Winston Churchill Trust
Learn globally, inspire locally.

Community Food Futures in Australia

2020 Churchill Fellowship

To investigate the Potential of Community Food Forests and Orchards

Report by

Gavin Hardy

Churchill Fellow

January 2023

THE WINSTON CHURCHILL MEMORIAL TRUST

Community Food Futures in Australia

Report by Gavin Hardy, Churchill Fellow

2020 Churchill Fellowship

To investigate the potential of community food forests and orchards

I understand that the Churchill Trust may publish this Report, either in hard copy or on the internet or both, and consent to such publication.

I indemnify the Churchill Trust against any loss, costs or damages it may suffer arising out of any claim or proceedings made against the Trust in respect of or arising out of the publication of any Report Submitted to the Trust and which the Trust places on a website for access over the internet.

I also warrant that my Final Report is original and does not infringe the copyright of any person, or contain anything which is, or the incorporation of which into the Final Report is, actionable for defamation, a breach of any privacy law or obligation, breach of confidence, contempt of court, passing-off or contravention of any other private right or of any law.

Signed

Date: 18 January 2023

Acknowledgements

There are so many people to thank with this project. Firstly, I want to acknowledge all the folks who helped get my Fellowship application over the line back in 2020. Deep bows to Catherin Bull, Jeremy Kirby, Ben Grubb, Costa Georgiadis, Gregor Mews, Dick Copeman, Naomi Lacey, John Mongard and Shannon Satherley! Thanks to Catherine Bukowski and Dave Jacke in the USA, and Susan Poizner in Canada, who gave me leads on projects and people to visit.

To the team at the Winston Churchill Trust in Canberra – Adam, Meg, Toby and Rose – and the travel agents at FCM Travel (shout out to Sonia Jennings) thanks for all that you do. Also cheers to Anthea Fawcett, Morag Gamble and the team at Sustain (including Churchill Fellow Dr. Nick Rose) who promoted my work through forums, webinars and podcasts. Whilst on the road it was so nice to keep in touch with Churchill Fellows Fiona Buining and Naomi Lacey as we were all travelling at the same time to similar places and investigating similar things. Ladies, I look forward to working with you both in the future. Big hugs to Kay McGill who gave valuable feedback on the final draft of the report.

I want to thank all of the people who hosted me whilst I travelled, arranged power packed itineraries, meetings and activities, and put me up in amazing accommodation.

It was my good fortune to stay with Beacon Food Forest co-founder Glenn Herlihy and his family at their home in Beacon Hill during my week in Seattle. I learnt so much from Glenn about Beacon Food Forest on our visits there and back at his house over a meal. Glenn took me on an insightful tour into north Seattle where we looked at other community orchard sites and community vegetable gardens. Also, thanks to Sandy Pernitz, P-Patch Coordinator, for the video call at short notice. Thank you, Annie Nguyen at City Fruit, for your time and the lunch – my shout next time!

I had five amazing days in the fabulous city of Victoria, on Vancouver Island, British Columbia, after taking a seaplane from downtown Seattle! I am most thankful to Tim Fryatt, Lifecycle's 'Social Entrepreneur' and Fruit Tree Project Manager, who hosted me, took me places and organised a packed program of activities and interviews. Also, thanks to Rowen Warrilow, Megan Sociedade and Joan Stonehocker (who also lent me her bicycle!).

I spent one very hot week in August in Miami investigating three mind-blowing school-based food forests. High fives to Debi LaBelle and Eddie Recinos from The Education Fund for hosting my school visits. Also, I want to acknowledge Dr Cara Rockwell and Erika R. from Florida International University, and Hal Skop, teacher at WJ Brian Elementary, for the time they took for interviews.

Thanks to Lincoln Smith for the tour and chat, and Cathy Bukowski for meeting up at short notice, whilst I was at Forested in Maryland USA, and to Steve, Lola and Chester for the stay – and the beers - at Greenbelt.

The week I spent in Philadelphia was one of orchard inspiration with the team from the Philadelphia Orchard Project. Co-Executive Directors Kim Jordan and Phil Forsyth were generous with their time assisting me and I met almost all of the crew whilst doing a stint of gardening at POP's main orchard. Also, a big thank you to Michael Muehlbauer, Executive Project Manager at Fair Amount Food Forest, for meeting with me.

I am particularly grateful to Peter O'hare, Head of Occupational Therapy at Bethlam Royal Hospital, London for meeting up and taking me on a tour of the hospital orchard and gardens at very short notice. I also want to acknowledge members of the Meadow Orchard in Crouch End who received me with open arms. Mel, Annalou, Jules and Catherine – may you continue to sing, dance and celebrate love for each other and your place. Thanks also to Kath Rosen and Abby Cremin from TOP, and Martin and Sandra Crawford from the ART for their time.

In Rotterdam I was hosted by the founders of Coöperatie Ondergrond – Paul de Graaf, Max de Corte and Bastian Rooduijn and I am grateful to the time that they gave to my visit, and I especially want to give Paul a massive shout out as he set up a packed itinerary for me. Also, thanks to Hilde Labadie at Groen Goed Rotterdam whom I gardened and chatted with at the Luchtpark Hofbogen Community Orchard, Julien at Food Forest Vlaardingen, and Femke and Theo from Aloha Restaurant.

In Parma, Italy, I was thrilled to visit Picasso Food Forest and to meet the founder, Francesca Riolo. During my five days in Parma, Francesca was a superb host, showing me other local community food sites as well as taking me to the nearby Tartuffe (truffles) festival in the Apennines, and various bars, restaurants and cafes in and around the city.

Lastly, I want to thank Amanda who for ten years listened patiently to my crazy Churchill Fellowship ideas, and supported me through the entire process. Could not have done this without you!

Brief Introduction

Over nine weeks from August to October 2022 I travelled in the northern hemisphere to investigate the potential of community food forests and orchards, and how they can be applied and delivered here in Australia. I met with the key people associated with ten of the world's exemplar projects and recorded 51 sites. As a built environment professional and community food practitioner the trip gave me incredible insights into the governance, operations, designs, yields and user experiences of these projects. For 25 years I have worked with others to plan, design, install, and manage community gardens but this experience gave me fresh ideas, insights and inspiration.

This report shares my insights, recommendations and implementation strategies. An accompanying Case Study report is also available upon request.

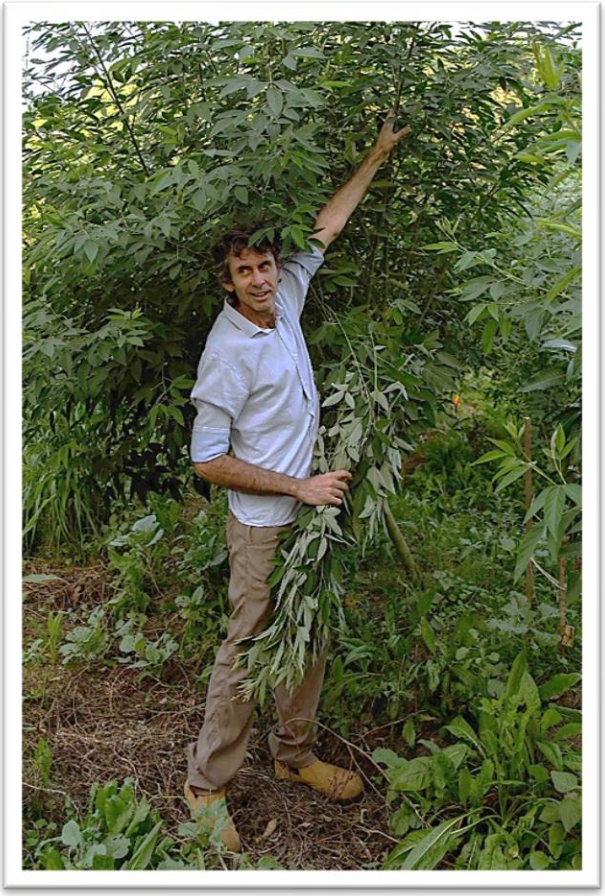
Contact details

Gavin Hardy

m. +61 479 010 428

e. qld@communitygarden.org.au, or gavindah@gmail.com

LI: linkedin.com/in/gavhardy/



Key words

agroforestry, biodiversity, community development, community garden, food forest, food sustainability, greenspace, horticulture, orchard, permaculture, urban agriculture

Contents

Acknowledgements ii
Brief Introduction iv
Contact details iv
Key words iv
Contents v
Report Overview 1
Itinerary 3
Introduction 4
My Approach 6
Insights 8
Service Delivery Models 8
Multiple Site Service Providers 8
Urban Orchard Service Providers 9
Benefits 10
Food sustainability 10
Health and wellbeing 12
Urban rewilding 14
Capacity building 15
Overcoming challenges 16
Funding and livelihoods 16
Volunteer involvement 19
Harvest and distribution 20
Legibility 21
Context 21
Site Design 22
Integration 22

Process 22
Features 23
Notable plants 26
Conclusions and Recommendations 28
Recommendations 28
Livelihoods 28
Service Delivery Models 28
Individual projects 29
Policy 29
Dissemination and Implementation 31
References, Abbreviations and Glossary 33
Appendix One – List of Sites Visited 35
Appendix Two – List of Videos 37

Report Overview

Key Insights

- **There are Service Delivery Models that allow for the number of community food forest and orchard projects to be scaled up across entire regions.**
- **Clear benefits to food sustainability, health and wellbeing, urban rewilding and community capacity building.**
- **A range of strategies in the areas of funding, livelihoods, volunteer motivation, harvest and distribution, site interpretation and context.**
- **Best practice design includes fine grained integration with buildings, empowered community planning processes, bespoke structures and spaces, effective signage and a diversity of resilient plants arranged in guilds.**

In 2022 I ventured overseas to ***Investigate the potential of community food forests and orchards***. I wanted to look at some of the world's exemplar projects, in cultures similar to Australia's, so that the lessons learnt can be applied here. The trip took me to five nations – USA, Canada, UK, The Netherlands and Italy - and over nine weeks I met the key people and recorded the sites associated with ten ground breaking projects. I also came across other projects as I travelled, that were not planned for or included in my itinerary, and ended up visiting 51 sites.

This report details my insights and recommendations into the ten 'official' projects on my itinerary. The aim of my investigations was to better understand their governance, operations, designs, yields and user experiences.

There were many 'wow' moments. Harvesting and gardening events in Seattle, Victoria BC, London and Rotterdam were such fun and so full of connection that I had visceral experiences of the physical and mental health benefits of community orchards. This experience was validated by the stories I got from other participants and from a visit to a large orchard in a psychiatric hospital in London. In Miami, I met children who told me that their school's food forest is helping them learn about science, maths, biology, gardening and nutrition. In Italy, I was given a master class on the urban biodiversity benefits of community food forests. And I was blown away by yields of tens of thousands of kilograms that groups are harvesting from urban orchards. I had amazing insights with world's leading food forest

designers in the USA, the UK and The Netherlands. And I learnt how not-for-profits provide services, motivate volunteers and sustain livelihoods for their staff.

The number of community-based food forests and orchards can be scaled up across whole regions using either multiple site service provider or urban orchard service provider models. In these models, financial sustainability is embedded in diverse funding sources and partnership arrangements with the charitable food sector, universities, food processors and other stakeholders. My research provided major insights into the benefits to food sustainability, health and wellbeing, urban rewilding and community capacity building. I received key lessons on overcoming familiar challenges in the community gardening space including obtaining funding, sustaining livelihoods, maintaining volunteer involvement, harvest and distribution techniques, and legibility and context.

The recommendations from this report can be applied in the Australian context:

- **Community Organisers** – the *Multiple Site Service Model* allows a group to potentially support hundreds of community food forest and/or orchard projects across entire regions. Also, the *Urban Orchard Service Provider* model allows not-for-profits to sustainably harvest and distribute fruit from a region's existing stock of fruiting trees, shrubs and vines. These models are sustained through funding and partnership arrangements that create realistic livelihoods whilst providing a low or no cost core service.
- **Site coordinators and designers** of community food projects will benefit from learning about the ways that the leading groups overseas keep volunteers interested and build united groups. Some of the leading projects incorporate community planning processes and design features to enhance participation and understanding. All of the community food forests incorporate a diversity of edible plant and support species, and micro-habitats, to create resilient systems.
- **School administrators and teachers** who already have, or are planning, an edible school garden could learn about how groups overseas provide on-the-ground implementation and maintenance support to create resilient food projects.
- **Planners and program officers** - in community development and/or urban agriculture policy frameworks, could adopt a wider 'community food systems' approach that expands beyond community gardens and includes food forests and orchards.

Gavin Hardy gld@communitygarden.org.au gavindah@gmail.com

Itinerary

Date of visit	Place	Project	People	Purpose
31 July - 7 August, 2022	Seattle USA	Beacon Food Forest	Glenn Herlihy (cofounder) Will Rak (president)	Record site, interviews
3 August 2022	Seattle USA	City Fruit	Annie Nguyen (exec dir)	Harvesting, interview
9 - 12 August, 2022	Victoria BC Canada	Lifecycles Project	Tim Fryatt (manager) Joan StoneHocker (exec dir)	Record site, harvest, sorting, interviews
14 – 21 August 2022	Miami USA	Food Forests for Schools Program	Debi LaBelle (manager) Eddie Recinos (manager) Cara Rockwell (researcher)	Record sites, interviews
23 August 2022	Bowie, Maryland USA	Forested LLC	Lincoln Smith (owner) Cathy Bukowski (author)	Record site, interviews
25 - 30 August 2022	Philadelphia USA	Philadelphia Orchards Project	Kim Jordan (director) Phil Forsyth (director) Sharon Apiah (orchard lead) Michael Muehlbauer (manager)	Record sites, interviews
17 - 18 September 2022	Dartington UK	Agroforestry Research Trust	Martin Crawford (director)	Course, interview
19 - 21 September	Bristol UK	The Orchard Project – Bristol	Abby Cremin (manager)	Record sites, interview
22 – 29 September 2022	London UK	The Orchard Project – London	Kath Rosen (CEO) Peter O Hare (OT)	Record sites, interviews
2 - 9 October 2022	Rotterdam NL	Coöperatie Ondergrond	Paul de Graaf (cofounder) Max DeCorte (cofounder) Bastian Reduyn (cofounder)	Record sites, interviews
20 - 25 October 2022	Parma, Italy	Picasso Food Forest	Francesca Riolo (cofounder)	Record site, interviews

Introduction

I am most grateful to the Winston Churchill Memorial Trust in Australia for providing me with the 'opportunity of a lifetime' to further my knowledge in world's best practice community food systems. I knew I was in for an amazing journey but I was blown away by breadth and depth of insights I received. I made valuable connections with overseas peers and met inspirational leaders. It was a truly transformative experience. Plus, I had a lot of fun along the way!

I set out to answer this question: ***What is the potential of community food forests and orchards for Australia?*** I met with the key players and studied the sites associated with leading organisations in the USA, Canada, UK, The Netherlands and Italy.

Community-based food forests (assemblies of food producing trees, shrubs, ground-covers & vines that mimic natural forests) & orchards (classically, large & orderly groves of fruit & nut trees on pasture) are novel public open space initiatives. They complement modern urban life by providing multiple social, environmental & health benefits to the community. While virtually unknown in Australian society, ground breaking programs & projects overseas have emerged over the last two to three decades.

Community orchard of netted apple trees in a Seattle carpark, August 2022

The UN recognizes that urban agroforestry (which includes food forests and orchards) is a valuable tool in meeting its sustainable development goals. My aim for this research is that it directly supports projects in Australia (and New Zealand) to:

- bolster local food security (particularly in disadvantaged areas)
- re-invigorate social connection
- activate underused public open space
- create & conserve biodiverse local places
- re-build lost skills & traditions
- give local children natural places to play & learn
- improve the health of the Australian people.

This research also investigated alternative models to the dominant form of community gardening which is centred around growing vegetables and herbs on individual rented plots

(known as allotments). This gardening type requires frequent watering, security against theft, intensive pest management, & excellent gardening knowledge & skills. I wanted to see if community food forests & orchards require less infrastructure, less frequent attention, & less personal knowledge & skill sets.

I felt that there were not enough suitable Australian projects, being at least ten years old, to get a full appreciation of the scope and potential of these systems. After years of research, and site visits I only found a handful of long term community projects throughout Australia. Overseas, there organisations with ground operations covering whole regions (and in one case, an entire country) as well as are exemplar established individual sites.

This report documents the processes, designs & operations of some of the world's exemplars. It is informed by many interviews with designers, administrators, ground crew, community leaders & participants, and recordings of site features, activities & yields. The **Insights** section includes my findings on how to increase the number of projects, their benefits, overcoming challenges and design features. I provide ideas on how to build on this research in the **Recommendations** section. Detailed descriptions of the ten organisations are in the accompanying **Case Study report**, which is available on request (refer to my contact details).

Some of the people I interviewed for this project. L to R: Tim Fryatt & Joan Stonehocker, Lifecycles Project, Victoria BC; Francesca Riolo, Picasso Food Forest, Parma Italy; Debi LaBelle (at left) and the crew from Food Forests for Schools, Miami; Kim Jordan & Phil Forsyth, Philadelphia Orchard Project.

My Approach

I investigated these projects:

1. Beacon Food Forest, Seattle USA
2. City Fruit, Seattle USA
3. Lifecycles Project, Victoria BC Canada
4. Food Forests for Schools, Miami USA
5. Forested, Maryland USA
6. Philadelphia Orchard Project, USA
7. Agroforestry Research Trust, Dartington UK
8. The Orchard Project, UK
9. Coöperatie Ondergrond, Rotterdam NL
10. Picasso Food Forest, Parma Italy

Logo montage of the ten projects I investigated

Over about nine weeks, from August to October 2022, I visited 51 sites. Most of these are associated with the ten projects described above but others I discovered based on suggestions from my hosts and online research whilst overseas. I also had downtime between meetings and site visits, plus took a few weeks off in the UK, France and Italy, and chanced across more sites, including a beautiful Castagneti (or chestnut grove) whilst hiking in the Italian Apennines! These sites are listed in **Appendix One**.

Luchtpark Hofbogen community orchard, Rotterdam. One of the 'not planned for' sites on my trip (October 2022)

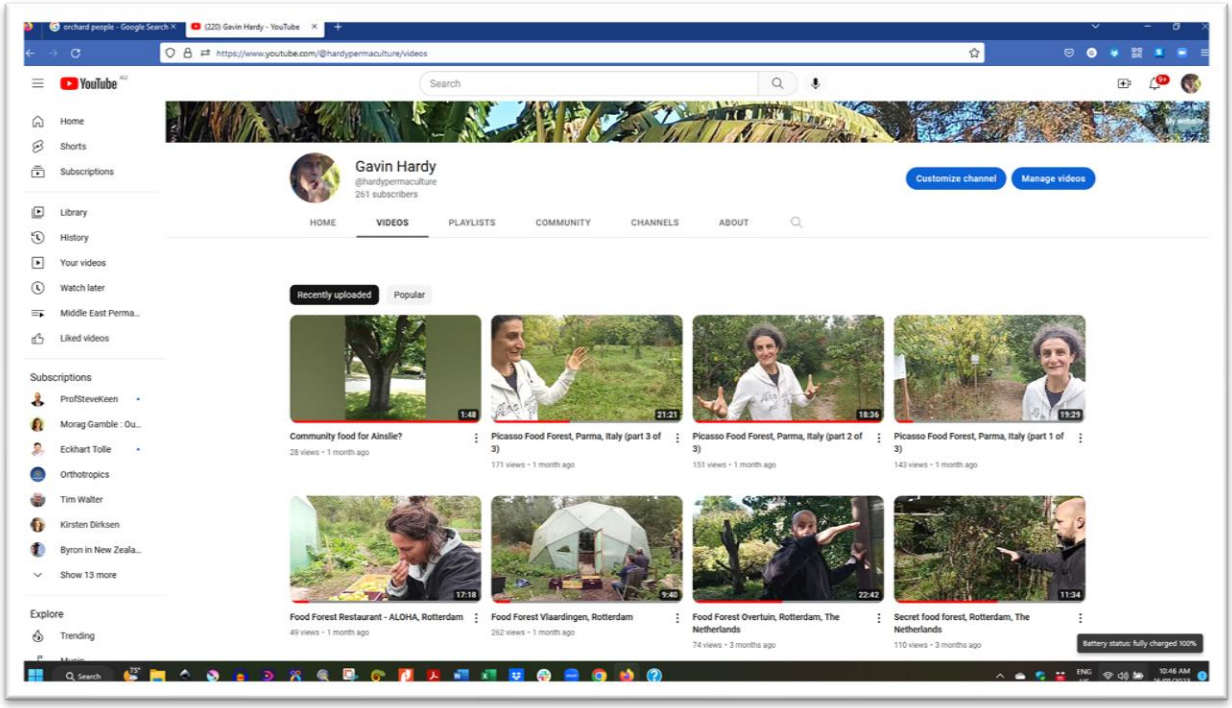
However, for this report I only refer to the sites associated with the ten 'official' projects. Detailed descriptions of the ten can be found in the accompanying **Case Study report** (available on request).

My investigations covered these areas:

1. Governance, including:
   - Organisational structure
   - Decision making
   - Fund raising
   - Partnering

2. Operations, including
    - Staff and HR
    - Services
    - Volunteer management
    - Site safety
3. Design features and notable plants
4. Yields
5. User experience

I used a voice transcription app, called Otter, to record conversations and convert the audio to text. I also took handwritten notes, uploaded 21 videos to my YouTube channel - refer to **Appendix Two** for a list - and snapped about 900 photos using a Canon Powershot camera and my Samsung A22 smart phone. I posted to social media (Tumblr, Insta and LinkedIn) and used some of the content from those posts in this report. I did not take a laptop or tablet, and did all my digital tasks overseas with the smart phone.



*My YouTube channel has 21 videos of community food forests and orchards from the trip. Refer to **Appendix 2** for links*

Insights

Service Delivery Models

Not for profit groups overseas have set themselves up to assist other organisations to either install and manage multiple projects and/or harvest and distribute produce. I'm excited as they offer models that we can emulate in Australia. They are scaling up the number of sites across whole regions, and in one case, an entire country, to deliver community food forests and orchards. I have categorised these ventures as:

1. Multiple Site Service Providers
2. Urban Orchard Service Providers

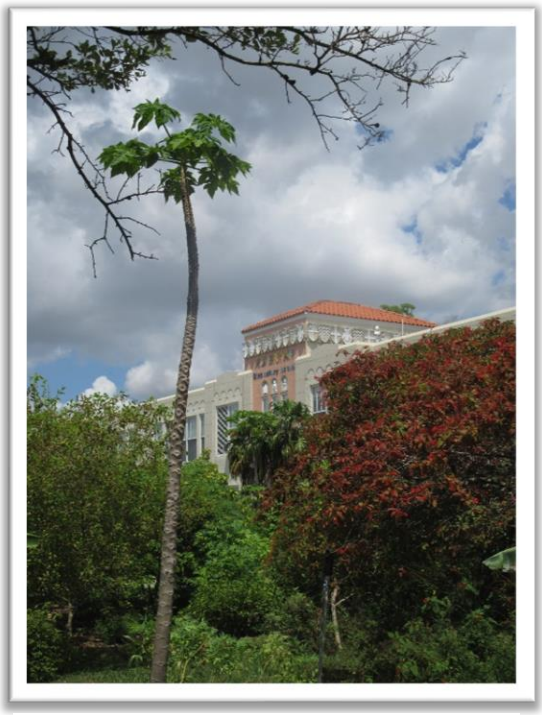
Multiple Site Service Providers

These are specialist providers offering food forest and orchard implementation and maintenance support to other groups including schools, churches, universities, healthcare providers, resident's associations and other community groups. The service usually needs to be free of charge (or very low charge) to the user group but at the same time offer sustainable livelihoods to the staff (see the 'Fundraising and livelihoods' section below). The provider may offer their service to one type of user group, for example, in Miami where the service targets elementary schools and is delivered by an 'in house' schools fund.

It is important to work very closely with potential community groups, including vetting them to ensure that they are ready to take on a project over the long term, and that the site has long-term security. There are options for offering different levels of ongoing maintenance support. Careful planning is required if fully maintaining multiple sites is part of the service offering.

Groups that I visited that offer this type of service include:

- Food Forests for Schools, Miami USA (28+ sites)
- The Orchard Project, UK (540+ sites)
- Philadelphia Orchard Project, USA (67+ sites)
- Coöperatie Ondergrond, Rotterdam NL (16+ sites)



Food forest at WJ Bryan Elementary School, Miami, August 2022. Delivered by The Education Fund's Food Forests for Schools *program*

Refer to the **Case Study report** (available on request) for detail about their governance and operations.

Harvesting apples at a church orchard, a service provided by City Fruit, Seattle, August 2022

Urban Orchard Service Providers

These providers focus on harvesting fruit from the 'urban orchard', that is, the existing stock of fruit trees, shrubs and vines in a region or city. For this service to be viable a region has to have a reliable and accessible stock of existing trees, shrubs and/or vines that are relatively easy to harvest.

The provider distributes most of the harvest to charitable food banks and/or meal programs, but volunteers and land owners may also get a cut. They also partner with cideries and other processors to make use of the 'seconds', and do not compete in the same markets as commercial farmers. They also offer tree care and educational services which help to promote the group's core mission and raise funds.

Promotion to private land owners (residents, businesses and institutions) is critical to the success of the venture, as is general awareness raising about the region's 'edible assets'. In Australia (and New Zealand) potential regions will include existing or former fruit growing districts and established suburbs with larger yards that can accommodate fruiting plants.

With the fruit sorting crew at the Lifecycle's Project headquarters, Victoria BC Canada, August 2022

Groups that I visited that offer this type of service include:

- City Fruit, Seattle USA
- Lifecycles Project, Victoria BC Canada

Refer to the accompanying Case **Study report** for detail about their governance and operations. Refer to **Appendix 2** – videos 6, 7 and 8 – for my experiences with the Lifecycles Project in Canada assessing, harvesting and sorting fruit.

Benefits

Food sustainability

Food justice and sovereignty

There are hundreds, and likely thousands, of community groups across the northern hemisphere that are motivated by 'food justice' and 'food sovereignty' (see **Definitions** on page 33). These groups provide universal access to nutritious and affordable food. Many of them are:

With Paul de Graaf, cofounder of Coöperatie Ondergrond at a new food forest site adjacent to apartments, Rotterdam, October 2022

1. installing food forests and orchards on their properties
2. restoring old orchards on abandoned public land
3. harvesting and distributing fruit to charities, that would otherwise go to waste, from an entire region's 'urban orchard'.
4. partnering with processors to create value added preserves and beverages from 'waste fruit'.

With Lizzy Pegler (third from left) from The Orchard Project UK and volunteers showing the pick of 552kg of apples from a harvesting event at the Royal Orthopaedic Hospital orchard, London, September 2022

Many of these set ups are located in 'food deserts' where folks have to travel great distances to get to a market, or the prices at the local shops are too expensive. Some of these projects are been enabled by not-for-profit organisations – like City Fruit, The Lifecycles Project, Food Forests for Schools, The Orchard Project UK (TOP) and the Philadelphia Orchard Project (POP) - who's mission it is to create community food forests and orchards, and/or harvest and distribute fruit from a city's existing stock of fruiting trees, shrubs and vines. Beacon

Food Forest in Seattle is developing culturally appropriate food gardens specifically for the Black, Indigenous, People of Colour (BIPOC) community, whilst the Philadelphia Orchard Project (POP) helps Philadelphia's BIPOC community to address land access for growing orchards.

Yields

Thousands of kilograms of fruit are been harvested in residential yards, public greenspaces and other places by dedicated not-for-profit groups. Both City Fruit in Seattle and Lifecycles in Victoria BC are harvesting 15 to 20 tonnes of fruit in an average year from entire city regions. This is fruit that would normally go to waste, and instead is taken to charitable food banks as table fruit, processed into drinks and preserves for sale, gleaned by volunteers and put out on neighbourhood free food tables. Beacon Food Forest reported 1714kg of food harvest in 2021. At the harvest events that I attended in Seattle, Victoria BC and London the yields ranged from 47kg to 552kg.

Edible Plant Diversity

The UN Food and Agriculture Organisation estimates that about 75% of the world's food currently comes from twelve plants and five animal species (see **References**, page 33). This narrow range of sources makes our food system extremely vulnerable to pests, disease and climate change. Additionally, ecosystems that are beyond the natural range of these species have to be modified in order to grow the food, often resulting in massive biodiversity losses.

I was introduced to potentially important vegetable protein foods - nut and seed crops - for Australian agroforestry systems including community food forests and orchards. Lincoln Smith in Maryland USA brought my attention to acorn flour, once a native American staple food, and its rediscovery as an important food for these times. Acorns, harvested from oak trees, have enormous potential as a food source in the temperate zones of Australia (and New Zealand). In some places, like Canberra, avenues of existing mature red oak already line some streets. Michael Muehlbauer in Philadelphia USA and Martin Crawford in Devon UK both talked about Chinquapins and other dwarf chestnuts, black walnut and butternut in the temperate zone systems they have developed.

Michael Muehlbauer, Executive Project Manager at Fair Amount Food Forest standing next to a young Chinquapin chestnut tree, Philadelphia, August 2022

*Leaves of the shrub Chaya (*Cnidoscolus aconitifolius*) at the Twin Lakes Elementary School food forest, Miami, August 2022*

At every food forest project I visited, I was introduced to food plants that were new to me. I pride myself on my plant knowledge but was simply astonished by the sheer diversity of edible plants that are been grown, particularly in the temperate zone (a region that is less familiar to me as I live in the subtropics). Beacon Food Forest has over 1000 species of plants, and both Picasso Food Forest and the Agroforestry Research Trust Dartington about 300 edibles! At the Food Forests for Schools program in Miami, Caribbean foods like Chaya Spinach (from the shrub *Cnidoscolus aconitifolius*) and Callaloo (from the taro *Xanthosoma brasiliense*) came into my orbit, and both could be widely used foods in the Australian tropics and subtropics.

At the community orchards I visited the dominant trees were mainly the more unusual apples varieties that are not available on the supermarket shelves. The culture of apples is particularly strong in the UK, Washington state USA and British Columbia, Canada with folks getting enthused about growing, harvesting and eating heritage fruits (or drinking ciders made from these fruits!). Stone fruit, bramble cultivars, pears, persimmons, figs, mulberry, American paw (*Asimina triloba*), kiwi's and grapes had also been planted in some locations and all do well in community spaces.

Health and wellbeing

Social connection

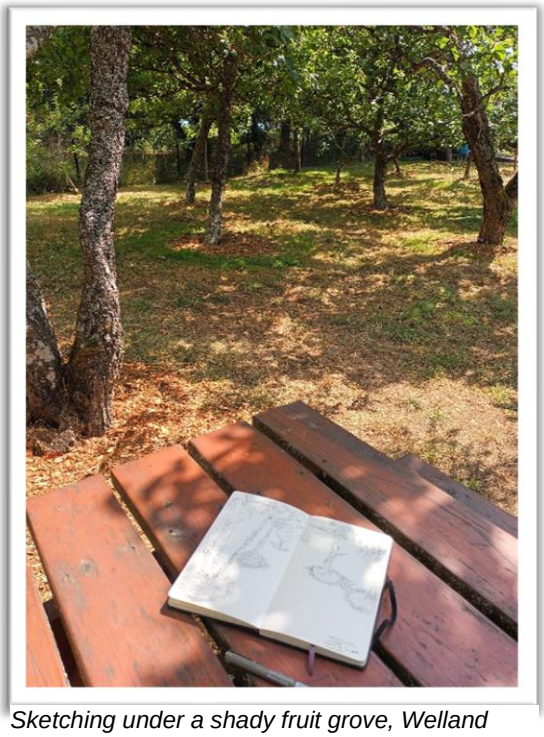
Many people that I spoke with reported how events at the food forests and orchards make them feel more connected with the local community. For example, the coming together of a group of strangers to harvest fruit from public orchards is particularly satisfying, fun and uniting. I loved the harvesting and gardening events that I attended and felt more connected with people from these experiences.

"Spent Tuesday morning… harvesting apples in an old orchard… Beautiful old apple trees, gnarled and covered in moss and lichen.

The group were friendly, convivial and welcoming. No pressure but I felt like I wanted to harvest, to pick as many apples as possible. Good conversation as we picked".

Journal Entry,
Holy Cross Lutheran Church orchard,
Seattle USA,

Groups including The Orchard Project, Lifecycles Project, City Fruit and the Philadelphia Orchard Project bestow 'social event' status to seemingly humdrum orchard activities. The reason for this is that social connection is of massive interest to most communities. The groups behind these activities recognise the potency of bringing people together in a safe, unthreatening environment. This approach has important lessons for Australia, highlighting the value of gardening activity in public places for the proven social benefits they provide.



Sketching under a shady fruit grove, Welland Community Learning Orchard, Victoria BC, August 2022

Public amenity

Local residents told me how much they enjoyed these places on their morning walks, gatherings with friends and family or visits with the grandchildren. These places are relaxing and grounding sanctuaries away from the stresses of the city and I spent time in some of them sketching.

At the Welland Learning Orchard in Canada the simple table and bench set ups and the short-clipped grasses under groves of fruit trees offered a delightful space for relaxation. The bespoke community buildings at Beacon Food Forest and the Meadow Orchard (London) offer respite, social space and design inspiration to the greater community, not just the project members. Almost all of the orchard and food forest spaces that I visited felt great to be in.

> *"I feel blessed to be experiencing another delightful place surrounded by abundance everywhere I look – fallen fruit, berry bushes, trees heavy with apples. The sun is out but under the trees it is cool and restful. I feel like I could come here and lay out a blanket, lay back and read a book. I don't feel I have to leave".*
>
> Journal Entry,
> Welland Community Orchard,
> Victoria BC,
> 10 August 2022

Peter O'Hare in the 80 year old Bramley apple orchard at Bethlem Royal Hospital, London, September 2022

Therapeutic spaces

Peter O'Hare, Head of Occupational Therapy at Bethlem Royal Hospital, London, utilises a community orchard as a therapeutic asset for mental health patients. The grounds of this hospital are blessed with an 80 year old orchard of about 200 apple trees. Peter and his team have developed numerous activities and sessions for patients with different needs both in the orchards and the associated kitchen garden. Activities include making juice and preserves, harvesting, weeding and mulching, or just contemplation in the beautiful orchard spaces.

Urban rewilding

Native plants

Picasso Food Forest in Italy, the Food Forests for Schools projects in Miami, and Beacon Food Forest in Seattle demonstrate that community agroforestry projects can benefit local fauna both in species richness and diversity. These overseas projects incorporate native plants (and their cultivars) that the native fauna have evolved with. Since starting in 2012, Picasso Food Forest has recorded over 300 fauna species including 50 species of birds!

A sign at Picasso Food Forest in Parma, Italy, showing the insect, bird and mammal species observed on site in the last ten years. October 2022

A challenge in Australia is to incorporate plants endemic to the bioregion into agroforestry that both benefit wildlife and people, as our current food choices – and community gardening practices - are almost entirely dependent on non-native plants that give minimal benefits for native fauna. Projects overseas display mixed

plant guilds of native and non-native food plants and support species.

Early senescent trees

Kath Rosen, CEO of The Orchard Project UK, explained that fruit trees tend to age a lot more quickly than native trees. As a result, habitat niches like hollows, sap runs and dead wood form more quickly creating habitat for birds and saproxylic invertebrates. It's a botanical process known as early senescence and is worthy of further research in Australia to see if the same benefits accrue here.

Hollow in an 80 year old apple tree, Bethlem Royal Hospital, London, September 2022

Capacity building

At the Food Forests for Schools program in Miami USA there are exemplary outcomes being achieved in the food forest environment. Primary school children are learning about edible perennial plants and how to prepare food with them. The students are also doing their science and maths classes in these spaces and getting significant overall improvements in test results! The kids are also doing biology lessons, getting involved in gardening sessions run by passionate teachers, and are taking home nutritious local food to their families. Grandparents, who have knowledge of the traditional foods being grown in the school food forests, are teaching their grandchildren as well!

Formal training programs in orcharding and agroforestry have been developed by the Philadelphia Orchard Project, The Orchard Project UK (TOP), City Fruit and the Agroforestry Research Trust. TOP's *Certificate in Community Orcharding* (CICO) and City Fruit's *Master Fruit Tree Steward* (MFTS) programs are very popular.

Many people are doing informal 'learning by doing' by attending work parties, volunteer gardening sessions, or specialty workshops for free or minimal charge. Additionally, some of the groups overseas invest in capacity building by offering lead volunteer programs. For example, the Philadelphia Orchard Project's lead orchard volunteers (LOVs), TOP's orchard leaders and mentors, Lifecycle's assessors, harvesters and sorters, and City Fruit's *Neighbourhood Ambassadors* are supported with resources and training, free of charge.

Beacon Food Forest also works on building a united community and have provided training in Non-Violent Communication, and Sociocracy (refer to **Definitions**, page 33). These techniques and processes create a space for open dialogue, a sense of ownership in a

place, and increased social capital. The techniques are very useful in community food settings as they embrace and make effective use of differences of opinion and ways of being.

Overcoming challenges

Funding and livelihoods

Funding and resourcing are major continuous challenges for most community food projects. A lesson from groups I visited is their emphasis on fundraising, partnerships and revenue creating enterprises. These lessons can be applied to community food projects in all their forms, including food forests, orchards, allotments and city farms.

I was fascinated by the ability of the service provider groups (see the **Service Delivery Models** section) to offer their services free of charge, or at very low cost, to other community groups. Yet, they have operating revenue that, based on the data available to me, in recent years ranges from approximately AUD$400,000 to over AUD$1,000,000, and they offer paid livelihoods to teams of five to 16 people. They are able to do this because they invest significant resources in fundraising.

Fundraising skill and mind set

Having skilled networkers, fundraisers and social media fiends on the team is extremely beneficial. City Fruit in Seattle is a shining light in this realm and the group, including board members, are out there in the community promoting what they do and forming many alliances. They have hundreds of funding sources including foundation grants, government agency grants, corporate and small business sponsors, individual donors and earnt revenue. The Orchard Project UK, the Philadelphia Orchard Project and Lifecycles are also very active in this area.

Partnerships and sponsorships

The formation of strong partnerships as part of a fund raising strategy is critical. For example, groups such as City Fruit and Lifecycles, who harvest the ‘urban orchard’, partner with charitable food banks and meal programs who give food to people in need. Both organisations promote and celebrate these relationships. This helps potential funders see the orchard or food forest as not just a garden, but as an enabler of positive health and wellbeing outcomes for an entire region.

Martin Crawford at the Agroforestry Research Trust (ART) explained that having a research agenda helps to build the reputation of the project/program. Research is done either in

house – as is the case for the ART, Forested and Coöperatie Ondergrond - or via partnerships with universities. For example, The Food Forests for Schools program in Miami partners with the Florida International University's *Centre for Tropical Botany* and the university's undergraduate and postgraduate students are undertaking research at the school sites. The resulting data and publications have attracted project funding from the US government's Department of Agriculture (USDA) and the Environmental Protection Agency (EPA).

Some groups also engage with the corporate sector. In 2014, The Orchard Project UK signed a sponsorship deal with the multi-national brewer Heineken and this enabled to group to scale up from being a London-based grassroots group to a national charity that now employs 16 people, has helped groups install 540 community orchards across the nation and offers a range of orchard related services in and around seven cities. Kath Rosen, TOP's CEO, pointed out that they have a tight policy on sponsorships, and whilst it can be controversial, they seek sponsors who align with the group's values.

Top image: Femka and Theo from Aloha restaurant visiting Food Forest Vlaardingen, Rotterdam. Bottom image: Theo in the restaurant kitchen with quinces purchased from the community food forest. October 2022

Enterprises

Another approach to fundraising is through creative businesses and enterprises. For example:

- **Gourmet tours** – 'Forested' in Maryland USA has the 'Food Forest Feast' where people do a tour of the site followed by a sumptuous dinner - under party lights – that is prepared by top chefs using ingredients from the food forest.
- **High end sales to restaurants** - at Food Forest Vlaardingen in Rotterdam, I encountered a restaurateur, Femka Snidjers, and head chef, Theo, buying produce with the aim of incorporating the 'flavours of the forest' into their cuisine. Refer to **Appendix 2**, video 18, for an interview I did with Femka.
- **Bespoke ciders, ales, meads and preserves** - City Fruit, Lifecycles and The Orchard Project are partnering with processers to make quirky local

Bespoke ciders and ales for sale, made from fruit rescued by the Lifecycles Project, Victoria BC, August 2022

product that promotes the group and provides a return from sales.

- **Specialist tree care services** - City Fruit and Lifecycles both offer fruit tree care enterprises, profitable side businesses that promote the organisation.
- **Training** - The Orchard Project UK have developed a Certificate in Community Orcharding (CICO) and Accredited Forest Gardening Award (AFGA). The Philadelphia Orchard Project offers POPCORE certified orchardist training and 'Harvest-Ed' curated workshops (that are held in orchards all over the city). The Agroforestry Research Trust has both online and in person forest gardening courses.
- **Produce sales** - The team at Coöperatie Ondergrond in Rotterdam harvests and sells produce as one of their income streams on sites that have minimal public access. In more public places this income strategy could work with lesser known plants or produce that requires specialist equipment and/or knowledge to harvest and process.

With Lincoln Smith and Cathy Bukowski (author of The Community Food Forest Handbook) at Forested, Bowie MD, August 2022

For-profit community agroforestry ventures

Lincoln Smith's 'Forested' venture in Maryland demonstrates that community agroforestry is possible via a for-profit business model. Lincoln is supporting livelihoods, including his own, whilst offering volunteer opportunities, and spaces and resources for community food and related activities. The success of this approach very much depends on the temperament and ethical orientation

of the creators, and their willingness to be inclusive and open to feedback from community members, which Lincoln does very well.

Volunteer involvement

Throughout Australia, raising peoples' curiosity and enthusiasm for community-based food growing projects, to the level where they want to be involved as regular volunteers, is a constant and major challenge. Most of the projects I visited overseas are tackling this issue in innovative and sometimes very simple but effective ways. This includes:

Sharing drinks and enjoying the view after a work party at Beacon Food Forest, Seattle, August 2022

- Combining informal fun, social connection and a sense of ownership with well-timed gardening sessions that fit with peoples' working week. Beacon Food Forest exemplifies this and gets dozens of people to 'work parties' and 'sunset labs'. Before the COVID19 pandemic they were getting over 100 people to events.
- Sharing meals and/or drinks at the end of a work session. Again, Beacon food forest does this well as does The Orchard Project UK.
- Offering structured volunteer programs that honour community members, celebrate their efforts with the general neighbourhood and support them in working autonomously. The Orchard Project UK, Philadelphia Orchard Project, City Fruit and Lifecycles all offer great programs that can be emulated in an Australian context.
- Tapping into a community's interests and passions, and then investing up front in software to create self-managing volunteer systems. The Lifecycles Project in Victoria BC does this brilliantly with the 'Gleaning Hub', a clever scheduling software that organises volunteers into assessors, harvesters and sorters.
- Partnering with specialist community organising groups who take on the role of managing volunteers. In Rotterdam, Coöperatie Ondergrond intends partnering with the specialist provider Groen Goed Rotterdam.
- Designing and installing unique and interesting community buildings and spaces that are a delightful to visit and hang out in. (See the **Site Design** section below).
- Providing both formal and informal 'hands-on' learning opportunities for agroforestry, horticulture and permaculture course participants and graduates.

- Offering a share of the yields.

Volunteers using ladders to harvest fruit during a Lifecycles Project event, Victoria BC, August 2022. Note also the picking poles laying down in the foreground.

Harvest and distribution

Equipment and risk

Fruit needs to be harvested in a certain way to maintain quality. The techniques used can present a safety risk to volunteers, particularly with larger trees and where produce is required as table fruit or for juicing. Fruit needs to be picked by hand and require the use of ladders. Both City Fruit and the Lifecycles Project train volunteers to use ladders safely. On the harvests I attended with these two groups, extendable poles attached with fruit picking cages or bags were also used. It is a lower risk method for 'A-class' harvests but is slower and not suitable for small or large fruits. Also, there is more risk of branches been damaged and adjacent fruit been knocked to the ground and being damaged.

Plant selection

Choosing plants that are relatively easy to harvest is an important consideration when planning a new community orchard or food forest. I observed and/or discussed with my hosts the use of smaller tree varieties (like Chinquapin chestnut), and shrubs (such as blue berries, Autumn olive and sea buck thorn), or fruits and nuts that can fall to the ground and not get bruised (like small plum varieties, olives and acorns). Lincoln Smith at 'Forested' in Maryland commented that a challenge with diversity in food forests is that different plants have different harvesting requirements.

Processing

Bruised fruits can be processed into ciders or other alcoholic beverages as this destroys bacteria. Fallen but unbruised fruit may be contaminated with animal excrement – including from pet dogs - and needs to be washed before using as table fruit, juicing or preserving.

At a harvest event I attended in London on 26 September 2022, that was organised by The Orchard Project, extendable poles with hooks attached were used to shake branches and loosen the apples which then fell onto a tarpaulin. They were then placed into bags and delivered to a cidery for processing. These apples did not appear bruised and, despite being

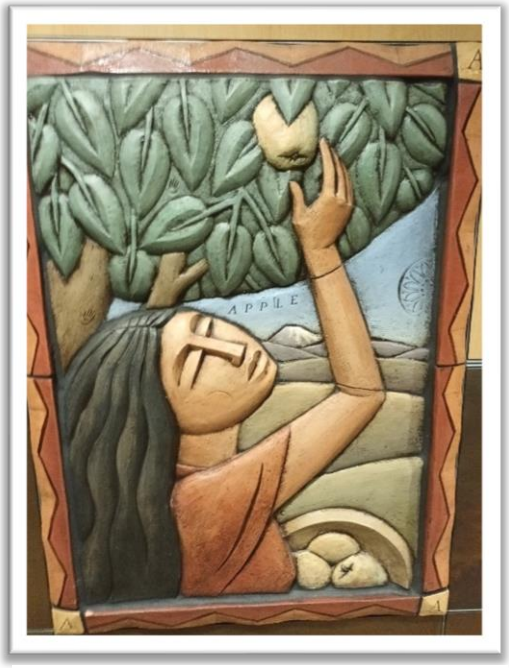
a bit tart, were fine eating - the tarpaulin and soft grass would have acted as a cushion. Refer to **Appendix 2**, video 14 to see the pick from that day.

Legibility

Signage and site interpretation is important for community food forest sites. Food forests are novel places that are rarely seen and therefore more difficult to identify and 'read'. As a result, almost all of the community food forests I visited had excellent signage to explain how they worked. The public appear to know more about orchards (as they are a recognised part of the cultural landscape) and they are more easily understood. Only a few of the orchard projects I visited had signage. See more in the **Site Design** section.

Context

Understanding a project's context is critical to comprehending how and why community food forests and orchards work (or not work) in a given place. All of the projects I visited have been shaped, to various degrees, by their area's physical and cultural surroundings. Some of those influences were quite obvious. For example, in Seattle and Victoria BC the legacy of apple orchards throughout these cities created the basis for both City Fruit and the Lifecycles Project to be established. Other outside factors were not so clear to me. For example, the outside influences on the Food Forests for Schools program in Miami were not so easy to grasp, until I dug deeper to understand the need for alternative models of lesson delivery, Miami's 'food deserts', and the interest in traditional foods.



Ceramic artwork at SeaTac airport, Seattle, indicates the importance of apple culture to the region. August 2022

Contextual analysis is, in most instances, a useful tool in the toolbox that can save time and resources.

Entry gate to Voedselbos (food forest) Overtuin in the Trompenburg Botanic Gardens, Rotterdam, October 2022

Site Design

Integration

The projects being led by Coöperatie Ondergrond in Rotterdam demonstrate that food forests can be integrated in dense urban settings close to where people live, work and play. Coöperatie Ondergrond have implemented sixteen projects to date at places including repurposed apartment blocks, a healthcare centre, schools, student accommodation, and a botanic garden.

Similarly, the Food Forests for Schools program in Miami has installed 28 edible forest gardens in elementary school grounds. The gardens wrap around the buildings and are part of everyday life at the school. Another example is the Picasso Food Forest site in Italy which was deliberately selected to adjoin medium density residential towers so residents could easy access. The Philadelphia Orchard Project's *Learning Orchard* is located in the grounds of The Woodlands heritage cemetery as part of an activation strategy to get more people to visit the grounds.

Process

Glenn Herlihy, cofounder of Beacon Food Forest, emphasised the power of community design and build processes to not only transform 'dead spaces' into welcoming green sanctuaries, but also create a sense of community empowerment and 'ownership' of a site. The design charette, whereby skilled facilitators empower members of the public to draw up designs and generate ideas, was used at Beacon and is a very effective process. Refer to **Appendix 2**, video 2, for a discussion I had with Glenn about this process. Debi Labelle and Eddie Recinos in Miami invest their time working closely with the teaching, admin and ground staff at schools to develop new food forests.

Some projects have taken years of persistence to get off the ground, particularly when the land owner is a risk-adverse local municipality or government agency. For example, Beacon Food Forest took four years to plant the first trees. Francesca Riolo from Picasso Food Forest explained that their recently installed wildlife pond took five years of discussion with the municipality. Francesca and I agreed that the issue lies in the novelty of these projects

on land owned by risk-adverse authorities. We both understand that as new ground is broken the process should be easier for governments to accept. This is a common challenge in Australia. Documentation and communication are essential if the number of these projects is to scale up.

Features

Garden buildings and elements

Creating interesting spaces can be a real drawcard for community members. At Beacon Food Forest there is a corral of small bespoke timber huts that small groups of people can use. Due to fire department regulations a larger building is not possible on the site. When larger groups gather, particularly in winter, a tarpaulin is stretched between the huts that then become the walls for a big marquis-like space. Design features like the archways, mosaic pavers and wide paths in Miami's Food Forests for Schools sites help to make community food forests feel welcoming.

Bespoke shelters arranged in a circle, or corral, at Beacon Food Forest, Seattle, August 2022

Mosaic tiles, arches and wide paths at Food Forests for Schools, Miami, August 2022

Pond at the European Food Safety Authority food forest, Parma, Italy, October 2022

<u>Targeted habitat devices</u>

Picasso Food Forest in Italy had excellent habitat devices. A well-designed pond with fencing and habitat niches for mosquito larvae predators was installed after my visit in October 2022. Co-founder and ecologist Francesca Riolo explained to me that, at an older public project, mosquito larvae have never been detected and the adult mosquitos above the surface were shown to come from other locations

Francesca gave me a detailed explanation of how piles and boxes of dead wood, arboreal bird and bat boxes, carefully designed insect 'hotels and uncut grass have greatly benefitted local biodiversity. Dry flower heads are not removed as they provide insect habitat and food sources for small birds

Habitat devices at Picasso Food Forest, Parma, Italy, October 2002. L-R: dry flower heads, insect hotel, wood box, & wood pile

over winter. In some Australian community gardens these very low cost elements have already been applied (as well as native bee hives and bird/bat boxes). There are key lessons for me about better approaches to design that target specific fauna and fungi.

Signage

Signage is important in the food forest sites to explain how they work. Picasso Food Forest had very effective interpretive signs that are strategically placed at 'education stations' on the walking path. Food Forests Vlaardingen and Overtuin in Rotterdam, and Beacon Food Forest also had excellent signage.

Great examples of signage in community food forests. Clockwise from top left: Beacon Food Forest (Seattle) entry sign, one of Beacon Food Forest's ceramic signs, Picasso Food Forest (Parma Italy) sign, Food Forest Overtuin (Rotterdam) sign detail

Martin Crawford talking about plants in the food forest at his Little Hempston site, Devon UK, September 2022

Notable plants

I was shown so many plants on the various tours I did, and talked more about them and other edibles over meals and coffee afterwards. It was an amazing experience being with Martin Crawford at The Agroforestry Research Trust in Devon UK for two days and absorbing his encyclopaedic knowledge of perennial edible plants. Lincoln Smith, Cara Rockwell, Will Rak and Glenn Herlihy in the USA, Bastian Rooduijn in Rotterdam, and Francesca Riolo in Italy also enriched my knowledge.

Below is my list of plants worthy of further exploration, chosen as they may have important application in Australian community agroforestry. Whilst some readers, particularly those located in the cool temperate regions of Australia, may be familiar with many of the plants on this list, almost all are unfamiliar to me.

- Autumn Olive (*Elaeagnus umbellata*) for fruit leather
- Beech (*Fagus sylvatica*) – tree vegetable
- Black locust (nitrogen fixer)
- Buckler sorrel
- Burdock
- Butternut / White Walnut
- Cardoon
- Chaya (Cnidoscolus aconitifolius)
- Chinese toon
- Chinquapin chestnut
- Costa Rican mint (*Satureja viminea*)
- Day lily (Hemerocallis fulva) flower buds, known as ‘Golden Needles’ in China
- Dwarf comfrey
- Dwarf quince (or northern lemon) – lemonade drinks
- Dwarf tamarillo
- Feral potatoes
- Fuki
- Goji berry
- Good King Henry (Blitum bonus-henricus)
- Green-Glaucous Bamboo (Phyllostachys *viridiglaucescens)* - shoots
- Heart nut – best taste of all the walnut family
- Honey Locust – edible pods
- Horseradish
- Hostas - shoots

- June plum (Spondias dulcis)
- Lindon tree (*Tilia spp*)– tree vegetable
- Medlar
- Monkey puzzle (*Araucaria araucana*) – similar to bunya nuts
- Oak – acorn flour
- Ostrich fern *(Matteuccia struthiopteris*) – fiddle leaf heads
- Passionfruit - flowers and leaves
- Perennial cabbage
- Perennial kale
- Rose hips
- Salal (Gaulthoria shallon)
- Salvia (*Salvia sclarea*) - leaf fritters
- Sea beets (*Beta vulgaris* subsp. *maritima)* – leaf vegetable
- Sea buckthorn
- Seminole Pumpkin (a variety of *Cucurbita moschata*)
-
- Service tree (*Sorbus domestica*) – precursor to apples and pears
- Shitake and oyster mushrooms
- Sichuan pepper
- Sochan (Rudbeckia laciniata) - leaves
- Strawberry tree (*Arbutus unedo*)
- Sunchokes
- Tahitian spinach (*Xanthosoma brasiliense*) – Callaloo stew
- Wine berry
- Yaupon Holly (*Ilex vomitoria*) – only native US plant with caffeine content.

*Eddie Recinos, Program Manager at Food Forests for Schools, standing next to a June Plum (*Spondias dulcis*), Miami, August 2022*

*Sea Beets (*Beta vulgaris *subsp.* maritima*) at ART Little Hempston, Devon UK, September 2022*

Conclusions and Recommendations

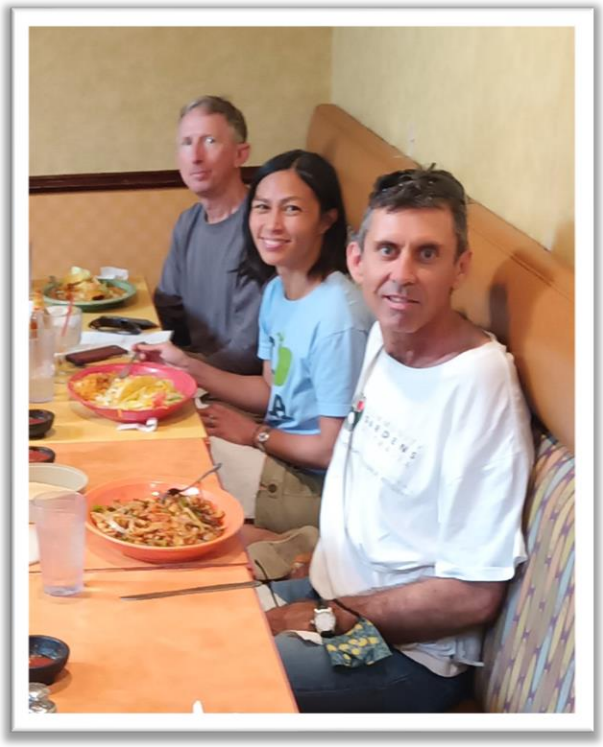
I set out to investigate the potential of community-based agroforestry systems, applicable to the Australian context. The investigation of 'potentials' is quite broad and there are many topic areas that I could have included in the research. My aims were to gain an understanding of some of the aspects of governance, operations, design, yields and user experience for each of the projects I visited. Whilst I think there is a lot more to learn I do believe I gained an excellent overview of the community food forest and orchard scene in the countries I visited.

My Fellowship experience was valuable because it shows that there are a range of projects that have direct application to the Australian community food scene. My analysis of the ten case studies shows that there are Service Delivery Models that groups can use to either create new projects, or exploit the existing urban orchard, across entire regions. There are clear benefits of community food forests and orchards to food sustainability, health and wellbeing, urban rewilding and capacity building. There are strategies and techniques to create ongoing funding and livelihoods, motivate volunteers, harvest and distribute produce, interpret sites and understand outside influences. Examples of project integration, community planning processes, design features and potential plants are also shown.

Recommendations

Livelihoods

For community organisers (including activists, advocates and service providers) this report includes models for creating paid livelihoods in community food projects in all their forms, not just food forests and orchards. I highly recommend that practitioners gain a thorough understanding of how partnering arrangements can attract funding, as well as scoping out diverse funding sources.



Lunch with Annie Nguyen, Executive Director of City Fruit, and one of the dedicated volunteers, Seattle, August 2022. Annie is a master fundraiser and networker.

Service Delivery Models

For regional and national urban agriculture not-for-profits, such as Community Gardens Australia, the Multiple Site Service Provider model could be studied. The case study about *The Orchard Project UK* will have relevance. This is a national

organisation that provides a free service to groups in disadvantaged areas yet runs a budget of over AUD$1 million. The *Philadelphia Orchard Project* case study also has relevance. I strongly recommend that the governance and operations of these two groups are investigated as possible models.

I also recommend that school administrators and teachers understand this model and read my case study on the *Food Forests for Schools* program in Miami for proven and effective learning alternatives. A similar program in Australia could be an excellent complement to the Stephanie Alexander Kitchen Garden program. The Miami program offers on-the-ground implementation and maintenance support to primary schools.

Talking with school children, Lake Stevens Elementary, Miami August 2022

In regions that have an extensive existing stock of accessible fruiting trees, shrubs and vines, the case studies about *City Fruit* in Seattle and the *Lifecycles Project* in Victoria BC will have relevance to aspiring and existing community food groups. Further research is required but my initial feeling is that the region would need to yield several tonnes of produce for any not-for-profit set up to be viable. Places in the temperate zones of Australia (and New Zealand), where Oak trees have been established (for example, Canberra) may provide viable sources of acorns for processing into flour. I recommend that in the first instance surveys are undertaken to assess potential yields.

Individual projects

There are valuable lessons on volunteer management, building a united group, design features, and potential perennial edible plants for existing community gardens. Over time community gardening needs can change. For allotment-style gardens that are in flux I recommend looking at the case studies in this report for transitioning to a community food forest or orchard. For well-organised groups there are excellent courses overseas that could be adapted here.

Policy

I also recommend that policy makers, community development officers, and greenspace designers and managers, who are charged with policy, implementation and management of

community gardens on public land, take a wider view to include community agroforestry in their work. Many community gardening projects in this country include fruit trees, and some projects (particularly newer ones) have small orchards and/or food forests. This investigation shows that large food forests and orchards can be durable ‘standalone’ community projects, when the appropriate governance and operational systems are in place.

Dissemination and Implementation

Whilst overseas, and just after I completed my final investigation in Italy, I presented preliminary findings in an online '**Urban Agriculture Master Class**' webinar hosted by the Permaculture Education Institute. The event included presentations from Churchill Fellows Dr. Nick Rose (2014) and Fiona Buining (2022). To date, over 2,000 people have viewed the webinar.

Since returning in November 2022, I have presented my findings at the **2022 Canberra Urban Agriculture Forum**, hosted by Regional Development Australia. Senator David Pocock and Churchill Fellows Naomi Lacey, Dr. Nick Rose, Fiona Buining also spoke. I have also recorded a video presentation for the **2nd International Forest Gardening and Food Forest Symposium** in February 2023, which is hosted by the Agroforestry Research Trust UK.

I am totally committed to project delivery on the ground. In the short term I intend to prepare a summaries themed around the recommendations and present these to different cohorts via Community Gardens Australia and other groups (such as Sustain). For government and corporate clients, I will integrate my findings into my planning and design consultancy work.

My longer term goal is to publish a 'how to' guide (online and hardcopy formats) that covers community food initiatives in all its forms, including food forests and orchards. I want to discuss this project with the Community Gardens Australia board, Sustain's executive director Dr. Nick Rose, and with Costa Georgiardis and Hannah Maloney (both TV presenters, authors, media personalities and CGA ambassadors). The project could have an international reach and there are colleagues overseas, such as authors Cathy Bukowski, Dave Jacke and Martin Crawford, who I will reach out to.

I also want to:

1. Work with a small group in Australia to pilot a not-for-profit based on the Philadelphia Orchard Project model. I've already done some scoping work and think a smaller city in a progressive area with available private and public land and an existing stock of fruit/nut trees may be an ideal place. So, I'm looking at Canberra, Fremantle and Newcastle as potential regions.
2. Present my case study work to the Stephanie Alexander Kitchen Garden Foundation, and primary school district administrators and teachers. In particularly, I want to explore the potential for incorporating my insights into the *Food Forests for Schools* program in Miami.

3. Explore with the Community Gardens Australia board a funding model based on *The Orchard Project UK*.
4. Reach out to the smaller towns and remote indigenous communities to talk about the real-world benefits and explore the possibilities for community agroforestry on country. I will be contacting Regional Development Australia.
5. Partner with colleagues overseas to bring training programs here, including Certificate in Community Orcharding (CICO) and Accredited Forest Gardening Award (AFGA) offered by The Orchard Project UK and The Master Fruit Tree Steward (MFTS) program offered by the Philadelphia Orchard Project.

Any of the above missions could be the target of impact funding and I want to make further enquiries with the Winston Churchill Trust and other foundations.

I've also identified further research that I want to undertake including:

- Understanding the philanthropic foundation, corporate sponsorship and charitable food landscapes in Australia.
- Learning from any groups in Australia (and New Zealand), who's operations are based on either of the two service provider models described in this report.
- Project investigations in New Zealand, including the Christchurch 'red zone' projects and a large community agroforestry project in the Wairarapa.
- Project investigations in southern India and Sri Lanka, including the Pitchandikulam Forest and Bioresource Centre and the 32-acre Kazhuveli Environment Education Trust site at Nadukuppam.

References, Abbreviations and Glossary

References

FAO Fact Sheet (2004) '*WHAT IS HAPPENING TO AGROBIODIVERSITY?'* https://www.fao.org/3/y5609e/y5609e02.htm#bm2 , accessed 24.01.2023

Abbreviations

AFGA – Accredited Forest Gardening Award

ART – Agroforestry Research Trust

BIPOC – Black, Indigenous and People of Colour

CICO – Certificate in Community Orcharding

MFTS – Master Fruit Tree Steward

POP – Philadelphia Orchard Project

TOP – The Orchard Project UK

Glossary

Agroforestry – "Agroforestry, a loosely defined term, involves the deliberate growing of trees and shrubs with crops and/or animals in interacting combinations for a variety of objectives. Such farming practices have been used throughout the world for a long time…" (P.K.R. Nair, in Encyclopedia of Soils in the Environment*, 2005*). I see food forests and orchards as subsets of agroforestry.

Community Food System – the network of community-based food growing projects within a defined region. Projects may include allotments, shared vegetable and herb gardens, edible side-walks, community agroforestry and community supported agriculture schemes.

Orchard – traditionally, orderly rows of fruit or nut trees on pasture that is grazed by livestock animals such as sheep, chickens and ducks. For modern commercial operations often a single species and variety is used and grasses are slashed or sprayed. In the community space orchards can be quite mixed in species/varieties, include pollinator gardens, and the understorey grasses are usually mowed.

Food forest – also known as 'edible forest garden'. Food forests mimic the structure and relationships found in natural forests, which are one of the most productive ecosystem types on the planet. The plant species consist of edibles and support plants such as nitrogen fixing legumes and pollinator attractors. Food forests can have three to seven layers of vegetation including canopy trees, lower trees, shrubs, herbaceous plants, groundcovers, rhizome layer and vines. Food forests have been known to yield fruits, nuts, pulses, grains, vegetables, mushrooms, wood and fibre. If animals are incorporated then meats, eggs, skins and other products are possible. The oldest known food forest is in Morocco and is believed to have been in continuous use for at least 400 years, and possibly 2,000 years.

Food justice - According to US-based environmental project Food Print, food justice 'is a holistic and structural view of the food system that sees healthy food as a human right and addresses structural barriers to that right... Food justice efforts (which are generally led by indigenous peoples and people of colour) work not only for access to healthy food, but for an end to the structural inequities that lead to unequal health outcomes'.

Food sovereignty - According to Food Secure Canada, food sovereignty is "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.' The concept was developed by La Via Campesina (the international peasant farmers' movement) and presented at the World Food Summit 1996 in Rome.

Non Violent Communication - an approach to communication based on principles of nonviolence. It is not a technique to end disagreements, but rather a method designed to increase empathy and improve the quality of life of those who utilize the method and the people around them. Nonviolent Communication evolved from concepts used in person-centred therapy, and was developed by clinical psychologist Marshall Rosenberg beginning in the 1960s and 1970s. (source: Wikipedia)

Sociocracy – According to sociocracyforall.org, "sociocracy is a governance system… [that is] best suited for organizations that want to self-govern based on the values of equality. Some people refer to sociocracy as Dynamic Self-Governance or simply Dynamic Governance…What we call sociocracy now was first developed as the Sociocratic Circle Method by Gerard Endenburg in the Netherlands in the 1980's.

Urban orchard – the total stock of fruiting trees, shrubs, vines and other perennial plants in a city or metropolitan region. The urban orchard includes plants on private and public lands such as residential yards, business premises, educational institutions, roads and streets, government land and public greenspace.

Appendix One – List of Sites Visited

Listed in approximately order of date of visit.

Seattle USA

- Amy Lee Tennis Centre Orchard
- Bradnor Gardens P-Patch
- Beacon Food Forest
- Holy Cross Lutheran Church
- Pipers Creek Heritage Orchard
- Good Shephard P-Patch and Orchards
- Jose Rizal Park Orchard

Victoria BC Canada

- Welland Learning Orchard
- Five sites including Spring Creek Food Forest and St Anne's Monastery Orchard
- Backyard Orchard, Fairfield

Miami USA

- Twin Lakes Elementary school food forest
- WF Bailey Elementary school food forest
- Lake Stevens Elementary school food forest
- The Kampong heritage orchard
- Fairchild Botanic Gardens tropical fruit collection

Maryland USA

- Greenbelt Community Garden
- Forested (Lincoln Smith's site)

Philadelphia USA

- POP Learning Orchard, Woodlands Cemetery
- Bartram's Garden Orchard
- Sankofa Gardens
- Fair Amount Food Forest
- Strawberry Mansion Orchard
- Chester Street Community Garden
- Saint Bernard Community Garden

Dartington UK

- ART Dartington food forest

- ART Little Hempston edible forest gardens

Bristol UK

- Warden Road micro orchard
- Windmill Hill City Farm

London UK

- Meadow Orchard
- Hackney City Farm
- Haggerston Community Orchard
- Royal Orthopaedic Hospital orchard, Harrow
- Bethlem Royal Hospital orchard, Beckenham
- Petersham Public Orchard, Richmond

Rucphen NL

- Groengenoten food forest

Rotterdam NL

- Luchtpark Hofbogen orchard
- SKAR Atelier Ruivenstraat food forest
- SKAR Atelier Borgenstraat food forest
- Female Student's food forest, Kralingen
- Kralingen Food Forest
- Secret Food Forest, Polyclinic Kralingen IJsselland Hospital
- School food forest #1
- School food forest #2
- Food Forest Overtuin, Trompenburg Botanic Gardens
- Food Forest Vlaardingen
- Stichting Voedseltuin community garden

Parma Italy

- Picasso Food Forest
- Via Cremona persimmon avenue
- European Food Safety Authority food forest
- University of Parma, Dept of Environmental Science food forest

Apennines Mountains, Italy

- La via degli Dei – Piana dei Castagni

Appendix Two – List of Videos

Below are links to videos of some of the sites that I visited.

	Site	Topic	Date published	YouTube link
Seattle USA				
1	Beacon Food Forest	Tour	7 Aug 2022	https://youtu.be/8JkQT8s9nAo
2	Beacon Food Forest	Community design process	7 Aug 2022	https://youtu.be/1NojWjc_Jk4
3	Beacon Food Forest	Cardoon forest	16 Aug 2022	https://youtu.be/uxzfSwK7H7w
Victoria BC Canada				
4	Welland Learning Orchard	Tour	13 Aug 2022	https://youtu.be/DXF1JsGjyJs
5	Spring Ridge Commons	Tour	16 Aug 2022	https://youtu.be/TU-PUUKiDdw
6	Lifecycles Project Depot	Assessing fruit ripeness	30 Nov 2022	https://youtu.be/xgKv5C74r4c
7	Residential yard	Apple harvest	30 Nov 2022	https://youtu.be/r2sgza3TUPs
8	Lifecycles Project Depot	Sorting and distributing fruit	30 Nov 2022	https://youtu.be/TF3OM-pJz8E
Miami USA				
9	Twin Lakes Elementary food forest	Tour	18 Aug 2022	https://youtu.be/iIAIcSEDuKc
Maryland USA				
10	Forested	Food forest design	28 Aug 2022	https://youtu.be/Qcb7CV--wVY
11	Forested	Establishing a food forest	28 Aug 2022	https://youtu.be/EarM9ZEa1RA

	Site	Topic	Date published	YouTube link
Philadelphia USA				
12	Philadelphia Orchard Project learning orchard	Alley cropping	28 Aug 2022	https://youtu.be/Sm8Crm_7XiM
Bristol UK				
13	Warden Road orchard	Tour	22 Sept 2022	https://youtu.be/p8ODFXbn9po
London UK				
14	Royal Orthopaedic Hospital, Stanmore	Apple harvest	13 Oct 2022	https://youtu.be/DoMSKl0gG84
Rotterdam NL				
15	Polyclinic IJsselland Hospital food forest	Tour	14 Oct 2022	https://youtu.be/DZSyYj7w6bA
16	Food Forest Overtuin	Tour	14 Oct 2022	https://youtu.be/YKubGIJDXM8
17	Food Forest Vlaardingen	Tour	16 Nov 2022	https://youtu.be/S_MXOBJGxjU
18	Food Forest Vlaardingen	Restauranteur's perspective	19 Nov 2022	https://youtu.be/TFFhwLPqcYc
Parma Italy				
19	Picasso Food Forest	Tour (Part 1)	24 Nov 2022	https://youtu.be/Ceu41uxJnNI
20	Picasso Food Forest	Tour (Part 2)	24 Nov 2022	https://youtu.be/-1Kv1P9UAZo
21	Picasso Food Forest	Tour (Part 3)	24 Nov 2022	https://youtu.be/PMJDsuR0uwg