



Arboriculture: What's going to happen next?

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It is well known that, at present, more than a half of the world population live in the built-up areas and that the urbanization processes have been cyclic and gradual since the beginning of human civilization, but they strengthened with the “industrial revolution” and they became a real “overflowing settlement” in the second part of the XX century. After the II World War the population increasing in the developing countries has been absorbed by the cities and it is to stress that in the near future 80% of the human beings will live in urban areas. This leads to strains on urban management, infrastructures, as well as on the quality of life and environment.

Increasing urban green areas is probably the intervention with the highest ROI (Return of Investment) among all the others adaptation and mitigations strategies. Thus, arboriculture and urban forestry should be part of the effort to manage urbanisation and to create liveable cities and it is certain that all green areas, from the flower beds to periurban forests which, in some way, recall the “concept of nature”, can fulfil a paramount role for the improvement of life quality and for reaching the minimal threshold for human well-being. It is a common opinion that green spaces have a simple recreational function while they can offer other potential benefits that can improve life level (“being-away”) of the users and this topic has been the subject of numerous research projects.

Densification of the cities adds to the major challenges that urban environments pose to urban vegetation, with urban trees as an important component. When looking at the latter, urban areas constrain tree growth and survival. Drought, poor soil quality, soil compaction, light heterogeneity, transplant shock, pollutants, salinity, pests and conflicts with human activity often cause premature plant death, thus reducing the net benefit from trees. It is, therefore, important to better understand the dynamics leading to tree decline in the urban environment and to develop strategies and techniques aimed at improving the horticultural tolerance (i.e. the capacity to provide benefits, not only to survive, under stressful conditions) of urban trees. These include nursery pre-conditioning techniques and post-planting management techniques, but a key role is played by species selection. Many different species are used in the urban environment, but selection criteria are frequently based on aesthetics and whether the species are native or not, rather than on the tolerance to the typical stresses imposed by the built environment and on the capacity to provide substantial benefits therein. This has led to only a limited knowledge about the ecophysiology of shade trees, if compared to fruit trees and crop species. We also need to know more about the planning, design and management of urban vegetation and urban green spaces.



How can we make sure that urban vegetation and green spaces are part of our efforts to develop inclusive, safe, resilient and sustainable cities; cities that are not threatening public health, but rather promoting it? Urban forestry, an interdisciplinary approach to the planning and management of all woody and associated vegetation in and around dense human settlements, can provide at least part of the answer.

What is going to happen next – over 10-15 years – will obviously be of the greatest interest to all people concerned with urban environment. Developing countries are and will be playing an increasingly important role, since their major cities are growing much faster and often in a less sustainable way than in the most developed countries. Some of the future challenges of the arboriculture include specific topics like climate change, trees and infrastructures, emerging diseases, tree stability. Further issues, like socio-economic and juridical aspects, environmental justice, restoration of degraded area, role of green areas on mitigating urban pollution, are certainly important and should be taken into account when planning and managing green areas.