Future studies could increase sample size and standardize participant amounts per island to allow for greater result transferability.

The concept of social stigma was prevalent across transcripts and a main focus of analysis and discussion in this paper. However, the sociological and ethnographic sources on Canarian culture used may be outdated and inaccurately capture modern phenomena. To explore stigma in

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future studies, researchers should focus on a specific age group and tailor ethnographic research to fit the chosen demographic.

Although the chosen sample size reflected a variety of production types, locations, farm sizes, and success levels, future studies would benefit from increased demographic diversity in age and gender. Likewise, interviewing producers who exited the industry would provide valuable insights on market pressures. Including conventional producers as control variables would broaden market understanding and potentially generate opportunities for collaboration and growth. Similarly, expanding the sample to include more members of formal cooperatives could provide insights on potential benefits of cooperative implementation.

4.3 Conclusions

The geographical isolation, heightened entrance difficulties, and insufficient demand present in the Canary Islands' organic farming market are key challenges that limit the industry's growth. Producers employ strategies of resource maximization and diversification to offer their products to niche markets that are willing to overcome price and accessibility barriers because of their appreciation of the products' greater added value. Communicating the value of organic products to greater populations, generating institutional support for the industry, and building a regional identity around sustainability hence become powerful tools in supporting small-scale organic producers and ensuring their longevity and growth.

This study is significant because it is the first of its kind in the Canary Islands. Despite quantitative studies on soil quality, growing conditions, and nutrient profiles of organic products in the archipelago, there have been no other qualitative approaches that attempt to assess the strengths, weaknesses, and opportunities of the market as a whole. Encouraging this type of

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research is essential to stimulate communication between producers and policymakers that can deliver tailored support for the struggling market.

Despite the limitations stemming from this study's sampling strategy, the results and discussion provide an important framework discussing the market's challenges and potential on a microeconomic scale. Further research should assess the efficiency of potential policy implementations that tackle the weaknesses revealed through this analysis and capitalize on the market's characteristic strengths.

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