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| **The Rise of Urban Farming**  **Grow fruits and vegetables in city towers? Advocates give a green thumbs up**   * By T. A. Frail * *Smithsonian* magazine, August 2010   More people than ever are growing food in cities, which happen to be where most of the world’s people now live. In windowsills, on rooftops and in community gardens, they’re burying seeds in Havana, Kinshasa and Hanoi—and in Chicago, Milwaukee and Atlanta. Novella Carpenter’s 2009 memoir, *Farm City*, trumpets the value of raising chickens, pigs and bees—in Oakland.  Urban farming is a response to a variety of pressures. Large parts of the developing world are facing shortages of water and arable land, the U.N. Food and Agriculture Organization says. Governments and other sponsors have supported urban food-growing projects in Cuba, Colombia, Botswana and Egypt. In the developed world, small-scale urban farms are seen as an antidote to industrialized agriculture’s excesses, including chemical fertilizers that pollute waterways and the high costs, both monetary and environmental, of transporting food to urban markets.  Dickson Despommier, a professor of environmental health sciences at Columbia University, has proposed “vertical farming”: growing food—including fish and poultry—in urban buildings as tall as 30 stories and covering a city block. In his vision, you could eliminate the need for soil by growing plants hydroponically (in a liquid) or aeroponically (in the air). You’d reduce water use and end runoff by recycling water in a closed irrigation system. Transportation costs would be next to nil.  Such a high-rise farm has not yet been built. But in Devon, England, the Paignton Zoo has maintained a hydroponic, controlled-irrigation garden for several months. The yield from its 11,000-odd leafy vegetable plants—lettuce, spinach, herbs—is fed to the animals. The garden takes up 1,000 square feet in a greenhouse, about one-twentieth of what it would require in a field. Kevin Frediani, the zoo’s curator of plants, says its key technology, a system of mobile nine-foot-high racks that help ensure the plants are properly fed and exposed to light and air, could be scaled up.  The maker of those racks, Britain-based Valcent Products Inc., says it is speaking to potential customers in more than 30 countries. “Agriculture has many problems, and it needs to have different methods as part of its armory of solutions,” says Valcent spokesman Tom Bentley. “Vertical farming will be part of that.”  **T. A. Frail** is a senior editor at *Smithsonian*. |
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