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# **"THERE IS A BEE IN MY BALCONY":**

A guide to growing food anywhere you live using illustrated narratives of diverse urban farms

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## ABSTRACT

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Food is a fundamental aspect of our everyday life, with deep connections to sustainability and social justice. Unfortunately, our current conventional industrial food systems form a core part of the ecological crisis. To engage with these systems, we require a radical transformation of our relationship with food, acknowledging that we as humans are also a part of the natural environment. Recognising the interdependence of agrobiodiversity, soil health and indigenous knowledge about nutrition and well-being requires the collective participation of diverse socio-economic groups at the local level. Efforts to encourage such involvement will be a robust systemic response to the "wicked problem" of unsustainable food systems and climate change.

In this project, we focus our research on exploring the potential of local urban food systems in promoting socio-cultural and ecological sustainability. The discourse and practices on urban farming in India are relatively understudied. We aim to examine local knowledge systems and the spatial, climatic and socio-economic considerations of Indian cities through our work. Specifically, our research entails gathering narratives from urban farmers belonging to various socio-economic backgrounds. Based on these narratives, we developed interactive workshops to explore the possibilities of sustainable food systems. We collectively interviewed 15 urban farming practitioners spread over six cities and towns and held two webinars with social entrepreneurs working to support urban farming initiatives. We also collaborated with 10 practitioners involved in urban farming activities to co-write articles on various themes pertaining to growing plants, ranging from practical concerns and ecological considerations to socio-cultural dimensions and policy directives. Our journey of co-creating knowledge and initiating conversations across academic institutions, civil society organisations and individuals culminated in an illustrated handbook, documenting the possibilities of reimagining sustainable food systems in cities. We used illustrations to make our research visually appealing, as well as to encourage diverse imaginations of city spaces and gardens beyond the conventional aesthetics of manicured lawns and "clean" terraces.

## INTRODUCTION

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India has witnessed rapid urbanisation in the recent decades. In 2021, approximately one-third of the total population lived in cities, and this trend is expected to continue in the foreseeable future as more towns and peripheral villages come under the purview of the "urban". These extended patchworks of uneven geographies and socio-economic realities intersect with questions of food security and nutrition in fundamental ways. Cities are major sites of energy, water and food consumption on one hand, and significant contributors of greenhouse gas emissions on the other hand. The consequences of inequitable access to safe and nutritional food is reflected in the increasing number of lifestyle diseases, rising malnutrition and increasing incidence of obesity. It is clear that food security and production are intimately connected with urbanisation and ecological issues, but these connections are not conspicuous. Frazier (2018) comments,

Food is a productive site for exploring the intimate intersection of bodies and cities. This is in part due to the inextricable relationship between food, the body, and place. As scholars have long identified, food is a symbolic and material force that transcends and delimits particular places and communities. (p. 12)

These connections may not be understood in cities, but can still be traced through food consumption patterns.<sup>1</sup> Urban spaces are far removed from sites of food production, and produce is routinely transported over thousands of kilometres through various intermediaries; a process that increases the cost as well as the ecological footprint of commodities. The disrupted supply chains during the pandemic, and the continuing inflation of food commodities, linked to fossil fuel prices, are a grim reminder of the unsustainable patterns governing the current food system. Yet, as Pollan (2013) notes, "Eating and drinking especially implicate us in the natural world in ways that the industrial economy, with its long and illegible supply chain, would have us forget" (p. 408).

Despite the challenges, a growing school of thought and practice under civic environmentalism aims at generating positive ecological and social outcomes in human-dominated landscapes through participatory environmental restoration and management initiatives. Urban farming, broadly understood as the growing and processing of food-related crops and the rearing of livestock within or in the vicinity of urban areas has emerged as a common feature of many civic ecology initiatives (Mougeot, 2006, p. 4). The connection between environmental actions and farming activities is succinctly captured by Wendell Berry's statement, "Eating is an agricultural act" (1990, p. 216). Linking the act of consuming food to the conditions under which food is grown and brought to our plates requires a systemic way of thinking about the human–nature relationship. Dehaene et al. (2016) comment that urban farming initiatives have the potential to consider "enduring aspects of self-provision (such as gardening and other forms of food growing); the re-localization (or 'reterritorializing') of the urban food market (e.g. the rise in short food supply chains such as farmers markets); establishing the notion of social justice and individual rights to food; and to find ways of reconstructing the notion of 'commons' around food, requiring efforts toward

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<sup>1</sup> See for instance Hungry Cities Partnership. (n.d.). *The partnership – Hungry cities*. <https://hungrycities.net/>

decommodification and forms of collective production" (p.175). Community farming requires a constant dialogue between practitioners to share the knowledge and skills involved in various tasks. Such dialogue and knowledge-sharing, in turn, strengthens feelings of community belonging, as people exchange ideas and thoughts on a variety of related topics (Okvat & Zautra, 2011). The participatory culture in these initiatives, especially from the point of view of expanding notions of sustainability, is a less-understood phenomenon (Poulsen et al., 2017).

In recent years, India has also witnessed a small but noticeable trend of urban community farms, with food safety and ecological integrity being the prime motivation. Several start-ups have facilitated a nascent interest in growing food by offering a host of services and materials to develop rooftop farms. Examples include iKheti, Edible Routes, Homecrop, and Squarefoot Farmers. States like Kerala have seen civic bodies initiate sustainable practices by providing kits and services to grow up to 30 vegetable varieties locally (Suma & Großmann, 2017). This trend is accompanied by a search for and revival of ecologically sound methods of farming that are embedded in traditional practices. Urban home gardening has enormous potential in creating edible cities and towns in India. With adequate planning and support systems, urban home gardens can become sites of integrated production of fruits, vegetables, poultry and small livestock, depending on the specific context. Moreover, urban home gardening can alleviate the issue of urban waste by integrating food production with household waste management. Popularisation of home gardening practices can considerably reduce waste at the source while bridging urban systems with food production and reducing their dependency on rural areas. The success of such initiatives also depends on the recognition and attention given to the inequitable spatial distribution and practical constraints of carving out kitchen garden spaces, especially in low-income areas. Common areas converted into edible gardens also run the risk of gentrification. Greater civic awareness is needed to prevent such areas and initiatives from being appropriated by real estate developers.

Urban agriculture in India, especially in metropolitan cities, also encompasses technology-aided, capital-intensive entrepreneurial initiatives such as hydroponics, vertical farming and aquaponics. However, they must be scrutinised thoroughly.<sup>2</sup> The mere practice of urban agriculture does not ensure sustainable outcomes. Although such enterprises shorten the urban food supply chain, their promotion should be based on a holistic and nuanced understanding of their functioning in intensive production methods and external dependence on inputs. The potential of local urban food systems in promoting socio-cultural and ecological sustainability needs to be researched from various perspectives (Frazier, 2018).

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<sup>2</sup> See for instance AgNews. (2020, December 11). *German agrochemicals major Bayer to enter India's home garden segment.* <https://news.agropages.com/News/NewsDetail--37439.htm>

## RESEARCH CONTEXT AND APPROACH

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This project was motivated by the need to contribute to ongoing dialogues and policy discussions on urban gardening practices as sites of recreation, livelihood, well-being, pedagogy and even resistance. We sought to foreground the voices of practitioners and understand the scope, motivations and challenges in sustaining food gardens across Indian cities. In the spirit of co-creating knowledge through the active participation of the people interviewed, we sought to emphasise particular histories, plurality of voices and geographical contexts.

Our approach involved interviewing diverse practitioners. Over 30 individuals were initially identified from various online and social media groups. We considered dimensions such as the potential interviewees' background, experience in growing food, positionality and geographical context. We explicitly sought to maximise the diversity of our interviewee pool the best we could. Once we had selected someone as a potential interviewee, we reached out to them, explaining our project and why we wanted to talk to them specifically. If they agreed to an interview, we familiarised ourselves with the interviewee's background and came up with questions specific to their interests to elicit detailed narratives. They also had the opportunity to collaboratively modify the questions in a back-and-forth conversation. The interviews were used to characterise practices, knowledge networks and evolving personal values. Specifically, in terms of practices, the project explores the spectrum and diversity of activities, artefacts and spaces being used to grow food-related crops. We also conducted a preliminary mapping of the knowledge networks, communities and resource sites that function as enablers of ideas and practices pertaining to urban farming. The interviews also delve into personal journeys of the respondents to understand their initial motivation, evolving perspectives, learnings and personal visions for the future. Once the interview was completed, we transcribed it and converted it into a short narrative that would help the general public to connect with the viewpoints of each person interviewed. These narratives were also shared with the respondents to ensure their perspectives were included faithfully.

While we had started with certain assumptions<sup>3</sup> regarding the practices, artefacts and spaces used for urban gardening, as the project progressed, we found ourselves embracing the dynamic perspectives and identities contributing to the work of each respondent. The interviews themselves began to look like invitations for further dialogue and research, rather than a finished "deliverable" subject to disinvested scrutiny. This incompleteness became a generative platform to imagine newer questions and perspectives rather than signalling a set directionality to the narratives.

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<sup>3</sup> Generally, given the time and space needed for growing food-related crops, we thought perhaps only a certain class were able to engage in such activities in urban spaces. This assumption also stems from the fact that unlike justice-oriented movements focused on food security in the West, the popular narrative of urban farming in India has largely come from economically privileged populations. These narratives don't necessarily contribute to ecological, health, or justice concerns. We were thus interested in understanding other perspectives that underlie urban farming initiatives.

## CO-CREATING PLATFORMS FOR DIALOGUE AND OUTREACH

Our project was guided by two broad questions:

- What kinds of practices and perspectives are embedded in urban farming initiatives in India?
- How can greater civic participation be nurtured through these practices and associated ideas?

We wanted to use these questions to create a resource of "actionable knowledge" for anyone keen to contribute towards imagining sustainable food systems.

We were able to interview 15 people from seven cities through the snowballing approach to draw attention to the diversity of practices and approaches governing urban farming practices. Ethical protocols of seeking consent and voluntary participation were followed. As we began engaging in conversations, we were aware that rather than aiming to be representative of the diverse Indian contexts, these narratives were meant to open up the space for further inquiry and reflection into broader domains of civic ecology. For instance, we reflected on conventional notions of labour (associated with youth and unskilled populations), care (female participation) and entrepreneurship (economies of scale and innovation) as we encountered senior citizens turning to gardening, men nurturing a balcony space with utmost sensitivity, and social entrepreneurs counting ecological sustainability as a core part of their business operations. A brief profile of the respondents is provided in Table 1.

**Table 1: Profile of individuals interviewed**

No.	Name	Location	Background	Space
1	Shantu Pindoriya	Gandhinagar	Self-employed	Campus grounds (IIT)
2	Samira Mukherjee	Mumbai	Former teacher	Balcony and terrace
3	Christopher Pareira	Mumbai	Retired entrepreneur	Ground space
4	Sarvodaya Community Farm	Mumbai	Volunteers	Allotted land
5	Antara Ray	Kolkata	Montessori teacher	Terrace
6	Alina Mazumdar	Kolkata	Homemaker	Terrace
7	Dhanashree Doddannavar	Pune	Finance analyst	Balcony
8	Karan Patel	Anand	Self-employed	Open land
9	Suvarna Mary Latha	Adilabad	School principal	School grounds
10	Vimal Nadan	Bengaluru	Retired development-sector professional	Terrace
11	Manasa Kambana	Bengaluru	Self-employed	Land
12	Gayatri Deshpande	Pune	Self-employed	Restaurant front yard
13	Vidula Mhsekar	Pune	Educator	Balcony
14	Madhuri Somalwar	Pune	Homemaker	Balcony
15	Anirban Hazra	Pune	University professor	Terrace

Source: Compiled by authors



In addition to the interviews, active efforts were made to institutionalise possible food garden initiatives by involving a student group called Prutha.<sup>4</sup> We organised two interactive webinars with field experts under the theme "Journeys in Urban Farming". The talks were well received and posted on YouTube for wider engagement. See Box 1 for brief profiles of the speakers.

### Box 1: Speaker profiles for the webinar on Journeys in Urban Farming

Farming Reimagined: Seeding Community Entrepreneurs" by Samir Bordoloi

Samir, an Ashoka Fellow, describes himself as a compassionate natural farmer catalysing the local food economy by building a network of indigenous food advocates and entrepreneurs in the North East. These changemakers are bridging the urban–rural divide, making farming aspirational again.

"Save a Leaf": Why We Need to Stop Burning Dry Leaves" by Aditi Deodhar

Aditi Deodhar worked as a software engineer before joining an NGO and eventually completing a course on Natural Resource Management from the Ecological Society in Pune. The course inspired Aditi to start an organisation called Jeevithnadi – Living River Foundation, with the vision of river rejuvenation through people participation. In February 2016, she created the Brown Leaf forum with the vision that "Not a single dry leaf should be burnt in India". In her talk, Aditi explained why leaf litter occurs in the first place, how it gets used up in natural areas and why it can become an issue in urban areas. She discussed how brown leaves are a source of carbon for the soil and should not be wasted. She traced her own journey and the process of creating a vibrant forum connecting leaf donors, leaf collectors and community composting initiatives.

Source: Small Farm Incomes, 2022a; Small Farm Incomes, 2022b

We also collaborated with Chhavi Mathur, a co-recipient of the TESS grant, to contribute to a series of discussions hosted by her group at the Living Waters Museum at the Indian Institute of Science Education and Research (IISER), Pune. We invited Samira Mukherjee, a teacher, to talk about her experience of facilitating terrace farming at her school. The discussion, titled "Sowing Seeds of Hope: Food Gardens in Schools" explored how school activities can be designed to empower students towards sustainable futures (Living Waters Museum, 2022).

A significant output of our project involved co-writing a handbook titled, *Cultivating Hope: Exploring Food Growing Possibilities in Indian Cities* on urban farming initiatives to bring together the narratives of the respondents along with articles on practical aspects of plant care.<sup>5</sup> Briefly, the process involved discussions with potential authors on various themes, who were then requested to submit an article that was reviewed and edited by us. We sought practitioners with extensive experience as professionals or educators involved in agrarian issues to write on specific topics (see Table 2).

<sup>4</sup> Prutha is a group of people at the Indian Institute of Science Education and Research (IISER), Pune who are interested in environmental activities, primarily in making the campus more eco-friendly and increasing awareness about green issues. See <https://www.iiserpune.ac.in/engage/outreach-and-training/student-outreach/prutha>

<sup>5</sup> We are also actively exploring a Hindi translation of the handbook to make it more accessible to a wider audience.

**Table 2: Themes covered in the handbook Cultivating Hope: Exploring Food Growing Possibilities in Indian Cities**

Sr. No.	Theme	Name	Organisation/Initiative
1	Compost	Anjali Choudhary	Sunheri Mitti
2	Saving seeds	Dipti Jhangiani	Edible Gardens
3	Pests and diseases	Anshuman Das	Welthungerhilfe
4	Growing microgreens	Berenice De Gama Rose	Permaculturist
5	Watering	Trupti Kedari	Gardening consultant
6	Mulching and soil care	Priti Bhosale	Gardening consultant
7	Harvesting	Ashwin Paranjpe	Gorus Farms
8	Making planters	Julius Rego	Green Souls
9	Edible weeds	Shruti Tharayil	Forgotten Greens
10	General plant care (soil, sunlight and larger ecosystem)	Samira Mukherjee	Former teacher
11	Policies on urban farming	Anita Pinheiro	Researcher

Source: Compiled by authors

An important aspect of our efforts to initiate institutional dialogues manifested in the form of a one-day workshop titled "Sustainable Food Systems in Urban Spaces" held on 19 November 2022 at IISER Pune (see Annexure B). The workshop was attended by more than 45 people with diverse work and educational experiences. The workshop began with a plenary talk by Sara Ahmed, a water and gender expert, followed by six short presentations by practitioners engaging urban farming. Emergent ideas included the "how, why and what" of community initiatives, the role of educational institutions in saving indigenous seeds and creating biodiverse farms, the need for urban planning policies to create supportive infrastructure, knowledge of edible weeds and native tree species, and the role of democratic technology platforms in enabling community-led food gardens. A highly interactive format allowed participants to discuss practical ways to initiate and sustain local practices such as composting within residential complexes, find ways to create seed exchange forums locally, support enterprises based on farmers' collectives and create institutional mechanisms to nurture volunteer-driven edible gardens and so on (see Annexure C for notes and photos). Overall, participants felt motivated and inspired to engage in the discussions and commented on the need for similar events to share ideas. Some comments shared by them as feedback illustrate the point:

*"This insightful workshop has taught me about the possibility of bringing interdisciplinarity to the process of addressing the food security system by using urban spaces for kitchen gardening and for growing medicinal herbs as well."* – Participant (Male)

*"I am motivated by the enthusiasm of the panellists and participants. It will surely keep me going. Knowing like-minded people personally is a boon."* – Participant (Female)

We also made use of a pictorial sharing platform called Kudoboard, where participants uploaded glimpses of their space, process and harvest as part of their urban gardening initiatives.<sup>6</sup>

<sup>6</sup> See Kudoboard. (n.d.) What's happening on your urban farm? <https://www.kudoboard.com/boards/LBCpKtLj>

## FINDINGS

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In their book on civic ecology, Krasny and Tidball (2018) write, "For humans to move towards a more positive trajectory in the face of linked social and environmental upheaval, we need positive examples of people acting to restore nature and renew communities" (p. xii). Urban farming provides such examples. Repeatedly, the narratives illustrate that working in garden spaces can enable multiple journeys of personal meaning-making and sustainability. We detail these below.

### Experiential Learning and Skilling

Respondents described how their efforts to make compost, collect biomass, grow seasonal edible plants or engage in plant care helped them expand their notions of sustainability, labour, care and community engagement. As one participant remarked, *"When you are personally involved, you understand the importance of such an initiative. We are not only growing plants, but we are growing as human beings"*. Visceral experiences of activities in the garden engage a wider spectrum of senses and their combinations, which allows one to attend to previously ignored features of the environment. This also allows one to be especially sensitive to changes, which can act as feedback (such as the budding of a flower, or early signs of a pest affecting a plant) and thereby respond accordingly. By paying close attention, individuals begin to participate in acts of care and are motivated to deepen their relationship with the "cared-for" environment based on the response. Building a meaningful relationship with the environment requires immersive, sensorium-based experiences, which generate the rich, moral imagination necessary to think and act in ecologically responsible ways. Given the atrophied and opaque nature of socio-ecological relationships in cities, facilitating such rich experiences and understanding the challenges in acting upon them is a promising and urgent area of research.

### Physical, Social and Cultural Feedback

Most participants described feeling motivated through tangible positive feedback, in terms of harvest or encouragement from peers. The idea of being able to grow food in limited spaces, even in small quantities, seems to have helped participants actively seek groups and practices to help them sustain the effort. Further, the possibility of forming and strengthening social bonds through shared actions acts as a motivation to participate in similar activities. For instance, Aditi Deodhar from Brown Leaf forum described how people organised themselves to collect dry biomass from various localities and kickstarted a civic movement to prevent dried leaves from going to the landfill. As evident in the narratives, the experience of togetherness attached to social interaction and affiliation not only motivates individuals to seek pleasure in social interactions, but also works to strengthen social bonds. These actions are mediated through the artefacts of practice, which act as tangible media for shared interactions.

### Building on Virtuous Cycles of Ownership and Empowerment

The interviews indicate how shared activities nurture group narratives, which further strengthen collective identities. Consider the case of a school neighbourhood that perceives itself as an environment-friendly community by becoming plastic-free or starting composting. Individual motivations can thus develop through narratives generated from participation in collective actions, wherein one begins to identify with the group and taps into the embedded perspectives driving the systems.



## Possibilities of Institutionalising Civic Ecology within Formal Educational Centres

Educational institutions are ideally positioned to function as outreach hubs within a local community, owing to their existing ties with students and educators. They can function as a common space to attempt diverse initiatives, as well as encourage greater participation and collaboration of teachers, students and other staff. Strengthening community involvement also helps in sustaining context-specific and place-dependent interactions. Creating space for such engagements within the formal curriculum has immense potential to seed grassroots movements across different localities.

## Barriers and Constraints

A recurrent tension articulated by many respondents was that of acceptance by neighbours, especially in shared spaces. While a few were able to garner support and appreciation from the immediate community, the aesthetics of growing food with frugal means could not be conveyed in many cases. Respondents also mentioned difficulty in saving seeds, as the fruits kept for harvest would get stolen or succumb to external elements. One of the respondents had to shut down her gardening activities a few months after the interview due to increasing protests by neighbours who felt that the garden was encroaching on public space. Lack of understanding, awareness and insufficient dialogue are some of the reasons that can escalate arguments. Another significant worry was the structural viability of spaces being used for gardening, especially balconies and rooftops. Fears of seepage or cracks also fuelled scepticism from neighbours in some cases. Supportive policies, infrastructure and social acceptability are needed to sustain such initiatives in the long run.

## OUTCOMES

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Through our project, we have attempted to create a resource of "actionable knowledge" for anyone keen to contribute towards imagining sustainable food systems. In the process, we were able to interact with diverse practitioners, entrepreneurs and academics working in this domain through in-depth interviews and participation in relevant academic communities. Our focus on urban farming initiatives stemmed from wanting to explore the possibilities and challenges of growing food in different spaces. We were able to facilitate exchange of ideas between practitioners and initiate discussions to grow a food garden at the IISER Pune campus. We are actively exploring collaborations with other groups such as Drift,<sup>7</sup> Living Farm Incomes<sup>8</sup> and Just Transitions Network<sup>9</sup> to create more avenues to share the handbook and continue to engage in dialogues.

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<sup>7</sup> See Drift. (n.d.). *Research, consultancy & education for transition – Drift*. <https://drift.eur.nl/>

<sup>8</sup> See Small Farm Incomes. (n.d.). *Small farm incomes | Rural incomes*. <https://www.smallfarmincomes.in/>

<sup>9</sup> See Just Transition Network. (n.d.). *Just transition network*. <https://www.justtransitionnetwork.com/>

## LIMITATIONS AND CHALLENGES

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Owing to logistical complications, we could not explore a few sites that we wanted to cover, especially from the viewpoint of marginalised socio-economic backgrounds. These included construction sites where migrant labourers grow edible crops on small patches of land and rented land near railway tracks in Mumbai. We hope to include these narratives in future documentation of practices.

We had initially visualised doing repeated interviews to understand the evolution of respondents' perspectives over a period of time. However, several logistical constraints such as travel restrictions and prior institutional commitments did not allow for sustained long-term engagements. Nevertheless, we have been in touch with most of the respondents, who have been extremely generous with their time and knowledge.

The initiatives described by most participants, especially when using their personal space, were limited to small, constructive tasks facing negligible systemic opposition (unlike in the case of protesting against building dams or clearing forest areas). Additionally, while a shift in perspective regarding recognising the interrelatedness and interdependence was observed, it was not clear if participants could place their practice in a larger context and compare with the trade-offs involved (such as the impact of agroecological practices on rural livelihoods, increase in public transport at the cost of clearing forest areas, etc.). These are systemic issues with no straightforward answers, so it is likely that relevant knowledge of local civic and environmental issues (such as waste ending up in the nearest landfill, prevailing prices of food, government rules/schemes, etc.) is required in addition to motivated action. Thus, it remains to be seen if personal, constructive actions can translate into large-scale social initiatives, especially in the face of resistance or inertia from the larger socio-economic system.

## REFLECTIONS

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As cities are poised to grow, urban design will play a crucial role in determining long-term challenges pertaining to sustainability, resilience and flourishing of ecosystems. India recently launched an ambitious project to turn urban areas into "smart cities". According to the mission statement, the purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area-based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving liveability of the whole city. New areas will be developed around cities in order to accommodate the expanding population in urban areas. Application of smart solutions will enable cities to use technology, information and data to improve infrastructure and services. (Smart Cities Mission, n.d.)

While the aims to improve built infrastructure and services are laudable, the urban environment needs equal attention. Far from being barren, urban areas can be rich pockets of biodiversity, with native and non-native species assemblages (Faeth, Bang, & Saari, 2011). These provide important means to deal with the challenges of climate change and its related effects. Co-existence and mutual well-being of living systems in cities also encourage social bonding and stewardship as people from different walks of life participate in group activities (McMillen et al., 2016). Thus, to avoid the adverse environmental consequences of urbanisation, ecologically-rich spaces such as wetlands, forested areas, farm plots, and beaches need to be defined, preserved and made an important part of the lives of people. As Russ and Krasny (2017) comment, "The story of cities as ecological spaces needs to be told, both in cities and outside them: to adults and to the many young people who increasingly populate the world's growing cities.... Such stories will have a critical impact on the willingness of the inhabitants of the cities of the future to protect and care for—and create—their urban environments" (p. 18). In this project, we explored growing edible plants as a practice that allows one to embody the reciprocal relationships embedded in the health of the land, soil and living beings dependent on it. Based on our findings we argue that community-farming can be an important way to motivate people to re-establish connections with the ecosystem.



## REFERENCES

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Berry, W. (1990). *What are people for?* North Point Press.

Dehaene, M., Tornaghi, C., & Sage, C. (2016). Mending the metabolic rift: Placing the "urban" in urban agriculture. In F. Lohrberg, L. Licka, L. Scazzosi, & A. Timpe (Eds.), *Urban agriculture Europe* (pp. 174–177). Jovis.

Faeth, S. H., Bang, C., & Saari, S. (2011). Urban biodiversity: Patterns and mechanisms. *Annals of the New York Academy of Sciences*, 1223(1), 69–81.

Frazier, C. A. M. (2018). *Food aspirations and insecurities in the developing city: Emergent food ecologies in Bengaluru, India* [Doctoral dissertation, University of California, Los Angeles]. eScholarship.

Krasny, M. E., & Tidball, K. G. (2015). *Civic ecology: Adaptation and transformation from the ground up*. MIT Press.

Living Waters Museum. (2022, September 20). *Sowing seeds of hope: Food gardens in schools – Dr Deborah Dutta & Samira Mukherjee – LWM, TESF India* [Video]. YouTube. <https://youtu.be/7t5YA6fdtZ0>

McMillen, H., Campbell, L. K., Svendsen, E. S., & Reynolds, R. (2016). Recognizing stewardship practices as indicators of social resilience: In living memorials and in a community garden. *Sustainability*, 8(8), 775. <https://doi.org/10.3390/su8080775>

Mougeot, L. J. A. (2006). *Growing better cities: Urban agriculture for sustainable development*. International Development Research Centre.

Okvat, H. A., & Zautra, A. J. (2011). Community gardening: A parsimonious path to individual, community, and environmental resilience. *American Journal of Community Psychology*, 47(3), 374–387. <https://doi.org/10.1007/s10464-010-9404-z>

Pollan, M. (2013). *Food rules: An eater's manual*. Penguin.

Poulsen, M. N., Neff, R. A., & Winch, P. J. (2017). The multifunctionality of urban farming: Perceived benefits for neighbourhood improvement. *Local Environment*, 22(11), 1411–1427. <https://doi.org/10.1080/13549839.2017.1357686>

Russ, A., & Krasny, M. E. (Eds.). (2017). *Urban environmental education review*. Cornell University Press.

Small Farm Incomes. (2022a, June 3). *Journeys in urban farming* | Samir Bordoloi | Ashoka Fellow [Video]. YouTube. <https://youtu.be/fWf2u3JtMMQ>

Small Farm Incomes. (2022b, July 29). *Journeys in urban farming* | Aditi Deodhar | Brown Leaf Forum [Video]. YouTube. <https://youtu.be/n29wm2KTBJ4>

Smart Cities Mission. (n.d.). *What is a smart city?*  
<http://www.smartcities.gov.in/upload/uploadfiles/files/What%20is%20Smart%20City.pdf>

Suma, T. R., & Großmann, K. (2017). Exclusions in inclusive programs: State-sponsored sustainable development initiatives amongst the Kurichya in Kerala, India. *Agriculture and Human Values*, 34(4), 995–1006.  
<https://doi.org/10.1007/s10460-016-9758-4>

## ANNEXURE A

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### Glimpses from Field Sites



**Figure A1:** A balcony garden in Pune  
Source: The authors



**Figure A2:** A social entrepreneur in Bangalore  
Source: The authors



**Figure A3:** A teacher in Mumbai  
Source: The authors



**Figure A4:** A retiree in Bangalore  
Source: The authors



YOURSELF  
then  
FAMILY  
then  
FRIENDS

Source: The authors



Source: The authors

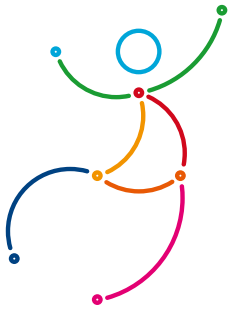


**Figure B3:** Dipti Jhangiani talks about community-driven farming spaces  
Source: Tiwari, 2022



**Figure B4:** A focus group discussion in progress  
Source: Tiwari, 2022





# TE|SF

**TESF** is a GCRF funded Network Plus, coordinated out of the University of Bristol, working with partners in India, Rwanda, Somalia/Somaliland, South Africa the United Kingdom and the Netherlands.

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