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# Can urban agriculture be used to improve green infrastructure and social well-being? The urban garden in the Ponticelli neighbourhood of Naples

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**Abstract** Urban agriculture can be used to improve green infrastructure and social well-being and as a tool for the sustainable regeneration of urban environments. Furthermore, urban agriculture, including urban gardening, has emerged as a means to help improve food insecurity and tackle climate change. This paper focuses on the social urban garden located in the Ponticelli neighbourhood on the eastern outskirts of Naples, which has around 70,000 inhabitants. This area originally had an agricultural economy but has now undergone uncontrolled building expansion and lacks an adequate supply of services for the community. The area also suffers from significant social and cultural problems, including high unemployment, school dropout rates and crime rates, which touch a large part of the population. The urban garden of Ponticelli represents an example of how social cohesion can be built through the expansion of urban agriculture, while at the same time contributing to the goal of sustainability and maintaining links to the rural economy. Yet the urban agriculture initiative risks remaining isolated and being of limited benefit to regional and metropolitan efforts for environmental sustainability if it is not framed within an overall metropolitan strategy for an urban agriculture programme.

**Keywords:** *urban agriculture, urban gardening, environmental resilience, Naples, Ponticelli*

## INTRODUCTION: URBAN AREAS AS SUSTAINABILITY LABORATORIES

The goal of this paper is to propose that urban agriculture, including urban

gardening, could be used as a tool to effect urban sustainability. The paper will focus in particular, on the urban garden in the Ponticelli neighbourhood of Naples.

The suburbs of the Neapolitan area are characterised by a rapid urbanisation process dominated by public buildings, in particular for residential use, designating small areas to public open spaces, such as meeting places, public parks and green spaces. These neighbourhoods are also characterised by a widespread presence of criminal activity that undermines the capabilities and mechanisms of social cohesion.

The concept of sustainability in confined areas is difficult to describe and measure, even more so in congested and unplanned urban contexts. In this paper we have assumed that the presence of urban green spaces for citizens promotes environmental and social sustainability. Accessibility and not their mere presence of urban green spaces is critical as a measure of sustainability. Therefore, we argue that through policies and favourable conditions, urban inhabitants can obtain and expand green spaces as productive spaces and places for positive social interactions and community gathering. This is particularly important in deprived areas, where outside space is limited and urban gardens can be 'laboratories' for social cohesion. Many researchers have substantiated the positive role of urban gardens in promoting social cohesion.<sup>1</sup>

In large urban and metropolitan areas, issues relating to environmental sustainability and social inclusion are more prominent and acute. Since the 1990s, researchers have looked at the relationship between nature and the city.<sup>2</sup>

Green infrastructures (GI) are spatial structures transmitting the benefits of nature to people. They aim to enhance nature's ability to deliver many valuable ecosystem goods and services, such as clean air and filtered water to rivers and streams.

The New Urban Agenda of the United Nations (UN) for 2030 includes the presence of green spaces among the key

indicators for the future of sustainable cities,<sup>3</sup> and the European Commission (EC) considers green infrastructures as strategic and important to many community environmental goals, including the protection of biodiversity, the sustainable use of soil resources and the fight against climate change.<sup>4</sup> According to the European Union (EU),<sup>5</sup> GI can be broadly defined as a strategically planned network of high-quality natural and semi-natural areas with other environmental features, designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings. Urban settlements can use GI approaches to address the management of the urban green and open public spaces programmes to reduce greenhouse gas emissions, absorb stormwater, prevent water pollution, and transform vacant lots as well as impervious roofs and streets into urban green spaces and habitats for biodiversity.<sup>6</sup>

Recently, the concept of green infrastructure was bolstered by a novel approach called edible green infrastructure (EGI) that can improve resilience and quality of life in cities and reduce food insecurity. EGI is a sustainable planned network of edible food components and structures within the urban ecosystem, designed and managed to provide primarily provisioning ecosystem services.<sup>7</sup>

Allotment gardens and community and social gardens are a sub-classification of EGI typologies. This kind of urban agriculture can be seen as productive GI for environmental and social well-being and can be used as a tool for the sustainable regeneration of urban environments.

They can attend to many environmental and social uses for urban citizens, improving public health and contributing to the quality of life and well-being of people, through leisure and physical activity, while protecting the ecosystem.

Furthermore, with rising concerns for food security and climate adaptation, urban gardening and urban agriculture have emerged as a rising agenda for urban resilience<sup>8</sup> around the world,<sup>9</sup> being considered as an important feature of the overall urban support systems at long-term and global scales.<sup>10</sup>

So, if until a few years ago the presence of green spaces and gardens was mainly considered an indicator of the quality of the urban spaces and the built environment, in recent years it has become a main indicator of sustainable urban development at the environmental and social level.

According to Barthel *et al.*,<sup>11</sup> in providing and preserving collective socio-ecological memories, urban gardening counteracts a social forgetting about our dependency on social cohesion and on local land. Collectively managed gardens may serve as living libraries for transmitting knowledge about a selection of locally adapted practices and plants. Allotment gardens also complement public urban spaces and parks by facilitating practices of place-making in neighbourhoods, which are crucial for constructing the social capacity for protecting and developing urban green space.

Most recently, Italian cities are embracing sustainability, a sometimes-contradictory effort to balance neoliberal commodification of nature with its scientifically legitimated quality of life benefits.

In the Italian provincial capital municipalities and metropolitan cities, where over 30 per cent of the population lives, urban greenery accounts for 3 per cent on average of the territory (over 600 km<sup>2</sup>).

The national law 10/2013 'Norms for the development of urban green spaces' recognises the important role of green space and trees in the control of emissions,

protection of the soil and water resources and improvement of the air quality, microclimate and liveability of cities.

This law is required for any Italian municipal administration over 15,000 population and includes detailed knowledge of its own arboreal heritage and requiring it to have a land registry of trees, planting a new tree for each child born or adopted and the production of a budget for urban green spaces, which demonstrates the impact of the administration on the green public space, including the number of trees planted and felled, consistency and state of green areas, etc. Nevertheless, the interpretation of the national law by the municipalities of Italy, even in 2019, still remains unevenly implemented, with considerable geographic differences in the application.

A society such as the Italian one is experiencing a condition of provisionality that does not push it to enhance its green heritage for future generations. It is no coincidence, therefore, that the law of the Italian state that provides for the planting of a tree in the municipality of residence at each birth has been almost disregarded in practice, except for some virtuous cases (in central-northern Italy).

For example, the city council of Naples (at the core of this paper) followed these national guidelines and, in 2011, approved another project in December 2011 about the 'Regulations for the non-profit assignment to public and private subjects of public green spaces', whereby associations, organisations or private citizens are able to adopt and take care of a green island. The initiative stems from the need of the municipal administration to maintain, preserve and improve public green areas through the direct and non-profit participation of citizens, making their own the real will expressed by private subjects and associations to participate in the improvement of the city.

After ten years, this project has not

achieved the expected results of generating a widespread 'green' sensitivity in the population and, above all, many of the areas that have been entrusted to private individuals or to commercial establishments remain in degraded conditions, especially in the suburbs (see Figure 1).

### GREEN SPACES IN THE CITY OF NAPLES

At present, the situation of the metropolitan area of Naples, in southern Italy, is characterised by a chaotic and uncontrolled urbanisation. This can be observed over an average of 30 per cent of land coverage in the metropolitan area, rising up to 50–60 per cent and as high as 98 per cent in the north core area of the city.

The urbanisation process of the city of Naples and its metropolitan area developed in a chaotic way during the 20th century, exemplified by wild overbuilding in many parts of the territory. The historical endowment of green areas has survived in scattered locations on the city perimeter, but in general many plots of land have

been eroded in a reckless way. The history of city planning is exemplary in this. The master plan of 1939, drawn up by Piccinato, adhered to the principles of 'building thinning' and the protection of green spaces, imagining a city that dealt with the issues of traffic and building overcrowding and would strike a balance between centre and suburbs. The dramatic urban history of this city from 1944 until the 1970s is characterised precisely by the need to cancel this plan in favour of dense and inconsistent housing development, endorsed by a political-business class linked to the 'brick',<sup>12</sup> whose most famous artistic representation is the film *Hands Over the City* (1962) by Francesco Rosi. With the master plan of 1972, the need for an endowment of greenery for each individual district began to be signalled, following the urban planning standards introduced by the Ministerial Decree of 1968, which for the first time regulated the relationship between residential and public spaces.<sup>13</sup> The development of the area follows the 1960s and 1970s local urban plan, aimed at expanding the city towards the north and east, and consolidates its structure with the extraordinary housing programme (PSER) launched after the earthquake of November 1980. Before this earthquake the city council of Naples approved the plan for the urban recovery of the suburbs according to the national law 457/78<sup>14</sup> — an urban planning operation through which, using various intervention tools, the municipality intended to improve the housing conditions of the historic suburbs surrounding the urban centre, and to equip those neighbourhoods with public facilities and green spaces (see Figure 2).

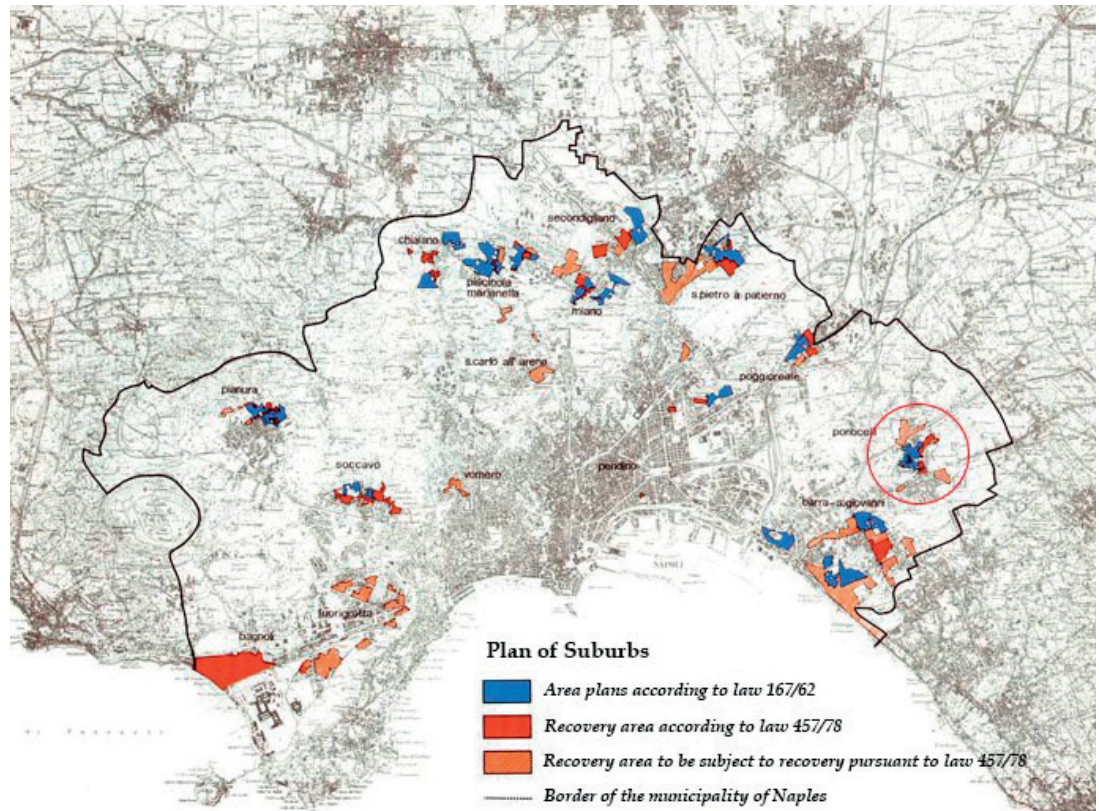
Although its interventions fall within limited areas, the plan of the suburbs intervenes on the current general town plan with the value of a general variant, proposing the suburbs as a set of urban fabrics with historical and environmental



**Figure 1:** Flowerbed in front of the COVID residence of the hospital, near the main public housing and De Filippo Park. This photo illustrates the neglected state of much of the green space entrusted to private individuals by the municipality of Naples

Source: Amato





**Figure 2:** Plan of suburbs, 1980. Circled in red is the neighbourhood of Ponticelli

Source: Comune di Napoli

characteristics worthy of a recovery strategy, no longer alone as a territory of expansion. The PSER implemented after the 1980 earthquake offered an opportunity to use the previous plan of the suburbs and make it operational for a process of redevelopment of the outskirts of Naples with punctual interventions for the recovery of the historic centres of the peripheral districts (autonomous settlement nucleus with a strong rural character, annexed to the municipality of Naples in the Fascist era), and above all, through the provision of equipment and green spaces in each neighbourhood.<sup>15</sup> The major redevelopment project mainly affected the neighbourhoods of Scampia in the north and Ponticelli in the east, both areas of residential construction following the Italian law 167 of 1962 on

public housing. In these neighbourhoods, plans have proposed two new urban parks, one of which will be the subject of our case study.

However, we must wait for the planning of the 1990s to see whether the 'variante di salvaguardia'<sup>16</sup> provided by the 1999 regulatory plan has promoted the expansion of areas of green spaces with particular focus on the green belt of the first suburbs: 3,000 hectares consisting of the last traces of villas, gardens, cultivated fields and scattered houses for which the establishment of a regional park has been proposed. These areas consist of individual territorial parks with particular natural and functional characteristics contiguous to that of the Campi Flegrei in the western area of the city. The primary objective of the 1999 plan was to offer public

accessibility to encourage sustainable urban tourism while promoting peri-urban agriculture. It is therefore a context still endowed with green spaces, the protection and safeguarding of which have prompted several initiatives in the course of the new millennium, many to little effect.

The strategic planning process of Naples metropolitan area only started in 2018, with the approval of the guidelines for the Metropolitan Strategic Plan. The guidelines identified two priority lines of intervention: economic development and environmental sustainability. These guidelines have been divided into six strategic axes, including the elimination of net land consumption and the increase in resilience through better management of natural resources and the protection and increase of green areas. This latter objective is also considered as a measure of adaptation to climate change, whereas, according to the latest Istat data, Naples is among the most affected cities in Italy for air pollution from nitrogen dioxide.

Such ambitious goals do not seem to be well defined. In the metropolitan city of Naples, the last census of urban greenery was carried out in 2017, only for part of the territory. Naples has neither adopted a green plan nor a green regulation, while it appears that the ecological network was implemented.<sup>17</sup>

According to the Italian Statistics Institute, during the period 2018–19, the city was in default with respect to the law 10/2013. Specifically, Naples has not fulfilled the article of this law of planting new trees following the birth of each child and for each adopted minor registered in the registry office. In the same way, in 2019, there were no local initiatives for the development of urban green spaces promoted by the administration.

The Neapolitan urban green area covers 11,414,570m<sup>2</sup>, with a higher density than the national average: 9.59 per cent of the total municipal area,

against the national average of 3.09 per cent. The overall quantity of greenery is, however, independent of the quality and possibilities of enjoyment by citizens. Different types of green spaces, including urban parks, historic villas or pedestrian furniture, perform different functions, ranging from the simple satisfaction of aesthetic pleasure to the possibility of enjoyment of free time within the cities or in their immediate proximity. Also, the concentration of the green in some areas at the expense of others significantly modifies the possibilities and the uses of the green itself. In order to consider the availability per inhabitant of green areas that are in some way usable by citizens, the indicator ‘availability of public green per capita (m<sup>2</sup>/inhabitant)’ can be used, which shows, behind the highest average density, a relatively modest per capita availability of 12m<sup>2</sup> per inhabitant in Naples compared to the national average of 33.8m<sup>2</sup> per inhabitant.

The prevalent green typology in Naples is historical green (14.28 per cent of the urban green in the municipal area) and large urban parks (25.20 per cent). The major criticism can be identified by analysing data about the high percentage of uncultivated green (18.68 per cent) and the very low percentage of equipped green areas (1.88 per cent).

Urban gardens still cover a small percentage of territory, representing only 1 per cent of urban green, with an area of 116,727m<sup>2</sup>, which, however, significantly increased by 90 per cent in the 2014–18 period.<sup>18</sup>

## THE COMEBACK OF URBAN AGRICULTURE IN PONTICELLI, CITY OF NAPLES

An example of urban regeneration, via an EGI approach, is the social urban garden in the Ponticelli district, the Ponticelli Urban Social Garden, located

within De Filippo Park, entrusted by the municipality of Naples to the Lilliput day centre, an institution linked to the drug addiction department of the Naples 1 Asl (local health authority). The social urban garden of Ponticelli represents a model of functional urban park, not only in terms of protecting the territory and the environment, but also as an opportunity to create human and social relationships.

The case study of the Ponticelli district, on the eastern outskirts of Naples, was dictated by the desire to describe how a marginal territory, deprived of its rural identity and distorted by an uncontrolled building expansion not accompanied by an adequate supply of services, can rediscover cohesion and identity through the practice of urban agriculture. This neighbourhood of some 70,000 inhabitants is an area with an original agricultural vocation compromised by uncontrolled building expansion and lacking an adequate supply of services, where social and cultural problems touch a big part of the population (ie high unemployment rate, school dropout, control of the territory by criminal organisations). Ponticelli is located on the edge of the compact city and has a chaotic structure, the result of historically defined settlement cycles, the expression of contrasting urbanistic models and architectural vocations. These territories, once fertile and dedicated to agricultural production, were affected by subsequent reclamation works of the swamps, which intensified after the Second World War with the arrival of large industry in east Naples. The 'new' Ponticelli, to the east of the pre-existing historical core, followed — both in the plan of 1968 and in its variant of 1979 — the logic of development through large infrastructure works intended for rapid travel by car. The pre-existing plots, drawn by hydrographic networks and the grid of agricultural fields, were excluded from the project of the new one, just as

a potential integration between the new routes and the historic centre was not pursued.<sup>19</sup>

So, Ponticelli is a territory suspended between an old rural identity and an uncertain future, which offers a repertoire of undeveloped areas, mixed with public housing, large equipment and infrastructural networks. Nevertheless, a rich and small archipelago of associations of the private social sector promotes a series of initiatives that deserve to be analysed as potential drivers of urban redevelopment.

The Big Project for East Naples (2013), funded by the National Operational Programme under the European Regional Development Funds (ERDF), highlights the current interest in the redevelopment of open spaces, road and service infrastructure, as well as in the conversion of decommissioned industrial and craft sites.<sup>20</sup>

Within De Filippo Park in Ponticelli, a network of stakeholders made up of institutions, schools, non-profit associations and city committees has given life to a public green care project promoted by the managers of the Lilliput day centre — the first social garden in a public park of the city of Naples, entrusted to the day centre of the Sert Asl Napoli 1,<sup>21</sup> curated by the Lilliput Cooperative together with a network of associations, schools in the area and by the users of the Sert themselves who, through agricultural activity, have the opportunity to learn a trade and thus begin a path of reintegration into the world of work and society. This small group of actors has also decided to set up a civic committee that can be an interlocutor to better interact with public institutions.

The social garden covers an area of one hectare of land which 146 people take care of every day, including citizens and groups (see Figures 3 and 4).

Each vegetable garden (renamed



‘terrace’ by the project promoters) is grown without the use of chemicals, respecting the nature and seasonality of the produce. Some ancient crops have also been recovered from the social garden. Initially the few terraces were entrusted only to those people involved in rehabilitation programmes for the treatment of various addictions such as alcohol and drugs. Later the garden was opened to schools, associations and citizens of the area: today there are many who animate the terraces cultivated with various vegetables, and more. Even during the coronavirus pandemic lockdown in 2020, this space continued to be usable for the assignees. The average social profile is made up of retirees, but there are many employees and especially associations and schools who have decided to participate in the initiative. In fact, these gardens have also assumed an important pedagogical function with guided tours for schools.

According to Barthel *et al.*,<sup>22</sup> urban gardens play a critical but hardly appreciated role in ensuring urban food production and associated ecosystem services. They offer an exclusive and peculiarly effective means of retaining and transmitting collective memories of how to grow food and manage the regulatory ecosystem services required to do so.

The urban garden represents a very concrete connection between urban reality and rural culture, insofar as it supports the transformation of cities and allows to maintain relationships with the original rural vocation of the place.

## CONCLUSIONS

According to Heynen,<sup>23</sup> despite often being neglected by urban studies, environmental issues have always been central to urban change and urban politics. Throughout the 19th century, visionaries of all sorts lamented the ‘unsustainable’ character of early modern cities and proposed solutions and plans that would remedy the socio-environmental dystopias that characterised much of urban life.

Contemporary cities, despite their different and multiple dimensions and structures, have to face, even more frequently, a series of risks, exacerbated by climate change, political instability, social and economic dynamics.

This is why large urban areas, while playing a major role in the environmental problem, have increasingly become key players in the definition and implementation of strategies to fight climate change. Cities have become more and more assertive to position themselves



**Figures 3 and 4:** Social garden in De Filippo Park in Ponticelli

Source: Amato



as globally relevant actors in recent years, assuming a position of centrality in the global context. According to Beck,<sup>24</sup> in a post-national world, the global city might reconquer a central position similar to that which they occupied long ago in the pre-national world. The city level can also substitute the traditional vertical forms of governance by forms of horizontal governance, as can be seen in diverse urban initiatives, such as the creation of transnational networks of cities and other subnational authorities in the climate change context.<sup>25</sup>

Thus, the issue of climate change has been entirely inserted into urban agendas, both to find instruments and strategies aimed at reducing greenhouse gas emissions and to increase urban resilience in the face of the several impacts of weather and climate events. Today cities represent the main field of experimentation in sustainability principles and climate-resilient methods, in order to implement environmental solutions in a multi-scalar perspective.

The resilient city envisages the transition to a model of urban regeneration, which sees the participation of local government and all communities in its process. In fact, inclusiveness seems to be the key to extending resilience beyond the best practices of the international community and the individual states that make it up, also extending it to the *modus vivendi* of the community in order to share and disseminate new ideas that can be replicated globally.

Following the idea of Davoudi *et al.*,<sup>26</sup> cities should develop proactive and site-tailored climate strategies, based on local communities' capacity for active living and addressed to improve their capacity to cope in the short term with climate impact (persistence), to continuously adapt in the face of changing conditions through incremental adjustments

(adaptability), and to innovate in the long term (transformability) by introducing fundamental changes within and across urban systems.<sup>27</sup>

Given the strong relationships between resilience, adaptation to climate change, mitigation and reduction of the risk of disasters, the increase of urban resilience through the practice of social gardens can be inserted into a framework of sustainability and therefore be considered as a tool at the service of the European green deal.

The model of De Filippo Park gardens represents an example of a response on a local scale that also takes into account the specificities and priorities of the territorial contexts in which it is inserted. The entrusting of the plots of land has led to a positive recovery of the agricultural vocation of the place, helping to create a spirit of community and solidarity between very heterogeneous groups of people.

Overall, however, the experience of Naples shows that the city is not yet ready to fully face the green shift. The green policies are still too discontinuous and variable in intensity, which seems to be a common issue today in all the Italian territories.

The metropolitan area of Naples has recently launched some initiatives related to this issue, such as the financing of municipal interventions for the increase of green areas and the start of the process of drafting a green plan on a metropolitan scale. It is, however, difficult to understand whether and how these issues can be further integrated into the ongoing redefinition of the Metropolitan Territorial Plan. Past attempts to move towards an ecological and smart city (Naples Smart City project) seem more tokenistic than actual.<sup>28</sup> Too often they end up mortifying and suffocating the most vital and generous thrusts of civicism, rather than encouraging them

through the effort to create propitious ecosystems, including regulatory ones.

Urban green is also an expression and experience of active citizenship, which in the key of subsidiarity supports and supplements public administration. The COVID-19 pandemic has demonstrated that wider and sometimes shorter supply chains are needed to affirm periods of uncertainty. Urban gardens, the artefacts they contain and the social processes they enable, serve as collective memory devices for transferring long-term socio-ecological memories of how to grow food and successfully overcome food shortages during economic crisis in cities.<sup>29</sup> The hope is therefore that the model of the Ponticelli social garden can represent only one piece of a broader plan to revalue abandoned or unused areas, in order to promote new forms of integration and social cohesion, making the city more resilient through the care of urban greenery and agricultural practice.

## AUTHOR'S NOTE

This paper is written in full agreement by the two authors. In compliance with the Italian evaluation indications, the first section is attributable to the two authors, the second to Fabio Amato, the third and fourth to Lucia Simonetti.

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  16. Specific planning interventions to designate green belt to protect the environment.
  17. The construction of the ecological network represents a framework within which to integrate and systematise the urban projects that the municipal administration has already started (or intends to start): for example, the projects relating to parks and green areas, those that refer to the operations of 're-appropriation of the sea' or even those that act, insisting on different sectors, on the quality of urban life.
  18. Across Europe, the impetus for allotment gardening was primarily food shortages. Also ubiquitous are the rise and fall of allotment gardening preceding and following food shortages caused by economic and political crises. This trend is most notable during the Second World War, see Barthel, S., Parker, J. and Ernstson, H. (2015), 'Food and Green Space in Cities: A Resilience Lens on Gardens and Urban Environmental Movements', *Urban Studies*, Vol. 52, No. 7, pp. 1321–1338. In Italy, urban gardens, originally called 'allotments of war', appeared for the first time in 1941, when lack of food established the ideal conditions for the cultivation of food in any vacant lot, especially in urban areas.
  19. Attademo, A. (2019), 'Ponticelli. Laboratorio Trasformare il Territorio', available at [https://www.researchgate.net/publication/338047643\\_Ponticelli\\_Laboratorio\\_Trasformare\\_il\\_Territorio](https://www.researchgate.net/publication/338047643_Ponticelli_Laboratorio_Trasformare_il_Territorio) (accessed 1st June, 2021).
  20. D'Ambrosio, V. and Leone, M. F. (2015), 'Controllo dei rischi del cambiamento climatico e progettazione ambientale per una rigenerazione urbana resiliente. il caso applicativo di Napoli Est/Climate change risks and environmental design for resilient urban regeneration. Napoli est pilot case', *Tèchne*, Vol. 10, pp. 130–140.
  21. The Services for Drug Addiction (Sert), are the public services of the Italian National Health System (SSN), dedicated to the care, prevention and rehabilitation of people with problems from abuse and addiction to psychoactive substances such as drugs or compulsive behaviors such as pathological gambling.

22. *Ibid.*, ref. 18, Barthel, *et al.*
23. Heynen, N. (2006), 'Green urban political ecologies: Toward a better understanding of inner-city environmental change', *Environment and Planning A*, Vol. 38, No. 3, pp. 499–516.
24. Beck, U. (2014), 'How Climate Change Might Save the World', *Development and Society, Climate Change and Social Risk*, Vol. 43, No. 2, pp. 169–183.
25. To support climate action, several cities formed cooperative networks such as the C40 Cities Climate Leadership Group, the Global Covenant of Mayors and the International Council for Local Environmental Initiatives, see Heikkinen, M., Karimo, A., Klein, J., Juhola, S. and Ylä-Anttila, T. (2020), 'Transnational municipal networks and climate change adaptation: A study of 377 cities', *Journal of Cleaner Production*, Vol. 257, No. 120474.
26. Davoudi, S., Brooks, E. and Mehmood, A. (2013), 'Evolutionary Resilience and Strategies for Climate Adaptation', *Planning Practice & Research*, Vol. 8, No. 3, pp. 307–322.
27. Galderisi, A. (2018), 'The resilient city metaphor to enhance cities' capabilities to tackle complexities and uncertainties arising from current and future climate scenario', in Galderisi, A. and Colucci, A. (eds), *Smart, Resilient and Transition Cities Emerging Approaches and Tools for A Climate-Sensitive Urban Development*, Elsevier, Amsterdam, pp. 11–18.
28. The smart city index 2020, which uses sustainability as the primary driver of the smart city, places Naples in a rather low position, especially in relation to sustainable mobility, data available at [https://assets.ey.com/content/dam/ey/sites/ey-com/it\\_it/generic/generic-content/ey\\_smartcityindex\\_sostenibilita\\_marzo2020.pdf](https://assets.ey.com/content/dam/ey/sites/ey-com/it_it/generic/generic-content/ey_smartcityindex_sostenibilita_marzo2020.pdf) (accessed 1st June, 2021).
29. *Ibid.*, ref. 11.