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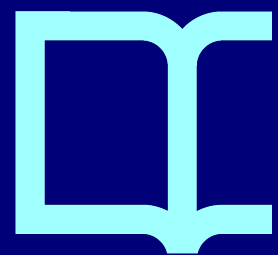
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**STRATEGIES FOR MAXIMIZING THE GASTRONOMIC VALUE OF THE
CHINAMPERO PRODUCTS FROM XOMICHILCO AREA IN MEXICO CITY.
EXPERIENCES FROM A HIGHER EDUCATION INSTITUTION.**

ABSTRACT

The aim of this article is to analyze the strategies that have been applied by a Higher Education Institution (HEI) to value the *chinampero* products within the gastronomic scene of Mexico City, in order to show its role as a key actor within the value chain of local-growth products, and the effects it has in the food system of Mexico City. Through a qualitative approach structured under a retrospective analysis of a series of strategies related to the *mis-en-scene* of *chinampero* products within the gastronomic arena, this study seeks to explain how an university can be observed as an agent of legitimization for the value of products and practices related to an specific way of production, through the recognition of different organoleptic attributes of its products, and the study of new food representations around social, environmental and cultural value associated with them. Thus, this study highlights the importance of the HEI, and especially those that are more intensely dedicated to food and/or gastronomic studies, to include concern for and promotion of food systems in their fields of both research and social action of the territories they are part of.

KEY WORDS

Gastronomic value; Higher Education Institution; Xochimilco; Mexico

Implications for gastronomy

This article is relevant for the study of gastronomy in two main fields related to its social and cultural aspects. On the one hand, it demonstrates the need to identify and recognize the emergence of new key actors such as education institutions in local food and culinary systems. Thus, this piece shows how these actors can mobilize some undervalued products through strategies that combine different values that include culinary attributes, and social meanings related with tradition, and culture of local production. On the other hand, this paper shows how gastronomy as both social phenomenon and academic discipline can provide sustainable alternatives to contemporary urban and periurban food systems.

1.Introduction

Mexico is among the ten world powers in production and exportation of foods, and about one fourth of the total population of the country lives in rural areas. Until the year 2015, there were around 5.3 million rural economic units. However, among those, almost 4 million were subsistence or self-consumption, and they had a very limited access or no interaction with the market (Official Journal of the Federation, 2015).

Mexico City, on its own, is a City with more than nine million inhabitants and it is part of one of the most populated metropolitan areas in the world, with around 22 million people (INEGI, 2022). However, even though Mexico City's territorial delimitation indicates that seven of its sixteen municipalities are suitable for familiar, urban and suburban agriculture (FAO, 2017), it is a food dependent area where up to 80% of the consumed foods come from other Mexican states, or straight from abroad (FAO, 2014). A large part of the arable soil and fresh products produced in Mexico City, come from the denominated *chinampera zone*: a wetland area located along the municipalities of Tláhuac, Xochimilco and Milpa Alta, with more than two thousand hectares where flowers and vegetables are grown.

The chinampas are artificial gardens created by humans with agricultural purposes built over lake zones of the Mexican Valley, and they date from around 2.000 years ago (Ensástiga et al., 2018). Although originally they were floating gardens, today the chinampas are held by vegetative material, mud from the wetland's sediment and *ahuejote* roots (*Salix bonplandiana*), a native tree from the area.

Apart from being one of the most important agro-productive regions of the territory in Mexico City, the chinampera area has an important cultural compound related with the ancient ways of farming and producing, declared as World Heritage by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1987 (Mexico City's Historic Downtown and Xochimilco¹) and Important Agricultural Heritage (Globally

¹ From the area of Xochimilco, what is highlighted in the inscription by the UNESCO, it is precisely, the way of farming using the chinampas (agricultural gardens).

Important Agricultural Heritage Systems, GIAHS) in 2018 by the Food and Agricultural Organization (FAO). From the *chinamperia* it has been recognized not only the sophistication and specialization of the production method, but also its sustainable characteristic, that allows the fast recovery of the environment and an alternative to face the consequences of the intense agricultural production. In addition, chinamperia seen, both as an agricultural practice and “biocultural food heritage”, plays an important role in sustainability related to territorial development, due the strong connection between nature and culture than enables complex cultural practices for an efficient management and appropriation of natural resources within a located territory (Zárate, 2022).

Thereby, González-Carmona and Torres (2014) state that the chinampera practice maximizes the resources of the environment by using integrally the water from the wetlands, the land and the fertilizers obtained from the sediments. They highlight the versatility of the space as well created from the layout of the chinampas, that take advantage of the water covered territory, and the ancient technology used in the cropping process, that allows growing products up to five times a year (Ensástiga y Ruz, 2018), on top of benefiting the native polycultures that give the territory its identity.

The chinampera production is also known for preserving the ancient agricultural technologies, because the producers use the traditional farming methods that have persist through time (Vázquez-Medina, 2022). In the chinampas it can still find four of the five main crops which their consumption was registered since pre-Columbian times: amaranth, beans, zucchini and corn (Ensástiga y Ruz, 2018).

However, despite the chinampera practice in the lake zone of the Mexican Valley dates form prehispanic times and its application represents a highly sophisticated way of growing foods in a limited space, the current social environmental conditions, such as the contamination of the water in some parts of the wetlands, the irregular growth of the urban pollution, the abandonment of the agricultural practice and the problems with the ownership of the land, or even the uncontrolled use of the agrochemicals for the intensification of the agriculture, as well as the predatory tourism in the zone or the use of motor boats, have substantially depleted the value of the chinampero products meant for human consumption in the recent times (Merlín-Uribe et al., 2013; Figueroa et al., 2022).

Likewise, the residual waters from the domestic units and irregularly settled urbanizations that crowd the place have contributed to the pollution of the water in some of the chinampera zone, substantially affecting the contamination of the products for human consumption. These factors have contributed to the creation of a general stigma that affects the chinampero products because of the misinformation of the ways of production and that translates into the generalized rejection of the products among some spheres of the urban population, just like the abandonment of the production due to the very low profitability that it represents (Vázquez-Mendoza, 2018; Stephan-Otto, 2005).

This has caused small farmers in the area to have limited access to the city's markets; In addition, they lack of the technologies and necessary knowledge to add value to their products and are exposed to health risks from the excessive use of agrochemicals (FAO, 2014: 05).

Due to the problems exposed, more and more civil society actors have joined efforts to revitalize the chinampería through agroecological practices that seek to restore the wetland ecosystem to promote quality agro-food production that guarantees safety, enabling alternative distribution networks and new channels and forms of consumption of chinampero products.

Civil Society organizations, educational institutions interested in the ecosystem and private initiatives have undertaken articulated actions that seek, in addition to the recovery of the ecosystem, to boost the agro productive chain and the revaluation of chinampero products to influence the improvement of the conditions of life of the producers and the inhabitants of the area. Among the actors that have participated as articulators of the initiatives for the revitalization of the chinampería and the consequent revitalization in the channels of distribution, the actions carried out by Higher Education Institutions (HEI) stand out; among these (and along with other prominent institutions, such as the Universidad Nacional Autónoma de México, UNAM), the Universidad del Claustro de Sor Juana (UCSJ)² has decided to articulate actions to promote the enhancement of chinampero products from the gastronomic field. The intention of the UCSJ has the same purpose as the principles proposed

² The UCSJ is an academic institution of Higher Education located in the historical downtown area of Mexico City, pioneer in teaching gastronomy in the country and offers a bachelor's degree since 1993.

by the Economic Commission for Latin America and the Caribbean (CEPAL for its acronym in Spanish) (2016: 150) when referring to:

(...) the development of regional gastronomy with local ingredients with identity can present good opportunities for the family farming that has preserved and cultivated these products for their own food for centuries, or that is capable of producing a diversity of new products of high quality (organic, fresh, etc.).

Through a series of actions structured since 2014, the UCSJ has become a linking agent in the food supply chain that has developed different strategies to highlight the gastronomic character of the chinampero products, assuming gastronomy not only as an academic discipline, but as a field of action through its key actors (producers, cooks, cultural promoters, restaurants, students, consumers). So, gradually, the UCSJ has positioned itself as an agent of legitimization for the value of products and practices related to the chinampería through the recognition of different organoleptic attributes of its products and the study of new food representations around social, environmental and cultural value associated with them (Vázquez-Medina, 2022).

This has contributed not only to an approach and reconnection between producers and consumers, but also to the creation of new consume values attributed to these products. All this becomes an object of study of interest, as it is a pioneering university entity that becomes an agent of revaluation of a popular product at risk through the legitimization of the gastronomic advantages offered by these products, as well as a coordinating institution between the different key actors involved in the mentioned process.

That is why, the aim of this article is, first of all, to present and analyze the strategies that have been applied to value the chinampero products within the gastronomic scene of Mexico City. Likewise, this research project aims to highlight the emergency of a higher education institution as a key actor within the value chain from the gastronomic field and the effects it has in the food system of Mexico City.

1.1 The impact of the Higher Education Institutions (HEI) in the contemporary food systems.

Food systems have been defined as the set of activities that are part of the production, distribution and consumption of agro-food products and, consequently, those that constitute the necessary processes for human nutrition in certain societies (Malassis, 1979). In this matter, it should be noted that, although complex systems, food systems involve many actors and interests, both public and private. Among them, the institutions are key elements in this chain, as promoters and guarantees of a balanced articulation between those who participate in the chain of value -mainly locally, but not only (Feenstra 2002; Friedmann 2007; Marsden & Sonnino 2012).

However, the multiple actors that are part of the different links in the chain are important, and also cover a large number of sectors and interests of civil society. In that same sense and despite the fact that educational institutions, as social actors, have a relevant role in training professionals and as enablers of the understanding of the environment and its benefit in the social fabric, it seems that in terms of food their intervention is restricted to somewhat limited areas in terms of impact on food systems. So, Pasquier points out that "universities can contribute to the transformation of food systems through their efforts to generate knowledge and critical analysis". She also recognizes that the contributions that have been made go beyond "the classic work of the academy, both for the link with social movements with claims regarding food sustainability", as well as with key alliances with local actors and sustainable food initiatives in the campus and the contexts that surround them" (Pasquier, 2022: 180). In that same sense, it must be taken in consideration that more than 70% of the people involved in agro-food production on conservation areas in Mexico City claim that they belong to some organization or movement, either a cooperative, association, foundation or even a company. (Cotler, 2022: 36).

In the case of bioremediation of the chinampero ecosystem, different higher education institutions in Mexico City have articulated intervention and advocacy projects. Mainly those who have tried to restore the quality of the water of the Xochimilco waterways stand out, as part of complex actions to recover the chinampero system and as a link for producers and consumers (Figueroa et al., 2022).

It is equally interesting to highlight that authors such as Bartlett (2011) point out the capacity of Higher Education Institutions (HEI) to contribute to the improvement of public and environmental health through reconnection projects between producers and consumers, by

making visible the origin and quality of local products and establishing their traceability, and by that legitimizing some of their consumption values. However, these actions to confer value do not seem to be among the priority strategies for HEI, or very little carry out actions have been articulated to value products in the gastronomic area (Vázquez-Medina, 2022).

In this sense, it may be wise to establish some of the meanings contained in the enhancement of food products. As affirmed by Salas (2021), the creation of the value of a food can be understood as the construction of a series of representations that allow the territorial association, the visibility of its identity and the specific practices that are circumscribed to certain products, in which the symbolic and economic capitals can be interchangeable and where certain meanings emerge from those same differentiations.

Under this, it is important to explain that the value expressed for certain products often has to do with the awareness of the environmental impact in which their closeness is favored to reduce their environmental footprint. So, we have the consideration of "local products", whose meanings, according to Brunori (quoted in Rinaldi, 2017: 5), could be typified by functionality (related to health and flavor); ecologically (associated with closeness, landscape and biodiversity); aesthetically (distinctiveness of diversity versus standardized); ethically (related to authenticity and identity), and politically (which appeals to the change in the power exercised over the patterns of production and consumption). To this we could add, for the specific case of Xochimilco, heritage, by virtue of the recognition of the intangible cultural heritage and known productive material.

2.Methodology

This text bases its methodological journey on a retrospective analysis of the strategies generated from the institutional, and specifically, from the academics, to analyze the actions of the enhancement of chinampero products. For such purposes, it uses the narrative technique (Cornejo et. al., 2008) to analyze and structure the effects of the strategies that have been carried out since the start of the project. The empirical findings have been based on a series of deeply conducted interviews with the creator and enabler of the project.

In this sense, as affirmed by Cornejo et al. (2008), it is worth mentioning that the use of the storytelling as a methodological tool has been used in various disciplines of the social

sciences, since it is an instrument that not only serves to collect information, but also confers meaning in certain conceptual, epistemological and ethical frameworks. According to these same authors (Cornejo, et al., 2008: 30), the use of storytelling in an investigation and the analysis of its data is situated in a second level of interpretation since what is being analyzed is the product of a narrator.

A methodological triangulation was also made based on complementary interviews with key actors, such as the chinamperos, who have become suppliers for different establishments and cooks who have implemented chinampero products on the menus of the restaurants where they work in. In addition, records, files and documents that served as evidence for the institutional record were consulted.

It also should be noted that this work is articulated mainly from the perspective of the Anthropology of Food, taking into account that the methods used from it have their own characteristics, perspectives and applications (Macbeth and MacClancy 2004; Hubert 2004; Medina 2004, 2019; Messer 2004). So, this research adopts a holistic and open approach that comes from the experience lived among the subjects of study (Tierney & Ohnuki-Tierney, 2012), focusing especially on feeding in its widest sense and the phenomenon related to this, such as, for example, the relationship with the environment or the distribution and enhancement of the chinampero products.

In a complementary way, triptych leaflets, brochures, press articles and several information contained in social media and websites were collected, which were later analyzed under established parameters (structuring of speeches based on the use of texts and images) in other works that have analyzed appreciation of products and dishes from the gastronomic point of view (De la Barre and Brouder 2013).

3.Results

3.1 Genesis and project development

The following paragraphs elucidates how a project organized and held by the UCSJ was developed. The project aimed to materialize the joint of Chinampero producers and potential consumers, through an academic, trading, and cultural event that was held annually at the UCSJ called *Chinamperia*.

The original idea of the project first emerged in 2014, within the framework of the 30th Festival of the Historic Downtown of Mexico City. Historically, this festival has been one of the most important large-scale cultural events held in Mexico City. One of the main characteristics of the festival is to turn for some days different venues located in the downtown for cultural purposes. Thereby, the Festival gathers different chapters or sections, one of which is gastronomy and where the UCSJ was in charge of carrying out the event “Milpa: livelihood and food”. On that occasion, with the installation of a corn field in the main patio of its premises and where, in addition to the academic and dissemination program, a small farmers and food market was also organized with the sale of food prepared with ingredients from the chinampera area. This event is considered to be the seminal precedent of the later-called *Chinamperia* project.

It should also be noted here that one of the main lessons learned after the first event, was to recognize that a large part of the students of the bachelor’s degree in gastronomy were unaware not only of the problem of the chinampera zone, but also of the products that are harvested within it. In this matter, after realizing the lack of knowledge of the students, one of the main interests was that future gastronomy professionals have a comprehensive approach to the area where they work.

After that first approach, then a more-structured event started to be planned. In that same year, the contact with chinamperos producers started, especially from the location of San Gregorio Atlapulco (which belongs to the municipality of Xochimilco), with whom interviews and exchanges began, considered as the basis of the proposal and subsequent academic research and the organization of the first event called *Chinamperia*. The ways of production, distribution and commercialization of the chinampero products are then analyzed, and said reflection and analysis, under the academic frame, leads to a first contact with the Ministry of Tourism of Mexico City, in order to get in contact the producers and restaurant owners in the city. In November 20214 “*Chinamperia, cultiivo milenario y orgullo vivo de la Ciudad de México*” held in the USCJ, gathered more than a thousand attendees and four keynotes were given. One of the distinctive actions of that first event, which was also financed by the Ministry of Tourism, was the recreation and installation of a chinampa of around 170 m² in the main patio of the University, in order to present, in a practical way, this type of productive spaces among the students of the institution and open to the general public.

Although it was one of the main purposes of the event, the first contact between the chinamperos and restaurant owners in Mexico City did not give any positive pay off beyond the first established contact: none trade, agreement or even commercial negotiation between producers and restaurateurs materialized. As the organizer of the event stated: “*The former Minister of Tourism invited more than a hundred restaurateurs, and less than the 10% attended the invitation*” (Personal communication, 2022). According to him, the lack of interest among restaurateurs could be due to:

“the ignorance of the characteristics of the products; a bad reputation of the vegetables produced in Xochimilco due to the water conditions; the impossibility of Chinampero producers in issuing tax receipts and giving credits; and lastly, the lack of training of the chinamperos producers to negotiate commercial relations.” (Personal communication, 2022).

A learned lesson from that first experience was to consider that a University focused mainly on gastronomy such as the UCSJ, should not stay away from the problems related to the local food chain in Mexico City, but should be turned into an active agent involved in both the analysis as in finding possible solutions for these. In this matter, since then it was decided that in all the carried out actions, the linking of the chinampero producers with potential urban buyers should be privileged in a practical way, in addition to generating an academic-cultural program around the project for the dissemination of the topics related with the agro food production in the Xochimilco area (this area is situated no further than 18 km from the Historic Downtown of Mexico City).

Despite the failure of the first initiative, a second edition was organized in 2016, with changes in the approach and structure of the event and which included conferences, workshops and a more structured dissemination plan. “*Chinampería, orgullo vivo de la Ciudad de México*” was held in April 2016, and included 10 keynotes, 16 workshops and a culinary contest, beside a food and farmer market with chinampero producers. (See figure 1) It was important in this new initiative the incorporation and support, in addition to the Government of Mexico City, the National Chamber of the Restaurant and Seasoned Food Industry (CANIRAC for its acronym in Spanish). In Mexico, this chamber is in charge of gather and organize more than 600,000 food and beverage businesses all over the country and plays a very important role between the State and private initiative.

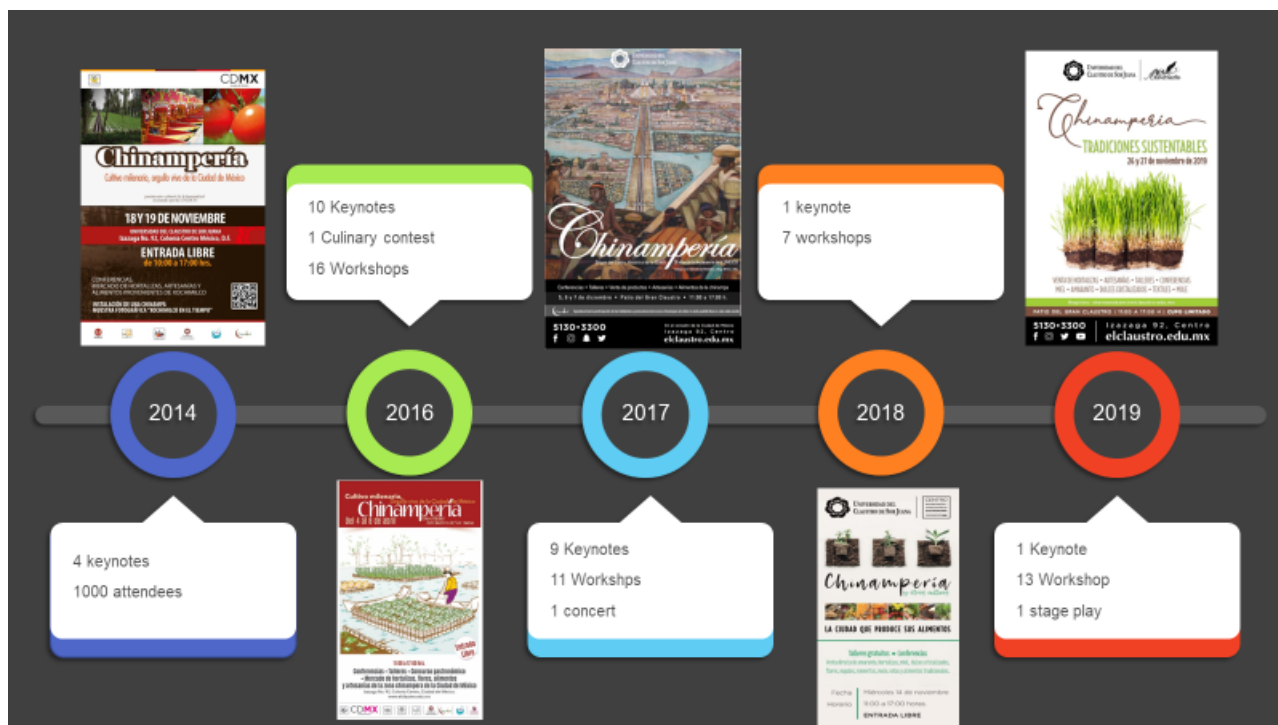


Figure 1: Timeline of Chinamperia events

Source: self elaboration

The contact with this last organization revealed certain deficiencies that we can consider to be part of the failure of the previous contact between producers and restaurant owners. So, it was observed that a large part of the producers did not have basic commercial elements, such as a bank account, or an irregular status before the Secretariat of Tax Administration (SAT for its acronym in Spanish) of the Mexican government. These facts imply, therefore, that they cannot issue invoices, receive bank credits or that as a consequence, they could not be constant with the deliveries.

Detecting these facts implied a significant advance in the establishment of these relationships, since up to that moment, only the contact between the actors had been taken in consideration, the sense of purchase and supply given the importance of the area and the model of cultivation, without considering the real commercial part that prevented establishing a steady link. It is then evident, from this perspective, the need of training in the commercial and financial fields for the chinampero producers, who claim to be unaware of most of the issues and economic and administrative requirements necessary to sell their products beyond their immediate local environments. Despite the deficiencies and needs stated, it is in 2016, that

one of the chinampero producers manages to establish a steady contact with one of the participating restaurants that is still active to this day, and that can be considered as a first success story based on the intermediation and academic action. At the present time, this producer already supplies around thirty establishments in Mexico City. According to the experience of success, we can identify some key aspects in the maintenance of the relationship between the producer and his clients: a) Interest of restaurateurs in acquiring products differentiated by their sensory characteristics, method of cultivation, proximity and heritage value ;b) willingness of restaurateurs to pay an additional cost for the aforementioned characteristics; c) commitment by the producer to comply in a timely manner with the requisitions made by his clients; d) Skills acquired by the producer in training in business management; e) Recognition by restaurateurs and chefs about the value of the chinampero products in culinary terms.

3.1.1. Reaching the scientific arena: Chinampería as a scientific project

, Chinampería reached the academic arena with a grant that was presented to the Mexican National Council of Science and Technology (CONACyT for its acronym in Spanish) entitled: "Linking model for the creation of innovative and productive value chains of gastronomic tourism based on traditional farming methods, endemic ingredients and/or with denomination of origin". Said project aimed to link the public and private sectors and the academic, and through it, the participation of the UCSJ as a union agent for the generation of a value chain and a direct commercial link between producers and buyers was based. Although this project was not consolidated, it set a precedent for the planning of strategies to generate effective links between the key actors that would establish the fundamental role of the University.

Agents of the Model

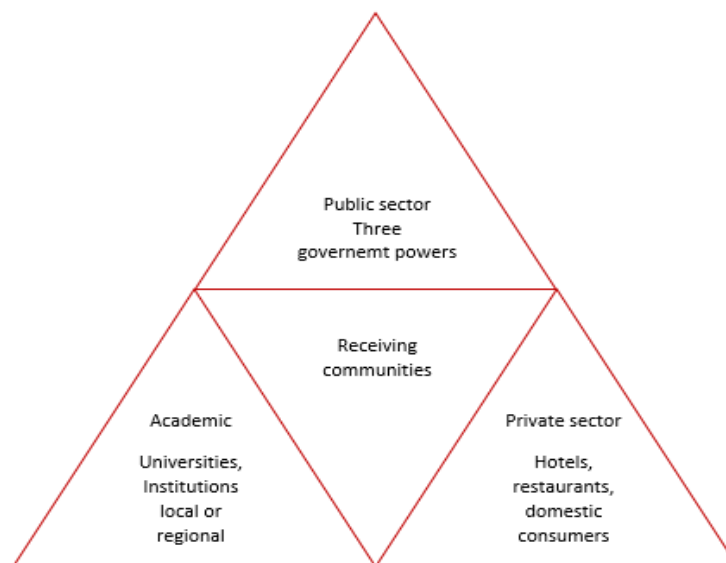


Figure 2. Project granted by CONACYT

Source: Self elaboration.

The activities (conferences, workshops, meetings, seminars, and cultural activities) continued in the subsequent editions of Chinampería in 2017, 2018 and 2019, although they were affected, on one hand, by the 2017 earthquake, which particularly affected Mexico City and the Xochimilco area, and later due to the COVID19 pandemic, which forced the suspension of all kinds of face-to-face activities during 2020 and a large part of 2021. In the 2017 edition, 9 Keynotes

eleven Workshops and a concert took place in the two-days event called: “Chinampería, origen del Centro Histórico de la Ciudad de México a 30 años de la declaratoria patrimonial”. The following edition entitled “Chinampería, la ciudad que produce sus alimentos”, one key note and seven workshops were carried out. For the 2019 edition, 1 Keynote 13 Workshops, and one play was carried out during the event (see figure 1)

The involvement in the scientific arena continued with the collaboration in the the project: "The chinampera label as a promoter of strengthening economic, nutritional and integral restoration of the lake area of Xochimilco throughout the chinampa-refuge model", which in collaboration with the UNAM and under the direction of Dr. Lu s Zambrano, opened a public call for scientific, technological and/or innovation for the attention of specific problems of Mexico City related to sustainable food production of the Ministry of Education, Science, Technology and Innovation of Mexico City (SECTEI for its acronym in Spanish).

Within the framework of this project, and aiming to enhancing the value of the chinampera productions, the UCSJ was in charge of the elaboration and design of technical datasheets for each product, designed both as a tool for dissemination and to help with the sales, and which included the most relevant information on the chinampa products, written in a colloquial language accessible to the general public. The content of the datasheets included a brief explanation of the chinampa-refuge³ model, information on the social-cultural and technical-sensorial aspects of the products (sensory profile elaborated by a trained panel of 29 gastronomists from the University⁴), and 5 key points related to an agro food production industry that guarantees food safety.

It is very important to mention, in this matter, that the list of products published in the sheets was elaborated collaboratively, selected by the chinampero producers themselves and responding to the real needs of sale identified by the study actors. In this way, it was determined the need of analysis of the following products: beets, broccoli, cauliflower, spinach, cabbage or kale, romaine lettuce, corn, rosemary, purslane and carrot. Of all of them, a comparison was made between the product grown in the chinampa and its commercial version. Finally, a sensory profile of the endemic products of Xochimilco was also performed: chicuarote pepper and cow's tongue plant or also known as mother in law's tongue. These datasheets are considered to provide relevant information for the consumers, in

³ The "chinampa-refuge" model was created to strengthen the traditional archeological practices and the ecological recovery of the waterways that surround the chinampas, promoting a collaborative work with the chinampa producers to maintain traditional agro ecological practices and establishing and apply rustic filters in the waterways to keep away exotic invading fish species, such as tilapia, that damage the habitat for other species and the structure of the chinampas. The original food chain is restored improving the quality of the water of this specific area, as well as the ecological functionality of the system (Figueroa et al., 2022).

⁴ Regarding the training methodology of the sensorial panel it's important to highlight that due to the conditions derived from the COVID19 pandemic, a remote sensory analysis strategy was proposed through the use of digital tools, due to this reason, the panel meetings were held entirely virtually. In this sense, it is important to note that the panelist did not have any personal approach to the producers, nor the chinampera area in order to follow security recommendations made by the health authorities.

relation to both, the cultivation model and the place of production of the food they are deciding to purchase.

It is important to mention that the technical sheets are downloadable⁵ and were printed and delivered to the producers that are part of the chinampa-refuge model during a final closing event of the mentioned project, whose main goal was the delivery of the *Chinampera Labels*, an acknowledgment where they specify the technical conditions, both of the refuge (controlled by the Laboratory of Ecological Restoration of the Institute of Biology of the UNAM), and of the quality of the water (studies carried out by the National Laboratory of Sustainability Sciences of the UNAM, (LANCIS for its acronym in Spanish). Likewise, and as a consequence of the aforementioned, the project of a future plan was considered to impart a free Hygienic management workshop for the chinampero producers, as necessary training as it is for food handlers, and of which a large part do not have.

Finally, a contact event was organized in August 2022, with direct invitation, between those producers belonging to the chinampa-refuge project whom obtained the chinampera label and a selection of restaurant owners and people from the gastronomic field. Chefs Andrés Salgado and Alberto Rodríguez, in charge of Zéfiro, the UCSJ School-restaurant, were asked to decide on the menu, together with their team of students, whose main requirement was that it didn't include any meat, in order to highlight as much as possible and value the plant products of the chinampa.

For this purpose, Ángeles Romero, a traditional female cook from Xochimilco, owner and founder of an important local restaurant, was asked to impart a training session to the chefs and cooking teams, with the intention of announcing and creating awareness regarding the importance of traditional Xochimilcan products and cuisine, as well as the changes in local food and cuisines in recent years. In this way, the dishes to be elaborated were selected, as well as the speeches, mainly from a social-cultural and historical base, on which the mentioned elaboration should be based.

The result was expected to be relevant both in the explanation and in the sensorial perception of the dishes that were prepared. It was also required to show the versatility of the use of the chinampero products as ingredients in several different preparations.

4 Discussion

⁵ Downloadable content available on this website: <https://claustronomia.elclauastro.mx/chinamperiaa/>

4.1 Lights and shadows of the gastronomic enhancement of local products from peri-urban rural areas

One of the positive aspects coming from the held event is the fact that there was an effective and direct approach between producers and restaurant owners, to evaluate the possibility of incorporating some of the chinampero products in some of the dishes on the menus of their establishments. In this sense, the awareness of the productive possibilities of the territory of the chinampas at a high-volume level are limited, both in extension and in capacity. Therefore, the aim is not to supply a certain product (lettuce, cabbage, etc.) in general to one or more restaurants, but to supply in a limited and select way certain elements that can be highlighted as local, agro ecological, clean, seasonal, etc., and from that perception, they can be valued by the establishment and easily perceived and valued by their customers. In this last matter, the role of the datasheets elaborated for each product by the academy in collaboration with the producers themselves can become an exceptional element, either to explain the characteristics and properties of said products to the restaurants themselves, and, from these, to state the value to their own customers.

It is not possible yet to estimate the results that this event will end up generating in the future in the level of sales of the producers; but it is possible to ensure that the door has been left open to explore the establishment of future business relationships that, to a large extent, could be performed directly, without any intermediaries. In this matter, the role of the academic institution is indicated as important in the mediation and in establishing contact, as well as partly in monitoring and easing when any of these contacts may have some continuity. Likewise, the University, as a training and research center, places its role in relation to the detection of those training courses that may be necessary in order to solve the problems of the chinamperos, and that, from its vocation of social responsibility, can offer them in these cases for free.

The path is not and cannot be easy for now. The chinamperos are local producers, but often they are not merchants and, in some cases, although they sell their products, they do not necessarily do so within the usual economic channels. Many of them are not registered in the social security, they cannot issue invoices, they have problems transporting their products outside their territory and even, in certain cases, they do not even have a bank account. The relationship with restaurant owners who demand *sine qua non* requirement certain basic

structures in their commercial relations (issuing invoices, collections and payments through banking entities, seriousness and constancy in supplies, transport...) are not simple to achieve. In this matter, it has been detected that many producers do not know how to face these challenges, which makes practical and specific training as well as professional advice essential to carry out said updates.

On the other hand, the gastronomic enhancement of these products from the chinampa, highlighting their most positive particularities (location, seasonality, cultural heritage, tradition, agro ecology, etc.) also leads to an inevitable relative increase in prices, both for production and its commercialization in restaurants. And these price increase corresponds both to the particular characteristics of production and commercialization as well as to the gastronomic value of these products. This fact also implies that these items remain out of reach for many socioeconomic layers of the population in Mexico City itself, who cannot afford this type of product and are forced to buy based on pricing, and not in relation to actual or perceived quality of the products.

4. Conclusions

Throughout this article we have tried to expose and analyze the performed strategies to value the chinampero products of Xochimilco within the gastronomic scene of Mexico City. These products are grown locally in a peri-urban rural area of the Mexican capital itself, with traditional and ancestral production models recognized as World Heritage and unique production systems of great value, and all this in a remarkable landscape setting. However, the proximity to the big city also affects this territory, and despite its theoretical protection, all the demographic and environmental pressures that Mexico City imposes on it: sewage from the city contaminating the waterways, urban pressure, waste and urban dumps, weekend tourism...

Secondly, and as a consequence of the exposed above, this work has stated the agency possibilities of a higher education institution (from research and from training aspects) and in collaboration with other HEI, as a key actor within the food value chain from the gastronomic field and the effects that this can entail in a highly complex context such as Mexico City's

Through the exposed story, we have been able to observe the role that the research and social transfer implemented by certain higher education institutions in collaboration has meant a real social and environmental change in the ways of life of the producers of the chinampas of Xochimilco. Through the implementation of the results of the different research phases, we have assisted in key aspects, such as the establishment of the chinampas-refuge, the cleaning of the water, recovering local flora and fauna, getting clean and local productions, the transition of some productive units towards agro ecology, the enhancement of the products obtained or the search for socioeconomic channels for their commercialization in Mexico City itself.

But this transition is not simple. The lack of adaptation to the market of the producers and to a large extent their lack of basic infrastructure, hinders the socioeconomic relations with other social actors (such as restaurant owners). This lack of adaptation also stands out the need for specific training and professional advice that, to a large extent, part of the producers cannot afford financially and in relation to which they need specific support. The associations or groups of producers, which have multiplied in recent years, have helped a lot in this regard. However, the participations turn out to be unequal and their internal functioning is not exempt from difficulties, which is why they are not always a solution to part of the existing problems.

Finally, the fact of valuing the products of the chinampa is abundant in the perception of fairer remuneration and prices for the producers, but also results in an increase in the cost of these products for the consumer, who finally must choose them based on quality either real or perceived in them, but not in relation to a competitive price in the market.

As final considerations, we highlight the importance of the HEI, and especially those that are more intensely dedicated to food and/or gastronomic studies, to include concern for and promotion of food systems in their fields of both research and social action of the territories they are part of. These types of initiatives have made it possible to demonstrate that multidisciplinary (and interdisciplinarity, when achieved, always having transdisciplinarity as an objective) both in scientific research and in the social transfer of knowledge, are not only possible, but also desirable.

In that same way, the HEIs are also benefited, as they link their action to the needs of their own territories and, at the same time, they create knowledge from the research that, finally, is transmitted and updates the educational corpus of the student body. It would therefore be desirable that initiatives such as the one developed here could be replicated in other university spaces, especially those where studies related to food and/or gastronomy are performed, since they create professional profiles with special knowledge and sensitivities to create links between producers, marketers and consumers.

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