Farming the Eternal City

A first spatial database on urban agriculture in the city of Rome

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Urban agriculture (UA) has been acknowledged for several positive effects such as access to fresh food, human activities moderation, agro-biodiversity and social and cultural relationships.

In the city of Rome due to social and economical trends this kind of activities are spreading, but so far very few attempts has been addressed to inventorying the UA areas (e.g. community gardens, residential gardens, school gardens, illegal vegetable gardens, urban farms, etc.) through Earth Observations techniques. Some mapping experiences have been carried out but all lack of a well established methodology to be applied for a complete inventory.

Researchers from the National Institute of Agricultural Economics (INEA) have just developed a methodology for mapping all the cultivated parcels in the city by photointerpretation and by exploiting the features of the most used web-mapping services (e.g. Google Earth, Google Maps and Microsoft Bing Maps). Google Earth has been used as basic tool for visual interpretation and polygon digitalization, while other services has been used for the availability of additional features (e.g. the 45° view of Microsoft Bing Maps). The integration of the web-mapping services combined with ancillary data improved the UA sites detection allowing to define both the land cover and in some cases the land use. Some field controls are currently ongoing to evaluate the results accuracy.

The current version of the database contains more than 4,000 polygons spread over a total surface of about 35,000 hectares with a total farmed area of about 400 hectares. The geodatabase was realized by interpreting the high resolution images of Google Earth for the year 2007 and 2013 allowing further analysis on the temporal evolution of the phenomenon. For example, the results of the diachronic analysis show a strong increase of the number of residential gardens (+13%) and the relative farmed area (+2 hectares).

This kind of approach based on the integration of the web-mapping services for building urban agricultural land use datasets is cost-effective compared to processing commercial remote sensing images. The inventory can enable administrators to perform analysis about the interactions between agricultural activities and the urban environment (e.g. avoiding to perform activities in polluted areas) and to enact informed policies for green and vacant urban spaces management.