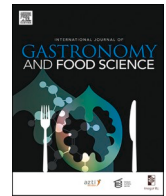




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## When sustainable cuisine imaginaries become *unsustainable*: Storage and preservation practices in Swedish restaurants

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### ABSTRACT

Sustainability is a key concern within the restaurant industry, which offers a variety of initiatives and approaches to it. This, in turn, creates different shared understandings, what we here call *sustainable cuisine imaginaries*. The practices fostered by these imaginaries are now facing unforeseen challenges due to the coronavirus pandemic, creating a dissonance in the way restaurants normally operate. By using storage and preservation practices as an entry point, this ethnographic study of six Swedish restaurants uses the concept of imaginaries to explore the different beliefs and ideals for restaurant sustainability and the practices fostered by those ideals. Three distinct imaginaries of sustainable cuisine were identified: locality as a quality, reducing meat in favor of vegetables, and the creative and knowledgeable professional. These imaginaries are materialized through different storage facilities, like root cellars, wine cellars, or meat aging fridges. This study shows how disruptions in restaurants, triggered by unexpected situations, exposed the fragility of these imaginaries. We argue that the sustainable cuisine imaginaries, as a complexity reducing mechanism, help restaurant professionals manage the intricacy of sustainability. However, they also demonstrate an array of simple solutions very susceptible to external factors. Sustainable practices can thus easily become unsustainable.

### Introduction

Restaurant professionals see sustainability as a complex subject that many struggles to grasp in its entirety as the industry lacks a common definition of sustainability (Hall and Gössling, 2013). However, increasingly more initiatives, like the Green Restaurant Association (US) and the Swedish Network of Sustainable Restaurants, offer guidelines and toolkits for turning restaurants into sustainable businesses. These create shared understandings on how to approach sustainability. Previous research on restaurant sustainability looks at its impact on business performance, environmental sustainability, and consumer perspectives (see Jacobs and Klose, 2016; Jang et al., 2017; Mackenzie et al., 2011). However, little is known of how staff work together with sustainability in their daily practices or how these are affected by unforeseen circumstances.

Food and beverage storage are an essential part of restaurant infrastructure and are affected by social and cultural norms and structures. These facilities allow a methodological approach to exploring the sense and meaning making of food and sustainability embedded within everyday practices of restaurants (Joose & Marshall, 2020; Pilcher,

2016; Shove and Southerton, 2000). This article empirically explores different storage and preservation routines within the Swedish restaurant industry as a way of investigating the narratives and practices related to sustainability.

We use the concept of imaginaries drawn from Cultural Political Economy (CPE) and propose the term “sustainable cuisine imaginaries”. The sustainable cuisine imaginaries are used as analytical tools since imaginaries help to analyze and identify the discourses and practices that depict the shared beliefs of a group (Sum and Jessop, 2013), in this case restaurant professionals in Sweden. Hence, the aim is to explore dominant sustainable cuisine imaginaries among restaurant professionals as complexity reduction mechanisms. We argue that the sustainable cuisine imaginaries help restaurant professionals manage the intricacy of sustainability but these imaginaries are susceptible to external factors. In particular, these imaginaries expose a fragile system which relies on restaurant professionals’ and businesses’ *drive* to pursue sustainable practices without the necessary preparedness and support to overcome unexpected circumstances. The dissonance within these imaginaries caused by the coronavirus pandemic suggests a cultural shift in how restaurants understand and implement sustainable practices, and

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therefore indicate that current sustainable practices are not resilient.

### Restaurant sustainability

According to [Pereira et al. \(2019\)](#), chefs have the role of change-makers and intermediaries between tradition, innovation, and culture that create sustainable culinary systems. In past decades, there have been multiple movements arguing for food choices that preserve local food culture and are environmentally friendly, such as the Slow Food Movement ([Born and Purcell, 2009](#)). Culinary professionals have promoted the philosophy that regards “cooking” as a means to a more sustainable future, like the Lima Declaration, signed by eight of the most renowned chefs worldwide and the Chef’s Manifesto Action Plan ([SDG2 Advocacy Hub, 2017-2020](#); [White Guide, 2013](#)). In Scandinavia, the New Nordic Food movement launched a manifesto in 2004 which relies on such aspects as regional and local products, seasonality, and animal welfare ([The Nordic Council of Ministers, 2020](#)). This movement has inspired a discourse for new national cuisines internationally ([Ozturk and Akoglu, 2020](#)).

[Sauer and Wood’s \(2018\)](#) study of Danish chefs found that although there was a positive attitude associated with sustainability, there was neither a clear understanding of the subject nor much evidence of sustainable practices. [Batat \(2020\)](#) identified intrinsic and extrinsic factors that motivate Michelin-starred chefs to adopt sustainable practices in restaurants in France, which shows that sustainability perceptions differ according to restaurant size and market. Nevertheless, most studies focus on management experiences and not on those who incorporate the restaurant’s sustainability vision and discourse into daily work and activities. Following [Jang et al. \(2017\)](#), we understand restaurant sustainability as a way of operating by adopting a culture of responsible behavior when producing meals while considering economic, social, and environmental goals.

### Imaginariness

*Imaginary* is a concept widely used in anthropology and cultural studies when studying how individuals make sense of their own experiences and the symbols and materiality attached to them ([Strauss, 2006](#)). The concept is also used in CPE, and [Sum and Jessop \(2013\)](#) define *imaginariness* as “semiotic systems that frame individual subjects’ lived experience of an inordinately complex world and/or inform collective calculation about that world” (p. 165). In other words, imaginaries are shared understandings that give coherence to complex issues through sense and meaning making. Imaginaries make reality manageable by giving it structure as it is impossible to grasp the entirety of intricate phenomena.

Lately, specific sets of imaginaries have been proposed to understand ideas relating to sustainability. [Levy et al. \(2013\)](#) elaborate on the concept of *climate imaginaries* to identify and analyze imaginaries of climate change to explain how some imaginaries remain peripheral while others dominate. Imaginaries have also been used to analyze consumers’ construals of alternative food networks by exploring different values attached to food ([Watts et al., 2018](#)).

Following this research and CPE, we propose the “*sustainable cuisine imaginaries*” concept. Sustainable cuisine imaginaries are semiotic systems. This means culinary discourses and practices prevalent at a specific point of time and place that help reduce the complexity of sustainability embedded in global trade, local cultures, politics, and economic factors. These complexity reduction mechanisms are the objects of study: understanding how certain imaginaries become accepted, integrated, and dominant and how they then materialize in restaurant routines and practices.

### Storage and preservation practices in restaurants

Food storage and preservation practices have shaped human history

and food culture but have been insufficiently examined from a sustainability perspective ([Hammond et al., 2015](#)). Research has mainly focused on household consumption and cultural and societal changes, like the advent of the cold chain that created an availability of fresh food regardless of origin and season ([Freidberg, 2009](#); [Shove and Southerton, 2000](#)).

Storage practices in restaurants are under-researched even though they are at the center of the restaurant business. The main body of studies on storage practices in restaurants looks at their efficiency and their safety ([González-Sánchez et al., 2013](#); [Hammond et al., 2015](#)). There is scarce research on how storage practices and facilities influence other restaurant activities. However, food storage ties into food purchasing and waste management, which are central to restaurant sustainability (see [Baldwin et al., 2010](#)). Inadequate planning leads to overproduction and purchasing that in turn becomes food waste, affecting restaurant sustainability and cost control, which are caused by human error and result in food production failure ([Mackenzie et al., 2011](#); [Mac Con Iomaire, Fawzi Afifi and Healy, 2021](#)). Minimizing inventories is one strategy for avoiding waste. This is done by encouraging rotation and fresh products through responsible food purchasing, menu planning, and forecasting ([González-Sánchez et al., 2013](#)).

There are no ethnographic studies investigating the mundane routines of food storage: the role of storage and preservation in daily restaurant work. According to [Pilcher \(2016\)](#), storage, preservation, and transportation are an essential part of culinary infrastructures and contribute to quality and the economic and cultural value of food. The latter is also linked to the notion of freshness, which has changed over time due to the influence of technology, government policies ([Freidberg, 2009](#)), and sustainability ideals. Hence, it is relevant to study these practices from a holistic perspective and explore the sense and meaning making of storage and preservation in food sustainability for restaurants.

### Materials and methods

An ethnographic study of six restaurants was conducted in Sweden. The selection criteria included a wide-range of food and beverage storage: wine cellars, root cellars, meat aging fridges, standard fridges, freezers, and dry storage. The restaurants are located in rural areas, small cities, and the largest city in Sweden. They consist of up-scale restaurants, cafés, and wine bars. The methodology follows [Belgrave and Hauf’s \(2015\)](#) suggestion of an ethnographic approach when using CPE and imaginaries as analytical tools. They argue that ethnographic methods allow investigation not only of the semiotic and discursive aspects of the imaginary but also the material practices. Thus, the methods used are interviews, walk-alongs with fridge stories ([Joose & Marshall, 2020](#); [Kusenbach, 2013](#)), and participant observations. This allowed capturing conscious and tacit knowledge and identifying the imaginaries surrounding sustainable cuisine, in both discourses and practices.

Eighteen semi-structured interviews on restaurant storage, food, and beverage quality and sustainability were conducted with an average duration of 41 min. This method allowed extracting the respondents’ own beliefs and analyzing the discourses on restaurant sustainability. Respondents included management, kitchen staff, and dining room staff (see [Table 1](#)). All interviews took place at the establishment with the exception of three. Two of these exceptions were held at a café during the participants’ day off (on their request) and the other over Facetime as the restaurant was closed due to the pandemic. All respondents gave written consent for the interviews to be recorded and both respondents and establishment were anonymized. All interviews were transcribed verbatim.

The walk-along with fridge stories consisted of a respondent guiding the main researcher through all food and beverage storage facilities and opening each one to explain its contents and specific use. Sometimes, one respondent showed the food storage and another the beverage

**Table 1**  
Respondents.

Establishment and activity	Type of company	Time opened	Respondents	Gender	activities observed	Type of storage
Bistro and wine bar (R1)	Entrepreneur	<3 years	sommelier head chef/owner	woman man	Walk-along of all storage and premises and lunch service	wine coolers in an entire wall as part of the décor of the bar, (a), (b), (c), (d), (e), (f)
Restaurant within cultural entertainment (R2)	International Group	3–10 years	head sommelier food and beverages manager reservations/host operations manager head chef	woman man man	Walk-along of food and beverage storage and premises	Microgreens growing in storage (a), (b), (c), (d), (e), (f)
Café (R3)	Large company	>10 years	head sommelier bartender breakfast host head chef	woman man woman man	Mise en place for lunch and walk along of storage and premises	Root cellar, (a), (b), (c), (d) in form of containers located outside the kitchen
Restaurant and hotel (R4)	Large food industry group	>10 years	head sommelier bartender breakfast host head chef	woman man woman man	Handling of the delivery, walk along of storage and premises	Root cellar and wine cellar underground and meat aging fridge. (a), (b), (c), (d), (f)
Restaurant, wine bar and hotel (R5)	International Group	3–10 years	head sommelier quality manager food and beverages manager	woman woman man	Walk-along of all storage and premises	Underground wine cellar, self-serving wine dispensers. And cellar with aging wine barrels and containers (a), (b), (c), (d), (e), (f)
Bistro and wine bar (R6)	Entrepreneur	<3 years	head chef waitress sommelier/ partner cook	man woman woman woman	Walk-along of storage and premises, handling of delivery	Wine cellar on display upon the restaurant entrance, (a), (b), (d), (e), (f), and freezer

(a) kitchen storage for service (refrigerated drawers).

(b) walk-in fridge.

(c) walk-in freezer.

(d) Dry storage.

(e) Wine coolers in dining room.

(f) Fridges.

storage. This allowed to observe and experience the sensory dimension of the facilities directly. It served to clarify the spatial practices and the social architecture. While walking through the restaurants, the respondents interacted with other staff, revealing who was allowed in which places and why. This method allowed respondents to interact with the content of these facilities, prompting them to elaborate on how they perceive the functionality, rationality, and meaning making behind these spaces (Joosse & Marshall, 2020; Kusenbach, 2013).

Participant observation of delivery handling, *mise en place*, and lunch service was performed but not all processes at all establishments. As observer-as-participant (Baker, 2006), the main researcher sporadically asked questions about observed activities. Delivery handling consisted of supplier deliveries and their handling towards preparation and/or to storage. *Mise en place* included all activities before the service, both in kitchen and dining room. This allowed the contrast of what was said during the interviews and what was observed. Although the goal was to observe a “natural” environment, the presence of the researcher changed the setting, as access was given by management. Some staff seemed uncertain when being observed, thus, the researcher constantly reassured them that this was not an evaluation and that the study participants were anonymous. Field notes and photographs were taken during participant observation, walk-alongs, and fridge stories, along with drawn sketches of the layout of the storage facilities. These field notes were transcribed into field reports.

The combination of ethnographic methods allowed capturing the complexity of practices and discourses and their materiality. Although diversity in the selection of restaurants helped explore variation of the phenomenon, there were constraints in time and access (Larsson, 2009). The material was collected October 2019 to September 2020, so collection started before the coronavirus pandemic and followed the restaurants as the restrictions came into effect. This made difficult participant observations at some restaurants due to safety concerns but captured a shift in narratives and practices. This shift allowed an analytical contrast useful for the third cycle coding described below.

Foremost, the new circumstances allowed observing how the restaurants handled the pandemic as the situation unfolded, and how aspects of sustainability were uncovered that otherwise would have remain hidden.

The analysis was performed by qualitative data coding (Flick, 2009) of both transcribed interviews and field reports. The first coding cycle was performed inductively and consisted of several readings of the material. First, the interview transcripts were coded using words mentioned by the respondents. The field reports were used to support the interview codes and to contrast what was said to what was done, which was not always congruent, thus creating new codes. The photos were used to analyze the materiality of practices and as a mind map to understand how the restaurant’s daily routines reflect the storage spaces and their uses. The first code cycle gave 102 different codes and the second was done by excluding codes not related to food or storage, resulting in sixty codes. The third cycle was done deductively by selecting the codes related to food practices and that were connected directly to storage and preservation, resulting in three main themes identified as imaginaries. The validity of the findings was enhanced by gathering a diverse sample set of approaches to sustainability, innovation, tradition, and food storage and to preservation practices. It was further enhanced by triangulating the results by comparing what was said to what was done.

## Results

The results show the dominant discourse among participants about sustainability in restaurants and the storage practices embedded in it. Three distinct sustainable cuisine imaginaries were identified along with the disruptive effects caused to them by the coronavirus pandemic.

### Storing local quality

This imaginary illustrates the importance the participants give to the

origin of utilized ingredients and foodstuffs. The general perception among respondents was that local products have better flavor compared to products from far away and these foodstuffs were mainly purchased through personal networks. A typical comment was:

It is important with organic and locally produced. If it is something that is harvested and shipped for a very long time then it loses a lot both in nutrition and in taste, (. . .), also that it is organic or biodynamic or natural on nature's terms I think provides quality and is easier to work with. (host, R2)

The main argument among participants was the shorter distance the foodstuffs are shipped. This argument is also found in earlier research on restaurant sustainability, yet there is scarce empirical evidence that this is a fact (Born and Purcell, 2009; Ozturk and Akoglu, 2020). The notion that local products are inherently "good" was prevalent among participants, except for the food and beverages manager at R5:

Then, you get to how you should run, it should be, well sustainable food, it should be possible to grow locally, [...] We live in a country where certain times of the year are very difficult, but then, then you could use a greenhouse and run it that way, so that it works. But that is also extremely energy consuming. Is that worse than getting it from a country where it isn't?

He pointed out an important aspect of food sustainability: the way of production. According to Born and Purcell (2009), the way food is produced has more impact than the transport itself, so locality does not work as a direct assessment on how sustainable a product is. Nevertheless, local foodstuffs were most often considered better than organic foods from far away. Some mentioned that it was better to first see what the "neighbor" does, and what you can find in your own region, particularly when using wild ingredients:

I have always liked that there is a lot that you can eat that is very nice. We have a waitress who is very, like, this: 'oh, I picked this'. Yeah, some marigold flowers, meadowsweet, these kinds of things. And it's great fun to be able to use something you've picked yourself. [...] So, it's probably just a little hobby, and then it's fun that you can use it and that it will be, like, very nice on a plate (cook, R6)

Origin was an important parameter for all participants when choosing ingredients. This was an aspect that was connected also to the participants' perception of quality, mainly measured in flavor. In the restaurants studied, storage facilities were used to maintain and increase food quality. Participants expressed knowledge and respect for the products in informal conversations where they noted that correct manipulation and storage were done to enhance quality instead of decreasing it. Each establishment had wine/root cellars and fridges used for storing vegetables or aging cheeses and/or wines, among other local specialties. The walk-alongs at R2 revealed that a storage room was used to grow sprouts and micro-greens for the kitchen, embodying the hyper-local trend (De Chabert-Rios and Deale, 2016).

The cellar at R5 contained barrels for aging wine produced on site, another example of the practices fostered by this imaginary. Although the grapes came from a Mediterranean region, R5 regarded their wine as locally produced. This also shows that "local" is a vague term and open to interpretation. As Born and Purcell (2009) suggest, it is socially constructed.

The exception to preferring local ingredients was when using products certified by a quality scheme such as a geographical indication (i.e. Prosciutto di Parma). R1 had a fridge dedicated exclusively for these, and food origin was regarded as a guarantee of quality and sustainability since strict rules of production must be followed to carry the denomination of origin. Hence, traditional ways of production also played a role in the perception of sustainability and having special storage for these products was central to maintaining quality.

### *More vegetables, less meat*

This imaginary is based on the understanding by almost all participants that meat consumption needs to be reduced and that vegetables must take center stage. Respondents expressed that this is the imminent future for restaurant sustainability and is an accepted discourse in society at large. When vegetables are the main ingredients, freshness and seasonality becomes central. As vegetables spoil easily, preparation and storage are paramount. This imaginary is expressed in the practices and facilities connected to freshness and seasonality:

What you can eat in season, is important to me (. . .). That, eating an asparagus in December that is not from Sweden does not taste the same way. You can buy strawberries that are not Swedish in October, November, December and they taste, it is not the same quality in taste, you cannot get, like, the (. . .) freshness. (sommelier at R2)

Almost every establishment had vegetable only fridges with specific temperatures; these, along with root cellars, were used to assure vegetable freshness. Likewise, meat fridges were used to ensure food safety and quality.

The root cellar at R3 and the meat aging fridge at R4 illustrated how this imaginary is embedded in the restaurants' storage spaces through tradition and innovation. The respondents mentioned that in-house preparation of preserves was preferred over buying fresh products from other regions when they are out of season, which was in line with the previous imaginary. Here, the respondents negotiated freshness with seasonality, by using vegetable preserves that allowed the use of products out of season:

We have a lot of processed things like this, lactic acid fermented vegetables, pickles and stuff. We have a lot of that in stock, as well as for us to be able to pick and work with it throughout the year (head chef, R3)

The perception of what freshness is, has varied over time as it has been influenced by the advances in transportation and storage. Thus, what is considered fresh food follows policies, health recommendations (Freidberg, 2009) and, nowadays, sustainability. R3 uses the root cellar for vegetable preserves like Nordic pickles and kimchi. Root cellars maintain a constant cool temperature year round and have been used since before the cold chain. R3's external root cellar has recently been restored, and in the café's garden, there is a photo of its interior aimed to encourage consumption of seasonal vegetables.

This imaginary relates to a serving style embraced by most of the restaurants that eliminated or reduced meat portion size, even when meat was at center stage. Unlike root cellars, meat aging fridges counted as modern technology that ensures the uniform aging of meat to improve quality but with less quantity. In R4, the meat aging fridge was visible in a special dining room where meat tasting events take place, allowing this facility to exhibit large pieces of meat as a part of the restaurant décor. However, serving sizes did not exceed 120 g, which the head chef at R4 regarded as a small serving size:

It may sound completely wrong to serve meat when everyone says that you should use vegetables instead. But we choose good meat, we know what the cows eat and that they have been outdoors. We serve less protein and more vegetables, but the protein is very good.

His remarks revealed a somewhat guilty and apologetic feeling about going against the norm. This normative discourse of reducing meat, acknowledged by the head chef, is seen in the appearance of plant-based Michelin-starred restaurants (Babat, 2020). The notion of freshness was also important to meat quality. Although it may seem contradictory to regard aged meat as fresh, the participants working with it explain that only the outer layer is "dry" and beneath this, it is fresh. This is in stark contrast to frozen meat, which all staff at this restaurant regarded as lower quality.



### *The creative restaurant professional*

Having good quality, local, fresh and seasonal products was paramount to working sustainably, according to the participants. The third imaginary represents the restaurants' dependency on personnel that recognize these qualities. This emphasizes the importance of skills for working sustainably. When employing a creative restaurant professional, the participants argued that the restaurants gained the means to work with ingredients from scratch and to think outside of the box. They assumed they would have staff interested in working sustainably. This was expressed as expertise, craftsmanship, and knowledge:

I believe that if you want to be sustainable, you have to have continuity in everything you do. If you have that, then you have the routines, then you have the knowledge (. . .). I believe that the choice of a product naturally matters the most, thereafter it is the knowledge a person has. If you give good products to someone who cannot handle them, they ruin the stuff. (head chef, R1)

Restaurant professionals also had to be curious and imaginative to work with the whole product and the ability to do so is connected to the craftsmanship of restaurant professionals. New recipes and applications are needed for using vegetable leaves and stems. These should not be seen as waste but instead as ingredients with gastronomic potential. The respondents saw this as triggering creativity or, according to [Batat \(2020\)](#), an intrinsic motivation to engage in sustainability:

... above all curiosity and creativity. To look at something you're about to throw away and just think, 'is there anything I think I could do with this?' (. . .) You will probably find something like, 'we'll test this'. (. . .) It also generates a lot of creativity and community, and with that, you also gain the knowledge. I would say it is also very important to be curious and daring. (sommelier, R2)

For animal products, using the whole animal is not straight forward. Some participants note that restaurants have the expertise for handling ingredients correctly, as mentioned by [Pereira et al. \(2019\)](#), and that this practical knowledge is passed down now from restaurant professionals to customers:

Restaurants that are really good at their craft are a great alternative. So, we will not have to discard large parts of the animals because no one knows what to do [with them]. The restaurants will be the best alternative. They have taken on, to put a little harshly, the role housewives once had (food & beverages manager, R5)

Participants do not use the whole animal, such as organs, tongue or head. Even if they were aware of underutilized parts, they referred to meat cuts. Only one respondent mentioned other animal parts related to Chinese cuisine, thus pointing out a cultural difference of what is regarded as food.

The creative professional makes the right choices and has the "will" to work sustainably. This will, together with knowledge was mentioned by most participants as the main prerequisite for working sustainably. Other factors were secondary in their view.

I would say it's about will only. In other words, (. . .) that you basically think it is important. Because there are many options today, but a little imagination is required. (operations manager, R3)

Knowledgeable personnel have skills to manage different foodstuffs needing special storage solutions. In smaller restaurants, this required being organized within their limited storage facilities. All restaurants studied had specialized storage for meat, dairy, beverages, etc. They also had facilities for more expensive products that were handled by only a few of the staff.

The wine cellars at R6 and R4 are managed by trained sommeliers who have the knowledge to assure the proper conditions for the aging process. This exemplifies the practices fostered by this imaginary. By

knowing when a wine is ready for drinking or if a wine has a defect, the sommelier has the final saying on its quality. Having creative and knowledgeable personnel is an investment in itself, not only financial but also in time to train them. When coronavirus pandemic disrupted the restaurant business, all investments like these were postponed or cancelled.

### *Disrupted imaginaries – when sustainability becomes unsustainable*

When the national restrictions due to the coronavirus pandemic were enforced, the discourses and practices fostered by the imaginaries presented above were disrupted. Practices and products that the restaurants previously took pride in became financially unsustainable due to loss of customers and revenue.

Foremost, changes in purchasing practices occurred. The restaurants relied more on wholesalers instead of buying from small producers. For the most acute example, collaborations with farmers, decreased from around one hundred to just three. The participants realized that this created a larger problem for the supply chain as a large part of the supplied products are harvested and produced according to demand from the restaurant industry. Wholesalers supply smaller amounts of a variety of goods, while local farmers supply larger amounts of fewer products, which restaurants did not require. Since access to imported goods diminished, participants argued that Sweden has to be more self-reliant. This highlights a contradictory narrative about reliance on local products, as it suggests a wider use of imported foodstuffs. Furthermore, the sales of organic food to the hotel and restaurant industry decreased 15% in 2020 while the private consumption remained stable ([Ekoweb, 2021](#)). Consumer's demand for organic food has thus not changed but that the restaurant industry has reduced its use. This is probably partly due to a decrease in customers, but perhaps also, judging from the fieldwork, a strategy of putting their resources in trying to survive the corona pandemic, instead of buying premium products.

Handling and storing fresh and seasonal products, mainly vegetables, became problematic when restaurant had to decrease from receiving hundreds of guests a day to only fifty due to capacity restrictions. The larger establishments argued that it was not possible to preserve and store such large amounts of fresh products. One restaurant, for instance, pickled and fermented vegetables and brewed beverages like kombucha and shrub, but only with a quarter of the fresh vegetables they had. The rest had to be thrown away. Consequently, this loss of guests resulted in large amounts of unutilized fresh products as restaurants lacked personnel, time, and preparedness to find other strategies. However, having skilled personnel also meant that they could stop buying new products and rely on stocks.

Restaurants also had to reduce their labor force and the complexity of their menus. Some had to close for some months and one closed permanently. It was observed and also confirmed by participants that stress levels increased as they had to do the same job with less staff, as basic operations remained unchanged regardless the number of guests:

We might have, like, 30 kilos of grated carrots or 180 avocados. So, it was really all the vegetables they had [the supplier]. And then it was quite demanding because you had to sort everything when it arrived. And we were all furloughed part time, so you worked three days a week instead of five. (. . .) It was difficult to get the whole picture of what was happening. That was a problem. (head chef, R6)

A lack of time and a general feeling of uncertainty directly affected their creativity and innovation, which are considered essential for sustainable practices. Staff felt that they had to concentrate on saving the restaurant and their own jobs instead. This shift in focus resulted in abandoning different initiatives, such as achieving a sustainability scheme certification, changing storage facilities to improve working conditions and environmental impact, and reducing food waste. The participants expressed that the changes in working routines made it

impossible to maintain commitment.

Other changed routines included reintroducing individual plastic serving containers, such as for butter, and replacing tap water with bottled water. This contradicted the sustainable practices that they proudly commented on at the beginning of the study but that were abandoned once the government restrictions came into effect. However, the participants continue to believe that the sustainable practices that were mentioned were central to the future success of the industry, but temporarily had to be put on hold. This shows a duality where they acknowledged both the importance of sustainable practices and the impossibility to continue with the same routines or implementing more ambitious plans. Hence, these culinary sustainability imaginaries were challenged when confronted with external pressures, such as a health crisis, as restaurants adapted to reduce their losses even if this meant going against their core values.

## Discussion

This study has identified three sustainable cuisine imaginaries: locality as a quality, reducing meat in favor of vegetables, and the creative and knowledgeable professional. The imaginaries mirror a wider social discourse on food sustainability (Watts et al., 2018). Similar arguments are found in studies of local food, attitudes and behaviors towards sustainability within the industry, and the larger ambition of reducing meat consumption (Born and Purcell, 2009; Ozturk and Akoglu, 2020; Sauer and Wood, 2018). The imaginaries illustrate how restaurants reduce the complexity of sustainability by adopting practices and narratives that describe an ideal image of what it means to work sustainably. Furthermore, these sustainable cuisine imaginaries are intertwined with and complement one another, as it is impossible to engage in seasonality and freshness without thinking about local products and creativity to use them in a way that avoids waste or underutilization.

These imaginaries could also be understood as a permeation of the ideals of the New Nordic Food movement, which has promoted local products, traditional skills, and sustainable work practices since 2004 (The Nordic Council of Ministers, 2020). This movement epitomizes a cuisine philosophy which is directly connected to the culinary and social qualities of food and to the idealized restaurant professional. It is a manifesto that serves as a powerful agent for these imaginaries (Sum and Jessop, 2013), as the movement seems to have molded a more or less unified vision of sustainability within the Swedish restaurant industry. However, this movement comes from a privileged perspective, as the manifesto was conceived by renowned chefs within the industry whose challenges differ greatly from the everyday practices of restaurants which cannot count on the same resources.

In contrast, the disruption due to the coronavirus pandemic suggests cultural changes in the restaurant industry when it comes to sustainability. Within daily operations, in particular when confronted with logistical and financial constraints, the imaginaries could not fully be put into practice. This follows the pattern within the hospitality industry of changing purchasing practices when confronted with a crisis (Mackenzie et al., 2011) and delineates a clear struggle between sustainability ideals versus financial profitability. The practices fostered by the sustainable cuisine imaginaries, thus, became unsustainable in the long run.

Mainly, the coronavirus pandemic challenges the common belief among participants and in previous research (see e.g. Batat, 2020; Jang et al., 2017) that the most important factor to engaging in sustainable practices is the *will* to do so and therefore the responsibility of individuals. The results show that will on its own is insufficient. The altered market and working conditions due to the pandemic reduced access to many types of resources also needed to work sustainably. One essential resource is skilled professionals who in their everyday work use their knowledge and creativity. This is in line with Hall and Gössling's (2013) argument on the importance of innovation and creativity to work sustainably.

Restaurants lack the preparedness and support to overcome

unexpected circumstances. The coronavirus pandemic made the weaknesses in the current way of operating and the fragility of common sustainable practices visible. This calls for a deeper understanding of sustainability and incorporating strategies that embrace its complexity to help the restaurant industry engage in resilient practices that create a more sustainable industry. Hence, it is paramount that formal education and training is incorporated to develop a workforce that can navigate the intricacy of sustainability. However, restaurants have not the resources to do it on its own, as it is a high pace industry, with inadequate long-term planning and where the master-apprentice system continues to dominate (Wellton et al., 2019). It requires cooperation with both academic research and authorities to incorporate practices that consider the complexity of culinary systems. Specially as the imaginaries here presented have also been promoted to serve private interests such as certification schemes or food suppliers that use this sustainability narratives to promote their products and services.

The complexity of sustainability needs to be embraced and not feared. In order to do so, trade associations, academia and authorities need to collaborate and support the restaurant industry with education and training, not only in food sustainability, but economic sustainability as well. The latter has been also pointed out in a report from the Swedish Agency for Economic and Regional Growth which states that poor economic sustainability leads to the abandonment of other sustainable practices. The report describes different scenarios to overcome the coronavirus pandemic and the most ambitious scenario and the one that will make the Swedish hospitality industry competitive, has a focus on innovation, sustainability and knowledge (Tillväxtverket, 2020). These focus areas require education and training.

We have used storage practices and facilities to highlight the structures and challenges of the social context to which they belong: Swedish restaurants. These practices are dependent on the infrastructure that, in turn, determine if and how these imaginaries materialize as practices and routines (Shove and Southerton, 2000). We suggest that storage facilities determine the amount, type, and quality of food that is served and the level of expertise expected of staff. They are thus related to the restaurants' daily sustainability work.

## Conclusion

This paper suggests that restaurant sustainability among Swedish restaurant professionals is mainly understood as a combination of using local and/or organic ingredients, using vegetables more widely, and the importance of a creative and knowledgeable professional who *wants* to work sustainably. We have argued that these three aspects should be understood as dominant imaginaries of sustainability. These imaginaries serve as complexity reduction mechanisms that make the challenge of restaurant sustainability manageable for restaurant's professionals but also represent an array of simple solutions that, as such, are vulnerable to unexpected situations. Sustainable practices can thus become unsustainable as in a time of crisis different perspectives emerge and gain momentum as events starts to unfold beyond anyone's control.

The restaurant industry is now at a crossroads, where the sustainable imaginaries presented here are being challenged by the coronavirus pandemic. In its aftermath, sustainability strategies need to consider preparedness for unexpected situations, which in turn will likely create new sustainable imaginaries, showing a cultural shift within restaurants and their understanding of sustainability. Especially important is the cooperation with trade associations, authorities and researchers to help an industry, which has been known to operate without long term planning. In order for the restaurant sector to meet the 2030 sustainable development goals they need thorough education in sustainability matters and incorporate routines and practices that create a more solid business which have the financial capacity to overcome unexpected situations. In other words, restaurants must stop perceiving sustainability practices as optional or as a niche investment, but instead as a foundation of their operations.

This paper also points to how restaurant storage can be used as a methodological approach for studying restaurant practices and how both walk-alongs and fridge stories can be used to unveil the sense and meaning making of daily practices to understand wider phenomena like restaurant sustainability.

### Implications for gastronomy

Sustainability is an important challenge of our society nowadays and the restaurant sector plays an important role in how this challenge is addressed by the society at large. This research paper investigates the complexity of sustainability within restaurants and how restaurant professionals reduce it by adopting beliefs and practices that are easily understandable and that portray a larger discourse of sustainability within society, what we call sustainable cuisine imaginaries. The coronavirus pandemic has exposed the vulnerability of these imaginaries and the necessity to explore further sustainable practices that are more resilient. Restaurant professionals need to have a better understanding of sustainability to be able to apply practices that pass the test of time. In order to do so, cooperation with other actors such as authorities, researchers and trade associations is required to implement education and training in sustainability matters. By acknowledging the need for cooperation, the idea that the most important aspect to engage in sustainable practices is the *will* to do so, is put into question as it replaces the individual responsibility of restaurant professionals to a shared responsibility of restaurants and authorities to cooperate. In conclusion, this paper focused on the restaurant industry by exploring storage practices that are rarely used and it approaches the sense and meaning making of the daily routines by employing a diversity of ethnographic methods which are innovative and interesting for restaurant and gastronomy researchers.

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### Conflicts of interest statement

The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

### Declaration of competing interest

None.

### References

- Baker, L., 2006. Observation: a complex research method. *Libr. Trends* 55 (1), 171–189. <https://doi.org/10.1353/lib.2006.0045>.
- Baldwin, C., Wilberforce, N., Kapur, A., 2010. Restaurant and food service life cycle assessment and development of a sustainability standard. *Int. J. Life Cycle Assess.* 16 (1), 40–49. <https://doi.org/10.1007/s11367-010-0234-x>.
- Batat, W., 2020. Pillars of sustainable food experiences in the luxury gastronomy sector: a qualitative exploration of Michelin-starred chefs' motivations. *J. Retailing Consum. Serv.* 57 <https://doi.org/10.1016/j.jretconser.2020.102255>.
- Belfrage, C.A., Hauf, F., 2015. Operationalizing cultural political economy: towards critical grounded theory. *J. Org. Ethnogr.* 4 (3), 324–340. <https://doi.org/10.1108/joe-01-2015-0002>.
- Born, B., Purcell, M., 2009. Food systems and the local trap. In: Inglis, D., Gimlin, D. (Eds.), *The Globalization of Food*. Berg, New York, pp. 117–138.
- De Chabert-Ríos, J., Deale, C.S., 2016. Taking the local food movement one step further: an exploratory case study of hyper-local restaurants. *Tourism Hospit. Res.* 18 (3), 388–399. <https://doi.org/10.1177/1467358416666137>.
- Ekoweb, 2021. Ekologisk Livsmedelsmarknad: Rapport Om Den Ekologiska Branschen Sammanställd. Ekoweb.nu. <http://ekoweb.nu/attachments/67/69.pdf>.
- Flick, U., 2009. *An Introduction to Qualitative Research*, fourth ed. SAGE Publications, Ltd, London.
- Freidberg, S., 2009. *Fresh: a Perishable History*. The Belknap Press of Harvard University Press, Cambridge Massachusetts.
- González-Sánchez, C., Garza-Ríos, R., Trujillo-Quintana, I., 2013. Determinación del tamaño del pedido en el almacén de un restaurante. *Ingen. Ind.* 34 (3), 280–292.
- Hall, C.M., Gössling, S., 2013. *Sustainable Culinary Systems: Local Foods, Innovation, Tourism and Hospitality*. Routledge, London.
- Hammond, S.T., Brown, J.H., Burger, J.R., Flanagan, T.P., Fristoe, T.S., Mercado-Silva, N., Okie, J.G., 2015. Food spoilage, storage, and transport: implications for a sustainable future. *Bioscience* 65 (8), 758–768. <https://doi.org/10.1093/biosci/biv081>.
- Jacobs, G., Klosse, P., 2016. Sustainable restaurants: a research agenda. *Res. Hosp. Manag.* 6 (1), 33–36. <https://doi.org/10.2989/RHM.2016.6.1.4.1292>.
- Jang, Y.J., Zheng, T., Bosselman, R., 2017. Top managers' environmental values, leadership, and stakeholder engagement in promoting environmental sustainability in the restaurant industry. *Int. J. Hospit. Manag.* 63, 101–111. <https://doi.org/10.1016/j.ijhm.2017.03.005>.
- Joose, S., Marshall, M., 2020. Fridge stories and other tales from the kitchen: a methodological toolbox for getting closer to everyday food practices. *Food Cult. Soc.* 23 (5), 608–626. <https://doi.org/10.1080/15528014.2020.1778921>.
- Kusenbach, M., 2013. Street phenomenology. The go-along as ethnographic research tool. *Ethnography* 4 (3), 455–485. <https://doi.org/10.1177/146613810343007>.
- Larsson, S., 2009. A pluralist view of generalization in qualitative research. *Int. J. Res. Method Educ.* 32 (1), 25–38. <https://doi.org/10.1080/17437270902759931>.
- Levy, D.L., Wright, C., Nyberg, D., De Cock, C., Whiteman, G., Spicer, A., 2013. Contested imaginaries and the cultural political economy of climate change. *Organization* 20 (5), 659–678. <https://doi.org/10.1177/1350508413489816>.
- Mac Con Iomaire, M., Fawzi Afifi, M., Healy, J.J., 2020. Chefs' perspectives of failures in foodservice kitchens, part 1: a phenomenological exploration of the concepts, types, and causes of food production failure. *J. Foodserv. Bus. Res.* <https://doi.org/10.1080/15378020.2020.1842955>.
- Mackenzie, M., Cheung, C., Law, R., 2011. The response of hotels to increasing food costs due to food shortages. *Asia Pac. J. Tourism Res.* 16 (4), 395–416. <https://doi.org/10.1080/10941665.2011.588869>.
- Ozturk, S.B., Akoglu, A., 2020. Assessment of local food use in the context of sustainable food: a research in food and beverage enterprises in Izmir, Turkey. *Int. J. Gastron. Food Sci.* 20 <https://doi.org/10.1016/j.ijgfs.2020.100194>.
- Pereira, L.M., Calderón-Contreras, R., Norström, A.V., Espinosa, D., Willis, J., Guerrero Lara, L., Pérez Amaya, O., 2019. Chefs as change-makers from the kitchen: indigenous knowledge and traditional food as sustainability innovations. *Glob. Sustain.* 2 <https://doi.org/10.1017/s2059479819000139>.
- Pilcher, J.M., 2016. Culinary infrastructure: how facilities and technologies create value and meaning around food. *Glob. Food History* 2 (2), 105–131. <https://doi.org/10.1080/20549547.2016.1214896>.
- Sauer, L., Wood, R.C., 2018. Behaviours and attitudes towards sustainable food provision on the part of Dutch restaurateurs. *Res. Hosp. Manag.* 8 (1), 41–46. <https://doi.org/10.1080/22243534.2018.1501177>.
- SDG2 Advocacy Hub., 2017–2020. Chefs' Manifesto: Join our community today. <http://www.sdg2advocacyhub.org/chefmanifesto>. (Accessed 4 November 2020).
- Shove, E., Southerton, D., 2000. Defrosting the freezer: from novelty to convenience: a narrative of normalization. *J. Mater. Cult.* 5 (3), 301–319. <https://doi.org/10.1177/135918350000500303>.
- Strauss, C., 2006. The imaginary. *Anthropol. Theor.* 6, 322–344. <https://doi.org/10.1177/1463499606066891>.
- Sum, N.-L., Jessop, B., 2013. *Towards a Cultural Political Economy. Putting Culture in its Place in Political Economy*. Edward Elgar, USA and UK.
- The Nordic Council of Ministers, 2020. *The New Nordic Food Manifesto*. <https://www.norden.org/en/information/new-nordic-food-manifesto>. (Accessed 22 October 2020).
- Tillväxtverket, 2020. *Turism och Besöksnäring Efter coronapandemin. En Nuläges- och Scenarianalys. Rapportnummer 0328*. Tillväxtverket, Stockholm. <https://tillvaxtverket.se/vara-tjanster/publikationer/publikationer-2020/2020-07-01-turism-och-besoksnaring-efter-coronapandemin.html>.
- Watts, D., Little, J., Ilbery, B., 2018. 'I am pleased to shop somewhere that is fighting the supermarkets a little bit'. A cultural political economy of alternative food networks. *Geoforum* 91, 21. <https://doi.org/10.1016/j.geoforum.2018.02.013>.
- Wellton, L., Jonsson, I.M., Svingstedt, A., 2019. "Just trained to be a chef, not a leader": A study of head chef practices. *Int. J. Hospit. Tourism Adm.* 20 (4), 400–422. <https://doi.org/10.1080/15256480.2017.1397584>.
- White Guide, 2013. *The LIMA DECLARATION – an Open Letter to the Chefs of Tomorrow*. <https://whiteguide.com/se/sv/news/176-the-lima-declaration-an-open-letter-to-the-chefs-of-tomorrow>. (Accessed 28 October 2020).