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# Food democracy and sustainability in France and Chile: Community gardens promote ecological citizenship

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This study explored cases of sustainable food production in urban and non-urban areas, including the development of urban gardens, and particularly the social relations involved in these community projects. A qualitative approach was used to compare four case studies in Chile and France: shared gardens in Lyon, family and workers' gardens in Santiago in Chile, an indigenous agricultural project in Lonquimay in the southern Andes, and the work of the NGO Cultivos Urbanos. The data was collected through surveys, participant observation and semi-structured in-depth interviews. The results show that tending gardens in these settings (worker, family, collective, or shared gardens) promotes social values that can lead to more sustainable forms of community living. As opposed to intensive agriculture, small-scale gardening practices, specifically in urban and peri-urban gardens, encourage human/non-human relationships, and the transmission of caring for nature and for others, which promotes ecological citizenship.

## KEYWORDS

food production, ecological citizenship, community gardens, Chile, France

## Introduction

The COVID-19 pandemic triggered not only a health crisis, but has also had significant economic and ecological impacts, including on food production and supply. Since the onset of the pandemic, the global food market has shown clear signs of disruption (Sepúlveda, 2022). When the effects of climate change and the consequences of Russia's war against Ukraine are added to this, food supply and costs seem unlikely to improve in the near future.

In response to these multiple challenges, social and solidarity economy initiatives have emerged in both urban and rural areas, led by stakeholders such as farmers, gardeners and consumers. For example, local "farm-to-table" systems have begun to reemerge in France, reorganizing both the way food is produced and sold. In the case of Chile, small and medium-sized farms are increasingly seen as a safety net for the food security and sovereignty of communities and the sustainability of regional economies (Sepúlveda, 2022).

The cases studied pre-date the health crisis. However, these cases show that gardens and cooperatives have historically contributed to addressing food insecurity, particularly in contexts of poverty. During various types of crises—e.g., social, political, and health—food sovereignty responses emerge to sustain and promote food production in fragile contexts.

Although the cases considered in this article are prior to the COVID-19 health crisis, they allow us to see how, in contexts of poverty or crisis, orchards and cooperatives have historically contributed to facing food insecurity.

The processes of “relocating” agriculture through more local production (*circuit court, in French*)<sup>1</sup> involve the development of proximity agriculture based on the quality of the relationship with the land between humans and non-humans (examples include organic farming, agroforestry and permaculture). The greening of agricultural practices (Lamine, 2017) entails the use of non-intensive techniques, production tools and work organization methods.

In the different local food production initiatives that have arisen, what is the implication on social relations? How are alternative forms of production to industrial, capitalist agriculture—for example, self-production in family or collective gardens—embedded in communities? If the effect is positive, is it possible to increase the presence of these gardens?

This study examined alternative agriculture and urban gardening initiatives with an integral approach (Arora, 2019) in different settings in order to understand how new or renewed community food production practices may be a response to the challenges raised by current crises.

We adopted an “ecology of practices” approach (Stengers, 2005), focusing on understanding how sustainability and ecological citizenship can develop in different ways, at different scales, with different types of connections between stakeholders who may have different understandings of the crisis, and with different targets.

The aim of these ecological practices is not solely about optimizing food production, but about connecting the collective with a local area. The case studies reveal the political actions of individuals and collectives to protect a locality and its links with food production. This study thus explores the relation of these practices not only on human and ecological wellbeing, but also on territorial belonging, the relationship of humans with their environment, and on the notion of ecological citizenship. Through the investigated case studies, we examine the possibilities of creating new relationships between people and agriculture, looking at issues such as productivity, the

relationship with nature, social production and new forms of consumption.

Regarding the concept of ecological citizenship, it is necessary to identify how environmental aspects are—or are not—incorporated into the exercise of being a citizen: whether stakeholders have or demand the opportunity to participate in environmental management. This can vary from community to community—some achieve greater visibility in their quest for participation while others remain marginalized from political action (Gudynas, 2009). Gudynas also points out the potential of ecological meta-citizenship, which requires looking at different scales and at the different stakeholders involved. In this study, we focused on three considerations emphasized by this author: (1) the relationship between citizens and the environment, including the social, political, ecological and cultural aspects of the territory; (2) the environmental concerns, for example, of indigenous, rural and urban communities, including the challenge of incorporating the valuation of non-human elements that do not necessarily meet productive concerns or human satisfaction; and (3) as “any meta-citizenship must consider a political dimension” (Gudynas, 2009, p. 66), how, in food production, the stakeholders at different levels (including environmental, peasant and indigenous movements) deepen the relationship between environmental and political action.

We examined these issues with four case studies in France and Chile. In France, we focused on shared gardens in the urban area of Lyon co-sponsored by citizens’ collectives and public agencies; the latter partly financed these projects to promote the ecological food transition. In Chile, we focused on three cases of collective cultivation: (i) new urban garden projects in the city of Santiago led by the NGO Cultivos Urbanos, (ii) a project in an indigenous community in the southern Andes, and (iii) workers’ gardens in the town of La Pintana.

We analyzed how the discourse and experience of citizens and other stakeholders in the local or national contexts transformed as a result of these collective practices and public policies. The findings indicate how, through concrete participation (Zask, 2011), processes of food democratization can emerge (Maurines, 2019; Paturel, 2019). Yet these processes demand political action that seeks to overcome problems of environmental or food justice (Hochedez and Le Gall, 2016). In Chile, for example, urban policies created during the 1930s promoted collective workers’ gardens. This allowed the physical existence of productive spaces in the city, permitting the inhabitants to develop sustainable means of living even in vulnerable contexts.

The examined case studies add support to the argument that collective gardens are an indispensable tool to enhance food democracy. As Zask (2016) points out, cultivating gardens or land collectively favors the development of democratic values. While not everyone’s aspirations are the same, shared values and their transmission converges with the concept of

<sup>1</sup> *Circuit court* is the French term for farm-to-table systems in which agricultural products are either directly sold from the producer to the consumer or indirectly via one sole intermediary. In France, the term officially requires <80km between the place of production and the consumer and no more than one intermediary (2002 decree, France).

meta-citizenship (Gudynas, 2009) in the sense that what the group aspires to has a political dimension.

In our comparison of cases in Chile and France, the scales and stakeholders are different; however, all show how individuals and collectives are trying to implement a more viable food and farming system.

The first section of the analysis describes the case studies in Chile and France. In each, the stated claim of the different collectives is to develop participatory action that seeks to strengthen relationships with the environment and with the human collective. The second section considers how the individuals and collectives involved try to implement agricultural systems that promote food democratization based on citizen participation. In the third section, we review how public policy in France is attempting to develop local food production and improve access to high-quality local food. Finally, we examine how working collectively in these food systems has effects on the participants' relationship with nature and on ways of being in the world.

## Methods

The study was based on comparative problematization (Hibou, 2014) in a multi-site approach (Marcus, 1995). The data was collected from ethnographic research and interviews and involved observing, describing and analyzing the interactions between the different agri-food systems and social processes. We sought to identify the differences and similarities in these varied contexts through a comparative method, understanding this as an exercise for organizing different elements to create a general representation, and unifying multiple techniques for collecting data in order to offer a different understanding of ecological citizenship (Denecheau et al., 2021). In terms of describing and characterizing different approaches to ecological citizenship, we develop a comparative case study with a logic of "tracing across" proposed by Bartlett and Vavrus (2017), where we select different cases seeking to understand how from different places, scales, and organizations, have tried to build citizenship. Our selection criteria were to choose cases that affording crisis, develop answers in front to food insecurity and try to change the relationship with nature. While the contexts and organizations we compared are very different, they have recognizably similar participatory processes in that they seek to strengthen social bonds.

For the case study in France, we conducted a long-term (1994–2008), socio-historical ethnographic study supplemented with data from various archival sources. The fieldwork was mainly carried out in the Rhône-Alpes region with different social groups and stakeholders in different contexts. The methodology was based on collaborative research with a pragmatic approach that aims to establish strong links between science and society. Data collection included conducting surveys

in Lyon in a process of co-construction and co-comprehension of local issues through working with various stakeholders (Guber, 2011). We sought to collect information from a range of stakeholders working to develop sustainable food in their local area (e.g., farmers, gardeners, social and solidarity economy organizations, project leaders, elected local officials, etc.). This long-term investigation involved participant observation *in situ* (e.g., at meetings or events) and participatory investigation methods (e.g., guided walks, photo elicitation).

The case studies in Chile involved different methodology, based on conducting in-depth ethnographic interviews with stakeholders. In Santiago, we conducted three non-structured interviews (from September 2021 to March 2022) with key stakeholders in the NGO Cultivos Urbanos. Since 2010 when the NGO was created, the number of members has changed. Today, five people implement current projects and strategize for future projects. The interviews focused on this core group, all of whom were between the ages of 30–40 and have been involved in the organization for over 10 years. We also conducted a documentary analysis of their work (e.g., project descriptions, public presentations, books, *ad-hoc* virtual library) available on their website.

In Lonquimay in the southern Andes, an ethnographic study on the collective agricultural project of this indigenous community was conducted in November 2017 and January 2018, and November 2019. Ten semi-structured interviews were conducted with participants selected according to two criteria: (i) Mapuches over the age of 30 belonging to the community of Pacunt Pedregoso ( $n = 5$ ); (ii) Government officials in charge of the "Sustainable Mediterranean Communities" project ( $n = 5$ ). The interviews sought information about the objectives, barriers, aspirations, and evaluation of a project led by the Ministry of Environment to create family gardens. The Mapuche participants were also asked about their response to and evaluation of this government action and their expectation of its effects on their lives. We also observed the performance of officials in the field (in offices, community meetings and Mapuche homes) and their interaction with community members.

In La Pintana (a working class municipality on the southern outskirts of Santiago), we collected data on a workers' garden, primarily through participant observation with Alberto, who has lived for almost 60 years on a 5,000-sq-m plot that is part of a family vegetable garden cooperative. These observations and interviews were part of more extensive research in Santiago on environmental activism in the city. We met Alberto when he attended meetings with different public authorities in the context of the changes resulting from the Urban Plan of Santiago (*Plan Regulador Metropolitano*) that came in force in November 2010.

In all cases, the approach was an in-depth, contextualized, long-term ethnographic study in which the researcher is embedded in and participates in changes as they occur in the

field. This allows a constant process of experimentation with and for the fields of investigation, making possible privileged relationships with the participants.

The case study conducted in France was part of a larger research project on food democracy as a common action and represents a more in-depth case than those analyzed in Chile. Yet this comparison is of interest as it shows the diversity of practices and the policies that sustain them in different locations. The French case is particularly interesting in contrast to those in Chile because of the many forms of citizen participation that have emerged in the last 20 years around healthy food produced in local or shared gardens.

Our comparative analysis focused on two main aspects to contrast the concepts that emerged from the data. The first was ecological citizenship, looking at how the interviewees aspire to a political project that allows them to manage their land and incorporate environmental aspects into the exercise of citizenship (Gudynas, 2009). The second was the notion of democratic values developed by Zask (2016), comparing the extent to which the different cases, at different scales, favor the development of democratic values. In fact, both concepts are intertwined. The collectives studied combine the objectives of cultivation and the protection of nature with the aspiration of the development of citizenship (Zask, 2016), which is transmissible in different spaces through social ties.

While this comparative analysis sheds light on important aspects of community-based land management and food production, the challenge in comparing these cases is the pronounced difference between the contexts. In France, there is a long history of food democracy (Maurines, 2019). In Chile, these initiatives have only recently emerged in urban and peri-urban contexts, indicating that local governance of food production is still weak.

## Results

### From a priority on productivity to sustainability

#### Chile

In Santiago, workers' gardens were created in a period (1930–1945) when working families were experiencing multifactorial problems such as overcrowding, low wages or unemployment (Yáñez and Deichler, 2018). Workers' gardens, promoted by public authorities and businesses, were seen as “home industries” (*industrias caseras*). The focus was on economic performance to allow families to achieve self-subsistence through a plot of land. Behind this lay an objective of improving the living conditions of low-income families in the city through a model of progressive cooperativism (Gurovich, 2003) that gave rise to various collective and community

organizations, such as water-access groups and sports clubs, among others (Catalán and Fernández, 2014).

In the following decades of economic, political and social crises in Chile, particularly during the Pinochet dictatorship, these vegetable gardens were spaces where workers could supply themselves with food to meet their needs, and shared plots, workshops and cooperatives were created (Fuentes, 2015). Urban gardens for workers were originally intended to produce food for the family. “I planted everything . . . and a good part of it was for my family, which was large,” as Alberto puts it. The collective gardens of La Pintana are paradigmatic in this way: although groups promoting urban agriculture have proliferated in Santiago in recent years, they do not seek to develop food production in this way (Fuentes, 2015).

In contrast to these workers' gardens, today's collective urban gardens in Santiago are less about the productive function of supplying healthy food than a political project on the margins of public and private institutions (Biskupovic, 2015), a point made by Fuentes, co-founder and former director of the NGO Cultivos Urbanos (Fuentes, 2015). This NGO works in different areas in the region around the capital. They develop projects in “lower middle class” urban areas such as Peñalolén, San Joaquín and Recoleta, but their main project is located in Santiago, in a historic neighborhood called Yungay. Santiago has around 500,000 inhabitants, and Yungay 35,000 inhabitants. The poverty rate in Santiago is 8.43% (Ministerio de Desarrollo Social y Familia, 2020). Since 2011, through a concession from the city administration, the NGO has had access to a house on the edge of a large urban park (Quinta Normal), where they have created ecological workshops and have maintained a green space over the last decade.

In the case study in an indigenous context, Lonquimay is the second poorest town in Chile's poorest region, La Araucanía: 64.4% of its inhabitants experience multidimensional poverty (Ministerio de Desarrollo Social y Familia, 2020). Because of this, Lonquimay is highly dependent on state assistance. Moreover, being in the high mountains, it is very susceptible to environmental changes (Marchant, 2011); climate projections indicate that Lonquimay is highly vulnerable to drought (ARCLim, 2020). This scenario is combined with increased risk of wildfires and biodiversity loss (Center for Climate Resilience Research, 2015). These impacts are especially felt by the Mapuche-Pehuenche inhabitants (Carmona, 2021), who represent 57% of the population (Ilustre Municipalidad de Lonquimay, 2022). This population dates back to Chile's internal colonization in the late nineteenth century, when to escape the Chilean and Argentine armies, Mapuche families from the valleys took refuge in the mountains. Later, the Chilean government distributed land titles, however, many families were not granted these, making land restitution a constant struggle over the last century (Bengoa, 2000). Currently, Mapuche communities inhabit highly degraded areas due to extensive exploitation of the native forest during the twentieth century

and overgrazing encouraged by the government in recent decades (Carmona, 2022). Their primary income comes from livestock, which has been promoted by the government since the occupation of the territory (Paillacheo, 2009). Other sources of income are state aid and the sale of non-timber forest products.

## France

In France, Lyon (population: 522,000) has implemented a policy to support shared garden associations since 2009: the primary of these is Passe-Jardins.<sup>2</sup> This non-profit group coordinates the Rhône-Alpes network of shared gardens and provides a resource center, supporting 404 shared gardens in Lyon. Since 1990, Passe-Jardins has been a precursor in local organic production and has helped to create a charter for citizen action for shared gardens, supported by the city of Lyon.

The total surface area of Lyon's collective gardens is 1.9 hectares, with two-thirds on public land (Lyon or Greater Lyon) and one-third on private land (social landlords or church parishes). More than 800 members are involved in these gardens, 60% women and 40% men, which is similar to the shared gardens in the larger Rhône-Alpes region. This is also close to the population structure of Lyon (53% women and 47% men).

All generations are represented in those involved in the gardens (21% under the age of 20, 52% between 20 and 60, and 26% over 60). These figures are in line with the population distribution in Lyon (22% under 20, 59% between 20 and 60, 19% over 60). There is a slight overrepresentation of people age 60 and over, which can likely be explained by the fact that this category has more free time to invest in the gardens on a daily basis. Of the hundreds of shared gardens, 19 have salaried facilitators, corresponding to the equivalent of about four full-time workers divided between 13 people. Most of the gardens have collective plots and harvests.

In all these different cases, working collectively makes it possible to build more sustainable living places in socially heterogeneous areas. In this sense, there is a continuity in the concept of the garden as a supplier and producer, as well as a transition to the concept of a sustainable third place: a space that allows for political participatory action and promotes ecological citizenship.

## Conceptions of community farming collectives

Community agricultural collectives have the aim of contributing to meet human nutrition needs and therefore can respond to food security issues. However, there are heterogeneous conceptions of and within these collectives. An understanding of these conceptions reveals how individuals and

<sup>2</sup> <https://www.lepassejardins.fr/>

collectives are trying to implement urban food systems through participatory action, promoting the defense of the territory through ecological commitment.

## Workers' gardens in La Pintana

One of the aims of the workers' and family gardens (*Huertos Obreros y Familiares*) in the district of La Pintana (Santiago, Chile) is to develop gardening training for the community and to improve ecological interactions in urban contexts. They arose out of a cooperative model in the government policies of the 1930s and were seen as a way to create forms of subsistence. We were interested in investigating the transition from a state intervention project to alternative agro-food models such as community gardens and urban orchards.

In an interview with Alberto, who has tended a plot here for over 50 years, we asked if, in his experience as a neighborhood leader, people are interested in citizen participation and in defending the cooperative vegetable gardens. He distinguished between those who arrived more recently and live in public housing, who have no prior roots in the neighborhood, and those like him who have lived here for decades. Yet beyond this, the key distinction he made is based on affect and care:

“Yes, it's true, we defend what is ours, but the saddest thing today is those who don't participate, who don't engage: they don't defend what we have, because you have to like something to be able to defend it.” (November 2010)

In this way, caring about something can foster local participation, indicating that there is a community component to food security (Mooney and Hunt, 2009). It has been found that affect and care participate in the greening of agricultural practices (Lamine, 2017) and promote the emergence of food democratization processes (Maurines, 2019; Paturel, 2019). They are the drivers of political actions that seek to overcome environmental problems or food injustice (Hochedez and Le Gall, 2016), encouraging the participation of stakeholders (Zask, 2011).

“A study from the University of Chile that I read the other day says that in 2004 the desert will arrive in Santiago and that it is already in the region of Valparaíso, so if they [the authorities] stupidly continue to destroy the [community gardens], the desert will arrive...” (Alberto, November 2010).

Alberto's comments show that in addition to the value anchored in local, agricultural practices and the care necessary to defend these, community gardens also have a more global function, and could contribute to combating processes such as the ecological crisis.

## Shared gardens in Lyon

In France, collective urban agriculture has its roots in the concept of “citizen and solidarity urban agriculture,” which promotes food democracy and sustainable food for all. This aims to make city dwellers’ agricultural and horticultural practices more ecological in the context of climate change. Many forms of citizen participation have emerged over the last 20 years around locally produced, healthy, quality food and shared gardens.<sup>3</sup> This participation takes direct forms, such as the implementation of collective projects, and indirect forms, such as mobilizing around a cause to defend (e.g., providing healthy food or maintaining biodiversity). In both cases, the aim is to repair real or assumed degraded environments and the cause is a motor for action.

In 2017, Lyon asked Passe-Jardins, which develops collective and solidarity-based urban agriculture projects, to evaluate the food production of the city’s shared gardens. This was found to be low, in part because many gardens do not consider themselves production spaces. Furthermore, vegetable production is challenging to quantify because few gardens weigh their crops, and there is no common basis of measurement as different types of produce cannot be quantified according to the same criteria. Only seven gardens could provide the quantity of vegetables produced, which was equivalent to 1 ton of organic vegetables per year. This is low, considering the number of members. The findings indicated that the gardens are mainly seen as a social support: for example, 33% offer cooking workshops. This is in line with the fact that they are the result of public policy promoting social cohesion; food provision is considered, but is not the central motivation for development. This is a major topic of research and development within Passe-Jardins. Developing the aspect of food supply could bring new jobs and spaces related to urban agricultural practices.

Within the Lyon metropolitan area, in recent years there has been a push to develop local and sustainable organic food production. To this end, a food non-profit/business/research cluster, The Bol,<sup>4</sup> brought together some 30 stakeholders<sup>5</sup> and two research laboratories from 2015 to 2020.<sup>6</sup> The Bol enabled a level of relocation of food production both through the pooling

3 A shared garden is a space created and maintained by the inhabitants of a town, village or, more often, an urban neighborhood. Its purpose is to create social links between users of all ages, backgrounds, social categories, etc. through social, cultural or educational activities. A shared garden is managed by a non-profit organization whose members participate in the garden. The harvest of vegetables, fruits, aromatic and medicinal plants, flowers, etc. is shared.

4 <https://www.lelabo-ess.org/ptce>

5 <https://letsfoodideas.com/fr/initiative/pole-cooperation-alimentation/>

6 Centre Max Weber (Sociology Laboratory) and Coactis (Management Science Laboratory).

of collaborative research and the creation, for example, of the harvest festival, a public event for Lyon’s inhabitants. During the event, different collectives showed how they take care of a particular resource, whether a seed, a plant or a consumable processed food, up to the recycling of waste to promote a circular economy (composting, bottle recycling, local currency, etc.). The Bol has also been involved in discussions concerning sharing logistics to save farmers transportation time and to reduce energy consumption. Although the Bol existed for a limited time, it allowed a place of experimentation between organizations, some of which have continued to work together. This is the case, for example, of the *Territoires à Vivre(s)* project and the *Maisons Sociales de l’Alimentation* (community food houses).

## The projects of the NGO cultivos urbanos

This NGO was created in Chile at the beginning of the 2010s by a group of young agronomy professionals, who developed a variety of workshops and projects in several regions to enhance knowledge about urban crops. Since the outset, the NGO has focused on increasing ecological knowledge and raising awareness, putting educational activities at the center of their work. Over the last decade, they have carried out seven main projects. The largest was started in 2011 and is located in the center of Santiago. With the support of Santiago’s municipal government, the NGO has created an open 120 m<sup>2</sup> space for cultivation and training in urban agriculture and environmental education. They have also developed projects including promoting the modification of home landscapes and gardens and training for public workers about urban gardens. Although the NGO’s main scope continues to be environmental education, strengthening and organizing the community are central themes of its projects.

For this organization, the concept of community has at least two levels. On one level, the community is the target group for workshops, which is mainly the community near the garden, but this relationship cannot always be developed because the community members do not have time or live too far from the garden to maintain it. On another level, the wider community is understood as all workshop participants and members of other urban garden organizations. This community is a resource as it opens different spaces and offers links to institutions (schools, grassroots organizations, municipal governments, etc.).

## The Lonquimay project in the Mapuche-Pehuenche community

Both climate change and many of the policies that have been designed to address it pose challenges for indigenous communities (Carmona et al., 2022). The emphasis on mitigation, mainly through reducing deforestation and forest degradation, has led to new territorial conflicts in developing countries. In many cases, the motivation to access international

funding has reinforced the dynamics of territorial control that exclude or even displace indigenous communities from the ecosystems where they have lived for centuries (Paladino and Fiske, 2017; O'Reilly et al., 2020). The claims of various indigenous movements have strengthened the debate on the protection of rights and pushed for the creation of various safeguards to ensure the wellbeing of affected communities (Claeys and Delgado Pugley, 2017). While forest conservation continues to present multiple challenges, the awareness of the importance of indigenous peoples' participation in mitigation measures has been strengthened internationally. Their participation has been associated with the success of mitigation policies as well as various social benefits, leading to the provision of certain guarantees of their rights (Brugnach et al., 2017).

International safeguards, coupled with the growing recognition of indigenous peoples' contributions to mitigation policies (Carmona et al., 2022), have pushed the Chilean state to encourage these communities to access international funding. In Lonquimay, the project "Sustainable Mediterranean Communities" funded by the Global Environment Facility (GEF) was implemented between 2017 and 2018. The GEF is an independent financial organization that provides funding to developing countries and countries with economies in transition. Its main objective is to address global environmental issues while supporting national sustainable development initiatives. Its funds are earmarked to develop projects related to biodiversity, climate change, international waters, land degradation, ozone layer depletion, and pollutants. The project, led by the Ministry of Environment in Chile, aimed to integrate community organizations to deliver globally significant environmental benefits.

The Lonquimay project was implemented in the Mapuche-Pehuenche community of Pacunto Pedregoso. This area was selected due to its high levels of environmental degradation. According to an official, the project aimed to mitigate greenhouse gas emissions through reforestation and the sustainable management of vegetation resources. As ministry officials were obliged to consult with the communities, they held initial meetings about the project. During these, the community demanded more involvement in the project design: as one leader noted, "We are tired of having solutions imposed on us from Santiago. We are not naive; our rights were violated. Treating us like children is over!" (Mapuche leader, *Ilustre Municipalidad de Lonquimay*, 2022). The aim of the community leaders was to improve their livelihoods, which were threatened by drought due to rising temperatures, overgrazing, and deforestation.

The Pehuenche are also influenced by the demands of international indigenous movements, which have established strategic alliances with environmental organizations (Wenz, 1996). These movements are increasingly raising their voices in multilateral processes such as the Conferences of the Parties

(COP) of the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity (Claeys-Mekdade, 2006). Like many of these movements, community leaders in Pedregoso aspired to advance their political aims through this project. Above all, they wanted to address what they identify as the main cause of the environmental crisis: the lack of respect of nature. They aimed to revitalize practices of reciprocity and recover the spiritual connection to the land, which they consider central to strengthening their autonomy. They thought that reforestation should go hand in hand with territorial control.

The community proposed building greenhouses to grow seedlings and reforesting an area of the forest. However, the ministry did not accept this because the area was too small. In the end, both parties negotiated an agreement that strengthened the project for all stakeholders. This feedback process took 2 years, and generated the idea of working with family gardens and reforesting through community nurseries. The project was called "Pehuenche High Mountain Gardens."

## Promoting ecological citizenship to change the relationship with the environment

The collective gardens in our case studies were created by citizens to respond to different problems. Climate change, environmental conflicts, resource scarcity, growth and urban pressure have created spaces where citizens seek to change the established environmental relationship and hierarchy. Thus, the objective of these gardens is not solely to provide food. In the cases of La Pintana, Cultivos Urbanos and Lyon, one of the main objectives is to strengthen the community, promote a collective connection with the land, and reinforce social bonds.

Some of these gardens have a long history—in La Pintana, they were created in the 1940s by legal decree (Law 6.815) (Fernández et al., 2013). These gardens were established on the border between the city and the countryside, allowing the rural to be extended into the urban. These spaces have managed to survive despite urban pressures thanks to the cooperative spirit of community members (Gurovich, 2003). To this day, these lands cannot be subdivided or used for activities unrelated to agriculture. For Gurovich, this makes these gardens an example of the ideality provided in spaces destined to transform society, now embedded in the inner edge of the urban–rural interface of Gurovich (2003). This case shows how a social approach to agriculture allows stakeholders to demand a leading role in land management and to resist climate change and urban growth. This can be considered a form of ecological citizenship, in which stakeholders participate in land administration, deciding on the environmental future of the local area where they live.

The more recent example of the projects of the Cultivos Urbanos NGO, while promoting a different experience of

urban gardens, also involves the systematization of citizen participation in gardens. These projects meet the multiple objectives identified by Heitmann (2013) of urban gardens: an arena for ecological education, a therapeutic space and resource, and an opportunity to rebuild social bonds. Ecological citizenship is developed by connecting the community through various tasks. In their founding statement, the Cultivos Urbanos leaders declare that they seek ecological practice that understands diversity as a manifestation of life. They promote biodiversity not only for science, but as an inexhaustible source for art, culture, spirituality, and the expression of individuals and communities. This ecological practice and its materialization in ecological education is the cornerstone of the NGO's work; this does not mean that other objectives have disappeared, but that for its members, the guiding theme is ecological practice through which the progress of other objectives will be achieved. In this sense, community development is understood as a two-way street with the sustainability of the practice of urban gardening. On one hand, the time and effort of community members are needed to maintain an urban garden, and on the other, the garden provides resources and benefits to the community, not least the education and the social link allowed through the NGO.

In the indigenous context, the Pehuenche High Mountain Gardens project arose when community leaders in Lonquimay challenged the usual procedures depriving them of resource management and demanded involvement in the project design. Expectations were high. Officials hoped to generate global environmental benefits, and the community hoped to strengthen food sovereignty, autonomy and social bonds. Those most involved wanted the project to promote a new paradigm that would allow the community to rely less on livestock and diversify food production, allowing a healthier diet. "The essential thing is food for the people—that is the paradigm shift. We need to eat fruit, we need to eat meat, we need to eat other things" (Mapuche leader, Lonquimay, 20/12/2017). There was also hope that any surplus could be sold non-profit to diversify incomes and strengthen social capital. Collaborative work is in itself a mechanism to strengthen the community: as one leader stated, "When we work together, when we join forces, we are much stronger than each on his own" (Mapuche leader, Lonquimay, 15/12/2017).

In a methodology based on local decision-making, all stakeholders envisioned long-term objectives for the Pehuenche community and beyond. It was decided to reforest the mountain area with more productive species, such as fruit trees, and the inhabited area with native species to allow more firewood to be harvested. Coordinated local management provided the community with an international platform as well as support from the municipality, which offered economic, human and technical resources. In the community, 27 families joined the project.

To achieve the project's goals, the indigenous leaders proposed strengthening local knowledge and complementing

it with research, training and new technology. The leaders wanted to put local knowledge into practice after it had been underestimated for decades. A priority was to revitalize the lost notion of reciprocity: "Giving something back to the land, not only receiving, but also giving: what do we as Mapuche give back?" (Mapuche leader, Lonquimay, 15/12/2017). The leaders expected that awareness on this could be raised through the reforestation process. The community also promoted "clean agriculture," strongly opposing the use of pesticides promoted by the state. Local agroecological practices, such as ash to fertilize and smoke to control frost, were revived. Plots were reorganized to protect the gardens from animals, promoting reflection on the sustainability of livestock. In this way, the project has both benefited from and had an impact on local knowledge: while rooted in the territory, it is also dynamic and, above all, enacted and co-constructed with the place (Lander, 2000).

## Promoting social connection and care of the environment

Small-scale garden practices, specifically in the context of urban and peri-urban gardens, are based on the care and transmission of human/non-human relationships and stand in contrast to intensive agriculture, whether high-tech urban agriculture or large-scale farming. Networks of community gardens are organized to promote social links and care of urban spaces. Historically, Cultivos Urbanos has focused its work on encouraging citizens to establish another type of relationship with nature. For this reason, they develop workshops dedicated to community education on urban agriculture in different areas of Santiago. In parallel to cultivating care for nature and developing connections, the NGO tries to empower the communities where their projects are inserted, which has not always been effortless.

In the indigenous context, the Pehuenche High Mountain Gardens project set a new paradigm in the policy targeted at native peoples in Chile. It demonstrated how meaningful engagement at the local level could change the perception of policy and boost the commitment of beneficiaries and their interest in caring for the environment. Nevertheless, implementing the Pehuenche project was not easy. The biggest challenge was to change the individualism imposed by government policy. Tensions also arose between the young leaders who led the process, and the older participants attached to livestock. For the GEF/ministry, the biggest challenge was carbon sequestration, as corroborated by an official: "The resources only allowed for specific activities on a predial scale" (Ministry of Environment official, Santiago, 18/02/2022). There was also no clarity on how to involve the community in this goal. The indigenous leaders argued that officials did not promote a discussion on the carbon aspect, so they did not know how to contribute.



Despite these ups and downs, the stakeholders consider that there have been many achievements, both material in the form of new infrastructure, and immaterial in that the project has strengthened social relations. Those involved perceived a difference compared to other government initiatives, especially the consideration of local knowledge. The project was managed by local leaders and promoted participation and collaboration, with greater accountability and transparency. This enhanced the self-esteem of stakeholders; little by little, this collaboration allowed project leaders to reestablish local trust and involve the community in actions rather than feel victimized in the face of environmental challenges. It enabled the villagers to feel capable of repairing their territory and perceive that the government recognizes their efforts. This is indeed the case: officials have a high opinion of the initiative and its progress.

The success of the project is largely due to the inclusion of local stakeholders, who live in the territory, and who were involved in planning and executing it. For example, an emphasis on developing a more self-sufficient and diverse diet benefitted from the cultivation of species that were previously not viable, made possible by rising temperatures. This led to the creation of a cooperative that works with products derived from pine nuts. The project works two ways, both building on the knowledge of the community and raising its awareness, for example, by promoting the importance of the forest and of water *via* local media: “We have a community radio station, and we strongly emphasize education and environmental issues, and within that, the issue of water plays a fundamental role” (Mapuche leader, Lonquimay, 15/12/2017). A reciprocal exchange also occurred in the planning of the gardens, which encouraged self-reflection on local production methods and livestock farming, while also reintegrating the community’s cosmivision into landscape management. This is important because it allows the issue of climate change to be incorporated into the community’s everyday life through its own cultural conceptions. It equally prompts institutions to observe the landscape in a more holistic manner, as a ministry official explained: “When they talk about the springs in the forest, I am hearing that they are talking about the spirits” (Ministry of Environment official, Santiago, 18/02/2022). This case shows how a local approach can be used for solutions to global issues such as climate change, through projects that local stakeholders help to define, are integrated into their cultural dynamics, and boost their ability and motivation to effectively repair the territories in which they live with the support of institutions.

These experiences illustrate the political dimension of ecological citizenship. Local stakeholders can be given a greater role in environmental management, taking into consideration cultural aspects, which allows them to strengthen their autonomy. This (re)appropriation of the territory in turn transforms the stakeholders, placing them in an active role: they are no longer “vulnerable,” acquiring citizenship and rights over their territories.

The community projects in these case studies can be seen as social and civic commons in the sense of [Bollier and Le Crosnier \(2014\)](#). Social commons are diverse: for instance, they can include community gardens, civic associations, ecovillages, and various forms of community-supported agriculture. They encourage personal involvement and peer support. In each of these cases, citizen participation is crucial. According to [Zask \(2011\)](#), this can be broken down into three stages that promote the process of building the common good. Participation starts with an individual “taking part” in involvement in an activity (gardening, for example). From this can emerge a phase of collective mobilization around a project. Finally, participation becomes a benefit for oneself and others and can thus be extended further to form new ways of participating and contributing, all of which form social connections and can promote care of the environment.

## Food democratization

Over the last few years, in both Chile and France, many organizations have developed to promote food justice. This trend has continued, with the COVID-19 pandemic giving greater visibility to the problem of food insecurity for an increasing number of people: students, migrants, and others on low incomes. France experienced a dramatic 45% increase in the demand for food aid in 2020. In Chile, rural areas have been more affected than urban areas, with impacts on food supply and food security ([RIMISP Centro Latinoamericano para el Desarrollo Rural, 2021](#)).

New forms of organization are emerging to respond to these social and ecological emergencies by local collectives working in networks at local, regional or national levels. In France, these include farm-based collectives that organize the provision of food in third places,<sup>7</sup> such as the *Volonteux*<sup>8</sup> or *Martinière*<sup>9</sup> farms. Their aim is to take care of nature, resources and people, and to pass on other ways of being on the land. Another mode of emerging collective organization is to build inter-organization interfaces with local groups that have a well-established operation and network and will share their skills with new projects, developing synergy and a capacity to act.

On a smaller scale, shared gardens are in full expansion. These involve cultivation on collective plots of land belonging to a local community and are created and maintained through interpersonal relationships. This is part of a wider movement of urban agriculture flourishing in many cities worldwide (e.g., the Incredible Edible in England, rooftop gardens in Quebec, community gardens in the United States, urban agriculture in Latin America and Africa, the gardens of Berlin, and many other examples).

7 <http://fablim.org/tiers-lieux-nourriciers/>

8 <https://www.fermedesvolonteux.com/blog>

9 <https://fermedelamartiniere.fr/>

Studies such as those of Zask (2016) have shown that shared gardens allow the realization of collective goals in alternative ways, putting democracy into action and restoring specific democratic values. The consideration of the “other” (both human and non-human) benefits community life by enabling people to work in common, stop destruction, and create collective projects.

In France, shared gardens are a response to social, economic and food issues. This renewal of urban gardens provides solutions as diverse as the self-production of food, the creation of social links, the improvement of the living space, the exercise of participative democracy, and environmental education. They welcome people of all ages, all cultures, and all social backgrounds. Collective gardens make it possible to obtain fruits and vegetables at lower cost, energy and environmental impact. They diversify the places of food production and allow people, including the most vulnerable, to take an active part in producing their food. They are also a place of social connection and transmission, allowing the exchange of culinary and cultural knowledge, the (re)discovery of less common fruits and vegetables, and awareness of seasonality. Shared gardens have embraced their environmental and social role, and since the 1990s public policy has enshrined this. For example, in 2003 the French Ministry of Agriculture proposed a law including the promotion of solidarity, social ties and environmental education through shared gardens.

In the case of Chile, the redrafting of the Chilean constitution that began in 2021 following the massive protests in 2019 could have an impact on urban agriculture. In the draft of the new constitution, the role and definition of nature have changed, with “nature” appearing 35 times as a subject in its own right, rather than as an object or thing, and a specific point defining the rights of nature (constitutional article proposal number 297). This development may present a new scenario; the Cultivos Urbanos NGO sees it as a step forward. When interviewed, its members see two positive impacts: the first is a change in the relationship with nature, from a relationship of production to one based on conservation and biodiversity regeneration; the second is the inclusion and participation of grassroots organizations working to change the relationship with nature in the constitutional arena and discussions, thus the possibility for greater food democracy.

## Food as a driver in human and human/non-human relations

In the case studies examined, the contact zones (Haraway, 2007) between humans and between humans and non-humans directly affect actions: in gardens, on farms, and within social and solidarity economy organizations. The resource, whether it is a plant, a seed or an animal, sets in motion interdependent relations and gives meaning to the activity (Maurines, 2019).

By taking care of the resource and the land, a collective shares ideals that add meaning to the action. This is the case whatever the objective of the collective, whether it is to produce local, accessible, healthy food or to transform people’s roles through agriculture (as with Cultivos Urbanos).

Working with natural resources affects one’s relationship with nature, one’s way of being in the world. However, collective transformation and the capacity to build extensive social links is complex. As expressed by interviewees, contradictions and tensions are evident when combining the will to generate global change with a reduced framework for action. Community garden projects are small, and production is limited and can even be lost if the plants are not tended (for example, when participants go on vacation).

Yet cultivating the land is not a job like any other, as pointed out by Zask (2016). It involves dialogue and participation, collective learning, cooperation, and sharing. Under certain conditions, agriculture can therefore represent a considerable power of change and a real hope for democratic ecology. The case studies we analyzed strengthen ecological citizenship, establishing reciprocal relationships between the community and collective gardens. Through collective work or a collective ideal of nourishment, stakeholders develop civic commitment, encouraging a participatory spirit that aspires to an ethical relationship with the environment. Sustainability is constructed in a multidimensional way: caring for oneself, for other humans and for non-humans.

This involves caring for the resource in designs that favor biodiversity, pollination and local fauna (e.g., hedges, birdhouses, insect hotels, ponds, etc.). This can be “politically institutionalized” with the creation of charters or organic or permaculture certification: public policy mechanisms that stabilize the recognition and legitimacy of the resource. The viability of the resource can also be supported by developing interfaces between different spheres, bringing together researchers, businesses, and citizen groups around cross-cutting science/society issues that aim to decolonize knowledge and produce shared knowledge.

Concretely, aspiring to ethical agriculture displaces the quest for productivity. This can foster food production based on ethical convictions, such as choosing to plant with endangered seeds entrusted by the Applied Botany Resource Center (*Center de Ressources de Botanique Appliquée*,<sup>10</sup> CRBA). After the seeds have multiplied after each harvest, some are then returned to the CRBA for conservation. This system also favors the reintroduction of local vegetable varieties that may be more resilient or have other valuable attributes.

In this way, gardening collectives assume their share of responsibility for the viability of the resource that gives meaning to their actions. They do so by putting themselves at the service of a common cause, to create a sustainable relationship with the

10 <http://www.crba.fr>

resource of which they are relays and whose role is indispensable in building a good life in common. These gardeners and farmers tend not to talk about the relationship they have with their plants in terms of production (Kazic, 2022).

The human population needs secure food chains and productive land to ensure the survival of agriculture. In the context of current crises, not the least of which is climate change, the viability of small-scale collective agricultural projects becomes particularly relevant. Beyond the green practices of collective gardens, individuals are motivated by a cause that favors the collective itself: benefit for oneself as well as for others (Zask, 2016). The aims of these groups—to produce food locally and ethically, to develop educational and restoration work, and to inform political projects—strengthen democratic values and develop relationships between humans and between humans and nature.

## Conclusion

The proximity agriculture case studies we analyzed demonstrate how these collectives strengthen relationships with the environment. The findings show how their collective engagement with the land goes beyond food production: protecting the environment, revitalizing urban spaces, and creating social links.

The groups studied were organized around an initial common project. Based on collective action and relations with the environment, through its defense and maintenance, they address daily challenges in which the aspiration of ecological citizenship is often threatened. Human beings transform the world by preserving it, as Zask (2022) points out, creating a common life. Ecological citizenship appears as a horizon; these community projects—and the work they demand—imply a common project. These experiences materialize citizenship, consolidate its exercise, and enhance it. This can be attributed to collective action but also to the different contexts of threats that make them face new challenges—for example, urban pressure and scarce available land.

The NGO Cultivos Urbanos promotes ecological citizenship by putting educational activities at the center of their efforts. Historically, their workshops on urban crops and native species have sought to change the relationship between people and nature. Over time, they additionally began to make the link between urban crops and alternative health programs, making collective gardens a therapeutic space for community health. In this sense, ecological citizenship is nourished by the activities of the NGO participants. However, it is also an aspiration that is constantly promoted through various experiences.

In the case of La Pintana, there is a stated objective to defend the workers' gardens from urban growth, demonstrating social values that aim to safeguard the sustainability of life in the city. The desire to maintain them is a way of opposing the growth

of the city and pollution. Now the challenge is orienting the community project toward the future so that it can be sustained over time.

The ecological practices of the shared gardens in Lyon connect the collective to the local area. While French public policy supports collective environmental projects, beyond food production the stakeholders seek new forms of participation that strengthen community ties and democratic values. Through participation, ecological citizenship is an aspiration to work together. Practices are renewed; although they do not aspire to definitive solutions, they do aim at an ecological transition that allows a better living in the city.

In the indigenous context, the Pehuenche High Mountain project is an example of how collective gardens can be an opportunity to revitalize traditional practices and rebuild trust. The participation of the community, wary from past government policy, alongside institutions, with their more global agenda, reestablished confidence in local capacities. Local involvement allowed agricultural practices to be reconsidered and new initiatives to be tried.

The point is not solely whether local collectives succeed in viable agricultural projects that effectively increase food democracy. It is equally how these initiatives seek opportunities to participate in food policy and social or cultural action. “Being part of,” “contesting,” “promoting,” and “presenting solutions” are all democratic values encouraged in the projects we analyzed. Our aim is not to present these cases as miraculous solutions to environmental or food problems, but to show how these practices can be essential in revitalizing the human relationship with nature and thus improve ecological citizenship. In addition to promoting democratic values, they offer the possibility of establishing reciprocity and recovering the spiritual connection to the land, which is particularly central to strengthening autonomy in indigenous contexts. We see these relationships between the environment and human collectives as key in future food production and environmental management.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

The studies involving human participants were reviewed and approved by Fondo Nacional de Desarrollo Científico y Tecnológico. The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

## Author contributions

CB, BM, and RC contributed to the conception and design of the study. BM wrote the first draft. CB edited and completed the article. CB, BM, RC, and EC drafted different sections of the manuscript. CB, EC, and RC contributed to the revision of the manuscript. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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