National Report

Community Gardens and Climate Change in Spain

A review of Community Gardens' activities in climate change adaptation, environmental education and their potentials for future climate strategies.

Table of Content

1. Introduction

Since the year 2000, the presence of urban, social and community gardens in Spain has been constantly increasing. Data shows that in the 00s, there were around 1000 gardens in Spain, with a more than considerable increase in 2017, where some 15,000 were counted (El Diario, 2017). By 2022, data from AndalHuerto project state that just in Andalucia region, where we have mainly focused our research, there are more than 260 social gardens, with a special focus on self-consumption (AndalHuerto, 2022a). In fact, AndalHuerto is currently mapping all the existent gardens in Andalucia in an interactive map (AndalHuerto, 2022b). To fully comprehend garden chances and challenges in Spain we have to understand that even though these spaces are normally a local council competence, they are actually run and managed by volunteers. This means that they are self-managed, created at community level and are not usually professionalised in a direct way, normally for people who are dedicated to collaborating in gardens have this activity as a complementary one.

The birth and further development of gardens in Spain has been strongly linked to different social movements, and to political action, especially in urban community gardens and after the 2008s economic crisis (Morán et al, 2017). This is determinant for gardens to be socially considered as places for community self-management.

Also, for the Spanish case it's worth noting the role of universities as promoters. Being born thanks to students and teachers initiatives, these gardens are an example of how to use and put into value universities' open spaces, in order to enhance their available resources such as land and water, and their horizontal and participatory usage. In Andalucia we can find several of these initiatives such as Jaula Abierta and Cultiva UMA in Universidad de Málaga and the ones Universidad Pablo de Olavide, that even has a specific diploma related to urban garden management. Also in Andalucia, the Red de Universidades Cultivadas, is an university gardens network whose objectives are to work with the organic garden as a didactic resource and learning tool, research agro-ecological cultivation techniques and develop projects for Education and Cooperation

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for Development in Food Sovereignty. These are normally dependent on Education Sciences Faculties and Agricultural Engineering schools.

When referring to peri-urban and rural gardens and networks, it is especially interesting the project that Somos Vega Somos Tierra association is developing in the area of La Vega, in Granada Southeastern Spain. This association is fully committed to the protection, conservation and dynamization of La Vega and through their gardens are willing to collaborate with local farmers, communities, women, children and the elderly.

However, even though there have been several national events, there is not a proper network connecting gardens, maybe due to a lack of digital skills in order to build an online connected community; maybe because there is a need for a promoter with enough presence and operational capacity.

Moreover, regardless of the specific typology of the garden, our research has shown that gardens in Spain share a common problem from which a number of other issues arise: continuity and temporality. Gardens end up being short-term projects, which prevents them from being fully integrated into neighbourhoods, municipalities and cities, and from generating a sense of belonging sufficient for these projects to reach their full potential, both socially and, of course, climatically. As is evident, this problem depends directly on the management as it is generalised in Spain, where it is still necessary to include the public authorities in the management of the gardens, thus ensuring their stability.

2. Current Situation in the Respective Country

2.1. Adaptation to Climate change

In terms of climate change adaptation and mitigation, the great potential of community gardens relies on various aspects within the nature and characteristics of these spaces. On one hand, regarding their own survival, gardens are active actors in terms of climate friendly techniques implementation. On the other hand, when implementing new techniques and activities, gardens become kind of pilot spaces where the rest of the society can learn how to be greener and climate friendlier, in fact, «gardens are, of course,

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the best example of think global act local practices, and spaces for direct citizen action against climate change»(Focus Group participant).

Referring to specific gardening techniques, our questionnaire answers show that climate change effects, in the case of Spain these being longer drought periods, earlier start of growing season, heavier rains and pests and disease increment have been determinant for gardens to implement new techniques. Among the selected ones, the most generalised and proved to be useful solutions are: mulching, composting, free of synthetic pesticides and fertilisers and the inclusion of natural flora and wild corners for insects and birds.

Nevertheless, it is also important to look down to a local-contextual level as many of the activities and techniques to be implemented will depend on the resources and possibilities offered by the environment. Most of the interviewed gardens claim that they have already introduced climate friendly techniques, based in natural, context-adapted solutions. This knowledge on how to take advantage of the environmental context is, without any doubt, one of the strong points of community gardens in their role as spaces to fight against climate change. Since droughts are one of the greatest problems, most of the new implementations are related to irrigation methods using either water collected from rain, nearby rivers, ditches among other water sources. Other activities and techniques implemented are the creation of food forests, planting wild edible species as a way of improving water infiltration, building natural shading infrastructures and changing sowing calendars and thematic workshops. In general, interviewed gardeners are keen on including as many environmentally friendly techniques as possible in the future, driving the path for gardens to be as energy and resources self-sufficient as possible.

Apart from gardening specific techniques, interviewed gardeners coincide in other ecologic practices as developed in the garden. More than 80% of gardeners either repair their own goods, reuse and recycle them or buy them second-hand. Also, products such as soil or compost are mostly bought locally. Other frequent climate friendly practices are separated waste collection, the use of environmentally friendly transportation to go to the garden and depaving.

Also, transversal actions which are considered by gardeners to be extremely relevant are all dissemination and awareness-raising activities, mostly in local canals, but with a need

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of widely spreading what is and can be done in gardens, they claim that , «the more visibility we gain, the more catching this will be for the people and further the message will reach» (Focus group participant).

2.2. Environmental education

Without any doubt, gardens are considered to have an enormous potential to become spaces for environmental education. Indeed, especially when referring to urban gardens, these are some people's main link to live and learn nature. In this sense, gardens as demonstrative spaces are one of the main faces of their educational potential.

Environmental education activities in gardens address local target groups, predominantly children, but also women, the elderly and the unemployed. To this target groups, the main types of activities held in gardens are school visits and workshops covering a wide range of topics such as responsible consumption, ecofeminism, agroecology, healthy and sustainable food, irrigation methods and the history of agriculture... In some of the interviewed gardens they have monitor and primary and secondary school teachers training courses on urban and school gardens which, although «they are not specific to climate change, do clearly address it, as it is part of our philosophy» (Focus Group participant).

These activities' frequency and timing conditions vary from one garden to another. Activities carried out in collaboration with other entities, especially with public schools, tend to take place on an annual basis. However, workshops and sessions organised by gardens sometimes depend on the gardeners availability, that in most of the cases are volunteers, and the organisation of internal committees, and ultimately depend on the internal resources of the gardens, as well as on their level of cooperation with external entities. In order to be able to increase the number of activities, the gardeners state that they would predominantly need financial support, but also advice and training. Regarding this, it is important to state that, since gardens in Spain are mostly managed by volunteers, the fact that contributors normally combine their activity in the gardens with their own working activities, there is a generalised lack of disponibility to organise more and different activities.

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Moreover, in university located gardens in particular it is very easy to envisage this formal and informal educational potential. They can function as `open classrooms' and almost as part of the university facilities where students can carry out their internships when didactic units are designed directly linking the training plans to the gardens. In a complementary way, they can serve as spaces for coexistence between students from different specialties and with different concerns that, without a doubt, have a place in a garden.

In any case, it is worth mentioning that by helding this activities gardens are becoming places for intercultural and intergenerational meeting, contributing to a learning process that goes beyond gardening itself and is built by and for communities that can benefit from gardens to get to know their territory better, «what we wanted to revive was the village square but in an orchard, a meeting place where people can chat, where the different population groups have to be represented, where there have to be young people, elderly people, people with disabilities...» (Focus Group participant). Gardens are the ideal place to provide an education that is both practical and responsive to the most current challenges, including, of course, the fight against climate change, but also to learn about coexistence, citizenship, equality, respect and democracy. Nevertheless, so that this informal education can be fruitful, garden related educational strategies have to respect each garden's contextual particularities.

2.3. Cooperations with NGOs and decision makers

Cooperation with NGOs, decision makers and other entities is widely spreaded within Spanish gardens. This cooperation is mainly established with city councils, schools, similar projects and associations, as well as universities.

It is once again important to highlight that since gardens are frequently managed by volunteers, these cooperations are essential for gardens, and can actually overcome the problem of staff unavailability which, as noted above, is one of the main barriers to increase the activities organisation.

Furthermore, cooperation with other entities contributes to the creation of synergies and support networks that would contribute to the consolidation of a much more transversal image of the allotments for society.

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There are several examples of fruitful collaboration between gardens and local institutions. In the case of the Andalusia region we find several examples of collaboration between public institutions and gardens. The Junta de Andalucia (regional body) through AGAPA carried out a seed distribution program for the conservation of local varieties in different gardens in the Andalusian region. The self-management of seeds in the gardens has made it possible to reduce the number of seeds purchased, thus contributing to the circularity of garden dynamics.

Another remarkable one is the case of Córdoba (Andalucia, Spain). In this city there is currently a solid consensus between residents and the municipality regarding the model and plan for the extension of the allotment gardens. In 2013, participatory meetings were initiated between neighbourhood associations and municipal institutions, in which the municipal institution was asked to become fully involved in the management of the gardens. From that first moment, this collaboration has led to the creation of numerous new gardens in the city, from 5,000 m2 to more than 20,000 m2, predominantly community gardens, without individual plots, with the idea of building «educational, agro-ecological and gender-equitable gardens» (Round Table participant). Thanks to the Córdoba Verde por el Clima, more than 200 workshops on climate change have been held since 2011. In collaboration with other local educational programmes directly related to the gardens, around 4000 young people have been able to attend activities within these spaces.

Another clear example of how institutional support and collaboration can facilitate the role of the gardens as active actors in the fight against climate change is the existence of a community composting plan in collaboration with SADECO (public company in charge of urban waste management). The aim of this plan is to recycle all the green material generated in the gardens but also the organic waste generated by the families who participate in the gardens and neighbours in the neighbourhoods of Cordoba. Such schemes also exist in other regions of Spain such as Castilla y León and the Basque Country.

In Madrid, the recently approved «Barrios Productores» project is linking social economy initiatives on municipal public land plots with a more productive dimension, thinking in multifunctional projects.

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3. Future Strategies

In order to consolidate the gardens as spaces for environmental education and mitigation of the effects of climate change, it is necessary that, first of all, institutions start showing willingness to put into value these spaces, this being followed by a change in the current generalised perception of gardens, rethinking their role beyond their socio-educational dimension.

Nowadays, gardens' place at institutional level is mainly in environmental education departments, conceived as a green policy. To increase their presence, it would be interesting to think about how they can be linked to food strategies, right to food policies, linking them with social and community economy policies, agro-ecology policies... giving relevance to the productive part of the gardens; but also to their role in urban transformation and renaturalization-green strategies , green infrastructure plans and climate refuges. In this sense, it is necessary to recognise the garden in its magnitude of intervening in the life of neighbourhoods where it becomes a pedagogical learning and, in essence, «To take another look: Stop thinking of the gardens as purely agricultural or educational spaces and start considering them as a public facility comparable to health centres, libraries, sports centres...' This would provide sufficient stability to be able to further develop the role of the gardens in the range of educational issues, dissemination, agricultural techniques...» (Round Table participant).

Likewise, institutions, in direct collaboration with gardens, should come up with new ways of public-private cooperation; strategies for the transfer of land, training processes agreed with the town council that respond to the needs of each garden in terms of not only competences in gardening, but also in participatory and community management mechanisms, conflict resolution... What is more, in a potentially commercial sense, some gardeners suggested the need to regularise the situation of gardens so that, if they so decided, they could market the products they grow, thus encouraging the entrepreneurial culture that can be found in the context of the gardens and so that the activity in the allotments would stop being purely voluntary.

Another important point is to cover the need for external dynamisation, which would ensure that the allotment projects can abandon their short-term nature in order to

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generate sufficient ownership and roots. Formulas calling for greater involvement of the institutions in the management of the allotments would alleviate the effects of the lack of professionalisation in terms of allotment work, and continuity could cease to be a problem.

Finally, it is crucial to disseminate the multifunctional image of the allotments in society. To this end, in the case of university gardens, it would be interesting for universities to use their presence in society to disseminate this image.

4. Conclusion

The role of the gardens as climate actors, as well as their potential to be spaces for formal and informal environmental education are undeniable. What is being worked on and done in the gardens in terms of climate action can be scaled up and applied at local, regional and, who knows, even state level, but there is still a long institutional road ahead.

For their real consolidation and to be able to reach the most of their potential, political support is absolutely necessary to ensure the continuity of the gardens and thus their consolidation and rooting in neighbourhoods, municipalities and cities. This implies introducing the allotments in public plans and policies in a transversal magnitude, considering them as public equipment and in their most multifunctional side, and designing these plans and initiatives according to «The different types of gardens that give us a glimpse of the existence of differentiated social, environmental and economic functions» (Round Table participant).

Consolidated as meeting spaces, the gardens can even act as a germ for other initiatives on a larger scale, both scientific and entrepreneurial, more or less linked to the gardens, such as organic restaurants, micro-enterprises of urban agriculture... Initiatives of this kind are sought by organisations such as the Asociación Palma Ecológica in Córdoba (Andalusia).

Once they have been established, energised and disseminated, it would then be appropriate to ask the gardeners directly about the materials and skills they need to maximise the role of the gardens.

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6. Annex

6.1. Methodology

ONLINE QUESTIONNAIRE

Period of data collection	March-April 2022
Number of gardens, that have participated	28

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Number of gardeners represented (total)	28
Ways of reaching respondents	Email, phone
Response quote (to how many did you send out, how many did you get back)	There were sent around 100 and we got 28 back

FOCUS GROUP

Date	June 17th
Number of participants	5
Field of expertise of the participants	Garden volunteers and managers, university teachers, public institution workers
Relation between participants	n.a.
Online or place	Online
How did you choose participants?	We got support from prof. Dr. Alberto Matarán in the selection and contact
How easy or difficult was it to get them?	Easy

ROUND TABLE

Date	June 28th
Number of participants	4
Background of participants (politicians, administrative body, national/regional/local,...)	experiencia en gesion municipal, educacuon ambiental, ha sido concejal en el ayto de cordoba.
Relation between participants	n.a.
Online or place	Online
How did you choose participants?	We got support from prof. Dr. Alberto Matarán in the selection and contact
How easy or difficult was it to get them?	It was difficult because of the required profile

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