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Urban Farms: Bringing Innovations in Agriculture and Food Security to the City

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BERKELEY FOOD INSTITUTE

Urban Agriculture and Food Security: A Partnership Waiting to Happen

Policy Recommendations include:

1. Encourage use of vacant land for urban agriculture
2. Make zoning information more accessible
3. Help farms better connect with those in need
4. Support urban agroecology research
5. Fund soil testing

Urban agriculture has the potential to change the face of hunger, community, and sustainability in urban areas by enabling cities to gain social and ecological benefits from vacant urban lands. Research from California provides important lessons for the nation.

One in seven California residents is currently classified as food insecure, meaning they lack consistent access to sufficient, quality food on a daily basis.[1] This equates to more than 5.4 million people, including 2.1 million children.[2] A history of inequity in infrastructure investment, access to financial resources, and social support programs, alongside divisions between sociocultural and socioeconomic groups, have left residents of some urban areas with a lack of access to healthy food. Local zoning rules from earlier periods of California history have intensified barriers to land access and worsened community disinvestment in low-income neighborhoods. At the same time, small, vacant lots and parcels otherwise ill-suited to traditional urban development are scattered throughout the Bay Area, and they could be used for food production.[3] Some farms and gardens are well established, but many still struggle to gain and retain access to the land, water, labor, and information they need to be optimally productive. This brief provides justification for policymakers to adopt strategic policy changes to achieve urban farming goals in disadvantaged communities.

Real Farmers, Leading a New Movement

Vacant urban land is subject to competing potential uses within a complex web of social, economic and environmental needs.[4] Over the last few decades, there has been a surge of interest in urban agriculture as an example of land use that can deliver a wide range of benefits. Success stories feature productive urban farms and gardens that use eco-friendly methods while improving local food security, bolstering local anti-poverty efforts, and providing green spaces for recreation and community well-being.[5] Meanwhile, a new movement has emerged to reclaim vacant land for agricultural use as people discuss how food should be produced within cities[6] and how to ensure that urban

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The Berkeley Food Institute (BFI) at University of California, Berkeley seeks to transform food systems to expand access to healthy, affordable food and promote sustainable and equitable food production. We empower new leaders with the capacity to cultivate diverse, just, resilient, and healthy food systems.

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food production truly answers the most important needs of local communities. While debate continues, urban farms in the Bay Area are producing much-needed food in some of California's most disadvantaged neighborhoods.[7,8]

Agroecology in the Urban Context

Like other urban farms and gardens across the nation, those in the Bay Area operate on small plots of land with few resources, little machinery, and largely volunteer labor. This distinguishes them from conventional rural farms. Small lots permit great attention to detail, and urban locations experience less pressure from rural pests.[9] In these unique spaces, many productive Bay Area urban farmers use practices and principles of agroecology,[7] in which the farming landscape is designed to be a diverse, resilient ecosystem rather than a monoculture that produces just a single crop. These farmers plant many varieties of plants together, carefully manage soil health, rotate crops each season, apply compost instead of synthetic fertilizers, and avoid the need for synthetic pesticides. Although urban yields can vary from field to field and crop to crop,[10] documented yields at urban farms show that even small-scale plots using the right strategies can produce more per acre than conventional agriculture.[11]

UC Berkeley students and researchers at the UC Gill Tract Community Farm.

Research Insights from the San Francisco Bay Area

In 2014 and 2015, UC Berkeley researchers Joshua Arnold and Miguel Altieri conducted two seasons of research with 24 urban farms and gardens in Alameda County.[14] **Their work revealed that Bay Area urban farms, using many principles of agroecology, provide local produce to disadvantaged communities, despite uncertain land rights.** The sampled sites ranged from school gardens to community-led farms, and were overwhelmingly dedicated to improving their communities and providing benefits to those most in need. An additional survey in 2016 of 36 farms and gardens, including those studied in the previous research, asked specific questions about food security impacts of their work.[15]

- Eighty percent of the farms indicated that education (including vocational training) was their primary goal, while 28% said their main focus was increasing local community food security, and only 14% existed primarily for profit.
- Farm managers touted the importance of the **human right to produce food** and enjoy green spaces, and yet, noted that **current land use rules** make their urban farming efforts risky and difficult. Only 33% of the 36 farms surveyed had secure long-term land rights, while others operated under the knowledge that their land access could be revoked at any time.
- Forty percent had one or more fulltime staff, while the rest relied significantly on volunteer and part-time labor from the community.
- There was clear evidence of significant value to the communities surrounding these 36 farms: half of the farms sent some or all of their produce home with the volunteers, and 69% distributed food directly to those in need in their community. Forty-two percent sold some of their produce through the formal market via farm stands or community-supported agriculture memberships, but the majority of these sales were heavily discounted and aimed specifically at those community members most in need and most affected by lack of access to fresh, healthy food.

According to the farm managers, what these existing farms need most to continue their work is additional funding, additional labor, stronger land tenure rights, and access to improved technical support.

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Meeting Community Needs

Simply producing more local food will not solve urban hunger without addressing the various root causes, but it can be one important part of the solution toward achieving food security.[12] Urban farming projects are often community driven, with food and proceeds going to local, lower-income volunteers. However, since those most in need of food assistance may be least able to volunteer at a community garden, improved access to land and resources for urban food production must be met with efforts at all levels to ensure that the food and other benefits reach those most in need.[13]

Wanda Stewart, owner of Obsidian Farm in Berkeley, California.

Urban Farms and Community Gardens Can:

Increase access to affordable, healthy food, especially for low income residents
Research suggests that food produced in urban farms and gardens most often stays close to the farm.[13] Community gardens can be instrumental in strengthening local access to traditional and culturally appropriate foods, reducing how much residents spend on food, and increasing vegetable intake. A 2016 study of community gardening programs serving diverse, low-income populations in San Jose, California, saw participants double their vegetable intake while reducing monthly food costs between $84 and $92.[8]

Bring social benefits by connecting people with the land and with each other
Urban farming spaces across the nation promote environmental education and engagement, vocational training, knowledge of food production methods and healthy diets, opportunities to strengthen community bonds, and an improved sense of connection to the environment.[16] Improved environmental awareness may, in turn, influence behaviors and attitudes.[17]

Create green oases that provide health benefits
Greening the urban environment is a key stated goal of many urban agricultural projects.[18] The transformation of vacant parcels into urban greenspace can contribute to lower crime rates,[19] while providing community gathering spaces. Urban green spaces provide a host of recreational and mental health benefits[20] as well as ecosystem quality-of-life services like temperature regulation, air filtration, and storm-water control.[5]

Provide economic benefits in urban centers
Investment in local food systems can increase community economic wellbeing in a variety of direct and indirect ways.[21] Producing food locally can create jobs at non-profits that support community initiatives, train participants in food production and marketing, and allow community members to supplement their income[22] while keeping more money circulating in the local area.[23] Stewardship by urban farmers may also help municipalities maintain vacant lots.[4]

Urban Farms Face Real Challenges

In the Bay Area and beyond, uncertain access to uncontaminated land and water create significant barriers for urban food production. High real estate prices and competing land-use options mean that landowners may prefer to not farm their land. Urban farms in the Bay Area also struggle with water and land rights. Those farms that pay for water cite it as a significant cost, while some farms are forced to rely on access to free water in a legal gray area that increases operational uncertainty. Soil contamination concerns can also be higher in urban areas, and research in the Bay Area has shown that many urban farms cannot afford to test their soil for contaminants.[7] Furthermore, if land tenure or water rights are uncertain, farms cannot make long-term financial and infrastructure investments to secure their stability and productivity. Overall, sustained funding (for human resources, equipment, tools, and infrastructure) represents a major challenge.

Policy Recommendations

Policymakers at local, state and national levels can help urban farms sustainably feed the hungry:

1. Encourage use of vacant land for urban agriculture

California legislation passed in 2013 (Assembly Bill 551) created tax incentives for owners of vacant plots to lease their land for farming,[24] but the bill focused only on private land and could go further to reverse long-term community disinvestment. Policy supplements to AB 551 and similar bills should consider incentivizing a broad range of agricultural activities on public and private lands, including green roofs, school gardens, edible parkland projects, and community farming. Efforts should be made to ensure land access in neighborhoods that have experienced historical disinvestment.

2. Make zoning information more available

Cities must make zoning information more easily accessible to potential farmers by simplifying the permit process. Outreach to landowners of vacant plots should stress how they might benefit from AB 551 and any subsequent incentives. Special incentives should be given in neighborhoods with a higher incidence of food insecurity, and to farms that operate using agroecological methods.

3. Help farms better connect with those in need

In addition to more land and resources for growing food, better distribution channels are needed to make locally produced food readily available to individuals in low-income and food-insecure communities. Cities should support existing distribution networks by encouraging farms to donate to food banks, while also creating new avenues to answer community needs via wholesale food hubs, direct-to-consumer retail, institutional procurement, and other means led by residents themselves.

4. Support urban agroecology research

Research is needed to identify opportunities and barriers for successful, community-led urban agriculture, to better understand the economic and social impacts of food produced in urban gardens, and to identify and disseminate local best practices for sustainable agroecological management. The economic benefits of urban agriculture for low-income communities, particularly where farmers share the harvest, need further study.

5. Fund soil testing

Urban development policy could help reduce risks from soil contamination by educating farm managers about contamination solutions like the use of raised beds. Local and state agencies should consider offsetting soil testing costs for those who wish to test their land.

With appropriate policy support, urban farming can provide vital benefits to individuals, communities, and urban ecosystems. It deserves greater attention as a part of both urban land use and food-access policymaking.

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