Enhancing resilience and quality of life through the ecosystem services provided by urban community gardens. Case study of the municipality of Madrid, Spain.

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Abstract

Urban gardens and other green urban areas can substantially contribute to enhance resilience and quality of life in cities through the generation of ecosystem services. These services include regulation services such as air purification, noise reduction, or habitat provision for biodiversity as well as diverse provisioning and cultural services. Over the last decade, but especially since the start of the economic crisis in Spain by 2008, urban community gardens have emerged in the municipality of Madrid driven by neighborhood organizations and several social movements. Most of the existing community gardens in Madrid are integrated in a network – the Network of Urban community Gardens of Madrid – which currently gathers more than 30 gardens. Urban community gardens have been also called urban green commons as they are dependent on a collective organization and management. In this study we examined the influence of these gardens on well-being and urban resilience through the characterization and valuation of the services generated and the management practices developed in them. For this aim we conducted from May 2012 to June 2013 semi-structured interviews and surveys to collect data from 20 community gardens and 162 informants. We chose a non-monetary approach for the valuation of ecosystem services through the use of a Likert scale. Results reveal 18 services generated by urban community gardens including provisioning, regulating and cultural services, being the latter the most abundant and better valued. These ecosystem services differ from other valuations performed in different agroecosystems, including different types of home gardens. Within the cultural services category among the better valued were the enjoyment associated to plant growing, socialization and environmental education/knowledge sharing. Within the regulating services maintenance of soil fertility, pollination and maintenance of local varieties were among the most valued. Finally, provisioning services related to food production were among the least valued. The results of this valuation are intimately related to the management practices developed in the gardens including direct democracy practices and agroecological management practices. The study highlights the ecological and social values of the gardens currently omitted in urban green areas management and planning. The links between ecosystem services and social-ecological resilience in cities are analyzed in the light of our results.

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