SUSTAIN | LORD MAYOR'S CHARITABLE FOUNDATION

Growing Edible Cities and Towns

A Survey of the Victorian Urban Agriculture Sector

Melbourne Food Hub (photo credit: Phoebe Powell)

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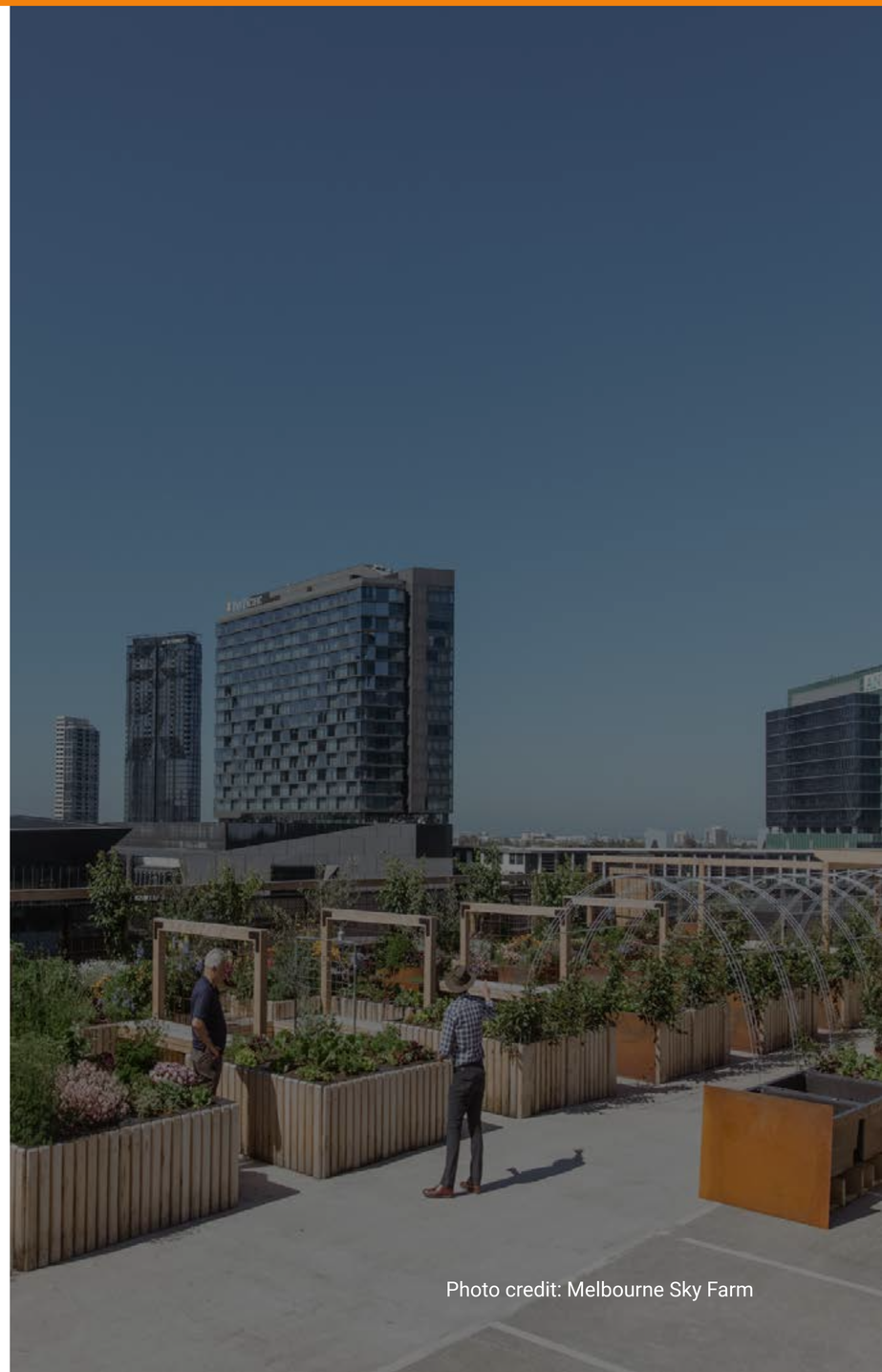

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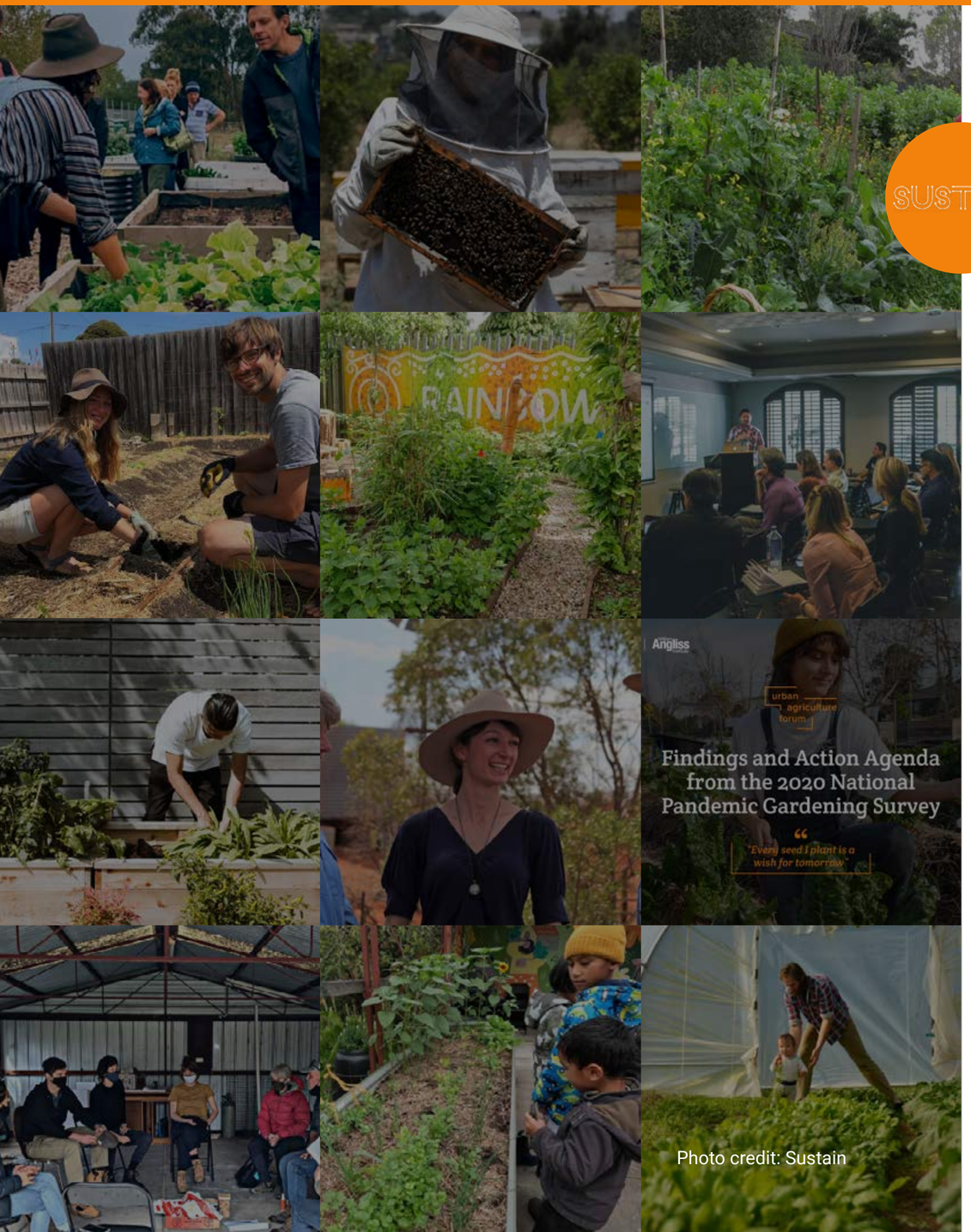

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About Sustain

Sustain: The Australian Food Network is a national health promotion charity and food systems 'think and do network' that empowers communities, governments, and organisations to create food systems for healthy people and ecosystems.

We believe urban agriculture is a powerful mechanism for creating healthier, more sustainable and socially just cities and for building food systems and agricultural literacy in our communities. For this reason, we have been advocating for greater recognition and support for urban agriculture in Victoria and nationally since our establishment in 2016.

Urban agriculture is now a key area of focus for Sustain's research, policy and advocacy agenda, and community praxis. Sustain's Pandemic Gardening Survey report (2020) documents just how critical edible gardening was for the physical and mental health of gardeners across Australia during the pandemic. The report provides a strong evidence base for sector support as a legitimate investment in public and urban health.

Our urban farm in Alphington and our Oakhill Food Justice Farm in Preston are testament to the delicious abundance that urban agriculture can bring to our cities and their potential as spaces for nourishment, healing, community connectedness and food justice. Our biennial national Urban Agriculture Forum is an opportunity for practitioners, researchers and policymakers to connect, share knowledge and expertise and strengthen a growing movement for more edible cities and towns. Our annual Urban Agriculture Month nourishes this movement, as it brings together thousands of people across Australia to celebrate urban agriculture in all its diversity and build momentum for its greater adoption and expansion.

Sustain's research, practice and events have shown us that the seeds of change are being planted across Australia. Our commitment is to nurture them so they can flourish.

Our vision for a more edible future

Sustain has a bold vision for the urban agriculture sector in Victoria. The roadmap presented in this report offers a pathway to help us get there.

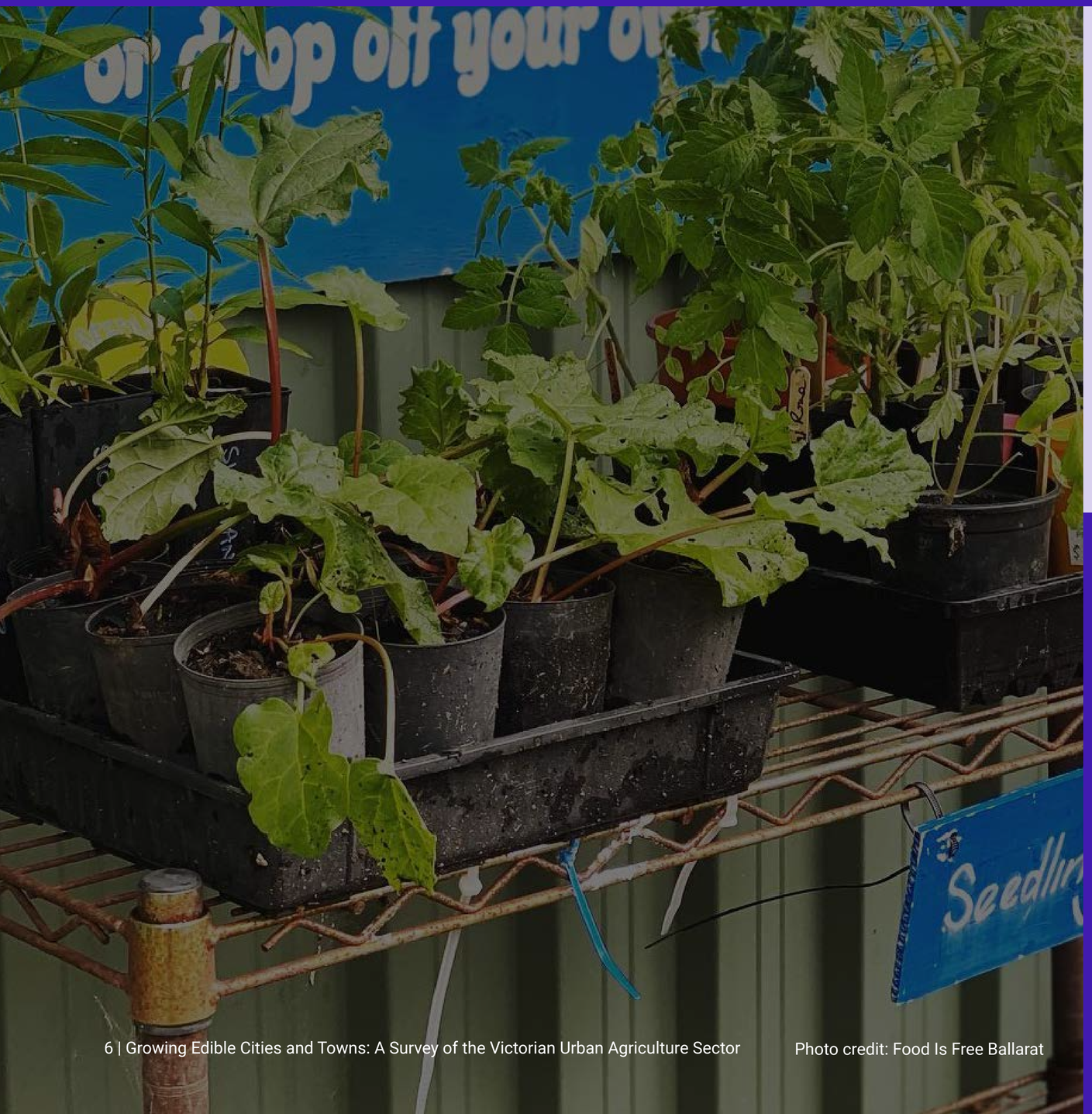
In 2032, Melbourne and Victoria's other regional cities and towns are considered global leaders in urban agriculture. Rooftop farms, edible median strips, neighbourhood farms and community/school gardens supply cities and suburbs with fresh, healthy food. These pockets of edible greenery cool the city, capture stormwater runoff and provide biodiverse habitat. They are lively spaces for cultural and intergenerational exchange.

Urban agriculture provides places for Aboriginal communities to connect to Country in the city and celebrate stories of belonging, both old and new. The cultural authority of First Nations' peoples guides the governance and design of edible landscapes.

Victoria's award-winning restaurants are celebrated for their seasonal, produce-driven menus and innovative collaborations with urban farmers. Strong connections between the hospitality sector, community composting initiatives and urban farmers are drivers of a thriving circular economy. Schoolchildren learn to grow food from a young age and are curious eaters with strong food literacy to support their transition into a healthy adulthood. Young people are excited by the possibility of a career in agriculture and have clear pathways to pursue this goal. All Victorians have access to spaces for growing food, should they wish, and can find urban food in their local businesses and communities.

Neighbourhoods across Victoria are vibrant, convivial and inclusive because the principle of good food for all guides their planning and development. Thanks to a thriving local food system, Victorians enjoy better health and wellbeing than ever.

Photo credit: Food Is Free Ballarat



Executive Summary

Despite the diverse benefits of urban agriculture, there is limited research into urban agriculture as a sector in Victoria. This report presents findings from a survey of sector practitioners in greater Melbourne (including green wedge areas), Bendigo, Ballarat and Geelong. The findings provide baseline data regarding the sector's composition, activities, market channels, challenges, needs and aspirations, as well as opportunities for its support and growth. The report also proposes a roadmap for addressing critical challenges that face the sector and for building on the strength of its social and environmental commitments, informed by the survey findings and relevant academic literature on urban agriculture.

This report's findings and recommendations are of relevance to policymakers at all levels of government, especially as food security, climate change, human and ecological health and urban sustainability emerge as key interconnected priorities in this challenging decade.

Photo credit: Food Is Free Ballarat

Key findings

A young, diverse and values-driven sector

Victoria's urban agriculture sector comprises an estimated

600-650

community organisations and commercial businesses.

Whilst community respondents tend to be clustered in the inner suburbs of Melbourne,

commercial operators are more prevalent in peri-urban areas.

The sector attracts a younger demographic with

over 50%

of respondents under 45 years old.

One third of respondents are in the **establishment phase**, and almost half **plan to grow or diversity**.

The urban agriculture sector engages in a diverse range of activities

from horticulture, livestock and apiculture to community education, community and school garden coordination, advocacy/ facilitation and food relief.

Social and environmental values are significant drivers for the sector.

Creating a healthy food system, contributing to healthy urban environments and enabling more self-sufficient communities, and responding to climate change were very or extremely important to over 90% of respondents.

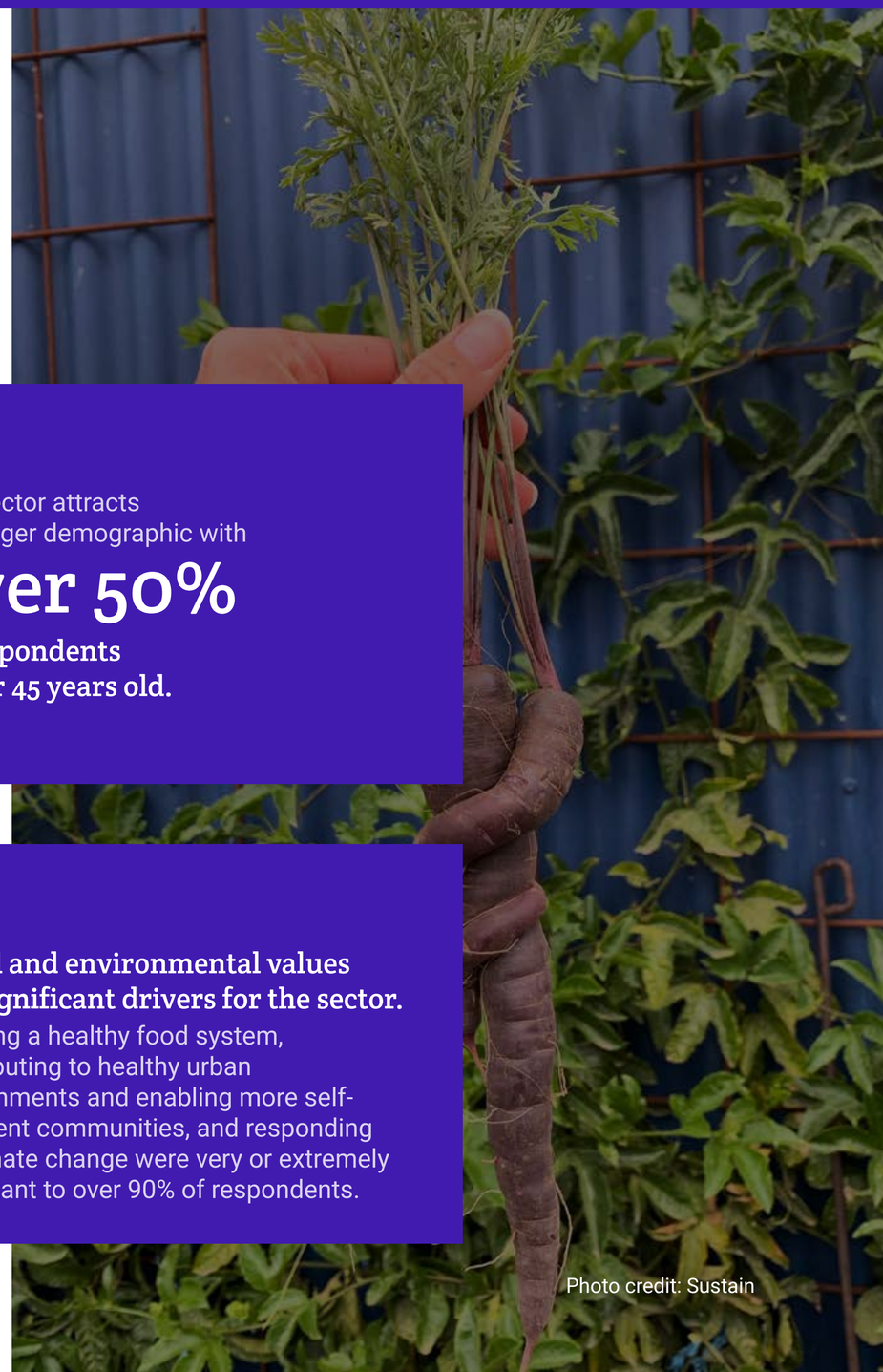


Photo credit: Sustain

Key findings

Economic snapshot

Number of employees

Community organisations tend to employ more people than commercial operators.

Revenue

70% of community organisations and 49% of commercial operators generate **less than $50,000 annually.**

Revenue streams

Commercial operators generate a **majority of revenue from sales and off-farm income.** The primary revenue streams for community operators are **government and philanthropic grants as well as sales.**

Customer base

There is a wide customer base for urban agriculture products and services. Individual households and councils are important customers of urban agriculture products and services.

Market Channels

Respondents showed strong interest in developing new market opportunities, including **urban food trails/agritourism, small-scale retail and direct-to-consumer channels.**

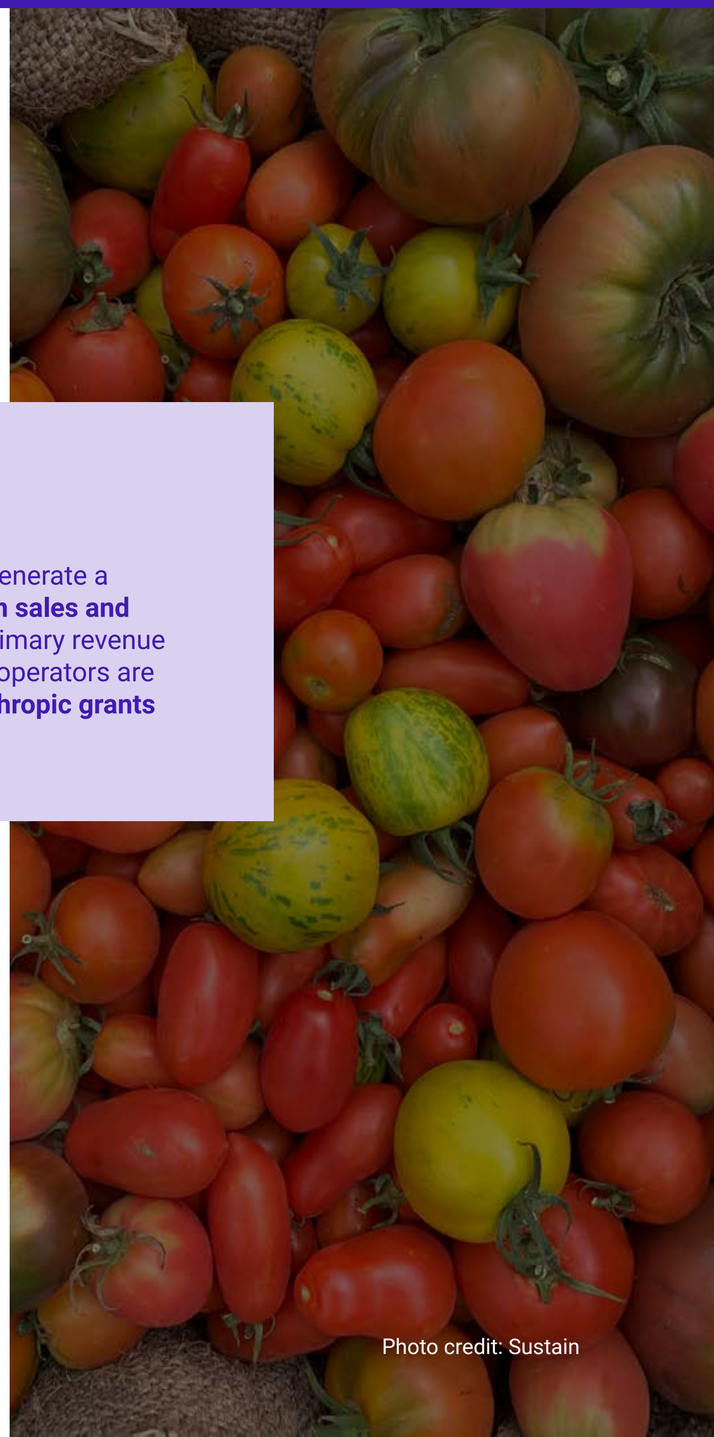


Photo credit: Sustain

Key findings

Constraints and barriers

Respondents highlighted critical gaps that, if properly addressed, would greatly expand their own capacity as well as that of the urban agriculture sector as a whole.

The most common constraints include:

Lack of grants tailored to urban agriculture

Over-reliance on volunteers or volunteer burnout

Difficulty accessing land or premises due to cost or insecurity of tenure

Regulatory barriers were reported by 84% of survey respondents. The most significant are:

Planning departments lack familiarity with urban agriculture

Urban agriculture is not recognised in the planning framework

Planning approval processes are complex and costly

Enablers, needs and priorities

Respondents emphasised several early enablers of success, many of which are the inverse of the identified constraints, including:

Secure access to land

Volunteer support, particularly in the community sector

Supportive council/ policy frameworks

Access to capital and funding

Respondents reported the need for further support with information and advice in the key areas of business skills, grant writing and marketing, branding and promotion.

Both community and commercial actors reported strong agreement on key priorities for development of the urban agriculture sector. These priorities are:

Identification of under-utilised urban land

Recognition of urban agriculture in state and local government planning frameworks

Investment in circular economies

In addition to the tangible actions above, two-thirds of respondents emphasised the importance of participatory policy processes, especially given the diverse motivations and differing levels of social capital amongst sector participants.

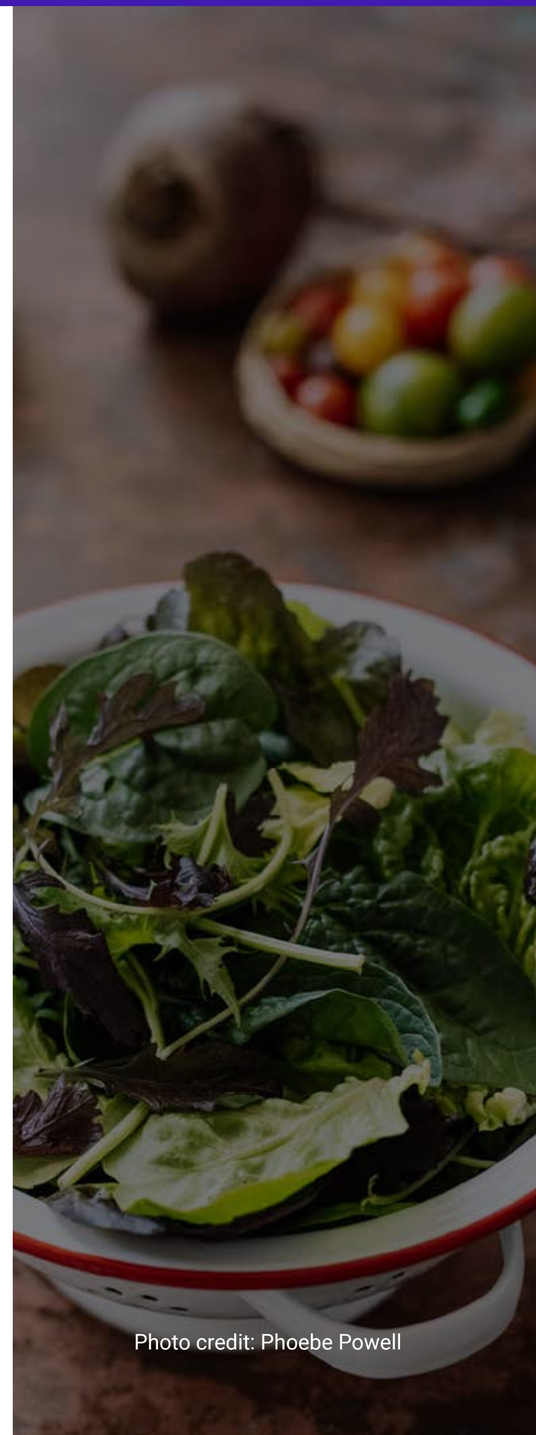


Photo credit: Phoebe Powell

Urban agriculture and Indigenous self-determination

Just as agricultural industries have contributed to colonisation and dispossession of Aboriginal people, so has urban development.

Consistent with Agriculture Victoria's commitment to First Nations self-determination and the ongoing treaty process between the Victorian government and First Peoples, it is important that any policy and philanthropic support for the urban agriculture sector is guided by Traditional Owners.

Urban agriculture should provide opportunities to honour Aboriginal knowledge and cultural belonging, support urban connections to Country, and ensure Aboriginal organisations are enabled to play a leadership role in governance and practice.

Urban Agriculture Sector Structure

Back End

Businesses and organisations

- Urban agritech
- Edible landscaping services
- Nurseries
- Councils & schools
- Researchers

Inputs

- Infrastructure
- Expertise
- Edible plants/seeds
  Compost, manure, etc
  Tools & equipment
- Land
- Grant, policy & other support

Outcomes

- Technological innovation
- Research & development
- Establishment & expansion of urban agriculture production sites
- Policy work & advocacy
- Jobs

Front End

Value adders

Experience economy

- Hospitality (restaurants, cafes, etc)
- Tourism (urban food trails & peri-urban agritourism)
- Training & development organisations
- Community education (workshops, classes, etc)

Community economy

- NFPs & social enterprises
- Community gardens
- School gardens
- Neighbourhood houses

Activities

- Food production
- Processing & distribution
- Community participation
- Training, skills development & knowledge sharing
- Composting
- Delivery of services & experiences

Outcomes

Economic

- Jobs and employment pathways
- Industry diversification & innovation
- Cross-sectoral collaboration
- Food economy localisation

Ecological

- Rain/stormwater capture
- Urban ecosystem regeneration
- Food waste reduction
- Nutrient recycling
- Heat island mitigation

Social

- Enhanced food literacy
- Community connection
- Mental & physical wellbeing
- Activated open spaces
- Community capacity building
- Increased fruit/veg consumption

Urban agriculture practitioners

Commercial
Micro-urban farmers, large commercial businesses, social enterprises

Community (paid)
Not-for-profit organisations, social enterprises, schools, local government

Community (unpaid)
Volunteer-led associations/groups (e.g. community gardening, etc)

Roadmap for a thriving urban agriculture sector in Victoria: A summary

Policies & plans

Situate urban agriculture in a **whole-of-government, cross-sectoral approach** to food system governance

Establish an **urban agriculture advisory council** to provide strategic guidance in aligning urban agriculture to existing legislative responsibilities and policy objectives

Develop an **urban agriculture strategy** with clear alignment to existing government commitments and identified areas of cross-departmental responsibility

Urban planning & land use

Prioritise urban food production as **vital city infrastructure**

Identify **existing regulatory obstacles** to urban agriculture

Create a dedicated **urban agriculture zoning classification and 'as of right' use** in state and local planning schemes

Finance & funding

Investigate options to **increase availability of land**

Resource an **urban agriculture fund** through innovative fiscal measures

Develop **participatory budgeting processes** and **grant programs**

Develop appropriate strategies for **resourcing Aboriginal leadership and participation** in urban agriculture

Governance & coordination

Commit to **a participatory and inclusive approach** to urban agriculture policy and governance

Seek representation from the **First Peoples' Assembly of Victoria** on the urban agriculture advisory council

Support the formation of **urban agriculture cooperatives**

Capacity building

Establish a **centre for urban agriculture** for research support, capacity building and leadership development

Resource **professional development opportunities** in urban agriculture and food systems for planning practitioners and government policymakers

Support a **mentorship program** to match new entrants and experienced practitioners

Infrastructure & materials

Provide **'as of right' water connections** for approved community gardens and urban farms

Establish **community grant programs** to resource essential edible gardening coordination and equipment, prioritising low-income communities

Support **circular economy composting**

Introduction

Urban agriculture is an essential response to all the big challenges we face: dietary & mental health, ecosystem regeneration, climate change mitigation and adaptation, social connectedness. We welcome the State government's interest in this sector and urge it to support wide-ranging policy and program initiatives through a dedicated state-wide urban agriculture strategy and budgetary allocation."

45 to 54 years old,
employee/director of NFP organisation

Alphington Urban Farm (photo credit: Sustain)

The 2020s are proving to be a decade of tremendous upheaval and disruption. The first years of the coronavirus pandemic saw major rises in household food insecurity across Australia and internationally.

The pandemic's continuation into 2022 was soon overshadowed by geopolitical conflict between Ukraine and Russia, and then a growing cost of living crisis. Household budgets, especially of the most vulnerable members of our society, are being squeezed through sharp cost of living increases, particularly for food, along with steep interest rate rises and upward pressure on rent. Frontline food relief agencies and local governments are struggling to cope with the increased demand, and thousands of families and children are suffering as a result.

To this bleak panorama we must add the climate emergency, with extreme and record-breaking weather events happening all over the globe nearly every month. The catastrophic floods in northern New South Wales and south-eastern Queensland in the first months of 2022 brought a sharp spike in prices for many vegetables (Yun, 2022). The medium- and long-term expectations are that such events will likely worsen, together with a significant warming and drying pattern that will lead to declining yields for basic grains and spiralling food price rises, spelling food insecurity for more and more Australians (Spratt and Dunlop, 2019).

Our food system is already failing to guarantee dignified food security for all. It has been for decades. All the indicators are that food insecurity will increase in the coming years. Tackling this at its source requires addressing basic inequalities that now characterise Australian society, above all income poverty (Loopstra, 2018).

Yet the multifunctional nature of urban agriculture offers very real opportunities to address this confluence of crises at a local and community level. It encourages the consumption of healthy and culturally diverse foods and fosters social connections via participatory processes (FAO, 2018; Ferreira et al., 2018). Urban agriculture has been described as a "nature-based solution" for ecological restoration, enhancement and regeneration in urban environments (Clarke et al., 2018). Its environmental benefits include reducing greenhouse gas emissions associated with shorter supply chains and less resource-intensive food production, capturing and recycling urban stormwater and organic waste, and mitigating the urban heat island effect (Blay-Palmer et al., 2014).

The mental health benefits of urban agriculture are also well established in the academic literature and became particularly apparent during COVID-19. Sustain's national survey of food gardeners across Australia found that 19% of respondents felt they could not have made it through the lockdowns without their garden; an additional 62% reported that their garden meant a great deal to their mental health (Donati and Rose, 2020). An international survey similarly concluded that gardening supported social-ecological health during the pandemic (Kingsley et al., 2022).

> *"[Edible gardening] has changed my life after years of grief and illness. I'm doing it to help me mentally and physically... I have severe arthritis and fibromyalgia, yet somehow the pandemic motivated me to set goals after the initial period of worry and isolation. Now I have plans and projects for the future and have achieved much in spite of the physical challenges and setbacks."*
>
> **Pandemic gardening survey respondent**

With 240 signatories to the Milan Urban Food Policy Pact, urban agriculture is increasingly recognised by city leaders and regional governments as a legitimate step towards the development of urban food systems that support public health, circular economies, climate change mitigation, community wellbeing and food security. It is strongly aligned with achievement of multiple **Sustainable Development Goals.**

An expansion of the urban agriculture sector can assist local and state government in Victoria in advancing many key social, economic and environmental priorities for COVID-19 recovery.

The findings presented in this report suggest that urban agriculture represents a powerful opportunity to empower communities and government in co-creating more edible cities and towns that are vibrant, socially inclusive, ecologically healthy, nutritionally abundant and delicious.

About this report

Despite the diverse benefits of urban agriculture and an active community of urban agriculture practitioners, there is very limited research into urban agriculture as a sector in Victoria.

In 2021, Agriculture Victoria commissioned Sustain to undertake a survey of the urban agriculture sector in Victoria. Sustain applauds Agriculture Victoria's investment in filling critical knowledge gaps. The findings in this report will be of great benefit to community, commercial and government stakeholders.

The survey captured the views and experiences of over 150 urban agriculture practitioners in greater Melbourne (including green wedge areas), Bendigo, Ballarat and Geelong. The research has generated baseline data to enable a better understanding of the sector's current status and to fill information gaps needed to track its future development.

The survey explored the following areas:

- Sector composition and geographic density and distribution
- Types of food production and other sectoral activities
- Economic profile including volunteers, employees, expenditure, and revenue streams
- Current and future market channels
- Values, drivers, constraints and barriers of the sector
- Enablers, needs and priorities for sectoral development

This report presents key findings from the survey, providing an evidence base for strengthening urban agriculture in Victoria. The roadmap proposes six key pillars for growing more edible cities and towns in Victoria, informed by survey findings and academic literature on urban agriculture.

The report's findings and recommendations are of relevance to policymakers at all levels of government, especially as food security, climate change, human and ecological health and urban sustainability emerge as key interconnected priorities in this challenging decade.

We thank the many people who completed and disseminated the survey and acknowledge the enormous contribution they make every day to the health, inclusiveness and sustainability of cities and towns across Victoria.

> **We call on readers to honour this work by supporting our roadmap towards a flourishing urban agriculture sector in Victoria.**

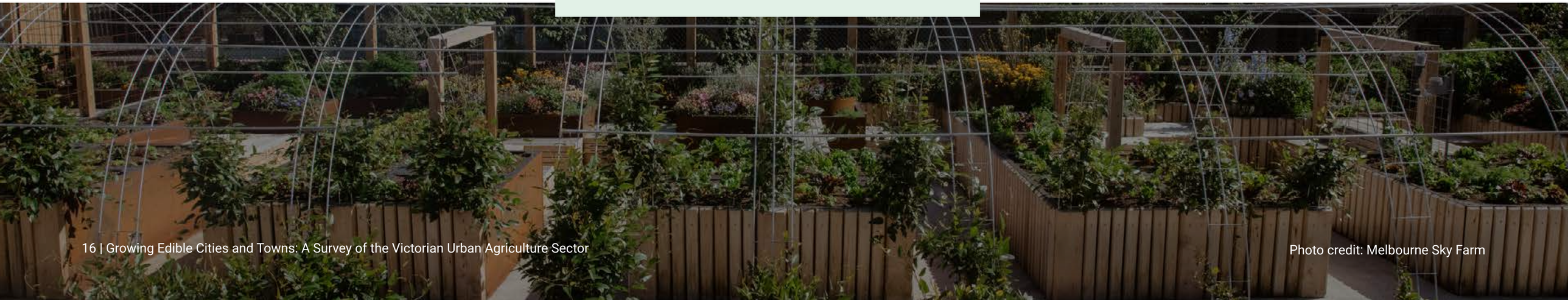


Photo credit: Melbourne Sky Farm

Photo credit: Melbourne Food Hub (Phoebe Powell)

Our approach

The findings and recommendations have been informed by:

A **survey** of community and commercial practitioners involved in urban agriculture from across greater Melbourne (including green wedge areas), Bendigo, Ballarat and Geelong

Desktop mapping of commercial and community actors around Melbourne

A **high-level summary of academic research** on the multifunctional benefits of urban agriculture, regulatory and economic challenges facing the sector and recommendations for supportive policy approaches

This report includes commentary from survey respondents and, where relevant, from 2020 pandemic gardening survey respondents.

This research builds on Sustain's 2020 research on edible gardening practices during the pandemic, presented in its report "Every seed I Plant Is a Wish for Tomorrow": Findings and Action Agenda from the 2020 National Pandemic Gardening Survey. For this reason, household gardeners were outside the scope of this survey.

Appendix 1 presents further detail about our methodological approach.

Appendix 2 contains the full survey instrument.

Planning day at Oakhill Food Justice Farm (photo credit: Sustain)

Background

While agriculture is still not commonly associated with cities in the minds of many people, this is rapidly changing.

"Urban agriculture" is defined as the production of food and other agricultural products in and around cities for both commercial and non-commercial purposes (Mougeot, 2000). This includes everything from community gardens and backyard production to commercial producers on rooftop farms, indoor microgreens or fungiculture as well as established larger producers operating on land that was once agricultural but that has since been in-filled by suburban development.

Current estimates are that over one billion people globally are engaged in urban or peri-urban food production, with over 60 million hectares of urban or peri-urban land under production (FAO, Rikolto & RUAF, 2022). The proportion of food that was both grown and consumed in cities doubled from 15% to 30% between 1993 and 2005; current projections estimate the productive capacity of urban agriculture as high as 180 million tonnes per year, amounting to 20% of total global food production (Altieri and Nicholls, 2020). For these reasons, leading experts on the future of sustainable farming regard urban agriculture as a central pillar in the post-COVID reconstruction of sustainable food systems (Altieri and Nicholls, 2020).

A brief history of urban agriculture in Victoria

Although there is growing interest in urban agriculture as an innovative approach to sustainable urban development, urban agriculture is not a recent development and has existed in many historical and geographical contexts globally. In Australian cities, urban agriculture was commonplace throughout the nineteenth century and up until the Second World War. For many households, growing food and rearing livestock were economic necessities but also a sign of independence (Gaynor, 2006). In Melbourne, the suburbs of Doncaster, Templestowe, Coburg, Heidelberg, Glen Waverley and Camberwell were home to many commercial market gardens and orchards in the first half of the twentieth century.

The post-WW2 era brought about significant land use changes in which agricultural land was converted to suburban expansion. While there are instances where councils and government agencies have preserved and maintained remnants of agricultural sites in now-urban areas (e.g. Bundoora Park Farm in Darebin City Council), urban expansion continues to drive loss of commercial agricultural production along the city's peri-urban fringe.

Photo credit: Food is Free Ballarat

Urban development pressures on Victoria's foodbowl

Victoria's peri-urban fringe plays an important role in sustaining Victoria's regional food economy as well as feeding its urban populations. Estimates from 2016 suggest that 16% of Melbourne's foodbowl farmland will be lost to urban development by 2050 at the current rate of population growth, with those areas closest to the city most vulnerable to competition from housing development and high costs of water and other inputs (Sheridan et al., 2016). In 2022, these pressures continue. Rising agricultural land values are stimulating the sale of farms to developers. The impacts of climate change, increasing cost of agricultural inputs due to geopolitical pressures along with pandemic-related labour shortages and other supply chain disruptions further threaten the viability of peri-urban agriculture with little end in sight (Murphy et al. 2022).

There is, as this report shows, a growing movement of young and new farmers aspiring to enter the agricultural sector. Many are committed to agro-ecological and/or regenerative approaches to farming that can also sustain local communities. Yet the prohibitive cost of land and challenges in accessing hands-on learning and training opportunities (which are often unpaid and require relocation) pose significant barriers to the future of sustainable agriculture (Massy 2021).

The policy and planning context

In the late nineteenth and early twentieth centuries, the question of how to feed a city was front-of-mind for municipal governments and planners. In the mid-twentieth century, agricultural systems expanded and moved further away from cities, while the growth of supermarket distribution chains reduced reliance on local food markets and effectively removed food and farming from the remit of urban planning (Donofrio, 2007). Although most cities, including Melbourne, have long histories of urban food production, the food system is now “a stranger to the planning field” (Pothukuchi and Kaufman, 2000). That agricultural activities have long been regarded as separate and distinct from urban life (and zoned accordingly) is a cultural barrier that remains embedded in local and state planning frameworks, despite growing community and government interest in the benefits of urban agriculture.

Existing and established land uses are subject to rigid zoning definitions that are not inclusive of urban agriculture (Castillo et al., 2013). There are currently no existing planning instruments used by state or local governments that recognise urban agriculture as a specific permitted urban land use (Sarker et al., 2019). Because it is an agricultural activity, urban agriculture is often approached as a potentially “nuisance-causing” activity which, in turn, creates “prohibitions, obstacles and impracticable conditions” for many urban agriculture practitioners in Australia (Pires, 2011).

The lack of recognition of urban agriculture as a desirable land use within the planning framework means it must compete for high-value land, operates with minimal regulatory support and remains a blindspot within city planning processes (Langemeyer et al. 2021). This represents one of the sector’s most significant barriers, as the survey findings confirm.

Federally, there has been almost no long-term policy or institutional support for urban agriculture in Australia. While there is some structural and policy support for urban agriculture in Victoria, it is weak compared with similar jurisdictions in Europe and the Americas where urban agriculture is more strongly championed, funded and recognised in planning frameworks (Nicholls et al., 2020).

It has only been in the last 10-15 years that some local councils, government agencies and philanthropists in Victoria have recognised the civic potential of urban agriculture to enhance community connectedness; foster a sense of belonging; build trust, support and reciprocity; and provide a convivial setting for education, empowerment, social cohesion, therapy and wellbeing (Kingsley et al. 2021).

> *“There is a significant opportunity for planners to enhance city sustainability by including urban agriculture into the planning agenda at all levels – from the master plan to the plans for individual sites and neighbourhoods. Planners can contribute towards better cities and healthier communities by making urban agriculture an aspect of their practice through its integration in urban infrastructures, planned unit developments, housing projects and by preserving or establishing edible landscapes.”*
>
> **Sarker et al., 2019**

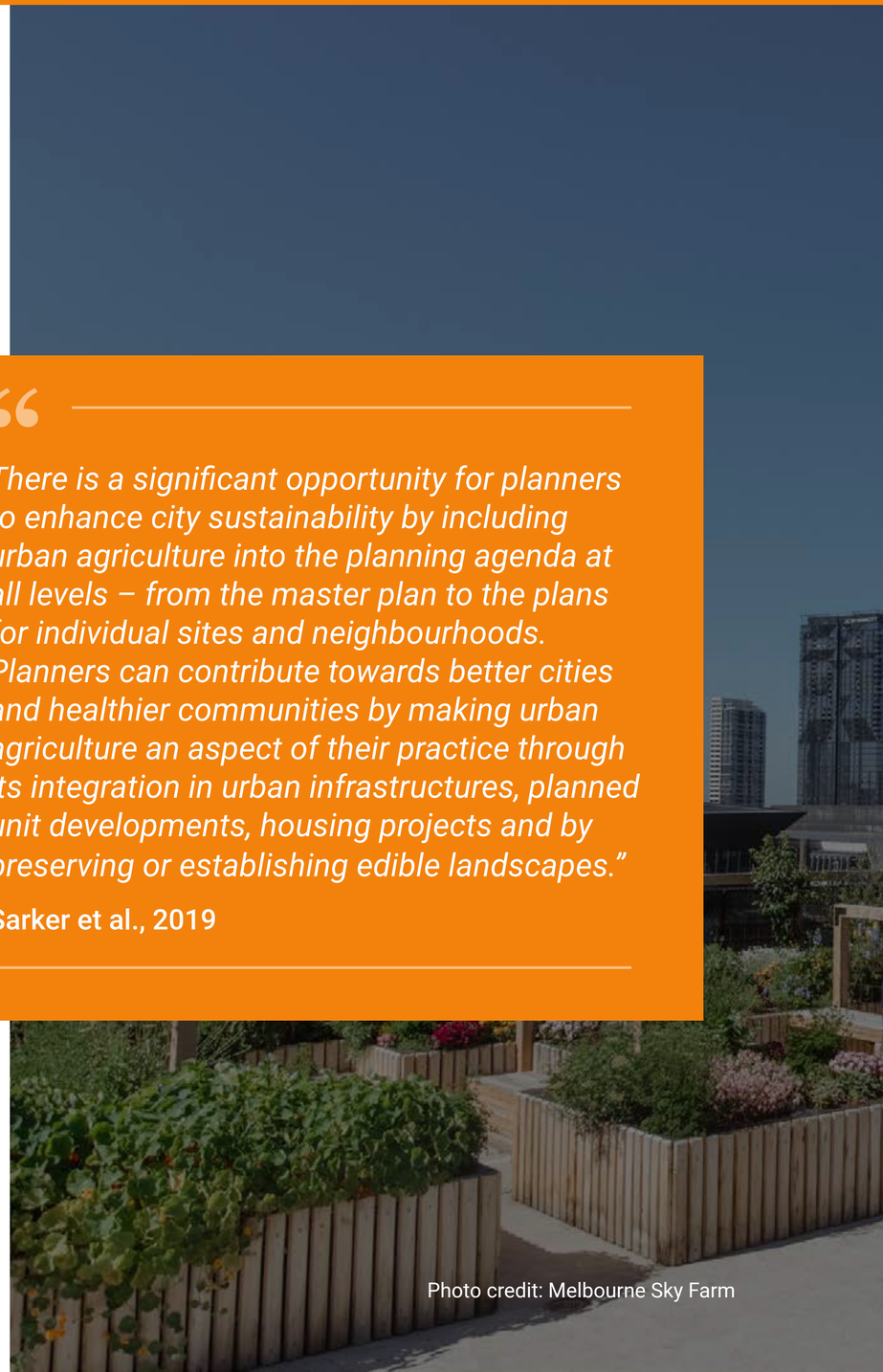
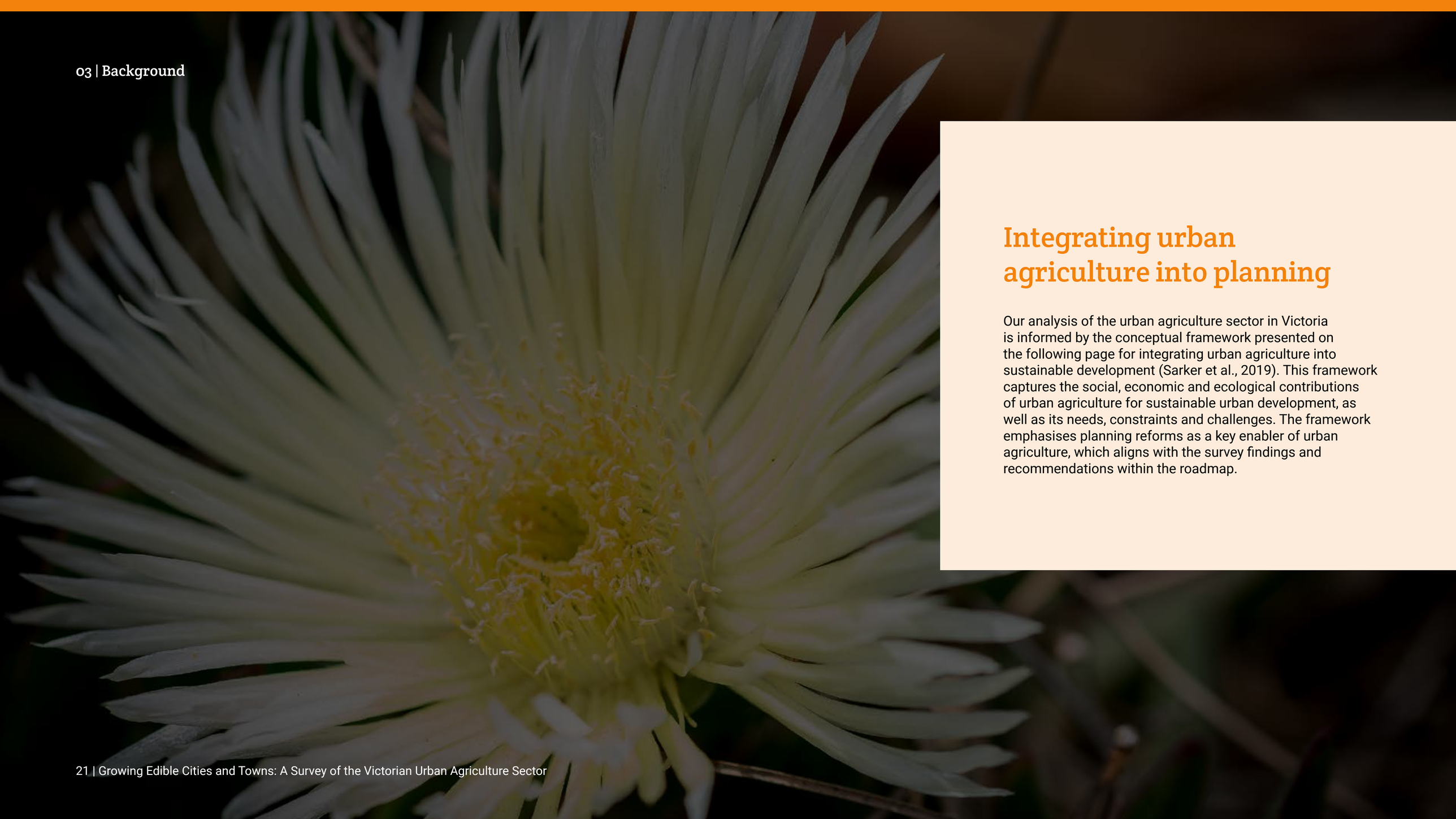


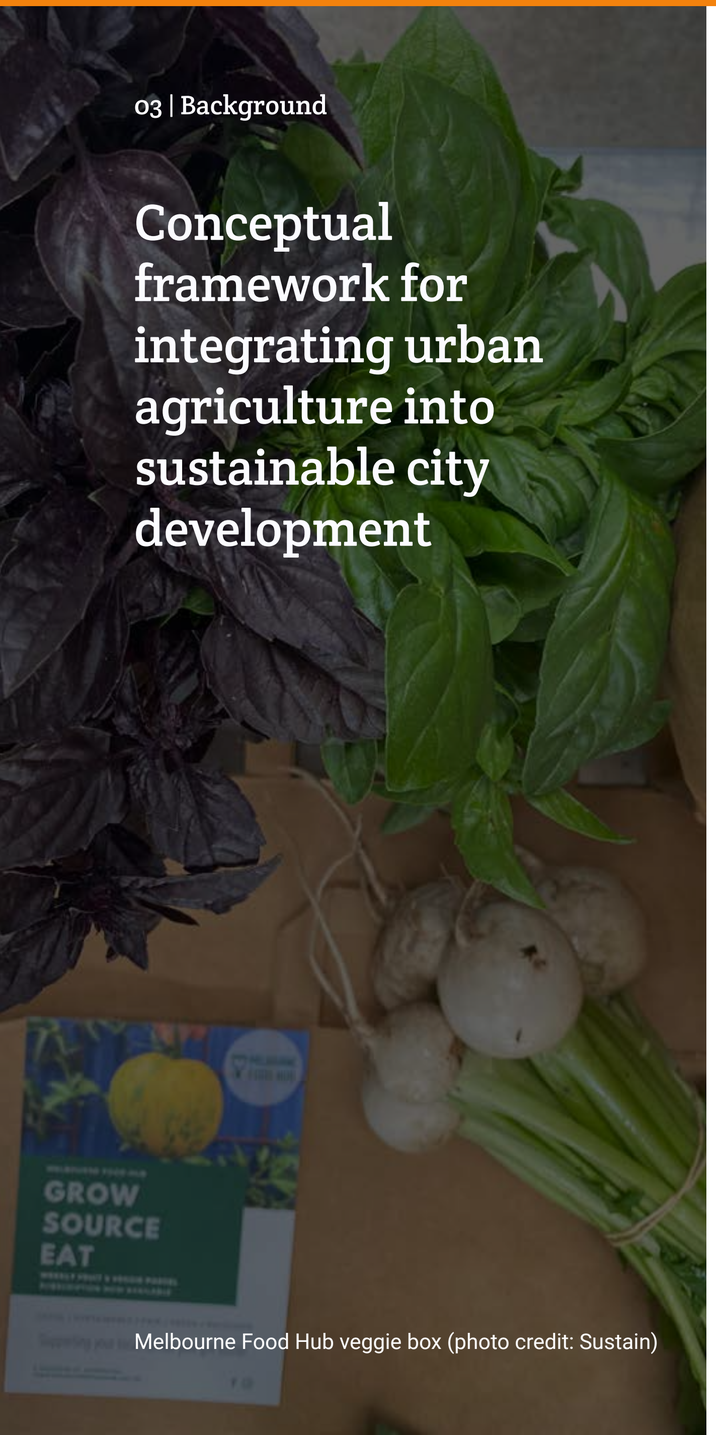
Photo credit: Melbourne Sky Farm



Integrating urban agriculture into planning

Our analysis of the urban agriculture sector in Victoria is informed by the conceptual framework presented on the following page for integrating urban agriculture into sustainable development (Sarker et al., 2019). This framework captures the social, economic and ecological contributions of urban agriculture for sustainable urban development, as well as its needs, constraints and challenges. The framework emphasises planning reforms as a key enabler of urban agriculture, which aligns with the survey findings and recommendations within the roadmap.

Conceptual framework for integrating urban agriculture into sustainable city development



Melbourne Food Hub veggie box (photo credit: Sustain)

Sustainable City Development

Social
- Food security and nutrition
- Poverty alleviation
- Improved health status
- Community building and social inclusion

Economic
- Income generation
- Employment generation
- Local economic development
- Enterprise development

Ecological
- Urban greening
- Open green space
- Reduction in ecological footprint
- Urban habitat diversity

Integration of urban agriculture into land use planning

Areas of planning intervention
- Policy formulation
- Building code
- Plot design
- Temporal user right agreement
- Integration in social housing programs
- Fiscal and tax incentives
- Land identification and land bank
- Integration with urban infrastructure
- Planned unit development
- Edible landscapes

Planning tools
- Master plans
- Local plans
- Site plans
- Subject plans
- Structural plans
- Neighbourhood plans
- Detailed planning scheme

Factors affecting integration
- Lack of political vision
- Insufficient scientific evidence
- Lack of policies, plans and programs
- Planner recognition
- Lack of supporting tools
- Lack of legal and regulatory framework
- Access to land and secure land tenure
- Insufficient structure and support service

Land use planning

Driving forces
- Community demand
- Policy framework
- Participatory planning
- Urban land market and governance

Urban development

Current challenges
- Energy limitations
- Water shortages
- Food security and food waste
- Air pollution
- Climate change events
- Decreasing biodiversity
- Increasing population
- Traffic congestion, inefficient public transport
- Competition for land use

Source: Sarker, A.H., Bornman, J. F. & Marinova, D. (2019). A Framework for Integrating Agriculture in Urban Sustainability in Australia. *Urban Science*, 3(2), 50.

Key Findings

[Urban agriculture] needs more support for micro scale growers to get started and continue to operate, more ways for existing BIPOC (Black, Indigenous, People of Colour) communities to access land, ways for urban ag to form partnerships or operate partly in regional areas."

25 to 34 years old, sole trader (horticulture)

Sector Overview

Composition and scale

The survey received 153 responses in total, with strong representation from Melbourne's inner north. For the purposes of understanding differing needs within the sector, survey respondents were categorised as follows:

- **Commercial operators,** including commercial as well as social enterprises from the micro to large scale
- **Community operators,** including NFPs, schools and local government supporting urban agriculture activities, as well as volunteer-led associations/ groups such as community gardens

These two categories were distinguished by the extent to which operations relied on trade versus grants and other revenue, with 45% being commercial operators and 55% being community organisations. However, the distinction between the two is not always clear-cut. Many businesses have a strong community orientation, and some community operators also generate their own revenue.

Because larger operators further from the CBD may be less well represented in the survey, supplementary desktop mapping was undertaken which identified over 450 sector participants in the following categories: 212 commercial businesses, 48 community organisations including grant-funded not-for-profits (NFPs) and volunteer-led associations as well as 225 food forests and community gardens. This desktop mapping is not a comprehensive representation of the sector.

Commercial operators on Melbourne's peri-urban fringe are likely to be underrepresented. There may also be community gardens that have not been identified. Only some school gardens were mapped; there may be over 100.

Allowing for a 33% overlap between desktop mapping and survey respondents, we cautiously (and conservatively) estimate the size of the sector at 600 to 650 operators, roughly split between commercial and community categories.

Commercial/community breakdown
(n153)

Photo credit: Melbourne Food Hub

Sector overview

A young, dynamic and diverse sector

Just over half of survey respondents are under the age of 45. The community sector reflected a slightly younger demographic: 25% were aged 25 to 34 years old compared to 19% in the commercial sector.

Participants within the urban agriculture sector are very diverse. They include edible plant nurseries, school gardens, edible landscape design, agritech manufacturing and equipment supply, large-scale aquaculture, micro urban farming start-ups, community garden coordinators, local government staff and councillors, community food system organisations and employment training providers as well as related businesses or organisations in which urban agriculture serves a secondary purpose.

01 A quarter of respondents are NFPs or social enterprises for which **food production is a primary goal**, with a further 20% identifying as small-scale commercial producers.

02 19% of other NFPs or social enterprises reported urban agriculture as **a secondary activity** to achieve a primary goal such as reducing social isolation, job training/skills development.

03 Other respondents reported providing support for the sector, either through products and services or through policy work (such as councils).

Age Breakdown
(Q1, n153)

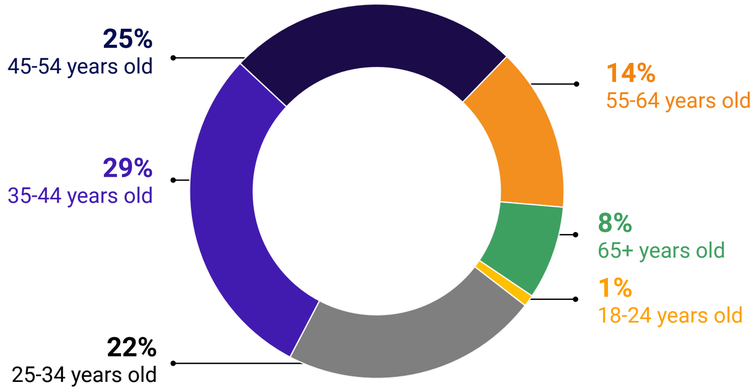
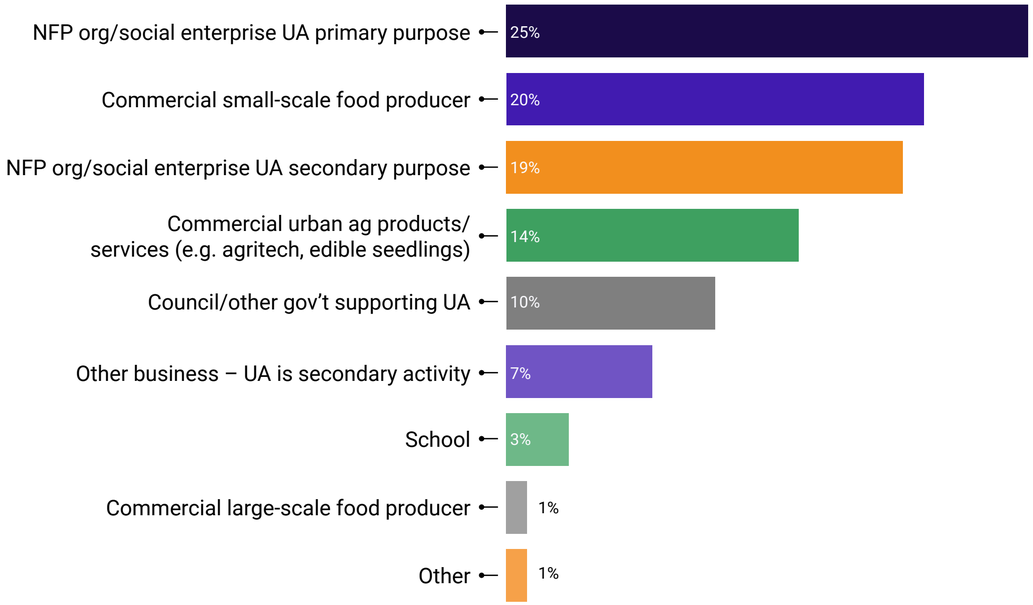


Photo credit: Food is Free Laneway Ballarat

Although many commercial operators are sole traders or small employers with modest revenue streams, results demonstrate strong potential for growth in Victoria's urban agriculture sector. A third (29%) are new or in an establishment phase across both the commercial and community categories, and almost half plan to grow or diversify.

Type of Operation
(Q4, n153)



Phase of Operation
(Q4)

All (n116)

A values-driven sector

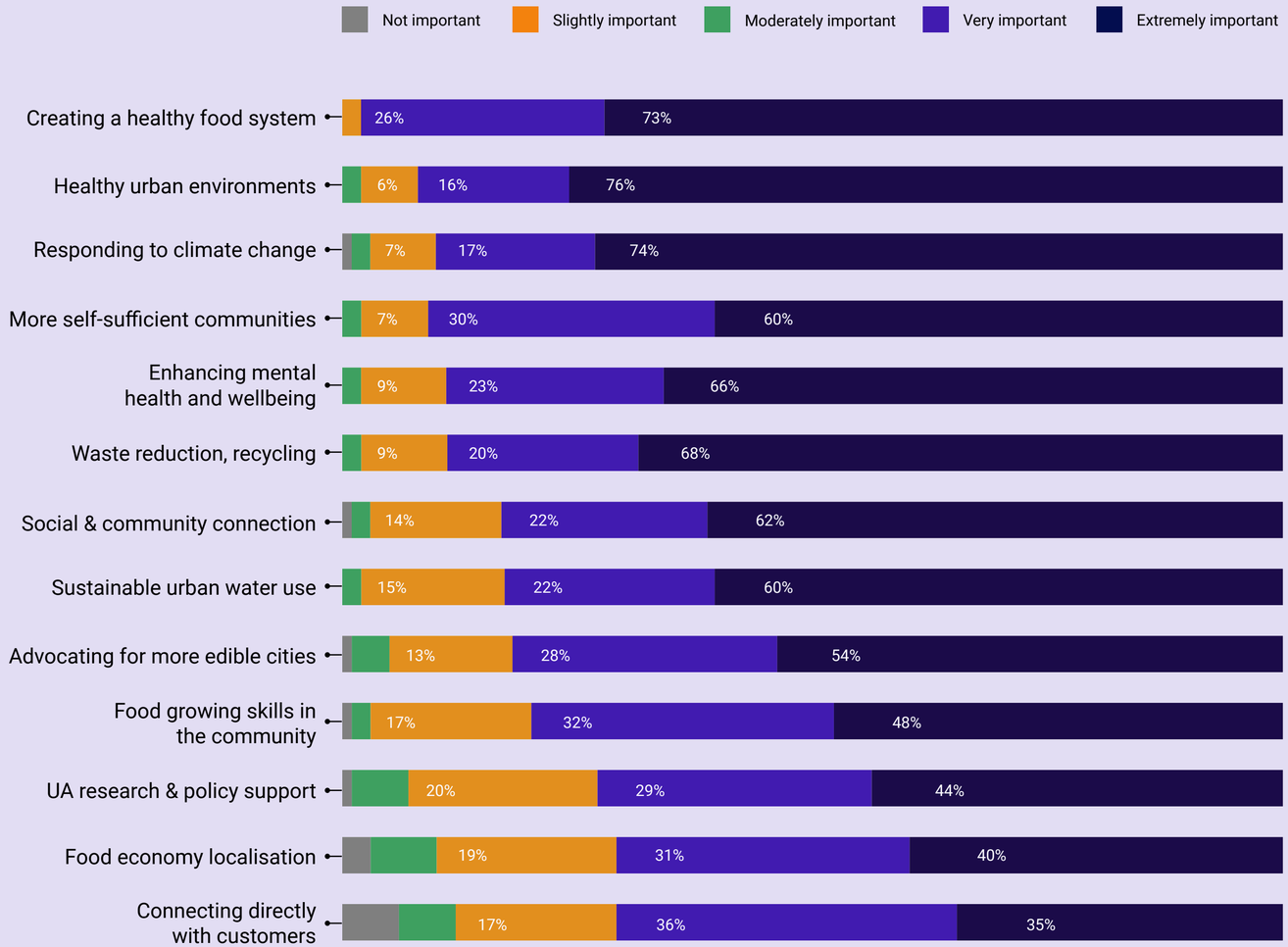
Environmental and social values are key drivers in the urban agriculture sector. Creating a healthy food system is a high priority for 98% of respondents. Enhancing mental health/wellbeing, creating more self-sufficient communities and healthier urban environments, responding to climate change, localising the food economy, connecting directly with customers and advocacy for more edible cities were also very/extremely important to over 80% of respondents.

The graph reflects social, environmental, economic and policy/ advocacy values which were very or extremely important for 70% or more of respondents. These environmental values are also reflected in respondent comments that indicate some participants are engaged in circular economy activities, in particular the processing of waste for reuse within the local food system.

With the exception of connecting directly with consumers and food economy localisation, economic values were not highly prioritised by either the commercial or community sector, though the commercial sector placed somewhat greater emphasis on these. The least important economic values were technological innovation (9% - community; 38% -commercial), maximising productivity (15% - community; 49% - commercial), and attracting commercial investment to urban agriculture (15% - community; 24% - commercial).

> *My micro business relies heavily on material sharing and reuse arrangements for resources like planters, pots, watering systems, saving and sharing seed etc. These systems often don't fit neatly into economic estimates, budgeting or policy. I would like to see more research into community-based circular economies and policies to support and streamline these initiatives."*
>
> **25 to 34 years old, sole trader (horticulture)**

Most important values
(Q30-32)



Distribution and activities: Desktop mapping

Map 1: Commercial sector (desktop mapping)

Commercial urban agriculture

Map 1 represents desktop mapping of commercial operators in and around Melbourne. This includes large-scale commercial operators (including aquaculture, horticulture and egg production) as well as medium-sized businesses in the western and south-eastern suburbs which were not captured within the survey.

Notably many urban agriculture businesses identified through an ABN search were registered in 2021 (particularly those growing mushrooms and microgreens). It is possible many start-ups responded to the changing retail environment in the COVID-19 context, capitalising on new distribution models and an expansion of direct-to-consumer veggie boxes, thus creating new opportunities for micro-operators within the sector.

Of the commercial businesses mapped to the left, the most common business activity is horticulture, followed by other high-value products such as honey, meat, eggs, breeding animals and mushrooms. Honey, fungiculture and microgreens appear particularly popular for new entrants to the sector, likely because they require minimal land and generate high-value products.

Other businesses include:

Specialist edible seed/seedling nurseries and urban agritech sell to commercial businesses (such as primary producers) and households

Some small mushroom and microgreen producers also market propagation/grow kits for home production

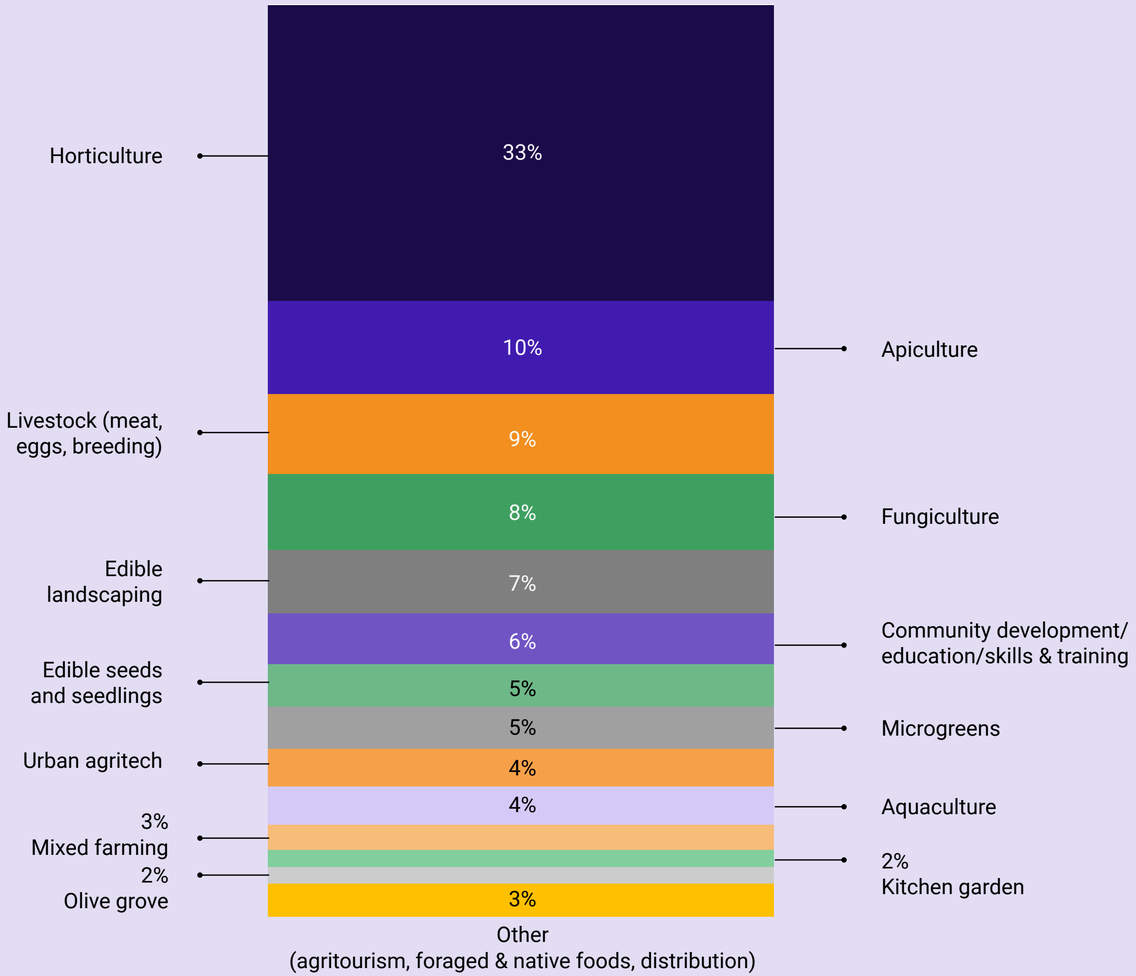
Edible landscaping businesses offer expertise and services to community organisations, schools, local councils and households

Kitchen gardens attached to restaurants

Small-scale growers on Melbourne's fringe participating in peri-urban agritourism, including U-fish/pick, farmgate sales or gardening workshops, strengthening local tourism opportunities

This diversity of business activity is the foundation for collaboration and interaction across the urban agriculture sector.

Primary Activity: Commercial Desktop Mapping
(n212)



Map 2 (on the following page) represents the distribution of commercial enterprises, community organisations and individual community gardens in Ballarat and Bendigo.

Map 3* depicts desktop mapping of the community sector capturing community organisations (with staff), volunteer-led associations and community and school gardens (including food forests and neighbourhood house gardens). Although community gardens are scattered throughout Melbourne, there are clear clusters within inner city suburbs. Outer suburbs appear less well serviced by community spaces for growing food.

Community capacity building (including community development, education/workshops, skills and training) is a primary activity for a significant portion (38%) of the community sector.

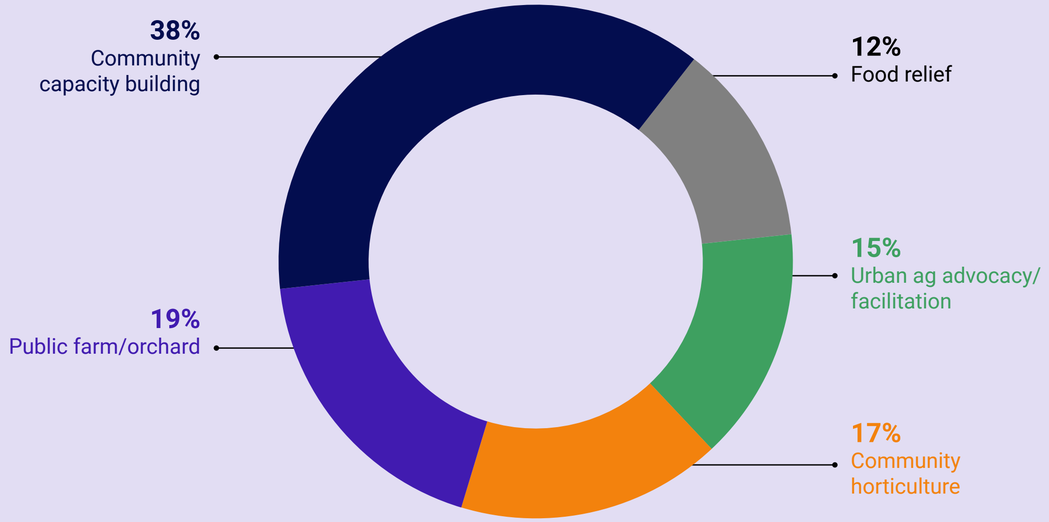
The category of 'public farms/orchards' represents urban agriculture assets held by state government, local councils or the National Trust.

Advocacy and facilitation activities relate to NFPs and volunteer-led community associations that advocate for urban agriculture or facilitate urban food gardening activities for the community.

Although only 12% of organisations mapped here are engaged in food relief as a primary activity, many of the organisations represented in other categories also engage in at least some food relief activities. The pandemic was a significant driver of food relief activities across the urban agriculture sector.

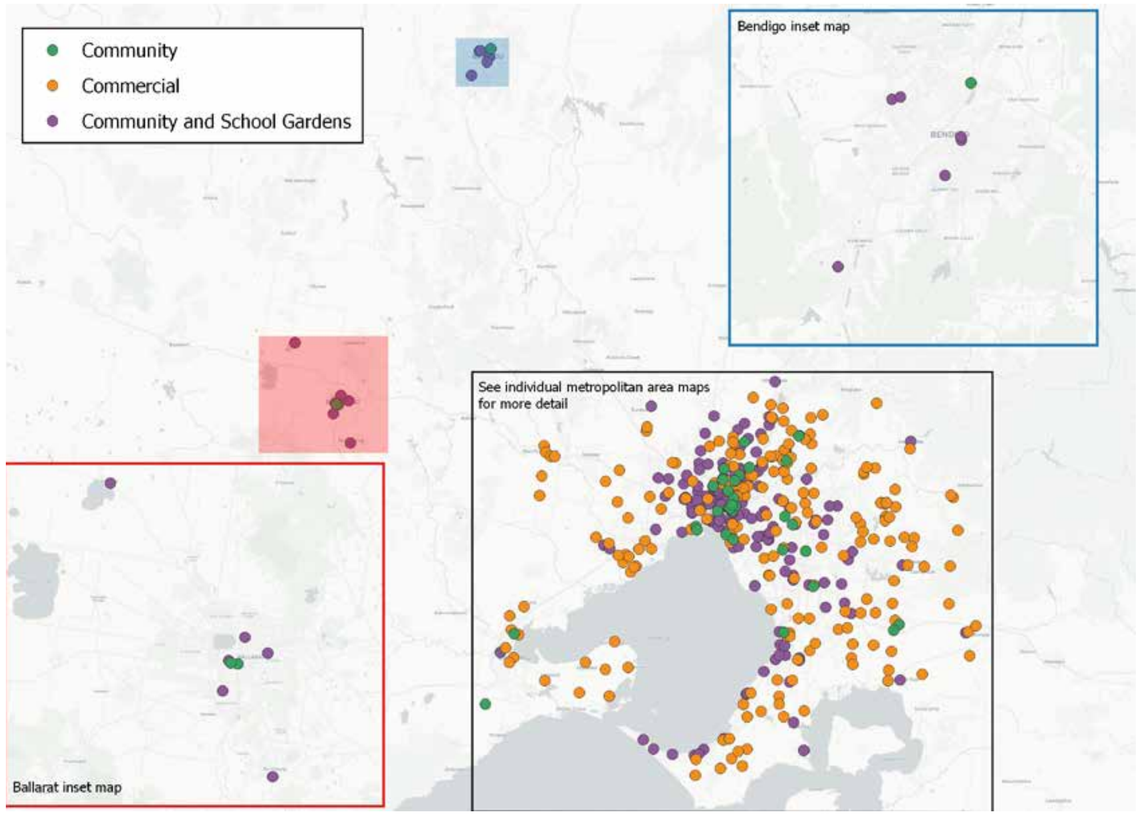
*It should be noted that this map does not capture every individual garden, only those for which exact street addresses were readily available. Because school gardens are not publicly listed, these will be significantly underrepresented in this map.

Primary Activity: Community Organisations (Desktop Mapping)
(n48, excludes individual community gardens)

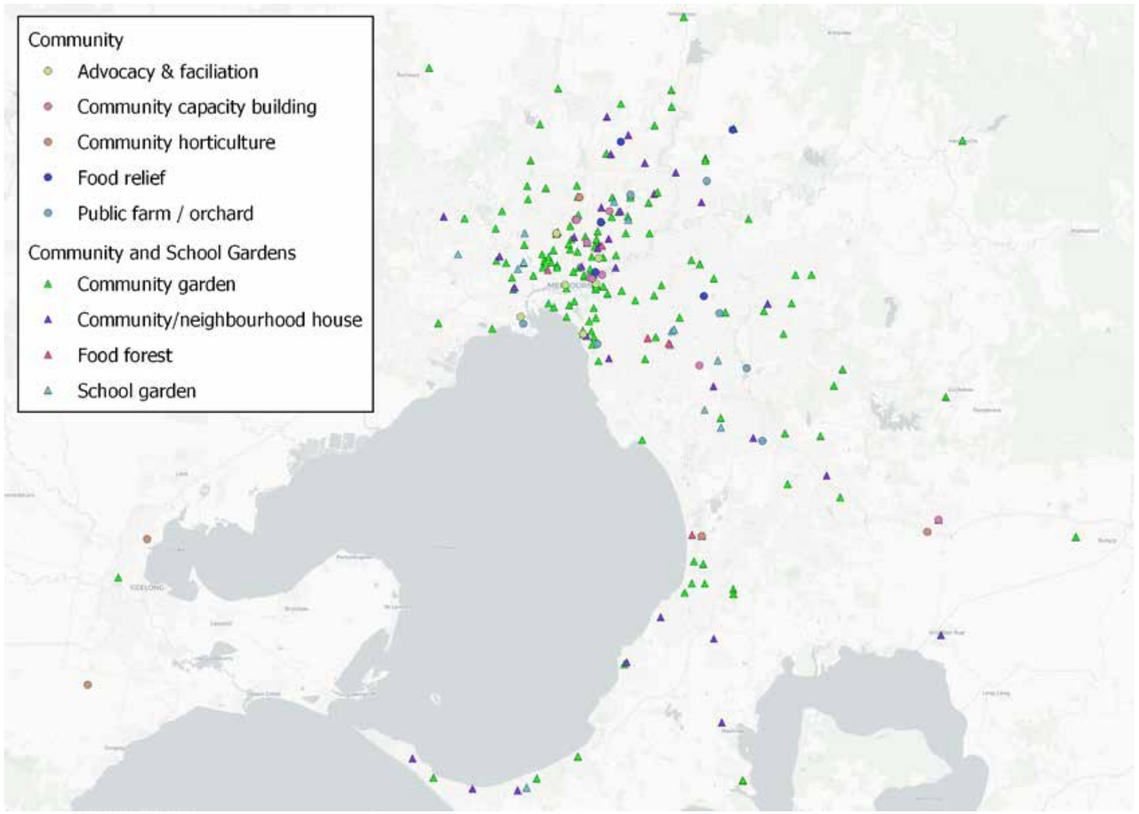


> *We grow fruit and vegetables for our own use and to supply a local foodbank. With appropriate funding we could roll out our community garden to other communities to support local food production and fresh foods for foodbanks."*
>
> **65+ years old, community volunteer**

Map 2: Bendigo and Ballarat



Map 3: Community sector



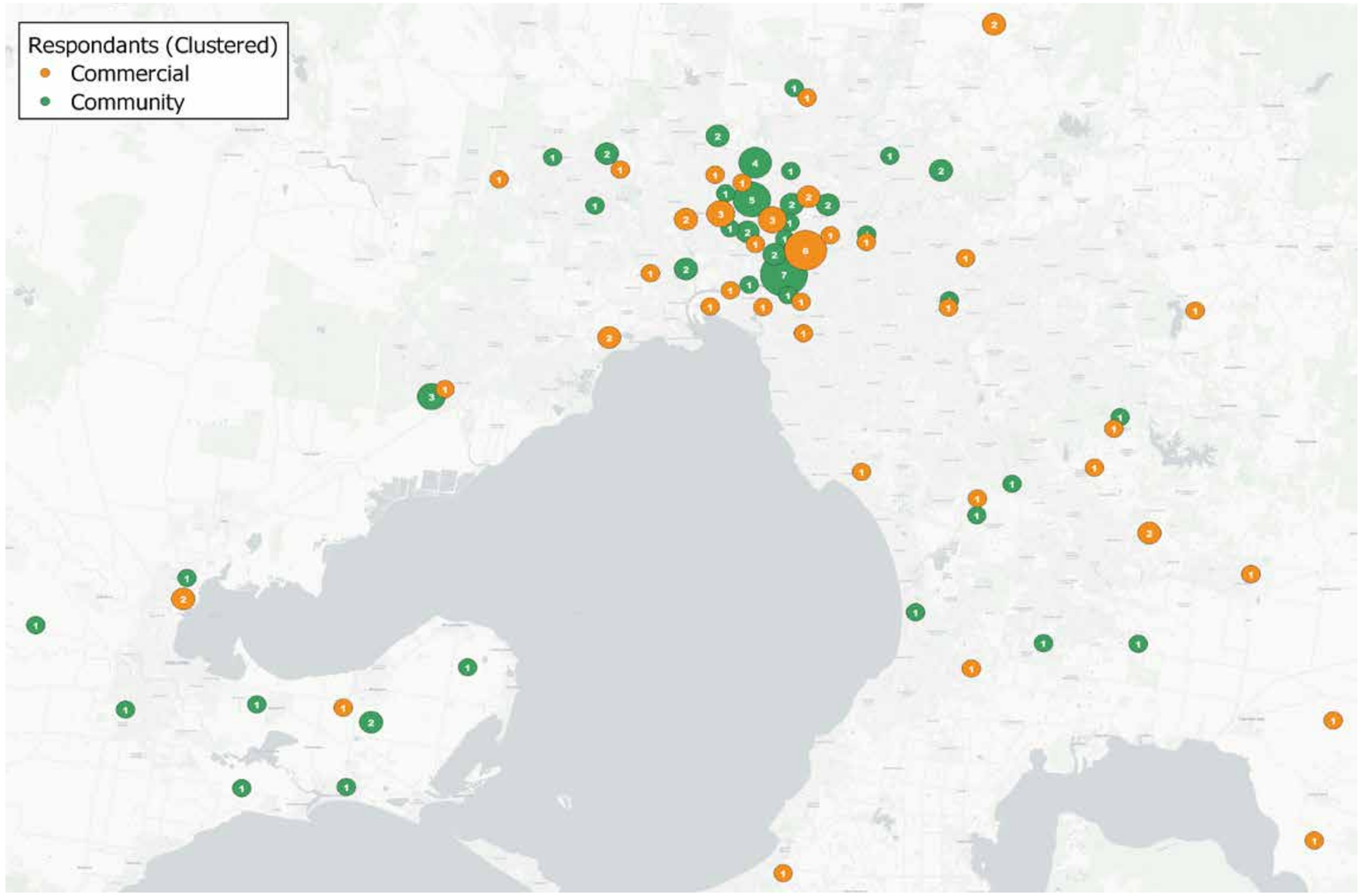
Distribution and activities: Survey respondents

Map 4 (at right) reflects the clustered distribution of community and commercial survey respondents across Melbourne by postcode.

The co-location of urban agriculture practitioners enables lively interactions between values-aligned commercial and community actors. A good example is the Melbourne Innovation Centre (MIC) in Alphington, situated on land owned by the City of Darebin. MIC is represented by the orange circle with the number ‘6’ on the map to the left (representing 6 operators).

There is an observable concentration of survey respondents in the inner northern suburbs of Melbourne. This may be because the survey was widely shared amongst urban farmers, urban agriculture advocates and community organisations in this area. However these suburbs also represent local government areas with supportive policies or programs that enable the urban agriculture sector, notably City of Melbourne, Merri-bek (formerly Moreland), Yarra and Darebin. These policies are typically developed in response to a mobilised, motivated community that encourages councils to develop enabling policies. However, supportive urban agriculture policies or strategies are not always sufficient to overcome barriers within the planning framework.

Map 4: Distribution of community and commercial survey respondents



Diversity of production

Although survey respondents were engaged in a range of business activities, 78% were directly engaged in growing food, with most respondents engaged in more than one type of food production. The graph (right) demonstrates the range of production among community and commercial respondents.[2]

Fruit and vegetables were the most significant form of production for community growers (74% and 95% respectively), highlighting the value of the sector in contributing to healthy diets.

Commercial growers tended to engage in higher value production: 46% grow edible/cut flowers, 13% produce mushrooms and 11% produce meat (compared to 38%, 8% and 5% respectively in the community sector).

Just under 40% of the sector engages in value-adding (almost equal between commercial and community respondents), with an additional 27% planning to value-add in the future.

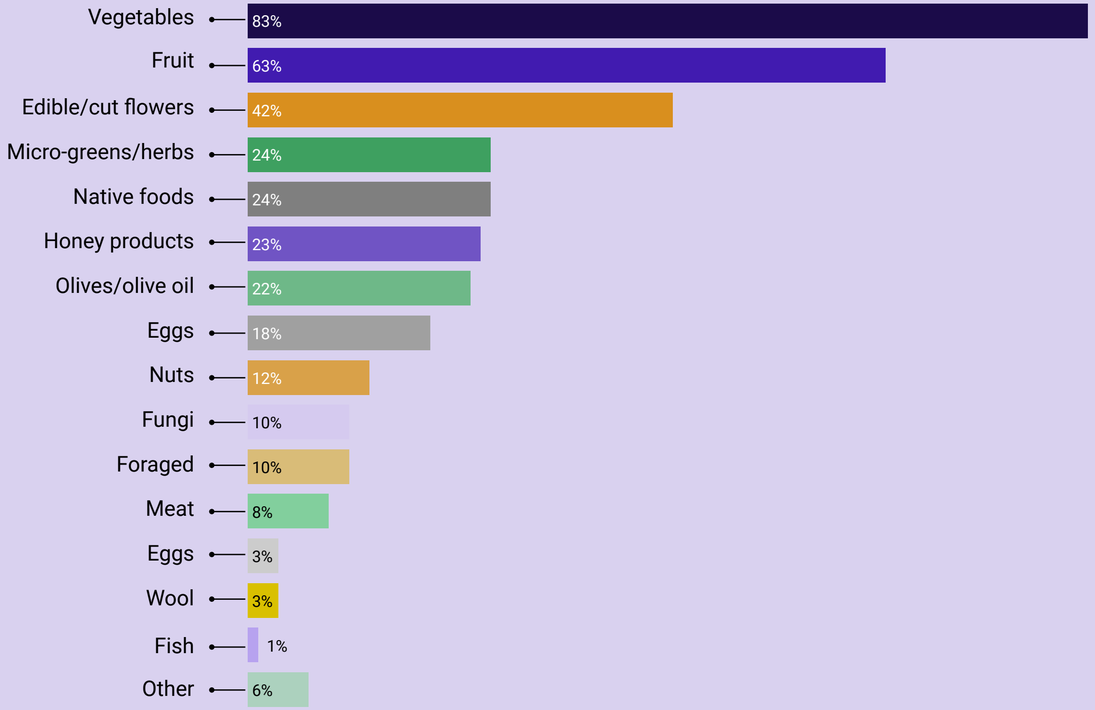
Value adding activities include:

- Dehydrating fungi or herbs
- Producing condiments, preserves or bee products (e.g. wax, etc)
- Making compost or seaweed fertiliser
- Using produce for restaurant menus
- Cooking classes or non-commercial purposes such as food relief.

[2] These results differ slightly from those in the desktop mapping of the commercial sector where commercial businesses were categorised according to only one primary activity. The survey allowed participants to select all types of production that apply.

Photo credit: Food is Free Laneway Ballarat

Diversity of production
(Q9)

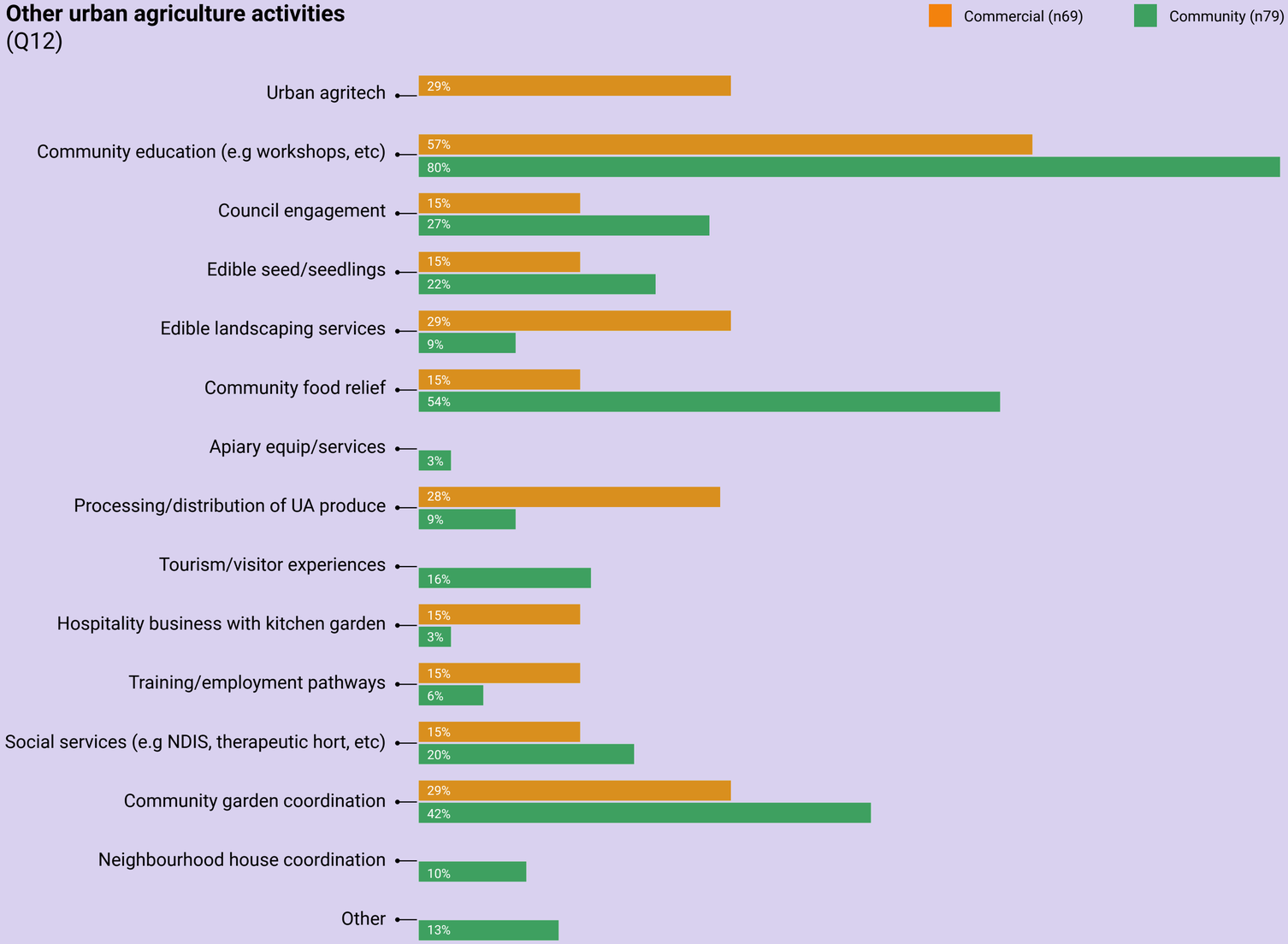


Other urban agriculture activities

Both commercial and community survey respondents reported engaging in a diverse range of activities beyond actual food production, from seedlings sales and edible landscaping to urban agritech and social services.

Community education was the most common (80% of community respondents, 57% of commercial) followed by community garden coordination and food relief. Despite the popularity of community education, relatively few respondents were engaged in training and employment pathways (6% community, 15% commercial), which could represent a potential opportunity for sector growth, particularly for young people.

Other urban agriculture activities
(Q12)



Economic snapshot

Size of operations

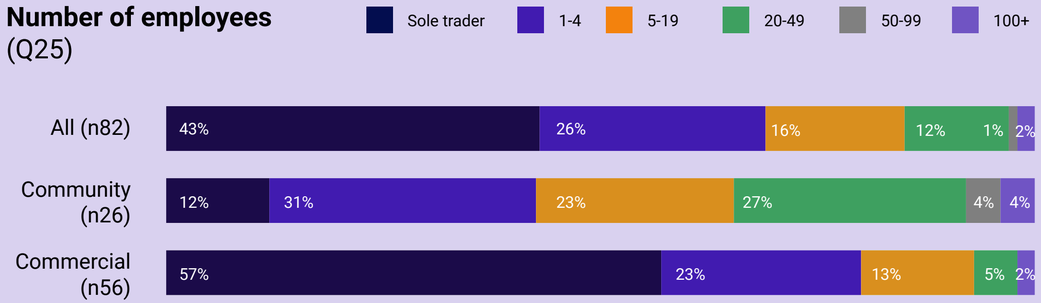
The urban agriculture sector includes large and micro-operators. At the large end of the spectrum are mainstream aquaculture companies exporting barramundi to Asia and established horticulture businesses growing herbs for supermarkets. At the micro end are urban farmers selling fruit and vegetables directly to households, retailers or the hospitality sector, along with producers of microgreens, fungi and edible flowers for boutique markets.

Commercial and community organisations differ significantly in size. The commercial respondents reveal a sector dominated by sole traders (57%) and smaller businesses with 1-4 (23%) or 5-19 (13%) employees. This is not surprising given many commercial operators are new or in an establishment phase and therefore less likely to employ staff.

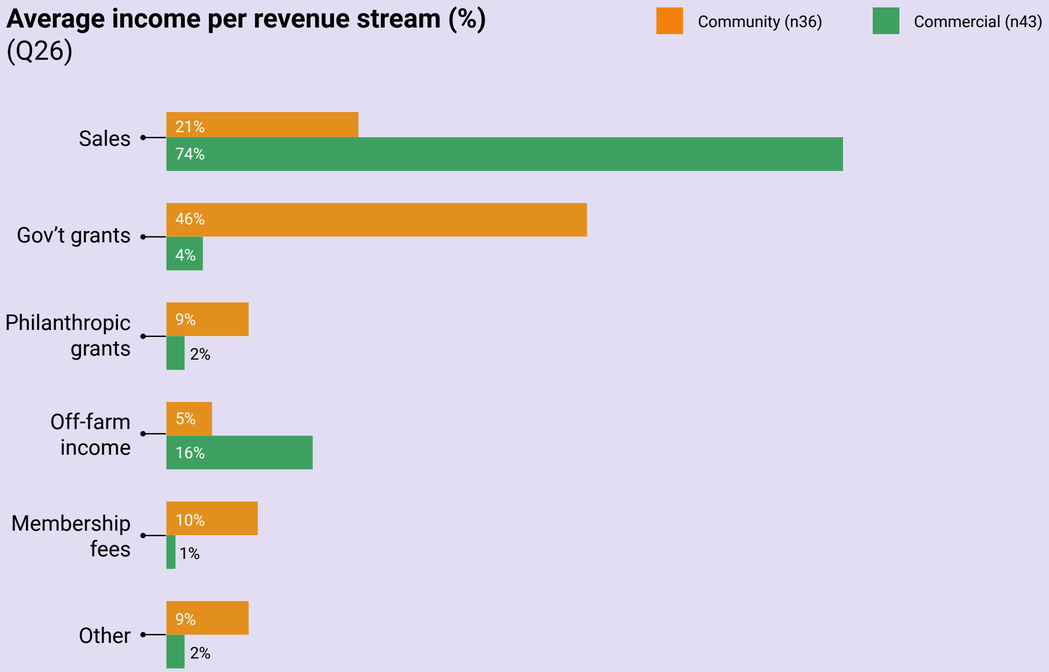
The majority of community sector respondents are small to medium employers, with 23% employing 5-19 staff and an additional 27% employing 20-49 staff.

> *The value of urban/small scale agriculture is routinely overlooked in agricultural census and therefore underestimated and undervalued. What gets measured gets improved, so we need to start measuring this sector."*
>
> **65+ years old, sold trader (horticulture)**

Number of employees (Q25)



Average income per revenue stream (%) (Q26)



Revenue streams

Due to the inherent challenge of working towards social and environmental aims alongside commercial objectives, most participants rely on a combination of revenue streams, often supplementing sales trade with grants.

Sales trade is the most common revenue stream for commercial respondents, contributing an average of 74% of total revenue income compared to 21% in the community sector.

Grants are the most important revenue stream for community respondents. Government grants contribute an average of 46% of total revenue. Philanthropic grants contribute an average of only 9% to revenue for community operators.

Off-farm income generates 16% and 5% of income for commercial and community operators respectively. For commercial businesses, this most likely represents micro urban farmers or small family farms on the city fringe supplementing their income with a second job. The need to generate off-farm income may present a limitation to the growth of some businesses. For others, a second revenue stream may enable investment in the business but can contribute to burnout in the long term.

Membership fees make a significant contribution (10%) to revenue among community organisations.

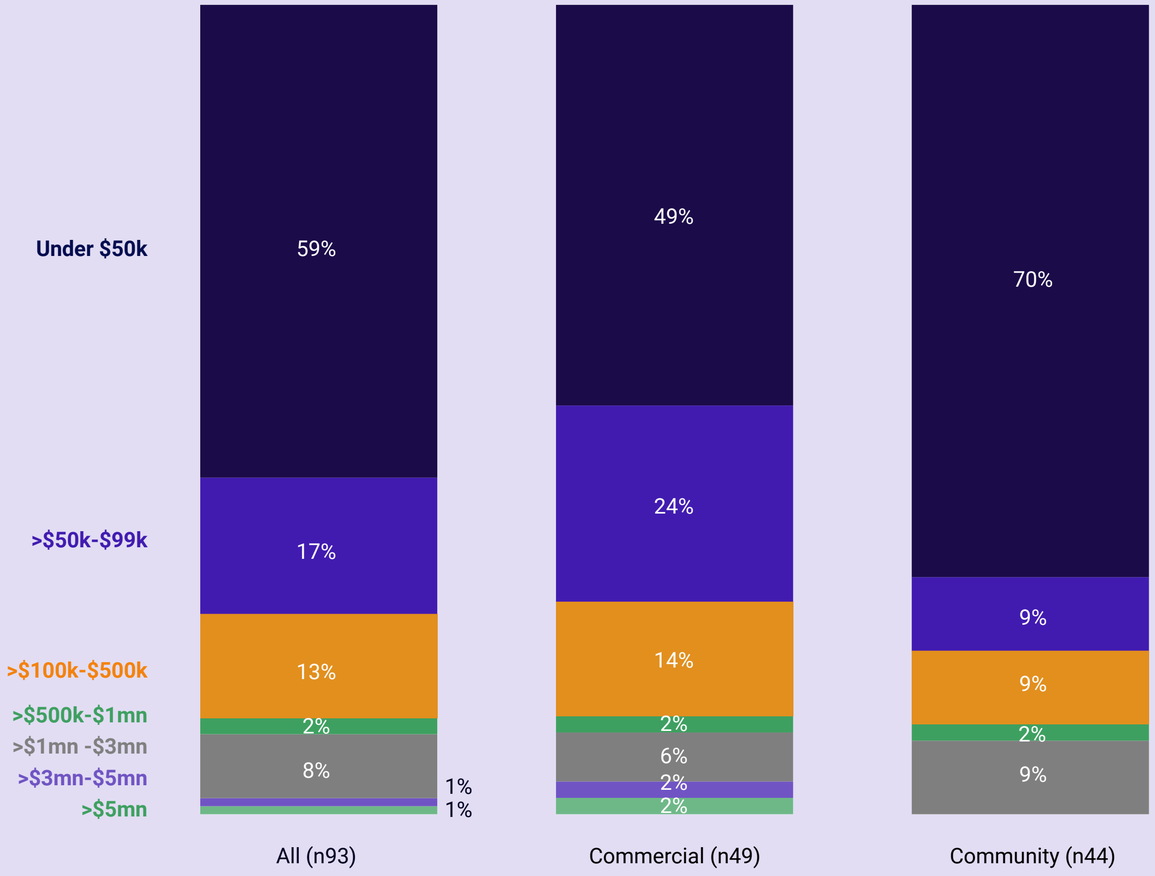
'Other' revenue streams specified by survey respondents included corporate sponsorships, consultancy fees, events and donations or fundraisers. In some cases, these are substantial.

Average annual revenue

- **70%** of community organisations and 49% of commercial operators are at the lowest end of the earnings scale (under $50,000/year).
- **Almost a quarter of commercial operators** report income of $50,000-$99,999 compared to 9% of community organisations.
- **Just over 10%** in both categories earn over $500,000, though no community operators report earning more than $3 million in annual revenue.

> *The most prohibitive thing is having to pay council a lease each year, despite our orchard being entirely on public land with no fences and all the fruit available for community. Sourcing funds to pay this is very difficult as we have no income."*
>
> **35 to 44, volunteer in community group**

Average annual revenue
(Q28)



The economic value of volunteers

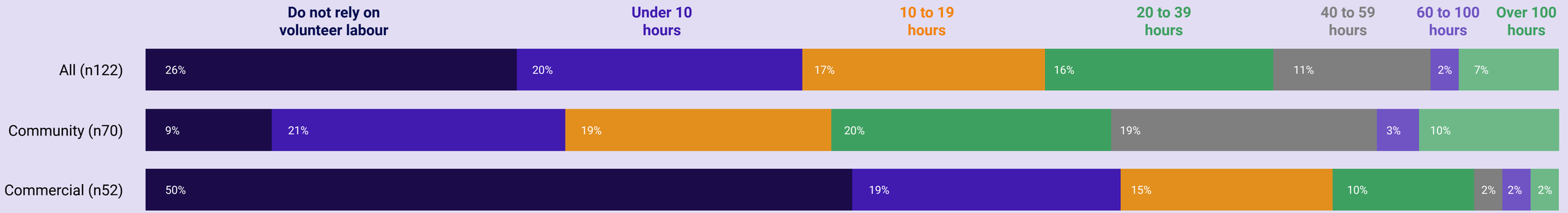
Volunteers in the charities and NFP sector are estimated to contribute 328 million unpaid hours, equivalent to $12.8 billion if these hours were paid (Deloitte Access Economics, 2017). Volunteers also make a significant contribution to the Victorian economy by augmenting what can be achieved within an organisation or community initiative. According to the State of Volunteering in Victoria report, nearly 25% of organisations that engage volunteers deliver services funded by the Victorian government (Ellis et al. 2020). This is consistent with the survey findings. Almost a quarter of respondents identify state and/or federal government as consumers of urban agriculture products or services; another 37% report local councils as customers. Urban agriculture volunteers therefore provide significant value to local and state governments by enabling the delivery of government-funded services such as educational activities in schools or community development on council land, enhancing councils' ability to meet community health and wellbeing commitments.

The sector relies heavily on volunteer labour, including 91% of community organisations and 50% of commercial operators. Many community gardening associations and school gardens rely almost entirely on volunteer labour. Some commercial respondents also rely on volunteers. These are likely social enterprises that engage in commercial trade but operate for a social or environmental purpose.

The survey findings estimate a total of 2,910 volunteer hours per week across the 90 respondents that reported volunteer engagement[3]. Using the State of Volunteering in Victoria Volunteer Replacement Cost Calculator, the replacement cost of volunteer hours reported by survey respondents is valued at $6.7 million dollars annually. To capture an estimate for the whole sector, this figure could conservatively be multiplied by 5, as only a relatively small number of community and school gardens were captured by the survey. This would value the volunteer replacement for the urban agriculture sector in Victoria at $33 million annually. Further research would be required to provide a more accurate estimate.

[3] Volunteer contributions (hours per week) were grouped in different categories. The median value for each category (i.e. under 10 hrs/wk=5, 10-19 hrs=15, etc) has been multiplied by the frequency of responses for each category and then summed to capture total weekly volunteer hours of 2,910 across all survey respondents.

Volunteer hours (per week)
(Q24)



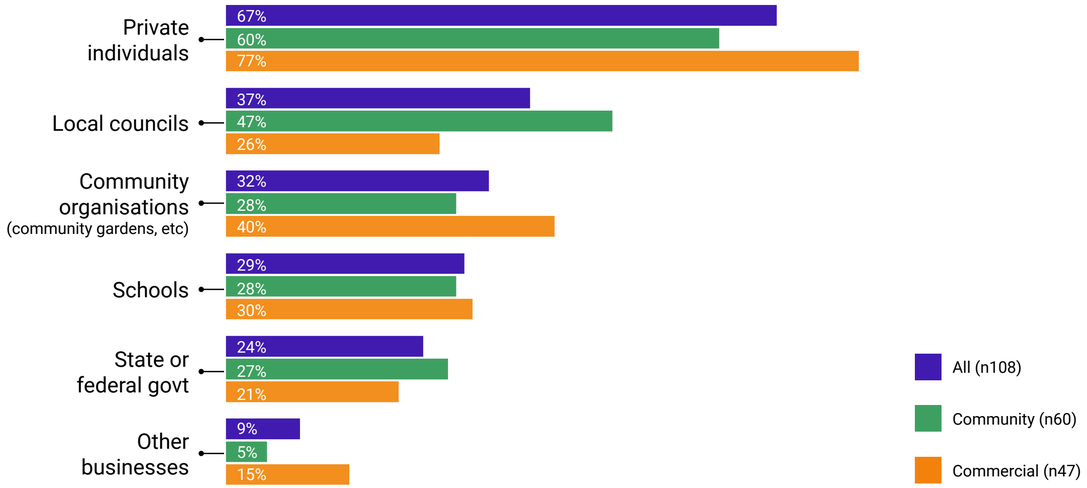
Customers of urban agriculture products and services

The survey results indicate a diverse customer base for the Victorian urban agriculture sector.

- Individuals and households are the main customer base for urban agriculture products and services (for 60% of the community sector and 77% of commercial operators), highlighting the importance of public support to the sector's viability.
- Local councils are also an important customer, especially among the community sector (47%). This also demonstrates how local governments benefit from the goods and services provided by the sector.
- Other significant customers include community organisations (32%), schools (29%), state or federal government (24%) and other businesses such as hospitality or landscapers (9%)

Goods and services paid for by schools, government and community organisations include edible seedlings/seeds or advice for edible placemaking or school/community garden design.

Who pays for urban agriculture products or services? (customer base)
(Q13)



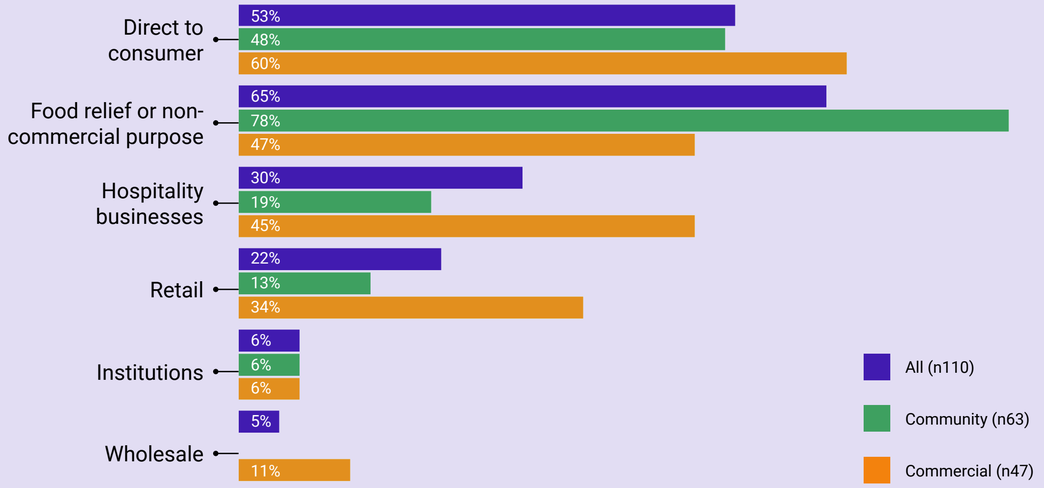
Current market channels

The commercial and community sectors share similar market channels.

- Food relief or non-commercial outlets were reported by 78% of the community sector compared to business operators (47%). These results highlight a strong social justice orientation among both community and commercial actors.
- Direct to consumer channels were reported by almost half of community respondents and 60% of commercial operators.
- The hospitality sector is also a significant market outlet for 45% of commercial businesses and 19% of community operators.

The pandemic context, with additional funding from government COVID-19 support grants and JobKeeper, could help to explain the involvement of commercial operators such as social enterprises (and hospitality businesses more broadly) in food relief activities including cooking and distributing free meals (Breheny, 2021).

Current market channels
(Q11)



New market opportunities

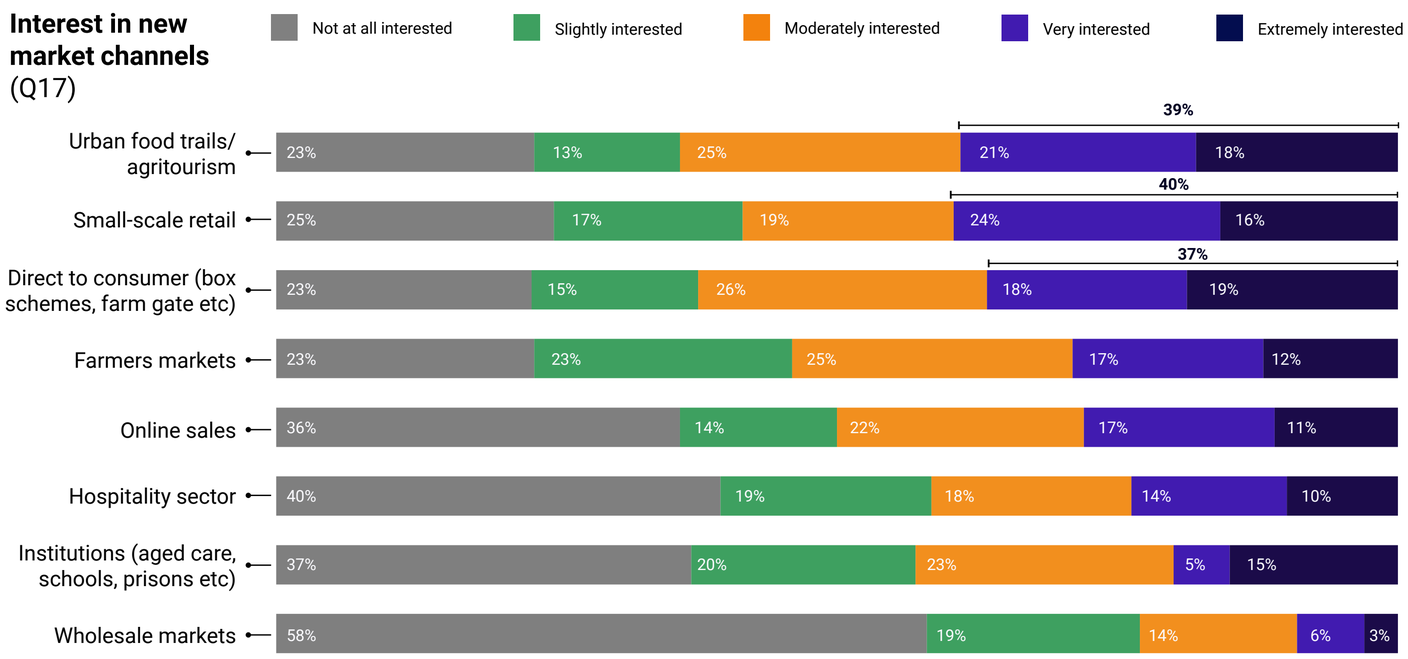
Survey respondents show strongest preference (very or extremely interested) for the following future market opportunities:

Small-scale retailers (40% overall), with commercial respondents expressing stronger preference (48%) relative to the community sector (32%)

Urban food trails/agritourism (39%): although most urban farm tours currently cater to local markets, there are opportunities to also cater to national and international tourism markets

Direct to consumers sales (36%)

Interest in new market channels (Q17)



Restaurant agriculture

The development of urban food trails is complementary with restaurant agriculture. Restaurant, or culinary agriculture, involves chefs training as gardeners or integrating gardeners into kitchen operations "in a mutually supporting and beneficial relationship" (Lyson, 2004, 91). Some high-end restaurants in urban/peri-urban areas maintain kitchen gardens to create more sustainable supply chains and gain a competitive edge.

Chefs develop menus around local, seasonal production in collaboration with farmers who grow unique varieties or pick produce at particular stages in the plant's lifecycle. Such small-batch production is rarely viable through other market channels, but some restaurants are willing to pay for premium produce that enhances their menus and aligns with their gastronomic identity and values. This market channel can be important to supporting micro urban farmers and small producers on the urban fringe.

Access to high-quality produce is essential to Victoria's international reputation as a gastronomic destination.

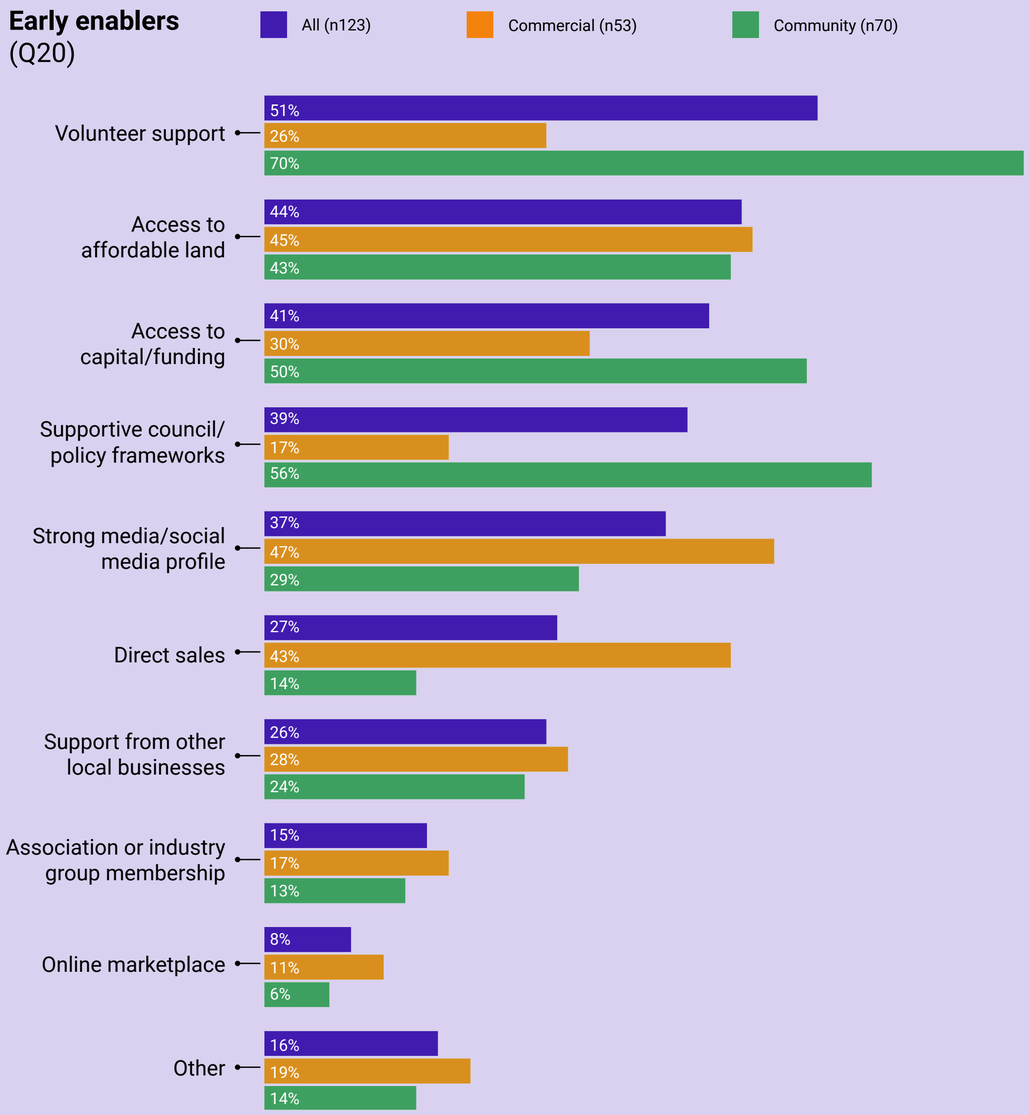
Enablers and Priorities for the Sector

Enablers for success in urban agriculture

Respondents reported on the following factors as early enablers of success:

- Having secure access to land is identified as an early enabler both by commercial (45%) and community actors (43%).
- While volunteer burnout is a constraint, volunteer support is essential to the sector, particularly the community sector.
- Supportive council/policy frameworks are also important to 56% of community respondents (highlighting the value of positive council engagement), as is access to capital/funding.
- Direct sales are a strong enabler for 43% of the commercial sector as is a strong media/socialmedia profile (47%).

These factors also offer insights into the value that may come from overcoming the constraints facing the sector.



Current needs for information and advice

Survey respondents identified their current needs for information and advice around business skills, grant writing and marketing, branding and promotion. A stronger focus on business skills was evident among commercial actors relative to community respondents. The need for advice and information regarding marketing, branding and promotion aligns with a previous question identifying a strong media profile as an early enabler in urban agriculture.

Commercial respondents also prioritised accessing new marketing opportunities. Information on land use/council requirements was more important to community providers.

Priorities (3-5 years) for commercial and community operators

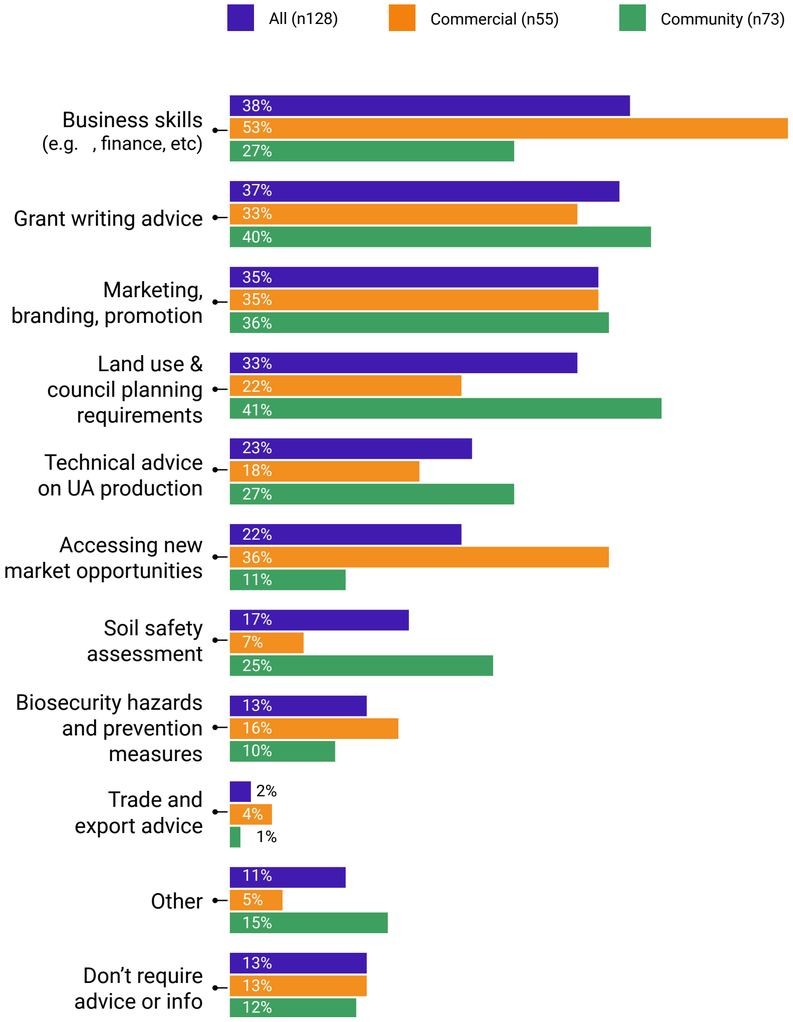
The commercial and community sectors have varying priorities over the next 3-5 years, though there is a common interest in connecting with like-minded businesses and organisations.

The community sector seeks to encourage more community participation and places greater priority on finding new funding sources due to greater reliance on grants. The commercial sector is most focused on creating new experiences, consistent with the high percentage of commercial businesses offering visitor experiences, farm tours and/or workshops. This presents opportunities for the sector given the interest in urban agritourism as a new market channel.

Becoming more productive was a stronger priority for commercial operators. This is a particular issue for start-up businesses due to the time invested in building healthy soils which is essential for productivity. Access to free or affordable compost and developing skills/knowledge can facilitate the transition to greater productivity.

3-5 year priorities
(Q18)

Current needs for info and advice
(Q22)



Priorities for sectoral development

Survey respondents were in strong agreement about what areas of focus represent best value for future development of the sector.

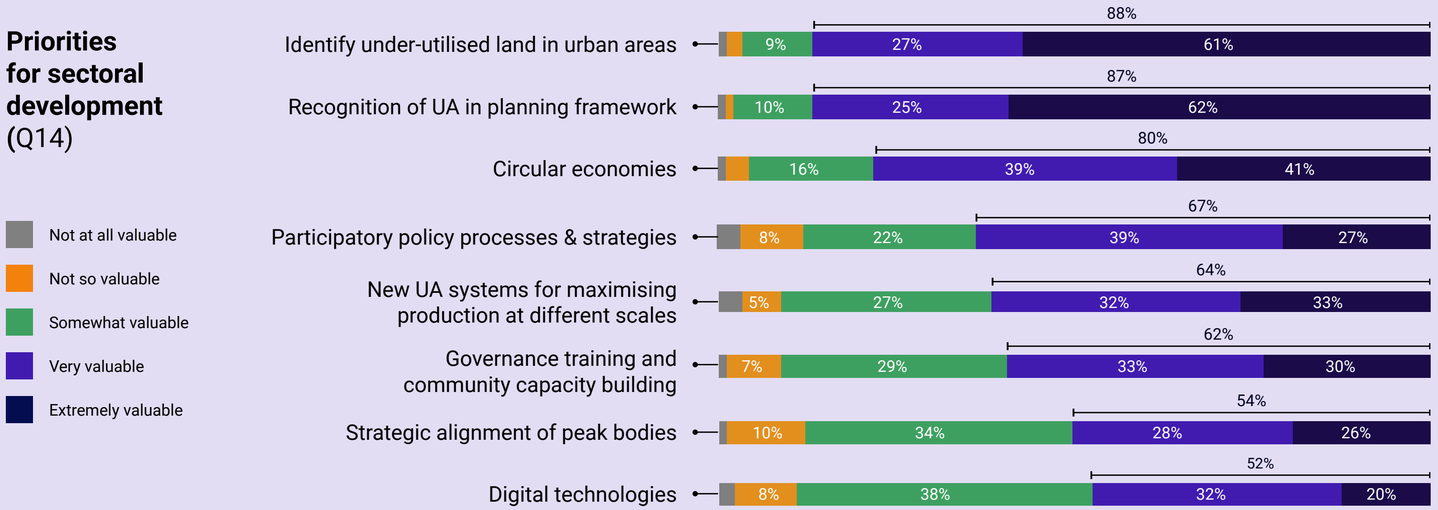
The top three priorities are:

01 Identification of under-utilised urban land

02 Recognition of urban agriculture in the planning framework

03 Investment in circular economies (consistent with the sector's strong environmental values)

Participatory policy processes were also highly valued by 67% of respondents. These processes are particularly important given the diverse motivations and differing levels of political and social capital amongst sector participants.



Networking and skills development

Membership breakdown

Approximately two-thirds of all respondents are members of at least one peak body or association. Almost half of respondents belong to a local food group or network.

33%
Young Farmers Connect

31%
Sustain

Membership of other groups includes:

Permaculture Victoria (17%)

Landcare (15%)

Community Gardens Australia (14%)

Sustainable Gardening Australia (13%)

Victorian Farmers Market Association (13%)

Australian Food Sovereignty Alliance (12%)

Assurance/accreditation schemes (8%)

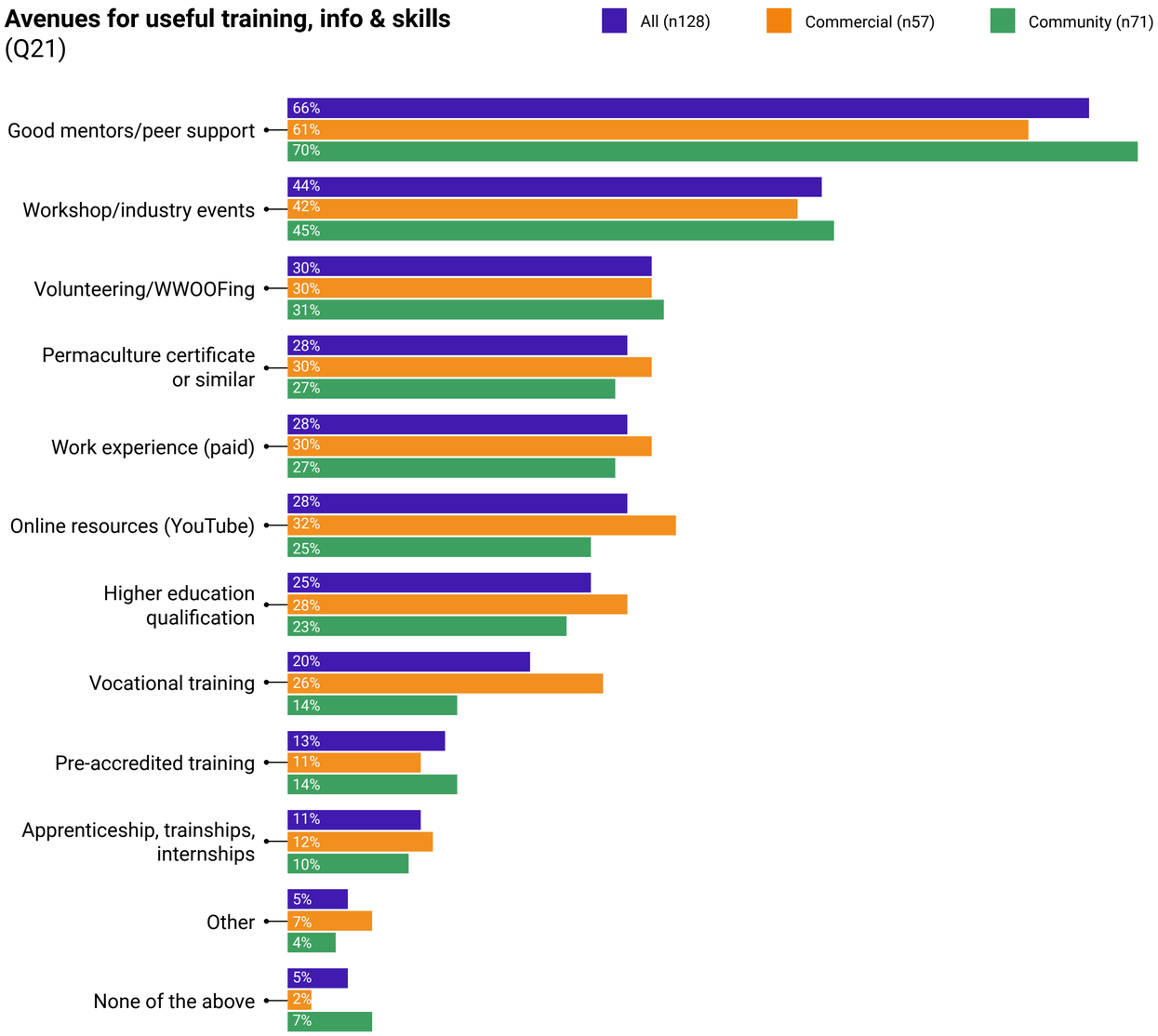
Victorian Farmers Federation (3%)

Avenues for training, information and skills development

Informal and non-traditional sources of training and skills development are very important to the sector. Two thirds of respondents report good mentors or peer support as important in this respect, followed by workshops and industry events (44%). Industry events such as the Urban Agriculture Forum are places to connect with peers, exchange knowledge, meet mentors and identify opportunities for employment or volunteering.

Volunteering or WWOOFing (World Wide Opportunities on Organic Farms), permaculture courses, paid work experience and online resources are important for approximately one third of respondents. Traditional modes of education/training appear less significant.

Formal qualifications represent the most significant difference between the commercial and community sectors. A quarter of all respondents identified higher education qualifications as useful to developing their skills and knowledge, though this is somewhat stronger for the commercial sector. Vocational training was reported by 20% of respondents overall, though more frequently reported by the commercial sector (26%) than the community sector (14%).



Department of Health visit to Oakhill Food Justice Farm (photo credit: Sustain)

Challenges and Opportunities

> *The way in which the urban agriculture sector could be best supported is through more funding. Everyone I know in the industry is underpaid and overworked, which is not sustainable. In order to build frameworks for a greener future, more investment needs to happen."*
>
> **25 to 34 years old, employee of social enterprise (horticulture)**

Constraints

> **The survey findings paint a picture of a young, dynamic, values-driven and motivated sector, confident in its ability to make a major contribution to the big challenges we face as a society.**

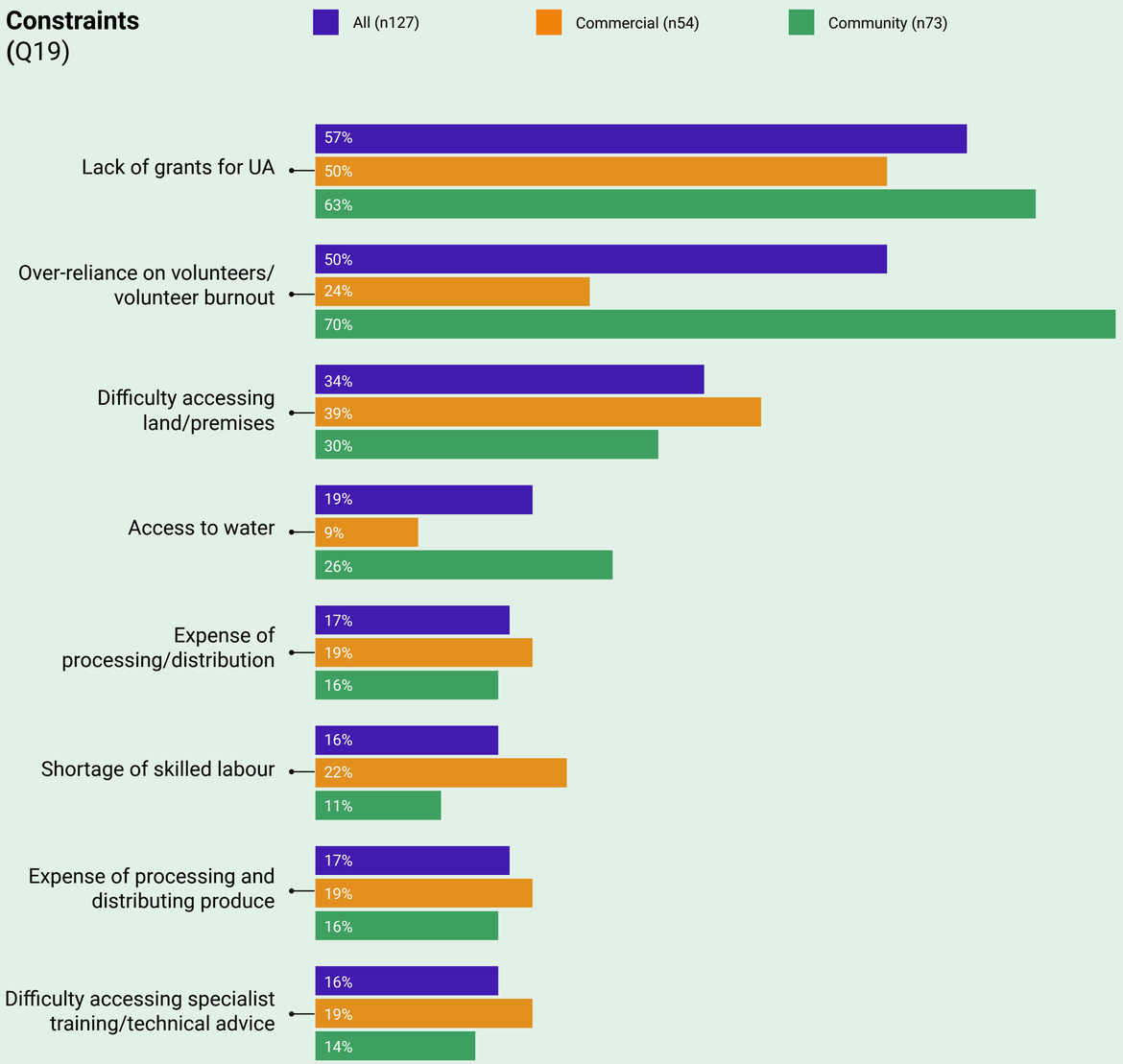
However lessons from overseas show that Victoria and Australia lag behind comparable jurisdictions in providing meaningful support for the urban agriculture sector.

The survey respondents highlighted critical challenges and barriers that, if properly addressed, would greatly expand their own capacity as well as that of the urban agriculture sector as a whole.

The most significant constraints reported by survey respondents are:

- Lack of grants tailored to urban agriculture (57%)
- Over-reliance on volunteers or volunteer burnout (50%)
- Difficulty accessing land or premises due to cost or insecurity of tenure (34%)

These three constraints are interconnected. High costs of urban land and difficulty accessing grants to supplement non-commercial activities or start-up costs means that the sector relies heavily on volunteers, which can lead to volunteer burnout.



The funding landscape

Government and philanthropic funding is critical for developing the urban agriculture sector. Constraints in accessing core funding means that many small to medium community organisations lack the resources to employ staff in fundraising and partnership development positions that are key for resourcing operational capacity such as finance and HR. This not only stretches their capacity, but hinders good reporting and monitoring, effective management of staff and strategic and financial planning.

> **Philanthropic grants contribute an average of only 9% to the revenue streams of community operators, suggesting greater opportunities for collaboration between philanthropy and the urban agriculture sector.**

The current funding landscape poses some key challenges for the sector:

01 Grant programs structured around quick wins or shovel-ready projects do not enable good planning or provide the sustained support required to develop programmatic and organisational capacity. They often result in poorly conceived projects that struggle to deliver lasting impact.

02 Wages are sometimes excluded from funding eligibility, reducing capacity for effective project coordination while also diminishing job-creation opportunities and intensifying over-reliance on volunteers.

03 For community operators, the exclusion of operational funding from many government and philanthropic grants leaves many core functions, such as HR and finance, under-resourced, compromising organisational effectiveness.

04 Grants targeting singular outcomes (e.g. health, environment, employment, etc) do not recognise the multifunctional benefits of urban agriculture. Many urban agriculture projects working towards multiple objectives can fall outside of grant parameters.

While short-term funding models are valuable for establishing projects, good initiatives falter without ongoing support, leading to counterproductive outcomes when they lose momentum. This was illustrated with the VicHealth Food For All program in the early 2000s which stimulated ground-breaking food systems projects and policy development in local governments across Victoria. When funding ended, projects fell over and new policy directions lost momentum.

> **Long-term funding commitments enable projects and initiatives to develop over time and enable monitoring and evaluation of progress through participatory approaches that build capacity and engagement across the community and business sectors**.

Volunteerism and burnout

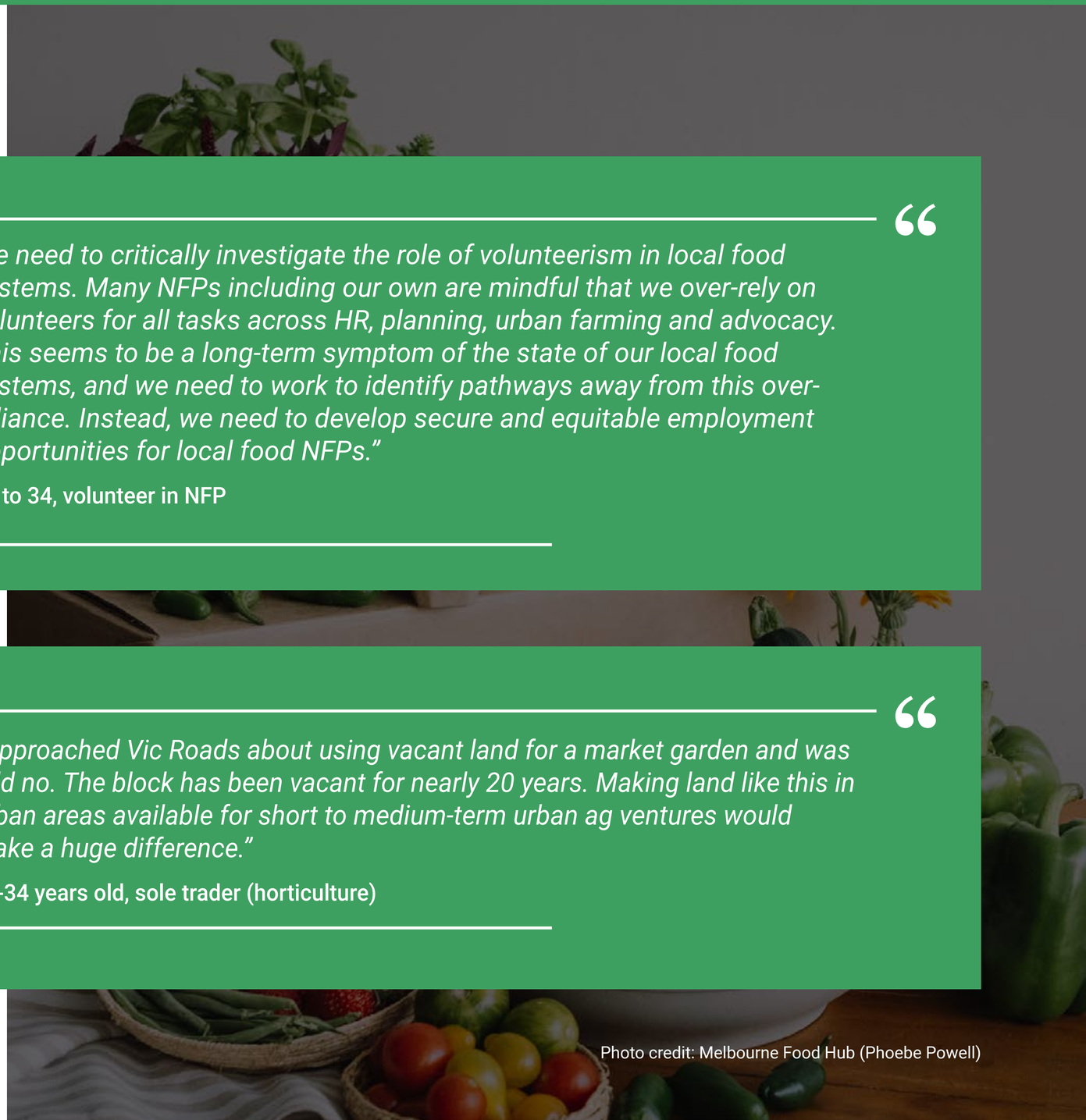
Volunteering can foster an improved sense of wellbeing and facilitate the exchange of skills and knowledge, strengthening community capacity and building social capital. However, volunteers are not a substitute for appropriate resourcing.

Over-reliance on volunteer labour (and associated volunteer burnout) is the most significant constraint facing 70% of the community sector respondents and almost a quarter of commercial respondents (24%). Volunteer availability is also a constraint, particularly over summer holidays when hot and dry conditions mean school or community gardens are in the greatest need of maintenance and care. Recruiting, training and managing volunteers is challenging and costly in the context of high turnover and insufficient resources for volunteer coordination.

Access to land

Despite an abundance of land suitable for food production across Melbourne, existing zoning frameworks continue to constrain the sector, particularly as selling food is deemed an industrial and commercial activity which is restricted in residential areas.

Public utilities are sometimes open to land-sharing arrangements; however the public/semi-public facilities/utilities zone currently prohibits agricultural activities and/or profit-generating activities, posing an additional constraint for the sector. This limitation affects commercial businesses as well as community organisations that may be expected to become financially self-sustaining by philanthropic donors or government grant programs, even though they are also delivering social or environmental benefits to the community. This can limit participants to accessing costly or short-term private lease arrangements that render projects or enterprises financially unviable. This, in turn, threatens the longevity, sustainability and replicability of urban agriculture projects to achieve multifunctional objectives, further limiting the sector's social, environmental and economic impact.



> *We need to critically investigate the role of volunteerism in local food systems. Many NFPs including our own are mindful that we over-rely on volunteers for all tasks across HR, planning, urban farming and advocacy. This seems to be a long-term symptom of the state of our local food systems, and we need to work to identify pathways away from this over-reliance. Instead, we need to develop secure and equitable employment opportunities for local food NFPs."*
>
> **25 to 34, volunteer in NFP**

> *I approached Vic Roads about using vacant land for a market garden and was told no. The block has been vacant for nearly 20 years. Making land like this in urban areas available for short to medium-term urban ag ventures would make a huge difference."*
>
> **25-34 years old, sole trader (horticulture)**

Photo credit: Melbourne Food Hub (Phoebe Powell)

Regulatory barriers

Regulatory barriers were reported by 84% of survey respondents. The most significant is that planning departments lack familiarity with urban agriculture (58%) and that it is not recognised in the planning framework (57%). This contributes to complex and costly approval processes, reported by 42% of respondents.

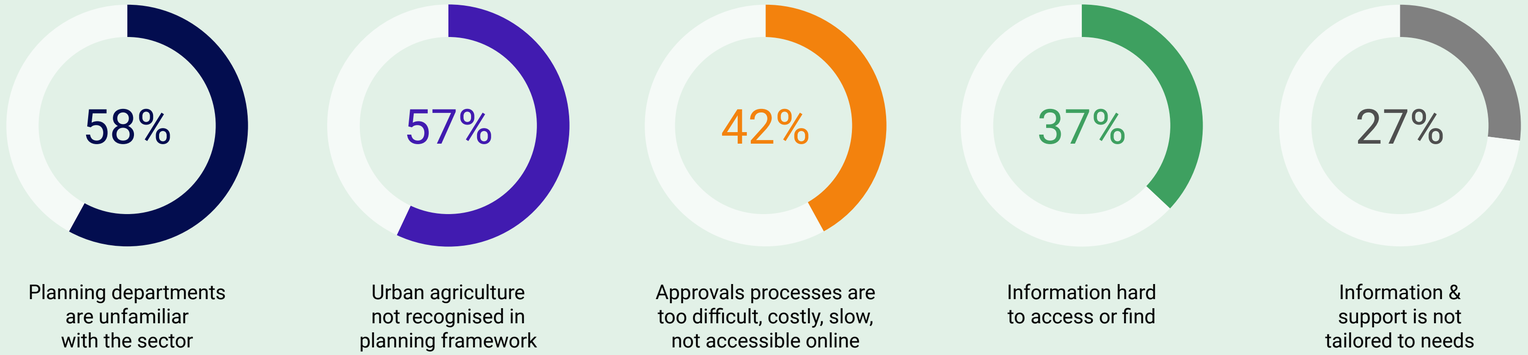
These regulatory barriers manifest because complex planning permits are required for even minor changes in land use. The complexity of these permit processes require resources rarely available to small or start-up businesses or community organisations.

The likelihood of delays is also high as most planning approvals for urban agriculture sit out of the box and often rely on the resolution of two conflicting land uses (public and commercial). This presents particular challenges for grant-funded projects constrained by set timelines that require certainty of land tenure before a grant can be applied for. Negotiating land access (particularly public land) and embarking on a planning approvals process without prior certainty of grant funding is more than most small organisations or businesses can manage. A further complexity is that planners may lack experience or familiarity with such public-private arrangements, may not understand the broader activities and benefits of urban agriculture for the community or may lack the operational flexibility to bring a common sense or pragmatic approach to bear on requests for planning approval.

Sustain's own experience in working with local government is that council staff often experience the state planning framework as a constraint to supporting urban agriculture. While community development or health teams may wish to support urban agriculture and sustainable food systems, planners must often operate within narrow legislative frameworks, even if they are at odds with health and wellbeing council priorities and urban agriculture strategies.

> *"More flexibility with rules and regulations for benign things such as size of caged structures based on areas in relation to permits. Broader and less stringent funding requirements for community connection initiatives."*
>
> **55 to 64 years old, community volunteer**

Most significant regulatory barriers
(Q15, n133)



Opportunities

Farm-schools partnerships

Schools represent a significant opportunity for both supporting the urban agriculture sector and expanding its impact. The Department of Education already benefits substantially from urban agriculture volunteers that maintain school gardens and facilitate educational activities for students. Urban farmers can also play an important role in transforming unused school land into sites for both commercial food production and student education. Opportunities to create innovative farm-school partnerships can easily stumble on bureaucratic hurdles due to zoning issues, but these can be mutually beneficial if regulatory barriers can be overcome.

> *Schools are important places to embed relocalisatiom and food security."*
>
> **45 to 54 years old, school employee**

Case study

Farm Raiser

Farm Raiser is a registered charity running an urban farm in Bellfield, Melbourne. Established by three young farmers, we sell produce to the local community grown on land provided by Waratah Special Development School, connecting farming activities with educational opportunities for students. We grow great vegetables for the local community while having a practical impact through regenerative agriculture to increase biodiversity and honour natural water and carbon cycles. We're motivated by the need to make good quality food more accessible and to make farming a more inclusive career path to people of all abilities.

Our produce goes to local grocers, farmers markets and to a veggie box program. The trade of our produce allows us to operate and pay the bills, with the long-term aim of being financially self-sufficient. Any profits made will be directed toward our food education programs in partnership with Waratah Special Developmental School and other schools in time.

We love growing good quality local food, and we work really hard to do so for reasons greater than 'really yummy carrots'. The very big purpose of our very little farm is to positively influence and improve the health of both humans and the environment through a more fair and just food system. The farm offers a sliding scale of payment for our veggie boxes, from free community boxes to upfront payment for the season. Our community boxes are paid for by others in the community, when possible, who can afford a little extra.

Patrick Turnbull, Farm Raiser

Photo credit: Farm Raiser

Case study

Photo credit: Preston Primary School

Oakhill Food Justice Farm

In July 2021 Sustain took on the activation of the former St Mary's vicarage and garden in Tyler St, Preston, which had fallen into disrepair after being vacant for many years. An unexpected and very positive outcome has been a partnership with Preston Primary School. Since the school has no edible garden on its site, the principal and teachers welcomed the opportunity to partner with Oakhill to provide their students with an engaging and enjoyable hands-on, soil-to-plate learning experience.

The Oakhill program works around the local Wurundjeri seasons calendar, recognising the traditional custodians of the land and the wealth of information in their long-term observations of nature. Students have enjoyed filling raised beds in their dedicated garden area, sowing seeds and watering them as well as the sensory experience of touching, smelling and tasting various plants in the garden as they learn of their qualities and benefits to both humans and the environment.

Many students have started composting in class and expressed a desire to start growing vegetables at home as a result of participating in this program. Teachers have been keen to incorporate topics from the gardening program within other subjects at school, and this term have been given a freshly sown punnet of seeds to take back to class and engage the students in caring for the seeds, while observing and documenting their progress.

The many benefits of participating in gardening activities at Oakhill are that it brightens the students' day, while also improving their attention, their confidence, sense of adventure and much more. As this is my great passion, I experience great personal fulfilment in nurturing students' love for gardening and seeing the sense of wellbeing that comes from having their positive experiences on the farm and opportunities to connect with nature.

Shani Shafrir, Therapeutic Horticulturist

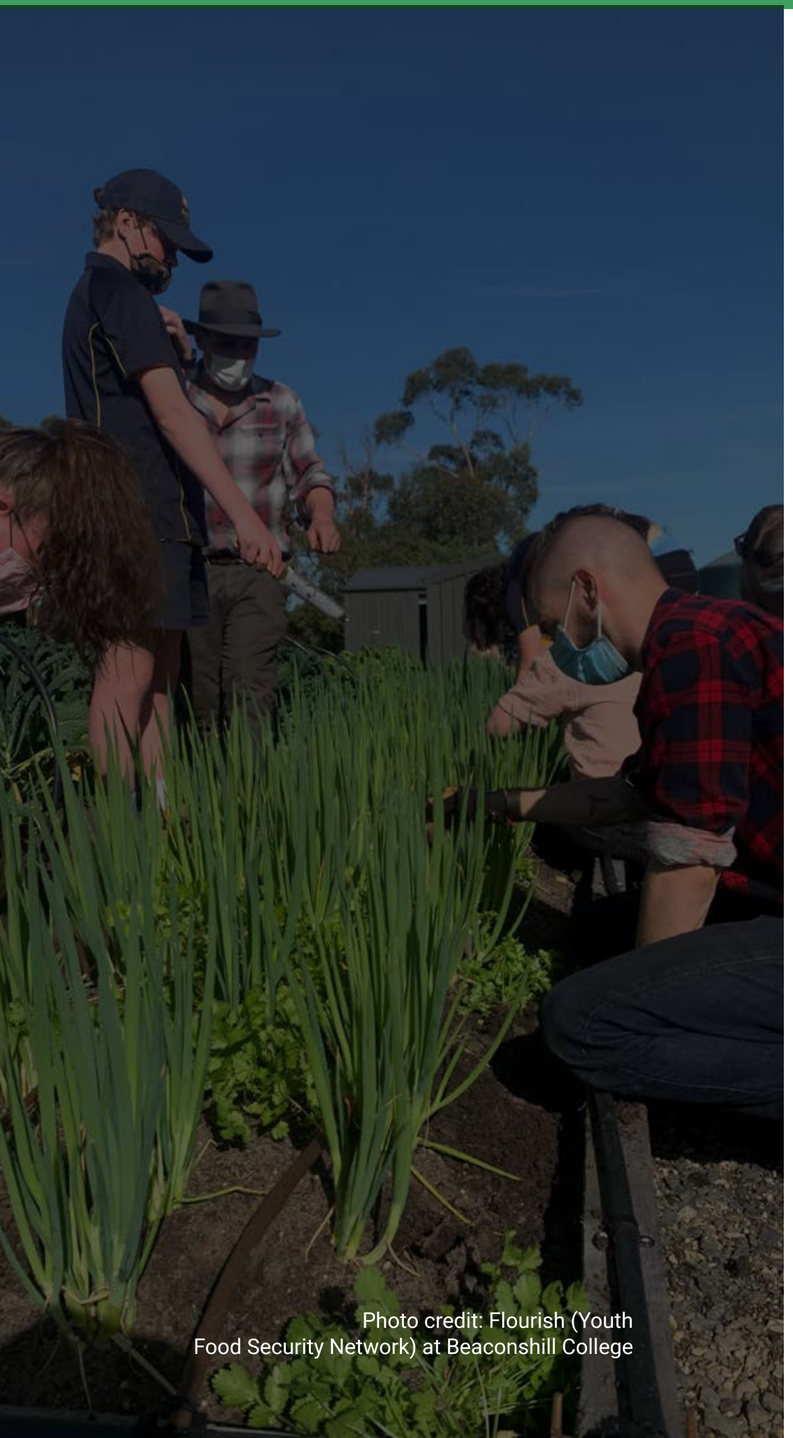


Photo credit: Flourish (Youth Food Security Network) at Beaconshill College

Localised food economies

Mainstream supply chains experienced significant disruptions during the pandemic. Many urban and peri-urban producers lost access to restaurant customers and needed to find new market outlets overnight. With the help of COVID-19 support payments, many businesses radically and rapidly transformed their business model. Direct-to-customer veggie boxes boomed as consumers radically changed the way they shop, providing new opportunities for urban farmers and hospitality businesses who supported them through veggie box subscriptions.

Shorter supply chains, characteristic of urban agriculture and local food systems, also proved more agile in responding to transport issues and labour shortages (Carey et al., 2021). This is consistent with previous supply chain disruptions, such as the Queensland floods (Smith & Lawrence, 2018). In the face of climate change, supply chain disruptions and increasing costs of inputs, the responsiveness of urban farmers and B2B collaborations offers insights into the value of investing in shorter and more localised urban food economies.

Jobs for a new green economy

The charitable sector makes a substantial economic contribution, estimated in 2015 to be $129 billion, comprising $71.8 billion direct contribution and an additional $57 billion in flow-on contributions; this equates to 4.8% of Australia's gross value add (Deloitte Access Economics, 2017). Charities represent 10.6% of total Australian employment; this doesn't include more than 300 million volunteer hours that would cost close to $13 billion in wages if volunteers were hired as staff (Deloitte Access Economics, 2017). For comparison, this gross value-add of the charitable sector is roughly equivalent to retail trade and almost double that of agriculture, forestry and fishing (Social Ventures Australia and the Centre for Social Impact, 2020).

Viewing the potential of the urban agriculture sector through this lens, the survey findings highlight significant opportunities to encourage new employment opportunities oriented towards sustainable, inclusive food systems and tackling socio-economic inequity. It is important to note that community urban agriculture operators tend to employ more staff than commercial operators in a wide diversity of roles ranging from project coordinators and community outreach staff to finance and administrative officers and communication managers. Greater government investment in the sector could generate significant numbers of meaningful jobs while also working towards multiple social and environmental objectives and mitigating the over-reliance on volunteers.

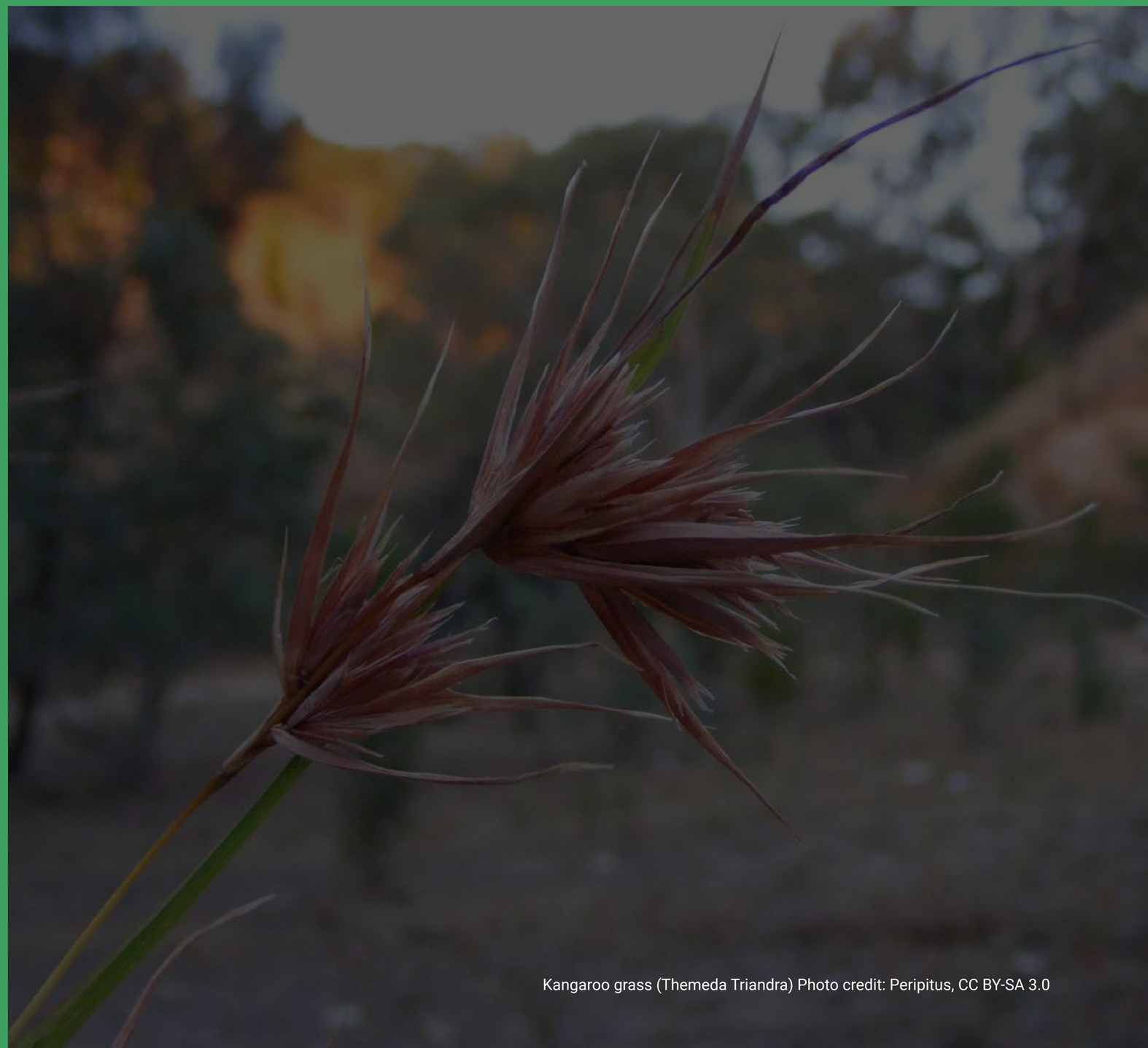
The high proportion of sole traders and low levels of revenue within the commercial sector limit opportunities for jobs growth. However, greater support for start-ups and growing urban agriculture enterprises could build capacity for many commercial operators across essential business functions and encourage cross-sectoral collaborations and interactions that are important to creating a strong circular economy.

Cultivating urban Aboriginal foodways

Growing indigenous grain crops on rooftops would be a step towards smaller scale farming practices which we know are better for Country and ultimately better for people. Our agricultural industry also needs transformative change if we are to meet the challenges imminent and thinking of how these green roofs could work across multiple imperatives would be an excellent strategy. We as Aboriginal people always try to work within holistic frameworks, and interconnectedness is the essence of our ways of knowing and doing. [...] What if a major part of the green roof revolution about to occur in Melbourne involved the employment of predominantly Aboriginal rangers to design, research, speak for and manage these 'new landscapes'? It may perhaps seem strange to conceive of these green spaces as landscapes, as Country, but they certainly have the potential to be just this in their capacity to be embedded in culture, to provide and to be nurturing. We as Aboriginal people have always changed and adapted to survive and thrive. I see no reason why these places in the sky can't function in much the same way and be conceived in much the same way as Country on the ground.

Barkandji artist, Zena Cumpston

"How Aboriginal perspectives can shape new landscapes" (2020)



Kangaroo grass (Themeda Triandra) Photo credit: Peripitus, CC BY-SA 3.0

The Role of Government

> *[Urban agriculture needs] recognition at the state and federal government levels (policy alignment / integration) of the value of urban agriculture to the health, wellbeing and resilience of urban communities in the face of future shocks and stresses (pandemic, climate impacts like bushfires, floods, heatwaves, social inequalities etc).”*
>
> **55 to 64 years old, council employee**

Photo credit: World Food Garden at Westvale Community Centre, St Albans, Madeline Tolson

Building on supportive precedents

In recent years the Victorian government has responded to emerging industry and community needs and priorities.

Initiated in 2018, Agriculture Victoria's Small-Scale and Craft Program is a grants program developed to meet the specific needs of smaller producers and makers. In early 2022, Agriculture Victoria launched the Secondary Schools Agriculture Fund, to support students to transition to agriculture careers.

The Victorian government also recently invested $1.5 million in 'Pop Up Food Relief' local markets, intended to provide dignified access to healthy and culturally appropriate food.

These are good precedents for a responsive approach to urban agriculture and food systems more broadly.

Effective policy support and leadership

Many respondents see urban agriculture as an effective policy response to climate change, social injustice, food insecurity and health inequities. However, they do not always feel heard by policymakers.

Urban design processes and neighbourhood regeneration projects at local and state levels focus primarily on residential and commercial developments and rarely consider the potential of urban agriculture to enhance the local built environment, beyond passing references to community gardens. The urban agriculture sector would benefit from integrated cross-departmental collaboration and more enabling policies at all levels of government.

Local government can and does play a positive role in facilitating urban agriculture. Some councils have developed specific urban agriculture policies and strategies (City of Yarra) or embedded urban agriculture within broader food system strategies (City of Greater Bendigo and Merri-bek City Council, formerly Moreland). Others have created targeted initiatives such as guidelines to facilitate edible verges and median strips (City of Melbourne).

However, some councils focus on risks rather than opportunities, or emphasise excessive regulation over enabling facilitation. This hinders the sector's growth, inhibits innovative policy responses, and undermines collaborative working relationships between community and government.

> *"Local government is the main barrier to these types of projects. They make it very difficult to start and continue to run things like open community orchards."*
>
> **35 to 44 years old, volunteer in NFP organisation**

Photo credit: Orchard End Farm

Participatory consultation and co-design

Community co-design and participatory policy processes that support the multifunctional benefits of urban agriculture are preferable to valuing urban agriculture on purely economic grounds which may diminish public and community support (Krikser et al., 2019).

Government has a critical role to play in balancing competing interests of different stakeholders and community members. This includes navigating the tensions between demands to focus on commercial outcomes versus community-oriented approaches. The community urban agriculture sector offers many social and ecological benefits that should be regarded as equally important to economic outcomes.

In developing urban agriculture policies or strategies, it is important for local governments to allow sufficient time for community engagement and consultation. Because policy development often follows budgetary processes, time allocated for community consultation is often compressed to suit these timelines. Insufficient lead-time and rushed consultation processes are barriers to meaningful consultation and input. This is particularly the case when working with Indigenous communities.

The Three-Category Approach offers a valuable toolkit for urban researchers, practitioners and policymakers in developing processes for communicating, collaborating and co-designing with First Nations peoples and organisations.

Backcasting for the co-design of the Oakhill Food Justice Farm

> *Meaningful engagement starts with better understanding of the strengths and customs of traditional to contemporary First Nations culture; better communication of methods; better collaborations by being patient and building time into a project at its inception to build meaningful and trusting relationships; empowering participatory collaborations with appropriate acknowledgements, ethics and protocols; and by co-authorship and co-design with Traditional Owners."*
>
> **Kirstine Wallis in** *Cities for People and Nature* **(2020)**

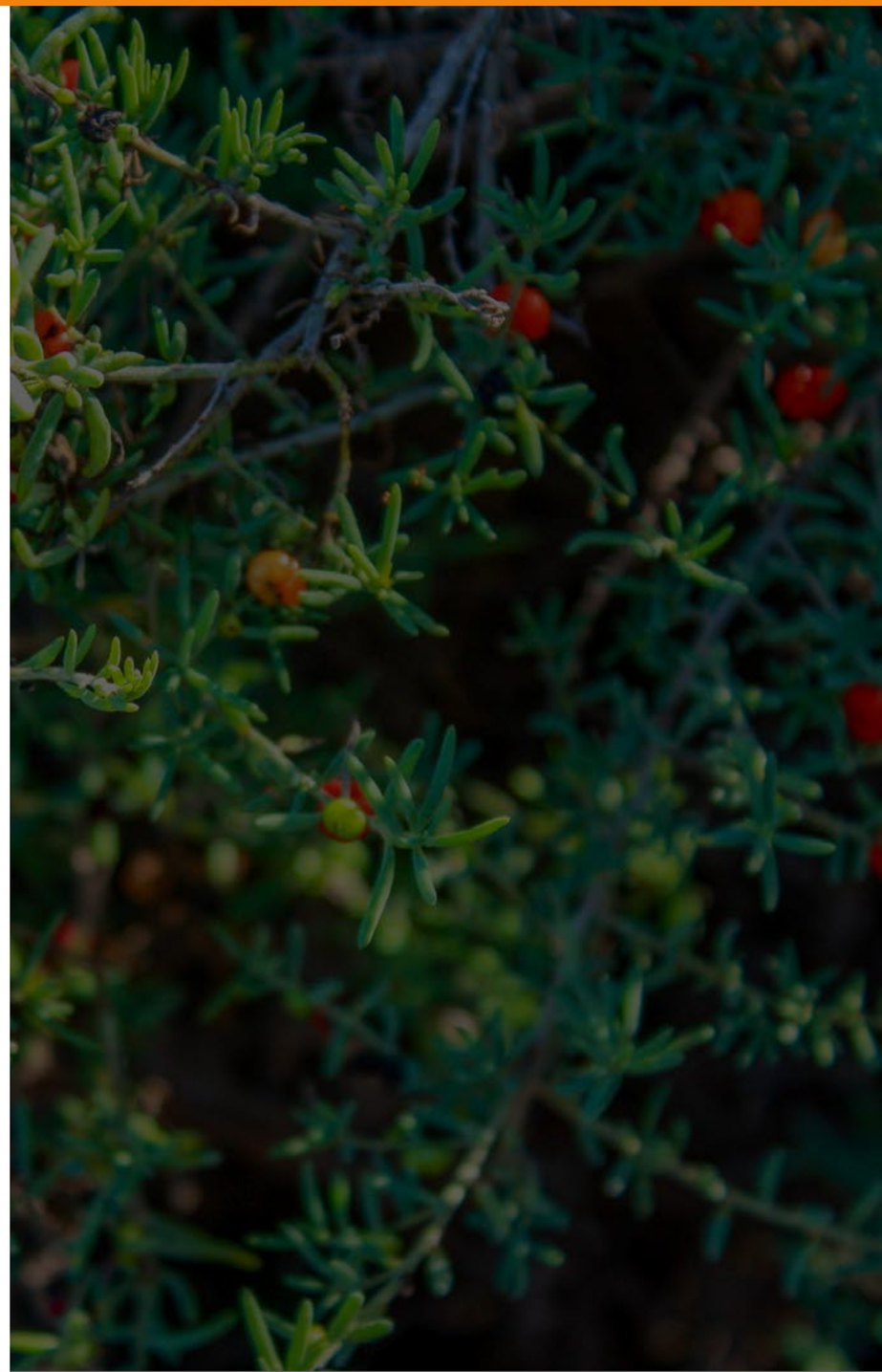
Planning for edible cities and towns

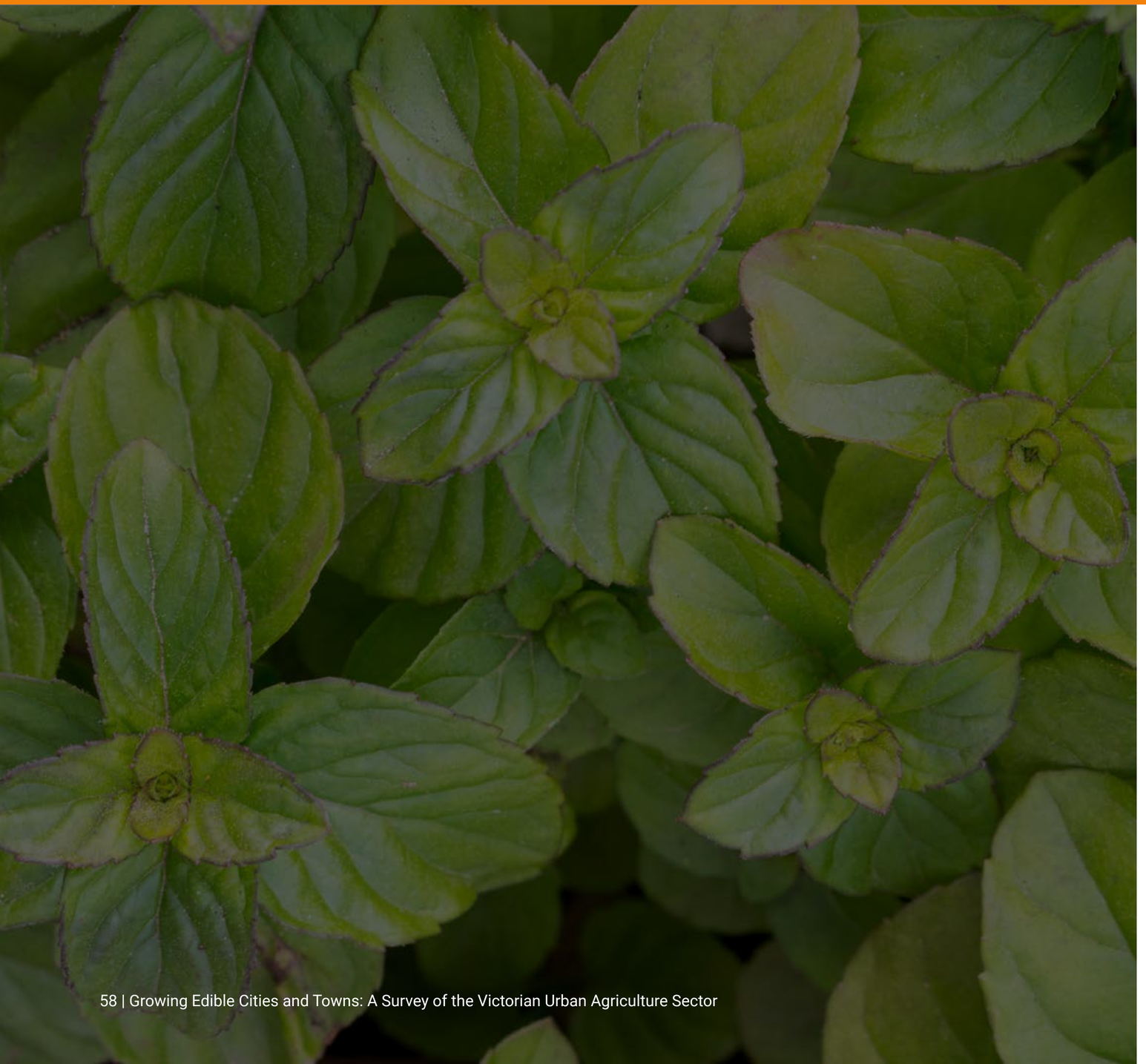
The planning sector's lack of engagement with food system issues and conflicting priorities between urban agriculture and other land uses continue to hamper the capacity of the urban agriculture sector to achieve its potential in Australia (Pires, 2011). There is a need for a collaborative, joined-up approach to policy development and planning reform that integrates agriculture, health, environment, education and community development.

This is consistent with public health and planning scholars calling for a "rethink of the way we build cities and towns" if human and environmental health is to be improved; however, they also note that "achieving this vision will require leadership from all levels and sectors of government, and professional associations and disciplines" (Giles-Corti et al., 2021).

> *It will take leadership and policy drivers to support the momentum, because understandably there is a lot of fear and concern, and economic issues always seem to come to the forefront."*
>
> Pandemic gardening survey respondent

Taking seriously the multifunctional benefits of urban agriculture provides a strong mechanism for re-imagining our cities and towns as places of edible abundance and human and ecological flourishing.





Understanding the city as Country

Rethinking cities and towns also means understanding them as Country.

Urban agriculture has an important role to play in deepening public understandings of Aboriginal history and belonging while creating places for Indigenous people themselves to celebrate, create and share their stories of Country on their own terms. The Living Pavilion project at University of Melbourne highlights the potential for Indigenous-led regenerative place-making to foreground Indigenous knowledge systems, ecological science and food culture.

The nourishment of urban Country and the resurgence of Indigenous foods and cultural practices in cities depends on access to urban land and supportive grant schemes that empower First Nations peoples to lead their own projects and exercise self-determination in how these projects take shape. It also requires policy-makers and practitioners to be open to a radical re-imagining of the city.

Roadmap for a thriving urban agriculture sector in Victoria

> *Urban farms should be recognised and encouraged for the enormous contribution they make to LGAs in terms of social capital, community building and ecological benefits, including being explicitly provided for in Local Environment Plans and State Environmental Planning Policies."*
>
> **Pandemic gardening survey respondent**

Photo credit: Rose Creek Estate, Keilor East

07 | Roadmap for a thriving urban agriculture sector in Victoria

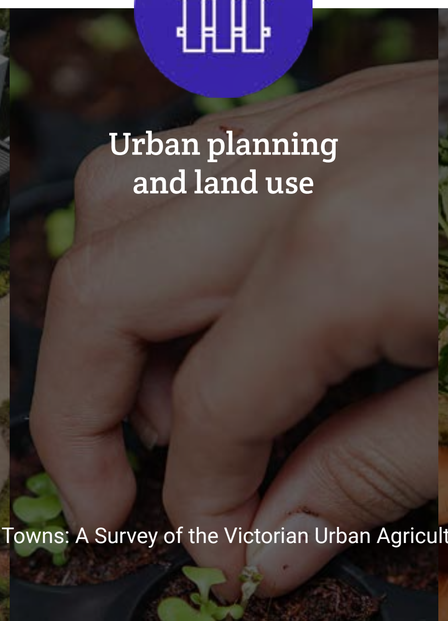
The final section of this report presents a roadmap for urban agriculture in Victoria. Most cities that invest substantially in urban agriculture do so within a broader agenda to strengthen local food systems and economies. For this reason, the six pillars within this roadmap for urban agriculture can be read as supportive building blocks for a broader strategic approach to a more sustainable and healthier food system in Victoria.

Each pillar supports a different aspect of expanding the urban agriculture sector with suggested timeframes (short = within 24 months and medium = 2-5 years). Sectoral responsibilities are indicated to highlight opportunities for collaboration.

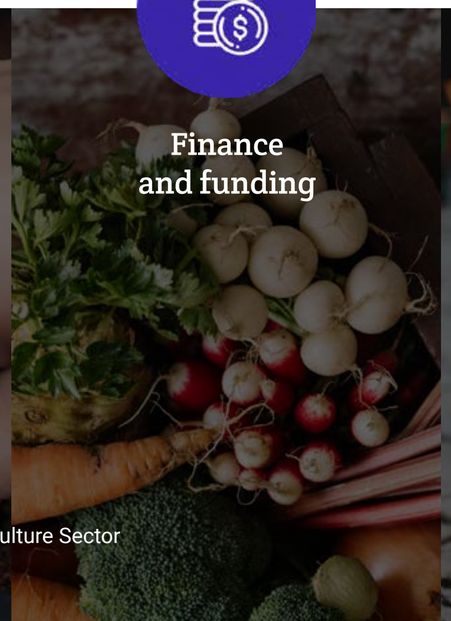
Just as survey respondents and the academic literature identify planning as a constraint to the expansion and success of urban agriculture, supportive planning frameworks are a key enabler for the sector. The roadmap therefore draws on the conceptual framework for integrating urban agriculture into sustainable urban development presented earlier in this report (Sarker et al., 2019). This framework serves as a valuable guide for understanding the multifunctional benefits of urban agriculture and the importance of planning reform as a critical pillar in the roadmap.

> *If urban ag could be seen as just as important as health and education, and we could see the three sectors come together to cooperate, collaborate, and be the cornerstone of all Australian policy and planning, it would achieve huge societal improvement for all."*
>
> **45 to 54 years old, employee/director of NFP organisation**

Policies and plans



Urban planning and land use



Finance and funding

Governance and coordination

Capacity building

Infrastructure and materials

Policies and plans

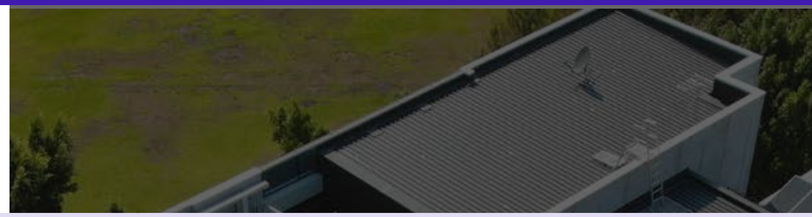
The Victorian government has a strong legislative and policy architecture to support the transition towards enhanced sustainability, health and wellbeing, spanning diverse portfolios that include planning, health, environment, agriculture, social housing, community and economic development.

These include the Public Health and Wellbeing Act, Planning and Environment Act, Climate Change Act and Strategy, Agriculture Strategy and small-scale agriculture grants program, Social Procurement Framework, Circular Economy (Waste Reduction and Recycling) Bill, Local Government Act and the Department of Families, Fairness and Housing strategic plan.

Urban agriculture can support these legislative and policy directions and strengthen government commitments to enhancing food security, urban forestation, community development, social justice, youth engagement and employment pathways at a state level. Scaling up urban agriculture within the context of a broader cross-sectoral food system policy framework would enhance the sector's impact. This would be best enabled by government teams and departments with a strong understanding of how policies, programs and work areas impact and intersect with local, state, national and global food systems.

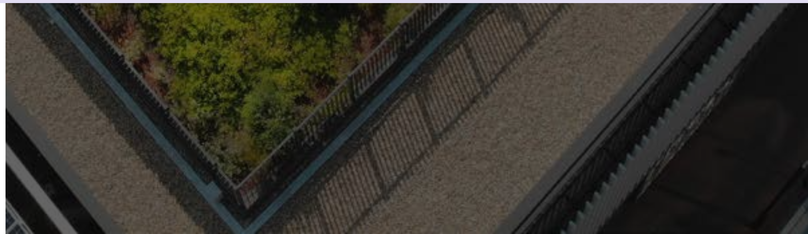
An urban agriculture advisory council could provide strategic support in aligning urban agriculture to current and future state government priorities across diverse policy domains, while bringing critical urban agriculture expertise into governance processes. The multifunctional and multidisciplinary nature of urban agriculture cuts across diverse policy domains. A key recommendation is therefore a dedicated and cross-departmental policy framework to support and guide the sector's expansion.

A supportive state policy framework would provide a strong mandate for local governments to develop strong urban agriculture strategies, enabling greater policy coherence and impact. Policies are most effective when adequately resourced, with dedicated officers and funding to support program implementation that is locally relevant and responsive.



Short term action	Responsible actors
Situate urban agriculture within a **whole-of-government, cross-sectoral approach** to food system governance	• State government
Establish an **urban agriculture advisory council** comprised of cross-departmental representatives and key practitioners and stakeholders to provide strategic guidance in aligning urban agriculture to existing legislative responsibilities and policy objectives	• State government • Local government • Community and industry sectors

Medium term action	Responsible actors
Develop an **urban agriculture strategy** with clear alignment to existing government commitments and identified areas of cross-departmental responsibility	• State government • Sustain: The Australia Food Network and other sector specialists
Develop a **participatory monitoring and evaluation framework** for urban agriculture policy outcomes	• State government • Local government • Community and industry sectors



Urban planning and land use

A supportive planning framework is a cornerstone to a thriving urban agriculture sector.

Understanding food production as vital urban infrastructure within the planning framework is essential to overcoming regulatory constraints identified in the survey. This would also be consistent with best-practice approaches such as Boston's Article 89 reform which mandates a 'right to farm in the city.'

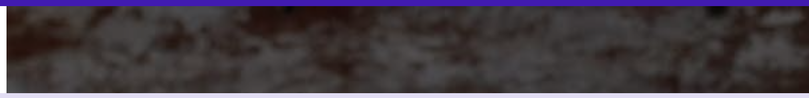
The inclusion of food systems modules in planning qualifications and professional development opportunities in food systems and urban agriculture would equip local and state government planning departments in understanding the intersections of their work with the food system and ensure that supportive programs and policies are designed accordingly (Mendes et al., 2011; Buxton and Butt, 2020).

Critical state planning reforms via *the Planning and Environment Act 1987,* including integrating public health as a key planning consideration, would empower local councils to integrate urban agriculture into their policies, plans and strategies. When planners have clear mandates to support health-promoting land uses and activities, they are enabled to utilise these mechanisms effectively (Keeble et al., 2021). For example, in the UK, planning policy and legislation reforms have been mobilised to create "use classes" and levies for unhealthy food outlets. This could form the basis for financing the urban agriculture sector (see 'finance' pillar) while, at the same time, reducing the burden of disease of unhealthy diets and mitigating against food waste packaging.

A land audit could identify potential urban agriculture sites within cities and towns across Victoria on private and public land.

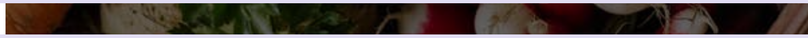
Urban farmer-school collaborations present an opportunity to enhance education outcomes for students, economic outcomes for young farmers and access to affordable, local produce for the community.

> *"Because of their inherently interdisciplinary and integrative as well as multisectoral and multi-actor nature, food systems as a planning issue offers a model from which to learn about how best to respond to complexity and diversity in planning problems and their solutions."*
>
> **(Mendes et al., 2011)**



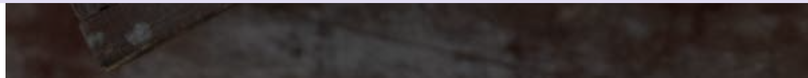
Short term action

Short term action	Responsible actors
Prioritise urban food production as **vital city infrastructure** on par with roads, sewers, retail and housing	• State government • Local government • Utility corporations • Developers / landowners
Develop and implement **urban agriculture and food system modules and curriculum** in formal education pathways and ongoing professional development for planners and policymakers	• State government • Planning Institute of Australia • Universities & TAFES



Medium term action

Medium term action	Responsible actors
Identify **existing regulatory obstacles** to urban agriculture in consultation with public utilities, planning experts and urban agriculture practitioners	• State government • Local government • Community and industry sector
Create a dedicated **urban agriculture zoning classification and 'as of right' use** in state and local planning schemes	• State government • Local government
Map and audit available private and public land suitable for urban food production, including utilities and schools	• State government • Local government • Utility corporations • Schools • Developers / landowners
Develop **legislative mechanisms** in the planning framework that require dedicated food production in new urban developments	• State government • Local government
Normalise community access to public land via supportive policy initiatives for edible verges, parks and gardens	• Local government • Community organisations



Finance and funding

The establishment of a Victorian urban agriculture fund would be a legitimate and important investment in the development of sustainable food systems that support community health and wellbeing, circular economies and climate action.

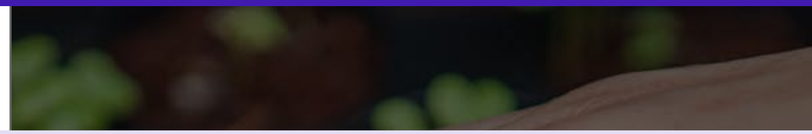
A long-term funding program would advance many state government objectives, while stimulating new green jobs and sector innovation amongst NFPs, community organisations and urban farming enterprises. Better resourcing of the sector would support volunteer participation within the sector, while mitigating against volunteer burnout.

Funds could be made available through innovative fiscal measures that apply levies to unhealthy food and beverage industries outlets at planning approval stage, similar to the establishment and funding of VicHealth through taxation against tobacco. Such fiscal measures are a win-win by resourcing new initiatives that promote positive, social, health and environmental outcomes. Councils could also be empowered to increase developer contribution schemes, community infrastructure levies and open space levies to support urban agriculture initiatives at a local level. This would lead to sector growth as well as enhance community amenity.

Other funding sources could include increasing land taxes on sites left vacant for more than three years. Current land tax exemptions for charitable purposes are an existing mechanism with significant potential for incentivising private landholders to make land available for urban agriculture, though this could be more widely promoted to encourage uptake.

There are critical complexities, however, regarding income generation to support charitable activities. Current rulings by the State Revenue Office offer some guidance for allowable activities but also potentially limit charitable organisations from raising funds to support urban agriculture activities. This can leave them vulnerable to complex legal processes as project activities evolve. Participatory budgeting processes could be explored to encourage citizen participation in funding decisions and enhance community buy-in. The Pick My Project community grants program is a tested mechanism for this. Collaborations with the philanthropic and investment sectors could also be investigated as a model for aligning investment towards transformative and impactful initiatives.

> *As a healthcare provider, I fully endorse edible gardening as an intervention that would improve public and climate health. I would view any government support - federal, state or local - as a very good and wise use of my taxes and rates."*
>
> **Pandemic gardening survey respondent**



Short term action	Responsible actors
Investigate options to **resource an urban agriculture fund** via innovative fiscal measures including: • Levies on unhealthy food/ beverage industries at planning approval stage • Land tax disincentives for land-banking	• State government • Federal government • Philanthropy and impact investors
Resource the participation of the **First Peoples' Assembly of Victoria** and other appropriate Traditional Owner groups on the urban agriculture advisory council to ensure appropriate cultural governance and benefits for First Peoples	• State government • First Nations organisations/ communities and Traditional Owners
Create legislative provisions enabling local councils to **increase developer contribution schemes, community infrastructure levies** and open space levies to support urban agriculture initiatives	• State government • Local government
Develop **participatory budgeting processes and grant programs** tailored to short-term sectoral needs	• State government
Investigate **collaborative cross-sectoral funding innovations** that align investment from state government, philanthropy, impact investors and superannuation funds for sustained sector support and transformative initiatives	• State governments • Philanthropy and impact investors • Superannuation funds • Urban agriculture experts

Governance and coordination

Collaborative and participatory approaches to governance and coordination would acknowledge the social, environmental and economic contributions of urban agriculture to the Victorian community and embed First Nations leadership within the sector's development.

Policy development and planning reform to support urban agriculture should begin with the recognition of First Nations sovereignty in urban environments. This is vital for dismantling barriers to the economic participation of Aboriginal people in urban agriculture and enabling connection to Country in cities and towns. New Indigenous-led approaches to urban land governance would provide opportunities for the urban agriculture sector to contribute to Aboriginal self-determination as a critical outcome of Victoria's treaty process. For this approach to be effective and fair, First Nations participation and knowledge would require appropriate resourcing and/or compensation in recognition of their benefits to the broader community.

Participatory governance encourages strong input and engagement from diverse sector participants. In developing supportive urban agriculture policies and strategies, consultation and engagement processes should be designed with ample time for community participation to ensure the broadest possible representation.

We strongly support the formation of local urban agriculture cooperatives as a way to stimulate resource/skill sharing, empower communities to develop locally responsive initiatives and encourage cross-sectoral economic collaboration in partnership with local governments. Cooperatives cultivate opportunities for enterprise development and employment, while fostering community connectedness, healing, social inclusion and environmental outcomes.

Collaborative governance models would build the confidence amongst community, philanthropic and industry stakeholders to invest in the future development of the urban agriculture sector.

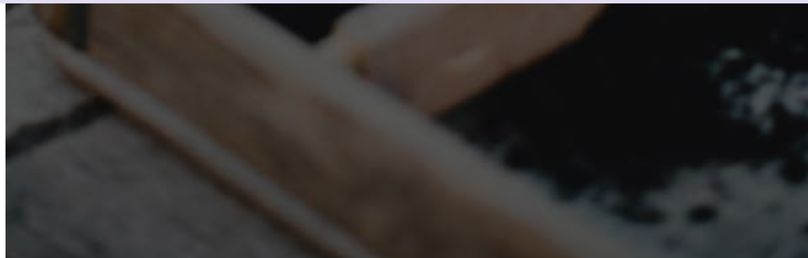
> *"We need funded volunteer garden coordinator roles (could be shared across gardens) to help avoid burnout and foster good governance, facilitate networks that share knowledge, bulk buy, group insurance policies and policy packs for community gardens."*
>
> **45 to 54 years old, volunteer in NFP community organisation**

Short term action

Short term action	Responsible actors
Commit to a **participatory and inclusive approach** to urban agriculture policy and governance	• State government • Local government • Community and industry sectors
Consult with First Nations organisations to develop appropriate strategies for **resourcing Aboriginal leadership and participation** in the urban agriculture sector	• State government • Traditional Owners and First Nations organisations

Medium term action

Medium term action	Responsible actors
Support the formation of **urban agriculture cooperatives**	• State government • Local government • Community and industry sectors



Capacity building

There are a range of education, training, research and capacity building roles for a significant cast of actors to play within the sector.

Many initiatives are already happening but would benefit from stronger resourcing, coordination and long-term commitments from local and state governments.

In the short term, resourcing urban agriculture networks and events could be a cost-effective approach for stimulating activity and building on existing strengths within the sector. An urban agriculture mentoring program matching experienced farmers with aspiring urban farmers could be an important mechanism to build capacity. This could also support new entrants into the broader agricultural sector. Many aspiring entrants are strongly committed to agro-ecological or regenerative approaches to farming focused on sustaining resilient, local communities. However, as noted earlier in this report, they face barriers in accessing hands-on learning and training opportunities (Massy 2021).

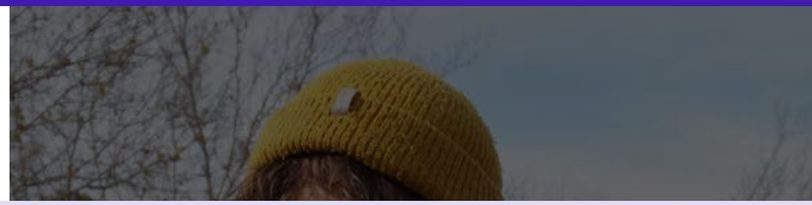
Embedding urban agriculture in school curriculum would develop food production skills and knowledge and improve food literacy. To ensure the sustainability of school gardens, allocations from the urban agriculture fund could also be used to match schools with skilled local urban farmers and/or community gardeners to help develop and maintain school gardens.

We recommend the resourcing of professional development opportunities for local government staff to embed food systems thinking across council planning.

This could further enable more integrated, 'joined-up' health, sustainability and planning policy within government.

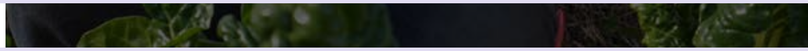
A key recommendation within this pillar is the establishment and resourcing of a centre for urban agriculture to serve as a specialist hub for coordinating research, knowledge translation and exchange, training, networking and sector-wide leadership development and capacity building.

> *"We have a large site with plenty of water but lack of knowledge and organisational/volunteer capacity hold us back. Information and encouragement from a peak urban agriculture body could be helpful in meeting this ambition. I suspect that other community gardening organisations would be similar."*
>
> **55 to 64 years old, volunteer in community group**



Short term action

	Responsible actors
Resource **local networks and events** that stimulate partnerships, collaboration and knowledge exchange across the sector	• State government • Local government • Community and industry sector
Embed **urban agriculture in primary and secondary schools** to increase food literacy levels	• State government (education) • Community organisations • Schools
Establish a **centre for urban agriculture** for long-term research, capacity building and leadership within the sector	• State government • Philanthropy • Researchers / trainers • Urban agriculture experts
Create **professional development opportunities** that build urban agriculture and sustainable food systems capacity within local government	• VicHealth • Local government • Sustain: The Australian Food Network and other sector specialists



Medium term action

	Responsible actors
Resource a **mentorship program** matching new entrants to the sector with experienced urban and peri-urban farmers	• State government • Sustain: The Australia Food Network and other sector specialists

Infrastructure and materials

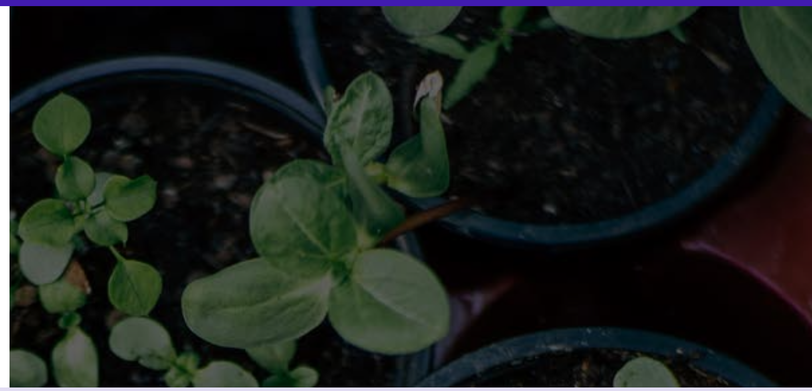
A thriving urban agriculture sector benefits from appropriate inputs, including seeds and seedlings, tools, quality soil and compost to reliable water access and storage facilities.

We recommend stronger resourcing for necessary infrastructure for community groups, with a priority on low-income and under-represented communities as well as new urban farmers. Mandating free water connections and supply for approved communal food growing by water utility companies would also support the community sector.

An expanded urban agriculture sector also offers opportunities for developing zero-waste circular economies. Benefits include local nutrient cycling, reducing waste processing costs and mitigating against greenhouse gas emissions. Compost is a critical resource for urban farmers, particularly given rising costs of fertiliser inputs. We recommend training and finance opportunities to support commercial and community composting, redirecting food waste from households and the hospitality sector to urban farms and community gardens. This could generate new opportunities for the creation of green jobs and enterprise innovation.

Edible communal growing spaces within a walking distance of every urban dweller in Victoria would be consistent with the vision of 20-minute communities within Plan Melbourne. Supporting Victorians with infrastructure and materials to grow food, particularly in lower income communities, is an evidence-based recommendation to support more connected Victorian communities with a range of benefits for mental, physical and dietary health.

> *A big struggle I've noticed in community groups is access to space: storage, registered kitchens etc."*
>
> **25 to 34 years old, community volunteer**

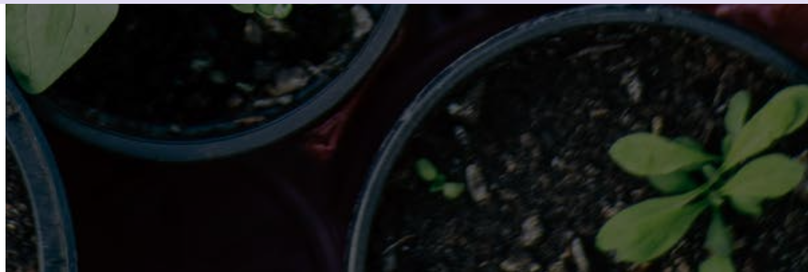


Short term action

	Responsible actors
Provide **'as of right' water connections** for approved community gardens and urban farms	• Water utility companies • State government • Local government
Establish **community grant programs** to resource essential edible gardening coordination and equipment, prioritising low-income communities and social housing estates	• State government • Philanthropy • Developers

Medium term action

Support **circular economy composting** that directs household and hospitality sector food waste to urban farms and community gardens	• Local governments • Local businesses and social enterprises • Community gardens / networks



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Appendix 1: Survey methodology

Survey development

The design approach was to create a survey that would capture detailed information and still be completed in 20 minutes. Questions were developed in consultation with Agriculture Victorian and informed by an analysis of relevant academic literature. The survey was tested and revised based on feedback from respondents.

Sector representation

This was the first survey of the urban agriculture sector in Victoria. Therefore its total size and composition is unknown. Assumptions about the representativeness of the data should be cautious. Based on postcode distribution, it is clear the survey has captured a significant portion of the small urban farmers and urban agriculture community organisations within inner Melbourne, particularly as it was shared heavily on social media within these networks. It is less representative of the larger end of the commercial sector such as aquaculture exporters and hydroponic microgreens producers supplying the wholesale and supermarket sector. This may contribute to omission bias, particularly where revenue and size of operation are concerned.

Survey distribution

The survey was open from 18 December 2021 to 13 January 2022. Proximity to the holiday break presented some challenges in collecting responses. Social media posts on Facebook and Instagram launched the survey in December. Additional posts were boosted in January to capture those returning from holidays. Over 150 emails were sent to urban agriculture businesses and organisations. Invitations to complete the survey were also sent via Linkedin. Recipients were encouraged to share the survey with their networks. Community Gardening Australia distributed the survey to its database of Victorian community garden coordinators. Sustain also disseminated it through its monthly e-news.

Survey completion

A total of 153 surveys were analysed. Of these 153 surveys, 80% (or 122) completed the survey in its entirety. According to Survey Monkey, the average survey completion for a 30 question survey is 85%. However, in this survey, financial questions (Q26-29) triggered significant survey attribution, with only 61% opting to provide revenue information, and 20% selecting “not applicable/prefer not to say.” Given the sensitive nature of financial questions, the 80% completion therefore falls within expectations.

Data cleansing

A total of 173 surveys were received via SurveyMonkey. Twenty surveys were excluded from analysis. Valid surveys were defined as those that answered Q8 (about food production) and Q12 (about other urban agriculture activities) at a minimum, or replied to Q4 (type of business/org) and provided postcode data. This was to ensure that survey responses reflected the views of sector participants rather than household gardeners (which were not the target audience). All qualitative comments were reviewed to ensure they were captured within codable survey questions where possible.

Analysis

Survey responses were downloaded into Excel for frequency analysis. Descriptive univariate analysis of individual questions was undertaken to report on frequency distribution and mean values. Frequency distribution within the report relates to the number of responses to a given question rather than the total number of surveys. For example, to understand a percentage frequency, blank survey responses were excluded in calculating the percentage of the n value. If “not applicable” or “prefer not to say” was included as a potential answer, these respondents were excluded from the total n value for the question.

Because the survey was designed to capture both the commercial and community sector, cross-tabular analysis was also undertaken to understand the differences and synergies between these two cohorts. However cross-tabular analysis produces much smaller sample sizes, and therefore caution should be applied in drawing conclusions.

Despite this caution, the findings of the survey, even at sub-population levels, are consistent with the academic literature on urban agriculture and Sustain’s own research and practice within the sector.

Survey Questions

Q1 What is your age range?

- ☐ 18-24 years old
- ☐ 25-34 years old
- ☐ 35-44 years old
- ☐ 45-54 years old
- ☐ 55-64 years old
- ☐ 65+ years old

Q2 What category best describes your urban agriculture business or organisation? Select the most applicable.

- ☐ Sole trader/partnership
- ☐ Commercial business or company
- ☐ Government (e.g. local council, state agency, etc.)
- ☐ Social enterprise (substantial portion of income derived from trade)
- ☐ Not-for-profit organisation (relies mostly on grants with minimal trade income)
- ☐ Community group (e.g. volunteer organisation led by committee of management)
- ☐ School (with food garden)
- ☐ Other (please specify)

Q3 In what capacity do you personally work in this business or organisation? Select the most applicable.

- ☐ Sole trader/partner (working for yourself or as a partnership)
- ☐ Employee of a business
- ☐ Volunteer (with coordination or committee responsibilities)
- ☐ Employee/board director of a community or not-for-profit organisation
- ☐ Employee of a council/government
- ☐ Employee of school
- ☐ Other (please specify)

Q4 What best describes your business or organisation? Select the most applicable.

- ☐ Commercial large-scale food producer, e.g. supplying wholesale or export markets
- ☐ Commercial small-scale food producer, e.g. selling via food co-ops, farmers markets, veggie boxes, farm gate sales, or direct to hospitality/retail outlets, etc
- ☐ Commercial horticultural or and/or other agricultural products or services (nurseries selling seeds/seedlings, agri-tech and other food-growing supplies, hives and apiary services, edible garden design, etc)
- ☐ Other type of business in which urban agriculture is a secondary activity or important input (e.g. kitchen garden for a restaurant, food co-op, etc)
- ☐ Not-for-profit community organisation or social enterprise with urban agriculture as its primary purpose (e.g. community farms/gardens, urban agriculture advocacy, etc)
- ☐ Not-for-profit community organisation or social enterprise that uses urban agriculture to achieve a secondary purpose (e.g. jobs training, therapeutic care, food relief, etc)
- ☐ Council or other government-owned organisation that runs a community farm, homestead, or orchard that is open to visitors
- ☐ School
- ☐ Other (specify below) or not applicable
- ☐ None of the above

Q5 If you are producing food or fibre, what is your tenancy arrangement? Select the most applicable.

- ☐ Lease private land/premises – commercial
- ☐ Land sharing or other non-commercial arrangement (e.g. borrowed land, vacant land awaiting development)
- ☐ Public land (owned by government or public utilities)
- ☐ Not applicable

Q6 Are you a member of any peak bodies or groups? Select all that apply.

- ☐ Local or regional network or group
- ☐ Accreditation or assurance scheme (e.g. organics, biodynamics)
- ☐ Victorian Farmers Market Association
- ☐ Victorian Farmers Federation
- ☐ Community Gardens Australia
- ☐ Sustainable Gardening Australia
- ☐ Permaculture Victoria
- ☐ Sustain: The Australian Food Network
- ☐ Young Farmers Connect
- ☐ Australian Food Sovereignty Alliance
- ☐ Landcare
- ☐ Not a member of any peak bodies or groups

Q7 What is the postcode of the business or organisation?

Q8 Does your business or organisation directly engage in urban agriculture (e.g. growing or producing food)? If "no", the next questions will capture other related activities.

- ☐ Yes
- ☐ No

Q9 What types of food does your business/organisation grow or produce? Select all that apply.

- ☐ Fruits (including berries)
- ☐ Vegetables
- ☐ Microgreens and micro-herbs
- ☐ Edible flowers or cut flowers
- ☐ Mushrooms (excluding personal mushroom propagation kits)
- ☐ Foraged foods (e.g. wild herbs or mushrooms, etc)
- ☐ Honey, honeycomb, bee pollen and other bee products (apiary services are included in Q12)
- ☐ Native foods
- ☐ Olives
- ☐ Nuts
- ☐ Fish or seafood
- ☐ Livestock - meat
- ☐ Livestock - dairy
- ☐ Livestock - wool
- ☐ Eggs
- ☐ Other (specify below)

Survey Questions

Q10 Do you value-add or process the products that you make or produce (e.g. turning berries into jam or drying herbs for tea)? Select the most applicable.

☐ Yes ☐ No ☐ Not yet, but I'm planning to

Q11 Where do you sell (or donate) your products? Select all that apply.

- ☐ Direct to consumer, e.g. farmers markets, veggie boxes, u-pick, farm gate, etc
- ☐ Retail, e.g. green grocers, food co-ops, etc
- ☐ Hospitality businesses, e.g. restaurants, cafes, bars, etc
- ☐ Institutions, e.g. hospitals, aged care service, schools, prisons, etc
- ☐ Wholesale markets
- ☐ Export interstate
- ☐ Export overseas
- ☐ Donate to food relief or other non-commercial purpose

Q12 What other urban agriculture activities are most relevant to your organisation or business? Select all that apply.

- ☐ Selling propagation kits or agri-tech supplies (e.g. mushrooms, aquaponics, wicking beds, etc) for domestic, commercial or government customers
- ☐ Community education, e.g. gardening workshops, kitchen gardens in school, demonstration farms, permaculture courses, etc
- ☐ Council support for urban agriculture activities, e.g. policy implementation, program coordination, etc
- ☐ Selling seeds and seedlings of edible plants
- ☐ Edible landscaping and garden design services (in private or public spaces)
- ☐ Community food relief
- ☐ Apiary services and products, e.g. hives, beekeeping equipment, etc
- ☐ Processing or distributing for urban agriculture producers (e.g. food co-op, veggie box scheme, etc)
- ☐ Tourism and/or visitor experiences, e.g. farm tours or visits, pick-your-own, etc
- ☐ Hospitality business with a kitchen garden
- ☐ Pre-accredited or accredited training / employment pathways, e.g. certificates in horticulture, supported skills development etc
- ☐ Providing social services (NDIS or other) e.g. therapeutic gardening, etc
- ☐ Community garden coordination
- ☐ Neighbourhood house coordination
- ☐ Other (please specify)

Q13 If you provide urban agriculture services or experiences, who pays for these? Select all that apply.

- ☐ Private individuals (e.g. general public, farm visitors, tourists, workshop participants, etc)
- ☐ Schools
- ☐ Community organisations (community gardens, etc)
- ☐ Local councils
- ☐ State or federal government departments (via jobs & training, health, disability or social services, regional development, etc)
- ☐ Other businesses (e.g. hospitality, nurseries, landscaping businesses, etc)

Q14 Please rate the areas you feel offer the greatest value for future development of the urban agriculture sector.

- ☐ Governance training and community capacity building
- ☐ Recognition of urban agriculture in planning framework
- ☐ Strategic alignment of peak bodies
- ☐ Participatory policy processes and strategies
- ☐ Circular economies drawing on eco-innovation approaches
- ☐ Digital technologies, e.g. for data collection & dissemination of knowledge amongst practitioners
- ☐ New urban production systems for maximising production at different scales
- ☐ Identification of under-utilised land in urban areas

Q15 What regulatory barriers or obstacles are significant for your business or organisation? Select all that apply.

- ☐ Urban agriculture not recognised in land-use planning framework
- ☐ Planning departments are unfamiliar with the urban agriculture sector
- ☐ Approvals processes are difficult, e.g. complex, time-consuming, not accessible online, etc
- ☐ Access to information , e.g. Information is hard to find or I don't know who to ask
- ☐ Cost of compliance, e.g. audit processes or planning approvals
- ☐ I don't know what regulations and requirements I have to meet
- ☐ Quality of information, e.g. hard to understand, not streamlined
- ☐ Information and support are not tailored to my needs
- ☐ I'm not affected by regulatory barriers

Q16 Which best describes your existing business or organisation? Select the most applicable (or "not applicable" if you are not a commercial enterprise).

- ☐ New and/or in establishment phase
- ☐ Established with no plans for growth/diversification (e.g. business as usual)
- ☐ Planning to grow or diversify
- ☐ Scaling back /winding down/exiting (e.g. succession planning, retiring, etc)
- ☐ Not applicable
- ☐ Other (please specify)

Q17 How interested are you in accessing new market channels for your business or organisation? (1 - not at all interested, 5 - extremely interested)

- ☐ Urban food trails / agritourism
- ☐ Other direct to consumer, e.g. box schemes, farm gate, etc
- ☐ Small-scale retail, e.g. green grocers, food co-ops, etc
- ☐ Farmers markets
- ☐ Online selling
- ☐ Institutions, e.g. hospitals, aged care service, schools, prisons, etc
- ☐ Hospitality, e.g. restaurants, cafes, bars, etc

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- ☐ Wholesale markets
- ☐ Supermarkets
- ☐ Export interstate
- ☐ Export overseas

Q18 What are the top priorities for your business or organisation in the future (e.g. next 3-5 years)? Select up to three.

- ☐ Encouraging community participation
- ☐ Create new experiences, e.g. workshops, courses, farm tours, etc.
- ☐ Finding new sources of funding
- ☐ Connecting with like-minded businesses and organisations
- ☐ Become more productive
- ☐ Purchase new infrastructure, e.g. equipment, buildings, etc
- ☐ Develop new knowledge and/or skills
- ☐ Better promotion, branding and marketing
- ☐ Find new land sharing arrangements
- ☐ Diversify or value-add your product/s
- ☐ Expand in size
- ☐ Other (please specify)

Q19 Which issues most significantly constrain your business or organisational activities? Select up to three.

- ☐ Lack of grants for urban agriculture
- ☐ Over-reliance on volunteer labour or volunteer burnout
- ☐ Land or premises is difficult to access, e.g. cost, insecure tenancy, rental increases, etc
- ☐ Access to water
- ☐ Difficulties accessing specialist training/technical advice
- ☐ Expense of processing and distributing produce
- ☐ Shortage of skilled labour
- ☐ Difficulties in accessing commercial finance

Q20 Which factors were most helpful in first establishing your business or organisation? Select all that apply.

- ☐ Volunteer support
- ☐ Access to affordable land
- ☐ Access to capital and funding
- ☐ Supportive council and/or policy frameworks
- ☐ Strong media and social media profile
- ☐ Direct to consumer sales, e.g. farmers markets, farm gate, veggie box
- ☐ Support from other local businesses, e.g. retail, hospitality, etc
- ☐ Membership with an association or industry group
- ☐ Online marketplace
- ☐ Other (please specify)

Q21 What avenues have been most useful or relevant for you with regard to training, skills development and accessing technical or other critical information? Select all that apply.

- ☐ Good mentor/s or peer support
- ☐ Workshops or industry events (online or in person)
- ☐ Volunteering or WWOOFing
- ☐ Permaculture design certificates or similar courses
- ☐ Work experience in paid role
- ☐ Youtube videos and other online sources
- ☐ Higher education qualification (associate degree to postgraduate)
- ☐ Vocational training (certificate to advanced diploma)
- ☐ Pre-accredited training, e.g. Adult, Community and Further Education
- ☐ Apprenticeships, traineeships or internships
- ☐ None of the above

Q22 What information and advice are most relevant to your needs or that of your organisation or business right now? Select your top three priorities.

- ☐ Business skills, e.g. finance, HR, business development, etc
- ☐ Grant-writing advice
- ☐ Marketing, branding and promotion
- ☐ Land use and council planning requirements
- ☐ Technical advice on urban agriculture production
- ☐ Accessing new market opportunities
- ☐ Soil safety assessment
- ☐ Don't require advice or information
- ☐ Biosecurity hazards and preventive measures
- ☐ Trade and export advice
- ☐ Other (please specify)

Q23 What government programs (federal, state, local) have you accessed in the past? Select all that apply.

- ☐ Monetary support, e.g. government rebates or incentives
- ☐ Victorian government grants
- ☐ Victorian government business support e.g. IT, marketing, financial management, mentoring, people management, social media
- ☐ Local government grants
- ☐ Other government workshops, forums or events
- ☐ Have not accessed government programs or support

Q24 If your work relies on volunteers, please estimate the number of volunteer hours per week that support your activities.

- ☐ Under 10 hours a week
- ☐ 10 to 19 hours per week
- ☐ 20 to 39 hours per week
- ☐ 40 to 59 hours per week
- ☐ Over 100 hours per week
- ☐ 60 to 100 hours per week
- ☐ Do not rely on volunteers

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Q25 If you are a social enterprise or commercial business, what best describes the size of your business or organisation (full/part-time and casuals)? Select the most applicable.

- ☐ 100+ employees
- ☐ 50 to 99 employees
- ☐ 20 to 49 employees
- ☐ 5 to 19 employees
- ☐ 1 to 4 employees
- ☐ Sole trader/partnership
- ☐ Not applicable

Q26 Please estimate your average annual revenue relating to the goods or services of your business or organisation. If you are a government agency, school or community organisation (e.g. managing urban farms, community or kitchen gardens, etc), please estimate the allocated operating budget for these activities.

- ☐ Not applicable or prefer not to say
- ☐ Under $50,000
- ☐ Between $50,000 and $99,999
- ☐ Between $100,000 and $499,999
- ☐ Between $500,000 and $1 million
- ☐ Between $1 million and $3 million
- ☐ Between $3 million and $5 million
- ☐ Over $5 million

Q27 What is the estimated annual expenditure of your business or organisation (e.g. wages, materials, etc)? If you are a gov't agency, school or community organisation engaged in urban agriculture (e.g. managing urban farms, community or kitchen gardens, etc), please estimate the operating expenditure for these activities.

- ☐ Under $50,000
- ☐ Not applicable or prefer not to say
- ☐ Between $50,000 and $99,999
- ☐ Between $100,000 and $499,999
- ☐ Between $1 million and $3 million
- ☐ Between $500,000 and $1 million
- ☐ Over $5 million
- ☐ Between $3 million and $5 million

Q28 What revenue streams do you (as a sole trader), your business or organisation rely upon in an average year? Provide percentage breakdown (numeric characters only - should add to 100%). Skip question if not relevant or you prefer not to say.

- ☐ Sales to general public or other businesses
- ☐ Government grants (local, state or federal)
- ☐ Philanthropic grants
- ☐ Off-farm income (if you are supporting yourself with add'l employment)
- ☐ Membership fees
- ☐ Other

Q29 Please specify any important revenue streams included as 'other'.

Q30 How important are the following social/community values to your business or organisation? (5-point scale ranging from 'Not important at all' to 'Extremely important')

- ☐ Creating a healthy food system
- ☐ Enhancing mental health and wellbeing
- ☐ More self-sufficient communities
- ☐ Supporting youth Providing food relief or reducing disadvantage
- ☐ Social and/or community connection
- ☐ Food-growing skills in the community

Q31 How important are the following environmental values to your business or organisation? (5-point scale ranging from 'Not important at all' to 'Extremely important')

- ☐ Healthy urban environments, e.g. green space, creating habitat, preserving heritage seed, etc
- ☐ Responding to climate change
- ☐ Waste reduction or recycling
- ☐ Sustainable urban water use, e.g. rain capture, reduce stormwater runoff, etc

Q32 How important are the following economic and industry values to your business or organisation? (5-point scale ranging from 'Not important at all' to 'Extremely important')

- ☐ Commercial/maximising productivity
- ☐ Food economy localisation
- ☐ Connecting directly with customers
- ☐ Technological innovation
- ☐ Building skills and job opportunities for others
- ☐ Attracting commercial investment to the sector

Q33 How important are the following policy and advocacy issues to your business or organisation? (5-point scale ranging from 'Not important at all' to 'Extremely important')

- ☐ Protecting agricultural values of the urban fringe
- ☐ Advocating for more edible cities and towns
- ☐ Research and/or policy that supports urban agriculture

Q34 Would you like to make any further comments about anything we have missed or recommendations about how to best support your work in the urban agriculture sector?

Growing Edible Cities and Towns

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