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Urban Agriculture: Another Way to Feed Cities

The plurality of urban agriculture models

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2. THE PLURALITY OF URBAN AGRICULTURE MODELS

Observed all over the world since the early 2000s, the revival of urban agriculture takes various forms, from the most technological, practiced in controlled environments, to the most "low tech" ones, such as intensive organic micro-market farming. Equally well implemented in developed as in emerging economies, these different models are suited to a wide range of local contexts, such as community gardens, rooftops and vertical farms.

A great variety of sources of inspiration

Faced with the limits of a conventional agricultural model that is incapable of feeding the future world population without endangering natural resources and consumer health, the heads of urban agriculture projects are exploring new growing methods, drawing as much inspiration from the possibilities of new technology as from the closed-loop operation of natural ecosystems, in a circular economy approach. Following the permaculture approach, the Bec Hellouin farm in Normandy has developed non mechanized farming techniques with no chemical inputs that enable them to produce large quantities from small areas. These techniques are especially well suited to restricted space in cities. Similarly, recirculation aquaculture, such as the one practiced at Lostallo in the Swiss Alps, makes it possible to farm great-quality fish, indoors and with a reduced physical footprint. The economic and environmental performance of this model offer a glimpse of its possible applications in an urban setting.

Many types of urban agriculture

To understand how urban agriculture can really change our production model, it is worth establishing a classification of the different models, highlighting their advantages and disadvantages. This is the task to which the SYSTEMIQ consultancy has committed itself, by distinguishing open-air urban agriculture from agriculture in a controlled environment, which draws on aeroponic, hydroponic and aquaponic techniques. Although in years to come, controlled-environment agriculture could substantially enhance the food self sufficiency of cities, its high cost is confining it to peri-urban areas and, in the medium term, makes it difficult for developing economies to access. Vertical farming specialist Dickson Despommier also shares this observation – integrated into a circular economic system, these innovations are highly promising in environmental terms, but require technological skills and financial resources that are currently only feasible in developed countries.

On the other hand, outdoor urban agriculture integrates easily with the urban fabric, especially on roofs. It not only presents environmental advantages, but offers other social, educational and psychological benefits. In São Paulo, communal gardens prove to be real laboratories for social innovation. Part of the advent of "edible cities," they contribute more broadly to the construction of a new urban model, based on a democratized management of public space and a better social and environmental balance. However, the productivity of this type of agriculture is not sufficient to sustain food production in any meaningful way or to become commercially viable.

Technological innovations and social and environmental synergies

These two major families of urban (and peri-urban) agriculture are not opposite and can be combined, giving rise to numerous synergies. The BIGH Farming company came up with a hybrid model, implemented in Brussels on the roof of a market hall, which combines the economic solidity of an aquaponic farm (fish farming and horticulture in near-closed circuits) with an outdoor vegetable garden employing people re-entering the job market. This example invites us to imagine innovative business models to maximize the positive impact of an urban farm via a public service offer or co-financing through related commercial operations. In short, the ambition for urban agriculture is not so much to feed the world as to feed cities in a different way.

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