

## Earth markets as a strategy for sustainable gastronomy

### Los mercados de la tierra como estrategia para una gastronomía sustentable

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Siembra 10 (2) (2023): e5366

Received: 28/08/2023 / Revised: 14/09/2023 / Accepted: 04/10/2023

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#### Abstract

The purpose of this article is to explain the bases of sustainable gastronomy and its relationship with slow food's earth markets, taking as an example the case of the Toluca Alternative Green Market and the impact it has on the Valle de Toluca's community in obtaining sustainable gastronomy. To obtain the results, a theoretical research with a qualitative approach was used, with a documentary and field environment experimental strategy. An instrument was applied to 16 members of the Earth Market, whom were selected taking into consideration that the main turn of their project complied with the gastronomic axis necessary for the project. Additionally, participant observation was conducted during a year. According to the results obtained, both inputs and collaborators, as well as customers represent fundamental parts of a sustainable gastronomy, each one of them with certain peculiarities, including the "zero waist generation", short supply chains and marketing, among others. It is concluded that in order for a gastronomy to be sustainable inside an Earth Market, three elements must be related: inputs, collaborators, and consumers, each with its own characteristics.

**Keywords:** sustainable gastronomy, slow food, earth markets.

#### Resumen

El propósito de este artículo es explicar las bases de la gastronomía sustentable y su relación con los mercados de la tierra del movimiento *Slow Food*, tomando como ejemplo el caso del Mercado Verde Alternativo de Toluca y el impacto que este ejerce en la comunidad del Valle de Toluca en la obtención de una gastronomía sustentable. Para obtener los resultados, se efectuó una investigación teórica de enfoque cualitativo, con estrategia experimental de ambiente documental y de campo. Se aplicó un instrumento a 16 integrantes del *mercado de la tierra*, los cuales fueron seleccionados tomando en consideración que el giro de su proyecto cumpliera con el eje gastronómico, aunado a una observación participante durante un año. Como resultados se obtuvieron que los insumos, colaboradores y clientes son parte fundamental de una gastronomía sustentable, y que cada uno con ciertas peculiaridades, engloban el "cero generación de residuos", cadenas cortas de suministro y comercialización, entre otros.

SIEMBRA

<https://revistadigital.uce.edu.ec/index.php/SIEMBRA>

ISSN-e: 2477-5788

Frequency: half-yearly

vol. 10, issue 2, 2023

siembra.fag@uce.edu.ec

DOI: <https://doi.org/10.29166/siembra.v10i2.5366>



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Se concluye que para que una gastronomía sea sustentable en un mercado de la tierra se deben relacionar tres elementos: insumos, colaboradores y consumidores, cada uno con características propias.

**Palabras clave:** gastronomía sustentable, *slow food*, mercados de la tierra.

## 1. Introduction

Debates on sustainable food, the ways in which it can be achieved, its contributions and repercussions have been around for years. However, only few groups achieve this objective and bring a change or impact on their population. The Food and Agriculture Organization of the United Nations [FAO] mentions that sustainable food entails “diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations” (FAO, 2010, p. 1). For a diet to be considered sustainable, it must be culturally acceptable, economically fair, nutritionally adequate, environmentally friendly and allow the optimization of natural and human resources (FAO, 2010).

Various associations and collectives have implemented strategies to achieve sustainable food, such as the Global Alliance for Climate-Smart Agriculture [GACSA], with projects that seek to improve food security within a climate change context, or the FAO’s Global Agenda for Sustainable Livestock (2021). According to reports, blogs and news, it seems that actions for sustainable gastronomy are achieving tangible results, but it is necessary to work on documenting these cases.

In addition to the FAO, there is an ethnogastronomic association that has been working for more than 30 years called Slow Food, founded in Bra, Italy, in 1986, which has promoted sustainable gastronomy through various socio-cultural programs, among which are the earth markets, whose objective is to “create direct links between producers and the general public, eliminating intermediaries and increasing the accessibility of good, clean and fair food” (Coulton, 2021). It is supported by other movements, such as zero waste, which seeks to reduce waste in gastronomic practices to generate the least possible environmental impact.

As to the search for research and documents concerning the constructs earth, markets and gastronomy in Dialnet database, the result obtained was zero articles, hence it was decided to make a change in the search constructs, to know what is being done in scientific terms in relation to sustainable gastronomy. When placing zero waste and gastronomy in the search engine, 10 documents were obtained, including theses, journal articles and books. When starting the discarding, we noticed that no document was related to earth markets and their impact on gastronomy, or the generation of zero waste, instead, for the most part, they focused on the design of sustainable business plans from different disciplines, such as the financial or marketing areas, which did not have the gastronomic, food or historical approach necessary to satisfy the purpose of this research.

In the Redalyc database, despite obtaining more than nine thousand results, when applying filters of location, temporality and discipline, to subsequently discriminate articles, an article published in the journal *El Periplo Sustentable* was obtained, which investigates sustainable gastronomy in Mexico, referring to gastronomy in the historical context, concluding in a comparison between Mexico and the European guidelines of sustainable gastronomy (Silva Zamora et al., 2022), which leading us to rethink whether “America or Latin America” is researching and writing what is necessary to be able to substantiate what

On the other hand, earth markets play an important role in gastronomy worldwide. The municipality of Toluca is located in the state of Mexico, and has a population of approximately 910,608 inhabitants (Instituto Nacional de Estadística y Geografía [INEGI], 2020), it has four main markets and 34 delegacional tianguis (Ayuntamiento de Toluca, 2020). Only one of these is considered an earth market, according to *Slow Food* categorization, leading to the question whether, despite the food insecurity in the world, eventual changes in consumption and sales habits made in territorial spaces such as the municipality, could have an impact on a global level from the locality.

For the present study, a theoretical research with a qualitative approach was carried out, with an experimental strategy of documentary and field environment. To analyze the data sources, an instrument was applied to 16 members of the market, obtaining as results two important aspects: the perception of the producers regarding their projects and how they develop within the sustainable gastronomy of the Toluca Valley, and the need to support processes and actions being carried out to obtain a sustainable gastronomy. To this end, a first section

entitled ‘gastronomy from the past to the present and its relationship with *Slow Food*’ is integrated, where the background of the basic concepts, and the terminology necessary to know the movement is discussed.

The next section on earth markets discusses the bases and objectives of this project, as well as its figures. Then, in materials and methods, the methodology and the instrument applied are discussed in order to continue with the results, where the data collected from the application of the instrument are analyzed and then move on to a discussion where the existence of earth markets and their elements are addressed. Finally, conclusions are reached, in which the areas of opportunity of the project are addressed, as well as the proposals and suggested complements based on the complete analysis of the document.

### 1.1. *Gastronomy from the past to the present and its relationship with Slow Food*

Etymologically, gastronomy comes from the Greek γαστρονομία, formed by gaster or gastros (stomach), nomos (rule) and the suffix -ia (quality), when the suffixes nomia are put together, the rule, law or science is obtained (Anders, 2023); therefore, gastronomy is the study of the relationship of human beings with their stomach, the food they ingest, and its value, both nutritional, cultural and social.

Over the years, gastronomy has been gaining more strength and rigor. It is not a mere and unsubstantiated history. In the beginning, gastronomy was considered as the art of cooking and the final food assembly. There are other terms that are directly involved with sustainable gastronomy. Some authors suggest that gastronomy should be studied in an interdisciplinary way, it involves knowledge related to art, dance, sculpture, nutrition, architecture, chemistry, agriculture, politics, among others (Gutiérrez de Alva, 2012; Laudan, 2020, Lujan, 2019). The gastronome, on the other hand, according to Gutiérrez de Alva (2012), performs activities such as tasting, transforming, historicizing, narrating, discovering, linking, understanding, knowing, contextualizing, experimenting and investigating food (p. 6): without a doubt, the concept of gastronomy and gastronome should be covered from different disciplines.

On the other hand, with the emergence of the concept of sustainability and sustainable development, a guideline is set to pay attention to the care and preservation of natural and cultural resources for these and future generations (Brundtland, 1987). Under this paradigm, it is clear that any human activity generates negative impacts on natural resources, and gastronomy is no exception.

The 17 Sustainable Development Goals are currently being proposed to be achieved by 2030, and gastronomy is implicit in them. Food is involved from responsible purchases to vulnerable communities, to decent jobs and the treatment of waste that ends up in the sea. Smart cities that allow better farming and use of resources, and education that promotes healthy and balanced eating. In other words, gastronomy is a cross-cutting axis that can help achieve the 2030 Agenda (Ibero-American General Secretariat [SEGIB] & Basque Culinary Center [BCC], 2022).

Among the collective efforts to achieve sustainable food, *Slow Food*, an international movement originating in Italy, stands out. It seeks to rethink gastronomy and all that it entails, by promoting the dissemination of a philosophy of traditional and regional safeguarding, combining pleasure with knowledge that promotes fair food for all members of the foodchain (Slow Food, 2023).

*Slow Food* was founded as an “ethnogastronomic” association by food activist Carlo Petrini in the city of Bra, Italy in 1986. The main goal was to support and defend good food and the gastronomic pleasures that come from a slow pace of life (Slow Food Foundation, 2023). *Slow Food* believes in gastronomy that goes from the local to the global, a multidiscipline that educates people to select their food based on food knowledge, allowing them to live their lives in the best possible way.

*Slow Food*’s strategies include The Ark of Taste, whose purpose is to catalog forgotten or endangered foods; the *Salone del gusto* and *Terra madre* events, where conscious producers and consumers can freely connect; and, the *Slow Food Cooks Alliance*, whose objective is to communicate and promote the bastions of *Slow Food* and world cuisine through the defense of biodiversity (Slow Food Mexico, 2023). In other words, it seeks a conscious diet that involves the conservation of resources and respects the rhythm of the earth. However, of all these, the proposal of the earth markets stands out; a project whose objective is “to create direct links between producers and the general public, eliminating intermediaries and increasing the accessibility of good, clean and fair food” (Coulton, 2021).

The three fundamental pillars of the movement have made it possible for more than 30 years to define sustainable gastronomy as all food that is good, clean and fair (Slow Food, 2023). This movement has allowed sustainability to be more than just another fad, and an attempt to make gastronomy be immersed utopianly in

all the Sustainable Development Goals, since it has been dedicated to the promotion and safeguarding of food and knowledge.

*Slow Food* has participated in the definition of those movements related to gastronomy and sustainability. Among these, earth markets stand out as places to buy high quality products, but also spaces to build communities, generate exchange and education.

Although there is still a long way to go in this regard, this type of market allows the public to know in an intimate way the origin of their products and the philosophy of the producers they seek to bring to the diner's table (Slow Food, 2023).

*Slow Food* recognizes as producers all those individuals, or food artisans who sell only what they produce, and can personally guarantee the quality of their products (Slow Food, 2020). The products must comply with certain characteristics which are: to be good; to use seasonal, fresh and tasty ingredients that satisfy the senses and are part of the cultural and local background; to be clean; to have a production and consumption that does not harm the environment, animal welfare, or health. And, finally, to be fair, with accessible prices for consumers and fair conditions and wages for producers (Slow Food Foundation, 2023).

There are other concepts that are directly related to sustainable gastronomy, such as the term zero waste, mainly related to the 1980 work *UrbanOre* by the American Daniel Knapps, which sought to reduce the space used by garbage in landfills, by encouraging the community to reuse their waste to reduce its volume (UrbanOre, 2023). Currently, the movement is based on five pillars, popularized by Bea Johnson (2013), known as the 5Rs: Refuse what you don't need, Reduce what you do need, Reuse what you consume, Recycle what you can't refuse, Reduce or reuse and transform the rest.

Indeed, gastronomy has evolved along with humanity and knowledge. For example, despite having started with a topic relatively alien to gastronomy, the concept of zero waste began to be used in the field in early 2010 (Roker, 2022), becoming a sub-movement known as *Zero Waste Cooking* (Larson, 2022). Using the same policies of the first movement, but applied to the gastronomic environment; reducing food waste, using all parts of the ingredients, minimizing portions, composting and donating, which, undoubtedly, is an element that should go hand in hand with sustainable gastronomy.

## 1.2. Earth markets

The Earth Markets project began in 2004, with the following objectives: to provide access to consumers and become places for the exchange of knowledge and the transmission of knowledge, with the aim of educating taste and proper nutrition, as well as generating conscious citizens (Slow Food Foundation, 2023). Places to develop a sense of community (Slow Food Foundation, 2023).

Earth markets seek to protect food biodiversity, giving value to the endemic varieties of the areas of origin of producers and market areas, in order to safeguard cultures and knowledge. Vindication is also sought, since "purchasing is a political act, a concrete and daily instrument to fight against large-scale problems, from the climate crisis to the loss of biodiversity" (Milano & Sandrone, 2020). The market seeks to be a fundamental piece for the creation of local food policies, demonstrating that there are other forms of buying and selling that are sustainable (Soto, 2005).

These projects also support the local economy through the inclusion of small producers in the region, who can provide first-hand evidence of who they are, what their production processes are, and under what criteria they set their prices. Finally, with the aim of forming communities, the markets also seek to educate in consumption through kindness, both personal and environmental, encouraging exchanges, barter and meetings related to all aspects of the chain, from producers to consumers.

Currently, in the world there are 91 earth markets in 31 countries and, of these, 5 are in Mexico; 2 in Yucatan, 2 in CDMX and 1 in the Toluca Valley, being the Earth Market Green Capital CDMX, the last one to be added to the list, positioning Mexico as the third country with the third largest number of earth markets, surpassed by the native country Italy, with 47 markets and Austria with 6 (Slow Food Foundation, 2023).

In order to be considered as an earth market, it is necessary to go through an application process in which the *Slow Food* network evaluates that they follow the international guidelines of the movement and that they adhere to the slow food philosophy. Once accepted, the markets participate in various national and international events of the association, within which there are forums, seminars and conferences where members of the community can make themselves known while continuing to educate themselves on the values of sustainability and agroecology, as well as conscious eating and zero waste (Milano & Sandrone, 2020).



The Mercado de la Tierra: Verde Alternativo Toluca, previously known as Mercadito Verde Alternativo, was inaugurated last August 28, 2021 at its headquarters Casa Espora, located at Humboldt 210, Barrio de Sta. Clara, Centro de Toluca. The event was presided over by Ileri Origel, spokesperson for the Market, and 24 local producers who have been part of it over the years. Originally, the market sought to promote food based on agroecological principles; now with the recognition of *Slow Food*, it will seek to safeguard the agriculture and heritage of Toluca, as well as to promote food education and conscious eating (Colacino, 2021).

Although there are four main markets and 34 tianguis (small informal trade markets) in the Toluca Valley, as of April 2020 (Ayuntamiento de Toluca, 2020), only one focuses on agroecological principles. Considering the above, the following questions arise: how has the Mercado de la Tierra: Verde Alternativo Toluca contributed to sustainable gastronomy in the Toluca Valley? Is a green market a viable strategy to generate collaborative networks between producers and consumers in the Toluca Valley? Considering the need for sustainable prices and work, are the prices of the market projects economically sustainable and adequate? Should the creation of more spaces for sustainable gastronomy be promoted or is it enough to disseminate and support those that are already underway?

## 2. Materials and Methods

This research is based on a qualitative approach, with an experimental strategy. The first phase consisted of a documentary review, in which various sources of data were analyzed with the intention of integrating a conceptual framework and obtaining a broader context of the topic addressed. In the second phase of fieldwork, instruments were applied with the intention of obtaining qualitative data to 16 members of the Mercado de la Tierra: Verde alternativo Toluca, who were selected taking into consideration that their project's line of business complied with the necessary gastronomic axis, together with a participant observation over a period of one year (2021-2022).

Participants whose axes were outside the gastronomic line of business, or whose primary line was not included within food, such as sustainable hygiene products or zero waste decorative elements, were discriminated. This elimination exercise left a population size of 16 collaborators within the earth market, with a confidence level of 95 % and a margin of error of 5 %.

For the application of the instrument, we spoke with the market director, the agroecology teacher Ileri Elisa Origel Rodríguez, whom after consulting with the market collaborators, assigned a day in which the market was in full operation, in order to apply the instruments and carry out observation of the corresponding projects in the same time and space.

In phase three, using the information obtained in the previous stages of research, a longitudinal descriptive knowledge was obtained, to observe the evolution of the market during one year and, in this way, to understand the circumstances in which the community of the Mercado de la Tierra: Verde Alternativo Toluca develops, as well as the effects that this has had on the sustainable gastronomy of the Toluca Valley, and on the development of the projects hosted in this space. For the analysis of the instruments, the Dedoose tool was used, which is a multiplatform that allows the analysis of qualitative data such as texts, audios, images and videos, among others.

## 3. Results

From the repetition of codes entered into the Dedoose platform, it is possible to visualize the most repetitive categories of analysis (Table 1), which, together with the previously mentioned references and reality, allow visualizing the relationship between utopia and praxis in the Toluca Valley Green Market. It is shown that, when relating the questions referring to sustainable gastronomy, sustainability, impacts on the market and sustainable gastronomy, the word cloud projects: agroecology, project support, local inputs, seasonal inputs and small producers, as the way in which the members of the market develop with respect to their knowledge of sustainability and sustainable gastronomy (Figure 1).

Most market participants recognize sustainable gastronomy as a result of the provenance of products, which must be local, clean and seasonal to be considered as such. However, also the use of agroecology is mentioned, which is defined as the science that incorporates social, biological and agricultural sciences, and integrates them with the traditional knowledge of farmers (Latin American Scientific Society of Agroecology

[SOCLA] & Third World Network, 2015, p. 7), in order to reinforce the practices used in the production and conservation of own and alternative low-impact inputs.

**Table 1.** Categories of analysis of earth markets.

Category of analysis	Orientation	Characteristics	Authors
Supplies	Temporary	Inputs that respect the time of the land, rainy season, conservation of moisture or drought of the land.	Borja-Bravo et al., (2018); Pedroza Ortega (2018); Cotler et al. (2020); Rosset (1998).
	Local	This type of inputs allows the land to rest, reduce costs and increase ecological, sanitary, social and economic benefits.	Gómez-Betancur et al. (2018); Alva Cruz et al., (2018); Juárez (2019).
	Endemic	Use of local seeds or fauna species that go from generation to generation to meet the needs of the people of the community.	Plazas Santamaría (2018); Arribas-plata Zurita (2021); Hotúa- López et al. (2021).
	Agroecology	Approach with basic ecological principles to make use of alternative inputs, with minimal dependence on external inputs.	Rosset (1998); Sociedad Científica Latinoamericana de Agroecología [SOCLA] y Third World Network. (2015); Gómez-Betancur et al. (2018); Alva Cruz et al. (2018).
Partners	Producers	A group of people who work with flora and fauna with local and endemic inputs, reducing the negative impacts of the dominant neoliberal diet and allowing resilience through local knowledge.	Loayza-Aguilar (2020); Figueredo y Paula (2021).
	Local suppliers	People who sometimes do not generate inputs for sale, but distribute local inputs in order to reduce distances and environmental impacts.	Mancera Valencia (2020).
	Collaboration networks	Adaptation and commercialization strategy for the local economy, involving small producers	Montes de Oca Rojas (2020); Mata-Arratia et al. (2022).
Consumers	Conscious	Consumers with attitudes, values and beliefs, aware of the impact of their actions on natural and cultural resources.	Salgado-Beltrán (2019); Palacios y Vivas (2018).
	Responsible	Well-informed and committed citizen with the intention and decision to not produce waste.	Ordóñez Abril et al. (2020); Gómez-Benito y Lozano-Cabedo (2022).

On the other hand, when describing sustainability, the category of analysis highlighted within the community members was that of balance, referring to working in harmony with ecosystems without generating a deterioration in the resources needed to live, as mentioned by Guillermina Palmas from Huerto Pachamama: “They are the actions we take to conserve and care for our environment, working harmoniously with nature” (personal communication, December 2021).

Regarding food security, there is confusion on the part of those involved, as it is argued that sustainability as a concept is linked to food sovereignty, while this is better grouped within the subcategory of sustainable gastronomy.

The repetition of codes in the Toluca Valley Green Market (Figure 2), allows verifying that those questioned consider that sustainable gastronomy entails local inputs, seasonal inputs and agroecology as an elemental part of the market; in addition to the consumption of small producers. It could be said that a green market should involve these four aspects.

The projects that have been active in the market for a longer period of time have a better notion of the ways in which they contribute daily to the creation of a sustainable gastronomy in the Toluca Valley, recognizing that their products are local, clean and fair and of agroecological origin.

The commitment of the market participants who have been participating in this project for more than three years is evident. The commitment is such that they carry out sustainable practices in their homes, generating zero waste, waste separation, composting, or the creation of urban gardens; that is, they take the knowledge

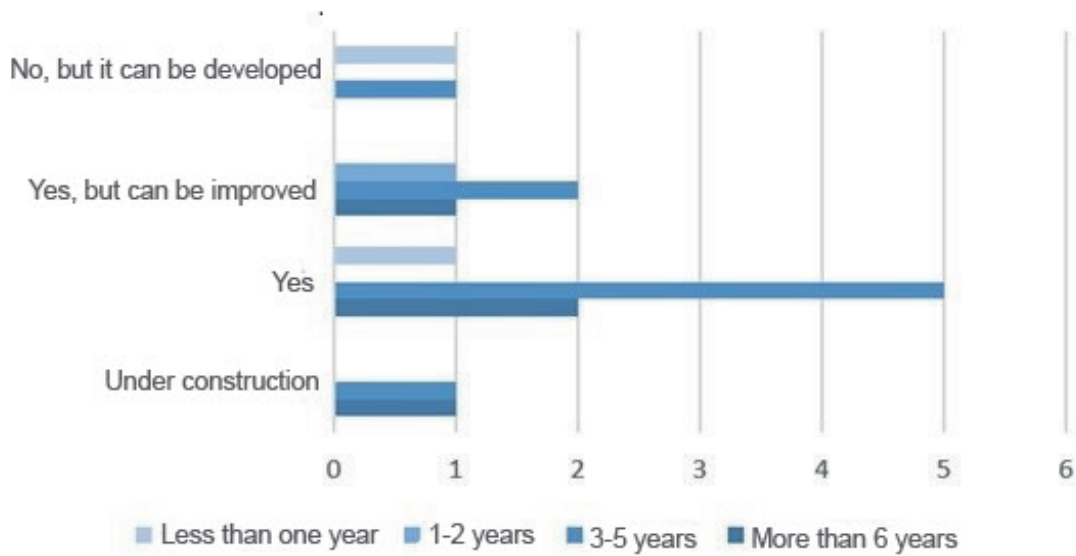
acquired in the market even further. On the other hand, the participants in youngest projects (with less time in the market) argue that there is no sustainable gastronomy in the Toluca Valley, or its foundation is not well planned, since there is a lack of knowledge and dissemination on the subject (Figures 3 and 4).



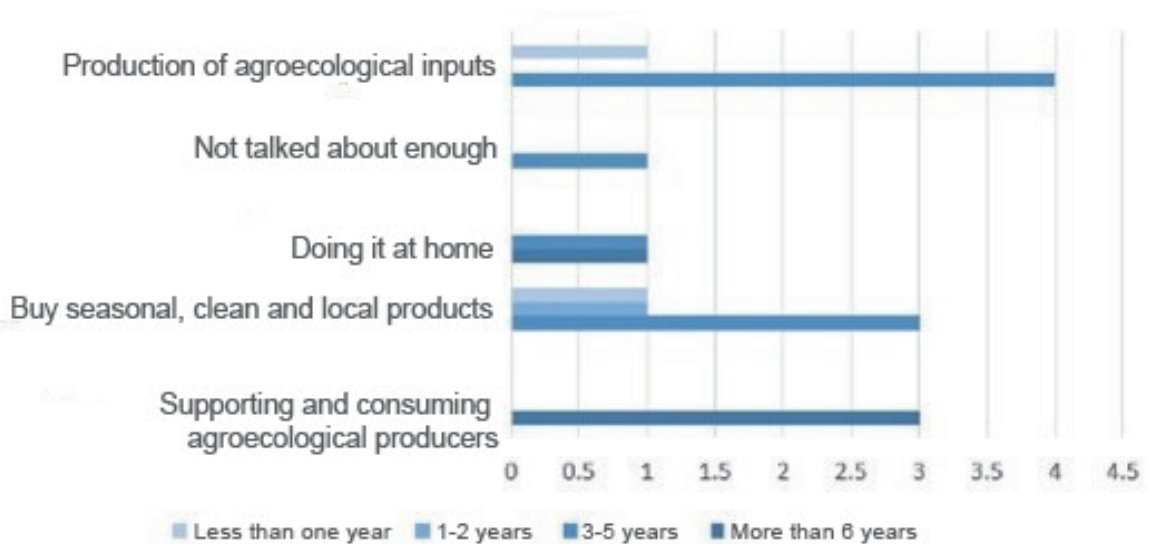
Figure 1. Word cloud of the Toluca Valley Green Market.

Codes	Market Impacts	Generate awareness	Sustainable gastronomy in the Toluca Valley	Supporting projects	Generating spaces	Sustainable gastronomy	Agroecology	Seasonal inputs	Local inputs	Small producers	Satisfying needs	Sustainability	Balance	Total
Market Impacts														
Generate awareness					3									3
Sustainable gastronomy in the Toluca Valley														
Supporting projects					3		1	2	4	5				15
Generating spaces		3		3		1				2				9
Sustainable gastronomy														
Agroecology			0	1	1				3	2				7
Seasonal inputs				2					7	2				11
Local inputs				4		3	7			5				19
Small producers				5	2	2	2		5					16
Satisfying needs													4	4
Sustainability														
Balance											4			4
Total		3		15	9		7	11	19	16	4		4	

Figure 2. Toluca Valley Green Market code repetition table.



**Figure 3.** Comparison between the period in Toluca Alternative Green Market community and Sustainable gastronomy presence in the Toluca Valley.



**Figure 4.** Comparison between the period in Toluca Alternative Green Market community and Experiencing sustainable gastronomy in the Toluca Valley.

According to community members, it is difficult for them to find information about sustainable gastronomy outside their circles, or communities focused or interested in sustainability. It seems that, despite the fact that sustainable practices are carried out in the green market, such as fair trade or the zero kilometer philosophy, there are few spaces that offer concrete dissemination in this regard (Figure 5).

The previous analysis of the categories leads to the recognition of inputs (Figure 6) as the one that stands out within the Mercado de la Tierra: Verde Alternativo Toluca. Although it is not necessary for producers to be aware of these concepts to realize their importance and understand the need to sell this inputs in the markets, it is reflected in the participation of small producers in the sale and handling of these, as Joel Ordóñez of Occentlalli mentions “By cultivating corn in a sustainable way and transforming these food products in an artisanal way and offering them with their natural properties” (personal communication, December 2021).

Another of the categories of analysis that was repetitive, and the one that is most discussed is agroecology, both when questioning aspects of sustainability and sustainable gastronomy, as well as the way in which the participants live a sustainable gastronomy in their daily lives. This makes us reevaluate agroecology as one of the elements on which the greatest emphasis is placed within the formation of the community of the Earth Market: Alternative Green Toluca.



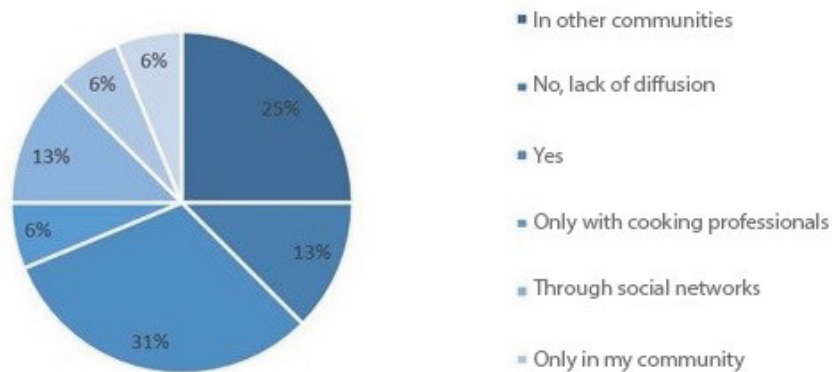


Figure 5. Knowledge of the alternative green market out of the market community.

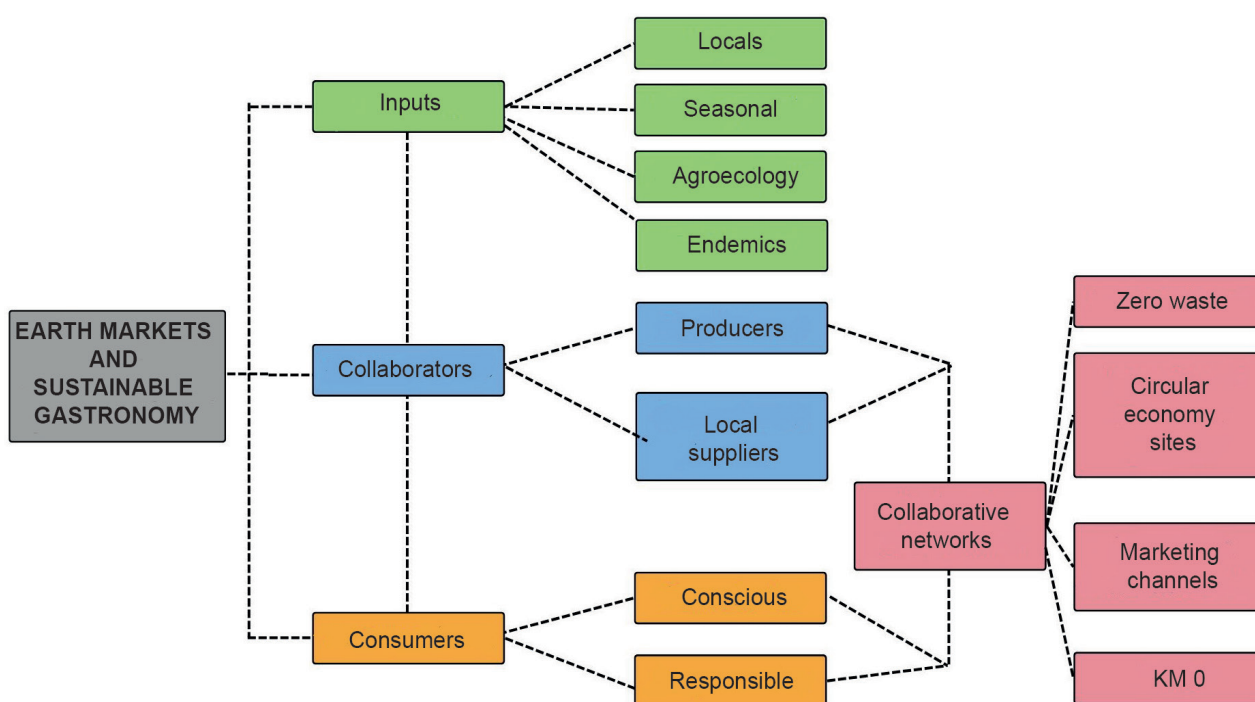


Figure 6. Elements for shaping a sustainable earth market and gastronomy.

Regarding the category of consumer analysis, there are two different assumptions, the conscious ones that are separated from the responsible ones, since according to those interview results it is necessary to generate a group of conscious clients, who know what they are consuming and why they are doing it, as they are aware of the origin of their food, as well as the vision and mission of the present projects thanks to their dissemination through workshops offered by the producers. Once these customers are generated, the path will be opened to the responsible ones, who already have a high degree of awareness and, therefore, would be committed not to generate waste and being frequent customers in their purchases in the market.

On the other hand, from the continuous observation of the market, an important point of access to the axes of sustainability, agroecology and sustainable gastronomy is perceived; therefore, when asked how has the Mercado de la Tierra: Verde Alternativo Toluca contributed to the sustainable gastronomy of the Toluca Valley? It is observed that, with its continuous activities, the market seeks to educate all members of the community about the aforementioned issues, conducting tours of recognition of local flora and fauna, collecting native seeds and promoting the creation of urban gardens, which favor the community, since the current urban diet is based on ultra-processed food, which results in excessive use of agrochemicals and is reflected negatively in the abandonment of the countryside and the displacement of farmers to more urbanized areas. Encouraging communities to move towards self-sufficiency step by step, starting with small harvests that can be obtained in crates or spaces in urban areas designed for this purpose.

## 4. Discussion

When analyzing the state of the art and searching for information on constructs such as markets and land, it is observed that earth markets already exist; however, these are focused on the study of population and economy (Soto, 2005). When these are related to *Slow Food*, there is a greater concern that both producers and consumers are involved in the markets, in order to obtain fair trade and quality products, and that those involved have an approach to *Slow Food* terminology and that the whole process is kind to natural and cultural resources, but above all that the land is given the necessary time to replenish itself between each planting. Although it is not only *Slow Food* that refers to this type of markets and sustainable gastronomy, the concept that FAO points out encompasses food security in a climate context, so much so that from the results it is visualized that the reality is different, a green market should be focused beyond short supply chains, it has three substantial elements that are inputs, partners and consumers. The latter are necessary for a fair price to be paid, for the circular economy to function and, therefore, for the green earth market to survive.

At the same time, it is pointed out that a earth market should create links between producers and the public; however, from the analysis of results and based on the categories of analysis, a earth market should generate collaboration networks between producers and suppliers. According to Mancera Valencia (2020), suppliers distribute local inputs in order to reduce distances and environmental impacts. For *Slow Food*, short supply chain products allow the creation of market opportunities for small-scale producers and promote dialogue between producers, therefore, in a green market there must be an essential relationship between suppliers, producers and local inputs or products that allow recognition among those involved and thus allow the formation of collaborative networks.

Finally, Coulton (2021) pointed out that one of the objectives of a green earth market is “to create direct links between producers and the general public, eliminating intermediaries and increasing the accessibility of good, clean and fair food”; However, intermediaries can be suppliers that are within a zero kilometer, people who also accept waste to generate compost and who undoubtedly can be responsible customers at the time of interacting in this type of spaces, in fact they play a fundamental role, as they also allow the creation of collaborative networks in search and opening of new spaces for sales.

## 5. Conclusions

Sustainable gastronomy promotes sustainable practices, which are being reserved to a very specific sector, the main reason is that there is little interest in documenting the projects that are already being carried out, a lot is being done, but without written works that could serve as background for future proposals or research on sustainable gastronomy.

Derived from this, it is considered important to mark precedents of the actions that are already being carried out in different communities with the main purpose of encouraging the creation of proposals with the necessary sustainable approach to establish a palpable sustainable gastronomy in the Toluca Valley. Therefore, it is considered necessary to carry out research that allows having appropriate methodologies for sustainable gastronomy and theoretical frameworks that allow having a knowledge related to what this gastronomy is, but above all, it opens a line of knowledge regarding earth markets and their elements, so that these markets have a strengthened value chain.

Having said this, it is possible to propose the previous image (Figure 6) allowing to visualize that it is necessary, within sustainable gastronomy, to find places where the commercialization channels are short and allow a circular economy, speaking from the economic sphere. From the environmental sphere, on the other hand, it is necessary that the inputs are local, endemic, seasonal and agroecological, since there may be families that work backyard agriculture or seek alternative seeds, but as long as they are respectful of the land and its times. From the social sphere, conscious and respectful consumers can form part of collaborative networks together with collaborators in the earth market, who in turn can be local producers or suppliers. The aim is that their knowledge regarding the inputs leads to zero waste generation, zero kilometer consumption and distribution, places to be able to promote such markets, among other aspects.

On the other hand, based on the information obtained from the instruments applied, the need for working with consumers is highlighted, in order to know if they really decide to buy in a earth market having a high degree of awareness of what this project entails, since in other types of markets, or supermarkets prices are

sometimes low. In addition to knowing the level of respect, regarding the commitment that consumers have with agroecological processes and producers, and also to investigate the importance of agroecology in the contemporary diet and how it can combat the modern shortage of clean food.

### Contributor Roles

- Paola Erandi Saucedo Jiménez: conceptualization, investigation, methodology, resources, software, writing – review & editing.
- Yanelli Daniela Palmas Castrejón: conceptualization, investigation, methodology, resources, software, writing – review & editing.
- Andrea Edurne Jiménez Ruíz: conceptualization, investigation, methodology, resources, software, writing – review & editing.

### Ethical Issues

The authors declare that for the application of the interviews an Informed Consent was obtained from each of the participants, and they were carried out in collaboration with the leader of the alternative green market, Irerí Origel. Therefore, there are no ethical implications.

### Conflict of Interest

The authors declare that they have no affiliation with any organization with a direct or indirect financial interest that could have appeared to influence the work reported.

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