Urban Agriculture

The *Urban Agriculture* Book Series at Springer is for researchers, professionals, policy-makers and practitioners working on agriculture in and near urban areas. Urban agriculture (UA) can serve as a multifunctional resource for resilient food systems and socio-culturally, economically and ecologically sustainable cities.

For the Book Series Editors, the main objective of this series is to mobilize and enhance capacities to share UA experiences and research results, compare methodologies and tools, identify technological obstacles, and adapt solutions. By diffusing this knowledge, the aim is to contribute to building the capacity of policy-makers, professionals and practitioners in governments, international agencies, civil society, the private sector as well as academia, to effectively incorporate UA in their field of interests. It is also to constitute a global research community to debate the lessons from UA initiatives, to compare approaches, and to supply tools for aiding in the conception and evaluation of various strategies of UA development.

The concerned scientific field of this series is large because UA combines agricultural issues with those related to city management and development. Thus this interdisciplinary Book Series brings together environmental sciences, agronomy, urban and regional planning, architecture, landscape design, economics, social sciences, soil sciences, public health and nutrition, recognizing UA's contribution to meeting society's basic needs, feeding people, structuring the cities while shaping their development. All these scientificfields are of interest for this Book Series. Books in this Series will analyze UA research and actions; program implementation, urban policies, technological innovations, social and economic development, management of resources (soil/land, water, wastes…) for or by urban agriculture, are all pertinent here.

This Book Series includes a mix of edited,coauthored, and single-authored books. These books could be based on researchprograms, conference papers, or other collective efforts, as well as completedtheses or entirely new manuscripts.

More information about this series at http://www.springer.com/series/11815

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Rooftop Urban Agriculture

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Preface

> …We are faced today with a grave threat, not one solely based on the fact that we don't have answers to burning problems in society, but even more to the point that we don't possess a clear apprehension of what the main problems are and clear understanding of their real dimensions… [Slavoj Zizek, Slovenian Philosopher, 13 May, 14:35, HRT "Nedeljom u Dva" ("Sunday at 14:00PM," Croatian Television, HRT 2012)]

Food Urbanism and Beyond: Toward a Sustainable Urban Agriculture

The complexities of contemporary global urban, political, economic, and environmental issues are evident. It is not hyperbole to say that we human beings are now confronted with the greatest challenge that we have ever faced; in fact, it is a matter of life and death. The planet has recently been experiencing a convergence of natural and man-made crises that are unprecedented in our lifetime. We are also facing the consequences of accelerating and rapid urbanization, the scarcity of natural resources and their mismanagement, the impact of major errors in our responses to disasters, and the increasing demand for and complexity of greatly expanding transportation flows. Our societies have also undergone rapid and radical shifts in terms of age and class, increasing the inequities between the rich and poor and intense demand for affordable and high-quality housing. All of these major challenges require immediate solutions from architects, urban planners, urban designers, landscape architects, horticulturists, and urbanists; actually, we need the combined efforts of all good people who are concerned with the physical condition and future of our cities. We need these professionals and experts to contribute their most imaginative, pragmatic, resilient, innovative, and just solutions.

As we have in many ways entered both the age of the "triumph of the city," where cities are at their peak performance in innovation, growth, culture, technology, urban expansion, opportunity, as well as competition, so have we also entered a "beyond the urban age" where cities also find themselves confronted by issues of

justice and the equitable distribution of wealth, opportunity, and power to all people in society. We therefore need to start rethinking what "the good city" and "cities for all" should be. Thinking that slums or poor neighborhoods are appropriate (dense or splintered) urban forms that make a contribution to ecological footprint and sustainability through resource allocation and recycling is a dangerous path to take. Implying that being poor is ecologically sound is simply wrong, because it is a matter of pure necessity—not of ecological awareness or choice—to live in a decent and healthy urban environment.

According to new UN DESA report, "World Population Prospects: The 2015 Revision," the current world population of 7.3 billion is expected to reach 8.5 billion in 2030, 9.7 billion in 2050, and 11.2 billion in 2100, whereas China and India remain the two largest countries in the world, each with more than 1 billion people, each with growing megacities and representing 19 and 18 % of the world's population, respectively. But by 2022, the population of India is expected to surpass that of China. A "perfect storm" of food shortages, scarce water, and insufficient energy resources threatens to unleash public unrest, cross-border conflicts, and mass migration as people flee from the worst-affected regions, the UK former government's chief scientist, Professor Sir John Beddington, has warned recently. So in the midst of converging crises of climate change and beyond, epidemic diseases, decaying infrastructures, international terrorism and regional wars, economic collapses, rifts in society, uncontrolled migrations, and other calamities, *water scarcity and food security* truly remain the two major "perfect storms" that will hit us in the decades to come in the path to "long emergency." With such a surge in population, human agriculture exerts a tremendous toll on the planet, from water draws to pollution and from energy use to habitat loss.

We must now recognize that we have to, aside from innovative solutions in inner cities (farming the city at eye level, vertical farming, rooftop agriculture, etc.), start to reorganize the landscape for local food production, as industrial agriculture will be one of the prime victims of our oil predicament. The successful places in the future will be places that have a meaningful relationship with growing food close to home. In relation to that, clearing out the terminology when it comes to "growing food" is extremely necessary in order to understand the crux of the problem. The dichotomy between the idea of the dense cities and high-rises for growing food vs. the yard and countryside of growing food in smaller scales will remain. Both are needed but both need to be carefully reconsidered and thought about. How people will live in the countryside under the condition where their lives will be centered on growing and producing the food—the fundamental of the new agrarian village—remains to be seen; moving beyond intentional communities will be linked with issues of economy, demographics, ecology, societal structurations, and spatial transformations. As architects, urban designers, landscape architects, horticulturists, environmental engineers, urban ecologists, and urban planners of city landscapes, these professions hold a vital tool in the growth of communities centered on food production. Food is both a local and global issue. The lack of productive urban land, food insecurity, uncontrolled urban growth, the lack of stable local food markets,

land use conflicts in the periurban areas, and a general lack of societal knowledge of food growing and preparation fuel these discussions from all sides.

Andrés Duany, the co-founder of the New Urbanism movement and the proponent of Traditional Neighborhood Development, has cleared up the terminology of "food and urbanism." Agrarian urbanism, as he explains, is different from both "agricultural retention" (deploys an array of techniques to save existing farms, including farmland trusts, greenbelts, and transfer of development rights), "urban agriculture" ("cities that are retrofitted to grow food"—the food produced is supported by distribution and processing systems such as farmers' markets, community kitchens, food cooperatives, and contracted restaurants), and "agricultural urbanism" ("when an intentional community is built that is associated with a farm—land is cultivated within existing cities and suburbs, sometimes using parcels in depopulated sectors"). Duany thinks bigger: "Agrarian urbanism is a society involved with the growing of food." Agrarian urbanism refers to settlements where the society is involved with food in all its aspects: *organizing, growing, processing, distributing, cooking, and eating it*. The concept is based on the English Garden City, Israeli kibbutz, 1960s commune, and US master-planned golf course community. Promoting the growth and vitality of these (current and future) urban agricultural spaces through coordinated policy, planning, and action across scales—from individual decision making to municipal planning to national and global policy—remains the grand task ahead.

The inner cities and the idea of "farming the city—urban agriculture" (as mentioned above in the "agrarian" terminology) through different approaches bring another set of complexities and also beg for clearance of terminology and approaches. A number of unresolved issues need to be addressed before we can consider "farming the city—urban agriculture" as a permanent solution to our (future) food needs. Although community gardens, kitchen gardens, organic micro-farming, and rooftop farming are very positive for a city's sustainability and for the well-being of its inhabitants, they are not without problems. Issues of lack of space and the rationale of farming in the middle of urban areas remain; the open question of high water requirements for agricultural activities is still not solved (nor is it for green lawns in suburbia); possible soil and water pollution that can lead to waterborne diseases and issues of inner city air pollution that are related to contaminated food and serious health problems are yet to be resolved fully; last but not least, the aesthetic issues linger but far more the "dark" rise and justification of the high-rise development. Some would say that "urban agriculture" was a new justifiable label used to "sugarcoat the pill to maintain conventional farming in the city" or to develop mega urban projects—like high-rise buildings—that otherwise would have been taken very badly by the people living in or on prospective sites. "Farming the city—urban agriculture" needs to be seen both as food (a tool for today's urbanization) and a resource (a tool for tomorrow's resilient post-urban age).

Whatever the case *(organic) urban agriculture*—also known as urban farming, pop-up food cultivating, guerilla farming, foodscaping, organic city repair, DIY guerilla gardening, and many other terms relating to agricultural practices in the middle of the city—is becoming a major activity in societies all over the world; also

let us not forget the predecessors in the shape of allotment—community gardens. Urban agriculture provides many benefits, including food security for people in the city, a reduction of energy used in conventional agricultural practices and food service, a reduction of carbon footprints, and environmental services for cities in terms of providing open green space. All over the world, people are turning unused lots, backyards, and even rooftops into gardens. Imagine if this movement could grow so massive that cities would no longer have to depend on rural and suburban agriculture to produce food for their own citizens. Great projects such as HK Farm (Hong Kong), Brooklyn Grange (New York City), Dakakker (Rotterdam), City Farm (Tokyo), and Lufa Farms (Montreal) are some of the examples testimony to this. Testing the grounds for social change—citizen-generated alterations of the built environment that are intended to improve the public realm or put underutilized space in service to the community seem to be the calling of the day. When trying to determine if urban agriculture may contribute to a sustainable future, the primary question to ask is will this agriculture be at the service of the inhabitants? Brian Clark Howard of National Geographic sees rightly benefits of urban farming in that it can add greenery to cities, reduce harmful runoff, increase shading, diminish "food miles" associated with long-distance transportation, get the freshest produce, and counter the unpleasant heat island effect. Garden plots can help people reconnect with the Earth and gain a greater appreciation for where our food comes from.

After all, the primary reason for designing wonderful built environments is to improve the lives of people; thus, incorporating elements of psychology and sociology into our designs is powerfully beneficial. By engaging in experimentation, research, innovation, and intellectual synergy between urban design and applied social science, we will truly achieve an integrated and holistic approach to analyzing, understanding, planning, and designing our built environments. The quality and the livability of the urban environment in our cities, towns, districts, and neighborhoods are the deciding factors in the social, cultural, economic, and environmental performance of societies and the quality of life of all its citizens. We now stand on the threshold of the greatest challenge for our professions. This challenge is no less than improving people's lives through optimally designing their urban environments and sustaining life on our planet. This wonderful anthology *Rooftop Urban Agriculture* is certainly a step in the right direction.

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