

URBAN GARDENING AND HOUSEHOLD NUTRITION OUTCOMES

Dr. M. Preethi

Professor & University Head

Department of Extension Education and Communication Management

Professor Jayashankar Telangana State Agricultural University, Hyderabad, Telangana, India

Abstract

Urban gardening is increasingly recognised as a practical household and community strategy for improving access to fresh foods within densely populated areas. Home gardens, balcony gardens, rooftop plots, allotments, school gardens, and shared community gardens can create local supplies of leafy vegetables, herbs, fruits, legumes, and other nutrient-rich foods. Their contribution is especially relevant where households face high food prices, irregular market access, limited green space, or diets with low diversity. The nutritional value of urban gardening, however, depends on the crops grown, the regularity of harvests, household food practices, safety of soil and water, and the capacity of families to combine garden produce with other nutritious foods.

This review-based study examines the relationship between urban gardening and household nutrition outcomes through a food-systems and public-health perspective. It synthesises evidence on garden production, food access, fruit and vegetable intake, dietary diversity, food security, nutrition knowledge, gender roles, and community support. The study also considers common constraints, including lack of land tenure, time limitations, water scarcity, soil contamination, insecure inputs, and unequal participation in neighbourhood gardening initiatives.

The analysis indicates that urban gardening can support healthier food practices by making fresh produce more available, visible, and familiar in daily household life. Benefits are strongest when gardens are linked with nutrition education, safe cultivation guidance, seed and water access, local participation, and inclusive governance. Urban gardening should therefore be treated not as a substitute for broader food and social protection systems, but as a complementary pathway that can strengthen dietary quality, resilience, environmental awareness, and community well-being.

Keywords: Urban gardening; Household nutrition; Dietary diversity; Food security; Community gardens; Fruit and vegetable intake; Urban agriculture; Nutrition education; Sustainable food systems; Public health

1. INTRODUCTION

Cities are increasingly important sites of food consumption, food insecurity, and dietary change. Many urban households depend on markets for almost all of their food, and this dependence can make diets vulnerable to price increases, disrupted supply chains, loss of income, and limited access to fresh produce. In low-income neighbourhoods and rapidly growing cities, households may face a combination of limited space, poor food retail environments, and time constraints that reduce the regular purchase and preparation of vegetables, fruits, and other nutrient-dense foods. Urban gardening offers one locally organised response by bringing food production closer to households and communities.

Urban gardening includes household kitchen gardens, container gardens, balcony and

rooftop gardens, allotments, school gardens, community gardens, and small-scale production on vacant or shared land. These forms differ in size, ownership, crop choice, labour requirements, and intended use. Some gardens primarily supply herbs and leafy vegetables for household meals, while others also generate small amounts of income, support social activities, or provide education for children and adults. Their nutritional relevance lies not only in the quantity of food produced but also in their potential to increase the availability, affordability, and everyday use of diverse plant foods.

Household nutrition outcomes are shaped by several connected factors: food availability, economic access, dietary knowledge, cultural preferences, care practices, health conditions, and the safety of food and water. A garden may improve one or more of these factors, but

its effect is not automatic. Families need suitable crops, safe growing conditions, time for maintenance and food preparation, and the ability to store, cook, and share harvests. Nutrition outcomes may also vary by season, household size, gender roles, age of children, and whether the garden is privately managed or collectively organised.

Urban gardening should therefore be understood as a nutrition-sensitive activity rather than simply an environmental or recreational practice. When it is connected with food safety, nutrition education, household decision-making, and supportive local policy, it can complement market-based food access and improve the resilience of urban food systems. This paper examines the pathways through which gardening may influence household nutrition, the limitations of existing evidence, and the practical measures needed to make urban gardening more inclusive, safe, and nutritionally meaningful.

2. LITERATURE REVIEW

Research on urban agriculture and community gardening has expanded across public health, nutrition, planning, environmental studies, and food-systems scholarship. A central theme is that gardens can increase exposure to fresh produce and encourage more frequent consumption of vegetables and fruits. Studies of household and community gardeners have reported associations with greater availability of vegetables at home, higher self-reported intake, improved food knowledge, and a stronger sense of control over food choices. Reviews also emphasise that outcomes are context-specific and that many studies are observational, use small samples, or do not measure nutritional change over long periods. A second area of research focuses on food security and household resilience. Gardens may reduce the need to purchase selected vegetables, provide produce during periods of financial stress, and create opportunities for sharing food among neighbours. In dense urban areas, gardens may be particularly valuable for leafy greens, herbs, and other perishable crops that are expensive or inconvenient to buy regularly. However, the contribution to total household food requirements is often modest because available

land is limited and gardens may not produce staples, animal-source foods, or sufficient crops year-round. The strongest interpretation is that urban gardening can complement, rather than replace, wider food-security measures.

2.1 FORMS OF URBAN GARDENING AND FOOD ACCESS

Home and container gardens are the most direct forms of household gardening. They can be established in courtyards, balconies, rooftops, windowsills, or small shared spaces using pots, raised beds, recycled containers, and vertical structures. Their scale is usually limited, but they can produce frequently harvested foods such as spinach, amaranth, coriander, tomatoes, chillies, beans, and seasonal vegetables. The closeness of these gardens to the household can reduce the time and cost associated with acquiring small quantities of fresh produce and can make vegetables more readily available for daily meals.

Community gardens are shared spaces managed by neighbourhood groups, schools, civil-society organisations, resident associations, local authorities, or informal collectives. They often offer access to land for people who do not have private outdoor space. In addition to food production, community gardens can support seed exchange, nutrition learning, composting, physical activity, and social support. Yet they may also face challenges related to temporary land access, unequal distribution of plots, maintenance demands, water supply, and the inclusion of renters, older adults, migrants, women with care responsibilities, and people with disabilities.

Rooftop, vertical, hydroponic, and other controlled forms of production are increasingly visible in cities. These systems may create opportunities where land is scarce, but they require careful assessment of cost, structural safety, water use, energy requirements, and the skills needed for operation. Their nutrition contribution depends on whether they make nutrient-dense foods genuinely accessible to households rather than serving only premium markets. Public programmes should therefore distinguish between technologies that are commercially innovative and approaches that are practically

affordable for low- and middle-income households.

Food access is also influenced by what happens after harvest. Households may consume produce themselves, share it with relatives or neighbours, preserve it, sell small surpluses, or exchange it for other foods. Gardens can strengthen local food networks, but they may not improve nutrition if harvested foods are not eaten by those with greatest nutritional need. The organisation of harvest sharing, nutrition messaging, and household decision-making therefore matters as much as the physical production of crops.

2.2 NUTRITION PATHWAYS AND HOUSEHOLD INCLUSION

Urban gardening may influence nutrition through several pathways. First, it can increase direct access to vegetables and fruits, particularly foods that are consumed fresh and harvested in small quantities. Second, it can reduce the perceived or actual cost of selected foods, leaving household resources available for other dietary needs. Third, gardening can improve familiarity with seasonal produce, food preparation, and the role of diverse foods in everyday diets. Fourth, shared gardening can create social support that encourages food sharing, collective cooking, and the exchange of local knowledge.

These pathways are mediated by gender and care responsibilities. Women often play central roles in food purchasing, preparation, and small-scale gardening, yet may have less secure access to land, water, tools, training, and decision-making. Gardens that add labour without reducing other burdens can have limited nutritional benefit. Conversely, programmes that provide nearby plots, flexible work arrangements, child-friendly spaces, labour-saving irrigation, and meaningful participation may support both food production and household care practices.

Food safety is equally important. Urban soils may contain heavy metals or other contaminants, irrigation water may be unsafe, and gardens located near busy roads or waste sites may require raised beds, clean growing media, washing practices, and testing where feasible. The health value of garden produce should not be assumed without attention to these risks. Nutrition-sensitive urban

gardening must combine production goals with guidance on safe soil, water, compost, pest management, storage, and preparation.

3. OBJECT OF STUDY

The primary object of this study is to examine how participation in urban gardening influences household nutrition outcomes. The paper investigates the relationship between garden access, crop production, food availability, dietary practices, and indicators of household food security. It considers both individual household gardens and collective community gardens, recognising that their nutritional effects can differ according to space, resources, participation, and local food environments.

The study focuses on nutrition-relevant garden outputs such as leafy vegetables, fruits, herbs, legumes, and other crops that can contribute vitamins, minerals, dietary fibre, and dietary diversity. It evaluates how gardening may affect the frequency of fruit and vegetable consumption, the variety of foods eaten, household food expenditure, seasonal food access, food knowledge, and confidence in preparing fresh produce.

A further objective is to identify the conditions under which garden participation is more likely to create meaningful nutritional benefits. These conditions include secure access to growing space, safe water and soil, suitable inputs, nutrition education, household control over harvest use, supportive local institutions, and policies that avoid excluding low-income residents and renters.

Finally, the study considers urban gardening as one component of an inclusive urban food strategy. It examines the role of municipalities, schools, health workers, resident groups, non-governmental organisations, and local markets in supporting gardens that are safe, productive, culturally appropriate, and connected to broader action on food affordability and public health.

3.1 GARDEN PRODUCTION AND DIETARY AVAILABILITY

This subsection examines the ways in which garden production can affect the availability of nutrient-rich foods within urban households.

- Assessment of the type, diversity, and seasonality of crops produced in household and community gardens.

- Evaluation of access to leafy vegetables, fruits, herbs, legumes, and other foods that support dietary quality.
- Examination of harvest frequency, household use, sharing, preservation, and small-scale sale of garden produce.
- Analysis of the role of space, water, tools, seeds, compost, and horticultural knowledge in maintaining production.
- Consideration of rooftop, balcony, container, raised-bed, and shared-land systems in land-constrained neighbourhoods.
- Assessment of soil, water, air-quality, and waste-management conditions that influence food safety.

The purpose is to identify which forms of garden production are most likely to improve the regular availability of safe and diverse foods for household consumption.

3.2 HOUSEHOLD NUTRITION OUTCOME DIMENSIONS

This subsection evaluates the nutrition and food-security dimensions that may be influenced by urban gardening.

- Frequency and diversity of fruit and vegetable consumption among household members.
- Availability of fresh produce for daily meals, snacks, and complementary feeding practices.
- Household food expenditure, perceived affordability, and resilience during periods of price fluctuation or income loss.
- Nutrition knowledge, food preparation skills, and confidence in using seasonal vegetables and herbs.
- Dietary inclusion of women, children, older adults, and other members with specific nutritional needs.
- Food safety practices related to soil, water, compost, pesticide use, washing, storage, and cooking.

These dimensions are used to understand how gardening may support both immediate dietary choices and longer-term household nutrition resilience.

3.3 GOVERNANCE AND COMMUNITY SUPPORT

This subsection considers the policy and community measures that can strengthen the nutrition contribution of urban gardening.

- Secure and equitable access to suitable land, rooftops, shared plots, or other growing spaces.
- Provision of safe water, composting options, seed support, tools, and locally appropriate technical advice.
- Nutrition education that connects gardening with dietary diversity, meal preparation, food safety, and child nutrition.
- Community-led monitoring of soil safety, irrigation quality, waste disposal, and garden maintenance.
- Support for women, renters, informal workers, older adults, and low-income households to participate meaningfully.
- Integration of gardens with schools, primary health services, local markets, food banks, and urban food-planning processes.

4. RESEARCH METHODOLOGY

The present study adopts a review-based, descriptive, analytical, and comparative methodology to examine urban gardening and household nutrition outcomes. The methodology brings together evidence from nutrition studies, urban agriculture research, public-health literature, food-systems reports, and community-garden evaluations. The analysis is designed to identify the mechanisms through which gardening may influence food access and dietary practices while also considering social, environmental, and institutional conditions that shape outcomes.

The study relies on secondary evidence from peer-reviewed articles, systematic reviews, international food-security reports, urban agriculture guidance, and selected programme evaluations. Material is interpreted through a thematic framework that considers garden type, crop diversity, food use, nutrition outcomes, food safety, participation, gender, and governance. The approach does not claim that every garden produces the same result; rather, it compares conditions that support or limit positive household nutrition effects.

4.1 RESEARCH DESIGN

The research follows a descriptive and comparative design to synthesise evidence on urban gardening, household food access, and nutrition outcomes.

Component	Description
Research Type	Review-based, descriptive, analytical, comparative
Approach	Nutrition-sensitive urban agriculture and household food-security analysis
Data Source	Research articles, systematic reviews, policy reports, urban gardening evaluations
Analysis Method	Thematic synthesis and comparative pathway assessment
Focus Area	Urban gardens, dietary diversity, food access, food safety, and community resilience

4.2 SOURCES AND ANALYTICAL CATEGORIES

The study considers the following evidence categories for evaluation:

- Urban gardening, household food production, and community-garden participation studies.
- Dietary diversity, fruit and vegetable intake, food access, and food-security assessments.
- Public-health literature on nutrition education, food environments, and food safety.
- Urban planning, governance, social inclusion, and sustainable food-systems reports.

Each evidence source is analysed based on:

- Type of garden, production setting, and access to land, water, and inputs.
- Foods produced, harvested, shared, sold, or consumed within households.
- Direct and indirect implications for dietary diversity, food affordability, and food practices.
- Distribution of benefits and constraints across gender, income, age, tenure, and neighbourhood conditions.
- Safety, governance, training, and policy measures that support sustainable outcomes.

5. DATA ANALYSIS

The data analysis synthesises evidence on the relationship between urban gardening and household nutrition outcomes. The relationship is examined through a sequence of linked effects: access to a growing space enables the cultivation of selected foods; harvests make fresh produce more available in or near the household; repeated access can influence meal planning, dietary variety, and willingness to consume vegetables and fruits; and these changes may contribute to improved food security and nutrition practices. This

sequence is shaped by crop choice, production reliability, household preferences, food safety, and the distribution of decision-making power within families.

Garden produce is especially relevant when it supplements foods that households may otherwise purchase irregularly because of cost, distance, or perishability. Leafy greens, herbs, tomatoes, beans, and seasonal vegetables can be harvested in small amounts and incorporated into meals soon after collection. This can increase the visibility of fresh foods in daily routines. However, the nutrition effect is likely to be smaller where gardens produce only a narrow range of crops, harvests are seasonal, or household members do not have the time, equipment, or knowledge to prepare the foods produced.

Household nutrition outcomes also depend on whether garden participation reaches people with lower access to healthy foods. Community gardens can expand access for renters and households without private space, but only when plot allocation, membership rules, opening hours, and costs do not exclude the groups they are intended to support. Programmes that combine gardening with nutrition education, cooking sessions, seed distribution, water support, and local health outreach may create more consistent benefits than gardens operating without support.

The analysis further highlights the importance of food safety. Produce grown in contaminated soil or irrigated with unsafe water may create health risks that offset potential nutritional benefits. Safe gardening requires attention to site history, raised beds or clean soil where needed, appropriate composting, careful water management, reduced exposure to traffic-related dust, and hygienic handling after harvest. Local authorities and garden organisers should provide clear guidance

rather than assuming that all green spaces are suitable for food production.

Evidence quality remains an important consideration. Many studies report positive associations between gardening and diet, but participants may already be more interested in healthy food, physical activity, or community involvement than non-participants. More robust evaluations that measure dietary change over time, include comparison groups, and consider seasonality are needed. Even so, the convergence of evidence on food access, vegetable availability, social support, and nutrition learning suggests that well-designed urban gardens can form a useful part of broader nutrition-sensitive urban policy.

6. DISCUSSION

The findings indicate that urban gardening can contribute to household nutrition by improving access to fresh produce, encouraging regular use of vegetables and fruits, and creating practical opportunities for nutrition learning. The strongest contribution is usually not the complete provision of household food needs; rather, gardening can increase the availability of specific nutrient-rich foods that are often purchased infrequently or consumed in limited quantities. This distinction is important for realistic policy design. Gardens should be presented as a complement to affordable markets, social protection, health services, and wider food-system improvements.

One important observation is that crop diversity matters more than simple garden presence. A garden that produces only one or two crops may provide limited nutritional value, whereas a carefully planned mix of leafy vegetables, legumes, herbs, fruits, and seasonal produce can support more varied meals. Extension support should therefore promote locally suitable crops with attention to household preferences, preparation practices, water availability, growing cycles, and nutritional relevance. Nutrition guidance should be practical and linked to the foods families are actually able to grow and eat.

The discussion also highlights equity and participation. Urban gardening is sometimes promoted in ways that overlook the barriers faced by low-income households, renters, informal workers, women with heavy care responsibilities, and people living in highly

built-up areas. Access to land is often insecure, and the time needed to maintain a garden can be difficult to find. Inclusive programmes need flexible participation models, secure sites, low-cost inputs, safe water, child-friendly design, transport access, and governance structures that give participants a real voice in decisions.

Environmental safety should be treated as a core nutrition issue. Urban soils can be affected by past industrial activity, dumping, heavy traffic, or construction debris. Gardening programmes need site screening, raised beds or imported clean soil where appropriate, safe irrigation guidance, and training on washing and handling produce. These safeguards are especially important in gardens linked to schools, early childhood centres, or households with young children.

Finally, urban gardening can create benefits beyond food intake. It can strengthen social ties, provide light physical activity, build environmental awareness, support composting and waste reduction, and create spaces for intergenerational learning. These wider benefits can reinforce nutrition outcomes by increasing confidence, cooperation, and interest in fresh foods. Yet they should not be used to overstate the nutritional impact of small gardens. Sustainable outcomes depend on sustained support, accountable governance, and integration with policies that address food prices, income insecurity, housing, water, sanitation, and public health.

7. CONCLUSION

This study concludes that urban gardening can make a meaningful contribution to household nutrition outcomes when it improves the regular availability, accessibility, and use of safe, diverse, nutrient-rich foods. Home, rooftop, balcony, container, allotment, and community gardens can help households obtain fresh vegetables, herbs, legumes, and fruits while also creating opportunities for nutrition education, food sharing, and stronger local food networks.

The analysis shows that benefits are shaped by several conditions: secure access to space, adequate water, suitable crops, safe soil and irrigation, household control over harvests, time for garden care and cooking, nutrition knowledge, and supportive institutions.

Gardens are most effective when they complement rather than replace wider systems for affordable food, social protection, health care, and local food distribution.

Effective urban gardening policy should therefore combine food production with nutrition education, food-safety guidance, equitable participation, local training, access to inputs, and long-term governance. Municipal agencies, schools, health workers, resident

groups, and civil-society organisations can work together to develop gardens that are safe, inclusive, culturally relevant, and connected to broader urban food planning. By treating gardening as a nutrition-sensitive and community-led practice, cities can strengthen household dietary resilience while also supporting healthier and more sustainable local food environments.

8. REFERENCES

1. Alaimo, K., Packnett, E., Miles, R. A., and Kruger, D. J. (2008). Fruit and vegetable intake among urban community gardeners. *Journal of Nutrition Education and Behavior*, 40(2), 94-101. <https://doi.org/10.1016/j.jneb.2006.12.003>
2. Alaimo, K., Beavers, A. W., Crawford, C., Snyder, E. H., and Litt, J. S. (2016). Amplifying health through community gardens: A framework for advancing multicomponent policy and program interventions. *American Journal of Preventive Medicine*, 50(5), S167-S175. <https://doi.org/10.1016/j.amepre.2016.01.019>
3. Algert, S. J., Baameur, A., and Renvall, M. J. (2016). Vegetable output and cost savings of community gardens in San Jose, California. *Journal of the Academy of Nutrition and Dietetics*, 116(2), 190-195. <https://doi.org/10.1016/j.jand.2015.10.014>
4. Armstrong, D. (2000). A survey of community gardens in upstate New York: Implications for health promotion and community development. *Health and Place*, 6(4), 319-327. [https://doi.org/10.1016/S1353-8292\(00\)00013-7](https://doi.org/10.1016/S1353-8292(00)00013-7)
5. Barthel, S., Folke, C., and Colding, J. (2010). Social-ecological memory in urban gardens - Retaining the capacity for management of ecosystem services. *Global Environmental Change*, 20(2), 255-265. <https://doi.org/10.1016/j.gloenvcha.2009.10.001>
6. Cabannes, Y., and Raposo, I. (2013). Peri-urban agriculture, social inclusion of migrant population and right to the city. *City*, 17(6), 769-782. <https://doi.org/10.1080/13604813.2013.812867>
7. Corrigan, M. P. (2011). Growing what you eat: Developing community gardens in Baltimore, Maryland. *Applied Geography*, 31(4), 1232-1241. <https://doi.org/10.1016/j.apgeog.2011.01.017>
8. Draper, C., and Freedman, D. (2010). Review and analysis of the benefits, purposes, and motivations associated with community gardening in the United States. *Journal of Community Practice*, 18(4), 458-492. <https://doi.org/10.1080/10705422.2010.519682>
9. Drake, L., and Lawson, L. J. (2015). Results of a US and Canada community garden survey: Shared challenges in garden management amid diverse geographical and organisational contexts. *Agriculture and Human Values*, 32, 241-254. <https://doi.org/10.1007/s10460-014-9558-7>
10. Food and Agriculture Organization of the United Nations. (2011). *The place of urban and peri-urban agriculture in national food security programmes*. FAO.
11. Food and Agriculture Organization of the United Nations. (2025). *Strengthening urban and peri-urban food systems to achieve food security and nutrition, in the context of urbanization and rural transformation*. High Level Panel of Experts on Food Security and Nutrition. FAO.
12. Furness, W. W., and Gallaher, C. M. (2018). Food access, food security and community gardens in Rockford, IL. *Local Environment*, 23(4), 414-430. <https://doi.org/10.1080/13549839.2018.1428106>
13. Garcia, M. T., Ribeiro, S. M., Germani, A. C. C. G., and Bogus, C. M. (2018). The impact of urban gardens on adequate and healthy food: A systematic review. *Public Health Nutrition*, 21(2), 416-425. <https://doi.org/10.1017/S1368980017002944>

14. Guitart, D. A., Pickering, C. M., and Byrne, J. A. (2012). Past results and future directions in urban community gardens research. *Urban Forestry and Urban Greening*, 11(4), 364-373. <https://doi.org/10.1016/j.ufug.2012.06.007>
15. Heynen, N., Kurtz, H. E., and Trauger, A. (2012). Food justice, hunger and the city. *Geography Compass*, 6(5), 304-311. <https://doi.org/10.1111/j.1749-8198.2012.00486.x>
16. Kegler, M. C., Prakash, R., Hermstad, A., Williamson, D., Anderson, K., and Haardorfer, R. (2020). Home gardening and associations with fruit and vegetable intake and body mass index. *Public Health Nutrition*, 23(18), 3417-3422. <https://doi.org/10.1017/S1368980020001485>
17. Kingsley, J., and Townsend, M. (2006). Dig in to social capital: Community gardens as mechanisms for growing urban social connectedness. *Urban Policy and Research*, 24(4), 525-537. <https://doi.org/10.1080/08111140601035200>
18. Litt, J. S., Soobader, M.-J., Turbin, M. S., Hale, J. W., Buchenau, M., and Marshall, J. A. (2011). The influence of social involvement, neighborhood aesthetics, and community garden participation on fruit and vegetable consumption. *American Journal of Public Health*, 101(8), 1466-1473. <https://doi.org/10.2105/AJPH.2010.300111>
19. Loopstra, R., and Tarasuk, V. (2013). Perspectives on community gardens, community kitchens and the good food box program in a community-based sample of low-income families. *Canadian Journal of Public Health*, 104(1), e55-e59. <https://doi.org/10.1007/BF03405656>
20. McCormack, L. A., Laska, M. N., Larson, N. I., and Story, M. (2010). Review of the nutritional implications of farmers' markets and community gardens: A call for evaluation and research efforts. *Journal of the American Dietetic Association*, 110(3), 399-408. <https://doi.org/10.1016/j.jada.2009.11.023>
21. Mead, B. R., Duncombe, T., Gillespie, R., Pugh, N., and Hardman, C. A. (2024). Does urban agriculture contribute to food security, and how might this be achieved? *Proceedings of the Nutrition Society*, 83(3), 195-203. <https://doi.org/10.1017/S0029665124002209>
22. Orsini, F., Kahane, R., Nono-Womdim, R., and Gianquinto, G. (2013). Urban agriculture in the developing world: A review. *Agronomy for Sustainable Development*, 33, 695-720. <https://doi.org/10.1007/s13593-013-0143-z>
23. Poulsen, M. N., McNab, P. R., Clayton, M. L., and Neff, R. A. (2015). A systematic review of urban agriculture and food security impacts in low-income countries. *Food Policy*, 55, 131-146. <https://doi.org/10.1016/j.foodpol.2015.07.002>
24. Brown, K. H., and Jameton, A. L. (2000). Public health implications of urban agriculture. *Journal of Public Health Policy*, 21(1), 20-39. <https://doi.org/10.2307/3343472>
25. Soga, M., Gaston, K. J., and Yamaura, Y. (2017). Gardening is beneficial for health: A meta-analysis. *Preventive Medicine Reports*, 5, 92-99. <https://doi.org/10.1016/j.pmedr.2016.11.007>
26. Spano, G., D'Este, M., Giannico, V., Elia, M., Cassibba, R., and Sanesi, G. (2020). Are community gardening and horticultural interventions beneficial for health and well-being? A systematic review. *International Journal of Environmental Research and Public Health*, 17(10), 3584. <https://doi.org/10.3390/ijerph17103584>
27. Taylor, J. R., and Lovell, S. T. (2014). Urban home food gardens in the Global North: Research traditions and future directions. *Agriculture and Human Values*, 31, 285-305. <https://doi.org/10.1007/s10460-013-9475-1>
28. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations. <https://sdgs.un.org/2030agenda>
29. World Health Organization. (2026). Healthy diet. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
30. Zick, C. D., Smith, K. R., Kowaleski-Jones, L., Uno, C., and Merrill, B. J. (2013). Harvesting more than vegetables: The potential weight control benefits of community gardening. *American Journal of Public Health*, 103(6), 1110-1115. <https://doi.org/10.2105/AJPH.2012.301009>