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Slow Food and circularity:  
the transformative keys to new sustainable  
tourism in Italy?

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## Introduction

According to many, Italy could be defined as “the country of gastronomy”. It is intertwined with our DNA, it plays a massive role in our culture, and we experience it daily. Regional cuisines merge together shaping core societal values such as conviviality, family traditions, and hospitality. If these aspects – deeply rooted in our minds – are able to strike a chord in almost every Italian, they can be even more fascinating and exciting for tourists, to the point of becoming one of the main reasons to visit our country.

Indeed, the concept of *food tourism* is acknowledged worldwide, interpreting the culinary experience as a purpose of tourism. In this wide scenario, the restaurant industry must be considered as a central actor, and understanding its role is imperative.

Not only the industry's role must be investigated in order to better appreciate its positive outcomes within the tourism sector, but even more to analyze its drawbacks and identify new possibilities for improving its sustainability. Undoubtedly, being tourism one of the major revenue sources in Italy, we must consider all its impacts, including the negative ones: many sustainability issues arose both outside and within the sector in recent years, especially due to a new awareness among consumers. In this context, the restaurant industry has the responsibility to face many challenges to improve its influence on food tourism.

However, these very challenges encompass numerous opportunities, among which the shift towards a circular economy. The potentiality of this change must be explored, as to date it has been overlooked. In the Italian framework, where eno-gastronomy plays a substantial role in everyday life, and where the

Slow Food reality has bloomed, the combination of both Slow Food Travel and circularity applied to the restaurant industry could prove to be powerful in tackling sustainability issues. This exploratory thesis wants to investigate this direction.

This study develops in the Italian context and culture with the aim to answer the following research question: how can circularity applied to the restaurant industry improve food tourism sustainability?

The first part of this inquiry verifies *if* circularity can actually improve food tourism sustainability through an extensive literature review, then the second part elaborates on *how* this can happen through the application of the "3 C's of the circular economy of food" framework to the sustainability certifications and acknowledgements that restaurants can obtain.

The literature review helps defining circularity within the restaurant industry, considering the Slow Food dimension and the characteristics of these activities, and verifying their effective compatibility. Moving on to the second part of this thesis, the research extends to the international context only to show an example of circular restaurant from Finland but then stays on a national dimension, examining sustainability certifications that are related to the restaurant industry and measuring both awareness of sustainability matters and innovation towards circularity in Italy, through the qualitative analysis of an interview with chef Igles Corelli, expert in the field of circular cooking.

In the third section of this study, the methodology is further explained, subsequently, in the fourth section, results are shown and described. The proper discussion follows in chapter five. Chapter six focuses on the limitations of this work and then the conclusions, in chapter seven, also provide some recommendations for future research.

## **Tourism, food, and sustainability: state-of-the-art and opportunities**

Almost every human being experiences at least once in their life tourism. The willingness to discover the unknown, to meet new people and cultures, to explore new landscapes, the need to reach very important job meetings or events, or just to relax and take some time for us, lead us to travel. Each of us could give a personal definition of tourism, depending on the meaning we give to it.

However, since a complete – and general, impersonal – definition is needed, the United Nations World Tourism Organization states that “Tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes” (UNWTO).

The tourism industry is known for being one of the most resilient industries worldwide. After nine years of constant growth and a sharp 50.4% fall during the Covid-19 pandemic in 2020, it has already recovered by 21.7% in 2021 (World Travel and Tourism Council, 2022). The industry growth is set to increase even more at a rate around 5.5% in the next decade, outperforming the growth of the overall economy that will settle on less than a 3% annual rate (World Travel and Tourism Council, 2022).

Being one of the largest and fastest-growing industries in the world, it is a significant source of income for many countries, supporting 1 in 11 jobs across the entire economy (World Travel and Tourism Council, 2022). Tourism has been subject to investment by several governments, correctly considering it as a *socio-economic development driver* (Fusco Girard & Nocca, 2017).

Nevertheless, with its linear configuration, the tourism sector also has a weighty impact on the environment, contributing to its degradation with 8% of global CO<sub>2</sub> emissions (Martinez-Cabrera & López-del-Pino, 2021). Even if these impacts are negative to date, the very fact that tourism impacts on the environment means that it equally has the power to positively influence it. In fact, as Fusco Girard and Nocca suggest, the tourism industry – “strictly depending on the presence of environments, cultures and communities” (Fusco Girard & Nocca, 2017) – is able to connect the four dimensions of sustainability (economic, social, cultural, and environmental) and it can contribute to their reciprocal enhancement.

In the last few years, consumers have become more and more aware about environmental threats, and they search for sustainable practices in all areas (The Economist Intelligence Unit, 2021). This demand for sustainability cannot be overlooked by the tourism sector. Therefore, Fusté-Forné and Jamal underline the importance, both for destinations and service providers, “to strive toward being carbon neutral in a circular economy that conserves land and resources” (Fusté-Forné & Jamal, 2020).

## **Circular economy and tourism**

As anticipated and also re-stated by other researchers, there is a growing interest in the concept of circular economy within the tourism industry, despite the complexity of its implementation (Jones & Wynn, 2019). Circular principles correctly applied to tourism can be drivers for an acceleration of the entire industry, engaging stakeholders in a more sustainable experience (Van Rheede, 2012).

Before moving on to the application of circularity to tourism, a brief explanation of the circular principles is required. According to the Ellen MacArthur Foundation, "a circular economy is a systemic approach to economic development designed to benefit businesses, society, and the environment", it is characterized by the fact of being *regenerative*, therefore eliminating the concept of waste that imbues the linear model (Ellen MacArthur Foundation). This framework has not only the goal to keep products and materials in use, but even more ambitiously to actively improve the environment rather than just protect it (Ellen MacArthur Foundation).

The shift toward a circular economy is among the EU priorities nowadays, especially considering the unbearable limitation of the linear model that never focuses on eliminating the negative aspects of its production systems (Kiss, Ruskai, & Takács-György, 2019). In recent years, many intergovernmental organizations have committed in formulating sustainable production and consumption policies, encouraging the adoption of circular models (Camilleri, 2021). This huge change is of the utmost importance in order to tackle the climate change planetary issues we are currently facing (Fusté-Forné & Jamal, 2020). Indeed, the opportunities offered by this paradigm shift are numerous and vital: above all, it has the potential to answer to every and each individual's needs while



protecting the planet on which we all live and depend (Martinez-Cabrera & López-del-Pino, 2021).

Despite all the interest that emerges from the work of the different authors cited thus far, as specified by Arzourmanidis et al. "the concept of circular tourism has been poorly analyzed until now" (Arzoumanidis, Walker, Petti, & Raggi, 2021). This happens also because it must be recognized that very often, in the context of corporate social responsibility and sustainable practices, the strategies adopted "are still supporting the linear production system, only stretching the line" (Vargas-Sánchez, 2018).

Yet, there is wide space for the application of circular principles to the tourism and hospitality sector, as also highlighted by Jones and Wynn that mentioned possibilities regarding water and waste management and energy monitoring (Jones & Wynn, 2019). Moreover, Camilleri stresses the inescapable opportunity for hospitality and food and beverage businesses to "forge closer relationships with their suppliers, including farmers and other retailers, to implement responsible inventory management systems and just-in-time purchasing" (Camilleri, 2021). Besides, the same author emphasizes the need to promote the circular economy's closed loop systems through different marketing channels to spread the awareness on how to generate less (or zero!) waste and therefore engage others toward the same goal.

As perfectly described by Martinez-Cabrera and López-del-Pino too, summarizing the view of different scholars, "if the tourism industry wants to prosper in this new economic paradigm where nothing is waste, it is important that the whole tourism value chain adapts to this disruption by jointly collaborating" (Martinez-Cabrera & López-del-Pino, 2021). According to Julião et al., the entire

industry is ready to take steps in this direction (Julião, Gaspar, Tjahjono, & Rocha, 2018).

Since there is still a gap in the academic literature concerning the tourism industry's circular innovations, as pointed out by different scholars such as Camilleri, Martinez-Cabrera, López-del-Pino and Vergas-Sánchez, this study will focus on the application of circularity to the industry, analyzing in particular the food and beverage sector to narrow down the nascent field of circular tourism and better identify its challenges and potentialities in Italy. In fact, as suggested by Jones and Wynn, it might be useful to concentrate on how specific companies or sectors within the industry embrace circular economy (Jones & Wynn, 2019). In this sense, also taking into account the relevance of food tourism on a national scale, the restaurant industry has been chosen as subject of study in this thesis.

## **Food tourism**

Food (or gastronomy) tourism has become so significant within the tourism system that it has dedicated policies, industry strategies and reports (De Jong, et al., 2018) such as the UNWTO Global Report on Gastronomy Tourism and the UNWTO Guidelines for the Development of Gastronomy Tourism.

This kind of tourism could be defined as "visitation to primary and secondary food producers, food festivals, restaurants and specific locations for which food tasting and/or experiencing the attributes of specialist food production region are the primary motivating factor for travel" (Ellis, Park, Kim, & Yeoman, 2018).

Likewise, Pagliuca and Rosciano agree on the fact that people often travel to a specific destination in order to experience the local cuisine and suggest that food is an impactful element in increasing the quality of the tourist experience,

therefore influencing both revisit intentions and recommendation to others (Pagliuca & Rosciano, 2015).

According to Dhora and Dionizi, "one of the most essential elements in the relationship between food, tourism and local development is the sector of restaurants" (Dhora & Dionizi, 2014). Going to restaurants and experiencing local cuisine is a fundamental part of the tourist's stay (Etcheverria, 2020). The study conducted by Fusté-Forné and Jamal shows that gastronomy influences eight out of ten visitors in their choice of a destination (Fusté-Forné & Jamal, 2020). Since consumers are more willing to spend their money in sustainable restaurants (Julião, Gaspar, Tjahjono, & Rocha, 2018), due to the spread of awareness concerning climate change in recent years, "green practices are becoming a trend" in the restaurant industry (Julião, Gaspar, Tjahjono, & Rocha, 2018). What strikes is that restaurants and tourism not only are complementary, but they are "mutually reinforcing" (Etcheverria, 2020). Therefore, consistently with Bertella and Vidmar, it can be argued that food is a key vehicle for change and food tourism "can be a valuable context" (Bertella & Vidmar, 2019) for the debate about sustainability and the implementation of viewpoints and plans to face the global climate change food-related challenges.

Additionally, along the lines of what has been discussed thus far, the analysis conducted by Pagliuca and Rosciano demonstrates that "in Italy tourism can be used as a driver for food such as food can be used as a lever for tourism" (Pagliuca & Rosciano, 2015), paving the way for a deeper gaze on the opportunities that arise from a circular economy of food.

## **Circular economy of food**

Nowadays, food systems are responsible for around one-third of the world's greenhouse gas emissions, consume a significant amount of natural resources, and destroy biodiversity (Camilleri, 2021). Eating habits in developed economies can generate greenhouse gas emissions by up to 28%, boosted by factors such as population growth, inefficient use and distribution of food resources, and high levels of food waste (Kiss, Ruzskai, & Takács-György, 2019). Operations involving food and beverage will unavoidably continue to produce waste, which may or may not have a negative impact on the environment and the long-term viability of biospheres (Camilleri, 2021), depending on waste management and the possibilities of reuse and recycle.

Since, according to United Nations climate reports, climate change continues to be the most important factor influencing the future of tourism and global sustainability in the 21st century (Fusté-Forné & Jamal, 2020), action is no longer deferrable. Indeed, both the United Nations and other intergovernmental organizations are studying the issues related to food waste and waste management, elaborating common strategies to tackle this matter (Kiss, Ruzskai, & Takács-György, 2019).

Among the possible solutions explored, one of the most challenging but – at the same time – promising, yet new and still to be completely discovered and implemented, is a circular economy of food. Increasing circular approach could prove to be very helpful in sustainable development, including better waste management, increased use of renewable energy sources, and improved building energy and water efficiency (Jones & Wynn, 2019). Reducing losses, waste, and unnecessary environmental harm caused by the food chains is indeed a way to

grasp how the circular economy concept applies to the food systems (Kiss, Ruskai, & Takács-György, 2019). In applying circular principles to food chains, different levels of production and consumption are affected, and imply food reuse, nutrient recycling, and the promotion of more diversified and efficient dietary patterns (Kiss, Ruskai, & Takács-György, 2019).

The tourism sector has a crucial role to play in the transition from the conventional, linear economy to a circular one because of its multiplier effect on the entire economy, which highlights its ability to promote circular flows in its suppliers and customers (Vargas-Sánchez, 2018). According to what emerged so far, "undoubtedly, food management is one of the fields where there is more room for improvement" (Vargas-Sánchez, 2018).

Camilleri offers us a series of actions that can be towards a circular restaurant industry, such as the establishment of flexible arrangements with local suppliers, but also having less items on their menus and using edible food products that are close to expire and re-use leftovers from cooking to make new products (Camilleri, 2021). Another non neglectable use of food waste is high quality compost for trees and plants (Camilleri, 2021), that can therefore positively impact the environment and give back what has been taken from it.

All these practices are already in use in some food contexts, that is the case of a Finnish restaurant that will be presented in the next sub-section of this work.

### ***A case from Finland: Nolla restaurant***

Nolla, which in Finnish means "zero", is a unique restaurant located in Helsinki, Finland, that operates with a zero-waste philosophy and is entirely plant-based. The owners are determined to offer healthy, in-season food while making sure that all facets of the business embody sustainability since it opened in March 2018 (Nolla, 2018). The initiatives taken in this direction are many, such as:

1. Implementation of a zero-waste philosophy: this means that they aim to produce no waste at all. This is achieved by avoiding single-use packaging, composting all food waste, and using biodegradable materials (Lucifero, 2020).
2. Plant-based menu: Nolla offers an entirely plant-based menu, reducing the impact of meat production on the environment. Plant-based diets have been shown to have a lower carbon footprint compared to diets that include meat (The Economist, 2019).
3. Local and seasonal sourcing: Nolla sources ingredients locally and seasonally, reducing the carbon footprint of transportation and supporting the local economy (Li, et al., 2022). This also ensures that the ingredients used in their dishes are fresh and of the highest quality.
4. Composting: Nolla composts all food waste (Nolla, 2018), reducing the amount of waste sent to landfills and promoting the creation of nutrient-rich soil. Furthermore, by giving their suppliers this composted soil to return to their fields in exchange for their excellent ingredients, they are able to close the loop (Nolla, 2018).
5. Biodegradable materials: Nolla uses biodegradable materials in their operations, reducing their impact on the environment and promoting a

circular economy (Noto, 2021). The furniture, the staff uniforms, and the utensils are all made from recycled or reusable materials, following the reuse and repurpose circular principles.

What makes Nolla really stand out is their full application of the 5 R's of sustainability in their business. When it comes to food and beverage, the 5 R's stand for (Michelin Guide, 2021):

1. Refuse to purchase or use products that are not sustainable or have a negative impact on the environment. In other words, this means choosing local products, cultivating close relationships with the nearest farmers and promoting small businesses (Michelin Guide, 2021). Also, eliminating single-use packaging, plastic containers and supporting the use of reusable water bottles, as well as allowing the consumption of drinks on tap at bars and restaurants, are all practices that oppose to the linear model and enhance sustainability (Michelin Guide, 2021).
2. Reduce the amount of waste generated by decreasing the use of resources, such as energy and materials. This implies drastically reducing, until eliminating, the amount of ingredients or leftovers thrown away (Michelin Guide, 2021). Finding ways to use the entirety of the products while cooking and controlling portions, avoiding excesses, are the recommendation in this sense (Michelin Guide, 2021).
3. Reuse products and materials as many times as possible to extend their useful life and reduce waste. Even if this may seem costly at the beginning, investments in reusable items are worth their price in the long run and reveal themselves far more sustainable than disposable ones (Michelin Guide, 2021). These include, for example, metal straws instead

of plastic ones, beeswax instead of sandwich bags, reusable bottles and cups, as well as fabric tablecloth instead of paper ones.

4. Repurpose, that means giving a new destination to used items (Michelin Guide, 2021). It is the process of turning food waste or by-products into new, higher-value products. For example, fabric from tablecloth can be used to craft work uniforms and kitchen aprons.
5. Recycle materials that cannot be reused to turn them into new products, preserving resources and reducing waste. This is actually the final option of the entire chain and it is made possible by using recyclable materials at the beginning, so that once they are disposed, they can be transformed in something useful again (Michelin Guide, 2021).

Indeed, "Refuse, reduce, reuse, repurpose and, only as the last option, recycle" is Nolla's approach to every aspect of their activity (Lucifero, 2020), making them an encouraging example of sustainable restaurant and demonstrating how to succeed by offering a top-notch eating experience while pursuing zero waste through circular principles (Noto, 2021).

## **Is food circular tourism an option? The Slow Food Tourism opportunity in Italy**

The concept of food tourism, assumed as "a sensory and cultural experience" (Bertella & Vidmar, 2019), is frequently linked with the authenticity of a place (Bertella & Vidmar, 2019). Food heritage is able to preserve regional identities and enriches the authentic experience of a destination (Ellis, Park, Kim, & Yeoman, 2018). In this search for authenticity, locality often expresses also the



sustainability of tourism, underlining the importance of food producers and suppliers, leading to regional food tourism through the creation of regional products (Ellis, Park, Kim, & Yeoman, 2018).

Indeed, the connection between food and tourism promotes local economic development while supporting the local culture and food chains play an astonishing multiplier effect of opportunities for all places (Pagliuca & Rosciano, 2015). For this positive mechanism to work, it is of the uttermost importance for both local communities and their governments to valorize “the specific vocations of their territory” (Pagliuca & Rosciano, 2015).

In line with the aim of protecting regional identities and preserving local products, and against the “McDonaldization” of everyday life (Ellis, Park, Kim, & Yeoman, 2018), in 1986, Carlo Petrini initiated the Slow Food movement in Italy (Fusté-Forné & Jamal, 2020). The principles of this movement promote “locally sourced ingredients, traditional recipes and taking time to source, prepare and enjoy food” (Dickinson & Lumsdon, 2010, p. 80) and support the protection of the environment, contrast fast food and fast lifestyles and also safeguard fair labor and work practices (Andrews, 2008).

Over the years, the philosophy of the Slow Food movement has been embraced by many, generating a new category of tourists, that is slow food tourists. They see the urgency of moving away from unsustainable industrial farming and its neoliberal ethic in favor of a healthier, more mindful lifestyle that takes care of the natural systems and places that nourish the planet's population (Fusté-Forné & Jamal, 2020).

The presence of these conscious and aware tourists, along with the global dimension reached by the Slow Food movement nowadays, constitute fertile

ground for the continuous improvement of sustainability practices in the tourism field. According to Fusté-Forné and Jamal, we can state that Slow Food Tourism is a significant microtrend to reclaim the local and address the climate crisis because of its capacity to support healthy ecosystems, cultural heritage, and local livelihoods while countering hegemonic neoliberal forces and industrial agribusiness (Fusté-Forné & Jamal, 2020).

Given the interesting framework that emerges from this far-reaching literature review, and also considering that De Jong et al. stated that "gastronomy tourism research is too narrow in its conceptualization" (De Jong, et al., 2018) and this aspect limits the understanding of what it actually is and what its effects may be (De Jong, et al., 2018), the aim of this thesis is to contribute to the investigation of the potentialities of the new combination of Slow Food Tourism and circular economy to enhance the sustainability of food tourism through the restaurant industry.

## **Methodology**

Due to the novelty of the phenomenon under investigation, that is, the joint application of circular economy principles and Slow Food's philosophy to the restaurant industry in Italy, the approach chosen for this thesis is an exploratory case studies' comparative analysis, as this is appropriate when describing new multifaceted phenomena (Elo & Kyngäs, 2008). More specifically, three different sustainability certifications within the restaurant industry have been taken into account, analyzed and compared. These are the Slow Food Chef's Alliance requirements, the Michelin Guide's Green Star, and the Bureau Veritas' Food Loss

and Waste Management Protocol. The reason for this comparison lies in the common aim that these sustainability acknowledgements share, which is spreading and certifying the sustainable practices put in place in the restaurant industry.

Indeed, the certifications have been examined in terms of purpose and criteria, allowing the identification of common principles and differences. Their focus on specific sustainability issues has been investigated with the help of the 3 C's of the Circular Economy for Food framework, through which a set of categories for the different organizations' requirements has been recognized, enabling the analysis. Moreover, the application of the framework allowed to effectively identify circular practices within the restaurant industry.

The analysis has been conducted through the triangulation of both primary and secondary data, increasing the validity and reliability of research findings by cross-checking information from different sources and enabling a broader and nuanced understanding of the research problem by capturing its complexity and variability (Decrop, 1999; Flick, von Kardorff, & Steinke, 2004).

This study focuses on food tourism, exploring the possibilities offered by the prosperous Slow Food scenario and circular economy principles to tackle the sustainability issues related to the sector.

Slow Food tourism has been recognized as a powerful generator of opportunities for the entire gastronomy tourism sector (Fusté-Forné & Jamal, 2020), allowing to offer authentic experiences while respecting regional identities and the environment in which these identities are created, developed, shared, and maintained.

## **Context and setting**

Slow Food is a global, grassroots organization, founded in 1986 to avoid the decimation of regional food cultures and traditions, combat the advent of the fast life, and fight the decline in interest in the food we eat, where it comes from, and how our food habits impact the environment (Slow Food Foundation, 2015). Since its origin, Slow Food has expanded into a worldwide movement with millions of supporters in more than 160 nations, aiming to guarantee that everyone has access to "good, clean and fair" food (Slow Food Foundation, 2015). According to the Foundation, there are several ties between food and other facets of life, such as politics, agriculture, culture, and the environment.

The birthplace of the movement, Bra, Italy, is home to the Slow Food international headquarters. The association oversees and supports the growth and expansion of the network and launches initiatives from there. The organization is managed by an Executive Committee under the direction of an International Council and the president of Slow Food is Carlo Petrini, who started the movement in the 1980s (Slow Food Foundation, 2015).

Among the entities that the Foundation has established to realize all its project, the Slow Food Foundation for Biodiversity is the one founded to support missions that preserve food biodiversity and traditions (Slow Food Foundation). These efforts are proven also by the terminology often used by the Foundation concerning gastronomy, which is "eco-gastronomy", recognizing the "the strong connections between plate and planet, and the fact that our food choices have a major impact on the health of the environment and society" (Slow Food Foundation, 2015).

As previously anticipated, circular economy is a systemic approach to economic development that aims to eliminate waste and create a closed-loop system where materials are kept in use for as long as possible (Ellen MacArthur Foundation). The circular economy model is based on the principles of reducing, reusing, and recycling materials, where waste is seen as a valuable resource, and products are designed with the end of their life in mind, to be easily disassembled, repaired, refurbished, or recycled (Ellen MacArthur Foundation). The goal of the circular economy is therefore to minimize waste, reduce resource consumption, and create a more sustainable future.

Hence, Slow Food and Circular Economy share many common goals, including reducing waste, promoting sustainable agriculture, and supporting local food systems. By advocating for food that is good, clean, and fair, Slow Food contributes to the circular economy by promoting sustainable food systems that minimize waste and promote the use of resources in a closed-loop system.

In this context, sustainability certifications are acknowledgements that are given to products, businesses, or organizations that meet certain environmental, social, and ethical standards. These certifications aim to provide consumers with information about the sustainability of a product or service and to encourage companies to adopt more sustainable practices (Curtis & Slocum, 2016). A comparative analysis of sustainability certifications can be useful in investigating circular economy opportunities in the Slow Food restaurant industry for several reasons:

1. It helps understanding the principles and practices of the circular economy and how they are being implemented in the restaurant industry;

2. It allows to analyze market trends and make hypotheses on their trajectory;
3. It enables the identification of best practices.

The certifications that have been selected for this study are the Slow Food Chef's Alliance, the Michelin Guide Green Star, and the Bureau Veritas Food Loss and Waste Protocol. These are all industry-specific and they will be further discussed in the data analysis section.

The 3 C's of the Circular Economy for Food framework has been then applied in this research, providing useful categories to which all the requirements taken into account have been assigned through a coding process. This step allowed to investigate and verify the circular identity of the requirements and practices analyzed.

As a result of all the previous steps, the cradle-to-cradle circular model is presented as a valuable implementation of circular economy principles within the restaurant industry.

## **Data collection**

The data collected between August 2022 and January 2023 comprise both primary and secondary data and include documentary information and a semi-structured interview.

First, documentary information has been collected, reaching a total of 34 sources. These include 6 websites that have been consulted, 14 online magazine articles that have been read, and 9 reports that have been analyzed together with 5 guidelines and 1 statute.

More specifically, online magazine articles allowed to chronicle the growing interest in sustainability and circular practices within the tourism sector and the restaurant industry, thus permitting the verification of existing information from other sources (Layder, 1993). Internal reports and guidelines from Slow Food, Bureau Veritas and the Michelin Guide gave access to the requirements needed for each certification, making it possible to identify, understand and analyze recurrent themes and emerging trends. This allowed to underline the similarities and the differences among them, thus identifying the direction in which the restaurant industry is currently moving. Indeed, the examination of these sources led to a deeper understanding of the organizations' philosophies and made it feasible to verify their compatibility with circular economy principles and practices, therefore providing support to the hypotheses developed through the literature review (Salvato & Corbetta, 2013).

On the other hand, external reports and websites, such as the ones from the United Nations World Tourism Organization allowed to get a clearer context and also highlighted major critical issues related to sustainability.

The complete list of all secondary sources mentioned above is available in the Appendix.

Subsequently, primary data have been gathered in January 2023 through a semi-structured interview with Igles Corelli, an Italian Michelin-star chef, famous face of Gambero Rosso Channel and more recently coordinator of the Scientific Committee of Gambero Rosso Academy. In the seasons of his show on the Gambero Rosso Channel (2012/2013), he was the first chef to use the term "Circular Cuisine" to define his philosophy of respect for food.

As a matter of fact, in Corelli's kitchen, as in nature, nothing is neglected or wasted; everything is transformed with the use of kitchen technology, of which he has always been a firm supporter (Corelli, 2022). Corelli is a well-known expert in the application of circular principles to the restaurant industry, with extensive experience and knowledge in the field. Thus, the interview with him was scheduled in order to obtain valuable insights on the subject.

Moreover, as already stated and supported in literature, circular cooking has the potential to transform the food industry and enhance sustainability (Camilleri, 2021; Fusté-Forné & Jamal, 2020; Jones & Wynn, 2019; Kiss, Ruszkai, & Takács-György, 2019; Vargas-Sánchez, 2018), making an interview with Chef Corelli a timely and relevant discussion.

This activity produced a 41 minutes audio recording and 7 pages of single-spaced interview transcript, helping to identify the main challenges and guaranteeing data triangulation (Decrop, 1999; Flick, von Kardorff, & Steinke, 2004).

Through the interview, a predefined range of topics has been covered, linking analytical categories to the respondent's experience (Gephart, 2004). This approach occasionally brought to light new, previously unconsidered factors, which helped to clarify some of the ideas that were first unclear throughout the data collection process (Flick, von Kardorff, & Steinke, 2004). In sum, the triangulation of these several data sources enabled the development of a solid and reliable study (Decrop, 1999; Flick, von Kardorff, & Steinke, 2004).

The interview transcript, protocol and informed consent form, as well as the complete list of all secondary sources mentioned above, are available in the Appendix.



### ***Semi-structured interview***

Open-ended questions were used to develop an interview protocol. These were created to get a clearer grasp of the topic being investigated, allowing to probe the participant for additional details when necessary. An illustration of the interviewer's queries is provided in the Appendix.

Without making any assumptions about the research topic, the main purpose of the study was introduced before the semi-structured interview began. The interviewee has been encouraged to speak openly about the topics he felt were most important. When required, more detailed questions were posed to clarify his thoughts concerning the circular restaurants opportunity and the specific strategies that can be developed in this direction.

### **Data analysis**

The comparative approach among certifications used in this work made it feasible to continuously monitor and compare data from different sources, enabling the adjustment of conceptual categories and emerging theoretical notions until theoretical saturation (Browning, Beyer, & Shetler, 1995; Strauss & Corbin, 1997).

The analysis started with the research of the requirements stated by the Slow Food Chefs' Alliance to join the movement, the requirements stated by the Michelin Guide to obtain the "Green Star" for sustainability and the requirements or practices required by Bureau Veritas in order to obtain the Food Loss and Waste Standard. In total, 17 requirements have been collected, of which 16 have been explored.

Once collected, the requirements have been analyzed with a comparative lens, in order to underline similarities and differences. Through a coding process, each requirement has been broken down into smaller units, to which labels summarizing the main concept have been assigned.

This activity allowed to aggregate the practices in 3 categories depending on the area to which they belong according to the "3 C's of the Circular Economy for Food" (Fassio, 2021), the conceptual framework used to study the phenomenon subject of this thesis.

In this way, it has been possible to identify circularity within the restaurant industry and prove that the requirements established by the different organizations are beneficial for the entire system. Thus, taking also into account the outcome of the interview with chef Igles Corelli from Gambero Rosso Academy, it is possible to define circularity and the whole Slow Food reality as strong drivers for a more sustainable tourism in Italy. In the next sub-sections, the requirements are presented and then, in the results section, findings are shown.

### ***Slow Food Chefs' Alliance***

The Slow Food Chef's Alliance is an initiative that connects chefs from across the globe who are dedicated to protecting traditional gastronomic knowledge, food biodiversity, and the producers who safeguard them (Slow Food, 2020). To date, 513 cooks have joined the Alliance in Italy (Slow Food, 2023).

According to the application form to adhere to the Alliance, there are four main requirements for a chef to engage in the initiative (Slow Food, 2020):

1. Prepare meals using high-quality, regional products that are sourced from farmers, herders, cheesemakers, fishers, butchers, bakers, and

- other food artisans that uphold traditional knowledge and methods while preserving the environment, the landscape, and animal welfare;
2. Give producers and their work visibility, respect, and a fair price by promoting the Slow Food Presidia, “Ark of Taste” and “Terra Madre” communities' products;
  3. Minimize their negative environmental impact and significantly decrease food waste;
  4. Promote the Slow Food ideology, its campaigns, and its projects by working together.

### ***Michelin Guide's “Green Star”***

The Michelin Guide was not always the legendary dining guide it is today, as is the case with all great innovations that alter the course of history. Its origins were far simpler; providing travelers with a small, red guidebook to inspire them to hit the road and plan their trips (Michelin Guide, 2023).

After having founded their world-famous tire company, in order to boost their sales, in 1889, the Michelin brothers produced this guide filled with useful information for tourists, including hotels and restaurants recommendations (Michelin Guide, 2023).

Recognizing the increasing impact of their Guide's restaurant section, Andre and Edouard Michelin recruited a group of secret inspectors to visit the restaurants and provide anonymous reviews (Michelin Guide, 2023). The Guide started awarding stars to fine eating restaurants in 1926, first designating them with just one star, then introducing the worldwide famous 3-star rating system (Michelin Guide, 2023).

In 2020, the Michelin Guide introduced for the first time the Green Star, an award that prizes restaurants at the forefront of sustainability, those who bear the ethical and environmental consequences of their business and who work with producers and suppliers to avoid and reduce waste, or even better eliminate it, erasing plastic and other non-recyclable materials from their supply chain (Michelin Guide, 2021).

So far, there are 49 Green Michelin Stars in Italy (Michelin Guide, 2023). Despite the absence of strict criteria to assign this award, the Michelin Guide has revealed the requirements that must be taken into account by the inspectors (Michelin Guide, 2021):

1. Use of locally and seasonally sourced ingredients;
2. The quality of the product, including its organic, biodynamic and ethical origin;
3. Low energy impact;
4. Menu composition;
5. Waste reduction efforts, including zero waste policies;
6. Waste disposal, reuse and recycling;
7. The chef and staff's communication and passion regarding sustainability;
8. Creative initiatives related to the environment;
9. Cooperation with the local community.

### ***Bureau Veritas Food Loss and Waste Protocol***

Bureau Veritas is a provider of "Business to Business to Society" services with the aim to establish trust between customers, government agencies, and enterprises (Bureau Veritas, 2022). As a global leader in audit and certification

services, the company helps its clients on their path to more sustainable business practices and a more sustainable society (Bureau Veritas, 2022).

Among the different certifications that it offers to its customers, the Food Loss and Waste Protocol is a standard that determines a hierarchy of desirable activities for the management of food surpluses (Bureau Veritas, 2022). These are the behaviors that should be put in place (Bureau Veritas, 2022):

1. Reduction in the amount of food surpluses generated;
2. Contributions to charities, food banks, and associations;
3. Using leftovers to produce animal feed;
4. Utilizing surpluses to produce energy;
5. Making compost to fertilize the soil.

Table 1. Summary of the organizations' requirements for sustainability awards.

Slow Food Chefs' Alliance	Michelin Guide's Green Star	Bureau Veritas Food Loss and Waste Protocol
Local, ethical and quality raw materials	Use of local and seasonal ingredients	Reduction in the amount of food surpluses generated
Use of Slow Food products	Use of quality organic products	Contributions to charities, food banks, and associations
Initiatives for the protection of the environment, involving local communities	Low energy impact	Using leftovers to produce animal feed
Zero waste policies	Menu composition	Utilizing surpluses to produce energy
	Zero waste policies	Making compost to fertilize the soil
	Waste disposal, reuse and recycling	
	Communication and passion regarding sustainability	
	Creative initiatives for the protection of the environment	
	Cooperation with the local community	

### ***The 3 C's of the Circular Economy for Food Framework***

Franco Fassio, systemic designer, researcher, and lecturer at the Università di Scienze Gastronomiche di Pollenzo, co-director of the specializing master's in Design for Food, and executive director of the UNISG Sustainability and Circular Economy Laboratory, claims that the circular economy for food is based on three factors that must be taken into consideration simultaneously (Fassio, 2021). These factors are also defined as the 3 C's: Capital, Cyclicity and Co-evolution (Fassio, 2021).

According to this framework, the protection and regeneration of Natural Capital, which is, the whole stock of natural assets, should be the new circular economic paradigm's first starting point when it comes to food (Fassio, 2021). This is related to Cultural Capital, which refers to the body of information, attitudes, and practices about natural and social ecosystems that must be preserved and passed down as an extremely valuable legacy in order for it to develop from generation to generation into an integrated vision of the future that can generate a distributed and equitable source of income to support economic capital (Fassio, 2021).

Some actions towards the protection and promotion of Capital could be:

1. The use of renewable energy sources, such as solar and wind power, to reduce greenhouse gas emissions;
2. The reduction of overproduction, optimizing both storage and supply chain management;
3. The use of local ingredients, reducing emissions due to long-distance transportation.

The second C stands for Cyclicity, which encourages thinking in terms of regeneration and comprises the three core ideas of extension, metabolization, and renewability (Fassio, 2021). To enable consumers to waste less and recycle properly, firms must take responsibility for a product's complete lifecycle. This is what is meant by the term "extension" (Fassio, 2021). Metabolism is the process of adding value to everything that is sold with the aim of never producing waste but always only resources for the same system or another system (Fassio, 2021). Every action must be in harmony with the natural cycles of regeneration in order to be considered renewable (Fassio, 2021).

Concerning Cyclicity, some actions to implement it in the restaurant activity could be:

1. The elimination of single-use packaging, replaced by biodegradable, reusable, compostable containers;
2. The use of leftovers to produce compost, to be given to suppliers in order to close the loop;
3. The choice of second-hand, recycled furniture to be used in the restaurants.

The last C represents Co-evolution, which was prompted by the mutualistic symbiosis found in nature (Fassio, 2021). Co-evolution is a dynamic that allows one or more subjects to gain from a relationship they develop, putting into action a solution that benefits all the system's participants (Fassio, 2021). Solidarity, dialogue, cooperation, sharing and symbiosis are all practices that can be applied with a win-win reasoning, producing solution that are valuable for all, including the environment.

Actions representing Co-evolution practices could include:

1. Sourcing from local producers to support local tradition and products;
2. Making sure that ingredients are ethical, both towards the environment and people who work to produce them. This means also collaborating on establishing ethical and fair work conditions with producers.
3. Raising awareness and educating consumers on the importance of sustainable food practices, such as reducing food waste and choosing locally sourced and organic food. This can be done through initiatives that engage with the local communities.



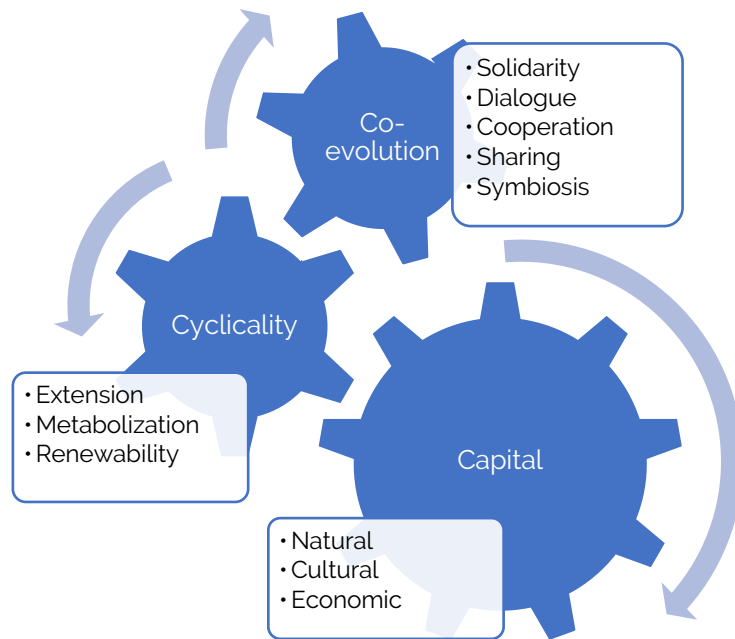


Figure 1. The 3 C's of the Circular Economy for Food adapted from Fassio, 2021.

The choice of this framework was motivated by the possibility of comparing the different requirements of the organizations taken into account in this study and analyze their effectiveness in producing and promoting circular practices in the food industry, therefore enabling a boost in sustainability for the entire sector, including food tourism.

## Results

In the following section, the circular identity of the practices promoted by Slow Food, evaluated by the Michelin Green Star and verified by Bureau Veritas Food Loss and Waste Protocol is shown.

Table 2. Analysis of the requirements through the 3 C's Framework

		The 3 C's of the Circular Economy for Food		
		Capital	Cyclicity	Co-evolution
<b>Slow Food Chef's Alliance</b>	Local, ethical and quality raw materials	X		X
	Use of Slow Food products	X		X
	Initiatives for the protection of the environment, involving local communities	X		X
	Zero waste policies	X	X	
<b>Michelin Guide's Green Star</b>	Use of local and seasonal ingredients	X		
	Use of quality organic products	X		
	Low energy impact		X	
	Zero waste policies	X	X	
	Waste disposal, reuse and recycling	X	X	
	Communication and passion regarding sustainability			X
	Creative initiatives for the protection of the environment	X		X
Cooperation with the local community			X	
<b>Bureau Veritas Food Loss and Waste Protocol</b>	Reduction in the amount of food surpluses generated	X	X	
	Contributions to charities, food banks, and associations			X
	Using leftovers to produce animal feed	X	X	
	Utilizing surpluses to produce energy	X	X	
	Making compost to fertilize the soil	X	X	

The requirements analyzed are 16 over 17, because the Green Star one related to the "menu composition" was not assessable in this context.

Each requirement can be attributed to at least one category within the 3 C's framework and each certification or acknowledgment covers all three areas. This means that a trend toward circularity can be identified within the restaurant industry. These results have been achieved through a coding process.

First, every requirement has been broken down into smaller units, meaning that all relevant words have been considered separately (i.e., "local", "ethical", "quality" concerning raw material in the first Slow Food's requirement). These units have been subsequently labeled with keywords, summarizing the main concept behind them (i.e., "ingredients features", always referring to the abovementioned requirement). The codes have been then organized into broader categories, corresponding to the 3 C's of the circular economy for food. This last step has been made taking into account how – and if – each code impacted on the areas defined in the framework. Indeed, "ingredients features" from the previous examples, can be found both in "Capital", since they enhance the promotion of local product consumption, enabling the reduction of greenhouse gas emissions due to transportation of raw materials, and in "Co-evolution", because the use of local products supports local producers in their growth, and also, the use of "ethical" ingredients implies a rigorous check of the work policies under which workers are placed.

The process has been reiterated for each requirement, producing, in the end, the table shown above.

What emerges is that each C contributes with different practices to the achievement of a cradle-to-cradle model applied to food. This is further explained in the next subsections.

## **Impact on Capital**

Concerning Capital, both Slow Food and the Michelin Guide promote the utilization of local, seasonal, and ethical raw materials, whose quality is granted by Slow Food Presidia or other biodynamic criteria. This implies a deep respect for Natural Capital, demonstrated also by the environmental initiatives and the commitment to implement zero waste policies. The same intention is carried out by the usage of food surpluses to produce animal feed, energy or compost to give back to farmers and producers required by the Bureau Veritas certification.

Furthermore, the valorization of locally sourced products promoted by Slow Food and the Michelin Green Star represents a powerful enhancer for Cultural Capital, fostering local traditions and knowledge.

These activities also have a positive impact on Economic Capital, since a more conscious, complete and regenerative usage of the resources lightens the costs related to latter ones.

## **Impact on Cyclicity**

All the actions required by the certifications and involved in the Cyclicity area underlie an effort from businesses to take responsibility for their behaviors and acknowledge the impact of their choices both on the society and the environment. The implementation of zero waste policies and the commitment to reduce – and eliminate – food surpluses, contemplated in the requirements of all three organizations, positively contributes to the achievement of a greater harmony with the regenerative cycles present in nature.

Again, waste disposal, reuse and recycle offer numerous opportunities to engage in circular activities, promoted especially by the Bureau Veritas certification, such as employing leftovers to generate animal feed, produce energy or compost, thus deleting the concept of waste from their production.

## **Impact on Co-evolution**

The Co-evolution area gives relevance to the relationships upon which every system relies on, in nature and business. In this sense, the use of locally sourced ingredients and Slow Food Presidia boosts the quality of the service in the restaurant industry while, at the same time, giving visibility and recognizing the efforts of farmers and producers. Restaurants and their suppliers grow together, in a symbiotic way.

Communication and passion demonstrated by chefs and their staff, allowing dialogue, are a powerful tool to involve the local community in several initiatives, both socially and environmentally relevant and provide many occasions to listen to the needs of communities. Commitment in this direction is intensively promoted by Slow Food and the Michelin Green Star requirements.

All three certifications show the willingness to meet the local needs, help suppliers and producers, and simultaneously take care of the environment and eliminate waste, is manifested also by the contribution to local charities, food banks and the cooperation in protecting and preserving local traditions and knowledge to be passed on future generations.

## Cradle-to-cradle model

Cradle-to-cradle (C2C) is a circular economy concept inspired by nature: in the environment, elements undergo continuous transformations without losing the capacity of being nutrients and the same can be applied to the industry (McDonough & Braungart, 2002). As a matter of fact, making used material available for the same or another system allows to eliminate the very concept of waste, because all waste can be converted into new resources.

Based on the analysis carried out so far, all the requirements discussed in the previous section, proven to be coherent with circular principles through the application of the 3 C's of the Circular Economy for Food framework, demonstrate that the C2C circular model can be adopted within the restaurant industry, significantly improving its sustainability, and thus enhancing food tourism sustainability.

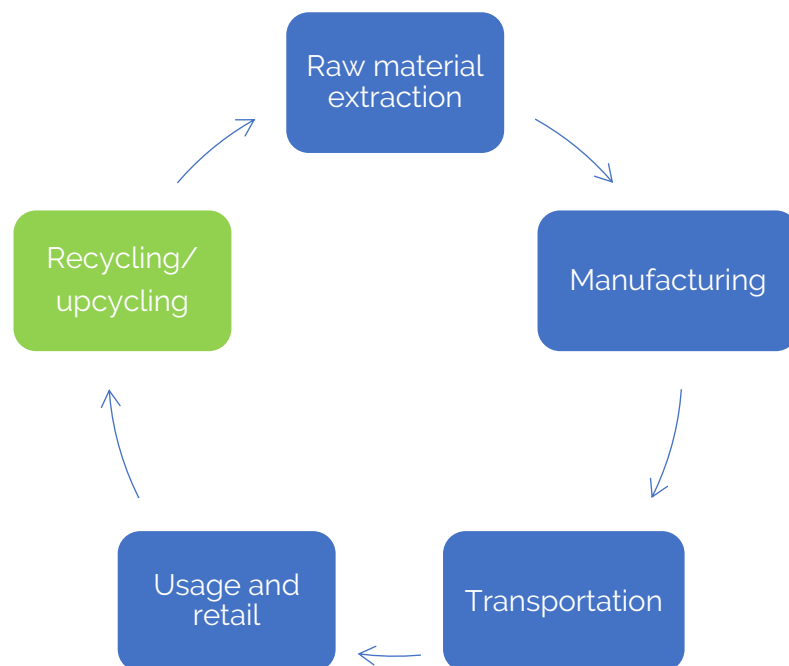


Figure 2. Cradle-to-cradle model adapted from <https://ecochain.com/knowledge/cradle-to-cradle-in-lca/>

Indeed, compliance with the requirements promoted by the three organizations enables the restaurant industry to close the loop, replacing the "waste disposal" stage from the linear "take-make-dispose" system with the "recycling/upcycling" one from circular models. By finding new uses for food waste, upcycling helps to close the loop of the circular economy, creating a more sustainable and efficient system for managing food resources.

Hence, the C2C model, as a result of the application of circular principles to the restaurant industry, can play a strategic role in promoting the sustainability of food tourism and contributing to the development of a more sustainable and resilient food system.

### **Contribution by Chef Igles Corelli**

To gather primary data for this study, an interview with Chef Igles Corelli has been planned. This activity allowed to validate the outcome of the previous analysis, also bringing out some criticalities that could not be investigated through secondary data only. Findings are shown in this section.

When asked about the aspects that lead to waste in the restaurant industry, the first problem pointed out by Chef Corelli is that "the industry produces more than needed". That is the origin of waste, because in order to produce huge quantities it reduces the quality of products, and therefore reaches low selling prices. That is the reason why people do not think twice when it comes to throw something away. The message that Corelli wants to share and that he promotes also in collaboration with Slow Food is an invite to "produce less, produce better".

After this introduction, he then specifies that for the restaurant industry "the issue is that people are not well prepared to use the products in their entirety" and

stresses the importance of making difference among restaurant types. Indeed, according to the chef, in high-quality, starred restaurants, there is "little waste", while instead those specialized in catering services produce "a lot of waste for sure" because they "lack both competences and equipment to reuse and recycle". Undeniably, "the ability to maintain the product and what is left of it" is of the essence for restaurants. To wrap it up, he concludes:

*"The real problem lies in the knowledge, maintenance, and processing of raw materials."*

High-quality restaurants "work with the highest quality materials" and this allows them to "use all the product", as also arisen during the comparative analysis and supported by the Slow Food Foundation's commitment for the promotion of quality ingredients. What emerges is that quality, in fact, is a key condition to implement circularity, as it enables a full use and reuse of the ingredients, coherently with the fact that "the circular concept must bring value to the product in its entirety". This view is emphasized both by Slow Food and the Michelin Guide in order to give to the products and producers the respect they deserve.

Unfortunately, according to the chef, many in the restaurant industry still produce in an "attempted sale" perspective, without a proper strategy and planning, and aiming only to reduce costs to get more profit. This also happen because the transition towards sustainability is costly, both in terms of money and time.

In this context, Chef Corelli explicitly supports technology and renewable energy, that "surely have an impact" on the restaurant industry. However, this impact is multifaceted, because while generating new opportunities in sourcing and producing energy, it also leads to the need of new professional figures, such



as the “technologist cook”, making the knowledge and education issue even more relevant. Overall, he states that “renewable energies are of the essence in this sector”, mentioning the case of businesses that thanks to their independency in this field, which has been achieved through the adoption of green solutions, do not suffer from the current rising price of energy, but instead “now are thriving”. This confirms what previously emerged through the comparative analysis of certifications, namely that the sustainable production of energy – as assessed by Bureau Veritas – impacts both on Capital and Cyclicity in the food system.

In the same way, Corelli positively considers the circular idea of producing compost or reuse waste to produce new resources, which are also promoted by all three organizations' certifications. Nevertheless, he points out that “you need to be very well organized, otherwise it risks to be an effort for nothing” and most importantly there should be “incentives to motivate the restaurant owner” in engaging in circular practices, therefore involving local public administration in this shift towards greater sustainability.

Besides, information problems arise. According to Chef Corelli, in past years, the large industry has been very instrumental in producing promotional information to its advantage, “and they did that giving junk food to people, convincing them it was healthy”. This happened without the intervention by the State to counteract the spread of wrong and false claims about the quality and healthiness of many products. In this sense, the absence of the State has been only partially counterbalanced by the initiatives of the Slow Food Foundation and other no-profit organizations. He says: “Information matters, education matters. But they must come from the State”, or at least, if not alone, from the Government too.

Yet, thanks also to the contribution of the abovementioned organizations, consumers' minds are awakening, they search for quality, locally sourced ingredients and they are very sustainability oriented. Additionally, he states, "tourism is changing". Nowadays, tourists are more educated, and they have higher expectations concerning sustainability matters.

In this context, Corelli reaffirms the educational role of restaurants, stating that "it has always been like that, and it has always been done in quality restaurants". Further, he specifies that "in the 80s it was a little bit pretentious" while "now, the narrative is changing. It is more truthful and less long-winded". This perfectly adheres to the requirements of communication, information, local communities engagement, and education set out by Slow Food, the Michelin Green Star, and Bureau Veritas.

In the end, what emerges is that there are many possibilities that are currently being explored and promoted also through the certifications taken into account previously in this study, but to date they are still cluttered, messy and scattered; a well-defined organization is necessary to reach a full and advantageous application of circular principles to the restaurant industry.

## **Discussion**

The research question from which this study stems is: "how can circularity applied to the restaurant industry improve food tourism sustainability?". It has the ambitious aim to investigate the sustainable opportunities related to the new circular economy practices implemented in an often overlooked – despite being

prosperous – sector such as the restaurant industry in Italy, and hypothesize their consequences on the entire food tourism sector.

The relevance of this thesis is rooted in the need to address the environmental impact of the tourism industry – and the food industry within it – and the opportunities to enhance sustainability through circular economy principles.

The extensive literature review that preceded the analysis contributed to verifying that circularity can effectively improve sustainability, including that of gastronomy tourism. Then, applying the “3 C's of the circular economy for food” (Fassio, 2021) framework to the industry-specific sustainability certifications from Slow Food, the Michelin Guide, and Bureau Veritas allowed for exploring how circular principles can be implemented in restaurants and what impact they have. Finally, the interview with Chef Igles Corelli validated the results obtained so far, providing essential insights on some criticalities that had been unnoticed up until then.

The results of the study suggest that Slow Food and circularity can be considered as important drivers for greater sustainability in the food tourism sector. In addition to showing that a trend towards circularity exists, the thesis demonstrates that the circular principles applied to the restaurant industry produce a cradle-to-cradle (C2C) model for food systems that boosts the sustainability of gastronomy tourism. This finding, supported by the literature review, is in line with what stated by Pagliuca, Rosciano and Etcheverria in their analysis, proving that in Italy, food and tourism are mutually reinforcing (Pagliuca & Rosciano, 2015; Etcheverria, 2020).

One of the key insights from the study is that the quality of ingredients is a determining factor for the success of circular practices, since it enhances the full use and reuse of raw materials, as emerged from the interview with Chef Corelli and strongly supported by Slow Food and the Michelin Guide to this day. At the same time, according to Pagliuca and Rosciano (2015), but also Dhora and Dionizi (2014), and Fusté-Forné and Jamal (2020) and many other authors included in the literature review, quality products improve the tourist experience of a place, which is directly linked with local development, promoted by the synergy with local communities engagement, boosted by Slow Food. Supporting the use of local products, Slow Food encourages the reduction of greenhouse gas emissions caused by transportation.

Moreover, the Slow Food activity generated Slow Food tourists, far more aware of sustainability issues. These new actors push businesses to be more conscious about the consequences of their actions on the environment, society and global economy. This bottom-up push has been confirmed by Chef Corelli.

However, this shift of mindset implies many costs for restaurants. Nevertheless, this study observed that these higher costs can be counterbalanced in the long run thanks to the production of green energy and the reuse or upcycling of resources. This statement is supported both by primary and secondary data, together with the literature review.

All the circular activities are of the uttermost importance nowadays considering the food waste dramatic amount that is reached every day, as reported by UNWTO, WTTC, and the Slow Food Foundation for Biodiversity. Indeed, circular practices, being oriented to eliminating food waste and the very concept of waste, allow to adopt the C2C model within the restaurant industry,

closing the loop and putting in place a virtuous circle for the entire gastronomy tourism sector.

Nonetheless, despite the positive results, the study also identified some challenges. First of all, quality is not enough. The knowledge of raw material is another essential element in order to correctly implement circular practices, because it allows to consciously use the ingredients. That is one of the aspects that undermine circularity in the restaurant industry, because education in this field is still not a compulsory requirement to open a restaurant, as pointed out by Corelli.

Yet, the ones that already follow a C2C model have the opportunity to educate both consumers and colleagues, thanks to the educational role of restaurants. Though, another criticality emerges at this point. Even recognizing the educational role of the restaurant industry, carried out through the sharing of sustainable philosophies and environmental initiatives involving local communities, is it right to totally attribute this responsibility to the industry alone? The results show that Government's intervention is required to fully achieve a shift towards circular economy in the restaurant industry as well as all the other industries, in line with what is reported by international organizations such as WTTC (2022).

Not only the Government can provide economic incentives to motivate restaurant owners, but, more importantly, according to both Chef Corelli and Slow Food, it can deliver new education guidelines and requirements towards circular economy practices and actively participate in the information received by consumers, ensuring its correctness and truthfulness.

The findings of this study have implications for policymakers, restaurants, and gastronomy tourists alike. For policymakers, the results underline the need for support and incentives to help the restaurant industry transition to sustainable

practices. This could include funding for research and development, training and education programs, and policies to encourage collaboration and partnerships within the sector.

For restaurant owners, the study provides insights into the benefits and challenges of adopting slow food and circularity principles, and highlights the importance of partnerships and collaboration in promoting sustainability in the sector.

For food tourists, the study recognizes the value they place on local and sustainable food experiences, and the role they can play in driving sustainability in the food tourism sector by choosing to support sustainable businesses.

# Research outcome

How can circularity applied to the restaurant industry enhance food tourism sustainability?

## Cradle-to-cradle model

	Raw Material	Manufacturing	Transportation	Usage	Upcycling/ recycling
<b>Key factor</b>	Quality	Ethical work	Local products and suppliers	Knowledge	Waste elimination
<b>Impact</b>	<ul style="list-style-type: none"> <li>Allows full use and reuse of the ingredients</li> <li>Enhances tourist experience and authenticity, promoting synergies with the local communities</li> <li>Valorization of the territory with Slow Food Presidia</li> </ul>	<ul style="list-style-type: none"> <li>Local development promoted by Slow Food and aware tourists</li> </ul>	<ul style="list-style-type: none"> <li>Reduce greenhouse gas emissions</li> <li>Local development thanks to the promotion of its products</li> </ul>	<ul style="list-style-type: none"> <li>Conscious use of ingredients</li> <li>Educational role of the restaurant industry</li> </ul>	<ul style="list-style-type: none"> <li>Green energy counterbalances costs</li> <li>Competitive advantage to attract Slow Food Tourists</li> <li>Educational role of the restaurant industry</li> </ul>
<b>Criticality</b>	<ul style="list-style-type: none"> <li>Quality works as driver for sustainability only when combined with knowledge</li> <li>Education in this field is not compulsory yet</li> </ul>	<ul style="list-style-type: none"> <li>Tourists are more aware but they need guidance to keep choosing sustainable businesses</li> </ul>	<ul style="list-style-type: none"> <li>Supply chains have to be rebuilt</li> </ul>	<ul style="list-style-type: none"> <li>Circular practices are possible only with quality ingredients</li> </ul>	<ul style="list-style-type: none"> <li>Circular principles are not widespread yet</li> <li>The transition toward circularity is costly</li> </ul>

### Implications

#### Policymakers

The results underline the need for support and incentives to help the restaurant industry transition to sustainable practices. This could include funding for research and development, training and education programs, and policies to encourage collaboration and partnerships within the sector.

### Implications

#### Restaurant owners

The study provides insights into the benefits and challenges of adopting slow food and circularity principles, and highlights the importance of partnerships and collaboration in promoting sustainability in the sector.

### Implications

#### Tourists

The study recognizes the value they place on local and sustainable food experiences, and the role they can play in driving sustainability in the food tourism sector by choosing to support sustainable businesses.

Figure 3. Results' summary

## Limitations

This study has some limitations that need to be acknowledged. Firstly, problems have been encountered when gathering data because of the novelty of the phenomena under investigation. Despite showing growing interest towards circularity applied to tourism, the literature available on this matter is still limited. For the same reason, it has not been possible to collect primary data through surveys directed to several restaurant owners, since the understanding of circularity principles among them is not yet widespread.

Secondly, primary data collected for this research relied on self-reported data from Chef Igles Corelli, which may be subject to bias and error.

Thirdly, the study used a qualitative research methodology, which can result in a rich and comprehensive understanding of the issue but is also potentially biased by the researcher. A mixed-methods approach, combining both qualitative and quantitative data, could have enriched the study and given a more extensive understanding of the topic.

The study was limited to the food tourism industry in a particular geographic area, therefore it might not be generalizable to other countries. Additional research is required to determine whether the findings of this study are applicable to other contexts and to appreciate the contribution that Slow Food and circularity may bring to improving sustainability in the global food tourism industry. Furthermore, this study focuses on restaurants. Large catering operations require a different approach to becoming circular.

In conclusion, the study's limitations must be taken into account when interpreting the findings, even though they help better understanding how Slow



Food and circularity might improve sustainability in the food tourism industry. To solve these issues and give a more detailed comprehension of the subject, additional research is necessary, also concerning the role of local administration and government in enhancing the transition towards circular economy practices.

## **Conclusions**

The results of this study have shown that Slow Food and circularity principles can play a substantial role in enhancing sustainability in the food tourism sector in Italy. The findings from the comparative analysis of the sustainability certifications and the application of the "3 C's of Circular Economy for Food" framework confirmed the trend towards circularity highlighted by recent literature and reaffirmed the positive contribution played by Slow Food in the Italian context, demonstrating the possibility to adopt a cradle-to-cradle model within the restaurant industry. This result has been validated by the primary data collected through the interview with Chef Igles Corelli.

The study highlights the importance of quality ingredients, collaboration, knowledge and education in promoting circular practices in the restaurant industry. The study also emphasizes the need for policymakers to provide support and incentives to assist food tourism businesses in making the transition to sustainable practices and overcoming the difficulties they encounter while implementing slow food and circularity principles.

In conclusion, this study offers proof that the circular economy and Slow Food principles are important drivers for sustainability in the food tourism industry. Restaurants may enhance their performance and contribute to a more sustainable

future for the industry by promoting local and sustainable food experiences and implementing circular economy practices.

The study highlights the need for further investigation and cooperation to promote Slow Food and circularity in the food tourism sector and to enhance sustainability in the industry.

## Acknowledgements

This journey has come to an end. What once felt so distant, now is right in these pages and I am so proud of it. The conclusion of this challenging path leads to new beginnings, I know, and I can't wait to explore them all. However, let me just savor this light-heartedness for a while.

First, I would like to thank my supervisor, professor Stefano Franco, for believing in this project even when I wavered. I am extremely grateful for the invaluable support and guidance I received working on this thesis.

I would also like to thank my co-supervisor, professor Matteo Caroli, for providing valuable feedback and suggestions.

I would like to extend a special thanks to Chef Igles Corelli for participating in this study and taking the time to share his experience.

Actually, I would like to thank my university, Luiss Guido Carli, for teaching me that I can always overcome my limits.

I am deeply thankful to my family for their love and support during this process. Without their warm encouragement and motivation, it would have been unbearably hard to complete this journey. Thank you mom for being, despite everything, a rock. Thank you dad for being the one and only role model I ever want to follow. Thanks to Matteo, Giacomo, and Giovanni. You have been able to make me sincerely laugh even in the hardest times.

Thanks to Angelo, aka Tino, for being my better-half. The love and patience you demonstrated to me are irreplaceable.

Finally, I want to thank myself for not giving up. We made it!

# Appendix

## Informed consent (translated in English)

Luiss Guido Carli University

Informed consent form for participation in a research study for master's thesis

### 1. Information on researchers and study

**Title of the study:** Slow Food and circularity: the transformative keys to new sustainable tourism in Italy?

**Researcher:** Carla Iacari

**Supervisor:** Professor Stefano Franco

You are invited to take part in a research study. This module contains the information that will allow you to decide whether to participate.

#### 1.1 Key information

Things you must know:

- The participation is voluntary. If you choose to participate, you will be asked to take part in an interview, scheduled according to your availability, by January 16, 2023. The required time will be about 30 minutes and the interview will be audio-recorded.
- There are no direct benefits or risks related to your participation in the study.

Please read this form and ask for any clarification.

## **2. Purpose of the study**

The aim of the study is to explore the opportunities that the circular economy applied to the restaurant industry offers to achieve greater sustainability of the entire food and wine tourism sector in Italy. In this field, circular principles are mainly applied in the fight against food waste, but there are still many possibilities to explore and limited data available. The questions are intended to grasp an authoritative point of view, within the restaurant industry, on the critical issues that arise during the search for sustainable practices.

## **3. Information on participation in the study**

You will receive an e-mail link to connect to a video call with the researcher.

## **4. Protection and sharing of research data**

We ensure that the information collected will only be used for this research project. In addition, the audio recording of the interview will be kept by the researcher and will be deleted after the end of the work (by April 28, 2023).

## **5. Contact information**

For any further information or communication, please contact:

**Researcher:** Carla Iacari

**E-mail:** carla.iacari@studenti.luiss.it

**Phone number:** (+39) 3337840986

## 6. Consent

- I, **Igles Corelli**, voluntarily agree to participate in this research study.
- I know I can refuse to answer any questions.
- I received the purpose and nature of the study in written form and had the opportunity to ask questions about it.
- I am aware that my collaboration involves the participation in a video interview.
- I am aware that I am not getting any benefits from participating in this research.
- I agree to the audio recording of my interview.
- I am aware that the informed consent form and the original audio-recording of the interview will be kept by the researcher on her devices until April 2023.
- I am aware that the transcript of my interview will be kept until April 2023.
- I am aware that I can contact the researcher for more information and clarification.

Participant's signature

Date

Researcher's signature

Date

## **Interview protocol (translated in English)**

1. What are the characteristics of the restaurant industry that make the sector so prone to waste?
2. What are the main difficulties for restaurants in fighting food waste?
3. Most of the food waste in the restaurant industry takes place during the food preparation phase (45% of the total), or in the customers' dishes (34%), or for food deterioration (21%). What are the possible strategies to reduce them, or even better, eliminate them? Some concrete examples?
4. How can the three circular principles of waste reduction, reuse and recycling be applied to restaurants?
5. Is there room for renewable energy in the restaurant industry? If so, what impact could it have on the business?
6. Over the past 40 years, Slow Food has involved more and more people in the many battles for good, clean and fair food. In catering, how important is consumer awareness?
7. Is there a "bottom-up push" for a more sustainable restaurant industry? How do consumer demands influence - if they do - the choices made by chefs in the kitchen?
8. What role do chefs play in conveying messages for greater sustainability?
9. Can it be said that the restaurant industry has, among other things, educational purposes?

## **Interview transcription (translated in English)**

Circular economy and the restaurant industry

Participant: Chef Igles Corelli (P)

Date: January 10<sup>th</sup>, 2023

Interviewer: Carla Iacari (I)

(P): Good morning!

(I): Good morning chef, can you hear me and see me?

(P): Yes, I can see you and hear you.

(I): Perfect. So, first of all I would like to thank you for accepting my invitation to participate in this study.

(P): No problem.

(I): No, really, it is a pleasure and an honor. I am sure that your collaboration will bring an important value to my thesis, so I want to thank you again. Have you read about the project I am working on?

(P): Yes, I read everything you sent me. I would like to ask you something...

(I): Sure, what is it?

(P): Where did you find the data concerning waste? Those of 45% during the preparation of meals and so on?

(I): They are from a Slow Food report, more specifically by the Slow Food Foundation for Biodiversity.

(P): I see. Could you please send it to me?

(I): Yes, of course.



(P): I would like to read it since I am participating to a meeting in February that is linked to circular cuisine, and I have already encountered this data, but I wanted a reliable source.

(I): Well, I have to admit that it has been difficult to find that, but then I saw that Slow Food shared the same information and so I thought it was trustworthy.

(P): Yes, it is.

(I): So, I would start if you do not have any more questions...

(P): No, that was the only question I had.

(I): Ok, we can start then. What are the characteristics of the restaurant industry that make the sector so prone to waste?

(P): Well, let me start with the premise that it is not true that there is all this waste. I mean, you tell me that, but I think that the real problem starts with the large industry, that produces more than what we need. The product that comes out is always a low-quality product and consequently, costing less, people are not careful. So, the message of the circular cuisine is "produce less, produce better" and I, as a chef, will help you to use the entire product. So, you get an economic return and I have a value because I work hard not to waste anything. That is the introduction that I wanted to do. To answer more specifically to your question, the issue is that people are not well prepared to use the products in their entirety. Why do I say so? Because you need to enter the philosophical idea of not wasting anything, because when you have a quality product that has a cost you have to do anything you can... think of the craftsman, who does not throw away even the dust, because it has an expensive base and has the knowledge to find a way to reuse everything. However, we cannot tar everything with the same brush, because another difference that we must make is the one between quality restaurants and

catering services, that are completely different. In the latter, there is a lot of waste for sure, because in my opinion they lack both competences and equipment to recycle. You see, the added value in this chain is also the ability to maintain the product and what it's left of it. On this matter, the Japanese are really experts. If you are able to safely transport the product in a correct way, then you are able to rework on it even a second time. While instead, catering services throw everything in the sun and in the evening, they are obliged to throw it away. In this case, there is an enormous amount of waste. In the end, the large industry is not even totally responsible, because in a certain sense a part of their "waste" is used instead to help charities and food banks. Hence, the real problem lies in the knowledge, the maintenance and the processing of raw materials. This is my answer to your first question.

(I): Ok, clear. In a certain way you anticipated my second question, which concerns the challenges for restaurants to tackle the food waste issue. You anticipated it because of course if both knowledge and tools are missing, everything is even harder. So, what can be done? Given the percentages we mentioned before: 45% of waste in food preparation, 34% leftovers in customer dishes and 21% food deterioration. What are the possible strategies to reduce these wastes, or even better in a circular perspective, to eliminate them and eliminate the concept of waste? Is there any concrete example?

(P): See the thing is that there are 6 types of restaurants. My industry, which is the quality-starred restaurant, has no waste... it has no waste because we work with the highest quality raw materials, with really high costs, and when you work with a premium raw material somehow you can use all the product. For example, take the 20€ frozen prawn against the 50€ fresh prawn: if you are able to process the

50€ one correctly you can make more money with that compared to the 20€ one. That is because the 20€ prawn can be used only partially; you have to throw away the head and process just the tail to avoid the taste of ammonia. A 50€ prawn instead, fast-lowered in temperature directly on board, allows you – just with its head – to prepare an excellent dish without tasting like ammonia, rather tasting like the sea! You, see? In this way, you already halved the cost of the product, whereas in the other case even if you try to use the entirety of the prawn, you have to throw all away, because it is really ammoniacal... hence, quality restaurants do not have waste, or very few. Now, let aside the mannerisms and the willingness to be cool like the young chef who, following a “zero waste” philosophy, desiccates the herringbone in an extra expensive oven for more than 10 hours, then blends it and uses it as a salad seasoning... I mean, with the money spent for that reuse, he could have bought a high-quality fish, it has no sense. That's not circular cooking. The circular concept must bring value to the product in its entirety, and it must be also economically sustainable! Consequently, the quality creative cuisine does little waste, while instead other approaches, such as the one of “attempted sale” according to which restaurants prepare huge quantities without even knowing if they will be able to actually sell them, have nothing to do with quality and value. Whilst the top-class restaurants have qualified employees, able to valorize the product... in other cases it is not like that. It all depends on the restaurant type. The industry already produces much more than we need, the staff is not qualified and the “attempted sale” that produces waste occurs... it always comes down to surplus of production compared to the needs. And the more the industry produces, the more it puts on the market a low-quality product that costs little. So people do not even think about it, throw things away, at most they threw few euros.

(I): Yes, of course. I did some research, but I was not able to find in Italy solutions such as the ones proposed by some Finnish and French restaurants, that produce compost with their waste. So, all the organic waste is transformed into compost and then it's given to the suppliers - because they have very short supply chains and therefore very close suppliers - and they make this exchange of raw material and compost created with the waste of raw material to give back to the soil. So, there is this cycle here that is interesting... now, according to you it is feasible in Italy or is it too far from our schemes?

(P): Well, just think about the issues you have in the restaurant industry. Think about how many restaurants would like to give food to charities. It's not possible because you have to stock everything in diversified containers for those that last, those that don't... so the restaurant owner, who works 18 hours a day - and I can assure you that you work 18 hours a day for real - has then to divide all the things and secure them in order to give this food to charities. It is impossible. I can guarantee you that I tried to do that during the "Internazionali di Tennis" in Rome, there were leftovers and to give them to food banks we had to jump through hoops. After 3 days, we stopped doing that. It was exhausting. You need to be very organized... and you should have some incentives to motivate the restaurant owner. Otherwise, one can say, "I'm already having a bad time, I can't give the food to charities easily, it requires too much work for nothing". Maybe in Sweden they have some incentives, I don't know... Let me give you another example. In Italy, where one is willing to do something but then is not possible, I did a project with the fishermen of Porto Santo Spirito, sort of a deal. I said to them "I am going to sponsor your shrimps, that are extraordinary, and in return when you find plastic in the ocean instead of throwing it back in the water you collect it and bring it to the docks". Trust me, at first, they

said no. That is because they have to pay for everything they bring with them when they come back after fishing. I insisted, the mayor has been visionary and has eliminated the cost for bringing the plastic to the harbor. Then, two or three years ago, with public funding for innovation, a group of young people started creating fabrics with this plastic, so now they produce kitchen aprons and jackets, they started a business. Yet, at the beginning it was panned. Luckily, the mayor has been clever. Fifteen years ago, it would have been impossible.

(I): Sure, the administration role comes into play, and it is of the essence in such cases...

(P): We're getting off track, aren't we? [laughs]

(I): Absolutely not! There are a lot of interesting insights. Returning to the circular principles, in which way waste reduction, material reuse and recycle can be applied to the restaurant industry? Intended as medium-to-high quality restaurants.

(P): Have you studied the circular philosophy?

(I): Yes, of course.

(P): Well, then the thing is not about recycle anymore! It is long before. I also clashed with my friend, chef Bottura, because he talked about a rotten lemon that he could use to obtain a fermentation, but it is wrong. You cannot have rotten lemons! You have to process it before it decays. I don't care about keeping a banana until it becomes black and then I don't even know what to do with it. The circular thinking starts long before. And it always comes to the fact that we have to produce less, produce better. Then chefs can help, with their knowledge, to valorize even celery leaves producing an amazing, flavored salt. And for that kind of preparation, celery leaves are the best part of the celery. The same leaves that

once were considered waste. This is the smartest thing of circular cuisine. Produce less, produce better, and I'll help you valorizing your product. That means also having respect for the producers, the farmers... my father always said, "the ground is low", meaning that it is hard work cultivating it. So, you have to pay for its products! Concerning compost, it could be useful to exploit bones, cartilage... however, you should find a way to collect all this stuff.

(I): It would take companies specialized in this.

(P): That's right! Do you know how they make chocolate? They use waste from pigs, such as cartilage, fat... there a truck that goes to butchers, collects all this waste and brings it to the companies. It is processed above 800 degrees to obtain liquid fat that goes into spreadable creams. Yet, it is well organized, such as that of waste oil. We need something like that. Thus, if there was someone going to restaurants and collecting the waste without driving the restaurant owner crazy, it would bring added value to the whole process. It would make sense.

(I): Clear.

(P): Then obviously ignorant people are everywhere.

(I): Sure!

(P): There's the one that buys shrimps for 70€, throws away their heads and uses just the tails to make a tartare without 50% of the raw material.

(I): So, we always return to the principle that what is missing is the knowledge of the raw material and the techniques to fully use it... also because in Italy we have many SMEs and many are family run, so many restaurants are – let's say – a bit improvised.

(P): Sure! Just think that middle school license is enough to open a restaurant. That says a lot, right? While instead a restaurant is a risky business, you could ruin yourself and your entire family.

(I): I totally agree. Let's move on to renewable energies. What impact – if any – could they have in the industry?

(P): They surely have an impact. I have to make another premise. We now have a 4.0 program with Gambero Rosso Academy linked with technologies. Why? Not only because often technologies can improve products, but also because in some cases there is not enough personnel to keep the restaurants going. Nowadays, kitchens don't need 10 cooks anymore, but instead 3 "technologist cooks" able to use the tools and improve the restaurant performances. This happens both for a lack of staff availability and the cost of work. Therefore, technology comes in help. At the same time, in recent days, technology also has become an unbearable cost, many companies are struggling. Take for example the costs related to nitrogen blast chillers, they're continuously growing both for the nitrogen price that is rising, and the cost of electricity needed to make those machines work. Other companies, that in past years have adopted green solutions such as solar panels to produce their own energy, now are thriving. They're even selling their energy to other companies! So, I'd say that renewable energies are of the essence in this sector.

(I): Okay, this field will surely need further investigation.

(P): Another modern job is the one of laboratories. We have a laboratory at Gambero Rosso that is the modern delivery. Even in the days of the pandemic I said that door-to-door delivery was crap for quality restaurants. With a cooking center the thing is different, though. Like, if you provide the recipe to the center located near the houses, they prepare the dish and then bring it to the customer,

then it has sense. The center gives a percentage of their sales to the original restaurant and at the same time customers receive a perfectly made dish also with the help of technology. For this kind of work a lot of energy is needed.

(I): Sure, it is challenging. Now, talking about consumers, over the last 40 years, Slow Food has brought together more and more people in the numerous fights for a good, clean and fair food. They did that through information, promotion... Well, in the restaurant industry, how important is customer awareness? In which ways their choices influence the path taken by restaurants and their owners?

(P): See, it is true that 40-50% of Italians have little money, right? But it is also true that we did not do great information. We told them to eat certain products that are rubbish, so that consequently they spend three times as much money in medications. However, we cannot demand to buy good products with an excessive price, we have to make adjustments and compromises. The big issue, I think, is that no good information has been made, while instead the large industry, with a lot of money, did that. And they did that giving junk food to people, convincing them it was healthy. Think about [Company name 1] that poisoned a lot of young people with its slogan or think about [Fast food company name] ... they logically dominate the market, and they are able to promote a false picture of themselves. They're disguised, like the devil clothed in white. They're devils who exploit people and resources to obtain a low-quality product that allows them to get huge profits. Think about [Company name 2], which is also a sponsor for high-quality restaurants with different products and think about the revenues they have from cheap products – that are, however, detrimental for people's health. I remember Petrini, during a 1980s campaign, he used to say "Bloody hell! People



haven't understood that even if they save money now on food, they will spend even more in pharmacies!". Healthy food is expensive, logically.

(I): Yes, it is evident the United States case, where obese people tend to be the poorest and where there is poverty the only food they sell is junk food, because it is the cheapest.

(P): Exactly! I remember when I was a kid, at school, I had a sandwich with salami for snack while the richer kid had [Commercial snack name]. It was junk food, but I would have done anything to have that snack!

(I): [laughs] I think we all did that at least once!

(P): [laughs] Right? But then it makes me sad to see all the young people being obese nowadays. It is crazy! And why? Because they no longer eat at home freshly cooked dishes from their mothers, instead they eat French fries, hamburgers, aperitifs, and all those things. They do "apericene" filled with junk food!

(I): Sure, it is the eating habits that should be adjusted a little.

(P): Yes! Information matters, education matters. But it has to come from the State, not from [Fast food company name]. See now, TV campaigns such as the one with [Chef name 1] that promotes the "quality" sandwich... that stuff is rubbish! It is not true that there are high quality ingredients made in Italy. Not at that low price! It is not possible.

(I): That is certainly true. However, there is a part of the population that is in some ways more aware. They are awakening, healthy principles are being spread. People are going back to home-cooked meals, they pay more attention during grocery shopping, even for economic reasons. Hence, in a way, could we talk about an impetus from below? Is it perceptible?

(P): Yes, there is a push for higher quality. I noticed it also in grocery stores, that are opening up to quality products. Even the bio section, that once was tiny, now is massive. There is less cellophane, people are free to choose their fruits and everything else. Therefore, they are searching for fresh, good products. There is room for improvement, but we can definitely state that there is this kind of awareness.

(I): It is a beginning.

(P): Yes, it is. We can see that also with the quality restaurants. If in the past only in France also those who took 1000 € per month once a year went to a restaurant of great quality, now this is happening in Italy too. Thus, there is the willingness to make a great quality experience. Of course, people cannot go to eat to [Chef name 2] everyday, but they can actually have healthier food. This is possible.

(I): Okay, perfect. So, we mentioned [Chef name 1], going back to that episode, what role do chefs play in conveying messages for greater sustainability? If they have any.

(P): They absolutely play a significant role! But they must not be mercenaries. I mean, [Chef name 3], [Chef name 4], they are chefs who spread positive messages. Then instead you have chefs that state that chicken from [Company name 3] is the most delicious, only because the company gives them like 80 thousand euros. You have to be careful... In fact, there are chefs at the moment who are promoting products and have millions of followers, they are on television, etc. but they are sending out negative messages. Now, [Chef name 1] does it, but he's not the only one! I see also [Chef name 5] and [Chef name 6] who promote everything and more, because they're paid for it. Then people follow them, buy products thinking they're good and healthy, when instead they're rubbish. It is a hard fight. But here the

message should not start from the individual, it should start from a regional, national project... for example Rome is now launched towards quality. I see that they open interesting restaurants. Before there was a medium, medium-low level, while now it is rising. Also because tourism is changing, it is more educated, more prepared. So, Rome is raising up again.

(I): Yes, it is reacting well to new impulses. Let's hope that the administration does that too. [laughs]

(P): Exactly. [laughs]

(I): Well, then, to conclude, since we have mentioned it, we can therefore say that the restaurant has, among the different purposes because it certainly has many, also the educational one?

(P): Without a doubt! It has always been like that, and it has always been done in quality restaurants. In the 80s it was a little bit pretentious, now the narrative is changing. It is more truthful and less long-winded. However, in the 80s, restaurants were already able to influence people.

(I): Well, also the new storytelling techniques have spread nowadays.

(P): Yes, sure. Anyway, I think that in order to open a restaurant these days at least a degree should be required. Otherwise, it can become too difficult.

(I): Yes, let's say that once it was a thing for few, while now is almost an essential requirement, a bit like English... 50 years ago very few people spoke English because they had a privilege, they were noble. Now if you don't know English it's not even possible to start working in a restaurant as a waiter.

(P): Yes, that's true.

(I): All right, then. I finished all my questions. Thank you again, it was really a pleasure.

(P): Thanks to you too for giving me interesting insights.

(I): Well yes, we exchanged ideas, of course. So, it was a pleasure, thank you and I'll send you the link to the report.

(P): Okay, thank you. Good luck!

(I): Thanks, have a nice day!

**Table of secondary data sources**

<b>Documentary information</b>			
<b>Source</b>	<b>Type</b>	<b>Topic</b>	<b>Link</b>
Slow Food	Article	Circular economy for food	<a href="https://www.slowfood.it/cibo-in-circolo-partire-dal-cibo-per-cambiare-paradigma/">https://www.slowfood.it/cibo-in-circolo-partire-dal-cibo-per-cambiare-paradigma/</a>
	Statute	Slow Food Foundation	<a href="https://www.slowfood.com/wp-content/uploads/2022/12/SlowFoodFoundation_Statute.pdf">https://www.slowfood.com/wp-content/uploads/2022/12/SlowFoodFoundation_Statute.pdf</a>
	Guidelines	Slow Food Foundation	<a href="https://www.slowfood.com/wp-content/uploads/2015/07/Manifesto_Quality_ENG.pdf">https://www.slowfood.com/wp-content/uploads/2015/07/Manifesto_Quality_ENG.pdf</a>
	Report	Slow Food Foundation	<a href="https://www.slowfood.com/wp-content/uploads/2022/08/Annual_Report_SF_2021_web.pdf">https://www.slowfood.com/wp-content/uploads/2022/08/Annual_Report_SF_2021_web.pdf</a>
	Guidelines	Slow Food Chef's Alliance	<a href="https://www.fondazioneSlowFood.com/wp-">https://www.fondazioneSlowFood.com/wp-</a>

			content/uploads/2020/11/EN_regolamento_Alleanza.pdf
Michelin Guide	Article	Michelin Guide's Green Star	<a href="https://guide.michelin.com/it/it/notizia/sustainable-gastronomy/la-stella-verde-michelin">https://guide.michelin.com/it/it/notizia/sustainable-gastronomy/la-stella-verde-michelin</a>
	Website	Green Stars in Italy	<a href="https://guide.michelin.com/it/it/selection/italy/ristoranti/sustainable_gastronomy">https://guide.michelin.com/it/it/selection/italy/ristoranti/sustainable_gastronomy</a>
Bureau Veritas	Website	Food Loss and Waste Protocol	<a href="https://www.bureauveritas.it/needs/food-loss-and-waste-protocol">https://www.bureauveritas.it/needs/food-loss-and-waste-protocol</a>
Renewable Matter	Article	Circular tourism	<a href="https://www.renewablematter.eu/articoli/article/turismo-circolare-una-ricerca-tra-gli-operatori-alberghieri">https://www.renewablematter.eu/articoli/article/turismo-circolare-una-ricerca-tra-gli-operatori-alberghieri</a>
	Article	Circular economy for food	<a href="https://www.renewablematter.eu/articles/article/carlo-petrini-and-franco-fassio-this-is-the-future-">https://www.renewablematter.eu/articles/article/carlo-petrini-and-franco-fassio-this-is-the-future-</a>

			of-the-circular-economy-for-food
European Parliament	Website	Circular economy	<a href="https://www.europarl.europa.eu/news/it/headlines/economy/20151201ST005603/economia-circolare-definizione-importanza-e-vantaggi#:~:text=L'economia%20circolare%20%C3%A8%20un,ridurre%20i%20rifiuti%20al%20minimo.">https://www.europarl.europa.eu/news/it/headlines/economy/20151201ST005603/economia-circolare-definizione-importanza-e-vantaggi#:~:text=L'economia%20circolare%20%C3%A8%20un,ridurre%20i%20rifiuti%20al%20minimo.</a>
Italia Circolare	Article	Circular tourism	<a href="https://www.italiacircolare.it/it-it/turismo-circolare-quando-la-sostenibilita-e-unattitudine.aspx">https://www.italiacircolare.it/it-it/turismo-circolare-quando-la-sostenibilita-e-unattitudine.aspx</a>
	Article	Michelin Guide and sustainability	<a href="https://www.italiacircolare.it/it-it/guida-michelin-ecco-gli-stellati-sostenibili-e-circolari.aspx">https://www.italiacircolare.it/it-it/guida-michelin-ecco-gli-stellati-sostenibili-e-circolari.aspx</a>
Fondazione Univerde	Report	Sustainability and tourism	<a href="https://www.fondazioneuniverde.it/wp-content/uploads/2020/04/IX-Rapporto-Italiani-turismo-sostenibile-ed-">https://www.fondazioneuniverde.it/wp-content/uploads/2020/04/IX-Rapporto-Italiani-turismo-sostenibile-ed-</a>

			ecoturismo-ottobre-019.compressed.pdf
Ellen MacArthur Foundation	Website	Food and the circular economy	<a href="https://archive.ellenmacarthurfoundation.org/explore/food-cities-the-circular-economy">https://archive.ellenmacarthurfoundation.org/explore/food-cities-the-circular-economy</a>
	Article	Circular economy and the restaurant industry	<a href="https://ellenmacarthurfoundation.org/articles/the-role-of-restaurants-in-a-circular-urban-food-system">https://ellenmacarthurfoundation.org/articles/the-role-of-restaurants-in-a-circular-urban-food-system</a>
	Report	Circular economy	<a href="https://ellenmacarthurfoundation.org/growth-within-a-circular-economy-vision-for-a-competitive-europe">https://ellenmacarthurfoundation.org/growth-within-a-circular-economy-vision-for-a-competitive-europe</a>
UNWTO	Website	Tourism for SDGs	<a href="https://tourism4sdgs.org/">https://tourism4sdgs.org/</a>
	Report	Sustainability and tourism	<a href="https://www.e-unwto.org/doi/epdf/10.18111/9789284420605">https://www.e-unwto.org/doi/epdf/10.18111/9789284420605</a>
	Website	Sustainability, circularity and tourism	<a href="https://www.unwto.org/covid-19-oneplanet-responsible-recovery-initiatives/circular-">https://www.unwto.org/covid-19-oneplanet-responsible-recovery-initiatives/circular-</a>



			economy-in-travel-and-tourism-a-conceptual-framework-for-a-sustainable-resilient-and-future-proof-industry-transition
	Report	Food tourism	<a href="https://www.e-unwto.org/doi/pdf/10.18111/9789284418701">https://www.e-unwto.org/doi/pdf/10.18111/9789284418701</a>
EHL	Article	Slow Tourism	<a href="https://hospitalityinsights.ehl.edu/what-slow-tourism">https://hospitalityinsights.ehl.edu/what-slow-tourism</a>
Hotrec	Guidelines	Food waste	<a href="https://www.hotrec.eu/wp-content/customer-area/storage/cf00d7c3286a238145bdc6545df90492/HOTREC-guidelines-to-reduce-food-waste-and-recommendations-to-manage-food-donations-19-January-2017.pdf">https://www.hotrec.eu/wp-content/customer-area/storage/cf00d7c3286a238145bdc6545df90492/HOTREC-guidelines-to-reduce-food-waste-and-recommendations-to-manage-food-donations-19-January-2017.pdf</a>
Zenbird	Article	Circular economy and the restaurant industry	<a href="https://zenbird.media/how-can-restaurants-">https://zenbird.media/how-can-restaurants-</a>

			contribute-to-the-circular-economy/
SGD2 Advocacy Hub	Guidelines	Sustainability and food	<a href="https://www.sdg2advocacyhub.org/index.php/Chefaction">https://www.sdg2advocacyhub.org/index.php/Chefaction</a>
SITRA	Report	Circular economy and the restaurant industry	<a href="https://www.sitra.fi/app/uploads/2017/02/Selvityksia100.pdf">https://www.sitra.fi/app/uploads/2017/02/Selvityksia100.pdf</a>
Ristorazione sostenibile 360	Report	Sustainability and the restaurant industry	<a href="https://ristorazione360.it/wp-content/uploads/2022/07/SDG-per-Sito-RS-360_Editato.pdf">https://ristorazione360.it/wp-content/uploads/2022/07/SDG-per-Sito-RS-360_Editato.pdf</a>
Associazione Italiana Turismo Enogastronomico	Report	Food tourism	<a href="https://www.robtagaribaldi.it/wp-content/uploads/2020/03/RTEI_2020_ENG_Trends-2020_REDUCED.pdf">https://www.robtagaribaldi.it/wp-content/uploads/2020/03/RTEI_2020_ENG_Trends-2020_REDUCED.pdf</a>
Next Tourism Generation Alliance	Article	Food tourism	<a href="https://nexttourismgeneration.eu/future-skills-in-tourism-and-the-importance-of-gastronomy-tourism/">https://nexttourismgeneration.eu/future-skills-in-tourism-and-the-importance-of-gastronomy-tourism/</a>

World Travel and Tourism Council	Report	Sustainability and tourism	<a href="https://wttc.org/Portals/0/Documents/Reports/2021/WTTC_Net_Zero_Roadmap.pdf">https://wttc.org/Portals/0/Documents/Reports/2021/WTTC_Net_Zero_Roadmap.pdf</a>
Excellence Magazine	Article	Circular cooking	<a href="https://excellencemagazine.it/davide-del-ducasi-alla-cucina-circolare-ma-serve-maggiore-conoscenza-tecnica/">https://excellencemagazine.it/davide-del-ducasi-alla-cucina-circolare-ma-serve-maggiore-conoscenza-tecnica/</a>
Morning Future	Article	Circular cooking	<a href="https://www.morningfuture.com/en/2018/10/24/igles-corelli-chef-circular-economy-restaurant/">https://www.morningfuture.com/en/2018/10/24/igles-corelli-chef-circular-economy-restaurant/</a>
Food Service	Article	Food waste	<a href="https://www.foodserviceweb.it/2020/01/02/ristorazione-i-tanti-modi-per-combattere-lo-spreco-alimentare/">https://www.foodserviceweb.it/2020/01/02/ristorazione-i-tanti-modi-per-combattere-lo-spreco-alimentare/</a>
Una Buona Occasione	Article	Circular economy for food	<a href="https://www.unabuonaoccasione.it/it/focus/economia-circolare">https://www.unabuonaoccasione.it/it/focus/economia-circolare</a>

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## Summary

The aim of this exploratory thesis is to investigate the opportunities that the joint application of Slow Food and circular economy principles offers in improving the sustainability of gastronomy tourism.

Gastronomy plays a massive role the Italian culture, thanks also to the variety of ingredients and local cuisines that merge together shaping societal values such as conviviality, family traditions, and hospitality. These aspects are fascinating for tourists too, to the point of becoming the key factor when choosing a destination to travel to.

Indeed, the concept of food tourism is acknowledged worldwide, interpreting the culinary experience as a purpose of tourism. Within this context, the restaurant industry plays a fundamental role. Not only the industry's role must be investigated in order to better appreciate its positive outcomes within the tourism sector, but even more to analyze its drawbacks and identify new possibilities for improving its sustainability.

Among these possibilities, a very promising one is that of a shift towards circular economy. To date, research in this direction is still limited and this thesis aims to fill this gap. The research question is therefore the following: how can circularity applied to the restaurant industry improve food tourism sustainability?

The inquiry is divided in two parts: first, it verifies if circularity can actually improve food tourism sustainability through an extensive literature review; then, it elaborates on how this can happen through the application of the "3 C's of the circular economy for food" framework to the sustainability certifications that restaurants can obtain.

Concerning tourism, it is important to stress that it is one of the largest and fastest-growing industry in the world and it can be considered a socio-economic development driver. However, its linear configuration implies a strong negative impact on the environment, contributing to its degradation. The growing interest and awareness developed on this matter by tourists are pushing businesses for a change and circular economy principles can be the right answer.

Circular economy is a systemic approach designed to be regenerative, this means that it eliminates the very concept of waste, considering it as a resource that can be reused, transformed, and recycled. This approach not only keeps resources in use, but it aims to actively improve the environment rather than just protect it.

Being among the EU priorities nowadays, this shift towards circularity is highly promoted by several intergovernmental organizations. Indeed, this paradigm shift has, above all, the potential to answer to each individual's needs while protecting the planet on which we all live and depend. Despite that, circular practices in the tourism industry, and more specifically in the food tourism industry have been poorly analyzed. For this reason, this study focuses on the application of circularity to the tourism industry, analyzing in particular the food and beverage sector to narrow down the nascent field of circular tourism and better identify its challenges and potentialities in Italy. Considering the relevance of food tourism on a national scale, the restaurant industry has been chosen as subject of study.

Food tourism, or visiting places for the experience of local cuisine, has become an important aspect of the tourism industry, with dedicated policies and reports like the UNWTO Global Report on Gastronomy Tourism and UNWTO Guidelines. It has been found that food plays a significant role in the tourist

experience, influencing destination choice and spending habits, particularly in sustainable restaurants.

Restaurants and tourism not only are complementary, but they are mutually reinforcing. This makes food a key vehicle for change. Moreover, being responsible for around one-third of the world's greenhouse gas emissions, action for the achievement of a greater sustainability is no longer deferrable.

The tourism sector has a key role in transitioning from a conventional linear economy to a circular one, due to its ability to promote circular flows among its suppliers and customers. The field of food management is identified as an area with room for improvement. One way to move towards a circular restaurant industry is by establishing flexible arrangements with local suppliers, using edible food products close to expiration, and reusing cooking leftovers. Another useful practice is using food waste for high-quality compost, which has a positive impact on the environment.

As demonstrated by the case of the Finnish restaurant "Nolla", the application of circular principles in the food and beverage industry is more than feasible. Nolla is a zero-waste, plant-based restaurant located in Helsinki. The restaurant operates with a sustainable philosophy and implements various initiatives, such as a zero-waste thinking, a plant-based menu, local and seasonal sourcing, composting, and the use of biodegradable materials. Nolla follows the 5 R's of sustainability: refuse, reduce, reuse, repurpose, and recycle. They strive to reduce waste, support the local economy, and promote a circular economy. Nolla serves as an example of how a restaurant can provide a top-notch dining experience while pursuing sustainability through circular principles.

In Italy, this mindset characterizes the Slow Food Foundation, whose aim is to promote local ingredients, traditional recipes and support the protection of the environment while contrasting fast food and fast lifestyles, safeguarding fair labor and work practices. The Slow Food movement has been embraced by many, generating a new category of tourists that is slow food tourists. The existence of these conscious and aware tourists, along with the global dimension reached by the Slow Food Foundation nowadays, constitute fertile ground for the enhancement of sustainable practices in the tourism industry. Therefore, the aim of this thesis is to contribute to the investigation of the potentialities of the new combination of Slow Food Tourism and circular economy to improve the sustainability of food tourism through the restaurant industry.

The novelty of the phenomenon under investigation requires the adoption of an exploratory case studies' comparative analysis approach. More precisely, selection, analysis, and comparison of three distinct sustainability certifications within the restaurant industry have been made. These standards are set forth by the Bureau Veritas Food Loss and Waste Management Protocol, the Michelin Guide's Green Star, and the Slow Food Chef's Alliance. This comparison was made since disseminating and certifying the sustainable practices implemented in the restaurant industry is a similar goal of all of these sustainability acknowledgements.

Concerning the first certification, the Slow Food Chef's Alliance is a global initiative that connects chefs committed to protecting traditional gastronomic knowledge, food biodiversity, and the producers who safeguard them. There are 513 members in Italy. To join the alliance, chefs must meet four requirements, including preparing meals with high-quality regional products, promoting the work

of producers, minimizing environmental impact, and promoting the Slow Food ideology.

Moving on to the second certification, in 2020, the Michelin Guide introduced the Green Star award to recognize restaurants at the forefront of sustainability. There are currently 49 Green Michelin Stars in Italy. To assign the award, inspectors consider factors such as the use of locally and seasonally sourced ingredients, the quality and origin of the product, waste reduction efforts, and cooperation with the local community.

Lastly, the Bureau Veritas is a company providing trust-building services for businesses and society. It offers audit and certification services to help its clients become more sustainable. One of its certifications is the Food Loss and Waste Protocol, which outlines a hierarchy of actions to manage food surpluses. These actions include reducing surplus food, donating to charities, using leftovers for animal feed, producing energy from surpluses, and making compost to fertilize soil.

The use of the “3 C's of the circular economy for food” framework allowed to identify categories to which assign the different requirements of the certifications through a coding process, enabling the analysis of differences and similarities and bringing into focus the circular practices within the restaurant industry. Triangulation of primary and secondary data has been used in the analysis to increase the validity and reliability of research findings by cross-checking data from various sources and to enable a more comprehensive and nuanced understanding of the research problem by capturing its complexity and variability.

Access to documentary information allowed to chronicle the growing interest in sustainability and circular practices within the tourism sector and the restaurant industry, to identify, understand and analyze recurrent themes and emerging trends among the requirements of the different certifications taken into account, and to identify the direction in which the restaurant industry is currently moving.

Primary data, gathered through a semi-structured interview with Chef Igles Corelli, validated the results of this research and provided valuable insights on the application of circular principles to the food and beverage industry. This activity occasionally revealed unexpected, previously overlooked aspects, which served to make some initially unclear concepts during the data collection process clearer.

The "3 C's of the circular economy for food" framework claims that, when assessing circular practices for food, three factors must be taken into consideration: capital, cyclicity, and co-evolution. The first one encompasses all those actions towards the protection of natural, cultural and economic capital. The second C, cyclicity, encourages to think in terms of regeneration and comprises the three core ideas of extension, metabolization, and renewability. Co-evolution involves all the activities that promote symbiotic growth. This framework has been chosen because of the possibility of comparing the requirements of the different organizations and analyze their effectiveness in producing and promoting circular practices in the food industry.

What emerges is that the certifications offered by Slow Food, Michelin Guide and Bureau Veritas have a positive impact on various aspects of business and society. They promote the use of local, seasonal, and ethical raw materials and encourage the implementation of zero waste policies. This helps to reduce

waste and increase sustainability, positively impacting the environment and the economy. The certifications also foster local traditions and knowledge, promoting cultural capital. Additionally, they encourage businesses to take responsibility for their impact on society and the environment, positively impacting co-evolution. The certifications also contribute to local charities and food banks, supporting local communities and preserving local traditions.

The results of this study show that each requirement can be attributed to at least one category within the 3 C's framework and each certification covers all three areas. This indicates that there is a circularity trend within the restaurant sector. In sum, each C contributes with different practices to the achievement of a cradle-to-cradle model applied to the restaurant industry.

Cradle-to-cradle is a biomimetic approach, meaning that it is inspired by nature. In the environment, elements undergo infinite transformations without losing their ability of being nutrients. The same applies to the industry when this model is put in place: used resources can be reused for the same or another system, allowing for the elimination of the concept of waste.

All the requirements, which have been shown to be consistent with circular principles through the application of the 3 C's framework, show that the C2C circular model can be adopted within the restaurant sector, significantly improving its sustainability and, as a result, the sustainability of food tourism. Compliance with the requirements allows the restaurant industry to close the loop, replacing waste disposal with upcycling and recycling. This brings to a more sustainable management of food resources.

One of the study's important findings is that the effectiveness of circular practices is determined by the quality of the ingredients because it promotes the



full use and reuse of raw materials, as was revealed in the interview with Chef Corelli and is still strongly backed by Slow Food and the Michelin Guide.

At the same time, high-quality products enhance a location's tourist attractiveness, which is directly related to local development and supported by Slow Food's efforts to engage local communities. Slow Food advocates a reduction in greenhouse gas emissions from transportation by promoting the use of local products.

Additionally, the Slow Food movement led to Slow Food Travelers who are much more conscious of sustainability issues. These new players encourage companies to think more carefully about how their decisions will affect society, the environment, and the global economy.

Even if the shift towards circular practices is costly for restaurants, this study found that by producing green energy and recycling or reusing resources, these greater costs might be offset in the long run. The literature review, together with primary and secondary evidence, all corroborate this claim.

Given the alarming quantity of food waste that is generated every day, all circular activities are of the utmost importance today, and the C2C model promoted by those circular practices can be a powerful tool to get rid of food waste and the idea of waste altogether. This closes the loop and creates a positive cycle for the entire gastronomic tourist industry.

Nevertheless, the study also found severe challenges despite the promising findings. First and foremost, quality is insufficient. Understanding the raw materials is another crucial component for effectively implementing circular practices since it enables conscious use of the ingredients. Because specific education in this field is still not required to start a restaurant, that is one of the factors that undermines

circularity in the restaurant industry. However, because restaurants play an educational role, those who already use a C2C model have the chance to educate both customers and competitors. Yet, another criticality concerns responsibility. In fact, it is not possible to completely put this burden on the restaurant industry alone, but policymakers must be taken into account too. In addition to offering financial incentives to restaurant owners, the government can also actively participate in ensuring the accuracy and factuality of the information consumers receive by actively delivering new educational requirements and guidelines for circular economy practices.

The study highlights the importance of Slow Food and circularity principles in promoting sustainability in the food tourism sector, and the impact this can have on policymakers, restaurants, and gastronomy tourists. Policymakers need to provide support and incentives for the restaurant industry to transition to sustainable practices. Restaurants can benefit from adopting these principles and should engage in partnerships and collaboration to promote sustainability. Food tourists can play a role in driving sustainability by choosing to support sustainable businesses.

This study has some limitations that need to be considered. Firstly, data gathering was challenging due to the limited literature available on this topic and difficulty in obtaining data from restaurant owners. Secondly, the study relied on self-reported data from Chef Igles Corelli, which may be biased. Thirdly, the study used a qualitative research methodology that is subject to researcher bias. Additionally, the study was limited to a specific geographic area and only focused on restaurants, not catering operations. The findings of the study should be interpreted with these limitations in mind and further research is needed to

determine the generalizability of the results and the role of local administration in enhancing circular economy practices in the food tourism industry.

The study found that Slow Food and circularity principles have a significant impact on enhancing sustainability in the food tourism sector in Italy. The analysis of sustainability certifications and the "3 C's of Circular Economy for Food" framework supports the trend towards circularity and the positive contribution of Slow Food. The study also found that quality ingredients, collaboration, knowledge, and education play a crucial role in promoting circular practices in the restaurant industry. The study highlights the need for support from policymakers to help restaurants transition to sustainable practices and implement Slow Food and circularity principles. In conclusion, the study confirms that the circular economy and Slow Food principles are important drivers for sustainability in the food tourism industry, and that further investigation and cooperation is necessary to promote these principles and enhance sustainability in the industry.