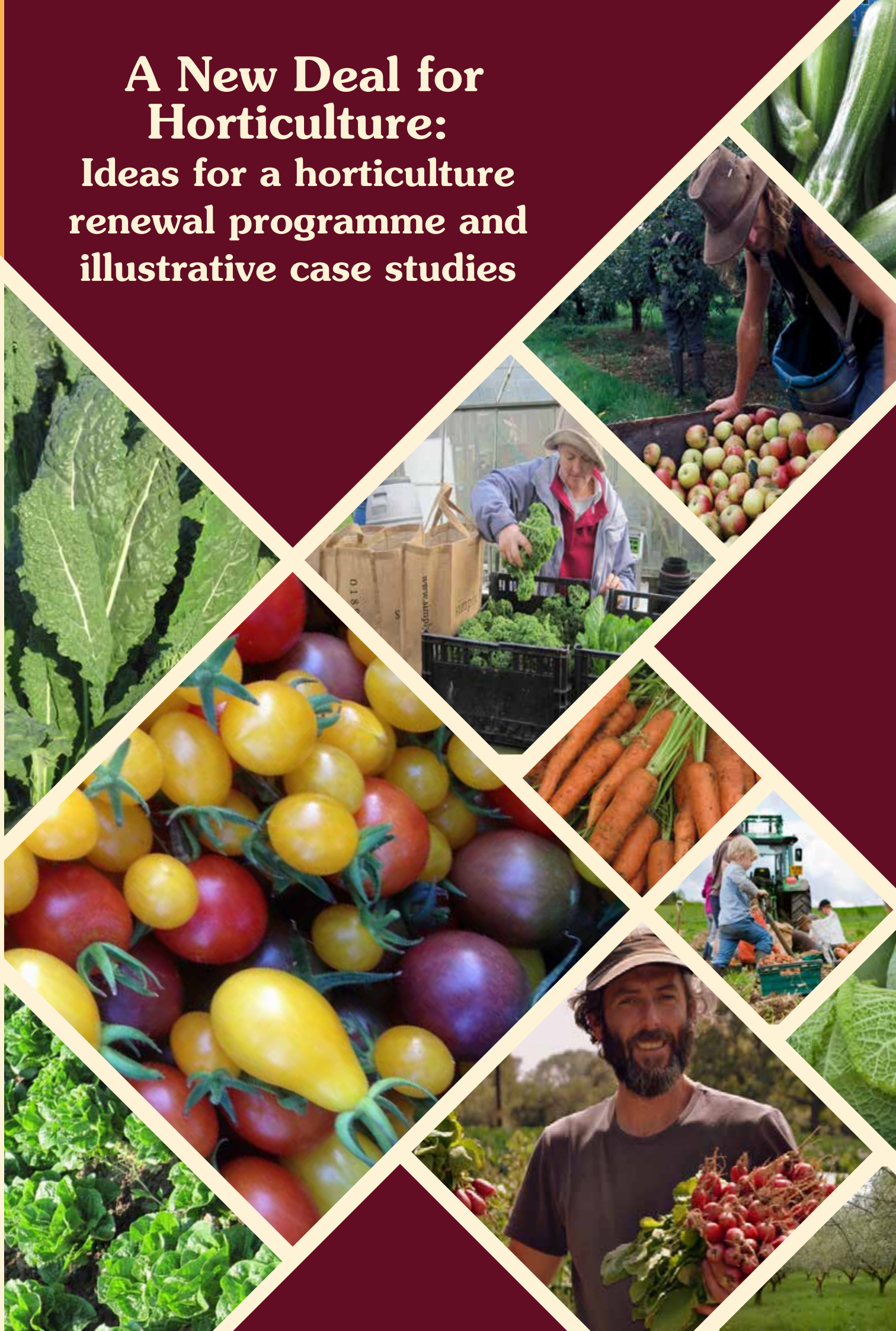
A New Deal for Horticulture:

Ideas for a horticulture renewal programme and illustrative case studies



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A Vision for Horticulture Renewal

- **Tasty, fresh and affordable fruit and vegetables for all** - Every person in Britain (England) (whether living in a city, town or rural area) has access to affordable, highly fresh, fruit and vegetables produced locally using organic methods and sold from a decentralised network of farms and market gardens either via Community Supported Agriculture (CSA) or box scheme, food hub or farmers' market. The diverse nature of these systems means that all needs would be catered for, from the person who wants the ultimate convenience of a doorstep delivery to those who want to participate in production through a CSA.
- **Local produce boosting local economies** - The percentage of fresh produce currently imported would be gradually substituted by locally produced fruit and vegetables through an increase in the number of small-scale, highly productive market gardens and farms. If just 1% of the £7.8billion worth of F&V currently imported was produced in the UK, this would bring £78 million into local economies, enabling the establishment of 780 new market gardens with an annual turnover of £100,000. This represents 11.3 new market gardens around each of Britain's 69 cities. A 10% substitution of imports would multiply this figure by 10!
- **Decentralised supply system** - Each city would have a decentralised, values-driven supply system, of the sort pioneered by Growing Communities, integrating urban and peri-urban production of perishable, high-value crops, with farms in the wider rural hinterland growing bulkier crops (carrots, onions, potatoes).
- **Viable Livelihoods** - Farmers and growers would be able to earn a decent income from growing and selling fruit and vegetables, and their workers would be paid enough to live in secure accommodation, with work benefits such as maternity leave, sick pay and pension provision.
- **Employment** - Due to its creative, meaningful, varied and convivial nature, combined with decent pay and working conditions, horticulture would become a desirable occupation for many school leavers. The labour-intensive nature of organic horticulture means many more part-time work opportunities would be created, enabling people to combine horticultural work with other "desk-based" jobs, creating a fitter, healthier and more mentally balanced population.
- **Food connection and education** – Individuals and families would have access to the farms where their fruit and vegetables are produced, with options to visit, volunteer or take a course in aspects of sustainable horticulture. A combination of its freshness and flavour, combined with the opportunity to participate in the food system would encourage people of all ages to eat, grow and enjoy fruit and vegetables.

The Landworkers' Alliance (LWA) and Growing Communities (GC) are working together to create a better future for small and me
rent food system. LWA is a grassroots union of small-scale, ecological and family farmers' across the UK. We campaign for the rights

Horticulture Renewal Programme

To meet the UK demand for fruit and vegetables a massive scaling up of production is required. The table below sets out a series of schemes which, implemented together, would lead to the recruitment, training and establishment of new growers and support existing growers to become more productive and efficient. Many of these ideas are already being implemented with great success, and case studies are provided on the enclosed sheets. However widespread adoption is limited by lack of funding and skills to support their development. These ideas and case studies are offered as an illustration of the type of programme necessary to bring our vision for UK horticulture into reality.

	Action	Case Studies
Recruitment	• Resource pack for students considering horticulture • Programme of careers talks in schools • Work experience programmes	No UK examples as yet
Training	• Vocational courses in organic and agroecological horticulture • Apprenticeships and Traineeships • Mentor scheme link to experiences growers and new entrants • Farmer to farmer study and research groups	• Organiclea City and Guilds Organic Horticulture Course • Soil Association Future Growers Scheme
Start up and business development	• Incubator farms • Create affordable access to land and accommodation • Introduce a "Mixed Farms Scheme" supporting the creation of horticultural units on larger farms • Provide grants and interest free loans for infrastructure and equipment costs	• Renata (France) • Ecological Land Co-operative • Trill Farm Market Garden • Scottish RPA New Entrant's Capital Grants Scheme
Production	• Inspire best practise through mentor schemes to link new growers with experienced practitioners • Support urban and peri-urban horticulture to develop market gardens as a community resource in green belt • Introduce an orchard planting and maintenance scheme to encourage long term investment in fruit production • Adopt production techniques from international examples of high performance, ecological market gardens	• Examples of highly productive UK market gardens (eg Fresh and Green, Tolly) • Ferme du Bec Hellouin, Curtis Stone, Jean Martin Fourtier
Distribution	• Shift to shorter supply chains • Create innovative and diverse, value-based distribution schemes to increase access to local fresh produce	• Community Supported Agriculture • Growing Communities, Tamar Valley Food Hub

dium scale organic horticulture. GC is a community-led organisation based in London, providing a real, practical alternative to the cur-
of producers and lobby the government for policies that support the infrastructure and economic climate central to our livelihoods.

A Realistic Route to Health and Harmony:

How our Horticulture Renewal Programme meets the objectives of the post Brexit agriculture bill

Health and Harmony

"Market dynamics are externalising costs onto health and society. This is policy failure"[1]

If the UK population were to eat the "seven a day" helpings of fruit and vegetables now recommended by Public Health England, UK growers would need to produce at least £2.4 million tonnes more of fruit and vegetables[2]. Bad diets result in diseases such as cancer, heart-disease and diabetes, costing billions to the NHS[3] [4]. Increased opportunity to eat fresh, local, organic produce and engage with production would bring significant physical and mental health benefits[5].

An Attractive Profession

"We want to attract more of our graduates and domestic workforce into this vibrant industry" p10 H&H[6]

Small scale organic horticulture is already attracting UK graduates and domestic employees, motivated by the meaningful, varied and skilled nature of the work. Addressing barriers such as access to land, and affordable accommodation, lack of training and mentor schemes and low investment in appropriate R&D would make it still more attractive[7].

Self-Reliance

"Agricultural support should focus on encouraging industry to invest, raise standards and improve self-reliance" p15 H&H

Import substitution of some of the £7.8billion[8] worth of fruit and vegetables we currently import would increase UK self-reliance on fresh produce, guarding against potential price rises of imported produce[9]. Agroecological growers tend to operate low input, "closed loop" systems, with a focus on recycling, so are more self-reliant in fertility, seed and packaging than their conventional counterparts.

Delivery of Public Goods

"We will support the industry to adapt to a new world: one which will yield greater economic benefits and improved environmental, biodiversity and animal health outcomes" p15 H&H

The production methods chosen by organic and agroecological SMEs focus on delivering positive externalities such as soil care, carbon sequestration and wildlife conservation, while local production keeps more money circulating within the local economy[10].

A Culture of Excellence

"There is an important role for knowledge sharing, producer co-operation and farmer to farmer learning to kick start a wider culture of excellence" p25 H&H

Organic and small-scale growers already co-operate to share knowledge through the Soil Association's Innovative Farmer Programme, FarmHack events, local growers' study groups and farm walks. Financial support from Defra would enable more growers and new entrants to benefit from mentoring and apprenticeship schemes.

A Productive and Resilient Sector

"We want to see productive, skilled and self-reliant, arable, horticulture, forestry and bee-keeping sectors, with reduced losses from pest and disease outbreaks" p55 H&H

Small scale horticulture often produces higher yields of vegetable crops than industrial systems, especially those which benefit from high labour inputs such as salad leaves and beans. The diversity of crops in such systems, combined with soil health and biodiversity means they tend to be more resilient to pests and diseases than monoculture systems[11].

A Culture of Co-operation

" ….It is important to build on and widen existing traditions of co-operatives to encourage a stronger culture of co-operation, transparency and fair dealing as part of a modern, 21st century food chain" p57H&H

SMEs often add value by direct marketing, achieving transparency and fair dealing. If supported to co-operate they could supply larger markets, such as public procurement contracts.

1 Schoen V. and Lang T. (2016) Horticulture in the UK: Potential for meeting dietary guideline. Food Research Collaboration Policy Brief
2 Food Foundation (2016. Veg Facts: A briefing by the Food Foundation. London: The Food Foundation.
3 Schoen V. and Lang T. (2016) Horticulture in the UK: Potential for meeting dietary guideline. Food Research Collaboration Policy Brief
4 Food Foundation 2016. Veg Facts: A briefing by the Food Foundation. London: The Food Foundation.
5 PHE 2017. Spatial Planning for Health: An evidence resource for planning and designing healthier places. London: Public Health England.
6 Defra (2018) Healthy and Harmony: The Future for Food Farming and the Environment in a Green Brexit. All italicised quotes marked H&H are from this document.
7 Laughton, R (2017) A Matter of Scale: A study of the productivity, financial viability and multifunctional benefits of small scale farms. LWA and Coventry University
8 Schoen V. and Lang T. (2016) Horticulture in the UK: Potential for meeting dietary guideline. Food Research Collaboration Policy Brief
9 Food Foundation 2017. Farming for 5 a day. http://foodfoundation.org.uk/wp-content/uploads/2017/11/Farming-for-five-a-day-final.pdf
10 Ward, B. and Lewis, J. (2002) Plugging the Leaks: Making the most of every pound that enters your local economy. New Economics Foundation.
11 Laughton, R (2017) A Matter of Scale: A study of the productivity, financial viability and multifunctional benefits of small scale farms. LWA and Coventry University

The Eatwell guide recommends that 40% of each person's diet consists of fruit and vegetables (Public Health England, 2016), yet currently only 1% of the £3 billion agricultural budget is spent on horticulture.

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Distribution Case Studies: Community Supported Agriculture

Community Supported Agriculture (CSA) is a farm structure in which the financial risk and, in some cases, work of production is shared by a community of members. It originated in Japan and Europe in the 1960's and since 1985 there has been a thriving CSA movement in the United States. Although CSAs have existed in the UK since the 1990s, a dramatic increase occurred in the last decade and there are now 106 CSA members of the CSA Network in the UK. In its purest form, members pay the full amount for a share of the harvest before the season has started (say £500), to provide the farmer with finance to buy seeds, equipment and an income until crops start, and then receive a share of each week's harvest. In practice, the model of CSA varies in terms of financial arrangements, labour requirements and according to whether it was initiated by the grower or the community. The three case studies below provide a taste of different models that currently exist in the UK.

Stroud Community Agriculture, Gloucestershire

Stroud Community Agriculture (SCA) is a community-initiated CSA and began in 2001 when a group of local people took on the rental of a 23-acre biodynamic farm near Stroud. The business is an Industrial and Provident Society Community Co-operative, owned and controlled by its subscribers, who elect a core group of eight members to make management decisions and employ the grower and farmer.

It now has 270 members, rents a total of 19ha of which 3ha is planted with biodynamic vegetables, and also raises pigs, cattle and sheep, enabling members to buy meat when they collect their veg share each week. A basic share is worth £44per month, which includes a £3 membership fee to cover the administration of the CSA. Shares are paid for via a direct debit system, and the knowledge that there will be a regular monthly income makes it much easier to plan for labour and expenditure. Vegetables are collected from the farm each week, and sometimes members might be asked to pick part of their share, which they are directed to by a noticeboard in the veg patch indicating what quantity of vegetables to take.

Members are not required to work in this CSA, but can take part in regular community workdays if they choose. A limited number of members can pay for their annual share by working on the farm for a certain number of hours each week, subject to a written agreement. The farm has a turnover of around £170,000 and now employs three full time equivalent workers and a couple of seasonal workers. During the last two years, a new starter farm initiative has enabled two new entrant growers to rent one acre adjoining SCA to grow vegetables, which are sold via the CSA and other outlets. The guaranteed market and mentoring service offered by the grower at SCA give the new growers the confidence to develop their skills, before moving on to their own project after1 to 2 years to make space for the next starter farmers.

Social events form an important element in building the community of SCA. Every month a social event of some sort brings members together, and many friendships have been formed during bar-b-cues, harvest suppers, bonfire night and even snail races! Many members have children, and value the connection with food production and the countryside that regular visits to the farm provide.

www.stroudcommunityagriculture.org

Chagfood Community Market Garden, Devon

Chagfood was initiated in 2009 by two local people, keen to bring vegetable growing back to the area. Twenty five initial members were recruited, two part-time growers were hired, an acre of land rented and a £38,600 Local Food Fund lottery grant secured to pay for infrastructure (three poly tunnels, a packing shed and a tool shed). An additional £9,800 grant from Dartmoor National Park subsidised the scheme

in the first two years, but from 2012 members subscriptions were able to fully fund running costs and the wages of two part time growers.

Chagfood has now expanded onto a second five acre site, and supplies year-round weekly veg-shares to 100 loceal households. Membership costs £450 per year for a small share, £600 for a medium share and £750 for a large share. Members are encouraged to pay up front for the whole year, although they also have the option of a monthly standing order. Although day to day management decisions are made by the growers, Chagfood is a Community Interest Company, and at the AGM each autumn members are asked to vote on the box price and the growers wages. Members are also invited every Thursday throughout the growing season to assist with growing tasks and harvesting and are kept up to date with a weekly newsletter. On average five members tend to come and help on a regular basis.Veg shares are dropped off at five collection points (usually a members house) in local communities around Chagford.
www.chagfood.org.uk

The Oak Tree Low Carbon Farm

The Oak Tree Low Carbon Farm was set up in 2011 on 12 acres (4.9Ha) of previously intensively cultivated arable land, bought by Joanne Mudhar. She and two other Directors set up a Community Interest Company in 2012, and started growing vegetables on three-quarters of an acre of land. Horse manure from a neighbouring farm was initially used at the farm and cattle, pigs and hens were soon introduced to increase the organic matter and fertility of a sandy soil that had been degraded through over-farming. The farm is not certified organic due to the costs of certification, but runs according to organic principles.

This CSA model allows members to choose from three tiers of membership. Full membership costs £9 per week and members are requested to commit to doing one to two hours of farm work per week depending on the season. Reduced Hours membership involves half to one hour per week of farm work, and costs £13. And, for £16 per week Armchair members can enjoy all the benefits of membership without any of the work commitment. Armchair members in the Ipswich area can also have vegetables delivered to their door. In return, members are rewarded with a share of the weekly vegetable harvest. Additional soft fruit, cut-flower, egg and animal product shares are also available for an extra cost. All members must pay a one-off deposit of £25, refunded at the end of the first year if all work commitments have been met. A veg share is provided every week of the year, but in the spirit of CSA, members accept that the volume of vegetables in a box will vary according to the time of year. Some summer gluts have been processed into preserves and chutneys for use during the leaner months.

While the vegetables and other produce are enjoyed by the members, for most people it is the involvement in the work of the farm (be it vegetable or cut-flower growing, harvesting or animal care), being in a beautiful natural environment and the sense of working together as a community that motivates them to stay as members. The farm has also seen the amount of wildlife increase at the site which for several years has hosted breeding Barn Owls. A previously monocultural arable field has thus been transformed over seven years into a diverse small farm, feeding 40 households (increasing to 60 households - around 240 people - in 2018), whilst building soil fertility, wildlife and community. The farm has faced many challenges during its establishment phase, due to lack of institutional support for small and organic farms. However, a sign of the CSA's success is that when its founder, Joanne Mudhar moved on in 2017, one of the farm members was willing to buy the land and Joanne's work has been continued by the farm's four directors and three part-time (1.8 full time equivalent) staff.
www.the-oak-tree.co.uk

Distribution Case Studies: Local Supply Chains

Growing Communities

Growing Communities (GC) began in 1996, with the aim of building a better, fairer food system that brings communities together, supports local, organic, small scale farmers with fair prices and looks after people, the soil and the planet. Twenty-one years later, almost 1000 households (2000 people) are on the veg scheme, while another 3000 people eat food from the market. Over 80% of members have changed their cooking and eating habits to eat more seasonal, local, fresh food since joining GC. They have also supported 50 producers, employed 57 people in Hackney and Dagenham and trained 42 people in food growing, preparation and selling, by using fresh, organic vegetables and fruit, supplied from GC's own market garden in Dagenham and urban "patchwork farm" in Hackney, and a network of about twelve market gardens and field scale growers within 60 miles of London. The 2017 turnover for fruit and vegetables was £750,000, including produce bought in wholesale during the hungry gap. They have also trained and mentored nine other community groups around the UK – the "Better Food Traders" - to set up their own local veg schemes using the same integrated supply model. Specific elements of GC include:

Fruit and Veg Scheme – Weekly vegetable bags range from £7.50 for a small box (designed to feed one person) containing five varieties of regionally produced vegetables, to £16.50 for a large bag containing ten varieties of vegetable (to feed 4-5 people). Customers are told which farm their produce comes from. Fruit bags are also offered (£4.75-£8.75), which contain seasonal UK fruit, but may also contain imported organic fruit.

Farmers' Market – A weekly Farmer's Market in Stoke Newington is attended by 30 stallholders – both producers and processors - all of whom are organically/biodynamically certified. These include several fruit and vegetable producers, as well as meat, dairy, mushrooms, honey and processed goods such as a bakery and cheese-maker.

Urban market garden and Patchwork Farm – Dagenham Farm opened in 2012 on an ex-council nursery site, and now supplies about 5 tonnes of vegetables per year from 0.23 ha (0.6acres) of glasshouses, polytunnels and outside areas. The project was initially funded by the Local Food Fund, part of the Big Lottery, from March 2012 to March 2014, but the grower's salary is now fully financed through sales of produce. As well as supplying the Growing Communities Fruit and Veg Scheme, Dagenham Farm is home to "Grown in Dagenham", a project to involve more local people in the life of the farm and help them develop new skills in growing, food preparation and selling. As well as Dagenham Farm, Growing Communities also operate a "Patchwork Farm" on nine market garden sites of up to 150 square metres, utilising underused spaces on estates, private gardens and church land across Hackney. These "micro-sites" give graduates from GC Urban Growing Training Scheme an opportunity to grow salad to sell to weekly veg box scheme and at other local outlets, thus increasing the amount of locally and sustainably grown food in Hackney and helping growers generate an income from food production.

Regional Suppliers – While urban market gardens and "micro-sites" are appropriate for growing high value salad leaves and other produce with a short-shelf life for which a high price can be obtained, bulkier field scale crops and fruit are supplied from a network of ten farms from Kent, Essex and Suffolk. These farms range from thirty-acre field scale vegetable producers to soft and top fruit growers on smaller acreages. Some veg scheme produce is also bought through local wholesalers – especially in April to June, when local veg is scarce. Overall 63% of the veg sold through the veg scheme comes direct from local farmers and 90% is grown in the UK: https://www.growingcommunities.org/about-us

Tamar Grow Local

The Tamar Valley has a strong heritage of market gardening. In its heyday in the 1950s horticulture employed eight to ten thousand people, with a growers' co-operative of 600 members. Many local varieties of fruit and flowers are well adapted to its warm microclimate. In 2007, Tamar Grow Local (TGL) was established, as 'not for profit' Community Interest Company (CIC) run on co-operative principles for the benefit of the community. Their activities focus on three main areas:

Community - Providing opportunities and support for local people to grow their own food including allotments, growing plots and orchards
Education - Raising awareness of the benefits of local produce and the unique market gardening history of this area.
Commercial - Working with commercial growers and supply chains to increase the availability & consumption of local food and produce.

They are also home to a number of other projects which in turn support these community groups and other food producing businesses, including local markets, a food hub and an equipment bank.

Tamar Valley Food Hub - Tamar Valley Food Hub (TVFH) aims to make the area well known once again for the quality and range of its local produce. They distribute produce from local food and drink producers to retail and wholesale customers across the Tamar Valley. Products from over 60 local producers are displayed for sale on the online shop front each week. Customers must order by Wednesday for free delivery to local pick up points, or home delivery for a small fee, each Friday. Producers have the flexibility of adjusting their availability from week to week, and as they supply to order they benefit from greater consistency and lower wastage than a farmers' market. Twenty of the producers are horticulturalists, producing salad and other vegetables, cut flowers, apples, soft fruit, wine and forest garden products.

The Food Hub links together innovative local projects such as the Tamar Grow Local Honey Cooperative and Apple Cooperative. It provides outlets for their Farm Start projects and CROP Horticultural Therapy Gardens. Their wholesale service links producers to enable them to supply larger contracts. And through the Open Food Network they link with other food hubs across the country to facilitate the import of organic citrus from Spanish farming cooperatives. Producers are able to set their prices, and TVFH put on an 18% mark-up (of which 2% goes to the Open Food Network, who provide technical support for the online ordering system). Compared to most retailers, who take a 30-50% cut, this is low, and enables producers to get a better price, while prices to customers are sometimes cheaper than the local supermarket for equivalent products.

TVFH started with low overheads, receiving funding of £12,000 to fund their first year's wages until the project became viable. Most overheads, such as packing space and their delivery vehicle, are shared enabling them to operate on such a narrow margin. Since starting in 2013, TVFH is growing year on year, currently distributing £50,000 of local produce annually. While demand would have made it possible to grow turnover more quickly by buying additional produce from outside the local area, the policy has been to balance demand (through limited promotion) against local supply to maintain the focus on supporting the development local production.

Farm Start – In 2015 Tamar Grow Local started offering starter units for new farmers and growers. These 1-3-acre plots are offered for rent (£500 annually), along with infrastructure, access to tools and business advice, and a guaranteed wholesale market. Their initial site has seven tenants, including traditional market gardens, an orchard, a vineyard and a cut-flower growing business.

www.tamargrowlocal.org

Training Case Studies: Courses & Apprenticeships

Organiclea: City and Guilds Horticulture Courses

OrganicLea is a workers' co-op that runs a market garden and horticultural training centre on the edge of London. Their main growing site, Hawkwood, is a 12 acre council market garden near Chingford Waltham Forest. Since 2009 they have been working in partnership their council's adult learning service to deliver City and Guilds Levels 1 and 2 in horticulture, as well as AQA Level 1 courses at other community gardens. These provide an assessment framework to follow, and a recognised qualification. Level 2 is an "industry standard", as it is a level of training that most horticultural employers would look for. Although the qualifications are "general" (ie not organic), at OrganicLea the courses are taught in the context of an organic growing system.

The courses give students a good level of practical experience with a sound theoretical underpinning. Successful learners come out qualified, proficient, and often inspired, as gardeners and food growers, but many elements of establishing/ running a market garden are not touched on e.g. marketing/ distribution, finances, and machinery. An on-site classroom, together with an acre of glasshouses, outside raised beds and other growing areas, and a vineyard and orchard, allow many opportunities for demonstrations and practicals. The courses vary from being two-thirds theory, in the case of the Level 2 Extended Certificate, to being 80% practical, as in the case of the Work-Based Level 1. All practicals are meaningful and useful, since they also contribute to getting work done in the market garden.

Currently courses are free to those on Job Seekers' Allowance; full fees are £250 - £400 (Level 2) and £170 (Level 1), with fees for those on low incomes half that. Around 100 people complete the OrganicLea horticulture courses each year. Learners who complete a Level 1 bring their new skills and knowledge to their own/ community gardens. Level 2 participants, on the whole, are looking for the course to support them in gaining a livelihood in food growing, and many achieve this. Some get jobs on rural farms/ market gardens and many apply their skills in urban community garden development, therapeutic horticulture and sustainable food enterprises.

https://www.organiclea.org.uk/we-help-you-grow-your-own/training-2/training/

Future Growers: Soil Association Organic Apprenticeship Scheme

The Soil Association's Future Growers programme has run since 2007, and has trained over 80 organic entrepreneurs, many of whom have gone on to establish successful horticultural businesses of their own. During its first phase the scheme brought together experienced growers who needed reliable employees, with people who were keen to work and learn about fruit and vegetable production. As well as practical, hands on training and seminars from organic experts the trainees also received a fair wage. The Future Growers were enrolled either in traineeships lasting a year, or apprenticeships lasting two. In addition to learning 'on the job', a series of workshops and educational weekends were run throughout the year. As well as learning the technical know-how of growing, they were also trained in business and marketing skills.

In 2017, the scheme opened its doors wider. Focussing on six weekend-long training events, rather than the matching service, has allowed more people to get involved. This year, 15 future growers are enrolled in the course, with more on a waiting list for next year. Also in 2017, the Soil Association launched its "Digging into Horticulture" programme, which introduces new introduce new entrants to the possibilities and opportunities within large-scale horticulture. Funded by the Princes' Countryside Fund, two 2-day study tours to the Isle of Wight and South Coast, and the Vale of Evesham enabled students to examine their preconceptions

of horticulture and provide them with real-life exposure to the sector. The visits gave the students a better understanding of the day-to-day functioning of large-scale horticulture, and were followed by a focus group, to enable attendees to explore their attitudes towards the sector and how the visits might influence their own careers.

https://www.soilassociation.org/farmers-growers/supporting-you/future-growers/ and https://www.soilassociation.org/blogs/2017/may/digging-into-horticulture-student-programme/

Kindling Trust

The Kindling Trust has established a network for sustainable food initiatives (Feeding Manchester) linking market gardens with markets and training opportunities. They work closely with existing local organic growers and buyers, such as the box scheme, Manchester Veg People and Unicorn Grocery. With demand for vegetables growing in Manchester, there is a need for more commercial organic growers to supply these buyers, as well as other local Farmers Markets and box schemes. The three stages of training initiatives run by Kindling Trust are:

The Land Army – Volunteer trips go out three days (9.30am-5pm) per week to help on the different Kindling Trust market gardens, giving an initial taster of commercial growing

The Commercial Growers Course – A four day course costing £100, with optional two days placement to practise skills learned on the course.

FarmStart – A farm incubator initiative offering "new growers" a 0.25 acre plot to try out commercial growing, and to supply local markets such as Manchester Veg People.

The course is taught by experienced growers at their sites and covers the key areas for setting up and running a food growing enterprise, including:

- Running a food growing business (including finances, legal issues, record-keeping, Health & Safety, managing volunteers) and co-operative business models.
- Understanding and maintaining soil fertility
- Small-scale market gardening – focusing on plant propagation and salad leaf production
- Field-scale vegetable production, including pests and diseases and machinery maintenance

The Farm Start programme has been running since 2013, during which time a twenty people have taken on plots. Many of these have gone on to work for existing growers, or have taken on their own sites. After five years of operating at one site, a second 1.5 acre site has been added, while investments to improve the first site are made during 2018.

www.kindling.org.uk

Start-Up Case Studies:
Horticultural Units on Larger Farms

Grown Green at Hartley Farm:
A market garden started from scratch

In 2010 Kate Collyns, a graduate from the Soil Association's Future Growers apprenticeship scheme, started renting land from Hartley Farm, a 150-acre mixed family farm. She now rents two 1.5-acre fields, on which she has developed a market garden supplying £18,000 worth of vegetables to local shops and cafes, a turnover which is growing each year. As the owner of the farm says, "We had dabbled ourselves with growing veg, but we quickly realised that we didn't have the expertise, passion & energy. I'd recommend to any farmer planning a diversification which may involve opening up to the public, to consider how this type of business can help put your farm on the map. But even if you're not planning any major changes and have a spare plot of land, it's very rewarding to see a young person using that resource to produce beautiful food with such passion."

Kate pays peppercorn rent of £500 per year, since she has invested in and installed all the infrastructure herself with help from friends, including six polytunnels (total cost £5,600), fencing and three lean-to sheds (total cost £1100). Being part of a larger farm, she benefits from an "on-site market" in the form of Hartley Farm Shop and Café, and having access to farm machinery and contacts with the other businesses on site. In return, the presence of Grown Green brings positive PR to Hartley Farm from media publicity and the availability of fresh produce for the farm shop, which is sold under the name "Grown Green at Hartley Farm". Kate also welcomes the public onto her fields for farm tours and monthly "Green Gym" volunteer days. During the last three years she has also employed several part time workers, to undertake seasonal harvesting and help with maternity cover during the last year.

Trill Farm Organic Garden:
A successful salad business rented from a mixed farm

Trill Farm Garden - Ashley Wheeler and his partner Kate started their salad business at Trill Farm in 2010, following Ashley's completion of a horticulture degree. The one-hectare (2.5 acre) garden was already rabbit and deer fenced, with some polytunnels erected, and access to a tractor and packing shed included. In addition, on-site accommodation is provided in a purpose built agricultural workers' dwelling, which is rented separately from the market garden. The fact that the necessary infrastructure was already in place enabled Ashley and Kate to quickly establish a thriving business, supplying salad and other seasonal vegetables to restaurants and cafes in the surrounding coastal area. With Lyme Regis, and other tourist towns nearby, most produce is sold during the summer, which fits well with the heavy clay soil which holds moisture in dry spells, but tends towards water-logging in the winter. The business provides a good livelihood for Ashley and Kate and their young family, as well as providing part-time employment for three seasonal workers and a trainee. The rent is £3000/year, but sales to the on-farm restaurant are greater than that, causing the advantages of being at Trill Farm to outweigh the cost. In 2017/18 £60,000 worth of vegetables were produced and sold.

Trill Farm was bought by its current owner in 2007 with the aim of creating a model farm which contributes to the health and well-being of individuals, society and the environment through experiential learning. Initially the farm was run as a single business made up of a variety of enterprises which made the most of the farm's varying characteristics, such as its more fertile areas, grassland, woodland and wetland. However, paying the wages of the employees

needed to run all the different enterprises was not economically viable, and the farm shifted towards renting out its resources to self-employed entrepreneurs willing to take the risk of operating their own businesses. This model began with the market garden, and remit of the grower was to rent the land for growing vegetables to sell elsewhere, but also to provide vegetables for other enterprises on the farm, such as the restaurant and catering for courses. Other enterprises run by self-employed entrepreneurs now include a beef enterprise, a soap making enterprise and a restaurant/catering business, and an aim of Trill Farm is now to demonstrate how small businesses can be highly viable.

The landowner has invested considerable amounts of capital into the infrastructure for the market garden, including: £5,900 Deer and rabbit around one hectare; £24,000 a twin span polytunnel; £18,000 Borehole; £50,000 Barn (used as a packing shed/storage for grower, but shared with other enterprises and the roof generates an income from its solar array). All the initial investment in the assets has been paid for by the landowner, and rents have not yet recouped investment to date, but now that main investments are complete, rents will be being increased to create a recover outlay. Further infrastructure requested by the grower is paid for on a 50:50 basis, or is paid for entirely by the grower if he can take it away in the future. The growers are responsible for the repair and maintenance of the infrastructure and have a three-year tenancy agreement.

Trill Farm forms a hub of interrelated small enterprises, which can benefit from each other's presence. For example, manure from overwintered cattle provides fertility for market garden, vegetables supply restaurant and the on-site carpenter using timber from woodland provides joinery services for all the businesses, while people running such a variety of enterprises provide a diverse pool of expertise and skills. Such economic, cultural and biodiversity brings a vibrancy and wealth to the countryside, which can be seen as a public good. Fiscal measures to encourage the creation of such mixed farms could include capital gains tax breaks to non-farming land owners who are willing to invest in the infrastructure to make land resources available.

Eves Hill Veg Co, Norfolk: A community enterprise on a bare-land holding

Eves Hill Veg Co was started by Hannah Claxton in April 2016 on 0.8ha (2 acres) of agricultural land near Reepham in North Norfolk. It is a not-for-profit community enterprise, which grows and sells vegetables via a community share scheme and to local restaurants. The project was initiated by an offer from the farm owners to give Hannah a year's free rent in order to bring her community market garden to their site. The landlords see having the market garden on their farm as a valuable asset, alongside their existing campsite and planned farm shop and café. The garden is a bare land holding, but the landlords have provided a small shed and assistance with occasional heavy machinery (mostly compost turning and topping green manures). The annual rent is now £750.

Community involvement includes a weekly open volunteer day and a monthly community day, with events such as compost giveaways and apple day. These open days usually attract over thirty people, including families, most of whom value the opportunity to up tools and get involved. Eves Hill Veg Co have also run courses in organic gardening in association with the local agricultural college and run a structured traineeship during the summer months.

Eves Hill Veg Co received an initial £5,000 start-up grant from UnLtd Fund for social entrepreneurs, which paid for a small poly tunnel, basic hand tools and the first year's seed, plant and compost requirements. The running costs for the project are about £5,000-6,000 per year, plus capital investments. In its second year, Eve's Hill sold £13,000 worth of produce and is projected to sell £16,000 in year three. It currently employs a part-time grower/co-ordinator (3 days per week), a three day/week apprentice (part funded by a community fund-raiser) and a volunteer development worker (grant funded) to facilitate further community integration (for example programmes for long term unemployed and adults with support needs). Hannah estimates that to develop a fully working business model, the project needs capital investment of about £20,000, for additional poly tunnels, a small tractor and basic implements, a classroom/dry room for volunteers, a van for deliveries, wind breaks and a compost toilet. Such finance is modest compared to grants currently available for larger farms and has the potential to create further local livelihoods and train future growers.

Production Case Studies: UK

The "A Matter of Scale" study collected and analysed yield and financial data for 69 UK holdings of 20ha and less. Many of these were horticulture focussed, and the four case studies below demonstrate what can be achieved in a UK context.

Homeacres, Somerset

On 0.09 hectares (0.23 acres) Charles Dowding has developed a highly acclaimed intensive "No dig" garden from which he generates an annual gross income of about £20,000. His flagship product is mixed salad leaves (representing 80% of sales), which he sells to restaurants and cafes within a five-mile radius of his home.

The no-dig system involves creating permanent raised beds by mulching grass with cardboard and laying compost 10-15cm deep, into which seedling modules are planted directly. Labour is reduced over the long term by keeping rigorous control on weeds, while not cultivating the soil reduces seed germination of weeds, since they are not exposed to light. The garden provides employment for two full time equivalents, although this also includes the running of courses on no-dig gardening.

Vegetable	Yield (kg/sq. m)	Gross income (£/sq. m)	Mean Non-org. yield (kg/sq. m)
Salad leaf mix	10	123	0.6
Beetroot	15	32	3.71
Celeriac	9	21.32	-
Kale	4	-	0.85
Broad bean followed by lettuce	3 + 6 = 9	4.5 + 78 = 82.5	0.4
Spinach	5	30	0.8

Fresh and Green, Devon

This highly productive holding was created from scratch on 4.98ha of south facing grade 1 agricultural land, in 2003. The grower and her family have had to get planning permission for an agricultural workers' dwelling and build all the infrastructure, but starting on a bare land holding this was the only affordable option due to the high cost of equivalent sized farms. Vegetables are grown outdoors and in three large polytunnels on 2ha, and sold via a box scheme feeding 80 households.

A small orchard and 100 square metres of soft fruit bushes, two flocks of laying hens (70 birds total) and 9 pigs provide additional income streams for the holding, which generates a modest livelihood for the grower and her family. Outdoor crops are cultivated with a tractor, but the high yields are made possible by a high proportion of hand labour such as picking peas, beans and leafy crops over a longer period than would be possible with mechanised harvest. The holding employs 1.4 full time equivalents

Vegetable	Yield (kg/sq. m)	Mean Organic Yield (kg/sq. m)	Mean Non Org. (kg/sq. m)
Tomato	12.75 (unheated)	n/a	40 (probably heated)
Carrot	6.4	2.5	6.11
Broad bean	6.1	n/a	0.4
French bean	3.4	n/a	0.86
Beetroot	10.9	2.5	3.71
Calabrese	3.4	0.5	0.86
Onion	4.25	2.5	4.22
Cabbage	6.8	n/a	3.02

North Aston Organics, Oxfordshire

Since 1998, Mark Stay and his team have been growing vegetables on 5 hectares rented from the North Aston Estate, to supply customers via a vegetable box scheme. The holding is composed of the more intensive walled garden (0.9ha) and about 4ha of field crops, which are subcontracted to another grower and cultivated with a tractor. Produce from the holding constitutes one half to two thirds of the contents of the 260 weekly boxes (with the rest coming from another local farm or local organic wholesaler) and includes 40 different types of vegetable.

The farm employs 3.4FTE, including proprietor and 4 employees, as well as the field scale contractor. Much of labour focussed on harvesting, packing, delivery and admin for box scheme. Although the yields of individual crops were not outstandingly high, the business is feeding a significant number of households, as well as providing a livelihood and meaningful, varied work for several people.

Vegetable	Yield (kg/sq. m)	Mean yield in survey (kg/sq. m)	Mean org. yield	Mean Non-org. yield
Potato	2.5	2.48	2.3	4.5
Tomato	7.56	4.76	n/a	40kg
Carrot	3.3	3.85	2.5	6.11
French bean	4.75	2.33	n/a	0.86kg
Parsnip	2	2.83	1.8	2.57

	2012	2013	2014	Mean
Income (including sales of bought in veg)	159,440	163,500	186,000	169,640
Costs	149,190	156,630	158,000	154,610
Net income	10,250	6,860	28,000	15,040

The Apricot Centre

The Apricot Centre is an organic fruit farm and educational centre, which has recently relocated to a 13ha site in Devon. On its previous 1.55ha (3.9ha) site in Essex, 1.37ha was planted to a fruit orchard and forest garden. The site was designed in 2000 using permaculture principles, to provide fruit and flower crops over the longest possible season. These include a wide range of apple (desert and cider), pear and plum varieties which crop from July through to October, as well as rhubarb, gooseberry, blackcurrant, raspberry, strawberry, peach, apricot, greengage, quince, medlar and cut flowers. The best fruit was sold in London at the Growing Communities' box scheme and weekly farmers' market, while blemished and surplus produce was made into jams, chutneys and cordials worth £3,000-4,000 per year. Before relocating, the fruit farm generated a gross income of about £20,000 per year and provided part time livelihoods for two people.

The Apricot Centre hosts about 25 educational visits for school children each year, enabling them to harvest fruit and learn about processing (juice pressing and jam making) and bringing in an additional income of £3,000 each year. During the winter, permaculture design and craft courses and a forest school brought in an additional £17,000 each year. The organic management of the orchard and forest garden mean they contain an abundance of wildlife, while providing a valuable educational experience to school children and fruit, preserved products and flowers for people in London.

Laughton, R. (2017) A Matter of Scale: A study of the productivity, financial viability and multifunctional benefits of small farms (20ha and less). Landworkers' Alliance and Centre for Agroecology, Water and Resilience, Coventry University. https://drive.google.com/file/d/0B5dw4mKBC3yEdzRIOHhNbkFwUFg1MWNycHNpZW5JaDBnWVNr/view

Production Case Studies: International

In recent years, several examples of highly profitable organic market gardens have emerged, which demonstrate systems selling vegetables and fruit direct to local communities

Green City Acres, British Colombia, Canada

Curtis Stone has been growing commercially on small plots of urban land since 2010, many of which are simply the underutilised gardens of sub-urban properties. During that time he has developed a highly intensive system that enables him to generate an annual gross income of $75,000 from 1,400 square metres (0.14ha or 0.34 acres) for a labour input of 40hours per week.

He attributes his success to the following features:

- Limiting cultivated area to avoid over extension and excessive work hours in relation to returns.
- Focus on just 15 different high value crops, judged to be the most profitable.
- Selling via a mixture of restaurants, wholesale delivery services and a weekly farmers' market, so that if a crop doesn't sell via one market stream it can be sold elsewhere
- Growing close to the market, so that produce can be delivered by bicycle and close connections are made between customers, neighbours and growers.

The actual growing system used to generate these profits relies on intensive cultivation of fixed beds 0.76m wide, on which will be grown at least two different crops per year. Careful attention to details such as the number of days to maturity for each crop, yield per square metre of bed and length of harvest period (which reduces labour input for cropping time) and interplanting one crop with the following one, mean that the productivity and profitability of every square metre is maximised. Such details are set within the wider business context of ensuring a continuous supply of different crops through the seasons and responding to fluctuating popularity of crops to ensure that there is always a good market. Profitability is achieved through minute management of labour deployment through the season, with attention to be focussed on preventative weed control, automatic drip irrigation systems, efficient harvest and post harvest operations. Extra labour is often provided by people from the neighbourhood doing 2-3 hours work per week in return for some vegetables. This arrangement is popular for people who value the exercise and social aspect of garden work, as a contrast to office based work.

Stone, C. (2016). The Urban Farmer. New Society Publishers

Ferme du Bec Hellouin, Normandy, France

Since 2006, the 6ha family run micro-farm at Bec Helloine has been perfecting the art of high intensity, non-mechanised market gardening. Their methods are drawn from traditions ranging from the Parisian market gardens of the nineteenth century, to permaculture, agroforestry and biointensive cultivation, with annual vegetable crops being grown in close proximity to fruit trees and perennial herbs and flowers. The annual crops are grown on permanent raised beds, at a high density, using a non-inversion tillage system. For example, one 80cm wide bed sown with 12 rows of carrot (6.5cm) apart, and over sown with 12 rows of radish (which will provide valuable shade for the carrot seedlings, and be harvested at 5-6 weeks), with lettuces followed by quick growing cabbage planted up the centre can yield 200 euros per square metre per year. The farm provides 60-80 weekly vegetable boxes to local people, as well as supplying gourmet restaurants in Paris.

In 2010 the productivity and unconventional techniques of this small farm attracted the attention of a researcher from AgroParisTech, leading to a study focusing on the questions:

- What is the economic performance that can be obtained in a limited area, arbitrarily set at 1000 square metres?
- What is the workload required to achieve this performance on 1000 square metres and how can it be distributed?
- What is the environmental performance of this system?

All crops grown within the 1000 square metre study area were weighed and recorded, and hours labour input were logged. During the first two years of the study (2013 and 2014), a monthly net income of 900-1500euros (Annual net income 11-19,000 euros) was achieved from growing and selling 76 varieties of fruits and vegetables requiring an average of 43 hours per week. By 2015, the value of produce grown on the plot had increased to 54,800euros, requiring an average of 30 hours per week in the garden and an additional 15hours per week on related market farming tasks. Produce is sold via a The 76 crops thus grown do not include low value, bulkier root crops, such as potatoes, which are bought in from a neighbouring, mechanised farm to meet customers' expectations for these vegetables to be included in their weekly veg basket.

The total cost of setting up such a system is estimated to be 75,000 euros (0.5ha land 5,000 euros; hedges, fences and ponds 10,000 euros; fruit trees and bushes 5,000 euros; small storage building 15,000 euros; tools, irrigation equipment and glasshouses 25,000 euros; used vehicle 5000 euros; miscellaneous 10,000 euros.

Hervé-Gruyer, P. and C. (2016). Miraculous Abundance: One quarter acre, two French farmers and enough food to feed the world. Chelsea Green.
K. Morel1, C. Guégan2 and F. Léger (2015) Can an organic market garden without motorization be viable through holistic thinking? The case of a permaculture farm. Acta Horticulturae. https://www.fermedubec.com/wp-content/uploads/2017/11/ENGLISH-viability_organic_market_garden_without_motorization_paper.pdf

Les Jardins de La Grelinette, Quebec, Canada

For ten years, Jean Martin and Maude Hélène Fourtier have been earning their income exclusively from 0.6ha (1.5 acres), generating $60,000-$80,000 per acre in diverse organic vegetable crops with a 40% profit margin. Work on the garden begins in March each year, and ends in December, providing the couple with three months for rest, travel and other activities, alongside job security and profound satisfaction and enjoyment.

Their produce is sold via a Community Supported Agriculture (CSA – see separate Case Study Sheet) scheme supplying 120shares over 21 weeks, as well as two farmers' markets (which equate to a further 100 shares per week) – each share having a value of $26 worth of vegetables.

The garden consists of 180 x 30metre long permanent beds, which are cultivated with a combination of a two wheel tractor with a PTO (Power Take Off) which can drive a flail mower or power harrow; heavy tarpaulins used to smother crop residues or weeds; a broad fork (wide manual tool with long tines used to aerate the soil) and a rake. The capital cost of setting up such a system is lower than for a system relying on a four wheel tractor and implements, with estimated set up costs for all tools, crop covers, and infrastructure coming to $39,000. The larger scale of operation than Green City Acres, means that a wider variety of crops are grown, with protected crops such as tomatoes, cucumbers and salad leaves contributing about 50% of annual gross income.

Fourtier, J.M. (2014) The Market Gardener: A Successful growers' handbook for small-scale organic gardening. New Society Publishers