The performance of urban standards as a way of evaluating the efficiency of facilities in the municipalities of inland areas.

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Abstract

In the inland areas, the organization of facilities and services, and their spatial distribution are challenges that can be overcome through the research of new tools.
In this paper we define the assessment of performance of urban standards. The methodological proposal is divided into several steps and implemented into a GIS environment. We developed a spatial index, that is function of a set of indicators that refer to the population and the area of influence of the generic urban facility, and which could be considered one of the basis of the strategic choices of the urban plan.
The methodology was applied to a municipality in the inland area of the Ancient Volceij (South Italy).

Keywords

Urban standards, Facilities, Inland areas, Structural planning, Quality of life.

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Introduction

A major part of the Italian territory, characterized by a spatial organization based on "small towns", is included in the concept of "Internal Areas".
The criterion of "distance" (remoteness) between the territories and the cities offering essential services constitutes the crucial definitive element that is adopted in conceptual construction of the perimeter of the internal areas.
One of the main difficulties of the inland areas is the fact that the provision of public services is characterized by a high cost-benefit ratio.
It seems clear that the most municipalities can share the concrete implementation of services and facilities through a policy planning for services to supra-municipal nature and, in general, the definition of common parameters and criteria of quality and of localization.
However, there is a category of services that can't be considered at the inter-municipal level. This category includes urban planning services, i.e. services that are explicitly defined in the urban planning, which characterize the liveability of the town and are strictly connected to the urban quality and the general well-being of society. Moreover, those services are centralities in the process of redevelopment of the city, of the reorganization of the qualitative/quantitative supply and the territorial endowment. (Moraci, 2007)
In order to meet the real needs of local communities, which have changed their appearance, elastic and flexible new facilities must be combined also with the change in the method for their evaluation. There is the transition between the concept of urban standards based on quantity and the one based on performance.

Material and methods

In order to define and design the performance of urban facilities, some aspects, such as the location, the area of influence, the accessibility, and the spatial distribution, become important to their new assessment.

Case study

The proposed methodology has been tested on the municipality of San Gregorio Magno in Campania, in the province of Salerno (Fig.2 – 0). San Gregorio Magno is situated in the inland area of the Ancient Volceij (South Italy): a context in which actions of territorial government and of cohesion policies are required to increase the qualitative supply of the overall system.

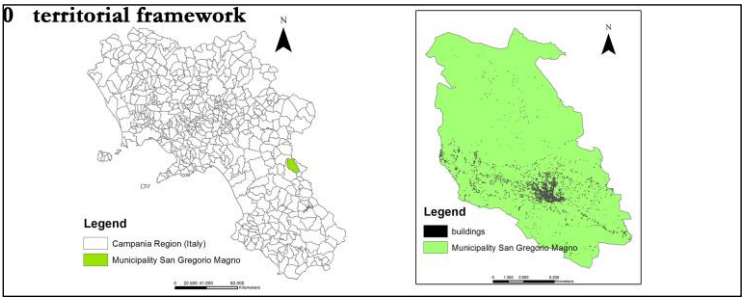

Figure 1 – San Gregorio Magno. Geographic position.

The initial assessment of per capita deficit of urban standards (DI 1444/68 - Lr 14/82) sets out a strategy for designing a net of facilities throughout the municipal territory.
Despite the introduction has emphasized the use of new forms of standards, for the case study we will analyse the four classic categories: green spaces, car parks, schools, and facilities of public interest.

It is important to emphasize that the deficit amount of facilities mainly concerns the public parks and the schools. By applying the following methodology we will prove, that for their incorrect distribution, there is also a deficit of car parks and facilities of public interest.

Methodology

The methodological diagram for the evaluation of the performance of urban standards, that has been implemented in a GIS environment, consists of different phases (Fig. 1):

- construction of a database;
- definition of an index to provide services;
- evaluation of the strategic choices of the urban plan.

The performance of urban facilities is defined in terms of number of people who can really benefit from facilities. This amount depends on the scope of the facility, which is defined as the maximum distance over which the user is no longer willing to bear the cost , in terms of time, necessary for arriving at the point of service delivery. (Christaller, 1933). The scope then results in the identification of the area of influence of the facility.

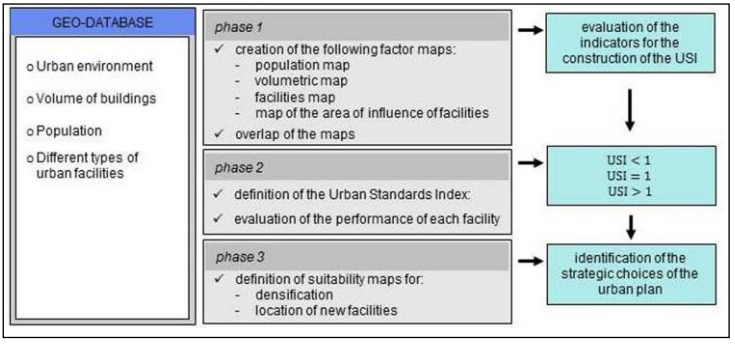

Figure 2 – Flowchart of the methodology.

The areas of influence have a different size depending on the facilities. The threshold values of the areas of influence have been defined by literature and technical manuals as a function of population density (Colombo *et al.*, 1996; Cnr,1986; Mercandino, 2006).
From these considerations, we defined the Urban Standard Index (USI) for each type of facility (i):

$$USI_i = \frac{A_i}{P_i} \times \frac{1}{d_{N,i}} \qquad i=1,2,\ldots n$$

with:
P_i= population which use the service. It is estimated by the combination of the population map and the map of the area of influence of facilities;
A_i= the land area of the facility;
$d_{N,i}$= coefficient of homogenization, which coincides with the endowment of urban standard, as defined in the DI 1444/68.

Discussion

The combination of the areas of influence of the facilities with a USI higher than the unit value identifies a suitability map for localization of possible actions of densification, according to a scale of values ranging from maximum to minimum (Fig. 3 – a, b).
Similarly for the combination of the areas of influence for the facilities with a USI less than unity, we will obtain a suitability map for the location of the new facilities (Fig. 3 – c, d, e, f).

Obviously, in order to ensure the mixité of services to the population, the priority of location of new facilities should be chosen first of all in the intersection of all the areas of influence of the different facilities (car parks, schools, facilities of public interest and green spaces), at their maximum value.

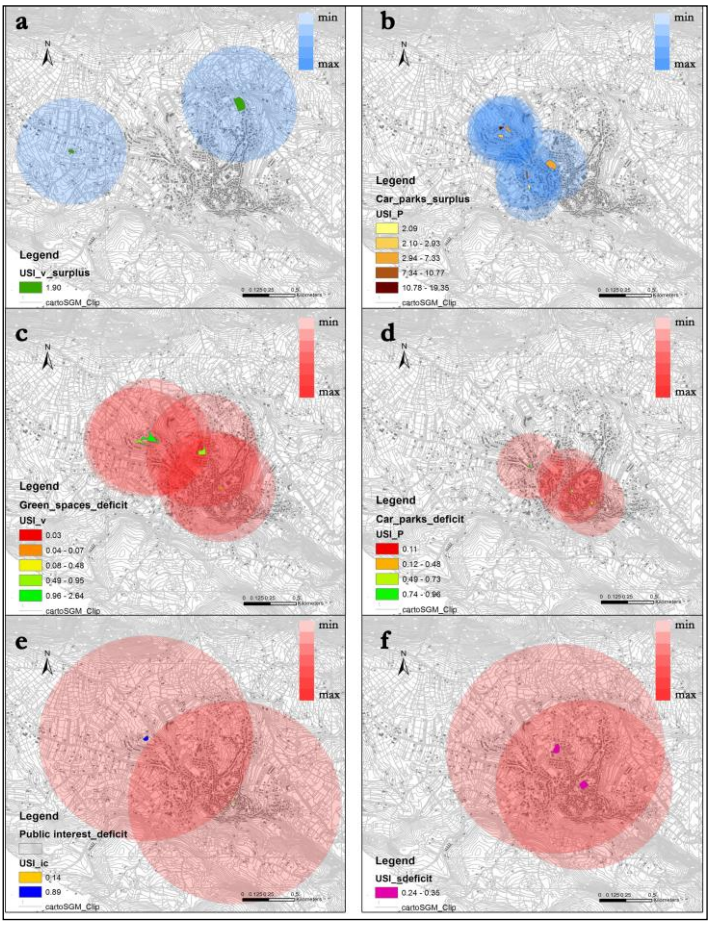

Figure 3 – Application to San Gregorio Magno

Conclusion

The enhancement of the municipalities in the inland areas must be addressed both in terms of urban and architectural conservation, both the overall quality and liveability, tying the preservation of existing property with the land use and its management.
The reorganization of the services and facilities is clearly guided by reasons of efficiency. In fact we are looking for more efficient solutions to the organization, in order to contain the spending growth, by trying to ensure best services (i.e. more effective services) to the citizens.
The tested methodology becomes a real method of verification of facilities of performance, starting from a database routinely built for designing the municipal urban plan.
The defined suitability maps identify one of the criteria of approach to the location choices in the municipal urban planning, which must be combined with other criteria related to the sustainable urban transformation. However, this criterion assumes special importance as it helps significantly to the sustainability of choices. In fact, it allows to optimize the existing urban structure from the economic point of view, it guarantees the functional mixité by raising the quality of life per capita in social terms, and, in addition, it minimizes the impact produced by the new realizations from the environmental point of view.

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