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Ecosystem services, monetary value and social sphere: a specific-vegetation software suite on a urban-scale project

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The concept of ecosystem services (ES), as a set of components of the natural capital that provide products and services directed to humans, was born around the middle of the last century, reaching a more systematic definition in the early 2000s with the Millennium Ecosystem Assessment (MA, 2005). This issue is implicitly linked to popular research topics, such as climate change, population well-being, fight against hunger in the world and has undergone a significant increasing interest from scientific research since the SDGs subscription, defined in the 2030 Agenda.

With the thrust of the investigation into this new branch, various tools have been created aimed at dealing with ecosystem services, not only from a qualitative point of view but in quantitative terms. The present work aims to analyze the applicability of a specific SE quantification software for vegetation, based both on the use of meteorological data and on the acquisition of field data and capable of returning outputs relating to the main components: environment (air quality), soil (use and cover) and water (quality and quantity of water runoff, with a focus on vegetation hydrology). The combination of this eco-hydrological model with a monetary ES evaluation is also interesting: although the economic model considered is particularly simple and therefore characterized by a non-negligible standard error, it is important to underline the direct and spontaneous association between SE and monetary quantification considered by the software, unlike how at the end of the last century the economic value of nature was still neglected.

Finally, the main results of a ES quantification project in an Italian urban context will be discussed, underlining the environmental improvement to the surroundings and the social benefits for the population.