Green-space in Urban Areas: Evaluation of Ficiency of Public Spending for Management of Green Urban Areas

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***Abstract*-Green spaces are often intended to support urban populations' quality of life, they have to be considered in connection with the places where people live and in a way that reflects their point of view. The most important aspect to consider is "functional level", intended: as green space inside and outside the city that are not substitutes for each other and both are perceived in different ways. Urban greening should be evaluated in relation to the relevant functional scales, ranging from street to city level. An important problem is the restricted economic situation of urban administrations. There is less money for an increased number of management objectives due to more intense use of urban forests, parks or green spaces in general. (Moll et al., 1995; Ware, 1994)The functional classification of green areas constitutes the first indispensable step for planning and for a better use of green areas. It's important to obtain such a goal through a detailed description of all green spaces, their characteristics and space development. Moreover, it is necessary to know the agronomic requirements, the pathological emergencies of this green patrimony. Finally, it is important to determine the costs and benefits of technical interventions. Normally the costs of maintenance are readily calculated and conspicuous. But the benefits provide are spread over many areas, making them hard to quantify and easy to overlook. Therefore it would be necessary to create a data- base that documents public green areas, playgrounds and tree stocks. This paper presents a case for the town of Florence (Italy) where we analyse the public funding and financial aspects of the maintenance operations and management oftwo investigated areas.**

Keywords-Urban green areas, economic value of parks, costs of green maintenance, urban green management

I. INTRODUCTION

Green spaces are often intended to support urban populations' quality of life, they have to be considered in connection with the places where people live and in a way that reflects their point of view. The most important aspect to consider is "functional level", intended: as green space inside and outside the city that are not substitutes for each other and both are perceived in different ways.

In this study we would like to present a close thematic examination of the Municipality of Florence. Our aim is twofold: we wish to highlight the question of annual expenses faced by the municipal administration for urban green-spaces and also to present an example of the maintenance of an historic garden.

II. DEFINITIONS OF URBAN GREENSPACE.THE RELEVANCE ASSUMED IN SPECIALIZED LITERATURE.

With the generic term green-space we define the areas that are naturally or artificially endowed with vegetation. In Italy the term urban green-space refers to a space "entirely covered or covered only above with vegetation, located in the center of a city or in the periphery" (Van Herzele, Wiedemann; 2003). Over time, the deterioration of the environment adjacent to the great metropolitan areas has increased the necessity to spread green-spaces for recreation and leisure time inside the urban fabric. Already in the mid 1800's in English and French cities they had begun to plan wide swathes of green-space as true and proper elements of ornamentation and improvement of the environment (Chiusoli, 2004).

In those same years in the United States, F.L. Olmsted planned numerous rural parks in urban environments. At the end of the century (1898) an English scholar, Ebenezer Howard, proposed such ideal urban order for the creation of a city "with low construction density" with a planned presence of green areas: a form of settlement in which the ordered urban 19th Century combined with a rational presence of green-space (garden city). In Rome in the 1920's two new residential areas were built, the Garbartella and Città Giardino Aniene. In the latter the urban plan for the quarter, which took into account a surface of 150 hectares was explicitly based on Howard's principles, in the wish to give life to an environment that would be greatly appreciated also from the esthetic point of view, one made up of small villas and gardens with trees (Panzini, 2005).

The term "urban green-space", as hinted at previously, identifies those portions of territory not constructed on, of private character (green-space intended to increase the enjoyment of the owner, a private subject) or of a public nature (green-space intended to increase public use through discharge of functions in favor of average citizens), that coexist with the structures and the manmade features and are intended for enjoyment and health of the citizens on the whole (Iuculano, Ubaldo, 1992).

One classification better articulated dealing with the work of numerous authors (cf. Bovo, 1998; Konijnendijk, 2003; Polelli, 1997; Pirani, 2004) is that which places on the same plain the "green-space of ornamentation", "functional green-space" and "private green-space". The criterion of distinction adopted is tied to property: public green-space and private

green-space. Such a choice is dictated by the observation that the topic deals with public urban green-space areas, and that also it is difficult to distinguish a "functional green-space" in a strictly private setting. At any rate, on the basis of the criterion of property, the phrases "ornamental green-space" and "functional green-space" represent the first great distinction of the public green areas. It is important to emphasize that in our territory private green-space, although its enjoyment may be at the exclusive advantage of the private citizen, must however be subject to the rules, broadly speaking, such as the regulations for green-space, which is "one of the most widespread conservation tools" (Semenzato 2003). Private green-space, although intended to satisfy the particular needs of restricted groups of people, can secondarily take on public functions, for example, for landscape or environmental characteristics, or in the case of citizen areas, where property analogous to public property is so scarce as to require an integration of functions with those of private property.

Public green areas on the one hand represent ornamental green-space (historic gardens, urban parks, wooded strips along highways, neighborhood green-spaces, conservation forests and urban woods) and on the other hand the so-called functional green-space represented by green-space for sports, scholastic, health and/or recreational purposes. The "woods in the urban area" is not considered as synonymous with public green-space but becomes one of the components in the category ornamental green-space. That which finds justification in the definition of urban forest or those natural arboreal formations that, despite being situated immediately on the outside (2-6 kilometers away) of the extended city (peri-urban woods, perhaps) represent a place easily accessible to the citizens.

The difference between "urban park" and "recreation area" considers the fact that one falls into the area of ornamentation and the other into that of functional areas, and it also looks at the respective dimensions and location of each one within the urban setting. In fact, "urban park" means a small wooded area situated inside a residential zone, while "recreation area" refers to an area of greater extension, often placed far from the center of the city and furnished with recreational equipment.

The wooded strips along roads represent "slender borders of vegetation scattered along streets and highways, with true, proper primary functions of filtering the atmosphere and the reducing noise pollution", without forgetting, however, that aesthetics also matter. Finally we should define the concept of "protection forest", in effect, a narrow belt situated between residential zones and the main arteries of the city. As far as regards the concept of "historic green-space" (cf. Segre, 2004) it is often emphasized that this, whether "a simplistic interpretation of gardens and parks to be considered as public interest", or in terms of their judicial ruling, to comply with the sense of the 1939 Laws 1089 and 1497, or for historic and artistic attribution, today's 1999, Testo Unico no. 490". The 1939 Law 1089 regarding all works of historic and artistic interest considers gardens as monuments and encompasses elements that are at least 50 years old in the definition of "historic and artistic interest".

III. AVAILABILITY PER CAPITA OF ENJOYABLE URBAN GREEN-SPACE IN ITALY

If we examine the distribution of urban green-space in our country by means of one of the more relevant indicators of the distribution of urban green-space, that is, square meters available per inhabitant, we have considered the availability and density of urban green areas in the more populated towns. It emerges that Rome, the capital, has the largest surface: 131 square meters per capita in 2008. Values much lower are in Milan (16.2) and Bari (14.3) (Table 1). If we consider all Italian towns, however, Savona, Lecce, Chieti, Ascoli Piceno, Crotone, Taranto Imperia have less than 5 square meters per inhabitant. The average urban green per capita in Italian towns is about 94 m2.

We must keep in mind that the data on this availability of enjoyable green-space in urban areas, prevalently traceable to parks and gardens (excluding either park area or urban area that falls within the municipal territory, or green areas not available for use, such as cemeteries or agricultural land), are often discontinuous. In some cases the values declared as "parks and gardens" include also areas not able to be configured properly as urban green-space freely enjoyable to the citizens (for example, wooded areas situated beyond the urban areas, if not actually combined with "green areas"). Besides this, where systematic and formalized outlining of the urban green-spaces is lacking, the data can refer either to the green laid out by the Regulation Plan, or in values based on information coming from non-homogenous data banks, often run by offices. In more than one case, significant incongruities have been pointed out between public administration data and that on the green-space effectively enjoyed by the population.

TABLE 1. ENJOYABLE URBAN GREEN-SPACE (M2 PER INHABITANT OF USEABLE GREEN-SPACE IN URBAN AREAS.

Town	Availability of urban green (square meters per capita)		
	2000	2004	2008
Torino	15.8	19.6	20.4
Milano	13.7	15.3	16.2
Verona	46.9	53.0	64.0
Venezia	27.8	30.6	37.0
Genova	38.8	41.1	40.9
Bologna	33.1	34.5	36.6
Firenze	19.6	20.3	20.7
Roma	132.6	139.4	131.7
Napoli	27.7	27.9	29.1
Bari	13.8	14.2	14.3
Palermo	62.1	72.9	76.0
Messina	7.7	8.1	8.2
Catania	62.6	68.6	72.6
Italy	**88.4**	**93.7**	**93.6**

Source*: Istat, 2010.*

IV. GREEN-SPACE PLANNING AND MAINTENANCE: SOME FUNDAMENTAL CRITERIA TO BE ADOPTED

Deciding to create a green-space or to plant a tree is certainly an important event because it means contributing to the betterment of the public patrimony by modifying urban spaces. In this type of true and proper urban vegetation project, the key features that guide its success are good ideas followed up with good measurements.

It is erroneous that in planning an urban green-space more consideration should be given to the style of the project than to the achievement of "good measures". Applying good measures means, in effect, planning with knowledge of the biological cycles of the plants. The breadth and simplicity of planning are determining factors even if that means razing urban portions or emptying them of the useless or superfluous. After the artful planning the most important priority is surely the choice to maintain the urban green-space according to qualitative standards. An example to the contrary would be the case of planting rows of trees like hedges in areas of new edification without following up with adequate agronomic practices: in the end the plants perish. Analogous problems present themselves in those areas allocated for public gardens, where more often the lack of cultivation transforms them into not very welcoming settings and often into receptacles of refuse and/or of abandonment. It is a primary need for community administrations and provinces to invest in green-spaces, but they must also plan in advance the instruments designed for maintenance (Segre, 2004). Careful planning for good maintenance achieves a situation that avoids re-planning or substantial changes to the layout of landscape of the places. Ordinary maintenance operations to be carried out on a regular basis throughout the year, such as cleaning, weeding, path maintenance, pruning of hedges and small trees, ground work, mowing, small trimmings, seasonal plantings, cleaning of manholes and drains are distinguished from those of extra maintenance to be carried out over a cycle of years, such as major pruning, plant removal and topping of trees. In this study we would like to present a close thematic examination of the district of the municipality of Florence, with the aim of highlighting both the question of annual expenses faced by the municipal administration for urban green-spaces and also an example of the maintenance of an historic garden.

V. CURRENT SITUATIONS IN THE URBAN GREEN-SPACES OF THE MUNICIPALITY OF FLORENCE, MANAGEMENT ASPECTS

The City of Florence includes 200 Public Green-Spaces that are managed by the 5 Florentine Quarters through the coordination of the Office of the Metropolitan Area and Decentralization of the Municipality of Florence. The area occupied by public green-space (managed directly by the municipal administration) amounts to around 2 Km2, an area equal to barely 2% of municipal area. The percentage contribution furnished by the five Quarters is heterogeneously allocated, in that Quarters 1 and 3 fluctuate at values a little above 1%, Quarter 2 is at a level a bit higher (1.5%), while Quarter 4 exceeds it, if only by a little. Quarter 5 is slightly over the top (around 2%) of the average value registered for green-spaces in the entire municipal area (1.99%). It must be remembered, as for the aims of this comparison, that for Quarter 1 (the historic center of the city) is registered a surface area intended for green-space of only about 124.000 m2, but it should be noted that this area would be an entirely different figure if it did not include the gardens placed under the care of the Soprintendenza ai Beni Artistici (Superintendence of Artistic Properties), which certainly assumes a preponderant role in the municipal area of the historic center. We are thinking of the Boboli Gardens (4.5 hectares) and of the numerous gardens and historic buildings belonging to private owners such as Palazzo Capponi, Palazzo Frescobaldi, Villa Bardini, Giardino della Gherardesca etc. (Zoppi, 1996).

TABLE 2. QUARTERS OF THE CITY OF FLORENCE: SURFACE AREA AND DISTRIBUTION OF GREEN-SPACES

Quarters of city	Q_1	Q_2	Q_3	Q_4	Q_5	Total
N° green areas	19.00	51.00	40.00	83.00	54.00	***247.00***
Surface green areas (square kilometer)	0.13	0.35	0.26	0.71	0.58	***2.03***
Surface of the green areas of the quarters/ Total surface of the green areas	6%	17%	13%	35%	29%	***100%***
Average green surface area (square meters)	6,842.1	6,862.7	6,500.0	8,506.0	10,740.7	8,202.4
Complete surface area of quarters (square kilometer)	11.40	23.41	22.31	16.99	28.17	102.3
Percentage of green area to complete surface area	**1.14%**	**1.50%**	**1.17%**	**4.16%**	**2.06%**	1.98%
Residential population of each quarter	67,802	88,626	41,246	66,564	103,739	367,977.0
Resident per square kilometer	5,950	3,786	1,849	3,918	3,682	3,597.9
Residents to green surface areas	5,453	2,612	1,584	942	1,703	2,470.8
Square meters of green area per habitant	1.9	3.9	6.3	10.6	5.6	***5.51***

Source: Our elaboration data of the Municipality of Florence.

The results from a comparison of the data available from the Municipality of Florence show that the characteristics of the green-space in various quarters are uniform. We now see certain aspects emerging.

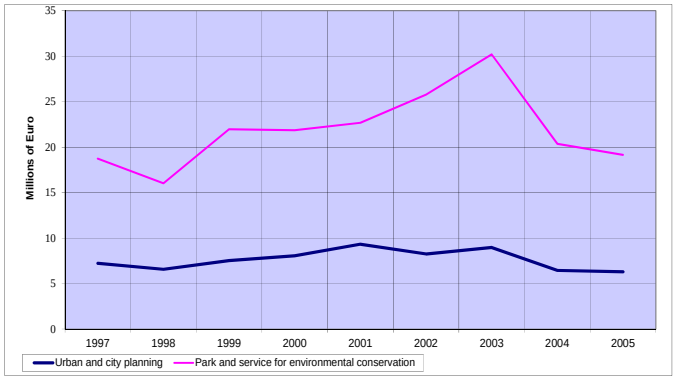
As regards the per capita endowment of green-space, the inhabitants of Quarter 4 can count on double the value (10m2) in respect to the average of the entire municipal area (5.5 m2), while Quarter 5, the most populous and extended maintains itself at levels decisively lower (c. 5.9m2). Such a circumstance gives evidence to the fact that Quarter 5 offers a number of green-spaces larger than in the rest of the city. It must be noted however that in this Quarter there is not an analogous availability of services provided to correspond to the extensive availability in terms of surface area: for example the sports structures of various types do not seem sufficient in respect to the resident population (Meloni, 2006). One aspect that all the Quarters hold in common lies in the homogeneous presence both of benches and of trees capable of guaranteeing shaded refuge from the hot summer days.

VI. XPENDITURES OF PUBLIC ADMINISTRATION FOR PUBLIC GREEN-SPACE

Financing of urban green-space is tied to municipal budgets of the individual administrations. In the case of the City of Florence we have made reference to the budgets from the period 1997-2005, endeavoring to extract the component of expense relative to maintenance and planning the individual areas. In particular, we have analyzed the financial aspect that includes capital funding expenses and current expenses subdivided between those intended for Urban Planning and for Management of the Territory and expenses meant for Parks and Environmental Protection of urban green-spaces. It was not possible in light of the data available to separate out expenses for each individual Quarter in that the information referred to the entire Florentine area. Graphs 1 and 2 report the flow of current expenditures and capital funding expenditures during the period 1997-2005 (Meloni, 2006).

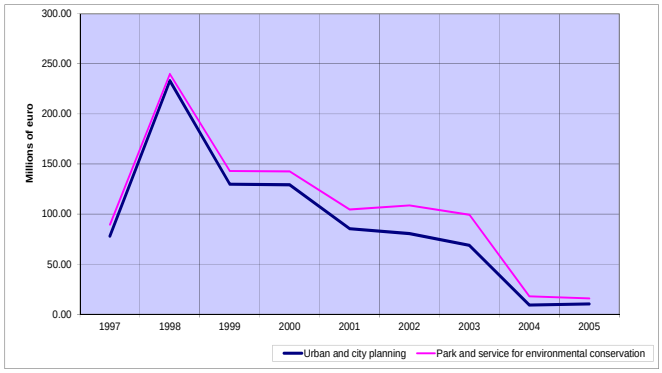
The statistic that appears most noticeable (the comparison is expressed in current value prices) is the decrease of allocations for green-spaces both in terms of current expenditures and in investments. In the latter case the decrease appears decisively more marked-82%, calculating the percentage difference on the total expenditures during the two years at the peak of the reference period (1997-2005). For the current expenditures, which represent the actual figure intended for the maintenance for green-spaces, the decrease is not uniform because at the end of 2003 the amounts allocated are shown substantially constant and in fact show a slight increase, but beginning in 2004 a reduction of 33% of the rise is recorded (determining the €20 million near 2004) confirmed by a last decrease in the following year.

If we look in greater detail at the data reported in Graph 1 and in the summary table (Tab.3) we can highlight that the sums for the maintenance intended for Urban Planning and Management of the Territory, included in an interval between 7 and 9 million Euros, present a trend at the time practically flat, while those that refer to Parks and Environmental Protection (ranging from 9.5 million to 21 million Euros) show a very slight growth (Graph 1), although in 2004 and 2005 the allocated funds are cut back notably. The corresponding costs in the capital funding, represented by figures decisively around 10 times greater, are characterized by great irregularities in the trend and by marked fluctuations between successive years (Graph 2) in the field at this time of a trend falling noticeably. Table 3 reports the percentage comparison that is recorded between current expenditures and those in capital funding in the course of the period under examination. Until 2003 maintenance expenditures (that is, current expenses) were very much lower than investments (capital funding expenses) and were valued at between 15% and 30% of the latter. Therefore we can deduce that there is in effect a tendency toward an increased incidence of such a percentage, a trend that is confirmed by the data relative to the years following up to 2003: current expenditures, though representing rather modest increments of value from 1997 to 2005, arrive first to equal (2004) the expenditures in capital funding, then to overtake them (by 20%) in 2005. The overall trend of the total outlays will, at any rate, significantly feel the effects of the only slight consistency of the current expenses.



Source: Our elaboration data of the Municipality of Florence

Figure1 Trend of Current Costs - Current Value- (1997-2005)



Source: Our elaboration data of the Municipality of Florence

Figure 2 Trend of Capital Funding - Current Value - (1997-2005)

TABLE 3 CURRENT CAPITAL FUNDING COSTS FOR ENVIRONMENTAL SECTOR OF THE MUNICIPALITY OF FLORENCE (VALUE IN MILLIONS OF EURO.)

	Current value cost			Capital Funding				
Years	Urban and city planning	*Parks and service for environmental conservation*	**TOTAL current cost**	Urban and city planning	*Parks and service for environmental conservation*	**TOTAL Capital account cost**	**TOTAL COST**	*Current cost/Capital funding %*
1997	7.23	11.50	**18.73**	77.91	11.56	**89.47**	108.20	20.9%
1998	6.57	9.48	**16.04**	233.21	6.78	**239.98**	256.03	6.7%
1999	7.53	14.44	**21.97**	129.79	13.16	**142.94**	164.91	15.4%
2000	8.07	13.79	**21.86**	129.28	13.36	**142.64**	164.50	15.3%
2001	9.33	13.36	**22.68**	85.35	19.19	**104.54**	127.23	21.7%
2002	8.26	17.51	**25.77**	80.48	28.15	**108.63**	134.40	23.7%
2003	8.97	21.23	**30.20**	68.68	30.57	**99.25**	129.46	30.4%
2004	6.45	13.92	**20.36**	9.14	8.62	**17.76**	38.12	114.7%
2005	6.29	12.87	**19.16**	10.19	5.56	**15.75**	34.91	121.7%

Source: Our elaboration data of the Municipality of Florence

This short examination of the municipal expense for urban green-spaces draws a rather worrisome picture: over the course of the years the ordinary available funding has diminished, as has that tied to funds in the Capital funding; on the contrary, thee has been a growth in the commitment of the municipal Administration for contemplated interventions, such as, substitution of numerous trees, greatly damaged by fungi and pathogens, in the citizen territory, creation of parking areas with the addition of green-space and/or other interventions of improvement of the curating of the green-space. Therefore financial funding that the municipal budgets have at their disposition every year remains insufficient, especially if one thinks about the importance that green-space assumes in a city such as Florence and one considers the future costs that will have to be sustained in order to guarantee sufficient maintenance.

VII. THE COSTS OF MAINTAINING AN HISTORIC GARDEN: VILLA STIBBERT

For the purpose of confirming what we have written, we report an analysis relative to the maintenance of an area of special importance in the context of gardens in Florence.

The area under consideration is that of the garden at the Stibbert Museum. The park around the museum, open to the public, constitutes an interesting case of green-space developed on the slopes of the hill Montughi, located to the north of the historic center of Florence. In 1908 the holdings passed, by way of inheritance, from Frederick Stibbert to the Municipality

of Florence, which from that time has conserved it as a museum of antique collections and as a public park. Due to the successive acquisition also of the park and of the Villa Fabbricotti (area adjacent to Villa Stibbert), the city Administration connected the two parks negotiating the obtainment of a piece of property of 2 hectares that separated them. There was formed, therefore a vast area of hilly public green-space (around 3-4 hectares) filled with historic memories and rich with vegetation and highly prized plants. Our study wishes to highlight the necessary costs of maintenance for the purpose of guaranteeing the best conditions of such a space of historical public green-space (cf. Fieni, 2004; Serci, 2004).

To develop a maintenance plan, a data archive was created to consider the following costs:

a) Costs of achieving the principal works necessary for the creation of green-spaces

b) Costs of maintaining the green-spaces (flowerbeds, trees, roadways, etc.)

c) Costs of management services (also considering forms of management contracted out, such as global service)

Other aspects always inherent in maintenance of green-spaces:

The obtainment of the costs of creating the principal works has come about through the examination of computed estimative metrics of the operations concerning the work in the area of the green-spaces in numerous areas of Italy, making a compilation of existent appraisals and of the technical information adjusted by various municipal administrations (Torino, Rimini, Ferrara, etc.). The data base created is composed of a combination of information and technical indications that can be organized as follows:

1) Average unit operative output (use of manpower and machinery of various types) for all the foreseen interventions in the area of special specifications;

2) Identification of the cultural interventions of maintenance with average unit operative output for each intervention;

3) Attribution, by means of an opportune calculation model that includes the average unit operative output and unit costs, in such a way as to define an average price (understood as a reference price) for every individual cultural operation.

These effected simulations offer us an idea of the annual cost for ordinary maintenance and that of maintenance under optimal conditions. In particular, they highlight what is necessary for accurate maintenance, in addition to a professionalism with which the work is carried out: also good financial funds on the part of Public Administration. If the expenditures relative to unforeseen events are included, such as, for example, interventions for tree rows, certainly the economic cost increases and undoubtedly becomes more difficult to sustain (cf. Moll et al., 1995; Ware, 1994).

At the present, our research activity is endeavoring to understand what part of public expense, classified as funds for public green-spaces, is absorbed by the carrying out of a bureaucratic-administrative nature that are not immediately perceived by the citizens. A more thorough knowledge of the costs strictly necessary for technical-agronomic management of green-spaces, as compared to the costs of the organizational structure of officials assigned to such functions and of the functions not strictly pertaining to the management of the green-spaces treated by these same officials, can contribute to improving the administration's management efficiency by providing for better services and lesser costs.

TABLE 4 COST FOR MAINTENANCE INTERVENTION OF SURFACE OF GREEN AREAS

	Ordinary conditions	*Optimal condition*
	€/Year	**€/Year**
Lawns	2333.44	2709.44
Flower beds	5400.00	11546.50
Hedges	2832.00	4404.00
Trees		5019.60
Various garden works	9462.40	6083.20
Total	**20027.84**	**29762.74**
Surface area subject to maintenance intervention (m^2)	*33800*	
Cost per square meter	*0.59*	*0.88*

Source: Our elaboration data of Quarter 5 and the Municipality of Florence

The fact remains, however, that the financial resources available in today's world are surely not sufficient for an optimal management of green-space (as in the example above where it is noted how optimal maintenance would require an increase equal to 50% of those funds normally sustained). It is therefore important to understand how essential it is to search for forms of financial aid even from sources outside the traditional ones (involvement of private enterprises, forms of outsourcing, funds from the European Union), especially if the objective that we envision is that of the attainment of a more elevated level of functionality and quality of urban green-spaces.

VIII. CONCLUSIONS

The importance of the green-spaces in an urban context is becoming more every day a topic of contention and of relevance for public opinion on the one hand and for the public administrations on the other. Often, in fact, the choices of urban policy are dictated by the restricted financial resources available, so that, if not accompanied by investments and extra provenances, they barely allow the carrying out of the interventions of ordinary administration.

Therefore, on the national and regional scene, numerous failings appear, especially those of positive examples of good management. An element that emerges from the reading of the vast scientific and popular literature existing about this topic is the "functionality" of the green-spaces. The classification of the different functionalities allow us, in fact, to identify the degree of intensity of benefits for the population in relation to the costs necessary for the development and maintenance of such areas. The absence or the scarcity, however, of the data relative to the economic value of potential benefits, such as those offered by greater opportunities for recreation, from the

increase of physical and mental wellbeing of the populace, of the betterment of air quality and of micro-climactic conditions, often renders difficult the choices on the part of the public worker who does not have adequate tools of evaluation for an efficient allocation of resources. An important problem is the restricted economic situation of urban administrations. There is less money for an increased number of management objectives due to more intense use of urban forests, parks or green spaces in general (Moll et al., 1995; Ware, 1994). The employment rate in the sector of public green services is difficult to maintain at levels of previous prosperous times. There is a lack of continuity in the economic chain, as the costs are calculated on a short-term basis, whereas the benefits become evident in the long run (Nowak, 1993). The decline in environmental quality in all residential areas due to the loss of greenspace, and specifically trees, leads to questions as regards the efficiency of greenspace policies. More attention needs to be paid to greenspace planning and management. In particular there is a need to control more carefully the process of increased density in the more affluent residential areas with bigger gardens. Economic cuts are an obtrusive threat to green areas. The park administrations, which are responsible for a large part of the city's green areas, have been hit hard in recent years by cuts in appropriations and personnel.

Several interesting results have been illustrated in a contribution of Riccioli and Scozzafava (2010), who shows the results of 495 questionnaires realized to the visitors of Florentine parks. In this study has been defined the average willingness to pay (WTP) for a better urban areas planning and no limit access to parks. Highest value is 4395 euro per year while the lowest is 4220 euro per year. The results point out that the value of "willingness to pay" expressed by the citizens is only partially compatible with both the costs of investment as well as those of management. Probably it needs a more important financial support that can be obtained from the involvement of private supporters as club of citizens, Bank Foundations and other organisms.

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