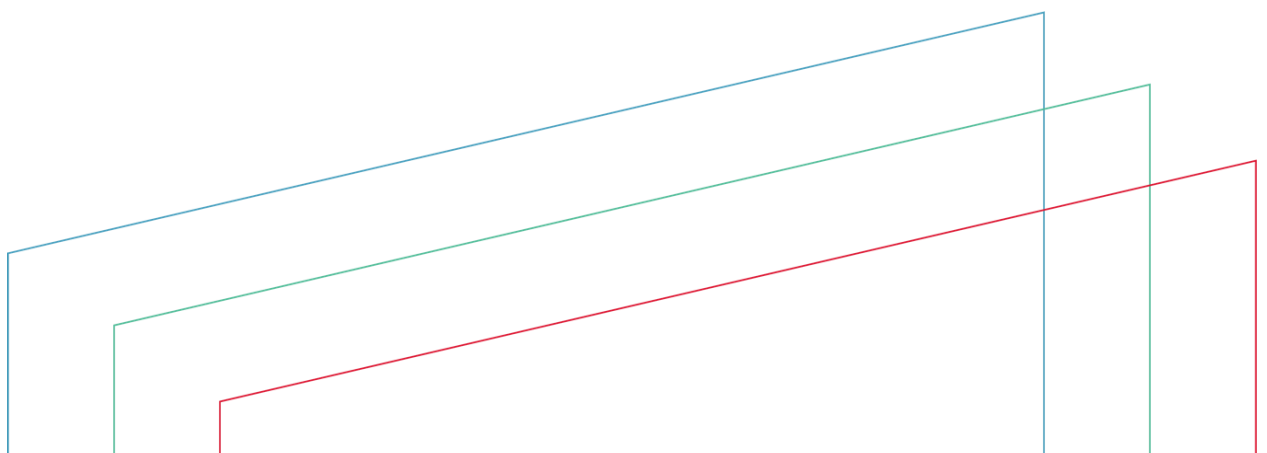




# FARMER-FOCUSED ROUTES TO MARKET

AN EVALUATION OF SOCIAL, ENVIRONMENTAL, AND  
ECONOMIC CONTRIBUTIONS OF GROWING COMMUNITIES

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**GROWING  
COMMUNITIES**  
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## FARMER-FOCUSED ROUTES TO MARKET

### An evaluation of the social, environmental, and economic contributions of Growing Communities

December 2020

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**Funder:** Farming the Future



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The New Economics Foundation is the UK's leading think tank promoting social, economic, and environmental justice to transform the economy so that it works for people and the planet.



Growing Communities is a London-based social enterprise that is reshaping the food and farming systems that feed us so they work better for us, our community and our planet.



The Soil Association is a UK non-governmental organisation, formed in 1946 to pioneer a world where we can live in harmony with nature. The Soil Association is a leading voice in the sustainable food movement, advocating for a visionary future for UK farming.

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## EXECUTIVE SUMMARY

Growing Communities is an organisation, based in Hackney, London that aims to harness the collective buying power of their local community and direct it towards those farmers who are producing food in a sustainable way. Over 2019/2020, the New Economics Foundation (NEF) conducted an evaluation of the impact of Growing Communities' two primary consumer offers: its weekly veg scheme and its farmers market. The impact of these operations on consumers, farmers, food processors, employees, 'food eaters', and the environment are all considered.

**Growing Communities' core operations cost £1,688,600 in the 2019/2020 financial year (FY); 54% of this was borne by veg scheme customers and 40% by farmers market customers.** The average veg scheme customer spent £641 per annum, while the average farmers market customer spent £837 per annum. These customers are the individuals that directly purchase food via Growing Communities. As this food often feeds household members as well as direct customers, we also refer to a larger group of people made up of customers and their households that we call 'food eaters' or consumers.

**These operations generated an estimated £6,294,000 in social, economic, and environmental value in the 2019/2020 FY.** The greatest proportion of this, circa 60%, went to veg scheme customers and their households, who received £3,836,000. The next largest share of the value generated was for farmers market customers and their households who received £1,638,000. The environment was the next largest recipient, with Growing Communities' operations creating over £508,000 in value annually. Farmers, employees, and food processors received £312,000.

**The average customer (including veg scheme and farmers market) received £2,461 in benefits for their households, while generating £228 of value for the environment, £76 for farmers, £52 for employees of Growing Communities, and £13 for food processors.**

**For veg scheme 'food eaters', the value of improvements in health reported (£631) were more significant than the value of food received (£301).** The social element of the veg scheme is estimated to create £310 in social interactions and £60 in sense of community for veg scheme members. Members also saved £310 worth of time by not shopping in a supermarket as much.

**For farmers market customers, the estimated value of health improvements generated were lower but still significant at £398.** This finding is consistent with the less veg-based nature of the market, resulting in the less pronounced dietary changes reported which might lead to less significant health benefits. Though the farmers market sees a larger number of people gather than at veg scheme collection points, the social benefit of the farmers market is slightly smaller, creating an estimated £245 in value in social interactions and £74 in sense of community per customer. Additional value was created in terms of improved knowledge of food and reduced food waste.

**Growing Communities' work supports significant environmental improvements, the largest of which was in improved levels of carbon sequestered within the soil, which is estimated to be worth £413,000 per annum.** It is important to note that there is

considerable uncertainty around this estimate, as the benefits stabilise after a period of time after organic farming approaches have been adopted.

**Categorising environmental benefits into either supply-chain benefits or consumer behaviour and packaging benefits, we find that the vast majority of the value created derives from the Growing Communities supply chain; £478,500 of environmental benefit is created through more environmentally friendly farming practices.** Shifting patterns of consumer behaviour results in additional value worth £29,700.

It is interesting to note that **the environmental benefits of organic farming in the supply chain (£478,500) exceed the yield forgone (£106,000)**, suggesting that organic farming is preferable to conventional methods, even before considering wider factors such as health and wellbeing.

**The greatest benefit created for farmers is the wellbeing benefit of feeling that their work was more appreciated.** This was closely followed by the impact of managing better financially and feeling more secure in their job. The value of reduced pressure to scale up their operations was also significant at £625 per farmer, as was the increased autonomy over what they can produce.

**The most significant value created by Growing Communities for its employees is to enable them to manage better financially.** This benefit is worth an estimated £1,077 per employee. The residential-centric nature of the employment, which reduces commuting time, was the next most valuable contribution to its employees, worth an average of £994 in time and £45 in costs per annum. Reduced childcare costs were significant at an average of £868 per employee, while physical health benefits were also significant (£207).

Food processors were the stakeholder for whom the least value was created in aggregate relative to other stakeholders. **The support received from Growing Communities and other stall holders at the market was estimated to be worth over £1,000 per year to food processors.** The improvement in financial wellbeing was markedly less than for farmers at £436 per capita, compared to £1,820. The value of being part of a social group (£640) was greater than that created for farmers (£69) or customers.

**Our analysis estimates that Growing Communities generated £6,293,700 in economic, commercial, social, and environmental value in 2019/2020, from £1,688,600 of costs (including the opportunity costs) giving it an overall cost-benefit ratio of £3.73 of value generated for each £1 of costs.** This ratio is the primary measure to be used when assessing the total economic efficiency of the Growing Communities operations.

Interestingly, the cost-benefit ratio remains high even when the focus is just on food eaters. For each £1 spent by consumers they, and their households, receive an additional £2.46 in benefit.

The findings presented in this report are subject to several limitations. Where considerable uncertainty exists, we have made conservative assumptions to ensure that the findings presented remain robust. The most significant of these is around the value of environmental production benefits, many of which have not been included. The environmental benefits associated with shortened supply chains and reduced transportation

measured in terms of changes in greenhouse gas (GHG) emitted have been excluded entirely. In light of this, **the findings can be viewed as a conservative estimate of the value created by this model of food production and distribution.**

# INTRODUCTION

## Growing Communities

Growing Communities is a community-based organisation that has operated in Hackney, North London, for the last 20 years. They aim to provide an alternative to the current conventional food system by harnessing the collective buying power of their local community and directing it towards those farmers who are producing food in a sustainable way.

Growing Communities has two primary customer offers; a subscription-based weekly veg scheme and a weekly farmers market. The veg scheme brings customers fresh, organic, seasonal fruit and veg each week. Customers are able to select the size of bag of veg or fruit they would like and then collect it from one of the Growing Communities distribution points, which include local businesses and community venues across Hackney. The weekly farmers market is run every Saturday in Stoke Newington and offers a wide range of produce to consumers including produce from many of the farmers who directly supply the veg scheme. In addition, people can buy dairy and meat from sustainable family farms; fresh, sustainably caught fish from the English Channel; hand-made baked goods; fermented foods; kombucha; pickles; and hemp products.

Growing Communities works directly with farmers and producers, as well as wholesalers to develop their supply chain. They also operate a farm in Dagenham and eight small market gardens in Hackney, known as the Patchwork Farm. In 2019/2020, 100% of food sold at the farmers market and 53% of food for the veg scheme was sourced directly from producers (including Growing Communities' own production), with the remaining share coming from wholesalers.

Growing Communities describes their operation as a principle-led approach to selecting the suppliers they work with. Central to this is the concept of Food Zones, which identify foods that can be sourced from different distances from the city and is illustrated in Figure 1.

This is implemented through a buying policy which requires Growing Communities to source certified organic produce and apply a hierarchy of purchasing, obtaining produce from their own growing sites first and then buying produce that can be grown in the UK directly from local and regional farmers. The next preference is purchasing produce that can be grown in the UK from wholesalers followed by buying from Europe produce that could be grown in the UK as a staple or main crop but which is in short supply. At certain times of the year, they buy produce from Europe that is not grown as a main crop in the UK or cannot be grown in the UK at all. This is sourced from as close to the UK as possible. The only produce they purchase from outside Europe is bananas, which are considered a staple and are extremely difficult to source within Europe. Air-freighted or 'hothouse' produce is not purchased.

In addition, the buying policy seeks to support farmers to grow produce most appropriate for their land. The typical agreement reached between Growing Communities and farmers in their supply chain includes a commitment to paying the price that farmers set for the produce (and not to haggle), to work in partnership, and to pay invoices within two weeks. Although both parties agree on the main products to be supplied and the timing, Growing Communities pledges to purchase all produce agreed on.

Growing Communities also administers grant-funded programmes of work on its Dagenham Farm which include providing opportunities for volunteers from low-income households and

people experiencing mental health issues to help on the farm; actively recruiting trainees who are single, local, unemployed parents; and hosting school and college visits.

### Evaluation scope

NEF conducted an evaluation of the impact of Growing Communities weekly veg scheme and farmers market over the period 2019/2020.

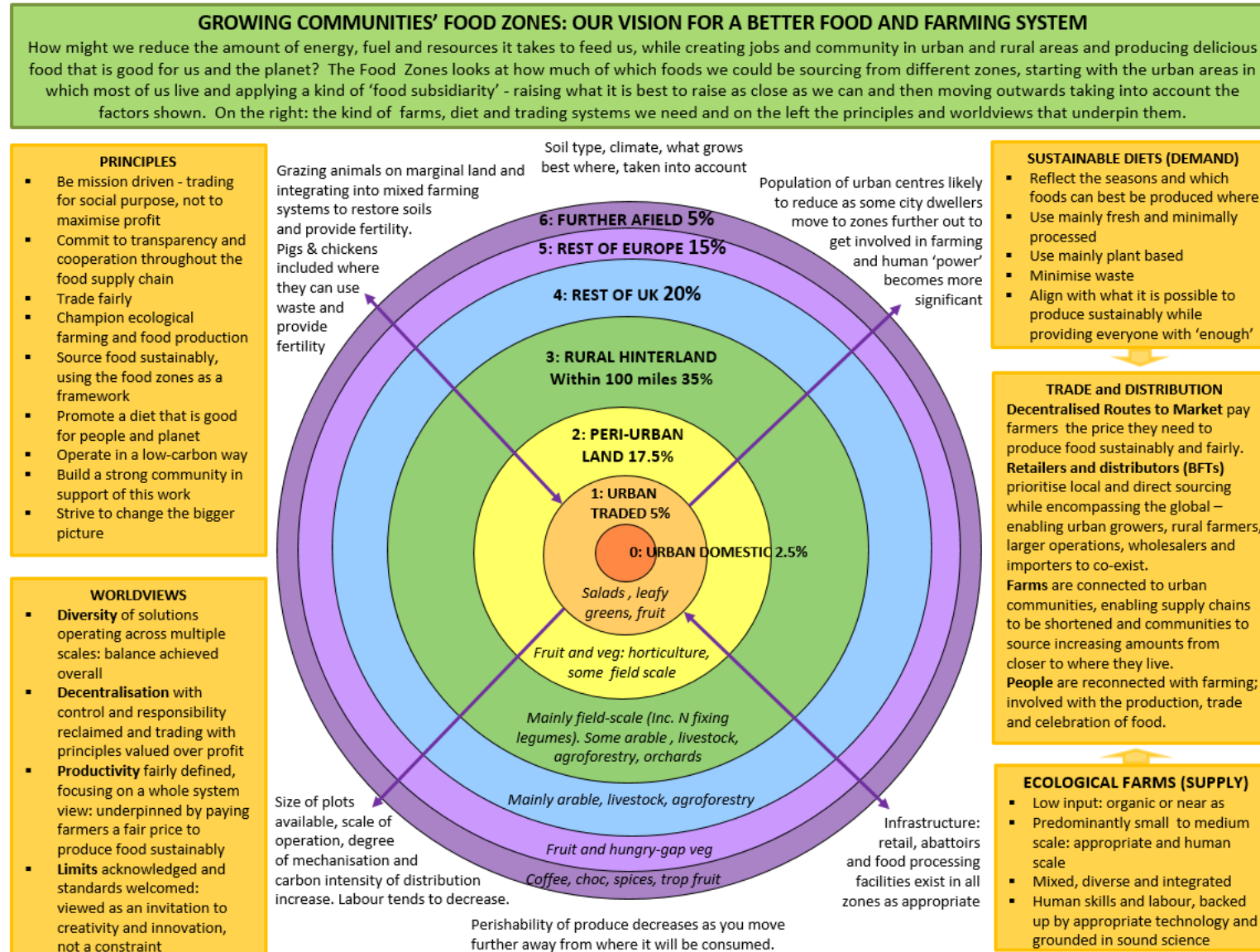
Certain Growing Communities activities have been excluded from the scope of the evaluation, namely:

- Grown in Dagenham (2016–2018) and Recipe for Life (May 2018–June 2019), two multi-year grant-funded projects, were excluded from the analysis due to data quality.
- The Better Food Traders network, a collection of 11 enterprises supported by Growing Communities to operate similar models. These enterprises are excluded as they are not directly operated by Growing Communities. It is our hope that these enterprises will use the evaluation toolkit, informed by this evaluation and made freely available by NEF, to evaluate their own operations.
- Better Food Shed, a hub in Barking established by Growing Communities supporting farmers to deliver their London orders. This is not evaluated as it is not part of the core operating model identified as the scope of this research.

This evaluation was conducted in partnership with Growing Communities and the Soil Association.



Figure 1. Proportion and type of produce typically purchased from each Food Zone; source: Growing Communities



## MAPPING AND EVIDENCING OUTCOMES

In October 2019, the evaluation team came together with partners from Growing Communities and the Soil Association to map the stakeholders and identify outcomes relevant to the evaluation through the development of a Theory of Change (ToC). Stakeholders are individuals (or entities) affected by or effect change. Outcomes are defined as the change that occurs as a result of an activity (eg improved emotional wellbeing of participants). The stakeholders included in the evaluation, and the nature of their engagement with Growing Communities are illustrated in Table 1.

The ToC diagrams are detailed in Appendix 1.

*Table 1. Material stakeholders included in the evaluation*

Stakeholder group	Description of engagement with Growing Communities
<b>Farmers</b>	Organic, local farmers directly supply food to the veg scheme and farmers market.
<b>Food processors</b>	Food processors sell products at the weekly farmers market.
<b>Employees</b>	Growing Communities' direct employees.
<b>'Food eaters' via the veg scheme</b>	Growing Communities supplies food to veg scheme customers and their households that they collect from distribution points
<b>'Food eaters' via the farmers market</b>	People attend the weekly farmers market in Stoke Newington, purchasing food directly from farmers and food processors.
<b>The environment</b>	The environment is affected by the farming practices undertaken in the Growing Communities supply chain, by the transportation and storage of produce, by waste generated in production and consumption, and by changes in behaviour among food eaters.

For each of the stakeholders detailed in Table 1, a range of outcomes has been identified. In the evaluation, it has been possible to include a sub-set of these outcomes in a social cost-benefit analysis through a process of monetisation. Other outcomes have been quantified but excluded from the social cost-benefit analysis or excluded from the evaluation due to data quality. The outcomes included in the evaluation for each stakeholder are described in the following section.

### Farmers

Over the evaluation period, 24 organic farmers directly supplied food to the veg scheme and farmers market generating £890,300 in sales in 2019/2020. Their outcomes are described in Table 2.

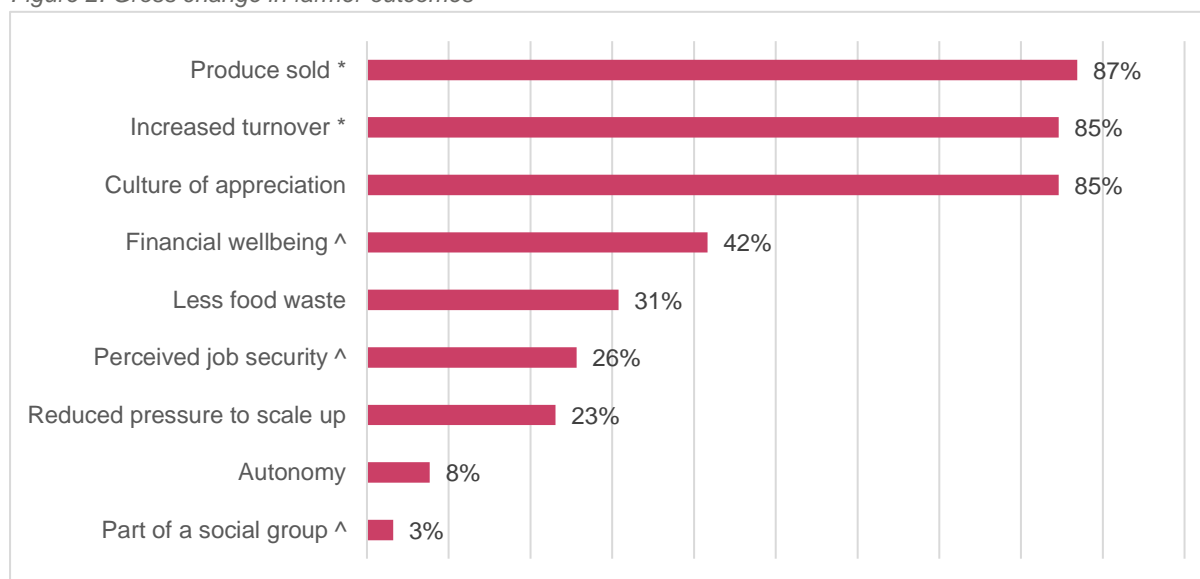
Table 2. Farmers' outcomes, by type

Outcome type	Description
<b>Monetised</b>	<ul style="list-style-type: none"> <li>Cost savings from less food waste</li> <li>Reduced pressure on farmers to scale up their operations</li> <li>Increased autonomy over what they can produce</li> <li>Wellbeing benefit of being part of a social group at the farmers market</li> <li>Wellbeing benefit of managing better financially</li> <li>Wellbeing benefit of perceived improvements in jobs security</li> <li>Feeling their work is more appreciated</li> </ul>
<b>Quantified</b>	<ul style="list-style-type: none"> <li>Increased produce sold</li> <li>Change in turnover</li> <li>More people employed</li> </ul> <p>This economic activity is captured in the food services delivered to consumers, so is not monetised in this part of our modelling</p>
<b>Unquantified</b>	N/A

Growing Communities buys food directly from farmers on terms that are advantageous to both parties. The typical agreement reached between Growing Communities and farmers includes a commitment to purchase as much produce as possible. This, together with other more sustainable practices, reduces food waste on the farm. Figure illustrates that a net balance of 31% of farmers surveyed agreed they have produced less food waste since working with Growing Communities.

Growing Communities also commits to paying the price that farmers set for the produce, to work in partnership, to pay invoices within two weeks, and to apply agreed purchase plans. This appears to be beneficial for farmers, with 42% reporting a meaningful improvement in their financial wellbeing; 26% reporting improved job security; 85% reporting increased turnover, with sales increasing by an average of 87%; and 85% reporting that their work is more appreciated since working with Growing Communities. Farmers also reported employing four more people, on average since working with Growing Communities. In the evaluation, to avoid double counting, turnover, higher pay, and increased employment are not included as benefits for farmers but included through the greater value of the product provided to food eaters, as such, they are treated as quantified rather than monetised outcomes (Figure 2).

Figure 2. Gross change in farmer outcomes



\* Quantified (non-monetised) outcomes, ^the change is a percentage point change (i.e. a difference between two percentages) rather than a percentage change or proportion, n= 12 to 14

## Food processors

Over the evaluation period, 13 food processors sold food or products at the farmers market, generating £158,810 in sales in 2019/2020. Their outcomes are described in Table 3.

Table 3. Food processors' outcomes, by type

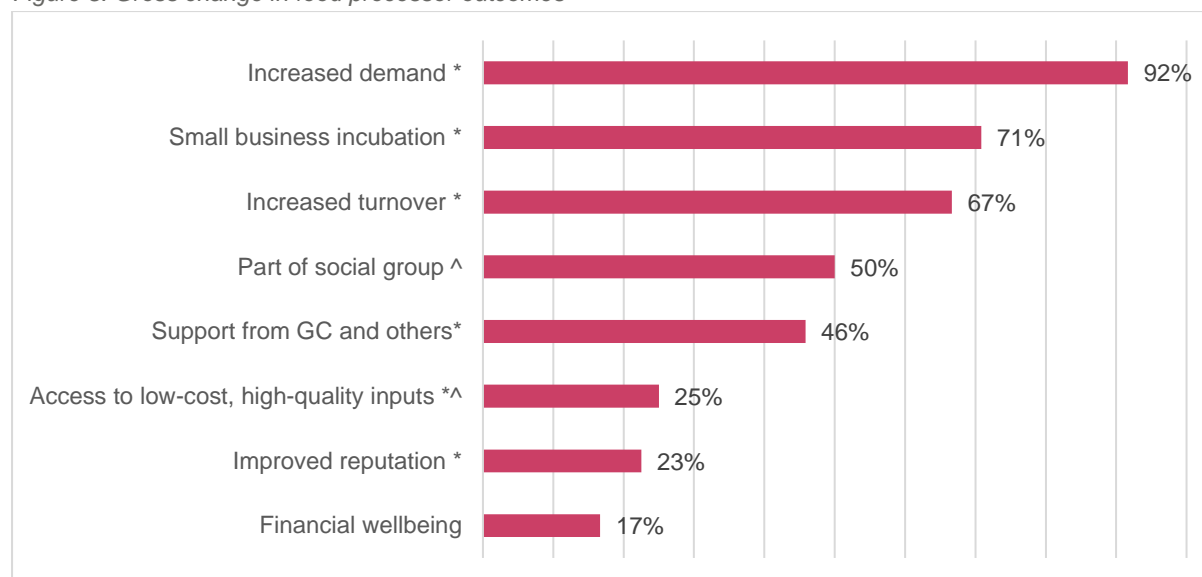
Outcome type	Description
<b>Monetised</b>	<ul style="list-style-type: none"> <li>Feeling supported by Growing Communities and other stalls</li> <li>Wellbeing benefit of managing better financially</li> <li>Wellbeing benefit of being part of a social group at the farmers market</li> </ul>
<b>Quantified</b>	<ul style="list-style-type: none"> <li>Access to low-cost, high-quality inputs</li> <li>Change in consumer demand</li> <li>Change in turnover</li> <li>Change in reputation</li> <li>Support received to incubate their business</li> <li>Change in the number of people they employ</li> </ul> <p>Economic activity (employment, turnover, demand) is captured in the food services delivered to consumers, so is not monetised in this part of our modelling.</p>
<b>Unquantified</b>	N/A

Growing Communities works with a range of food processors including bakers, chocolatiers, and hot-food vendors. The market's high environmental and social standards seem to have benefited food processors, with 23% reporting reputational gains and 25% reporting improved access to low-cost, high-quality inputs (Figure 3).

Almost all food processors report improved demand, with an average increase in turnover of 67%; 17% report improved financial wellbeing (which is less than the 42% of farmers) and an average increase in employment of five people.

On average, food processors strongly agreed (71%) that “support from Growing Communities was the reason... my business [became] self-sustaining”. Processors also report a 46 percentage point increase in support from market traders compared to previous arrangements. Similarly, the proportion of food processors reporting that they feel part of a social group increased by 50 percentage points since they began working with Growing Communities.

Figure 3. Gross change in food processor outcomes



\* Quantified (non-monetised) outcomes, ^the change is a percentage point change (i.e. a difference between two percentages) rather than a percentage change or proportion, n= 6,

## Employees

Growing Communities directly employed 36 people in the evaluation period, 14 of whom had dependent children. Their outcomes are described in Table 4.

Table 4. Growing Communities employees' outcomes, by type

Outcome type	Description
<b>Monetised</b>	<ul style="list-style-type: none"> <li>Reduction in childcare costs</li> <li>Reduction in travel costs</li> <li>Reduction in travel time</li> <li>Improved physical wellbeing</li> <li>Wellbeing benefit of managing better financially</li> </ul>
<b>Quantified</b>	N/A
<b>Unquantified</b>	N/A

Of the 36 people employed, 12% mainly work on growing sites, 40% mainly work in the office or from home, and 44% work in mainly veg packing and delivery, with the remaining 4% of staff working at the farmers market. No staff works a 5-day working week (35 hours)

with Growing Communities. On average employees work 2.6 days, (24% work for 2 days), with variation of 1 to 4.5 days per week; 36% of employees have other jobs, including roles in art, education, care and social enterprises.

Growing Communities pays all its employees the real London Living Wage as a minimum and caps pay at a maximum of twice this rate. They offer free staff lunches on the days when most staff are in the office. Since working with Growing Communities, 12% of employees reported an improvement in their financial wellbeing, while employees report a marginal 1% increase in physical health. Growing Communities offers flexible working arrangements. The 14 employees with children reported that they are able to care for their children for an average of 7 extra hours per week. Employees also reported reduced commuting time and cost, reflecting Growing Communities' localised neighbourhood-oriented approach to food distribution (Table 5).

Table 5. Gross change in employee outcomes

Outcome	Indicator description	Change in indicator
<b>Improved financial wellbeing</b>	Change in proportion reporting that they are managing well financially (% reporting valuable outcomes)	12%
<b>Reduction in childcare costs</b>	Average annual change in number of additional caring hours, among those with kids	375 hours
<b>Reduction in travel costs</b>	Average change in annual travel costs	£141
<b>Reduction in travel time</b>	Average change in travel time per year, hours	230 hours
<b>Improved physical health</b>	Average self-assessed change in health	1%

n= 5 to 25

## Food eaters – veg scheme customers and households

Growing Communities supplies food that feeds an estimated 3,027 people of which 1,421 are veg scheme customers. Customers on average spent £640 via the scheme in 2019/2020 (£910,350 in total). Their outcomes are described in Table 6.

Table 6. Veg scheme food eaters' outcomes, by type

Outcome type	Description
<b>Monetised</b>	<ul style="list-style-type: none"> <li>Food received</li> <li>Change in average number of food portions wasted</li> <li>Change in perceived general health</li> <li>Increase in adventurous cooking</li> <li>Increase in knowledge of food</li> <li>Reduced time spent in the supermarket</li> <li>Increase in social interactions</li> <li>Change in sense of community</li> </ul>
<b>Quantified</b>	<ul style="list-style-type: none"> <li>Change in cooking habits</li> <li>Change in use of re-usable packaging</li> </ul>
<b>Unquantified</b>	<ul style="list-style-type: none"> <li>Specific health benefits of eating organic food</li> <li>Specific health benefits of dietary changes</li> <li>Other wellbeing benefits</li> </ul>

▪ Benefits to the state of improved health

Consumers reported increased knowledge of local and seasonal food since they began purchasing food from Growing Communities with 64% agreeing that their knowledge has increased, and 61% reporting being more aware of the source of their food, as shown in Figure 4.

There is evidence that consumers developed more sustainable consumption habits with 84% of customers reporting that they eat more seasonal food, 41% of customers reporting eating more fresh and unprocessed food, and 23% reporting more adventurous cooking since joining the veg scheme. The average customer increased the number of meals they cooked from raw ingredients by around 1 meal per week since joining. Meanwhile, food waste declined, with the average food eater wasting 33 fewer portions annually than before joining; 13% of customers increasing the amount of re-usable packaging they take with them on their weekly shop.

Customers also reported increases in their social wellbeing with 60% agreeing that they feel involved and part of the Growing Communities network, while there was a 14 percentage point increase in customers reporting that they felt a strong sense of community.

Growing Communities operates a series of collection points across Hackney where consumers chat to other members or simply pick up their bag of food. As a result, veg scheme consumers reported saving 50 hours each year in time that would have otherwise been spent supermarket shopping.

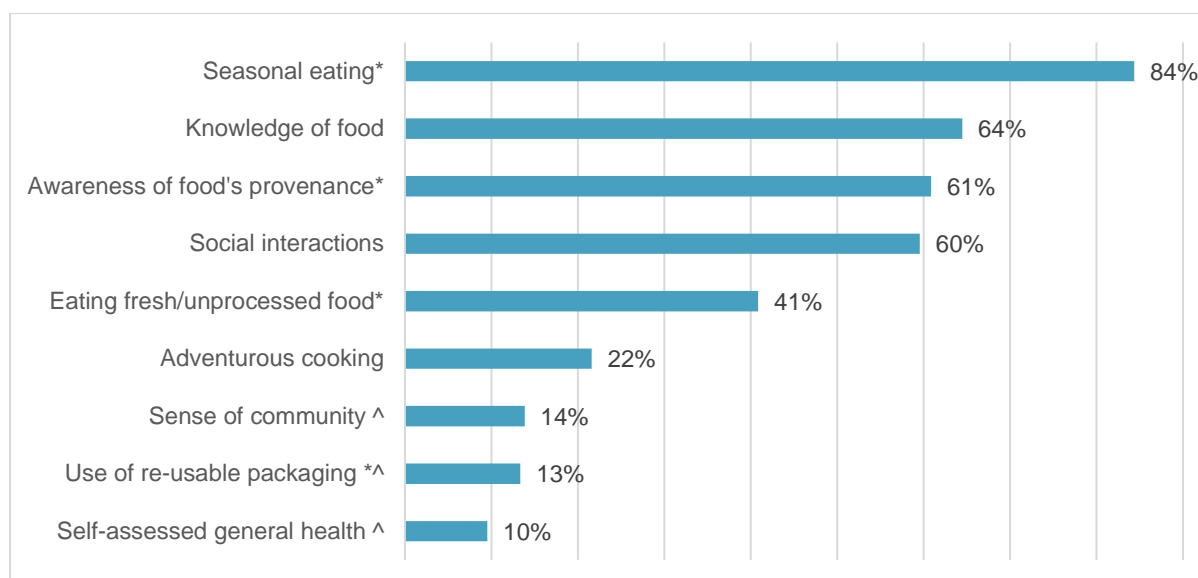
Food eaters reported that their general health improved by 26% since joining, equivalent to an annual increase of 10%. This may have been driven by shifts towards more vegetable-based diets. On average, food eaters cut down the amount of meat they ate each year by 61 portions, fish by 31 portions, and dairy by 61 portions, while increasing the number of portions of vegetables consumed annually by 115 portions.

It is outside the scope of this evaluation to assess:

- Whether Growing Communities customers gain any benefit from specifically eating more organic food, though this may be included in the improvement noted in their self-assessed general health scores.
- The extent to which improvements in health result in reduced healthcare costs for the state.

*Figure 4. Gross change in veg scheme food eater outcomes*





\* Quantified (non-monetised) outcomes, ^the change is a percentage point change (i.e. a difference between two percentages) rather than a percentage change or proportion, n= 122 to 117

## Food eaters – farmers market customers and households

Growing Communities supplies food via the farmers market that feeds an estimated 1,961 people of which 934 attend the market. An estimated 14% of these people are also veg scheme members. For modelling purposes, we assume veg scheme members are subsumed in the farmers market customer stakeholder group, leaving 1,687 farmers market food eaters of which 803 are customers. Growing Communities customers spent an average of £820 via the market in 2019/2020, totalling £765,404 across all customers. Their outcomes are shown in the table below.

Table 7. Farmers market food eaters' outcomes, by type

Outcome type	Description
<b>Monetised</b>	<ul style="list-style-type: none"> <li>Food received</li> <li>Change in average number of food portions wasted</li> <li>Change in perceived general health</li> <li>Increase in adventurous cooking</li> <li>Increase in knowledge of food</li> <li>Reduced time spent in the supermarket</li> <li>Increase in social interactions</li> <li>Change in sense of community.</li> </ul>
<b>Quantified</b>	<ul style="list-style-type: none"> <li>Change in cooking habits</li> <li>Change in use of re-usable packaging</li> </ul>
<b>Unquantified</b>	<ul style="list-style-type: none"> <li>Specific health benefits of eating organic food</li> <li>Specific health benefits of changes in the number of portions of meat, dairy, fish, vegetables, and fruit consumed</li> <li>Other wellbeing benefits</li> <li>Benefits to the state of improved health</li> </ul>



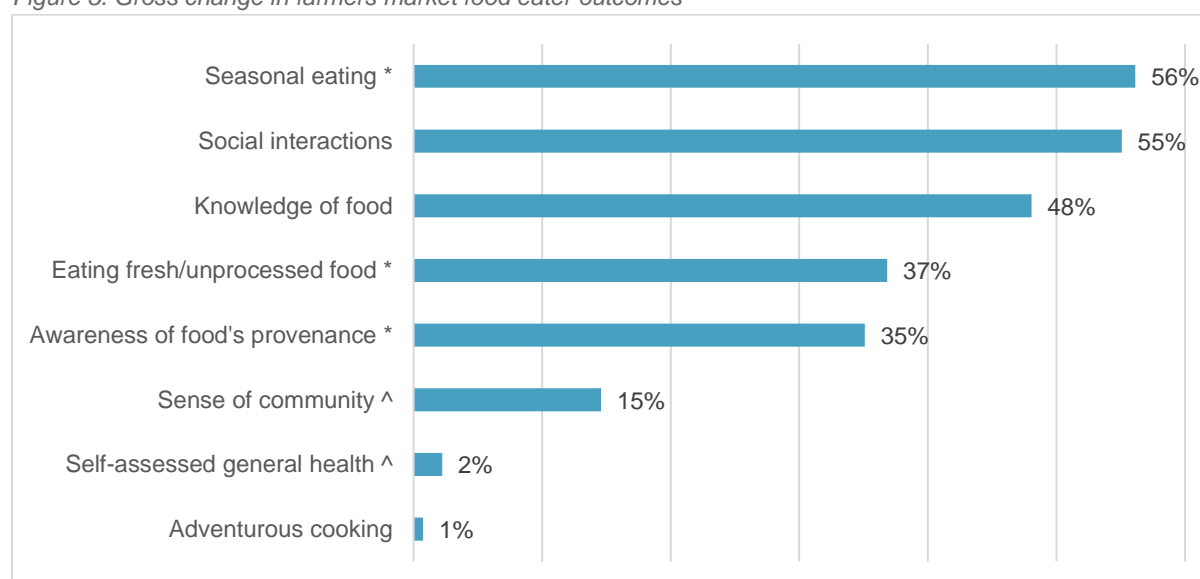
Consumers reported increased knowledge of local and seasonal food since they began purchasing food from Growing Communities with 48% agreeing that their knowledge has increased and 35% reporting being more aware of the source of their food.

Though this change is less pronounced than for veg scheme customers, there is evidence of an increase in sustainable consumption habits, with 56% of customers reporting that they eat more seasonally since joining Growing Communities, 37% eating more fresh and unprocessed food, and 21% cooking more adventurously. The average customer increased the number of meals they cook from raw ingredients by around one meal every two weeks. Food waste has reduced, with the average food eater wasting 42 fewer portions annually. Customers did not report a meaningful change in the amount of re-usable packaging they take with them on their weekly shop.

Customer reported an increase in social wellbeing since attending the farmers market with 55% agreeing that they feel involved and part of the Growing Communities network, while there was a 15 percentage point increase in customers reporting that they felt a strong sense of community.

Food eaters reported that their general health improved by a marginal 2%, markedly lower than for veg scheme customers (Figure 5). Food eaters also reported a less significant change in diet. On average, food eaters cut down the amount of meat they ate each year by 10 portions, while fish consumption increased by 0.5 portions and dairy by 12 portions. The number of portions of vegetables consumed annually increased by 88 portions on average.

Figure 5. Gross change in farmers market food eater outcomes



\* Quantified (non-monetised) outcomes, ^the change is a percentage point change (i.e. a difference between two percentages) rather than a percentage change or proportion, n= 232 to 64

## The environment

The environment is affected by the farming practices undertaken in Growing Communities supply chain, by the transportation and storage of produce, by waste generated in production and consumption, and by changes in behaviour among food eaters. Environmental outcomes are shown in the table below.

Table 8. Environmental outcomes, by type

Outcome type	Description
<b>Monetised</b>	<p>Mitigation of climate change:</p> <ul style="list-style-type: none"> <li>Reduced GHG emissions due to the exclusion of use of synthetic nitrogen fertiliser</li> <li>Reduced GHG emissions due to reduced use of other non-renewable resources – arable farms</li> <li>Increase in organic matter (carbon) in soil over time</li> <li>Change in GHG emissions due to changed livestock units on farms</li> <li>Change in GHG emissions due to changes in food eaters' diets</li> <li>Change in GHG emissions due to reduced online food orders due to delivery</li> </ul> <p>Other:</p> <ul style="list-style-type: none"> <li>Improved biodiversity and landscape beauty due to organic farming practices</li> <li>Improved water quality due to the exclusion of use of synthetic nitrogen fertiliser</li> </ul>
<b>Quantified</b>	N/A
<b>Unquantified</b>	<ul style="list-style-type: none"> <li>Change in GHG from reduction in use of other non-renewable resources – livestock farms</li> <li>Reduced eutrophication of water courses from reduction in use of other non-renewable resources</li> <li>Reduced GHG emissions from reduced transportation from farms to distribution hub</li> <li>Change in the impact on human health from the exclusion of the use of pesticides and antibiotics</li> <li>Change in the impact on human health from micro-organisms and bovine spongiform encephalopathy (BSE), i.e. mad cow disease</li> <li>Change in reusable containers impacting reduced plastic and GHG emissions and biodiversity</li> <li>Improved air quality from reduced transportation</li> </ul>

Growing Communities supports farmers to use organic, agro-ecological farming practices to reduce their environmental impact. Organic farming excludes the use of synthetic nitrogen fertiliser relying instead on biological nitrogen fixation by legumes.<sup>1</sup> This provides public benefits in particular in terms of reduced GHG emissions (related to both manufacture and use of nitrogen fertiliser), reduced leaching and pollution of water courses, and reduced impacts on biodiversity, particularly insects. For GHG emissions, each kilogram of nitrogen use reduced saves approximately 10kg in GHG emissions (CO<sub>2</sub>-equivalents).<sup>2</sup>

In terms of impacts on water quality, substantial amounts of nitrogen applied to land in conventional farming are not utilised, resulting in nitrogen losses through leaching and evaporation. Nitrogen surpluses have been found to be 40%–50% lower on organic farms than non-organic, meaning less nitrogen leaches into the water table.

Organic farming excludes the use of all herbicides and almost all pesticides and fungicides. It relies instead on crop diversification/rotations and biological controls, supported by natural predators from uncropped land, as well as mechanical weed control in limited circumstances, particularly in horticulture. As a result, organic farming has significant

positive impacts on biodiversity ranging from soil micro-organisms and earthworms through to non-crop plants (including many rare, red-list species), insects and pollinators, wild mammals and birds.<sup>3</sup>

One study<sup>4</sup> found that, on average:

- The number of arable plant species was 95% higher.
- The number of field margin plant species was 21% higher.
- The number of farmland bird species was 35% and their abundance 24% higher.
- The number of insect pollinator species was 23% and their abundance 26% higher.
- The abundance of earthworm species was 78% and their biomass 94% higher.

This evaluation monetises the value of estimated biodiversity improvements, utilising conservative estimates recommended by Department for Environment, Food and Rural Affairs (Defra).

Organic farming practices emphasise the recycling of organic matter from plants and livestock, as well as the inclusion of fertility-building phases, with or without livestock, in organic crop rotations. These materials not only recycle nutrients, but they also supply organic matter to the soil. Research<sup>5</sup> demonstrates that organic farms contribute significantly to higher soil organic matter levels, better soil structure, more biological diversity, more earthworms, and less soil erosion as a result. It is noted that soil organic matter levels do not increase indefinitely following a system change but stabilise at a new equilibrium level. It is estimated that organic practices will result in a one percentage point increase in soil organic carbon over 10 years on organic rotational land.<sup>6</sup>

Ruminant livestock are considered important in organic farming because of their potential to be utilised in the fertility building phase of organic rotations. On cropping farms, livestock may be used when fertility is being rebuilt on rotational land, while stocking rates on grassland are typically 20%–25% lower on organic farms.<sup>i</sup> The increased GHG emissions from higher effective stocking rates on cropping farms, as well as the reduced GHG emissions from lower stocking rates are both accounted for in our analysis.

This evaluation excludes the monetisation of the impact of reducing other non-renewable resources on livestock farms; reduced eutrophication of water courses from reduced use of other non-renewable resources; and the impact on human health from the exclusion of pesticides, antibiotics, and from changes in microorganisms.

The evaluation found that Growing Communities' customers and their households reduce the amount of meat, fish, and dairy and increase the number of vegetables they eat. These food sources have different carbon footprints. Producing 1 kg of beef emits 60 kg of GHGs (CO<sub>2</sub>-equivalents), while peas emits just 1 kg per kg produced. Overall, animal-based foods tend to have a higher footprint than plant-based. For example, lamb and cheese both emit more than 20 kg CO<sub>2</sub>-equivalents per kilogram on average.<sup>7</sup> Our modelling accounts for the impact of dietary changes on GHG emissions.

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<sup>i</sup> Stocking rates also reflect the reliance on bought-in feeds, and reduced stocking rates on organic farms are a reflection of greater reliance on farm-sourced feed.

Food eaters also report changes in the amount of food they waste. All else being equal, lower food waste reduces production and so reduces GHG emissions. These consumption changes are accounted for within our modelling.

Growing Communities' customers also report reducing the number of online food orders they make, with online orders falling by approximately six orders annually for veg scheme customers and three orders for farmers market customers. We account for the estimated impact this has on GHG emissions.

Growing Communities' veg scheme also seeks to reduce the amount of plastic packaging used. As a result, veg scheme customers report a 24 percentage point reduction in the amount of plastic packaging that their weekly food shop comes in. We account for the GHG embodied within this but are unable to assess its potential impact on biodiversity or landscape values.

Growing Communities' buying policy utilises the concept of Food Zones, which looks at how much of which foods can be sourced from different distances from the city. Growing Communities only buys certified organic produce and does not purchase any air-freighted or 'hothouse' produce. A hierarchy of purchasing operates where referencing locally produced options where available. This buying policy ought to reduce the distance travelled by food within the supply chain, and the carbon intensity of that transport, potentially reducing the amount of energy required in food transportation and storage. Assessing this impact is outside the scope of this evaluation as existing applicable research is limited, so a meaningful assessment would require a full carbon audit of Growing Communities' supply chain as well as that of a more conventional routes to market.

## FINDINGS

### Costs

Growing Communities' core operations cost £1,688,600 in the 2019/2020 financial year (Table 9); 54% of this was borne by veg scheme customers and 40% by farmers market customers. An opportunity cost of £106,000 was incurred as a result of the production choices of the farmers who directly supply it. By producing food organically, the amount of food produced was an estimated 25% lower when compared to conventional methods. Though this cost is not actually paid, it is implicitly borne so must be included in our analysis. The reduced yield was estimated using an average reduction in yield informed by a related research.<sup>8</sup>

Table 9. Annual cost of Growing Communities' operations, 2019/2020

	Cost	Proportion of total cost
<b>Annual cost to VS customers</b>	£910,400	54%
<b>Annual cost to FM customers</b>	£672,200	40%
<b>Yield forgone attributable to GC</b>	£106,000	6%
	£1,688,600	

The average veg scheme customer spent £641 per annum, while the average farmers market customer spent £837 per annum.

### Assessing impact

In the previous chapter we described the gross change experienced by Growing Communities' stakeholders. To understand this impact, we need to understand the net change Growing Communities is responsible for. This requires a consideration of the following:

- **Deadweight.** Also known as the counterfactual, deadweight represents the change in the outcome that would have occurred anyway for the stakeholders, in the absence of the involvement or existence of Growing Communities.
- **Attribution.** Not all of the change experienced may have been attributable to Growing Communities. To remove the proportion of change that was caused by other factors occurring at the same time, we applied a percentage of attribution.
- **Displacement.** The improvement in certain outcomes may have resulted in displacement (ie resulting in an equivalent worsening of the same outcomes for other people not involved in Growing Communities' activities). The full details of the deadweight, attribution, and displacement assumptions and financial proxies used in the modelling are detailed in Appendix 2.

### Outcomes

Growing Communities generated an estimated £6,294,000 in social, economic, and environmental value in the 2019/2020 FY. The greatest proportion of this, circa 60%, went to veg scheme customers and their households, who received £3,836,000. The next largest share of the value generated was for farmers market customers and their households who

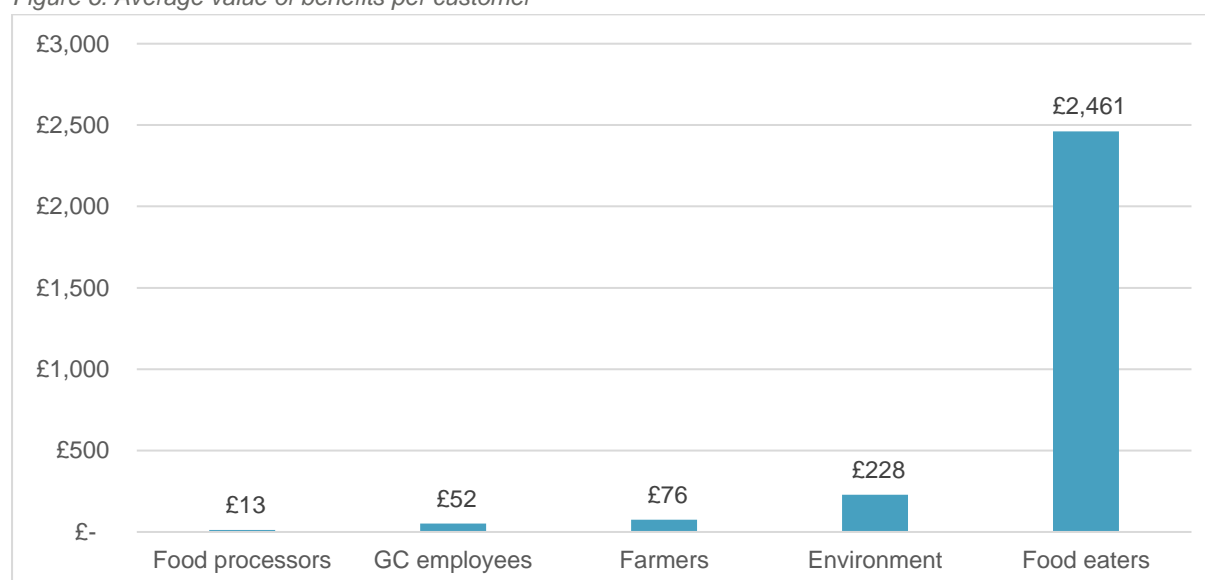
received £1,638,000. The environment was the next largest recipient, with Growing Communities operations creating over £508,000 in value annually. Farmers, employees, and food processors received £312,000 (Table 10).

Table 10. The economic, social, and environmental impact of Growing Communities, by stakeholder 2019/2020

	Value	Proportion of total value
<b>Food processors</b>	£28,000	0.4%
<b>GC employees</b>	£115,000	1.8%
<b>Farmers</b>	£169,000	2.7%
<b>The environment</b>	£508,000	8.1%
<b>Farmers market customers + households</b>	£1,638,000	26.0%
<b>Veg scheme customers + households</b>	£3,836,000	60.9%
	<b>£6,294,000</b>	

The average customer (including veg scheme and farmers market) received £2,461 in benefits for their households, whilst generating £228 of value for the environment, £76 for farmers, £52 for Growing Communities employees, and £13 for food processors (Figure ).

Figure 6. Average value of benefits per customer



A breakdown of the value created for veg scheme customers and their households (Table 11) illustrates that the estimated value of improved health per customer (£1,344) is greater than the value of food (£641),

The social element of the veg scheme is estimated to create £310 in social interactions and £60 in sense of community for veg scheme members. Customers also saved £310 worth of time by not shopping in supermarkets.

Table 11. Annual value created for veg scheme customers, by outcome (2020 prices)

Outcome	Total value	Value per customer	Value per food-eater
Change in average number of portions wasted – VS	£38,539	£27	£13
Increase in adventurous cooking – VS	£39,116	£28	n/a
Increase in knowledge of food – VS	£44,179	£31	£15
Change in sense of community – VS	£85,576	£60	n/a
Reduced time spent in the supermarket – VS	£368,146	£259	n/a
Increase in social interactions –VS	£440,923	£310	n/a
Food received – VS	£910,353	£641	£301
Change in perceived general health – VS	£1,909,128	£1,344	£631

For farmers market customers the estimated value of health improvements generated were lower but still significant at £836 (Table 12). This finding is consistent with the less veg-based nature of the market, resulting in the less pronounced dietary changes reported for farmers market customers which might lead to less significant health benefits. This is mirrored by the much smaller benefit seen from adventurous cooking for farmers market customers.

Interestingly, though the farmers market sees a larger number of people gather than at veg scheme collection points, the social benefit of the farmers market is slightly smaller, creating an estimated £245 in value in social interactions and £74 in sense of community per customer. Additional value was created in terms of improved knowledge of food (£20) and reduced food waste (£27).

Table 12. Annual value created for farmers market customers, by outcome (2020 prices)

Outcome	Total value	Value per customer	Value per food-eater
Increase in adventurous cooking – FM	£661	£1	£0
Increase in knowledge of food – FM	£15,964	£20	£9
Change in average number of portions wasted – FM	£21,624	£27	£13
Change in sense of community – FM	£59,506	£74	£35
Increase in social interactions – FM	£197,088	£245	£117
Change in perceived general health – FM	£671,162	£836	£398
Food received -FM	£672,249	£837	£399



In terms of environmental benefits, the greatest value created was in improved levels of carbon sequestered within the soil, which is estimated to be worth £413,000 per annum. It is important to note that there is considerable uncertainty around this estimate, as the benefits stabilise after a period of time after organic farming approaches have been adopted. We assume this period to be 10 years in our modelling. We noted that Growing Communities has enabled small-scale farmers to expand their organic operations, applying these farming approaches to additional land. Additionally, we are aware that the approach has to be adopted for a considerable period of time for the benefit to accrue. We feel confident that Growing Communities provides the financial stability for this to take place, as evidenced by farmers' outcomes.

Categorising environmental benefits into either supply-chain benefits or consumer-behaviour and packaging benefits, we find that the vast majority of the value created derives from the Growing Communities supply chain: £478,500 of environmental benefit is created through more environmentally friendly farming practice and shifting patterns of consumer consumption behaviour results in additional value worth £29,700. It is interesting to note that the environmental benefits of organic farming in the supply chain (£478,500) exceed the yield forgone (£106,000), suggesting that organic farming is preferable to conventional methods, even before considering wider factors such as health and wellbeing.

Table 13. Annual value created for the environment, by outcome (2020 prices)

Outcome	Total value
Higher imputed levels of Livestock Units (LU) on arable and horticultural farms	-£15,727
Change in average number of dairy portions eaten a week (net) – FM	-£1,290
Change in average number of fish portions eaten a week (net) – FM	-£83
Improved biodiversity – arable land	£217
Change in the number of online food orders	£363
Less packaging waste on food – VS	£603
Change in average number of portions wasted – FM	£1,243
Improved biodiversity – improved grassland	£1,390
Change in average number of meat portions eaten a week (net) – FM	£1,497
Change in average number of portions wasted – VS	£2,215
Reduced GHG (no nitrogen fertiliser, grassland)	£3,139
Change in average number of fish portions eaten a week (net) – VS	£4,213
Lower levels of Livestock Units (LU) on livestock farms	£6,609
Change in average number of dairy portions eaten a week (net) – VS	£7,922
Change in average number of meat portions eaten a week (net) – VS	£13,027
Reduced GHG (lower use of other non-renewable resources) – arable/horticulture	£13,106
Reduced GHG (no nitrogen fertiliser, crops)	£24,814
Improved water quality (no nitrogen fertiliser)	£31,309
Increase in organic matter (carbon) over time	£413,680

The greatest benefit created for farmers is the wellbeing benefit of feeling that their work was more appreciated. This was closely followed by the impact of managing better financially and feeling more secure in their job. The value of reduced pressure to scale up their operations



was also significant at £625 per farmer, as was the increased autonomy over what they can produce. The social benefit of the farmers market itself was the least significant, only contributing an estimate £29 in value per farmer annually.

Table 14. Annual value created for farmers, by outcome (2020 prices)

Outcome	Total value	Value per farmer
The wellbeing benefit of being part of a social group at the farmers market	£699	£29
Increased autonomy over what they can produce	£3,036	£126
Reduced pressure on farmers to scale up their operations	£15,000	£625
Cost savings from less food waste	£22,615	£942
The wellbeing benefit of perceived improvements in job security	£34,917	£1,455
The wellbeing benefit of managing better financially	£43,683	£1,820
Feeling their work is more appreciated	£48,679	£2,028

The most significant value created by Growing Communities for its employees is to enable them to manage better financially (Table 15). This benefit is worth an estimate £1,077 per employee. The residential-centric nature of employment, which reduces commuting time, was the next most valuable contribution to its employees, worth an average of £994 in time and £45 in costs per annum. Reduced childcare costs were also significant at an average of £868 per employee, while physical health benefits were also significant (£207).

Table 15. Annual value created for employees, by outcome (2020 prices)

Outcome	Total value	Value per employee
Reduction in travel costs	£1,620	£45
Improved physical wellbeing	£7,446	£207
Reduction in childcare costs	£31,255	£868
Reduction in travel time	£35,777	£994
The wellbeing benefit of managing better financially	£38,786	£1,077

Food processors were the stakeholder for who the least value was created in aggregate relative to other stakeholders (Table 16). The support received from Growing Communities and other stall holders at the market was estimated to worth over £1,000 per year to food processors. The improvement in financial wellbeing was markedly less than for farmers at £436 per capita, compared to £1,820. The value of being part of a social group (£640) was greater than that created for farmers (£69) or customers.

Table 16. Annual value created for food processors, by outcome (2020 prices)

Outcome	Total value	Value per food processor
The wellbeing benefit of managing better financially	£5,674	£436
The wellbeing benefit of being part of a social group at the farmers market	£8,322	£640
Support from Growing Communities and other stall holders	£13,778	£1,060

## Cost-benefit ratio

Our analysis estimates that Growing Communities generated £6,293,700 in economic, commercial, social, and environmental value in 2019/2020, from £1,688,600 of costs (including the opportunity costs) giving it an overall cost-benefit ratio of £3.73 of value generated for each £1 of costs (Figure 7). This ratio is the primary measure to be used when assessing the total economic efficiency of Growing Communities' operations.

This figure includes the economic, non-financial costs of reduced yields from organic farming. If these figures are excluded, then the cost benefit ratio rises to £3.98 of value generated for each £1 of costs.

Interestingly, the cost-benefit ratio remains high even when the focus is just on food eaters. For each pound spent by consumers they, and their households, receive an additional £2.46 in benefit.

Figure 7. Estimated value and costs associated with Growing Communities and Cost-Benefit ratios

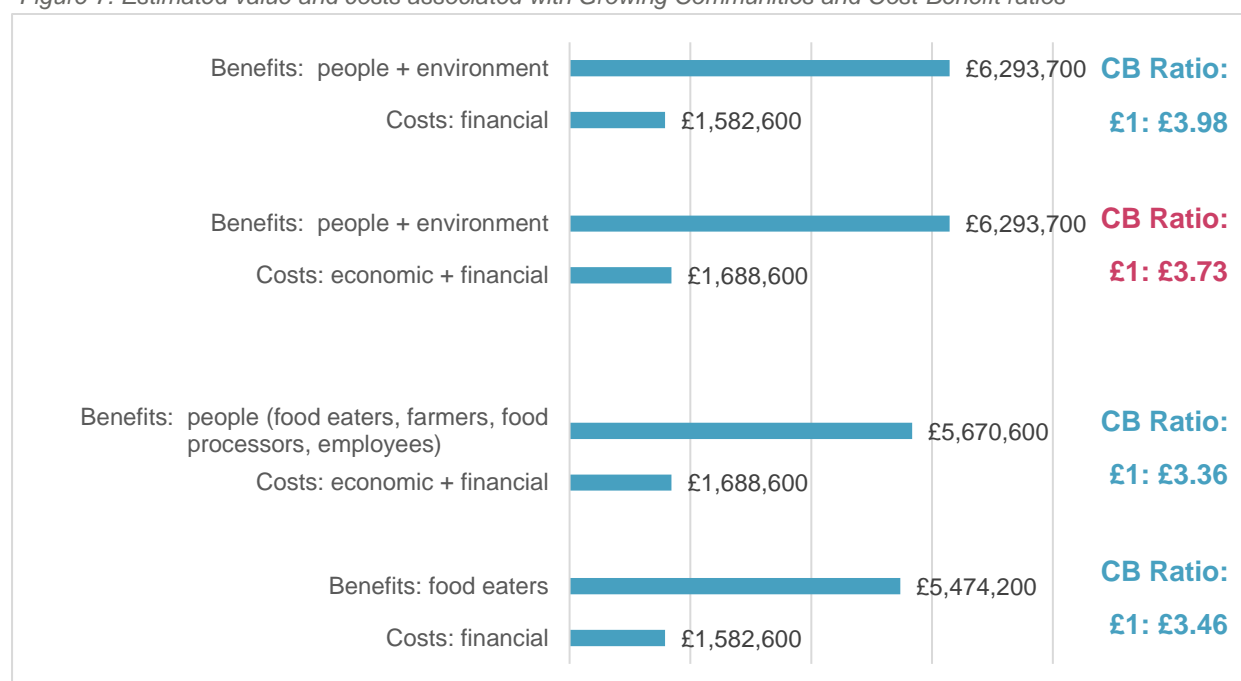


Figure 8 illustrates that for each £1 spent by the customer, £3.46 of value is generated for the customer and their household, 32p for the environment, 11p for farmers, 7p for Growing Communities employees, and 2p for food processors.

Figure 8. Average value of outcomes per £ spent by customers



## Limitations

The findings presented in this report are subject to several limitations. Where considerable uncertainty exists, we have made conservative assumptions to ensure that the findings remain robust.

- **This analysis used small sample sizes of stakeholders.** Of the 24 farmers that supply Growing Communities, 14 took part in the survey. Similarly, 6 of the 13 food processors were surveyed. These small sample sizes limit the confidence we can have in the value of their outcomes. They are unlikely to significantly alter the findings however, as these outcomes only represent 3.1% of the total value created. We surveyed 25 of the 36 staff, 228 of 1,421 veg scheme customers, and 232 of an estimated 934 farmers market customers.
- **The number of farmers market customers was assessed during the COVID-19 pandemic by counting all attendees at the market.** During the pandemic numbers were controlled at the market. This meant that many people attended the market on their own rather than as a group. This may mean that an underestimate of customers has been used, as customers opted for less busy shopping options due to health concerns.
- Self-estimated financial values were used for certain wellbeing or financial benefits, rather than utilising observed behaviours or more robust wellbeing econometric analysis. For one food processor outcome 'support from Growing Communities and other stall holders', and several farmers outcomes – 'cost savings from less food waste', 'reduced pressure on farmers to scale up their operations', and 'increased autonomy over what they can produce' – we asked stakeholders to self-estimate their financial value. These values should be used with caution, but their value is equivalent to 1.2% of the total outcomes, meaning the overall findings will not significantly change.
- **Considerable uncertainty about environmental benefits of the Growing Communities supply chain.** As detailed in the report, we have not been able to quantify or monetise many of the environmental benefits of organic production. Additionally, the largest environmental outcome included stops returning additional value after a period of 10 or so years once the level of soil carbon stabilises at a new normal. It is important that this is considered when interpreting these results. It is also important to remember that cost-benefit analysis is a marginal analysis that is not well-suited to valuing fundamental, life-support systems such as those provided by the environment, particularly when these systems are at risk and more difficult to value.<sup>ii</sup>
- Exclusion of the environmental benefits associated with shortened supply chains and reduced transportation measured in terms of changes in GHG emitted. These benefits were excluded due to the heterogeneity of counterfactual scenarios. To address this in the analysis would require primary research to assess the carbon intensity of the Growing Communities supply chain. It is interesting to note that research suggests that the transport only accounts for a small amount of the carbon footprint of animal-intensive products, so this may be a less significant omission than might be initially thought.<sup>iii</sup>

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<sup>ii</sup> For a fuller discussion of the problems of monetising natural outcomes, see <https://neweconomics.org/2020/01/can-a-natural-capital-approach-restore-nature-in-the-uk>

<sup>iii</sup> This article makes the case that food choice (eg meat vs veg) is far more environmentally significant than local vs not: <https://ourworldindata.org/food-choice-vs-eating-local>

## CONCLUSIONS

Growing Communities creates a large amount of commercial, economic, and environmental value for each £1 spent, with an estimated cost-benefit ratio of £1: £3.76. This makes it a highly-efficient method of food distribution once wider costs and benefits are accounted.

The vast majority of benefit accrues to consumers and their households, receiving an estimated 87% of total benefits. For every pound spent they receive £3.46 of economic and social value. The environment is the next biggest beneficiary, receiving 32p. This is interesting in that it suggests that Growing Communities is primarily a social intervention and as well as an environmental one.

Our findings suggest that much of the power of short, local supply chains is that they enable environmentally beneficial production and distribution to be economically sustainable. By utilising short supply chains and by working in partnership with farmers, Growing Communities is able to redistribute economic power to farmers, providing them with financial security to generate considerable social value for themselves and even greater benefits for the environment. This is all achieved while offering consumers a product that we estimate returns them an additional £2.46 for each £1 spent.

Many of the environmental outcomes are much more difficult to quantify and monetise and so have not been properly captured here. Where possible, we have conservatively monetised these values, but the findings could be improved by undertaking greater primary research in this area.

The sample sizes for growing customers are large, giving us confidence that the demonstrated approach creates the value documented in this report. More uncertainty surrounds the 3.1% of total value that relates to the food processors and farmers surveyed. Future research could build on this by sampling suppliers that directly supply Growing Communities and similar schemes.

## APPENDIX 1: THEORY OF CHANGE SESSION

NEF facilitated a Theory of Change (ToC) session in September 2019 to map the stakeholders and outcomes associated with Growing Communities' activities. The session was attended by the following people:

- NEF: Griffin Carpenter, Elizabeth Cox, Christian Jaccarini, Duncan McCann (previously a food processor at the Growing Communities farmers market).
- Growing Communities: Julie Brown, Natasha Soares
- Soil Association: Adrian Steele

The collaborative identified the following stakeholders as materially affected by Growing Communities' operations:

- Growing Communities' food eaters (including their households)
- Agro-ecological farmers
- Volunteers, trainees, patchwork farmers, local community groups members
- Food processors
- The environment
- Employees
- Primary and secondary school students

The collaborative produced seven ToCs, which map Growing Communities' operations to outcomes. These are shown in Figures A1–A7 and illustrate the complex nature of the operations under review. The figures inform data collection and form the basis for assessing Growing Communities' impact. Some outcomes have been excluded or updated as the evaluation team developed a greater understanding of the intervention.

Figure A1. Theory of change, agro-ecological farmers

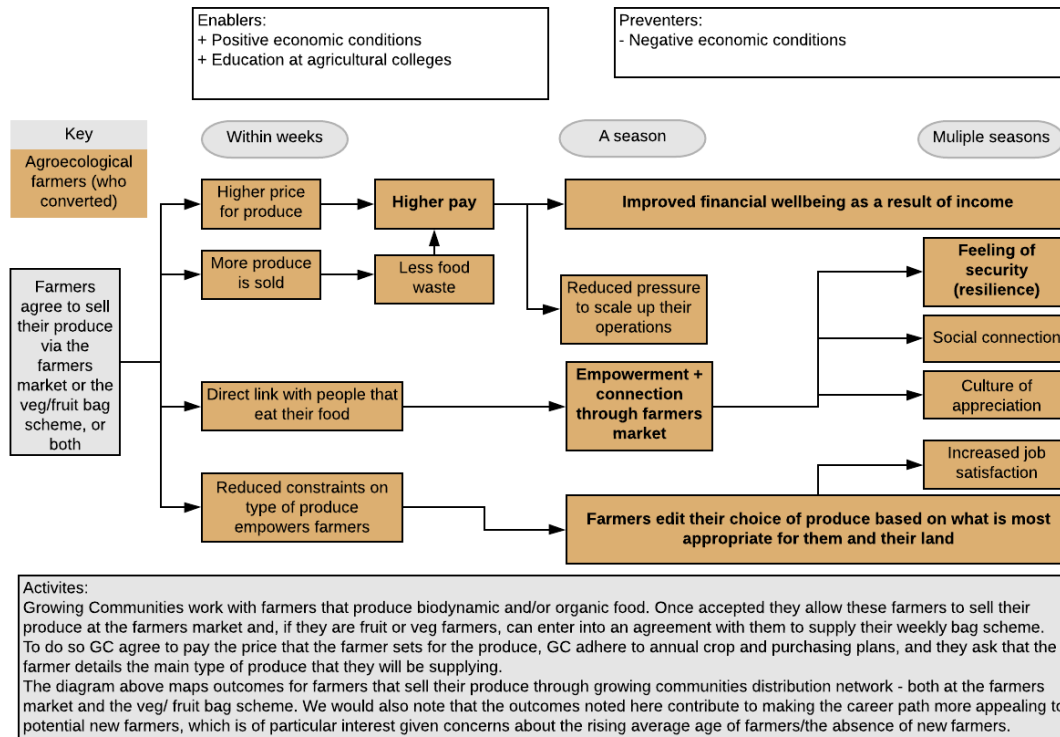


Figure A2. Theory of change, the environment

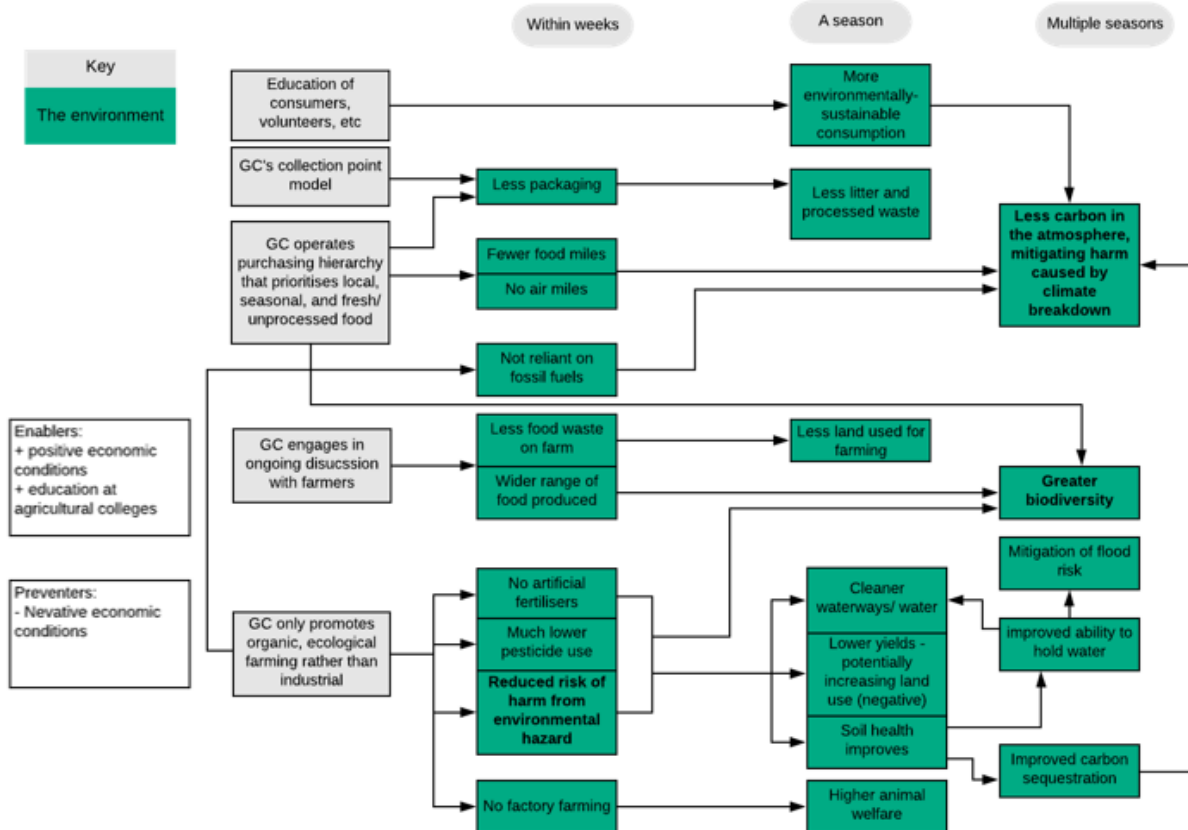


Figure A3. Theory of change, Growing Communities' food eaters

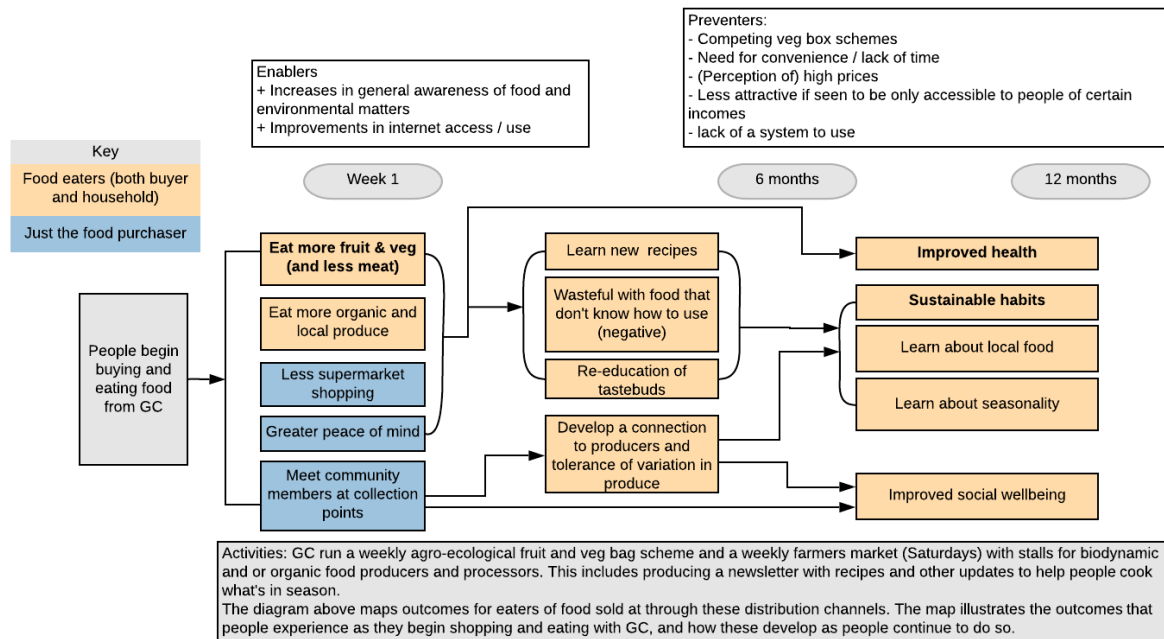


Figure A4. Theory of change, volunteers, trainees, patchwork farmers, and community group members

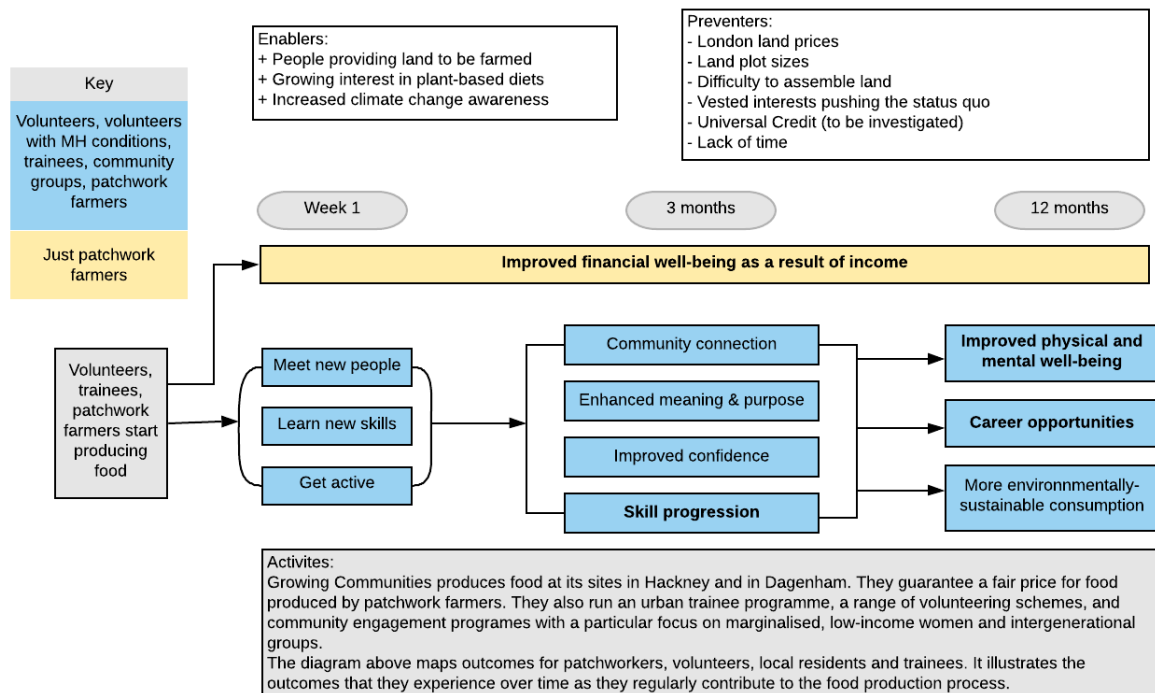




Figure A5. Theory of change, food processors

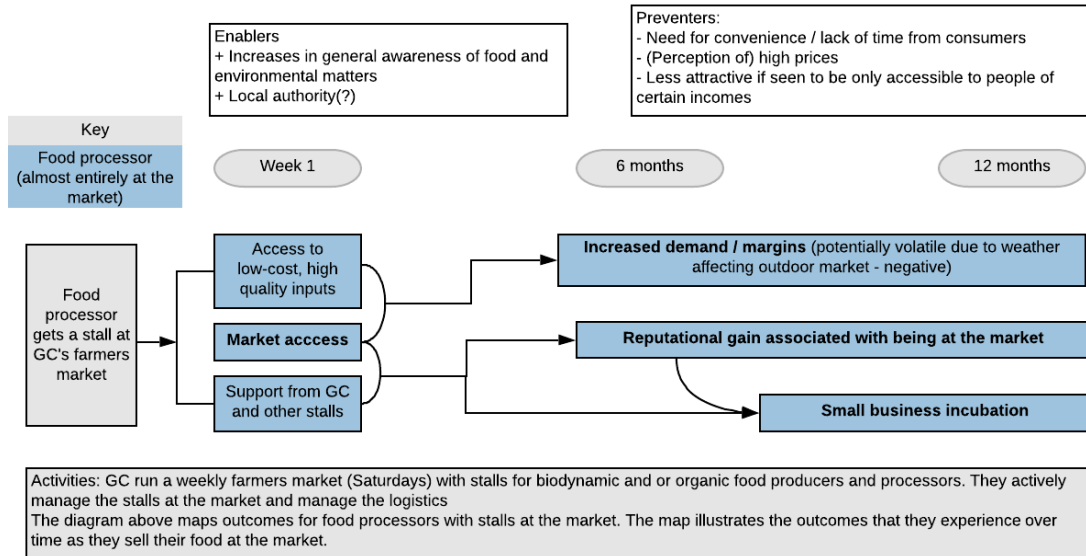
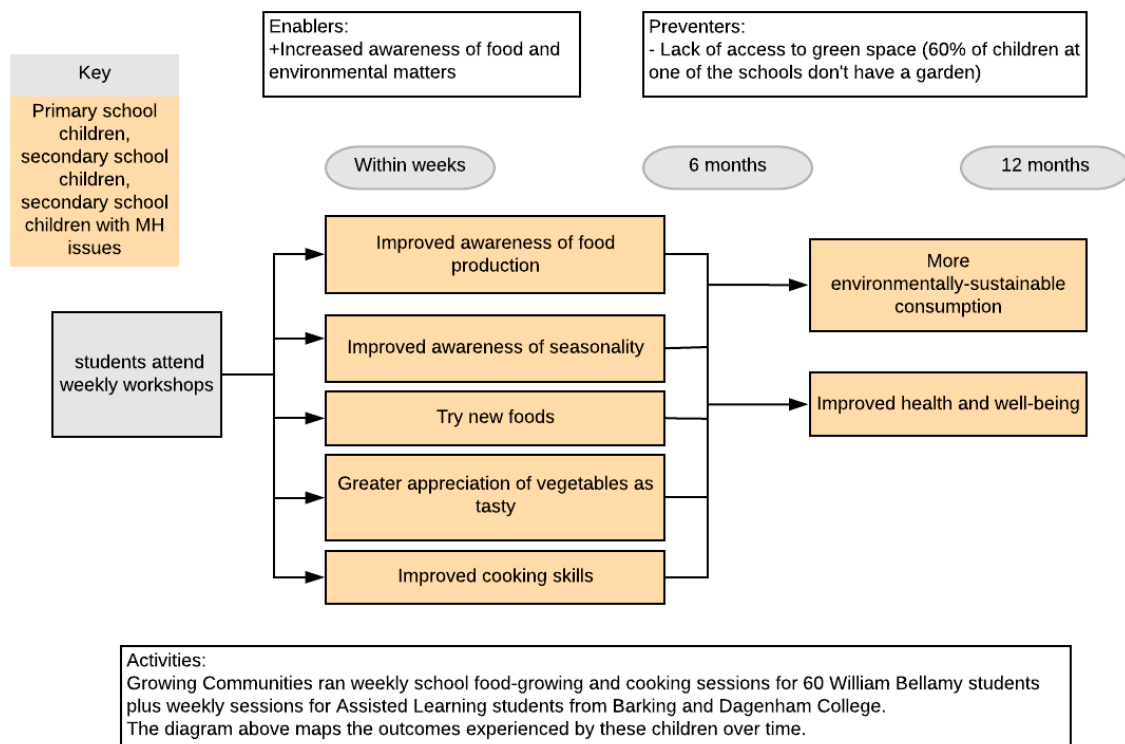
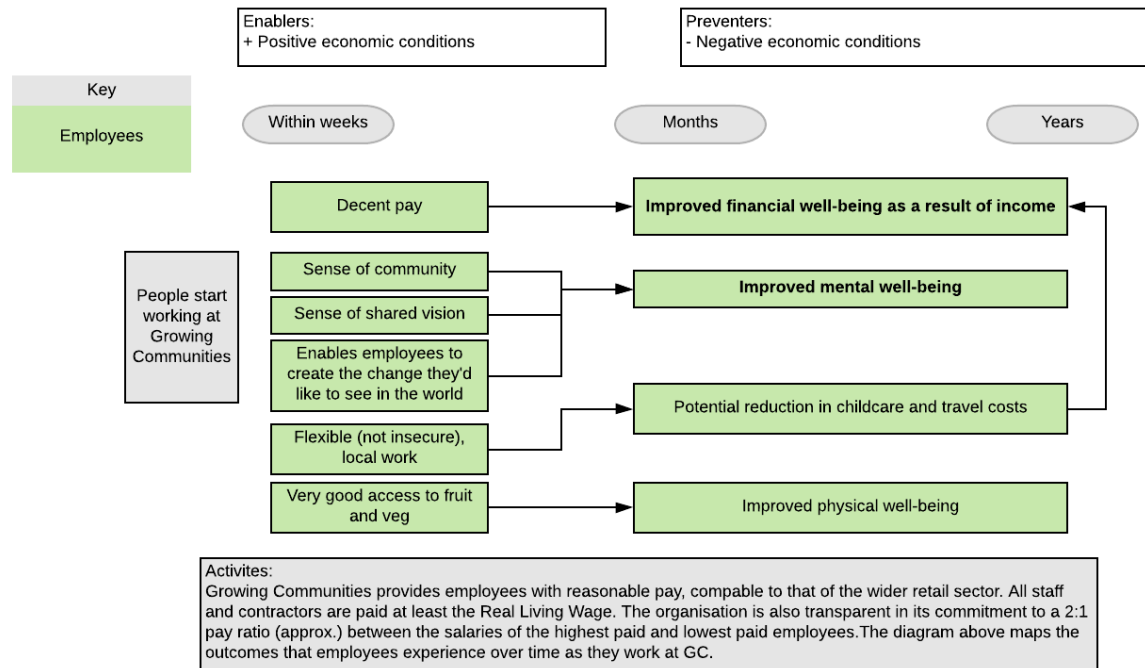


Figure A6. Theory of change, school and college students



## FARMER-FOCUSED ROUTES TO MARKET: GROWING COMMUNITIES

Figure A7. Theory of change, Growing Communities employees



## APPENDIX 2: MODELLING ASSUMPTIONS

### Population assumptions

*Farmers:* 24

*Food producers:* 13

*Growing Communities employees:* 36, 14 of which have children

*Land in direct supply chain:*

Our survey analysis suggests that the farmers that directly supply Growing Communities operate 2,344 hectares of farmland.

Total amount of farmland (Ha.)	
<b>Fruit</b>	16
<b>Protected cropping (vegetables)</b>	16
<b>Vegetables</b>	1,749
<b>Dairy</b>	544
<b>Meat</b>	18
	<b>2,344</b>

We asked farmers what proportion of their total agricultural output supplies Growing Communities and used this to estimate that 40% of this land is used for Growing Communities produce.

Total amount of farmland in population (Ha.) that's dedicated to GC	
<b>Fruit</b>	7
<b>Protected cropping (vegetables)</b>	7
<b>Vegetables</b>	696
<b>Dairy</b>	217
<b>Meat</b>	7
	<b>933</b>

*Growing Communities food eaters, farmers market:* Growing Communities supplies food via the farmers market that feeds an estimated 1,961 people of which 934 attend the market.

*Growing Communities food eaters, veg scheme:* Growing Communities supplies food via the farmers market that feeds an estimated 1,961 people of which 934 attend the market. An estimated 14% of these people are also veg scheme members, so for modelling purposes we assume they are subsumed in the previous stakeholder group, leaving 1,687 people, of which 803 are customers.

## Indicators and net change assumptions

Displacement is assumed to be 0% throughout, while drop-off is assumed to be 100%.

### Farmers

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution description	Attribution proportion
Farmers	Cost savings accrued from less food waste	Net proportion that agrees that they have produced less waste since selling through GC	31%	Assume that waste generated by option to produce food as they did prior to GC hasn't changed	0.0	To what extent would you say that your change in produce waste is due to working with GC?	29%
	Reduced pressure on farmers to scale up their operations	Net proportion that agrees that they have reduced pressure to scale up their operations since working with GC	23%	Assume that option to produce food as they did prior to GC hasn't changed	0.0	'To what extent would you say change in pressure to scale up is due to working with GC?'	50%
	Increased autonomy over what they can produce	Net proportion that agrees that they have greater say in what they can produce since selling with GC	8%	Assume that option to produce food as they did prior to GC hasn't changed	0.0	'To what extent would you say that the changes in the autonomy of what you produce is due to working at GC?'	36%
	The wellbeing benefit of being part of a social group at the farmers market	Change in net proportion reporting they feel part of a social group due to the farmers market, compared to other farmers markets	3%	Comparison to other farmers markets is already included in indicator, hence assume zero deadweight	0.0	'To what extent would you say that the change in your sense of feeling part of a social group is down to working with GC?'	48%
	The wellbeing benefit of managing better financially	Matched change in proportion reporting that they are managing well financially (% reporting valuable outcomes)	42%	We assume other economic options haven't changed	0.0	'To what extent would you say that the change in how you are managing financially is down to working with GC?'	48%
	The wellbeing benefit of perceived improvements in job security	Change in proportion reporting that they feel satisfied with their job security (none were dissatisfied during either period)	26%		0.0	'To what extent would you say that the change in your job satisfaction is down to working with GC?'	46%
	Feeling their work is more appreciated	Net proportion reporting that there's a greater sense of appreciation of their work compared to before	85%	We assume other economic options haven't changed	0.0	'To what extent would you say that the change in how you are managing financially is down to working with GC?'	44%

Attribution questions were asked in the Growing Communities farmers survey 2019/2020.

## Food processors

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution question/description	Attribution proportion
Food processors	Support from GC and other stall holders	Average change in the extent to which food processors feel supported by GC and other stall holders	46%	We assume other economic options haven't changed	0.0	To what extent would you say that the change in support you receive at work is down to working with GC?	33%
	The wellbeing benefit of managing better financially	Net proportion of traders that report managing better financially these days	17%	We assume other economic options haven't changed	0.0	To what extent would you say that the change in how you are managing financially is down to working with GC?	29%
	The wellbeing benefit of being part of a social group at the farmers market	Change in net proportion reporting they feel part of a social group due to the farmers market, compared to other farmers markets	50%	Comparison to other farmers markets is already included in indicator, hence assume zero deadweight	0.0	To what extent would you say that the change in your sense of feeling part of a social group is down to working with GC?	54%

Attribution questions were asked in the Growing Communities food processor survey 2019/2020.

## Employees

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution question/description	Attribution proportion
GC employees	Improved financial wellbeing	Change in proportion reporting that they are managing well financially	12%	Labour market conditions not changed substantially so assumed zero	0.0	Assumed 100%	100%
	Reduction in childcare costs	Average annual change in the number of additional caring hours, among those with kids	375	National proportion of parents that work flexibly	49%	Assume 100%, job flexibility is necessarily determined by GC	100%
	Reduction in travel costs	Average change in annual travel costs	£140.61	National proportion of commuters that have a short commute (30 mins or less)	68%	Assumed 100%	100%
	Reduction in travel time	Average change in travel time per year, hours	230	National proportion of commuters that have a short commute (30 mins or less)	68%	Assumed 100%	100%
	Improved physical wellbeing	Average self-assessed change in health	1%	Assumed zero	0.0	To what extent would you say that any change in your health since you started at GC is due to working at GC?	38%

Indicator data came from the Growing Communities employee survey 2019/2020. Deadweight assumptions for the travel time and cost came from the Office for National Statistics<sup>9</sup> and the deadweight assumption for reduced childcare costs came from a Working Families report.<sup>10</sup> An attribution question for physical wellbeing was also asked in the Growing Communities employee survey 2019/2020.

## Environment

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution question / description	Attribution proportion
Environment - Direct Supply Chain	Reduced GHG (no nitrogen fertiliser, crops)	tCO <sub>2</sub> e saved per hectare	1.42*	Proportion of the land that farmers indicate would still be used for agro-ecological farming Source: Growing Communities farmers survey 2019/2020	0.6	Assume 100%	100%
	Reduced GHG (no nitrogen fertiliser, grassland)		0.57*		0.6		100%
	Improved water quality (no nitrogen fertiliser)	kgN surplus avoided per hectare	47*		0.6		100%
	Reduced GHG (lower use of other non-renewable resources) – arable / horticulture	tCO <sub>2</sub> e saved per hectare	0.75*		0.6		100%
	Increase in organic matter (carbon) over time		18*		0.6		100%
	Lower levels of Livestock Units (LU) on livestock farms		1.2*		0.6		100%
	Higher imputed levels of Livestock Units (LU) on arable and horticultural farms		-0.9*		0.6		100%
	Improved biodiversity – improved grassland	Organic farming estimated to have a similar impact on ecosystem services as that that would be delivered by the additional action under the 'increased spend' Biodiversity Action Plan scenario	Included** in proxy		0.6		100%
	Improved biodiversity – arable land				0.6		100%

\*Source: Nic Lampkin (2020) (Organic Policy, Business and Research Consultancy) Potential contribution of organic farming and growing to ELM<sup>11</sup>

\*\*Source: Christie et al. (2011) as cited in Defra's ENCA tool<sup>12</sup>

## FARMER-FOCUSED ROUTES TO MARKET: GROWING COMMUNITIES

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution question/description	Attribution proportion
Environment - continued	Change in average number of meat portions eaten a week (net) – FM	Annual (net) reduction in number of portions of meat	9.8	Proportion of population that is vegetarian. Assume that in any given year this % would make their diet more sustainable *	2%	To what extent do you think that the reduction in your meat/fish/dairy consumption is because of going to the farmers market?	81%
	Change in average number of fish portions eaten a week (net) – FM	Annual (net) reduction in number of portions of fish	-0.54				
	Change in average number of dairy portions eaten a week (net) – FM	Annual (net) reduction in number of portions of dairy	-11.81				
	Change in average number of portions wasted – FM	Annual (net) reduction in number of portions of food wasted each week	42.10	Annual household food waste reduction (driven by other organisations) **	2%	To what extent do you think that the change in the amount of food you waste is because of going to the farmers market?	48%
	Change in average number of portions wasted – VS		32.7		2%	To what extent do you think that the change in the amount of food you waste is because you are part of the GC veg scheme?	63%
	Less packaging waste on food – VS	Percentage point change in the amount of total weekly shop that comes in plastic packaging	24%	Assumed zero	0.0	To what extent do you think the changes in the amount of plastic packaging used for your food is because of being part of the GC veg scheme?	62%
	Change in average number of meat portions eaten a week (net) – VS	Annual (net) reduction in number of portions of meat	68	Proportion of population that is vegetarian. Assume that in any given year this % would make their diet more sustainable *	2%	To what extent do you think that the reduction in your meat/fish/dairy consumption is because of being part of the GC veg scheme?	56%
	Change in average number of fish portions eaten a week (net) – VS	Annual (net) reduction in number of portions of fish	31				
	Change in average number of dairy portions eaten a week (net) – VS	Annual (net) reduction in number of portions of dairy	61				
	Change in the number of online food orders	Annual change in the number of online food orders – VB	6.3	Included in financial proxy calculation	0%	To what extent do you think that the reduction in your online supermarket shopping orders is because of being part of the GC veg scheme?	73%
	Change in the number of online food orders	Annual change in the number of online food orders – FM	2.7	Included in financial proxy calculation	0%	To what extent do you think that the reduction in your online supermarket shopping orders is because of going to the farmers market?	43%

\*Source: vegetarian society<sup>13</sup>

\*\*Source: WRAP<sup>14</sup>

Unless otherwise stated, these data come from surveys of Growing Communities customers: the Growing Communities veg scheme survey 2019, and the Growing Communities farmers market survey 2019.



Food eaters – farmers market

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution question/description	Attribution proportion
Food eaters - Farmers' Market	Food received – FM	Indicator included in proxy		n/a	0	Direct economic contribution attribution assumed to be 100%	100%
	Change in perceived general health – FM	Percentage point change in perceived general health since joining (proportion averaged over the average number of years they've been visiting)	2.2%	Assume zero	0	To what extent do you think that any of the changes in your health are because of going to the farmers market?	75%
	Increase in adventurous cooking – FM	Percentage reporting that they've become more adventurous cooks since joining (proportion averaged over the average number of years they've been visiting)	1%			To what extent do you think that the change in your knowledge of food is because of going to the farmers market?	62%
	Increase in knowledge of food – FM	To what extent do you think your knowledge about local food has increased since shopping at the farmers market? (on a scale of 0 to 5, where 0 is not at all and 5 is a lot)	48%			To what extent do you think that the change in your knowledge of food is because of going to the farmers market?	62%
	Change in sense of community – FM	To what extent do you agree with the following statement: "I feel a strong sense of community"	15%	Pre-existing proportion of people that feel belonging to a community	63%*	To what extent do you think that the change in your sense of community is because of being of going to the farmers market?	59%
	Increase in social interactions – FM	Average of: To what extent do you agree with the following: "I meet more people socially than before I started coming to the farmers market?"  To what extent do you agree with the following statement: "I feel involved in and a part of the Growing Communities network"	55%	Pre-existing proportion of people that feel belonging to a community	63%*	To what extent do you think that the change in your social interactions is because of being part of the GC farmers market?	51%
	Change in average number of portions wasted – FM	Annual (net) reduction in number of portions of food wasted each week	42.10	Annual household food waste reduction (driven by other organisations)	2%**	To what extent do you think that the change in the amount of food you waste is because of going to the farmers market?	48%

\*Source: DCMS<sup>15</sup> \*\*source: WRAP<sup>16</sup>

Unless otherwise stated these data come from surveys of Growing Communities customers: the Growing Communities veg scheme survey 2019, and the Growing Communities farmers market survey 2019.

Food eaters – veg scheme

Stakeholder	Outcome	Indicator description	Indicator result	Deadweight description	Dead-weight amount	Attribution question/description	Attribution proportion
Food eaters – Veg scheme	Food received – VS	Indicator included in proxy		n/a	0	Direct economic contribution attribution assumed to be 100%	100%
	Change in average number of portions wasted – VS	Annual (net) reduction in number of portions of food wasted each week	32.7	Annual household food waste reduction (driven by other organisations)**	2%	To what extent do you think that the change in the amount of food you waste is because you are part of the GC veg scheme?	63%
	Change in perceived general health – VS	Percentage point change in perceived general health since joining (proportion averaged over the average number of years they've been visiting)	10%	Assume zero	0	To what extent do you think that any of the changes in your health are because of the GC veg scheme?	59%
	Increase in adventurous cooking – VS	Percentage reporting that they've become more adventurous cooks since joining (proportion averaged over the average number of years they've been visiting)	22%			To what extent do you think that the change in your knowledge of food is because of being part of the GC veg scheme?	71%
	Increase in knowledge of food – VS	Percentage reporting that they've become more knowledgeable since joining (proportion averaged over the average number of years they've been visiting)	64%				
	Reduced time spent in the supermarket – VS	Annual average fall in the number of hours spent in the supermarket by VS customers	58.3	Assume zero	0%	To what extent do you think that the reduction in your time spent in supermarkets is because of being part of the GC veg scheme?	72%
	Change in sense of community – VS	To what extent do you agree with the following statement: "I feel a strong sense of community"	14%	Pre-existing proportion of people that feel belonging to a community*	63%	To what extent do you think that the change in your sense of belonging to your local community is because of being part of the GC veg scheme?	51%
	Increase in social interactions – VS	To what extent do you agree with the following statement: "I feel involved in and a part of the Growing Communities network"	60%			To what extent do you think that the change in your social interactions is because of being part of the GC veg scheme?	60%

\*Source: DCMS<sup>17</sup>, \*\*source: WRAP<sup>18</sup>

Unless otherwise stated these data come from surveys of Growing Communities customers: the Growing Communities veg scheme survey 2019/2020 and the Growing Communities farmers market survey 2019/2020.

## Financial proxies

### Farmers

Stakeholder	Outcome	Financial proxy description	Source	Value
Farmers	Cost savings accrued from less food waste	Annual saving from food waste among those reporting a reduction	GC farmers survey (2019/2020)	£10,500
	Reduced pressure on farmers to scale up their operations	Reported annual value to the individual of having less pressure to scale up operations compared to industrialised agriculture	GC farmers survey (2019/2020)	£5,417
	Increased autonomy over what they can produce	Reported annual value to the individual of not being constrained on what they can grow compared to a similar role in industrialised agriculture	GC farmers survey (2019/2020)	£4,604
	The wellbeing benefit of being part of a social group at the farmers market	Wellbeing (inflation-adjusted) HACT value of being a member of a social group for those outside London	HACT Social Value Bank (2018, 2020 prices)	£1,895
	The wellbeing benefit of managing better financially	Wellbeing (inflation-adjusted) HACT value of financial comfort for those outside London	HACT Social Value Bank (2018, 2020 prices)	£9,116
	The wellbeing benefit of perceived improvements in job security	Wellbeing (inflation-adjusted) HACT value of having a secure job for those outside London	HACT Social Value Bank (2018, 2020 prices)	£12,380
	Feeling their work is more appreciated	On an annual basis, how much is it worth to you financially to feel that your work is highly appreciated compared to, say, a similar role in industrialised agriculture?	GC farmers survey (2019/2020)	£5,479

## Food processors

Stakeholder	Outcome	Financial proxy description	Source	Value
Food processors	Support from GC and other stall holders	On an annual basis, how much is it worth to you financially to have support from GC and other market traders compared to, say, selling through wholesalers?	GC farmers survey (2019/2020)	£6,937.38
	The wellbeing benefit of managing better financially	Wellbeing (inflation-adjusted) HACT value of financial comfort for those in London	HACT Social Value Bank (2018, 2020 prices)	£8,978.14
	The wellbeing benefit of being part of a social group at the farmers market	Wellbeing (inflation-adjusted) HACT value of being a member of a social group for those in London	HACT Social Value Bank (2018, 2020 prices)	£2,363.64

## Employees

Stakeholder	Outcome	Financial proxy description	Source	Value
GC employees	Improved financial wellbeing	Wellbeing (inflation-adjusted) HACT value of financial comfort for those in London	HACT Social Value Bank (2018, 2020 prices)	£8,978.14
	Reduction in childcare costs	Hourly cost of a nanny per hour (2020, London)	<a href="https://www.childcare.co.uk/costs">https://www.childcare.co.uk/costs</a>	£11.66
	Reduction in travel costs	Already captured in indicator	-	-
	Reduction in travel time	Hourly value of commuting time	Department for Transport, TAG Data Book July 2020 <sup>19</sup>	£13.50
	Improved physical wellbeing	Wellbeing (inflation-adjusted) value of 'Good overall health' from HACT-Simetrica Social Value Bank for London	HACT Social Value Bank (2018, 2020 prices)	£23,911.14

## Environment

Stakeholder	Outcome	Financial proxy description	Source	Value
Environment	Reduced GHG (no nitrogen fertiliser, crops)	Social cost of carbon /tCO <sub>2</sub> e	BEIS: Current UK government guidance <sup>20</sup> on what social values to apply in policy appraisal and how to apply them includes central estimates for 2020 of:	£69.00
	Reduced GHG (no nitrogen fertiliser, grassland)		£14/tCO <sub>2</sub> e (£51/tC) for sectors covered by the EU Emissions trading scheme (ETS) and £69/tCO <sub>2</sub> e (£254/tC) for non-ETS sectors	£69.00
	Improved water quality (no nitrogen fertiliser)		Wessex Water vis Lampkin (2020) <sup>21</sup>	£2.00
	Reduced GHG (lower use of other non-renewable resources) – arable/horticulture	Social cost of carbon /tCO <sub>2</sub> e	As above	£69.00
	Increase in organic matter (carbon) over time			£69.00
	Lower levels of Livestock Units (LU) on livestock farms			£69.00
	Higher imputed levels of Livestock Units (LU) on arable and horticultural farms			£69.00
	Improved biodiversity – improved grassland	Estimate of value of biodiversity (sense of place, non-charismatic and charismatic species, water regulation, climate regulation) for improved grassland £/ha	Christie et al. (2011) <sup>22</sup> Table 30 & Table 2	£17.41
	Improved biodiversity – arable land	Estimate of value of biodiversity (sense of place, non-charismatic and charismatic species, water regulation, climate regulation) for arable fields £/ha		£0.86
	Change in average number of meat portions eaten a week (net)	Average value of CO <sub>2</sub> e created per portion of meat / fish / dairy. Calculated using portion weight estimates with estimates of carbon footprint of different food	Poore, J., & Nemecek, T. (2018) <sup>23</sup>	£0.11
	Change in average number of fish portions eaten a week (net)			£0.11
	Change in average number of dairy portions eaten a week (net)			£0.08
	Change in average number of portions wasted			£0.08
	Less packaging waste on food – VS	Value of CO <sub>2</sub> e embodied in plastic packaging associated with annual shop	Estimate 250g of plastic with weekly shop (using Savanta research <sup>24</sup> ) translated this to carbon using 'UK Government GHG Conversion Factors for Company Reporting' from BEIS <sup>25</sup>	£2.79
	Change in the number of online food orders	Estimate of the carbon footprint per food delivery box. 0.7 kg CO <sub>2</sub> e per delivery in a Light Goods Vehicle	Coley, D., Howard, M., & Winter, M. (2009) <sup>26</sup> .	£0.05

### Food eaters – farmers market customers and households

Stakeholder	Outcome	Financial proxy description	Source	Value
Food eaters – farmers market	Food received – FM	Total value of food purchased at farmers market	GC financial data	£672,249
	Change in perceived general health – FM	Wellbeing (inflation-adjusted) value of 'Good overall health' from HACT-Simetrica Social Value Bank	HACT Social Value Bank (2018, 2020 prices)	£23,911
	Increase in adventurous cooking – FM	Price of a cooking course	<a href="https://www.londoncookingproject.com/cooking-classes">https://www.londoncookingproject.com/cooking-classes</a> <a href="#">6-hour cooking course is £180 in Battersea</a>	£180
	Increase in knowledge of food – FM	Price of a (low-cost) nutrition course	<a href="https://www.futurelearn.com/courses/food-science-and-nutrition">https://www.futurelearn.com/courses/food-science-and-nutrition</a> <a href="#">Food science course</a>	£32
	Change in sense of community – FM	Wellbeing (inflation-adjusted) value of 'feeling belonging to a neighbourhood' from HACT-Simetrica Social Value Bank	HACT Social Value Bank (2018, 2020 prices)	£2,307
	Increase in social interactions – FM	Wellbeing (inflation-adjusted) value of 'Member of social group' from HACT-Simetrica Social Value Bank	HACT Social Value Bank (2018, 2020 prices)	£2,364
	Change in average number of portions wasted – FM	Average cost a meal. Weekly food shop costs £25.8 (excluding eating out) for an individual divided by 19 (assuming 2 meals are eaten out)	Office for National Statistics (ONS), Family Spending Survey & NEF analysis	£1.36

### Food eaters – veg scheme customers and households

Stakeholder	Outcome	Financial proxy description	Source	Value
Food eaters - Veg scheme	Food received – VS	Total value of food purchased via veg bag		£910,353.24
	Change in average number of portions wasted – VS	Average cost a meal. Weekly food shop costs £25.8 (excluding eating out) for an individual divided by 19 (assuming 2 meals are eaten out)	Office for National Statistics (ONS), Family Spending Survey & NEF analysis	£1.36
	Change in perceived general health – VS	Wellbeing (inflation-adjusted) value of 'Good overall health' from HACT-Simetrica Social Value Bank	HACT Social Value Bank (2018, 2020 prices)	£23,911
	Increase in adventurous cooking – VS	Price of a cooking course	<a href="https://www.londoncookingproject.com/cooking-classes">https://www.londoncookingproject.com/cooking-classes</a> <a href="#">6-hour cooking course is £180 in Battersea</a>	£180
	Increase in knowledge of food – VS	Price of a (low-cost) nutrition course	<a href="https://www.futurelearn.com/courses/food-science-and-nutrition">https://www.futurelearn.com/courses/food-science-and-nutrition</a> <a href="#">Food science course</a>	£32
	Reduced time spent in the supermarket – VS	Value of hour saving to individual	Department for Transport, TAG Data Book July 2020 <sup>27</sup>	£6.17
	Change in sense of community – VS	Wellbeing (inflation-adjusted) value of 'feeling belonging to a neighbourhood' from HACT-Simetrica Social Value Bank	HACT Social Value Bank (2018, 2020 prices)	£2,307.29
	Increase in social interactions –VS	Wellbeing (inflation-adjusted) value of 'Member of social group' from HACT-Simetrica Social Value Bank	HACT Social Value Bank (2018, 2020 prices)	£2,363.64

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