Sustainable food, consensus, and debates: a study on university campuses in Mexico City

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Abstract

Purpose – This paper aims to analyze the conceptions that underlie the notion of "sustainable food" of different social actors based on a study focused on promoting sustainable food strategies on university campuses.

Design/methodology/approach – The research incorporates the views of various actors linked to a sustainable food project on the campuses of the National Autonomous University of Mexico (Universidad Nacional Autónoma de México), which is one of the most important universities in Latin America. The study includes a literature review on food sustainability strategies on university campuses and implemented sustainable food programmes in 100 universities worldwide. It also incorporates semistructured interviews and discussion groups conducted with consumers of the university community, 60 smallholder farmers and managers of 23 alternative food networks in Mexico City.

Findings – This research evidence the diversity of meanings and perspectives associated with food sustainability and a generalized emphasis on its environmental dimensions, although environmental problems tend to be partially understood. It also highlights the priority students and producers give to the accessibility of healthy foods.

Research limitations/implications – The results of this study revealed important elements, potentially useful for designing sustainable food strategies on the campuses, considering the principles of the rights-based approach to development and social participation.

Originality/value – The research evinces tensions in the definition of food sustainability and its translation into actions from a multistakeholder perspective.

Keywords Sustainable food strategies, Urban food systems, Campus, Citizen participation, Social participation, Community–campus engagement, Sustainable universities

Paper type Research paper

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Introduction

In the past century, major demographic, technological, political and social changes have transformed food systems. These changes include urbanization, the industrialization of food production, processing and distribution, and the concentration of decision-making over food production and distribution, all of which pose sustainability challenges and endanger food security in different ways. Food production, transformation, distribution and consumption have some of the most significant environmental impacts among human activities. Besides, there is a persistent lack of access to sufficient and quality food for broad population groups, malnutrition imposes enormous challenges to public health, while there are high rates of food loss and waste, and smallholder farmers have been marginalized, among other sustainability problems.

Evidence of these socioenvironmental deterioration processes has created a growing consensus on the need of the transformation of food systems toward more sustainable schemes. Consequently, in recent years, numerous international statements, research studies and strategies seek to promote this transformation. In general terms, emphasis is placed on the need to ensure food security for present and future generations, generate social benefits (e.g. health and equity) and neutralize the negative environmental impacts created by the agri-food industry and contemporary consumption patterns. However, there are different interpretations (Aiking and de Boer, 2004) and competing narratives (Dubisar and Roesch-McNally, 2018) regarding the priority issues in the transition toward more sustainable food systems and on pathways that have the potential to achieve these goals. This lack of consensus has led to an absence of clarity of public, private and social initiatives and on the popular understanding and appropriation of these notions.

The diversity of assessments regarding the present and future of food systems reflects, to a large extent, normative visions linked to divergent social development proposals that imply specific risks and opportunity costs. Consequently, public policies require a grounding in ethical foundations that must be commonly reached with social actors (iPES FOOD, 2015, p. 9). In this context, the recognition of the perspectives of different actors on food sustainability provides an important framework for inclusive processes of definition of the strategies, adequate in specific contexts. This article analyzes the perspectives on the food-sustainability binomial based on research on sustainable food programmes at university campuses. The research includes a literature review, an analysis of universities' sustainability programmes worldwide and a qualitative study developed with members of the National Autonomous University of Mexico (UNAM), peri-urban food producers, and members of alternative food networks (AFN). The activities related to the qualitative study developed at UNAM are part of a broader action-research project that seeks to lay the foundations for the design and implementation of a new sustainable food program on the campuses of this university.

This research seeks to give visibility to the plurality of meanings associated with food sustainability and argues on the need to understand the daily necessities, values and ideals of the potential participants in a specific policy intervention, avoiding the definition of "the best option" to improve access to food from an external point of view. At the same time, the research seeks to promote critical reflection on alternative food movements and, more generally, on the underlying problems of food inequity and precariousness (Guthman, 2008).

The approach of our study agrees with the proposals that identifies universities as privileged physical and social spaces to understand, design and implement strategies geared toward sustainability. Notably, the framework used in our study can be used to generate relevant information and experience to promote sustainability in other type of spaces. Because cities and campuses are very different units of analysis, this perspective emphasizes the contributions of universities toward urban sustainability, by highlighting their potential

as catalysts for change (Escalona Aguilar *et al.*, 2015) and documenting the alliances between universities and cities across the world (Trencher *et al.*, 2014) or their social responsibility (Pothukuchi, 2021). Accordingly, universities and university students have play a key role in various movements related to sustainable food practices (Barlett, 2017) and have the ability to create new opportunities for establishing sustainable food systems (Goodman *et al.*, 2011).

Literature review

Sustainability in universities has gained relevance over the past few years. In general terms, a "sustainable university" minimizes the environmental, social and economic impacts of its activities, incorporates these problems into its research and teaching activities and promotes the transition toward sustainability at the local, regional and global scales. The existing literature in this field addresses a wide range of topics, including the discussion about the best strategies for reducing the environmental impact of activities on campus, indicators used for its assessment and the incorporation of sustainability in scientific research and training offers (Oyama *et al.*, 2018).

The literature on university campus food covers a wide range of topics, including the analysis of food insecurity among students (Bruening *et al.*, 2016; Hagedorn *et al.*, 2019; Murray *et al.*, 2021), nutritional effects of their eating patterns (Caruso *et al.*, 2014; Muñoz-Cano *et al.*, 2015; Navarro-Prado *et al.*, 2015) and their relationship with food environments (Roy *et al.*, 2019; Barbosa *et al.*, 2020; Martinez-Perez *et al.*, 2021) are of particular importance. Notably, in recent years, this field mainly developed from studies on sustainability. As discussed in the Introduction, these studies reflect the growing concern for sustainability in food systems and support the efforts and capacities of universities to contribute to more sustainable practices across food systems in broader contexts.

Previous studies have analyzed the processes and results of sustainable food projects on university campuses (Rojas *et al.*, 2007; Barlett, 2011; Stahlbrand, 2016) and their contributions to advancing sustainable university initiatives. These studies focused on the environmental dimensions of sustainability, addressing issues such as planting and managing collective vegetable gardens on campus considered to be critical educational projects (Duram and Klein, 2015; De Young, 2016), as well as opportunities for liaising with local communities (Aftandilian and Dart, 2013) or strategies for increasing food production (Bhatt *et al.*, 2009). Other studies also analyze waste management concerning food preparation and consumption (Erälinna and Szymoniuk, 2021), food wastage (Abdelaal *et al.*, 2019), the environmental footprint of food consumption (Nilsson *et al.*, 1998), reduction in meat consumption to cope with climate change (Figueiredo *et al.*, 2021) and the water–energy–food security nexus (Gu *et al.*, 2018).

Other more socially oriented studies consider themes such as the understanding of consumers' decisions regarding the consumption of sustainable products (Chen *et al.*, 2016; Vecchio and Annunziata, 2013); the schemes that link universities to alternative food networks (Barlett, 2017) and other community organizations (Burley *et al.*, 2015; Rojas *et al.*, 2011). These analysis address different specific objectives, including understanding the trajectories of student involvement in food-related initiatives (Mayer *et al.*, 2021) and their role in strengthening social movements that demand sustainable food systems (Levkoe *et al.*, 2016). Others have also explored specific linking mechanisms, such as the role of public procurement (Stahlbrand, 2016) or farmers markets on campus (Ward *et al.*, 2014).

Research objectives and approach

Most of the papers published in this field define food sustainability as associated with specific ecological problems, demands for justice or other categories, such as "local" or "organic," without problematizing these concepts or their relationship with sustainability.

In contrast, some exceptions explored the effects of specific actors to a sustainable food system, generally focusing on the students' views (Rojas *et al.*, 2007; Bollani *et al.*, 2019).

This research takes up the theoretical-methodological proposal of the multistakeholder analysis is characterized by generating knowledge from the link with social actors directly involved in the issues discussed and interested in solving specific problems. This approach seeks to include different perspectives and types of knowledge, allowing to deal with the complexity of food systems, making inequalities and power relations visible and identifying valuable elements in resolving problems in specific contexts.

The study analyzes from this approach the connotations linked to food sustainability from four different perspectives: the sustainable food programmes of various universities in the world as a general reference framework; the UNAM community (including students, academics and practitioners of the sustainability); AFN interested in collaborating with UNAM to provide food coming from sustainable production and distribution schemes; and small producers from the peri-urban area of the city committed to sustainable forms of production. This exercise allowed us to learn the perspectives of actors involved in the search for sustainable food alternatives in different ways and generate collective reflections on the principles that should characterize a sustainable food project promoted by the university.

The decision to include small peri-urban farmers and AFN considers their socioenvironmental contributions beyond their location. Our interest in involving these actors stems from the intention of making visible the importance of integrating them into the generation of urban food policies and contributing to their empowerment, for being so far some of the most proactive actors in the local context. This does not imply their promotion a priori, which is why this project includes the analysis of the scope and limits of these initiatives, seeking to generate spaces for discussion and cocreation processes among its objectives.

The main contribution of this study is to highlight the diversity of meanings attributed to food sustainability. This diversity shows the different projects and needs of the actors potentially involved in sustainable food programmes, which must be considered in the decision-making process to improve the effectiveness of strategies implemented in the future. Notably, even though this study is limited to Mexico City, the results could be relevant for universities in other regions.

Methodology

The research was conducted from a qualitative approach and developed from various data collection techniques, using content analysis as the central data processing strategy. However, given its exploratory nature, further research is required to deepen the investigation results. It is also important to note that the initially planned fieldwork technics had to be adapted to the restrictions imposed by the COVID-19 pandemic, which restricted the richness of some of the exercises carried out, which had to be conducted virtually.

The data presented in this article were collected from different exercises conducted throughout 2019–2021. During the first stage, a bibliographic review focused on food on university campuses was carried out. The second stage was focused on constructing a general characterization of food practices in the central campus of UNAM and some of the external campuses. In the third stage, the sustainability programmes of various universities worldwide were analyzed to identify the place they give to food and the type of strategies proposed in this area. The analysis of sustainable university programs includes the 100 universities with the highest global score according to the *UI GreenMetric World University Ranking, 2020* [1]. This analysis considered the programmatic documents, in the cases where they are available, and the information on the web pages of the sustainability initiatives of the universities. In the fourth research stage, different exercises were carried

out to learn the perspectives on food sustainability of AFN and smallholder farmers. The participant AFN responded to an invitation to collaborate as interlocutors in the research-action project reported in this article, with the prospect of collaborating as future facilitators of food supply on campuses. The smallholder farmers from the peri-urban agricultural area of Mexico City were identified as potential suppliers of a sustainable food campus program for producing with agroecological techniques and participating in various short food-supply chains. The following table describes in more detail the strategies and tools implemented in the research (Table 1).

Results

This section describes the meanings and connotations associated with sustainable food, based on the analysis of the sustainable programmes of universities, interviews and collective discussions carried out with various sectors of the UNAM university community, managers of the AFN and food producers.

Topics related to food in sustainable universities programmes

Initially, sustainable university programmes did not include food among their priorities. However, since 2010, the topic has garnered increasing attention, particularly in the USA,

Stage	Objectives	Strategies and tools
1st	To identify the arguments addressed in the scientific literature on food-related issues on university campuses, emphasizing publications that address food sustainability	Literature review
2nd	To make a first approach to the food practices and food sustainability issues on UNAM campus	Visits at UNAM's central campus and 5 external campuses 23 semistructured interviews with employees of food vending businesses on the campuses with different profiles 2 workshops with students
3th	To identify the relevance given to food in universities' sustainability plans and the approaches of the strategies proposed in this area	Content analysis of the sustainability programmes (including programmatic documents and websites) of the 100 best-ranked universities worldwide by the *UI GreenMetric World University Ranking* (2020)
4th	To characterize a sample of production units linked to sustainable food initiatives in the city and to document the perspectives of those responsible for the	Field visits and semistructured interviews were conducted with 60 smallholder farmers from the peri-urban agricultural area of Mexico City
	To identify the food sustainability criteria from the perspective of academic specialists	4 online workshops conducted with a multidisciplinary group of experts in biology, ecology, anthropology, sociology, economics, landscape architecture and industrial design
	To know the perspectives of the university community regarding the problems and shortcomings of food systems and their correlation to sustainability	6 virtual discussion meetings with consumers of the UNAM community and a survey with consumers belonging to the UNAM university community An online survey (with 100 participants from the university community)
	To document the perspectives of AFN members and learn about the challenges they face	45 online discussion meetings with members of 23 Alternative Food Networks (AFNs)

Table 1.
Research tools and analysis exercises carried out for research development

Canada and in Europe. In 2020, 47 of the 100 universities best ranked by the *green metric World University Ranking* reported some action related to food sustainability in their sustainability programs or web pages.

The trends identified in the universities' sustainability programmes and websites analyzed were consistent with the literature reviewed. The main concern of the initiatives implemented is the environmental impact of food systems. Most strategies that promote local food supply underline their contribution to the mitigation of greenhouse gas (GHG) emissions (mostly from transport), some of them also incorporate the offer of organic products. Many universities apply these precepts committing to ensure that specific percentages of the products used in their cafeterias are sourced from local and/or organic food supply chains. A few universities developed environmental certification programmes or partnered with food producers. Some universities organized farmers markets or food basket sales under the scheme of coresponsibility agriculture. These programmes often promoted an increase in vegetarian or vegan food products. Another environmental topic commonly found in these programmes is that of waste management. These include strategies seeking to reduce the use of disposable materials, promoting waste separation and recycling, as well as composting. Another commonly implemented initiative is the development of urban community gardens.

The limited attention given to nutritional and health dimensions in these programmes is striking. When present, these themes are approached through food recommendations and cooing recipe books. A few programmes also incorporated socioeconomic concerns, mostly addressed through the donation of part of the vegetable gardens production to food banks.

Finally, there is an increasing academic participation in sustainable food programmes, associating them with the academic offers, on courses, workshops and participatory research. Some universities also held different events that strengthen social ties within the university community and among universities and other actors, such as group work in the university gardens, shared meals and promoting leisure-cultural activities (Figure 1).

Figure 1.
Word cloud with the most frequently mentioned words in food programmes of universities

Source: Data obtained from this study, based on the analysis of the food programmes of universities

Universidad Nacional Autónoma de México community views on food and sustainability

UNAM is one of the most important universities in Mexico and Latin America, due to its contribution to higher education and research [2]. The members of UNAM's community generally spend long hours working or studying in the campus. Our study results revealed that only a small number of the members of the community brought homemade food to campus, whereas most purchased food on campus from restaurants, cafeterias, food booths, vending machines and at a supermarket located in the central campus. Multiple options that can be classified as "informal trade" were also available on the campus and are, in general, widespread in Mexico City. These options included food carts, mobile food vending schemes (e.g. food bicycles, food trolleys or car trunks held open at specific points to display merchandise), as well as administrative workers who prepare and deliver informally take-out to workplaces.

The discussions groups revealed that UNAM's community does not consider food sustainability a priority problem. Instead, the main food issues mentioned were the lack of economic access to quality food, the lack of healthy options, little time for food consumption and persistent safety problems in formal and informal establishments. Among the ideas associated with food sustainability, a strong environmental bias was observed; sustainability was broadly regarded as something "that does not harm the planet," with other main concerns being GHG emissions and agrochemicals (Figure 2).

Views of alternative food network managers' views on food and sustainability

The term AFN encompasses various organizational schemes of citizen groups seeking to promote more equitable exchanges between the different actors of the food system (De Schutter, 2017). In Mexico, this movement started in the 1990s and since then gained strength, especially in the past decade. Twenty-three AFN collaborated on this project, these networks have different organizational schemes: consumer groups and cooperatives, farmers markets, food basket delivery systems (based on community-supported agriculture) and community gardens. The AFN managers were mostly young, middle-class individuals, concerned with food sovereignty and justice; a significant number of them are women.

Source: Data obtained from this study, based on interviews with the universitary community

Figure 2.
Word cloud with the most frequently mentioned words in interviews with the university community

The diversity of topics discussed in the group meetings held with the AFN managers was striking, reflecting the sensitivity of sustainable food systems for them, and their participation in actions aimed at developing novel pathways for change. The topics most frequently mentioned were the quality of the products and the knowledge involved in their production, the need to promote a fairer distribution of the profits generated in food distribution and the consumers' responsibility for promoting and consolidating changes in food systems. They also referred to environmental problems of food production, focusing on the need to reduce GHG emissions and the pollution resulting from the use of agrochemicals (Figure 3).

Mexico City peri-urban farmers' views on food and sustainability

As already mentioned, we conducted 60 interviews with the farmers living in the Mexico City peri-urban farming area officially recognized as a conservation area. All of them worked on small family farms, although some hired workers during periods of high labor demand. Notably, these farmers did not use agrochemicals and are developing an agroecological management. Often, a member of the family processed part of the production to complement the offer of fresh products, seeking to increase their profits.

Although men and women collaborated on the production tasks, men were predominantly engaged in farming activities, whereas women mostly worked in processing, marketing and liaising activities to get access to governmental programmes and subsides. Most interviewees were older than 45 years, and a third were over 60 years old, reflecting a general aging trend prevalent in the Mexican countryside that express challenges of generational replacement and limits the capacity of farms to conduct environmental protection tasks that require intensive labor demand. A third of the interviewees were farmers' children, university graduated, that returned to work in the family lands. In two thirds of the cases, agricultural and processing activities were the main source of income for farmers. Among the alternative sources of income, pension and trade were the most common. Must of the production of these farms was destined to the market.

All these initiatives may be integrated into sustainable food initiatives on campus and in Mexico City. In general, they were integrated into AFNs, but some also sold their products in

Figure 3.
Word cloud with the most frequently mentioned words in the discussion groups held with Alternative Food Networks (AFN) managers

Source: Data obtained from this study, based on interviews with AFM members

the local markets. These individuals assessed their participation in AFNs positively. Notably, they identified the opportunities to consolidate their work and addressed the issues of the lack of availability of labor, in addition to analyzing the difficulties in transporting their produce and increasing the number of buyers to whom they have access.

In the analysis of the connotations of "sustainable food" among this group, notions related to environmental balance prevailed, as in the other groups, but the importance they attributed to self-sufficiency was consistent. This view was in contrast with the fact that their production was predominantly market-oriented, and that the food consumed in their homes was mainly purchased in conventional circuits, which defined "sustainable food" as a space in which they participated as producers, but not necessarily as consumers, mostly because of their limited economic means.

Among the characteristics most frequently associated with "sustainable food" was the access to healthy food; the importance of this factor was identified in the impoverished sectors of the population that were affected by job insecurity; the individuals in this population experienced food insecurity and were affected by the continuous increase in food prices (Figure 4).

Similarities and differences between the views of different actors

Table 2 presents the differences between the views of the actors included in this study. Broadly speaking, "sustainable food" was characterized as the use of organic food that promotes health, reduces the impacts of agriculture on ecosystems and is based on local production. In university programmes and in the visions of the UNAM community, this general notion is complemented by a growing attention to veganism and solid waste management. Among AFN and farmers, the participation of smallholder farmers and a fairer distribution of benefits are also considered as important issues. The following table presents a synthesis of the results of the analysis developed in this research.

The table highlights the diversity of perspectives and priorities, the only option common to the set of actors was access to "organic/natural food." North American and European universities with sustainable food programmes prioritized organic, local farming, vegetarian/vegan options and waste management, whereas food safety, economic accessibility and food justice were generally considered secondary concerns.

Figure 4.
Word cloud with the words most frequently mentioned by Mexico City peri-urban farmers

Source: Data obtained from this study, based on interviews with peri-urban farmers

Table 2.
Comparison between the visions of food sustainability of the sectors included in the study

Dimensions analyzed	University programs	UNAM community	AFN	Food producers
Economic accessibility	Absent	Prevalent	Marginal	Marginal
Healthy food	Marginal	Prevalent	Prevalent	Prevalent
Food safety	Absent	Prevalent	Marginal	Absent
Organic farming	Prevalent	Prevalent	Prevalent	Prevalent
Local	Prevalent	Marginal	Prevalent	Marginal
Fair distribution of profits	Marginal	Marginal	Prevalent	Prevalent
Increasing the vegetarian/vegan options	Prevalent	Prevalent	Marginal	Absent
Solid waste management	Prevalent	Prevalent	Marginal	Absent
Decreasing food waster	Marginal	Marginal	Absent	Absent
Products from small farmers	Marginal	Marginal	Prevalent	Prevalent
Subsistence	Marginal	Absent	Absent	Prevalent

Source: The authors, based on field research

Economic access to healthy, organic and safe food, solid waste reduction and the availability of vegetarian and vegan options were the top priorities among UNAM community, whereas the local origin of food, its production by smallholder farmers and food-waste reduction were less important. The AFN managers emphasized on sourcing the food from local and small farms and promoted the fairness of its distribution, whereas economic accessibility and food safety were fringe concerns; in addition, the managers of AFN were not concerned about reducing food waste. Finally, for farmers, the most important topics were food production by small farmers, fair distribution of profits and the strengthening of subsistence agriculture, while they were not concerned for food safety, vegetarian options and food and solid waste reduction.

Discussion

One of the most comprehensive characterizations of sustainable food systems includes:

- environmental and biodiversity protection without depleting non-renewable resources;
- universal access to sufficient, healthy, nutritious, and culturally appropriate food;
- belonging to an inclusive economic system that reduces power inequalities and ensures a more equitable distribution;
- promoting social cohesion and respecting cultural diversity; and
- allowing public participation (Bricas *et al.*, 2019).

However, this perspective is far from the proposals of the university programmes analyzed; it is also far from the perception that relate food sustainability mainly with the satisfaction of daily needs among the actors interviewed. Which are the reasons for these differences? And what does this imply when seeking to build schemes that promote sustainable food practices?

Our analysis includes the visions of actors with different experiences regarding access to food and linkage with food production and distribution activities. Broadly speaking, all these actors focus on the environmental dimension of sustainability, perceived as beneficial to human health, even if these concerns are defined in narrow terms. Other problems

such as food loss and waste, pollution and the depletion of resources, with substantial socioenvironmental impacts received little attention.

It is also worth highlighting the lack of questioning of the link with sustainability of notions that have become emblematic in the discussion on food sustainability. This is the case of "organic production," generally identified as positive for human and environmental health (Lockie, 2006). Similarly, "local" is regarded as way to reduce emissions and promote the local economy, often with a certain exaltation of tradition. This is also the case of the promotion of vegan diets. Undoubtedly, the consumption of organic and local foods, as well as the decrease in the demand for animal protein, contribute to sustainability. Many traditional food production, distribution and consumption practices could also be recovered to promote more sustainable approaches. However, when the relationship of these perceptions with the sustainability of food systems is not further analyzed, important facts risk to be ignored. Organic agriculture can be wasteful of resources, contribute to soil erosion and biodiversity loss, generate large amounts of plastic waste and reproduce the unequal relationships that characterize contemporary food systems (Goodman, 2000; Goodman and Goodman, 2001; Rigby and Bown, 2007; Getz *et al.*, 2008; Risku-Norja and Muukka, 2013). While the scale of production in no way guarantees that food production and distribution will be more environmentally friendly, socially just or provide food of higher nutritional quality (Born and Purcell, 2006). The production, distribution and consumption of vegan products can also reproduce many of the socioeconomic and environmental problems at the root of the sustainability crisis that they seek to solve. Finally, the modern appeal to tradition and its link to sustainability is also full of contradictions (Bak-Geller and Pasquier Merino, 2020).

The way these notions are frequently used reflects how consumption, in addition to solving physical or material needs, can be associated with social meanings and objectives (Lipschutz *et al.*, 2017). The notion of "organic," for example, is frequently associated with "natural," "pure" and "clean" production, that could be understood as a response to some of the modern uncertainties about food safety (Fischler, 1990). The emphasis on local production, in turn, highlights the reconnection to the territory and is frequently intertwined with references to traditional practices, underlining qualities such as taste and cultural meanings of some products, counteracting the processes of geographic, economic, cognitive, social and political distancing that have taken place between urban consumers and their food in recent decades (Bricas, 2020).

As stated before, the analysis of the perceptions of food sustainability among the diverse actors considered in this research shows differences regarding the importance given to socioeconomic dimensions of sustainability, such as equitable access to healthy food and socioenvironmental justice. Lower-income students identified the lack of access to healthy food as one of the main food problems. This concern was also prevalent among farmers. This is not minor; it clearly expresses the crisis caused by the burden of malnutrition in the region, caused by the instability of food prices, job insecurity and more broadly by prevalent income and wealth distribution policies.

Some tension was observed between the need of farmers to receive fair prices for their products and the need to provide greater economic accessibility to quality products to consumers. This apparent contradiction expresses the limits of public and AFN policies that promote the orientation of small farmers' production to niche markets. Most often these initiatives are based on a perspective of small-scale organic agriculture as a fringe sector, excluding exclude most of the population from access to quality food, even farmers themselves.

The research also found that other fundamental issues such as the job insecurity of employees involved in different stages of the food supply chain, or the governance of food systems are mostly ignored in the reflection on food sustainability. The absence of reference of a rights-based approach of the access to adequate food and a healthy environment also stands out.

Conclusions

Sustainable food programmes of universities are relevant for different reasons. Universities are living spaces where the university community eats daily, so sustainable food initiatives should be part of broader sustainable initiatives on campuses. Sustainable food strategies can promote socially fairer production and distribution systems, ecological resource management and healthier practices, besides creating spaces that facilitate social participation and reflection on other sustainability problems. Sustainable food initiatives can become spaces for research, teaching and extension of culture, establishing a close link with the substantive tasks of universities. Food practices on university campuses can make relevant contributions to strengthening external projects committed to the sustainable production and distribution of food. Due to their social legitimacy and the relative ease for the management of internal projects, universities can successfully develop marketing and consumption schemes that can be exported to other contexts in the cities where they are located. However, the analysis of the sustainability programmes of diverse universities in the world shows, in most cases, that the reflection on their objectives and contributions to food sustainability can be strengthened.

Widespread notions, such as "organic" or "local," discussed in the previous section, helped to highlight some of the challenges faced by food systems. However, these notions are often oversimplified and lead to insufficient attention to food unsustainability problems, limiting the impacts and potential of the implemented initiatives. Sustainable food initiatives in universities should facilitate access to food from schemes that are respectful of the environment, while also promoting social welfare and a fairer distribution of profits.

The analysis of the perspectives of the actors included in the study allowed us to verify that, although Mexico City offers a wide range of food, access to safe and quality food remains a central concern, relegating the importance given to food sustainability. This research also documents the diversity of meanings associated with food sustainability and identify the most common themes, concerns and divergences between the actors considered in the research. In this sense, the simplicity and partiality of the understandings around food sustainability stands out, a fact that limits the claims even among those actors mobilized around the construction of alternative food schemes. Based on the results of this study, it seems necessary to stand out the importance of use comprehensive definitions of food sustainability as a reference to guide the design of food sustainability initiatives in universities. Simultaneously, this paper shows the importance of considering the views and needs of local actors in the design of initiatives, while trying to strengthen their decision-making capacities. It also shows that their design is strengthened when programmatic objectives are defined collectively. This can help to legitimize their goals, disseminate the promoted ideas and enhance community participation. These elements are critical for successfully implementing high-impact sustainable food initiatives in universities.

Our results highlighted the need to modify the food environments on university campuses to facilitate access to healthy food, giving particular attention to physical and economic accessibility for consumers. Alliances with AFNs and peri-urban smallholder farmers can potentially contribute to achieve this goal, while strengthening food sustainable initiatives in the cities.

Notes

1. Wageningen University & Research, University of Oxford, University off Nottingham, Nottingham Trent University, University of California – Davis, Trier University of Applied Sciences, Universidad de Groningen, Leiden University, University College Cork, Universita di Bologna, Universidad of Connecticut, University of Southern Denmark, Universidade de Sao Paulo USP, Université de Sherbrooke, Dublin City University, Universitat Autònoma de Barcelona, University of Limerick, Universidad Autónoma De Nuevo León, Weifang Institute of Technology, Universitat Bremen, Leuphana Universitat Luneburg, Universita degli Studi di Torino, University of North Carolina Chapel Hill, Universidad De Alcala, Politecnico di Torino, Freie Universitat Berlin, Universitas Indonesia, Universiti Putra Malaysia, University of Warwick, Universidade Federal de Lavras – UFLA, National Pingtung University of Science & Technology, Universiti Malaya, University of Eastern Finland, Universidad del Rosario, Hame University of Applied Sciences, King Abdulaziz University, Keele University, Shinshu University, Diponegoro University, Universita degli Studi dell'Aquila, National Chi Nan University, RUDN University, Luiss University, Universitas Gadjah Mada, Universidad Autónoma De Occidente, Delft University of Technology Tu Delft, Da-Yeh University, National Cheng Kung University, IPB University, Fundación Universidad del Norte Barranquilla, Lincoln University, Universidad Nacional de Colombia, Czech University of Life Sciences Prague, University of Zanjan, Università degli Studi di Genova, Riga Technical University, Carleton University, Universidad Complutense De Madrid, University of Pécs, Universidad Rey Juan Carlos, Institut Teknologi Sepuluh Nopember, Mahidol University, Aalborg University, Universidad De Santander, University of A Coruña, Universitas Negeri Semarang, Universiti Malaysia Sabah, University of Leicester, Chaoyang University of Technology, University of California San Diego, Istanbul Technical University, Al-Balqa Applied University, Kasetsart University, National Yunlin University of Science & Technology, Western Michigan University, Universitat Bayreuth, Universiti Utara Malaysia, Universidad Tecnologica de Pereira, Princess Nourah Bint Abdulrahman University, Trent University, King Mongkut's University of Technology Thonburi, Dhurakij Pundit University, Ton Duc Thang University, Universidad Nacional Autónoma de México, Washington University Saint Louis, University of Szeged, Universidad Autonoma de Puebla, ITESO, Universidad Jesuita de Guadalajara, Universidade do Minho, Universiti Malaysia Pahang, Universitat De Girona, York University, Siam University, Universiti Teknologi Malaysia, National Chin-Yi University of Technology, Nanhua University Taiwan, University of Kashan, Universidad EAFIT, Universitas Sebelas Maret, University of Campinas.
2. In the academic year 2020–2021, UNAM had almost 367,000 students enrolled in upper secondary and higher education programmes, over 41,500 academics and 30,500 technical and administrative workers. Its teaching activities were conducted by 15 faculties in 14 multidisciplinary units and 14 upper secondary schools, where 131 undergraduate programmes, 37 technical education programmes, 42 graduate programmes and 3 high school curricula were taught. Research activities were conducted in 35 institutes, with 13 centers and 13 programmes, where quarter of the scientific articles published annually in Mexico were generated. The facilities of the university included 6 campuses and 17 schools in the metropolitan area of Mexico City, and 6 campuses in other states, in addition to 26 museums, 18 historical sites, and other research units located in the country.

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