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1. Introduction

Throughout the evolution of human populations, there have been profound transformations in the occupation of the territory. The vast majority of the original landscapes of our planet have undergone significant modifications by human activity. More specifically, in Europe, the hunter-gatherer stage they have led to the disappearance of primeval forests. These have been replaced, in the areas where greater control was exercised, by intensive agricultural territories and large cities, in the longer term [1–3].

Initially, the type of distribution was predominantly rural, with low density and small cities with poor communications. In recent decades, we have witnessed a change in the forms of land occupation, with an increase in artificial surfaces. This situation is a consequence of two factors, demographic growth, and the change in economic structures from the primary sector to the industrial and services sector [4]. Cities have suffered population growth caused by multiple causes, from the typical concentration of industry and improvement in the provision of public services in large cities, depletion of mining areas, and even the effect of natural disasters such as earthquakes that caused the exodus almost instantaneously among entire populations [5, 6].

However, unlike what happened at the beginning of these change processes, urbanization model that consumes much more land is taking place lately. This low-density urban development system is caused by increased purchasing power, greater mobility caused by motorization, and an explosion of mass tourism. In recent times, it is the tourism of cities that can act as a focus of attraction for migration due to the more excellent value that people give to the quality of life and apply it to their free time [7]. In fact, a panorama affects the natural and agricultural landscape due to the dense fabric of the urban and its connection routes. This situation is aggravated by demographic perspectives, as shown in the study by UN-DESA [4], which indicates that in 1950 only 30% of the world’s population lived in cities, while in 2018, that percentage rose to 55%.

In all these contexts, it would be necessary to consider what is urban and rural. The latter would be those that do not have urban characteristics or, using rural identity criteria, those with a significant presence of green or open spaces [8, 9]. If we resort to European terminology, the urban/rural typology is based on two dimensions: the degree of human intervention and urban influence [10]. The first is represented by the proportion of artificial surfaces (industry, housing, and communication routes, among several other examples). At the same time, the second has to do with the range of the primary urban center in each area and its population density. Consequently, current trends in land use, from rural to urban, have two aspects.
Urban Green Spaces

On the one hand, there is its contribution to increasing social and economic benefits. Nevertheless, on the other, they lead, in the longer term, to a series of alterations with adverse effects on the functioning of ecosystems. This disorganized and chaotic development was later attempted to be corrected with urban planning procedures, whose objective was to eliminate urban chaos and prevent it from happening again [11, 12].

This does not mean these negative consequences cannot be stopped or improved. Thus, strategies such as an increase in agricultural efficiency, the brake on erosion, sustainable agroforestry policies (such as the reintroduction of livestock in abandoned areas to curb the proliferation of forest fires), and the increase of green spaces in urban areas could be applied.

This last aspect, urban green spaces, is of considerable importance as it is related to some of the environmental problems of cities. Until the eighteenth century and since Roman times, the formal and physical relationship between the city and its surroundings remained relatively unchanged, with a closed city considered the central factor and an environment without too many alterations. The walls also included social connotations, the dominant classes lived inside, and the rest, people of lower social status, lived or worked in the surroundings. This thinking evolved into the concept that something valuable should be locked up, leading to the development of private gardens for the enjoyment of a few [13, 14]. The city has recently evolved toward the need to develop an urban planning concept in which the existence of green spaces has become more critical. Although new urban planning models were introduced in the 1920s, environmental issues were unimportant. However, at the beginning of urban theories, the environment was considered essential for balance and quality of life [15] and especially in the works of McHarg [16], who sought to bridge the gap between ecology and land planning and gave way to an ecological approach to planning. In recent times, Steiner [17] indicates that: “(...) planning is a philosophy for organizing actions that enable people to predict and visualize the future of any land area.”

The processes of territorial expansion in urban fabrics have caused a significant increase in the generation of superheated air, higher concentrations of pollution in the atmosphere, and a scarce presence of vegetation. This set of factors contributes to modifying local climatic conditions, giving rise to urban heat islands. In addition, the waterproofing of a large part of the territory’s surface hinders the infiltration of precipitation, reducing the absorption rate of the soil. All these, together with the increasingly frequent episodes of torrential rains, increase the risk of flooding in urban areas [18, 19].

Within green areas, trees have essential effects on the environmental conditions of cities. Concerning contamination by fine particles in the atmosphere, they contribute to buffering it since they behave as a sink for these particles through the mechanism of variation in stomatal conductance and photosynthetic rate [20]. Gaseous pollutants from the atmosphere are also filtered by the trees in cities, as is the case with NOX emissions caused by vehicles traveling on communication routes [21, 22].

Trees’ shade effect is recognized and widely studied, highlighting its participation in buffering the urban heat island [23–25]. The reduction in the incidence of radiation and the increase in humidity due to perspiration are decisive factors in these processes. In a recent study, in European cities, it has been seen that when comparing treeless areas with the presence of trees, significant temperature drops were produced, more pronounced in the north than in the Mediterranean area and the Iberian Peninsula [26]. The importance of green infrastructure, its diffusion, and increase
acquires excellent value when considering the emergencies and deaths causing heat waves throughout the planet [27–29].

Therefore, the above-mentioned links to the concept of ecosystem services. In recent years, much attention has been paid to ecosystems because of the services that allow life reside in them. In the middle of the last century, it was believed that the loss of habitat, biological species, and the depletion of natural resources was due, to a large extent, to the fact that the services provided by ecosystems did not have a monetary value, focusing on values associated with cultural services [30]. Subsequently, attempts were made to price environmental goods and services [31, 32]. However, certain services are intangible (pollination, climate regulation, and biodiversity are just a few examples.), and their value is ecological and not monetary. It was in 1981 when the idea of giving value to the services provided by nature from both an economic and a practical point of view crystallized [33]. The concept of ecosystem services was developed to draw attention on the benefits that ecosystems provide to society. It evolved to become an essential framework for promoting and designing environmental management. The valuation of ecosystem services was originally designed for nonurban systems [34]; hence, the need to create new models that reflect those provided by urbanized environments [35, 36].

Despite what ecosystem services represent, it is necessary to consider that the physical surface of the city itself is not enough to develop life skills in cities. The needs far exceed the size they have. Hence, concepts such as the ecological footprint have been developed [37].

With postmodernism emerging in the second half of the twentieth century, a “new urbanism” appeared, bringing the awakening of urban ecology and environmental concerns that filled the last treatment gap in social and environmental-systemic issues [38].

Summing up the above statements, analyzing green spaces from the perspective of Urban Ecology should be considered. This subdiscipline of ecology emerged in the last decades of the twentieth century. It uses and integrates terminologies and methodologies from various disciplines such as ecology, land planning, architecture, economics, political science, geography, sociology, engineering, anthropology, and health sciences [39]. Humans are part of ecosystems, but instead of just another organism, we are a force of nature that acts to modify our environment [39]. People can relate well and create social groups capable of influencing the administrative bodies that make environmental decisions. In other words, politics or sociology influences urban ecosystems depending on our culture [40]. In this way, urban ecology is helping to make cities friendlier.

Despite all these advantages that green areas present, care must be taken and not take steps back, as in the USA with the loss of tree canopy (7000 hectares per year) between 2009 and 2014 [41].

2. Final Remarks

As final remarks, urban green areas, ecosystem services, ecological footprint, and urban ecology constitute a chain that links the problems and solutions that must govern the management of urban areas and that administrations must incorporate. However, time is running out against all approaches. Compared with the rural world, cities’ socioeconomic benefits will continue to displace the population in larger urban areas. The policies to, if not stop, at least mitigate these migrations go through finding
ways to fix the population in these rural areas, the eternal “philosopher’s stone” of territorial planning. Nevertheless, what about existing cities and those that will continue to grow? Among all the applicable measures, what contribution can green areas provide? These are the questions that, in part, try to clarify the works that professionals from very diverse disciplines worldwide are trying to answer and to which this book aims to be a small contribution.

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