

Science for Environment Policy

Urban gardens provide many ecosystem services to Barcelona residents

Urban gardeners in Barcelona, Spain, identified 20 ecosystem service benefits, from pollination to environmental learning, in a recent study.

Cultural ecosystem services — mainly related to the opportunity for residents to interact with nature — were the most common and highly valued of the ecosystem services identified.

Currently half of the world's population lives in cities, and this figure is expected to rise to 60% by 2030. Developing sustainable, liveable and resilient cities is, therefore, one of the major challenges in urban policy and planning. [Green infrastructure](#), such as urban gardens or nature areas, can form an important part of cityscapes and provide a number of benefits to residents. The EU has produced a [Green Infrastructure Strategy](#) in order to promote green spaces and contribute towards its [2020 Biodiversity Strategy](#).

Communal gardens can provide a number of ecosystem services within urban areas. These include contributing to human wellbeing by cleaning [air](#) or [water](#), providing habitats to encourage [biodiversity](#), and also 'cultural services', such as providing opportunities for recreation and environmental education. In Barcelona, the City Council recently developed a 'Green Infrastructure and Biodiversity Plan'¹, a strategic plan that recognises urban gardens as important components of urban green infrastructure.

In this study, researchers explored the various ecosystem services provided by 27 urban gardens in Barcelona through interviewing and directly observing garden users and consultation with urban planners. Interviewees included members of the Network of Community Gardens of Barcelona, an association which coordinates urban gardening initiatives. In total, 44 garden users were interviewed.

Ecosystem services identified by the respondents were categorised into the type of service provided ([provisioning, regulating, habitat or supporting and cultural services](#)), to indicate whether services provide mainly ecological, economic or social benefits. A further 201 gardeners were surveyed to assess the perceived importance of the ecosystem services identified from the interviews.

Meetings were then held to share the results of these surveys with members of Barcelona City Council's Green Space department and city planners involved in developing green spaces to support gardening programmes. Local planners indicated that the results would support efforts to promote urban gardens in the city.

Twenty different ecosystem services were identified by the gardeners, with 'cultural ecosystem services' the most frequently and highly valued. This service comprised 12 subcategories, including: learning and education; social cohesion and integration; maintenance of cultural heritage; relaxation and stress reduction; and political fulfilment. Within this category, 'learning and education' was the most widely acknowledged of the specific ecosystem services identified.

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**19 August 2016
Issue 467**

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Source: Camps-Calvet, M., Langemeyer, J., Calvet-Mir, L. & Gomez-Baggethun, E. (2016).

Ecosystem services provided by urban gardens in Barcelona, Spain: Insights for policy and planning. *Environmental Science & Policy* 62: 14-23. DOI:10.1016/j.envsci.2016.01.007.

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To cite this

article/service: "Science for Environment Policy":

European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.

1. Barcelona's Green Infrastructure and Biodiversity Plan: <http://ajuntament.barcelona.cat/ecologiaurbana/sites/default/files/Barcelona%20green%20infrastructure%20and%20biodiversity%20plan%202020.pdf>

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Urban gardens provide many ecosystem services to Barcelona residents (continued)

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2. Towards an EU research and innovation policy agenda for nature-based solutions & re-naturing cities:
<https://ec.europa.eu/programme/s/horizon2020/en/news/towards-eu-research-and-innovation-policy-agenda-nature-based-solutions-re-naturing-cities>

The researchers acknowledge the limitation of consulting garden users who are already likely to have a positive appreciation of the services provided by urban gardens. Despite this, they say the results demonstrate the positive role of urban gardens in raising environmental awareness, promoting community engagement in environmental stewardship and creating opportunities for recreation.

Urban gardens can also form part of [nature-based solutions](#) to challenges in European cities, including restoring abandoned or neglected areas and promoting social inclusion. A recent report² by the European Commission's expert group on '[Nature-Based Solutions and Re-naturing Cities](#)' refers to social inclusion and the reduction of economic inequalities as a Europe-wide challenge in urban policymaking.

Many of the gardeners within this study, which included less privileged social groups, such as migrants, the elderly and the unemployed, reported that they viewed the gardens as an opportunity for social interaction with other gardeners and city inhabitants. The study's authors conclude that urban gardens are, therefore, an effective nature-based solution for policies aimed at improving quality of life within cities.

