Underutilized or undervalued? The role of restaurants in valorizing agrobiodiversity

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Abstract

Agrobiodiversity has been at risk for the past decades and many calls have been made to reverse the trend, not only through conservation measures but also by increasing the use of agrobiodiverse crops. This article focuses on the role of the retail sector – and particularly restaurants – in revitalising consumer demand for neglected and underutilised crops (NUCs). Given the commercial orientation of private sector actors such as restaurants, it aims to better understand how (medium-priced) restaurant owners go about giving value to NUCs while at the same time keeping their business going economically. To this end, it explores the two 'moments' of evaluation and valorisation highlighted by valuation theory, using the categories elaborated in the business model canvas. The results of in-depth interviews with seven restaurant owners in Rome who use NUCs in their menus shows an 'interrupted' valuation process. In this process, the value co-constructed by restaurant owners during the evaluation moment is not passed on to consumers in the valorisation moment as much as it could be, thus limiting consumers' ability to learn about NUCs and potentially increase NUC demand. The overall cultural and institutional context that values 'locality' above other aspects related to sustainability plays a role in limiting the valorisation of NUCs, thereby making the case for the need to revise such dominant standards to better reflect the value of NUCs.

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Dalia Mattioni has worked on topics related to food policy, food environments and food security for the past 20 years. She has collaborated extensively with the Rome-based UN agencies carrying out different tasks ranging from direct project management in the field to research and training on various topics such as sustainable livelihoods, project impact assessments and gender. At the UN Food and Agriculture Organization (FAO) she worked with the Nutrition and Food Systems Division on a Food and Green Environment Project implemented in Dar es Salaam, Lima and Tunis and, more recently, as a research associate with the University of Cardiff on an EU-funded project on urban food systems in Europe. She is currently a researcher at the Department of Agriculture, Food and Environment, University of Pisa (Italy).

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Introduction

There is ample evidence today that agrobiodiversity, that is, the domesticated and undomesticated plants, animals and microorganisms that contribute to food and agriculture, is severely at risk (FAO, 2019). Numerous calls for action have been made in the past decades to increase efforts at agrobiodiversity conservation, not only through conservation measures such as the use of germplasm banks, but also through the use of agrobiodiversity (Jones et al, 2021), with suggested interventions that span the entire food chain from farm to consumer. Here we will focus on crops, and particularly on Neglected and Underutilised Crops (NUC) which include wild, domesticated, or semi-domesticated plants, 'whose potential to improve people's livelihoods is not fully realised because of their limited competitiveness with commodity crops in mainstream agriculture' (Ulian et al, 2020:422). In designing pathways to reverse the current trend, much emphasis is placed on the production end of the food chain, with very little attention paid to what occurs post farmgate and the importance this has in revitalising consumer demand for NUCs (Baldermann et al, 2016). In this, the retail sector, that is, supermarkets, grocery stores, and the HORECA (Hotel, Restaurant and Catering) sub-sector, has been particularly marginalised (Zimmerer et al, 2021).

This article aims to contribute to answering questions around how to increase the consumption of agrobiodiverse products by focusing on the retail sector, and particularly on the role of restaurants. In the last decades, eating out has come to take on a very relevant role, especially in the industrialised Global North (Diaz Mendez & van den Broek, 2017). While eating out used to be a special activity, today it has become normalised, and people use about 40% of their food budget on eating out (US Bureau of Statistics, 2018; Eurostat, 2022). Chefs, along with restaurant guides, are also increasingly considered as 'taste-makers' and much research has been carried out on the role of (especially high-end) chefs in influencing taste and preferences (Richardson & Fernqvist, 2022). For these reasons, restaurants can represent important arenas where consumer appreciation and demand for specific food items are shaped, thus potentially contributing to an overall increased demand for NUCs.

Very little however is known about how restaurants go about giving value (or not) to NUCs, and the aim of this article is to contribute to filling this gap by exploring the valuation process of restaurants that choose to use NUCs. To do so, we draw upon the body of valuation studies enriched by the use of the business model canvas. The article progresses in the following way. The next section summarises what is known so far about how restaurants can contribute to food system sustainability, and highlights how agrobiodiversity and NUCs do not form part of the 'language' around sustainability. We then develop our conceptual framework, drawing from valuation studies and the business model canvas. In the following section we present our methodology and the empirical findings around who the actors involved in constructing value for NUCs are, what is being valued and where, and what tools are mobilised to evaluate and valorise NUCs. We discuss our findings in Section 5, pointing out that while value is constructed for NUCs together with farmers in the sourcing stage of a restaurant's business, it is not (entirely) passed on to consumers through valorisation as much as it could be. We conclude by noting how, with a view to expanding the overall demand for NUCs, to generate an incentive for farmers to increase agrobiodiversity in their fields, there seems to be a missed opportunity in the role that restaurants can play.

Restaurants and agrobiodiversity

Very little research has been carried out on the role of restaurants in valorising NUCs. There has been an emerging literature on sustainable restaurants in the general realm of hospitality and tourism that provides context and some evidence on what some restaurant owners are doing to make their restaurants more sustainable, specifically with respect to food (Higgins-Desbiolles et al, 2019). A number of voluntary labels have emerged that define food-related standards to be reached in order to obtain the label, such as the Green

Key certification in the Netherlands, the Food Made Good label in the UK and the Green Dining logo in the USA. In all cases, no mention is made in the key criteria of the use of agrobiodiversity or NUCs. In other words, ensuring the presence of one or more NUCs on the menu is not considered as an important criterion for a restaurant to be contributing to sustainability.

Another relevant strand of literature is the one that focuses on restaurants that choose to source part of their products from local food systems (Sims, 2010; Sharma et al, 2014) mainly in large cities in the USA and in Europe. Restaurants that buy local do so because they perceive local products to be fresher, tastier and generally of higher quality, and they consider these products to be more sustainable because they are produced using certain production and artisanal methods, which helps support the local economy (Trivette, 2019). Of course, while they show high levels of motivation and commitment to the above aspects, it is also a way of differentiating their product and giving them a reason to place a premium on price (Duram & Cawley, 2012). In terms of profit margins however, not all restaurants rely on price premiums: some restaurant owners find ways to offset the higher costs of local products or of increased labour time by using other strategic pricing initiatives, and in some cases buying local can actually be cheaper (Inwood, 2009).

Although the proportion of local foods sourced is quite low compared to what restaurants source overall, deciding to buy fresh or processed foods from small, artisanal local producers can present a number of difficulties related not only to timeliness and consistency, but also, for example, to order processing time, that is, the time it takes to find and order the products from the local farmers and suppliers. Compared to large intermediaries, local farmers often do not have extensive product catalogues and sales order processing systems, and are thus unable to process orders quickly (Sharma et al, 2014). In spite of the above, restaurants that buy local have devised organisational strategies to 'make it work'. For example, considerable effort goes into fostering and nurturing direct relationships with local producers and suppliers, especially at start-up phase (Murphy & Smith 2009; Nelson et al, 2017). In terms of in-house organisation of restaurants that buy local, having a trained kitchen and waiting staff is important for several reasons. The first is that using local food requires more in-house processing steps, such as the time and skills required to wash, chop and prepare fresh products, which also leads to less waste. Secondly, local farmers are usually unable to guarantee precise delivery bundles (of items) and timing, so kitchen staff need to be trained enough to be able to improvise menu offerings and be flexible in planning kitchen tasks (Nelson et al, 2017). There is evidence that chefs, in particular, adapt their menu to the variety and seasonality of the available offer (Duram & Cawley, 2012).

What emerges so far is a clear appreciation of and commitment to sustainable food. Yet very little evidence exists in this literature of any particular attention paid to NUCs. A handful of articles do focus on specific examples of (gourmet) restaurants around the world that use NUCs with an aim to make these more well known to the public (Pereira et al, 2019; Luziatelli et al, 2020), and there is evidence that chefs look for unconventional varieties of fresh products that allow them to create innovative menu items (Strohbehn & Gregoire, 2003). Yet, in light of a call to 'advance biodiversity in food and agriculture through a collaboration with chefs' (Moreau & Speight, 2019: 2381) the strategies used by the restaurants to give value (or not) to NUCs are not described and analysed.

This article explores this gap by focusing on restaurants that choose to use NUCs. We investigate specifically how restaurant owners go about giving – or not giving – value to NUCs while at the same time keeping their business going economically. The focus is on medium-priced restaurants that are accessible to a wider public and thus have the capacity to influence the consumption preferences – and raise the awareness about NUCs – of a larger number of individuals compared to high-end or Michelin-starred restaurants. The valuation process used to construct NUCs' value is analysed using insights from valuation studies and particularly those that come from the realm of food. Specific sub-questions concern who the actors involved in constructing value for NUCs are, the relevance of context therein, what is being valued and where, and what tools and devices are mobilised to evaluate and valorise NUCs. The description of the tools and strategies used in the valuation

process is enriched by drawing from the building blocks of the Business Model Canvas, as illustrated below.

The process of building value: who, what and how

Valuation studies have shown that the process of valuation, whereby a good is evaluated and said to 'have value', is a dynamic and socially constructed process that involves a variety of actors (Aspers & Beckerts, 2011; Kjelberg et al, 2013). The different views and interests around what value consists of is what leads to a dynamic process of contestation, negotiation and compromise where actors can 'adapt, extend or alter the meaning of quality' (Arnold & Dombrowski, 2022: 151). Nowhere has this been observed more clearly perhaps that in the realm of food, where Alternative Food Networks (AFNs) have introduced a new notion of 'good' food. Products are no longer (only) qualified based on product qualities, such as aesthetics or taste, but also on criteria related to the environment or social justice such as fair trade and organic (Dowler et al, 2010; Dubuisson-Quellier, 2013). In other words, new orders of worth have been introduced,, alongside the dominant industrial and market conventions, creating spaces governed only by civic or 'green' conventions (Boltanski & Thévenot, 2006; Evans, 2011), such as Farmers' Markets or, more often than not, spaces where conflicting conventions co-exist (Varga, 2019).

Judgement devices that consumers use to identify and evaluate products in the market reflect different orders of worth, as various actors – be they retailers, manufacturers or a network of farmers – make a range of devices available to consumers to orient them towards their products. Examples include personal networks used to access credible and trustworthy information, critics and restaurant guides, rankings, and third-party labels, such as Geographic Indications (GI) or Slow Food Praesidia (Karpik, 2010; Dubuisson-Quellier, 2013). Value is not a static attribute of products but is constructed across time and space. In their temporal and spatial analysis of organic product qualification in Germany, Arnold and Dombrowski (2022) use the case of Bioland to show how the meaning of 'organic' changes in time as external actors located along the food production and distribution chains contest its meaning. Bioland has thus been led to modify the qualifications linked to organic. Spatiality also points to the relevance of context, highlighting how the construction of value is conditioned by the cultural, social and political characteristics of the societies in which it is embedded. This 'situated character of value determination' (Corvellec & Hultman, 2014: 358) becomes clear when international standards around food are valued (or not) depending on the geographical context where they are 'put into action' (Loconto & Arnold, 2022).

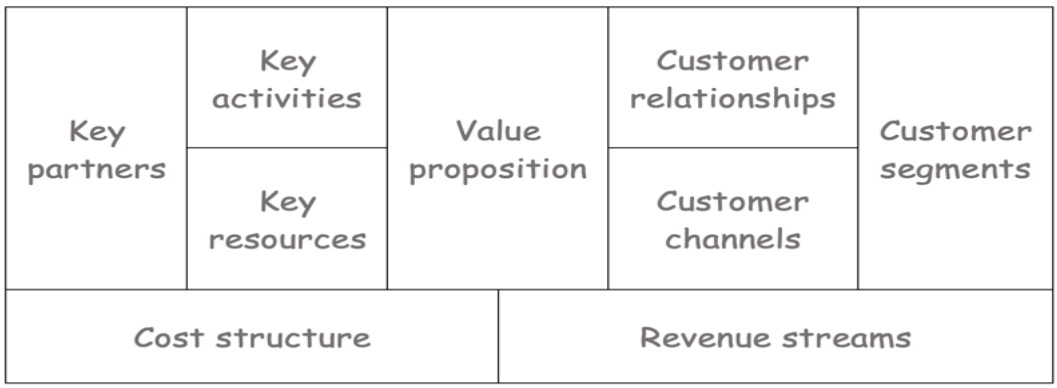
In terms of the temporal dimension, a distinction that is particularly useful for our research is the one between the evaluation and valorisation 'moments' of the valuation process. This is a difference that stems from how this process is experienced by consumers on the one hand, who need to compare goods offered in the market and make judgements on their desirability, and producers on the other, who need to demonstrate the value of their products compared to other products (Aspers & Beckerts, 2011; Vatin, 2013). While judgement devices are used in the evaluation moment to establish what qualifies as quality, other tools are used during the valorisation moment to create or add value to goods (Bessy & Chauvin, 2013). Such valorisation activities include product differentiation, lower costs, offering goods considered of superior quality, or creating narratives or 'stories' in a more declarative way through communication or advertising, for example (Richardson, 2008; Varga 2019).

In relation to the above considerations, restaurants hold a particular place insofar as they are both buyers and sellers of NUCs. In unpacking the specific question of how restaurants create (or not) value for NUCs, an interesting area of investigation about restaurants is thus, on the one hand, how they evaluate the goods – in this case NUCs – being sold to them by producers, and on the other, as sellers to final consumers, how they valorise NUCs. Delving into this area of inquiry will allow us to answer our questions not only on how valuation occurs but also on who evaluates what, and where the valuation occurs.

In order to investigate tools and strategies used by restaurants in the valuation process, the authors use the

Business Model Canvas (BMC) for its reported capacity to facilitate a clear and simple description of how a business works (Osterwalder and Pigneur, 2011). A BMC (see Fig. 1 below) is made up of nine components.

Fig 1: The Business Model Canvas



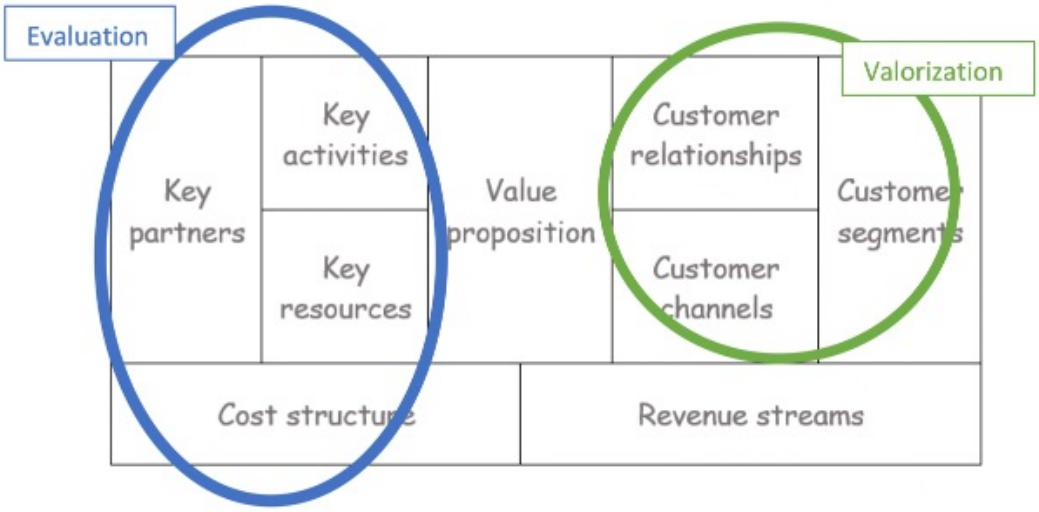
(adapted from Osterwalder & Pigneur, 2011)

Central to the BMC is the value proposition (VP) developed by the firm owner/s that refers to the reasons a customer may value the offerings of a specific firm rather than another. Three of the components focus on customers, and specifically on how the VP(s) – or the order(s) of worth – are communicated to customers/clients. It is important to note here that, as Corvellec and Hultman (2014) point out, more than one VP can co-exist in the same business – a finding from their research that resonates with the observation of different (at times conflicting) orders of worth governing the same market spaces. The Partnerships component describes the network of suppliers and partners that make the model work, while Activities and Resources refer respectively to the most important things a firm must carry out to make its model work and the key physical, financial, or human resources it will need to make that happen. Lastly, in terms of value capture, revenue streams and cost structure refer to how a firm generates revenue and monetary profit.

The authors used the nine categories of the BMC to separate, albeit artificially and only for the static purposes of analysis, the two 'moments' of evaluation and valorisation, where the central figure of evaluator and valoriser is the restaurant owner (RO). As shown in Figure 2 below, as purchasers of NUCs, an analysis of the evaluation 'moment' (BMC components contained in the blue circle of 'Evaluation') helps to better understand which providers restaurant owners choose to partner with, given the specific VP(s) that govern the way that they manage their restaurant. Given the choice of partners, other relevant BMC components relate to how the restaurant adapts its activities (or not) to interact with them (logistics for example) and how it adjusts its resources to live up to the values underpinning its choice of each specific partnership.

It is equally important for sellers of NUCs to understand how the valorisation process of NUCs occurs. Relevant components to analyse here are those contained in the green circle: those related to customer relations, and particularly the channels used to valorise NUCs (written/oral communication for example) and the relationships built with consumers (formal or personal for example). Key activities, such as those that occur inside the kitchen and in the dining hall, and key resources, such as waiting staff skills, and cost considerations will also be analysed to better understand how the restaurant adapts its internal 'workings' to make valorisation happen. In terms of financial viability of the firm, we assume here that all restaurants are viable, as we have chosen restaurants that have been running for at least five years.

Fig 2: An adjusted Business Model Canvas



(authors' elaboration)

Context and methodology

Context and sample

To address the above questions, and given the exploratory nature of the research, in-depth interviews were carried out with seven restaurant owners in Rome that used NUCs[1] in their cuisine. Rome is the largest city in Italy and, after Milan, the city with the most restaurants in Italy: about 15,000 (FIPE, 2024). It is one of the top capitals of gastronomic tourism, appreciated particularly for its national and local cuisine (Lupsa-Tataru et al, 2023), which is why many restaurants – especially those in the highly frequented city centre – offer dishes that belong to traditional Roman cuisine. Rooted in the culinary traditions of the poorest classes in Rome, this is a simple cuisine made up of hearty pasta dishes and the well-known 'quinto-quarto', the poorest meat cuts, usually animal entrails (Duscio, 2014). Most restaurants rely on large commercial providers that do not have NUCs in their catalogues (personal communication) and there is no statistical/formal information on which restaurants in Rome use NUCs. Identifying restaurants that use NUCs therefore required the use of key informants – namely a small retailer specialised in the sale of NUCs and two intermediaries/providers that specialise in the sale of sustainable food products in Rome and who therefore know the context of food retail provision well. A purposive approach was thus followed to select restaurants with a diversity of characteristics and market positions.

All the restaurants selected were located in the city centre and were therefore frequented by both locals and tourists, except for one which was located in the neighbouring countryside and was frequented mainly by locals. Three of the restaurants selected belonged to the category of typical Roman restaurants, one was an Enoteca, specialised in the sale of wine but where it was also possible to eat, and three offered a menu that was freely inspired by Italian cuisine but where the creativity of the chef was greater (see Table 1). In terms of price range, most of these restaurants could be considered as medium-range, except for one which was mid/high-range. No high-range restaurant was chosen purposefully, as one of the aims of the research was to understand the extent to which restaurants could be a platform for an increased demand for NUCs.

[1]Given that the definition of NUCs includes wild plants, in some cases these restaurants also include wild edibles in their menu.

Table 1: List of restaurants[2] included in the sample

Restaurant	*Type of cuisine*	*Price range[3]*
A	Italian cuisine	€ 35 - 100
B	Italian Cuisine	€ 10 - 25
C	Enoteca	€ 20 - 35
D	Roman cuisine	€ 20 - 40
E	Roman cuisine	€ 20 - 40
F	Roman cuisine	€ 25 - 45
G	Italian cuisine/Agrituris-mo	€ 20 - 45

All the restaurant owners were also chefs and had been chefs for at least ten years, starting first of all by working in restaurants managed by other people, and eventually opening their own restaurant. Two of the chefs were women and the rest were male, and their ages ranged from 35 to 65.

Data collection

Given the nature of the research question focused on better understanding how ROs give value to NUCs, the authors used a suite of qualitative methods. First, ROs were interviewed in depth for an average of 45 minutes, after having received their informed consent. The guiding questions for the questionnaire were built around the components of the BMC, with a view to then reassemble the data around the corresponding areas of 'evaluation' and 'valorisation'. Secondly, to collect information on VPs and valorisation, the authors chose two tools. First, they analysed all written material, both physical and digital. This included the menu and other written material found in the restaurant, as well as information posted on social media, such as Instagram and Facebook, and the restaurant's website. Second, given that communication was also given orally by waiters in the dining hall, the authors also used observations in all the restaurants; they specifically chose to have a meal there and asked the waiters for further information on specific items of the menu that they knew were made up of NUCs. This information was used to double check and complement insights obtained with the other tools (Foster, 2006).

Data analysis

All oral communication was fully transcribed and coded based on the components of the BMC they referred to. For example, relevant words and sentences that were related to 'key partners' were coded as such, and the authors further coded the category to reach a description of types of partners, such as farmers, intermediaries, or social networks for example. Data to 'populate' the different categories of the BMC was also taken from the written material reviewed and from the notes taken just after the observations. The data was then sorted, based on the components that belonged to the 'evaluation' and 'valorisation' categories, as illustrated by the blue and green circles in Figure 2. They were analysed to have a better understanding of who the actors involved in each moment were and where the valuation occurred. In order to correctly identify NUCs, the authors cross-checked the contents of the restaurant's written material, as well as the transcripts, with Italy's National Registry of Biodiversity of Agricultural and Food Interest (from now on: National Registry)[4] to make sure that what was being signalled (or not) as a NUC, was in fact a NUC.

It is important to note that, given the exploratory nature of the research and its intention to shed light on the qualification mechanisms that a specific group, such as ROs, use in the case of NUCs, it lends itself to laying

[2] All restaurant names have been changed (and simplified to a letter) to guarantee their anonymity.
[3] Based on information from TripAdvisor and a review of the menu by the authors.
[4] In 2015 Italy set up a National Register of Biodiversity of Agricultural and Food Interest within the Ministry of Agriculture, Food and Forestry Policies, with a view to protect and enhance agro-biodiversity. The Register contains a list of local genetic resources related to food and agriculture of plant, animal or microbial origin subject to the risk of extinction or genetic erosion.

the ground for larger studies in the same area of research. Additionally, the similarity of the overall context in which the interviewed ROs operated and the homogeneity of the characteristics of ROs generally who decide to source differently explains why seven interviews were sufficient to yield "rich" data, that is, data that allows us to identify generalities rather than information on individual cases, thus suggesting data saturation (Baker & Edwards, 2012; Morse, 2015).

Results

Restaurants as evaluators – appraising the value of NUCs

There are mixed orders of worth that shape the way that ROs evaluate the food they source and particularly NUCs. First, we find the same civic conventions that underpin AFNs. ROs wish to contribute to a food system that protects the environment and runs counter to the prevailing industrial and standardised system, whether this is couched in terms of sourcing from farmers who only use agroecological methods or whether it means sourcing from local, small-scale farmers:

> *[People will say] I would like a super-green, super-pointy broccoli… well, yes, maybe you'll find it once, but then the farmer can't make it again, like an industry. […] [That's why] our menus are born out of a desire to choose a producer upstream who does healthy work, in the field and on the soil [A].*

This quote alludes to why these ROs appreciate NUCs – they are a way of adjusting to Nature's rhythms, rather than the other way round. This is reflected not only in forms of production but also in processing, where raw or minimally processed items are preferred to systems that may alter the food's taste and essence or be harmful in terms of health: 'There is something that unites wine, and cheese and cold cuts for example: so [I choose] natural wine and raw milk cheese, and cold cuts without preservatives' (C). Care about health is another ethical value upheld by ROs that goes beyond legal considerations about food safety, and it is the desire to provide a varied diet that drives ROs to appreciate and seek NUCs whenever they can. Social aspects, especially tied to supporting local farmers, the local economy and traditional ways of processing and cooking are another aspect of care that is prominent. Ethical values however co-exist with more commercial values: ROs are also business people who pursue profit and commercial ends, and their effort lies in trying to 'square' profit and purpose:

> *If you think you only want to earn you are wrong, because then you become like the others: commercial. Your role is not only to be commercial, but also to preserve [Nature], to do research… (G)*

The mix of values underlying their valuation practices gains clarity when we observe the types of judgement devices they use. First and foremost, in terms of key partners, all the ROs have a direct relationship with farmers, and in some cases source all of their fresh produce directly from farmers without using intermediaries. The reasons are mixed. In some cases, this choice is driven by a desire to support very small farms that would not survive if they lost the restaurant as a market outlet:

> *The work I do with Maurizio [the forager] is an important supplement to his salary ... [....] It is important to give those who are in the area and work there the opportunity to stay there. At the moment there is a strong outmigration... (F)*

Other ROs search for 'unique' products that farmers can provide only at specific times of the year. Yet others consider it important to source products that are grown using agroecological methods, and trust is the basis for selecting a farmer who does not rely on a certification. Within this general frame, there are two ways in which NUCs end up on the restaurant table: there is either a specific search and 'research' carried out by ROs for 'unique' products that leads them to find specific farmers, or – and this is most often the case –the farmers themselves propose NUCs:

> *Some [farmers] have carried out their own research on ancient seeds and do trials. For example, he told me about a cabbage he tried to plant, it's an old variety. He brought it to me and explained why it has a bigger leaf. It's more delicate in flavour, it goes very well with fish. (B)*

It is therefore the direct relationship with farmers that allows ROs to learn about NUCs and to place them on their menus. The relationship with farmers is therefore not a classic 'one-way' relationship aimed simply at obtaining a raw product for the kitchen, but becomes a two-way and iterative relationship whereby ROs learn from farmers, and restaurants become outlets for farmers' experimentation. There seems however to be a limit as to how much ROs learn about NUCs from farmers, or know about NUCs altogether. The authors compiled a list of all the NUCs sold (or mentioned) by the restaurants during the period of the interviews and compared it with the contents of the National Registry. They found that in some cases, what is called a NUC by a RO, is in fact not in the Registry. Interestingly, when the NUC is actually not a NUC, what matters for the RO – and what has value for him/her - is the geographical belonging of the item, that is, it being GI certified.

Compared to a classic model based on a specific order placed with an intermediary, dealing directly with (small) farmers entails a different type of logistics. On the one hand it provides greater flexibility to deliver smaller quantities of food, especially horticultural products that, in the case of restaurants that do not have a cold room or a large storage room, represent a way to better handle their stocks and cash flow. On the other hand, dealing directly with farmers can sometimes mean untimely delivery and receiving volumes that are different from those initially ordered. What distinguishes the interviewed ROs however are the efforts that are made to adapt their personal rhythms and menus to the types and timing of the products received.

> *When you're dealing with these people, it's useless to make specific requests - 'bring me 20 kg of...', 'just the chrysanthemum', it's impossible. It's not really correct to call them suppliers... you can't establish a commercial relationship like a large-scale HORECA intermediary (F).*

In other words, ROs put in place key activities to adapt to the specificities that dealing directly with farmers entails. Devising a menu is a key activity that allows ROs to adapt to what the farmers have to propose, which is why ROs have flexible menus that change every day or that may include 'off menu' items. Restaurant C, for example, does not have a paper menu but has kept a QR code system introduced during the Covid emergency. Even though some customers complain, the owner has kept the QR code system because 'it allows me to change the menu when I want, based on what I manage to get from the farmer that day'. Restaurant A owners have designed a menu where they only indicate the main ingredient in the dish without specifying the type, so that if a farmer proposes a NUC, they can insert it easily into the menu, without being tied to a fixed menu:

> *The good thing about writing 'chicory' is that you can then propose any chicory. Sometimes it can be the pink one from Gorizia. The more detailed you are in the menu, the harder it is to find. (A)*

Other ways of adapting and minimising the risks posed by dealing directly with farmers is to have a wide range of farmers to choose from – and this is made possible thanks to the 'alternative' food network that both farmers and restaurants belong to and that enable them to expand their range of providers. In deciding to deal only with some farmers, it helps to set up an internal order processing organisation that facilitates the flow:

> *It is possible to deal only with farmers – it's a matter of knowing how to organise yourself. I delegate. There's someone who just takes care of the vegetable orders, or the meat orders, someone who collects them all and sends them out. It is difficult yes.... it is an extra effort. (B)*

While what the above adaptation efforts show is a strong ethical base underpinning the choices ROs make in terms of sourcing, other judgment devices based on more commercial or monetary considerations are used, such as standards like GIs, price and taste. It is therefore essential that the chosen items taste good, based on the RO's own standards: 'I taste, and if they pass my judgment then it's good. I am a chef, a cook with a very refined taste, and I recognise good things' (E), even though in the case of the interviewed ROs this comes with a desire to 'know what is behind the plate' (F). Being business people, placing 'unique' products on the menu that allow them to differentiate the restaurant from other (competing) restaurants is also a consideration, as are affordability and profit margins:

> *Here quality also means somewhat higher prices. ... I now pay more for bread than before because it is organic and sourdough, but I do it gladly. I didn't charge for bread before. Now it costs 2 euros. (C)*

Lastly, ROs use their own knowledge of raw and processed food items in terms of texture, taste and visuals to judge where to source a specific item and from whom. Restaurant B, for example, only buys from mills that are also bakeries because 'that way the supply chain is short, and I know that they only use their own flour made of ancient grains'. The RO is able to know this because bread made only from ancient grains is 'firm and without alveolation' whereas bakeries that claim to offer bread made from ancient varieties, in fact mix in improved flour and the bread is alveolate. It is therefore the ROs' own knowledge of what a processed item made of an ancient variety tastes like that guides them in their evaluation of the best source.

Restaurants as building value – valorising NUCs

While ROs show a certain interest and willingness to use NUCs in their kitchen, and find ways to do so, the presence of NUCs in their dishes is not – or marginally – communicated to the customers. When analysing the restaurants' websites and social media, what comes across is the picture of restaurants that propose menus grounded in the local cuisine and that also pay attention to the environment and to the origin of the products they source. All the restaurants refer to aspects of sourcing and cooking that 'respects Nature', such as seasonality, the use of poorer cuts of meat in an attempt to avoid waste, simple 'natural' cooking that prefers raw products or products that have gone through artisanal/mild processing, such as making bread with sourdough, an attention to animal welfare, and in four cases, the use of organic or Slow Food products. They almost all refer to the territory, that is, the use of local products, often sourced from small local farms, foragers or businesses. What this illustrates is the VP of these restaurants that is grounded – to different degrees – on an appreciation of sustainability. In this overall self-portrayal or 'restaurant identity' there seems to be little space for NUCs. NUCs are indeed never mentioned on the restaurant websites, except for the case of Restaurant A, where it is clear that they offer wild edibles collected by local foragers. They are mentioned sparingly on Instagram or Facebook, where only 1 – 2 posts overall are specifically dedicated to NUCs, such as ancient cereal varieties to make bread or pasta at Restaurant B and pictures of wild edibles by Restaurants C and E.

The same is true for their written menus. Restaurants C and F have a menu which starts off with a small paragraph explaining the 'philosophy' of the restaurant based on attention to small producers, Nature, seasonality, traditional recipes and ways of cooking. Yet, while they both sell dishes or drinks that use NUCs, these are mentioned sparingly or not at all. This happens in other restaurants as well. Restaurant D, for example, sells the Conciato di San Vittore. On the menu, its 'value' lies in it being a cheese made in Lazio (local) with milk from sheep that roam freely (animal welfare) and is processed in a traditional way. The fact that the sheep belong to an almost extinct breed (Sopravvissana sheep) is not given any weight. In fact, the menu does not even contain anything written on the special nature of the cheese; it is just noted as being 'local cheese'.

When ROs were asked why they did not specify in their menu that they were using NUCs, a couple of them simply mentioned forgetfulness; a RO admitted to 'having flaws in our internal communication… I don't sponsor it [NUCs] enough' (D). The main reason presented was related to the type of customer relationship they wanted to foster, based on trust and the creation of an atmosphere of conviviality in the restaurant. In the latter case, their responses were linked to commercial considerations concerning what a consumer expects to experience when they eat out: 'a good time' and a 'distraction', not being 'bored':

> *[Describing NUCs in the menu] makes everything too boring, pedantic and didactic. You become annoying. We mustn't pollute the good time spent at the table by being a know-it-all and boring. (A)*

In describing their restaurant on their website, some ROs used the word 'conviviality', highlighting the importance of promoting an atmosphere or 'mood' of conviviality in their work, in line with typical communication modes of more commercially oriented restaurants. It is for this reason that ROs often prefer to communicate the

value of the NUCs orally, and will do so 'if asked' and not systematically, because: 'I'm not an educator – I just want to pass on my passion'. Orally describing the dishes and 'storytelling' are strategies the ROs use to build their clientele over time, as well as making sure that what the client eats is balanced and healthy:

> *I want a clientele that is known and trusts what I put in their stomachs, and that happens with trust over time not with what I write on social media. (G)*

Orally communicating what the menu contains is usually carried out by the waiters, as ROs do not always have time to do so. The observational data collected by the authors during their eating out visits to some of the restaurants show that waiters do not always correctly inform customers when a product is a NUC. Only in the case of wine did waiters explicitly mention local or indigenous varieties, otherwise NUCs were often confused with typical products, that is, typical of a specific region, or with 'types of vegetables', that is, with a different variety of vegetable but not necessarily a NUC; or they only described the artisanal process in the case of processed products such as cheese or bread, but not the origin of the raw material. As we saw above, this same confusion is shared with ROs themselves with respect to knowing how to recognise a NUC as such.

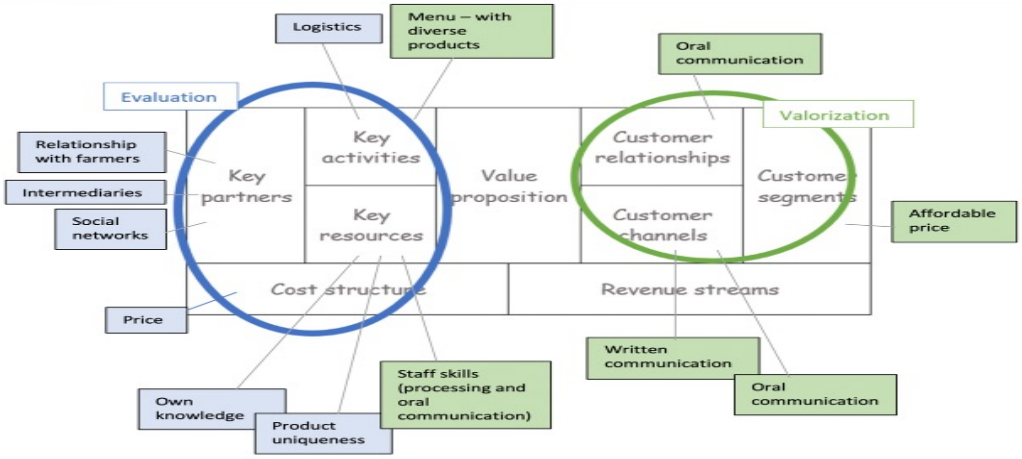
Price is a well-established way of signalling commercial value (Aspers & Beckerts, 2011), and price premiums are typical ways of valuing non-standardised products or differentiating oneself on the market, as in the case of Michelin-starred restaurants. In the case of the interviewed ROs, while they do indicate that NUCs can cost more because it takes more time and 'creativity' to process them, and therefore more human resources, they make a conscious decision not to pass this cost on to consumers in an explicit attempt to 'make such products more affordable'. Various pricing strategies allow them to do so; for instance, some will cut costs in other areas of their business to make up for the higher cost of NUCs:

> *Then of course to have a high price you have to have an image, gadgets, waiters in uniform, etc. So what do we do: we take away the plating, we take away the cool tableware, we take away something else – and you save on that. (E)*

Restaurant A, where average costs are higher, has thought of a differentiation strategy based on location: right next door to the pricier restaurant, they have opened a smaller enoteca where dishes cost less but are made in the same kitchen (and with the same ingredients) as in the costlier restaurant. Theirs is also a strategy to be more competitive: they 'apply different costs to give two market segments a way to get to know us'. Others still, increase the cost of their medium-priced items, in order to decrease that of a pricy unique NUC item.

To sum up, and following on from the analytical categorisation proposed in Figure 2, the below figure is a graphic representation of what has been described above. Specifically, it is a static description of the evaluation and valuation 'moments' using the building blocks of the BMC. In the next section we use these blocks to better understand the valuation process and specifically how valuation occurs, who evaluates what, and where the valuation occurs.

Figure 3: A description of the evaluation and valuation moments using the building blocks of the BMC



Discussion – an 'interrupted' valuation process

In endeavouring to answer our main research question as to how restaurants construct value for NUCs, the main finding is that the restaurants we analysed do not give value to NUCs, or rather, the value that they do construct in part of the valuation process is 'interrupted' and becomes 'invisible' to the consumers who (mostly) do not know that what they are consuming is a NUC, even though it actually is one. Specifically, what we observe is that while NUCs are positively appraised during the evaluation moment, they seem to lose value in the valorisation stage. In other words, and to use a more dynamic metaphor, value does not 'travel' from the evaluation stage on to the valorisation moment as much as it could (Muniesa, 2011).

Figure 4: The construction of value during the valuation process of a NUC in a restaurant

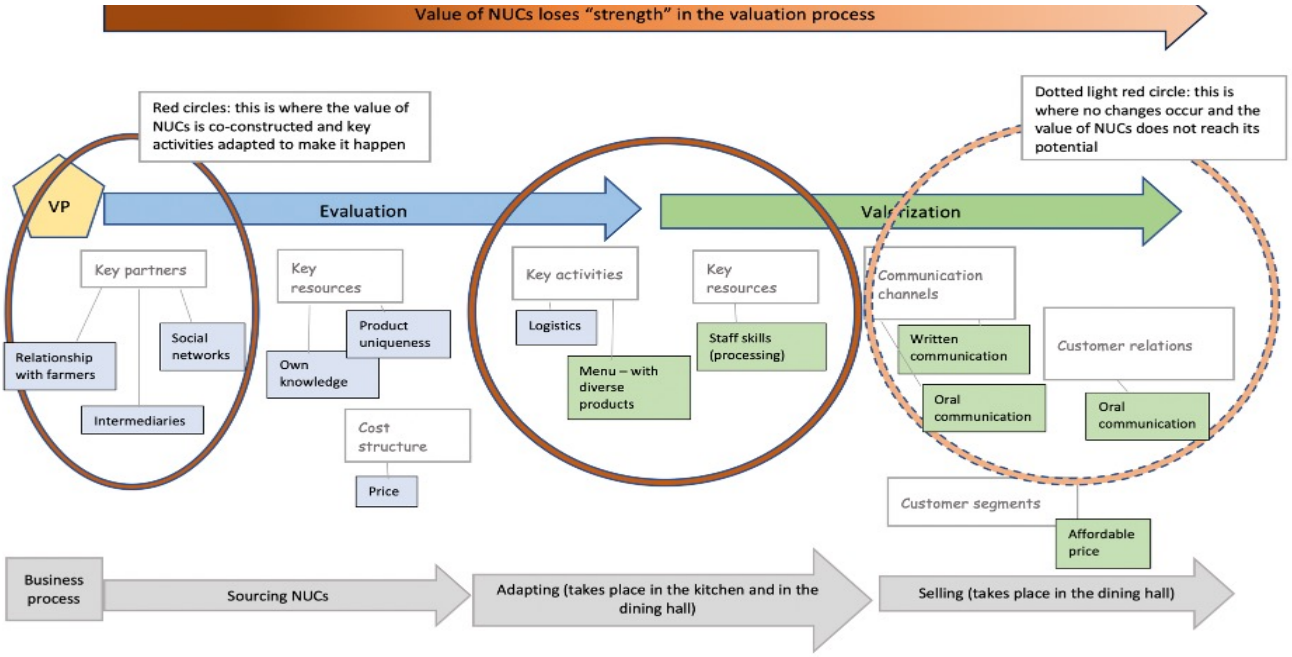


Figure 4 above is a graphic depiction of this 'interrupted' process which builds on Figure 3 by adding the processual nature of valuation depicted with arrows, in this case a blue arrow for the evaluation 'moment' and a green arrow for valorisation. At the root of the process of constructing value is the value proposition (yellow pentagon), while the red circles indicate where value is created around NUCs: a full red circle indicates a strong construction of value while a light red circle with a dotted outline illustrates the loss of 'strength' of the value, which is also depicted by the top red arrow that fades into light red. To better explain the diagram and how the 'loss' of value occurs, we will explore it in more detail, bearing in mind the sub-questions of our research: how value is co-constructed and with whom, its spatial and temporal characteristics and the importance of context.

Value propositions are central to the restaurant business, and what we note in the case of the restaurants that we examined is their multidimensional and dynamic nature (Corvellec & Hultman, 2014) reflecting the co-existence of different orders of worth. On the one hand the VPs reflect civic and 'green' orders of worth, that to some extent include NUCs, while on the other hand, given that ROs are also business people, they also base their strategy partly on 'market conventions'. This is why issues of affordability, aesthetics and 'pleasing the consumer' are considered and 'weighed' when choosing to place a NUC on the menu. Defining what is 'good' and 'quality', including a NUC, depends on a series of considerations that are grounded not only in ethical values but also market-based criteria.

There is a spatial aspect in the 'distribution' of these orders of worth between the evaluation and valorisation

moments. More precisely, there is a 'spatiality of value' (Corvellec & Hultman, 2014: 358) where NUCs are given value in the space that precedes their transformation in the kitchen (see grey line at the bottom of Figure 4) because these 'spaces' are dominated by civic and 'green' conventions where NUCs are given value, while the convention that dominates the 'space' of the dining hall is a market one.

To explain what happens in the 'space' that precedes the kitchen, we need to observe more closely the use of judgement devices. ROs that value NUCs change the key partners they deal with and – to varying degrees – rely on social networks, rather than consolidated large distributors, to source (some of) their food. Here, in line with the literature that situates retailers within Value-based Territorial Food Networks where they play a role in keeping local food networks in place (Trivette, 2018; Smaal, 2022), we too note how in the evaluation 'moment' ROs, as purchasers of food, rely strongly on a network of local farmers, 'virtuous' intermediaries and a broader alternative food network to (jointly) evaluate value (personal communication). As Karpik points out, these 'act as guideposts for individual (and collective) action' (Karpik, 2010: 44). This is confirmed by the literature on small and peasant farms in Italy, showing how they tend to rely quite substantially on direct sale and personal contacts as well as on consumers interested in territorial products (Prosperi et al, 2023). It is partly ROs' trust in their networks and in farmers' knowledge around 'different' crops, as well as the iterative nature of their relations with farmers, that leads them to use NUCs. To the extent that 'values are conceptions of the desirable that are learned' (Loconto & Arnold, 2022: 603), ROs learn to value NUCs through these very networks.

Just as we observed from the literature on farm-to-table initiatives, here too ROs make an effort to adjust their key activities accordingly, both in terms of logistics, to fit in with the ordering processing times and deliveries of small local farmers, and in terms of their menus, to make space for daily changes that include NUCs. Further adjustments concern the resources they use, with more training of their kitchen and waiting staff, for example, on processing and communication, respectively.

So far we have noted that NUCs are valued by ROs in the evaluation moment. The extent to which NUCs are valued as such, rather than as local and seasonal products, is however not as strong as it may seem and would partly explain why value does not 'travel' to the valorisation moment. All the restaurants we have examined portray themselves as caring for sustainability, whether this is couched in terms of solidarity with farmers and foragers, an attachment to their 'territory', an attention to organic products and artisanal ways of processing, or 'natural' cooking. It is these aspects, and particularly the direct relationship with local farmers, that prevails in ROs self-portrayal, thus leaving a small role for NUCs to play. In other words, just as agrobiodiversity does not emerge as a strong indicator to be considered in sustainable restaurant logos, even in the case of ROs, having a NUC on their menu is not the strongest qualifier of their being 'virtuous'. This is manifested in their 'confusion' and limited knowledge about what is and is not a NUC. In other words what is being valued is (more) their being local and seasonal, and less their being part of agrobiodiversity.

The value of NUCs is therefore somewhat 'diluted' before reaching the 'space' of the dining hall, where it loses almost all of its value due to limited written and oral communication (on NUCs) and the prevalence of a market-based convention concerning the type of customer relations to be built. We note in this phase that ROs do not build a reputation or use 'declarative' actions to build a 'story' about themselves based on the value of having used a NUC (Varga, 2019). In fact, while many AFNs are constructed together with consumers to jointly settle 'shared uncertainties' (Lamine, 2005), going back to the question of who ROs build the value of NUCs with, a missing actor in the examined restaurants is certainly the consumers.

An important role in this process of loss of value is played by context, that is, the 'institutions that stabilise, objectify, and generalise valuation processes' (Heinich, 2020:6). In the case of Rome, and Italy overall, geographic indications and organic labels are the dominant institutions that frame valuations around sustainability. Here too, we note how the confusion that ROs express is often related to an association of sustainability with

'territory' and locality, which is very much influenced by the predominance of geographic indications. Hence, even among ROs that use NUCs, they are to a certain extent under-valued because what prevails in RO's judgment criteria and in the context that in part forges their values, are social relations and a macro context that do not value NUCs. In other words, given that standards 'construct' value, the dominance of a narrative based on GIs and locality is what makes the value of NUCs 'invisible' and leads to their 'valuelessness' (Loconto & Arnold, 2022). A further contextual consideration to make relates to geography. As Rome is a large city, ROs are at a relative geographical and cultural distance from farmers (Bricas et al, 2013). They are therefore less likely to know what happens in the field compared to citizens of smaller cities where finding NUCs on restaurant menus is more common, given ROs closeness – both geographical and socio-cultural – to surrounding farmers.

Conclusions and policy implications

Exploring how value is constructed (or not) for NUCs in value chains where restaurants co-construct the value propositions for them is important insofar as 'the value that is offered has consequences for the wider society' (Corvellec & Hultman, 2014: 368). In our case, we observe that there has been a missed opportunity in generating this wider benefit: on the one hand, the restaurants analysed in this article are medium-priced venues, accessible to a large portion of society, and the pricing policies that ROs have practiced in keeping NUC prices down, potentially contributes to making NUCs more well known within the wider public; on the other hand, however, while consumers may be exposed to an 'experiential valorisation' in the restaurants, their learning potential is limited by the lack of written and oral communication.

The exploratory nature of the study does not allow these conclusions to be generalised, and there are areas that would merit further exploration in larger studies carried out in the same area of research. For example, with respect to communication on food within restaurants, while still confined to the world of high-end restaurants, extensive research is being carried out in the realm of food design on how to make NUC-based foods more palatable and 'normal' (Celi & Rudnick, 2016). The extent to which these foods may be inspirational to and adapted by other restaurants warrants further attention. From a theoretical perspective, this research has not investigated the link between the response (if any) that consumers give – explicitly or tacitly – to the revision of a restaurants' VP and valuation process. Further research into consumer food practices within restaurants would need to be carried out to fill this gap.

Notwithstanding the above limitations, the study does provide policy insights to outline opportunities and challenges in the use of restaurants as a platform to increase NUC consumption. A recent survey of European consumers on awareness about NUCs shows that most consumers, while sensitive to sustainability issues, are unaware of and marginally interested in issues related to agrobiodiversity, and that if they do know about NUCs, they learnt about them in Farmers Markets and in restaurants (Chiffoleau et al, 2024). These are therefore important venues not only for producers to find a suitable outlet for their products, but also for consumers to learn about NUCs and potentially increase NUC demand overall.

A major barrier to increasing restaurants' potential to be a springboard for more appreciation and consumption of NUCs is the institutional one, related in particular to the dominant role of GI standards. The value of the interviewed ROs' work in Rome has been their attempt to contest normalised ways of procuring food in the dominant food procurement context of the city and, in so doing, to have contested normalised 'discourses' justifying the marginalisation of NUCs in defining what is 'sustainable' (Bernardi & Tridico, 2021). The reality of a general institutional context that maintains the 'valuelessness' of these products (Loconto & Arnold, 2022) is however still prevalent. Work would need to be carried out to modify the existing rules of the game by, for example, making the presence of NUCs more clear in GI labels and/or creating special labels for NUCs, or introducing wider contextual changes such as creating special Farmers Markets for NUCs, and supporting the work of small/medium intermediaries that specialise in agrobiodiversity and local/organic products.

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