

LOCAL FOOD PROCUREMENT

**What are the
co-benefits for
local and
regional
economies?**



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Table of Contents

Executive Summary	3
Introduction	4
Methods	5
Results	5
<i>Resources</i>	5
<i>Evidence of benefits</i>	5
Creating jobs and generating incomes	5
Increasing economic activity and developing resources	6
Building social capital and community connectivity	6
Improving health, focus on diet and nutrition	6
Improving educational achievement	6
Environmental stewardship	6
<i>Economic models</i>	8
What is an input-output model using IMPLAN?	8
What does the IMPLAN method reveal?	8
Case studies	10
<i>University of Vermont Medical Centre, Vermont</i>	11
<i>Jefferson County Public Schools, Kentucky</i>	14
<i>Food to School Program, La Crosse County, Southwest Wisconsin</i>	17
References	35

Executive Summary

The aim of this rapid scan of selected reports was to understand the variety of benefits of farm-to-institution projects can generate in regional economies and to quantify the economic benefits that can be realised. A series of institutional reports, journal articles and other documents were reviewed and summarised to answer the research questions on economic benefits of local food procurement.

The results show evidence of a broad range of benefits that regional communities can expect to realise from localising food systems. In some cases, it was possible to quantify economic benefits into dollars and jobs but more often a broader range of economic, social, health and environmental outcomes were reported.

Economic benefits were reported across three broad categories.

- Creating jobs and generating incomes
- Increasing economic activity and developing resources
- Building social capital and community connectivity

There was evidence of jobs being created across the food system, on farms, in hubs, food processing and distribution as well in food service. In particular the models made way for greater employment opportunities for younger and small farmers who operate at the ideal scale to serve institutions. In thriving regional economies there are also wider job creation opportunities across retail and service sectors.

The direct economic activity from an increase in direct farm sales was often significant and its impact more potent due to growers retaining a greater margin than other market models. Often new businesses and infrastructure were created, such as food processing facilities and the development of new product lines to meet institutional needs.

Social capital and community connectivity were built through inter-institution collaboration and the development of deep trust across institutions as they partnered on shared goals that benefit the local region. Improved urban-regional relationships were also cited.

Over time, many of the broader health, social, educational and environmental benefits such as access to health insurance, enjoyment of local produce, educational engagement, reduced food waste and carbon emissions are likely to contribute significant economic value in food producing regions.

It was also important to gain a basic understanding of how the economic assessments were conducted and the data requirements, limitations and the expectations of what could be generated from the model's output. All the economic assessments used the IMPLAN (Impact Analysis) input-output model.

The results from such an analysis can be expressed in dollar amounts and jobs as well as being indicated as a multiplier. The economic multiplier captures the economy-wide circulation of activity from the initial financial transaction (purchase of local fruit and vegetables), or the amount of local economic activity that is triggered by the purchase of any one item. The more a dollar circulates in a defined region, and the faster it circulates, the more income, wealth and jobs it creates as economic benefits for that defined region. Multipliers for direct sales cited in these reports were between 1.03 to 2.4 and for employment ranged from 0.49 to 3.3.

At the end of the report three case studies are included to demonstrate the wide variety of regional benefits created through farm-to-institution policies.

University of Vermont Medical Centre would probably be considered the gold-standard of farm-to-institution programming with their award-winning dining facilities, patient meals, roof top gardens, beehives and their international leadership in sustainable food service. As one of the earliest adopters of the Healthcare without Harm food pledge they host an admirable and ambitious range of local food initiatives where they can name the fisherman and vessel that supplied the catch of the day and they have growers booking tables at their eateries.

The case of Jefferson Kentucky describes a successful government-backed branding initiative, 'Kentucky Proud' that was established to address the rural decline that followed the collapse of the local tobacco industry. The comprehensive approach across the region saw significant investment in new food processing facilities and the development of new product ranges to meet institutional need.

Finally, the Food to School Program in Wisconsin demonstrates how the momentum gained through a well-connected local food system operating to serve one local institution can spur other institutions to follow suit, even in neighbouring states. The successful spin-offs included a significant reduction in food waste and the development of several new fresh and frozen vegetable products that were created to meet the needs of institutional markets.

A common element of the stories told through each of these case studies is that the estimated economic returns are inevitably supported by broader, immeasurable social value that is built through the process of establishing, growing and maintaining local food procurement through anchor institutions.

Introduction

Since mid-2019, Eat Well Tasmania Inc. has been undertaking a project involving preliminary investigations to identify roadblocks and opportunities for increasing procurement of locally grown fruit and vegetables by institutions in Tasmania. Institutions are hospitals, aged care facilities, correctional and education facilities. The hypothesis is that increasing local sourcing to meet these large contracts could have a positive impact on the Tasmanian food system, regional development and see more fruit and vegetables remain in Tasmania, than currently do.

The Launceston Institute of Applied Science and Design has an interest in the impact in regional communities of adopting innovative policy responses that create public value through transformative change. Can public services procurement through research, pilots and innovation, use values-based decision making to create wider social and economic benefits in Tasmania?

Following the recent rapid review of tools and processes for implementing values-based procurement in partnership with institutions, the project team now wants to build up an evidence base around the economic benefits of local procurement. A rapid scan of selected reports and literature was required to answer the following research questions:

1. What evidence for the economic benefit of local food procurement and/or relocalising regional food systems exists?
2. What types of economic benefits are common? For example, job creation, the multiplier effect, comparison with trade-only based food systems.
3. What types of models are used to determine the economic benefit?

4. Provide 3 case studies of where an economic benefit has been clearly quantified.

Methods

A series of resources (reports, journal articles, podcasts, blogs) were provided to form the basis of the report. Each resource was examined, and useful information was extracted and synthesised into the summary table to enable summarised responses to the research questions. Key references from the original resources were used to add relevant details or follow up for potential case studies.

The case studies are based on a combination of the original sources provided, web searches for additional operational detail and sources identified during the process of this project.

Results

The table at the end of this report summarises the key information from each of the resources provided.

Resources

A total of 16 resources were included in this review. There were a variety of primary and secondary sources including peer-reviewed journal articles, 'how to' guides, blog posts and a podcast.

The quality of useful information varied, with not all providing useful insights to inform answers to the research questions. However, taken as a whole they provide useful findings which are summarised in the sections below.

Evidence of benefits

The results of this rapid review show evidence of a broad range of benefits that regional communities can expect to realise from localising food systems. In some cases, it was possible to quantify economic benefits into dollars and jobs but more often a broader range of economic, social, health and environmental outcomes were reported. Many of these have flow on financial results that would be realised over a longer time frame and would be difficult to quantify. The summary results below are reported under a modified framework presented in one of the papers identified during this project (1). The categories have been reordered to emphasise the economic benefits that were the main concern of this project, with broader benefits included at the end to offer a complete picture of the indirect benefits. Over time these broader health, social, educational and environmental benefits are also likely to contribute significant economic value in food producing regions.

Creating jobs and generating incomes

Food system jobs on farms, hubs, processors and institutional food service (multiplier range of 0.49 to 3.3)

Indirect regional job creation in fields beyond food and farming

New opportunities for young and small farmers to grow product for institutional markets
See the figure on page 21 for a summary table of multiplier effects from published studies extracted from Roche *et al.* 2016.

Decent wages for workers in a traditionally low paying, poor condition sector

Increasing economic activity and developing resources

Money directly spent on local produce with a large proportion going directly to growers (multipliers in the range of 1.03 to 2.4)

New businesses development (hubs, distributors, cooperatives, processors)

Infrastructure to support programs such as food processing (peeling, freezing, refrigerated transport)

New product development - bulk processing to meet institutional demand and new products to suit customer preferences/program guidelines

Circular economy effect of money into other local businesses that are unrelated to food and farming (grocery store, cinema, hairdresser etc.)

National security implications of shorter supply chains and more resilient local and national food supply

Building social capital and community connectivity

Trust across food system partners and of institutions

Shared goals and visions

Catalyst for novel collaboration between health, agriculture and economic development sectors

Institutional commitment to local goals

Improved rural-urban links

Social inclusion for low-skill workers becoming involved through training and employment opportunities

Improving health, focus on diet and nutrition

Access to health insurance via employment

Shorter supply chains can reduce chances of food contamination

Safe and fair working conditions

Fruit and vegetable intake

Higher nutrient intake from fresh produce and greater enjoyment of fresh, flavourful food

Improving educational achievement

School attendance and concentration

Alternative education based on garden/agriculture/food studies

On the job educations and training in food handling, food safety, production, processing and packing, marketing, procurement procedures.

Environmental stewardship

Understanding of local and seasonal food production

More transparent food system

Shorter supply chains mean reduced carbon emissions

Reduced food waste

Maintaining arable land for food production and ecosystem functions

Table 1. Summary of Identified FTS Economic Impact Studies

Study	Scenarios	Final Model Assumptions and Model Customization	Multipliers
Haynes (2009), Tuck et al. (2010) Minnesota	3 utilization scenarios (special meal, unprocessed substitution & sub all) and 3 pricing scenarios (farm, school & intermediate)	-shift from wholesale to ag sector -shift from non-local purchases to local -increased food costs paid through taxes -customized agricultural sector in IMPLAN	Sales = 1.03 - 1.25*
Kane et al., 2010 Oregon	Scenarios based on current purchases in 2 school districts and additional \$0.07 spent on local food. Excluded fluid milk and butter purchases.	-some of the local food purchases are new -other assumptions and modelling customization not specified	Sales = 1.86 Value-added = 2.82 Jobs = 2.43
Gunter, 2011 Colorado	Scenario 1 = local impact, new demand and no shift from wholesale to agricultural sector Scenario 2 = regional impact, new demand and no shift from wholesale to agricultural sector Scenario 3 = regional impact, demand shift from wholesale to agricultural sector Scenario 4 = regional impact, demand shift from wholesale to agricultural sector and customized IMPLAN	-shift from wholesale to ag sector -shift from non-local purchases to local -customized agricultural sector in IMPLAN	Sales = 1.47-1.63 Employment = 1.27 – 3.30 (much lower when using custom FTS sectors) Labor income = 1.32-1.43
Kluson, 2012 Florida	Multi-county region around Sarasota, FL with 9 local farms	Assumptions and model customization not specified.	Sales = 2.4 for produce and 1.84 for dairy
Pesch, 2014 Minnesota	Scenario 1 = Standard growing season Scenario 2 = Extended growing season including high and low tunnels, cold frames, and crop storage	-shift from wholesale to agriculture -growing season is extended -shift from non-local purchases to local	Output = 1.7 - 2.19* Employment = -0.49 - 1.47* Jobs = 1.58 - 3.0*

*calculation made by authors.

Figure 1 Summary Table from Roche *et al* (2016) on economic impact studies of farm to school programs

Economic models

All of the studies that have quantified the economic benefits have used IMPLAN (Impact Analysis) software to model input-output assessments. As one of the papers (2) included a review of studies that have done an IMPLAN economic analysis a table summarising those results have been included also (see Figure 1 above).

What is an input-output model using IMPLAN?

An economic impact study calculates the cumulative amount of money that cycles through the economy of the geographic area between industries, households and government agencies as a result of the changes in the industry or events (3).

What does the IMPLAN method reveal?

Results can be expressed in dollar amounts and jobs or can be calculated as a multiplier. An economic multiplier is a single number that captures the economy-wide circulation of activity from an initial financial transaction, or the amount of local economic activity that is triggered by the purchase of any one item. The more a dollar circulates in a defined region, and the faster it circulates, the more income, wealth and jobs it creates. The minimum a multiplier can be is 1, which indicates that every dollar spent locally generates no additional economic activity.

This example from the Vermont Farm to School paper (4) is included to help demonstrate meaning from the output of an IMPLAN model. The relevant result from the baseline section of the Vermont table is included after the relevant descriptor to assist with understanding the output.

	Employment	Labor Income	Value Added	Sales
Baseline scenario: Contribution of the current local food purchases by Vermont schools on the Vermont economy				
Direct Effect	3.2	\$111,410	\$218,843	\$914,943
Indirect Effect	2.8	\$96,511	\$177,046	\$374,508
Induced Effect	1.3	\$50,793	\$89,587	\$154,374
Total Effect	7.3	\$258,714	\$485,476	\$1,443,825
Type II Multiplier*	2.3	2.3	2.2	1.6

The **direct effect** results from purchase of local food by the school.

Vermont example: \$914,943

The **indirect effect** results from the food suppliers purchasing goods and services and hiring workers to fill the school's order. For instance, a yogurt maker purchases milk to produce the additional yogurt purchased by the school. In the example

Vermont example: schools are spending an indirect \$374, 508 in the local economy.

The **induced effect** results from the effects of the changes in household income due to the economic activity from the direct and indirect effects. For example, employees of farms, food manufacturers and wholesalers spend their paycheck buying food at the grocery store or paying the mortgage on their house.

Vermont example: \$154,374.

The sum of the direct, indirect and induced effects is the total economic impact. For each of the effects (direct, indirect and induced), results include the output (also referred to as total sales) value added, labour income, and employment.

The output/**total sales** are usually the largest numerically. However, they do not represent the best measure because double counting typically occurs because the output number includes the total amount of sales revenue from all industries. For example, milk used to make yogurt or cheese can be counted as sold multiple times when the dairy farmer sells the milk to the cheese or yogurt maker, when the food manufacturer sells the finished product to a wholesaler, and last when the wholesaler sells the milk or yogurt to a school.

Vermont: schools are spending \$914,943 on local food from the farming sector, \$374, 508 in related sectors.

The **value-added** number is considered to be a more conservative and accurate measure of economic activity. It is a similar measure to the gross domestic product (GDP). It includes wages paid to employees, profit accrued by the business owner, dividends paid to investors, interests, or rents, and indirect excise tax, as well the sales and excise tax paid by individuals to the government.

Vermont: The purchase of local food by schools contributed \$485,000 in total value added, with \$219,000 of that in the farm and food processing sectors.

Labour income measures the value added produced by the labour component. It includes employee wages and the owner profits.

The **employment** number represents the number of jobs needed to support the economic activity, not the number of people employed (a person can have more than one job) and is measured in annual average jobs. It includes salaried employees and self-employed, and a job can either be full time or part time. The employment number is derived from industry average output per employee.

Vermont: Local school food purchases supported 7.3 jobs in the local economy, with 3.2 of those jobs in the farm and food processing sectors. The multiplier is 2.3.

What are the limitations of IMPLAN?

Some of the resources identified limitations of the model that should be recognised when interpreting the results. These include:

- The model doesn't fully capture the impacts of smaller, diversified farms and other small-to-medium sized operations that are often involved in local food system transactions.
- Farmers selling to local and regional markets and small-scale farmers tend to spend more money locally and spend their money differently than the IMPLAN model predicts. This means they may have a higher multiplier than is calculated in the model.
- It uses fixed price models that do not account for fluctuating produce prices throughout the season.

- IMPLAN models make assumptions there are 'no resource constraints': which means it is assumed that the expansion of locally produced foods does not take land, water or resources away from other productive activity.
- The model also assumes there are 'no opportunity costs of spending': Meaning it does not account for any lost direct sales activity in other food-handling sectors of the economy (typically the wholesale and retail sectors).
- While the model tells us how many jobs are created it is not known who takes them, moves for them, loses them or the skill sets required to do them, nor the seasonal nature of many food-related jobs.

Case studies

The initial intention was to find case studies that would have specific application to the Tasmanian context by size, island nature or crops or climate. However, the choice of case studies reflects the information available; both through the resources provided and determined searching, reading and analysing to find stories that would prove insightful and worth telling to inform the current project.

Many case studies about local food exist but case studies that included the details of a local food project that centred on institutional procurement, with a focus on local and that included a quantifiable economic impact assessment were hard to find. Many of the available stories were about the general economic value of the local food sector (baseline and under various scenarios relating to cost-shifting or seasonal extension), were about healthy procurement policies rather than local and either included a hypothetical economic assessment or none at all.

These case studies provide additional information to supplement the details reported in the summary table. Each story emphasises that the estimated economic benefit is always supported by broader, immeasurable social value that is developed and nurtured through the process of establishing, growing and maintaining local food procurement through anchor institutions.

University of Vermont Medical Centre, Vermont

Place Burlington, Vermont USA

Institution: University of Vermont Medical Centre (UVMC)

Size The hospital has approximately 7,500 employees and there are five food outlets of varying size as well as the patient foodservice. They serve around 1.55 million meals annually with 15% to patients and the rest to hospital staff and visitors. Figures available from 2012 show the food budget of \$4.03 million and 44% of the budget was spent on food from Vermont.

Local Procurement Program: In 2006 UVMC was one of the first sites to sign the [Health Care Without Harm Healthy Food in Health Care](#) pledge in 2006. Their efforts to revolutionise and localise the food service are comprehensive, ambitious and admirable.

Under the director of local food champion, Diane Imrie, Director of Nutrition Services, there is a strong commitment to serving fresh, locally produced, minimally processed foods, and to partnering with farmers throughout the region to supply healthier food to patients while boosting the local economy.

In addition to prioritising local purchases, some food comes from the UVMC grounds, with three onsite gardens, including a rooftop garden on the oncology centre for herbs and other fresh produce to improve patient meals and an onsite beehive. There is also an onsite farmers market for staff, visitors and community members.

Through the sustainable fish and seafood program, they aim for fish that is North American, preferably wild and seasonal.

“Our menus now identify the type of fish, where it was caught, and sometimes even the boat name and the captain. It’s a fun thing for everyone.” Diane Imrie, Director of Nutrition services.

They work in partnership with a local frozen storage house that receives, processes and stores fresh produce during the growing season meaning they are able to serve locally grown blueberries, green beans, corn and broccoli in the winter months.

The UVMC has been recognized as a leader in their field and have established the Centre for Nutrition and Healthy Food Systems to educate other healthcare institutions about building a sustainable food service. Their goal is for the Centre to be a national role model for healthy and sustainable food systems.

In 2019 they were awarded a [gold barn prize](#) through Vermont Farmers Network (VFN) which recognises members sourcing ingredients from 15+ individual farm partners (their website currently lists over 60 local producers) and purchasing 35% or more of annual food expenditures from local sources or over \$350,000 annually.

They also won first place honors in both the Sustainable Procurement and Public Policy and Advocacy categories at the Sustainable Food Awards competition of the Health Care Without Harm Healthy Food in Health Care Program in 2011.

Scope of Economic Assessment:

The economic impact of this buying program was assessed using the IMPLAN Input-Output model and was supplemented by surveying stakeholders to get a comprehensive understanding of the perspective of vendors, customers and the production specialist.

Process of assessment

The economic assessment was done using an input-output model in IMPLAN including purchasing data. The 15 sectors representing the agricultural sectors that the hospital bought from were aggregated into one farming sector and the 25 sectors representing the food manufacturing sectors the hospital bought from were aggregated into one food manufacturing sector. This was necessary because specific spending details by each individual category were unknown and it also simplifies the analysis.

The qualitative aspects of the research involved surveying customers at three different dining venues over nine different time slots, phone interviews with eight current suppliers (including farmer, wholesalers and manufacturers) and a detailed interview with the UVMC Production Specialist who leads all the local procurement activities.

Findings

Economic

The \$1,637,839.00 of local food purchases generate an additional \$625,100.80 to \$1,108,654.20 in the economy representing a multiplier of between 1.38 to 1.68.

Two new full-time positions were instated at the nutrition services team to account for the increases in volumes, representing \$95,057.58 in labour income. Every job added through the additional purchase of local food generated a multiplier of 0.72 to 1.18 jobs in the rest of the economy in backward linkages.

Of the food expenses 40.9% of the expenses are attributed to the local farming sector, 50.3% are attributed to the local food-manufacturing sector, and the rest is attributed to the wholesale sector.

Opportunity costs that could be considered in this model were those sales local wholesalers did not make due to the increase in direct from farm purchases and this was modelled to be \$98,828.23.

Relying on locally grown food ensures that area farmers are more financially secure, thereby ideally enabling them to sustain better health. "The same is true for the surrounding community. If we're able to put more financing into our community, it makes it a more vibrant place to live and work," Diane Imrie.

Vendors

Vendors' motivations for selling to UVMMC reflected a range of perceived social and economic benefits, including relationships, prestige, and pride in selling to local institutions as well as the value of steady, high volume sales.

For some vendors, sales to UVMMC were seen as signals to new potential buyers of the vendor's capacity and professionalism to supply quality products:

“We talk about it with many folks, when I am at trade shows and people ask me who we sell to. We sell to a number of college and universities but when they know that we sell to the largest health care provider in Vermont and one of the largest in New England, it’s very rewarding and something that I can brag about it.” Supplier 7.

Some also saw the hospital as an anchor to test and launch new food products, gain brand recognition in the local community. They were proud of how the hospital creatively showcased the locally grown produce to the point that the Harvest Café is evolving into a destination eatery.

One farmer I deal with told me he came in for dinner one evening after being here a couple times, and we recently took our first reservation for a group of about 30. We also draw people from the university and even from downtown.” Diane Imrie

Overall 15 to 18 percent of the retail business is from visitors. Partnerships with local vendors, based on close relationships, allow for steady supply of quality, locally grown foods at affordable prices. These attributes appeal to its customers, especially employees, who choose to eat there rather than bring food from home.

Buyer

On the receiving end, the Food Service workers are satisfied with the products and process but lament the impact of the short growing seasons. They ensure using plenty of non-seasonal product is also used (meat and dairy) and develop relationships with processors who can do freezing and storage.

” Over the years we have try to find ways to expand the growing season so to speak by getting into relationships where certain orchards, having a means to utilize the harvest either by freezing it, a farm has frozen vegetables.” Production Specialist.

They work to find farms and businesses large enough to be able to reliably supply at price points that work for UVMC and volumes to be sufficiently large to make it worthwhile for the vendor. Purchasing large quantities in advance gives food companies confidence to experiment and develop products specific for institutional markets. Because of UVMCs requirements, one local company has begun producing hormone-free cheese, shredding it and packaging in five-pound bags, while a local food processor supplies shredded local carrots.

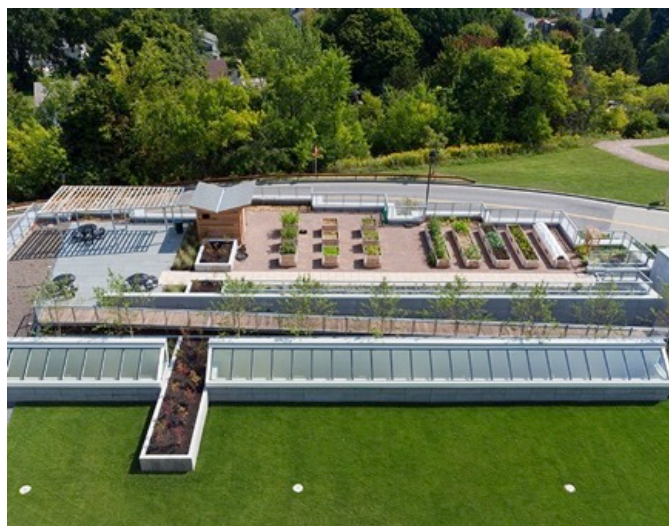


Figure 2 Rooftop garden on the Oncology Centre

Jefferson County Public Schools, Kentucky

Place

Kentucky

Institution

Jefferson County Public Schools, Kentucky

Size

72 schools with 101,000 students from kindergarten to grade 12 serving over 15 million lunches, breakfasts, and snacks each year. This equates to 60,000 lunches per day and around 30,000 breakfasts. Also includes a fruit and vegetable snack program for 17,500 elementary students three days a week.

Program

A combination of Louisville Farm to Table, Kentucky Local, Kentucky Proud

The food and agricultural programming in this state is framed on the historical basis that it was once a heavy tobacco-producing region, which with legislation to buy back tobacco, has led to significant rural decline. Many of the programs were designed to support farmers to recover from decline of the tobacco industry. Research suggesting there was a \$4 billion food market in Louisville that farmers could potentially adapt to meet and benefit from was also a key driver of these initiatives.

The Kentucky Agricultural Development Fund and the Kentucky Proud program are Kentucky Department of Agriculture branding initiatives. They exist to establish relationships, systems, and incentives to promote purchasing Kentucky-grown foods for a range of buyers including institutions.

The school district's nutrition services staff worked with the new distributor, Grasshoppers Distribution, and the established firm Piazza Produce as well as directly with local growers. This case documents the processes and outcomes of the innovative approaches that aimed to maximize benefits for institutional purchasers, growers and distributors, and the broader Kentucky community



WHY BUY
KENTUCKY
PROUD?

When you buy Kentucky Proud,
you buy local food that you can
serve to your family with
confidence.

Buy Local.



WHY BE
KENTUCKY
PROUD?

When you are a Kentucky
Proud member, you have
access to marketing assistance,
grants and special programs.

Buy Local.



FIND
KENTUCKY
PROUD.

Locate

Kentucky Proud products,
farmer's markets, restaurants
and members in your area.

Buy Local.



FIND
KENTUCKY
PROUD
RECIPES.

Let us show you how to
prepare delicious Kentucky
Proud dishes for your family.

Buy Local.

Grasshoppers Distribution

This distributor was initially an online farmers market and subscription grocery service, but they expanded their business model to begin providing locally sourced food to institutions, restaurants, and wholesale customers. They were an important food system partner in place to coordinate activities, thereby reducing duplication of effort.

In 2012 they received a contract for the School Lunch Program and Fresh Fruit and Vegetable program for Jefferson County Public Schools. Through this development, some growers were able to grow specifically to meet the school districts' needs. One grower planted a field that was not in use and sold 17,000 radishes directly for the fruit and vegetable snack program and bring in a whole new income stream.

In 2013, Grasshoppers worked with 70 family farms, offering a wider array of products (locally grown fruit and vegetables, antibiotic-free meats, dairy products, bread) and an online ordering system. They began working on value-adding projects with local kitchens in restaurants and catering companies. They made soups and pickles with products that didn't sell well by selling the slow-moving produce to the kitchen, buying their soups back frozen, and then selling them to their customers.

Grasshoppers purchased nearly \$600,000 of product from local producers in 2011 and 2012. Unfortunately, the business eventually closed citing a lack of financial sustainability due to not reaching the required scale to sustain a local food economy. This demonstrates the challenging operational environment these businesses operate within.

Piazza produce- aggregator

Piazza helps connect farmers to the school lunch program, performing important aggregator roles to meet institutional requirements. These include:

- providing support to the farmers to produce products that meet the needs of the district in terms of volume, timing and food safety
- aggregating products from multiple farms to meet the district's volume
- contracting out processing to those local businesses with the facilities and capabilities
- providing coolers for storage
- delivering food products throughout the district.
- Outsourcing food processing meant they could buy greater quantities, especially when there were bumper crops at peak season;
- support local businesses and meet increased demand from their customers for value-added, ready-made products.

Efficiencies were created by having centralised locations where farmers could drop off produce, and two drivers and vehicles were made available six days a week for sorting and delivering products.

The Director took time to visit farms regularly so that he could understand how the farmers operated and see the produce firsthand. To meet gaps, they also provided resources and technical support for farmers on the necessary recordkeeping practices. Their Food Safety Department works with local farmers to help them comply with government food safety guidelines.

Piazza had 10% increase in sales and customers between 2007 and 2013, and the addition of two farms suppliers. In 2011, Piazza sold \$19,000 to Jefferson County Public Schools. By 2013 Piazza's Kentucky Local program hit \$100,000 in sales enabling them to add a second truck driver and they were considering adding another full-time employee.

Scope of Economic Assessment

While some sales figures are available, the majority of outcomes descriptive of economic activities rather than quantifiable figures.

Process of Assessment

The Kentucky group do not have the tracking procedures in place to enable an economic impact evaluation nor do they have the capacity to undertake the analysis. There are some figures available to quantify the economic benefits gained as well as a range of more qualitative indications of economic activities generated through the region.

Findings

It has been estimated that the Farm to Table initiative facilitated the purchase of \$1.5 million in local foods over four years. In the 2012–13 school year, the district spent \$542,650 on produce for its Fresh Fruit and Vegetable Program (out of a total snack-service budget of \$902,066). This involved \$53,309 of produce items that were locally sourced (9.8% of total produce expenditures down from 13.3% the previous year due to crop failure). Through Kentucky Farm to School statewide purchases of locally sourced food by school districts grew from \$35,000 during the 2010–11 school year to \$460,000 in 2012–13.

The snack program is used as a testing ground for new local produce items in the broader farm to school program connected to the school lunch program. For example, butternut squash is now regularly on the lunch menu after samples offered through the snack program proved students would eat it.

The food service unit is now trying to work with poultry farmers in eastern Kentucky to aggregate their products into larger units in order to fulfill a chicken bid for the school district.

Some of the other reported outcomes that are likely to have economic benefits have included:

- Additional roles for kitchen staffing at Jefferson County Public Schools (and associated income).
- About a dozen farms have increased local food sales and this has increased the number of farm jobs available
- New products have been created for schools; this created new business for one local processor.
- Louisville Farm to Table estimates that it brokered hundreds of thousands of dollars of local food sales per year, for a total of \$1.5 million over the past four years.
- The Kentucky Farm to School program reports that schools across the state purchased \$460,000 of local food in 2012–2013, up from \$35,000 three years earlier.
- Farmers gained new technical and marketing skills.
- Piazza Produce built new storage facilities to handle local foods.

Food to School Program, La Crosse County, Southwest Wisconsin

Place

La Crosse County, Southwest Wisconsin

Size

5 school districts: 3, 000 Students and 2,500 meals per day

Gundersen Lutheran: Hospital 130 employees and 3,000 meals (patient and general public) on a typical weekday.

Program

La Crosse County Food to School Program

This case shares the impressive progress of a local food procurement project that started through funding for school meals and has since had the commitment and development of a range of other organisations and institutions joining to create a highly functional, well-connected local food system.

An initial series of health-related grants enabled schools in the district to develop food and wellness policies, school gardens and establish local purchasing practices. Most of the money was put toward investments in equipment, infrastructure and systems to support sustainable farm to school activities. The grants were partially used to purchase equipment to help with food preparation and processing, cover additional staff time to prepare local foods, purchase promotional and educational materials, hold training on food preparation, start/expand gardens, and purchasing the local food itself.

Through the initial project the University of Wisconsin at La Crosse, Gundersen Health System, Reinhart Foodservice, Just Local Foods, Fifth Season Cooperative, and Organic Valley have all made commitments to support local food producers.

Scope of Economic Assessment

Covers six broad categories including:

- Building social capital and community connectivity
- Creating jobs and generating income
- Increasing economic activity and developing resources
- Improving diet and nutrition
- Enhancing student academic achievement
- Environmental stewardship

Process of assessment

This case study presents the broad economic and social activity generated through institutional procurement rather than the discrete assessment of economic impacts with dollar figures. It is intended to provide a qualitative, aspirational perspective of the multiple types of place-based social and commercial capital that can build slowly over time based on a well-connected local food system in a farming region and can have wider implications in other areas as their success becomes recognised and modelled elsewhere. This approach is in line with theory outlined in more detail in the publication “A Critical Analysis of Economic Impact Methodologies” (5)

Schools

As with many of these types of projects, the initial impetus from an injection of external funds from multiple sources was critical for building momentum. The capital to establish dedicated roles, purchase appropriate infrastructure and assist with initial food purchases enabled success to follow.

The establishment and development of new business models that filled useful roles to serve the local food vision was a major aspect of this case that demonstrates how the local economy can adapt and flourish under a local procurement push.

- Keewaydin Organics- a distribution network for a significant group of local organic farms (70+)
- Just Local Foods- Produces and markets foods from the Keewaydin Organics network and had a major contract with the school district to provide local food directly
- Fifth Season cooperative- a dedicated food hub, processor, aggregator and local food leadership group.
- Reinhart foods- the traditional local broadline distributor focused on a more mainstream market but already carried local milk, cheese and cranberries. After becoming a member of Fifth Season they committed more deeply to being able to supply a more extensive range of local foods to its large buying group.

These clusters of food and agriculture businesses collaborate to provide a diverse assortment of local products for schools initially then other organisations followed.

Hospital

The local hospital was an anchor institution with strong green credentials and ambitions, a natural ally joining the local food movement. Early on the Food Services Unit were spending 15% on local food with a goal of 20% the following years. They defined local as a 150-mile radius and were spending \$130,000 of local food in one year.

The hospital provided additional staff training and development to assist the workforce to adapt to the increase in fresh, whole foods. Favouring long-term local economic development over short term financial wins, the hospital made a steadfast commitment to local farmers even with price fluctuations that happen with seasonal variation and natural disasters.

“We decided that once we get a product in, we would not switch it out based on price,” Mark Hutson, Gundersen Lutheran’s Administrative Director of Nutrition Services

They invested in a local producer to develop and test a new line of low sodium pasta for some patients and found ways of using farmers’ second-rate produce in their meals. For producers, the hospital served as a test ground for new product including the development of minimally processed, organic, locally grown ready to roast vegetable mixes that the co-op began to process for multiple institutional markets (pictured below).



Figure 4 Fifth Seasons' Frozen Products include a potato mix (left) and a colourful mixed root vegetable combination including squash and beets.

The Food Service Manager reported that localising their food supply was fairly cost neutral but there was variation over the growing season. Staff were finding smart ways to reduce costs to continue supporting the local food mission. For example, committing to using local food led to the Gundersen's food waste program as a means of valuing the produce and saving money to reinvest into quality local produce. Staff became interested in tracking how much and what food waste was being thrown away and made adjustments accordingly. Within six months of this project they had decreased food waste by half.

Use of the broadline distributor (Reinhart) and the Fifth Season Cooperative meant more local farmers could grow for the hospital because food safety certification (and liability) sat with these larger distributors. Fifth Season supplied its members with the materials and hosted the training needed to pass a cooperative audit and assisted with hazard analysis policies and procedures. Acting as a champion for local produce in healthcare food service, the model at Gundersen Health is influencing and inspiring neighbouring health districts to join the local food effort. Institutional purchasers in Milwaukee and Minneapolis have begun to pay closer attention to the economic context in which the food-service programs work. This may result in building even more capacity and stronger local economic networks in those regions, another indirect impact of Wisconsin's leadership.

Fifth Season

The co-op's goal is "to build a robust regional food system that supports a healthy environment, a strong economy, and thriving communities." It does this by aggregating sustainably grown local produce, raised under food safety protocols, to supply regional markets within a 250-mile radius of their base in Viroqua.

Fifth Season coop is based on a European Co-op model where the board includes six membership groups representing the food system:

- producers
- producer groups
- buyers
- processors
- distributors
- workers

Establishing Fifth Season addressed a gap in the local food system and created a strong new business model. Significant time and energy were dedicated to developing a model that was least likely to raise tensions between the different member groups and be fair for all, particularly when it came to pricing.

Fifth Season's sustainable local product line now features more than 130 quality fresh, frozen and specialty produce, meat, dairy and value-added foods that are aggregated from within 150 miles of Viroqua.

The cooperative's current membership includes 62 small family farms, six farmer/producer groups, 25 processors, four distributors and thousands of buyers. Gundersen Health System, Mayo Clinic Health System, Reedsburg Area Medical Centre, Upland Hills Health, Vernon Memorial Healthcare, University of Wisconsin La Crosse and Stout campuses, and Menomonie, Viroqua and West Salem school districts are among the buyer members. This comprehensive list of institutional buyers is indicative of their potential economic impact. Based at the Food enterprise Centre where they can mingle with and inspire other local food innovators, Fifth Harvest recently saw a 12% increase in sales during 2017 and ended 2017 with overall sales totalling more than \$675,000, an increase of \$71,320 over their 2016 sales.

The board made a careful and calculated decision to include Reinhart distributors as a member. This meant Fifth Season significantly cut down potential costs to them of becoming a distributor (fleet costs alone would have been significant) and it meant the Fifth Season producer network now had access to the 218 institutional food services Reinharts sells to and the 5 000 more it could access through its wider partners.

Findings

The qualitative impacts outlined below demonstrate the economic potential of some of the following impacts

- Range of new food businesses developed
- Jobs and associated income across the local food system
- Food hub development enabled more local farmers to supply institutions
- Waste reduction and associated cost savings
- Local food into major broadline distributor offering
- Leadership development in school students engaging deeply with the farm to school initiatives
- Training and development for food service staff in the hospital

The region participates in a creative partnership with local community supported agriculture (CSA), convenience stores, farmers' markets, grocery stores, and worksites that multiply the educational, nutritional, and the potential long-term economic impacts of farm to school practices.

BUILDING A REGIONAL FOOD SYSTEM

A MULTISTAKEHOLDER COOPERATIVE FOR A LOCALIZED ECONOMY

EVERYONE HAS A STAKE

Building community wealth means making the local economy stronger by democratizing who owns it. In the 7 Rivers region of rural Wisconsin, the Fifth Season Co-op, started in 2010, does this across the entire food supply chain. It's building a cooperative, community-anchored local food system that's owned & operated by six different classes of stakeholders, working together for both economic and ecological sustainability.

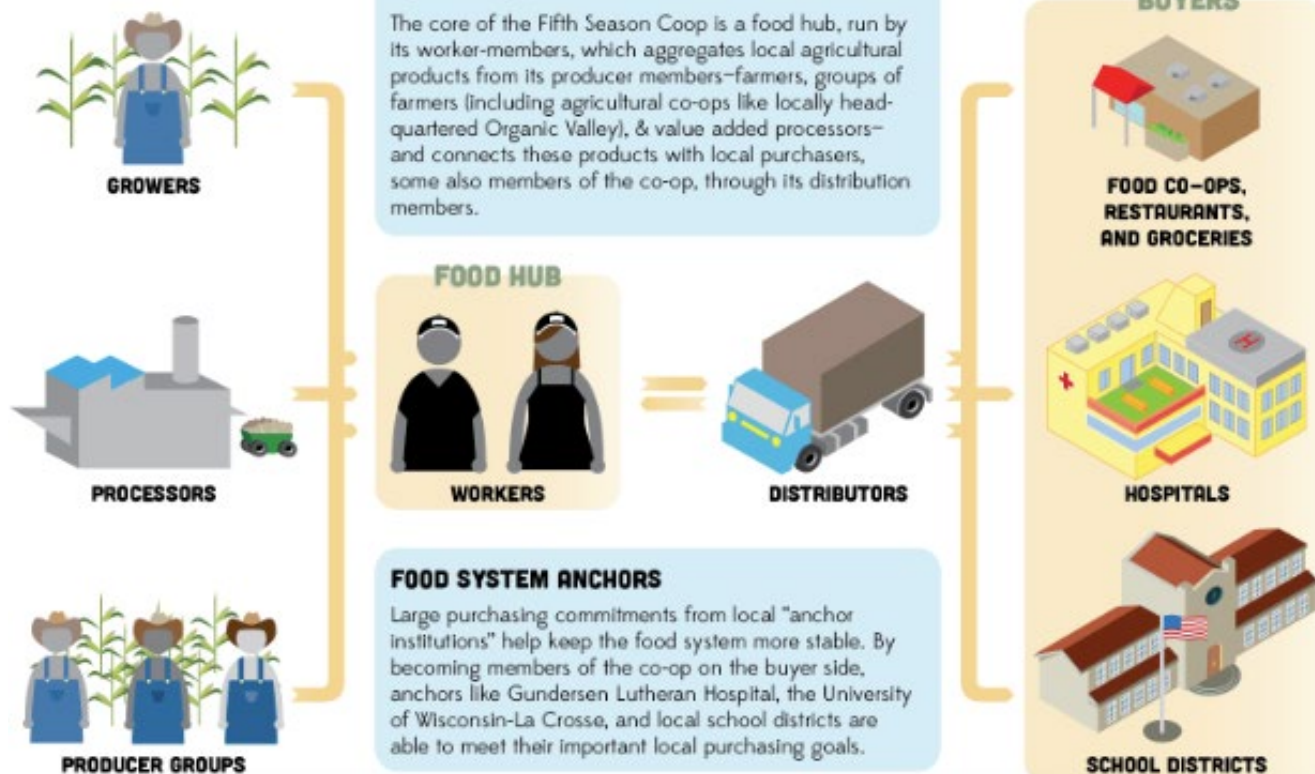
WHY LOCAL?

Despite the heavy prevalence of agriculture in the 7 Rivers region, most food grown is exported—and most food consumed comes from elsewhere. Fifth Season is an intentional attempt to build a more self-sufficient regional food system.



HOW IT WORKS

The core of the Fifth Season Coop is a food hub, run by its worker-members, which aggregates local agricultural products from its producer members—farmers, groups of farmers (including agricultural co-ops like locally headquartered Organic Valley), & value added processors—and connects these products with local purchasers, some also members of the co-op, through its distribution members.



FOOD SYSTEM ANCHORS

Large purchasing commitments from local "anchor institutions" help keep the food system more stable. By becoming members of the co-op on the buyer side, anchors like Gundersen Lutheran Hospital, the University of Wisconsin-La Crosse, and local school districts are able to meet their important local purchasing goals.

ORE ABOUT FIFTH SEASON: FIFTHSEASON.COOP * INFOGRAPHIC DESIGNED BY THE DEMOCRACY COLLABORATIVE: COMMUNITY-WEALTH.ORG

Figure 5 Infographic demonstrating the operation of Fifth Season Cooperative

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
<u>Harvesting Opportunity. The Power of Regional Food System Investments to Transform Communities</u> (6) St Louis, USA 2017 <i>A very comprehensive report (300+ pp) on a large research project led by the Federal Reserve and Reserve of St Louis to better understand localising the food system.</i> <i>Detail on financing models may become useful as the project looks for additional financial support/backing.</i> <i>Ch 9 on best practice in food hub financing, start-up and management may be useful.</i>	More transparent food system and consumers feel empowered to reward growers whose practices align with their values (sustainable, local, organics, seasonal) Greater product differentiations Strengthened rural-urban linkages May offer opportunities for young, new farmers on a small scale Institutions offer a new opportunity to promote or market their farm/products to the community Greater sense of community inclusion/building social capital Fair work conditions including union wages, safe and healthy working conditions, and health insurance ^[17]_{SEP} Can encourage farmers to move from commodity crops to fruit and vegetable farming Safe and resilient national and local food supply important for reasons of national security Most food hubs are providing significant production, marketing and enterprise development support to new and existing producers to increase the supply of local food.	Producers are price-makers (not takers) Training and education for low income/unemployed to work in new food production, processing and retail jobs (may include fruit and vegetable processing, hospitality, baking, transport and logistics) Farmers selling direct to consumers spend more of their money in the local economy where it circulates locally for longer and benefits the local economy (Sacramento- UC Davis). 89% inputs local vs 45% other farmers. Growers using local food aggregators (food hubs) to market their product to local wholesale/large-volume customers typically retain 60 to 85 percent of the market price paid by these clients (7), strengthening the inter-industry linkages (business-to-business connections) within their local economy, theoretically resulting in a positive local economic impact. Investment in and development of food infrastructure that supports multiple producers such as hubs, processing and packaging facilities. Highest-performing hubs pay more for their labor but get even more performance for that labor, with the	Other approaches to examine the economic effects of local food systems activity have utilized spatial panel data econometric approaches whereby a measure of local foods activity (typically direct-to-consumer farm sales) is used as an explanatory variable in describing changes on income growth (typically county-level per capita income) (p 63).

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
	Local food to schools increases collective knowledge base about local, seasonal fruit and vegetables Institutions can act as a conduit for a product that does not have a high level of consumer acceptability (seconds); this enables local producers to support sustainable production and distribution practices (less waste).	typical food hub full-time worker equivalent generating sales of \$387,204 (8).	
<u>The Economic Impact of Locally Produced Food</u> (9) St Louis 2017 <i>This is a blog summary of the comprehensive resource above.</i>	Most consumers are willing to pay more for local food and this stands across all income groups. Reasons for this include: • Consumers wanting transparency regarding the ingredients in their food • Consumers wanting an authentic brand story^[1]_{SEP} • Concerns about the environmental impact of the non-local food system	Studies have shown that the financial impacts of selling into regional markets are greater for fruit and vegetable farms with gross annual revenue under \$350,000. Farms of that size that sell in regional markets are shown to be more likely to earn positive net farm income and have lower operating expense ratios, resulting in increased farm viability. Nearly 32 jobs are created for every \$1 million in revenue generated by produce farms involved in some form of direct marketing, compared to only 10.5 jobs for those involved in wholesale channels exclusively. This larger local impact is likely the result of direct marketers purchasing a greater share of their inputs locally compared to producers not involved in direct marketing (89 percent compared with 45 percent).	NA

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
Local Food and Economic Development – A guide for Local Governments (10) Madison, Wisconsin 2014 0.8% food to consumers Most food system jobs are low skill (varying quality from low/no benefits to secure employment) Goals should be to localise food cluster, increase market share and capitalise on growing demand for healthy, local food. 'Food Value Chain' definition: system of food production, aggregation, distribution, consumption and disposal where stakeholders are linked by shared set of values beyond maximised profit (P 2) Goals - maintain transparency and minimise steps and travel of whole process. <i>Good details on food hub set up, ownership, operations, challenges, role of local govt.</i> Kentucky projects with restaurant reimbursements for buying local, produce delivery to local staff		Short supply chain means predictable and cost-effective deliveries, more responsive during high demand periods, keeps jobs and money locally. In the USA local food sales were \$4.8B of \$300B total farm agricultural production in 2007- local food is big business. Local businesses and employees more likely to spend their money locally Revenues tend to stay in the local economy and be reinvested in supplies, labour and other spending 13 farm jobs per \$million in sales Local economies benefit when farmers maintain the income they would have spent on 'middleman' in the food system Each dollar spent on local food recirculates an estimated \$2.6 into Wisconsin's economy. And every \$100,000 in local food sales creates 2.2 jobs. Illinois: using conservative economic multiplier of 2 to 3 cycles, estimated 20% increase in local production, processing and purchasing would generate \$20-30\$B new economic activity in the state and created thousands of jobs for farmers and farm-related businesses (11).	North Carolina- If all NC residents spent 10% of their food dollars on local foods (\$1.05 a day) approximately \$3.5 billion would be available in the local economy every year, part of it flowing back to local farmers and businesses(12). Vermont: 5% increase in local farming and food manufacturing would lead to \$135 million in annual output and increase food system employment by nearly 1,500 jobs in a 10 year period(13). See the USDA Economic Research Service for additional references and other resources.

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
<u>The Economic Impact of Local Food Procurement by Institutions</u> (14) Alberta, Canada 2017 <i>Interview guides in the appendix may be helpful for actions related to the first project.</i> <i>Good detail on food hubs as making useful contributions to the possibility of relocating the food system.</i>		Economic impact of a shift towards local food procurement at an institutional level would have led to a 40% increase in jobs, labour income, and GDP as compared to current practice Current practice: For \$90m in annual produce purchases across institutions: 100 direct jobs 18 induced jobs \$5.2m to direct and indirect workers \$825,000 to induced workers (wages of \$52,000 and \$45,000 respectively) \$18m GDP (direct and indirect) \$1.9 m (induced activity) Buy local hypothetical: 140 direct jobs 25 induced jobs (for both is 40% above current approach) \$7.3m to direct and indirect workers \$1.16m to induced workers (wages of \$52,000 and \$45,000 respectively) \$25m GDP (direct and indirect) \$2.7m (induced activity) (for both is 40% above current approach)	Input Output-Model built and maintained by Alberta Finance. Possible to quantify the economic and fiscal impacts of a particular activity as the spending associated with the activity ripples through the economy due to the interconnected nature of various sectors and markets. [SEP] Enables showing economic benefit as: - Employment (FTE) - Value added (GDP) - Earnings expressed as employment income
<u>7 benefits of Eating Local Foods</u> (15) Michigan	Full flavour due to being picked at peak ripeness and having shorter transit and storage times Local food is seasonal food	Money spent with local farmers and growers stays closer to home and reinvested in local businesses and services.	Not included

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
2013	More nutritious due to shorter storage time (nutrients are lost over time and in different storage conditions). Environmental benefits- maintain farmland and green/open space in local communities Food safety benefits- fewer steps between farm and plate means fewer chances for contamination		
<u>Let's reap the economic benefits of local food over big farming</u> (16) Nick Rose, Australia 2014	Not included	Local food economy job creation rates 3x higher than national and/or global food economies (17) Multiplier effect- money spent on local business that is retained in the local economy is typically more than 50% compared with only 15-30% of money spent in non-local business. (broken reference hyperlink in original article). Illinois- 20% increase in local food production generates \$20-30B of economic activity. Applying the same logic across all Australian states (with a total combined annual spend on food of US\$158 billion, compared with US\$48 billion in Illinois) would mean that the same 20% shift to local food in Australia would lead to at least AUD\$50 billion of new economic activity, with consequent major job-creation and local business impacts.	Not included

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
		Victoria's Mornington Peninsula Shire found in preliminary modelling that expanding its local food industry by 5% would bring in A\$15 million and create nearly 200 jobs (18).	
<u>Economic Impact of Localising Detroit's Food System</u> (19) Detroit, USA 2016 <i>Note this paper is about household spending rather than institutional procurement.</i>		Shifting 20% of food spending to local product Detroit City: \$480m 4,700 jobs \$125m more earnings \$20m in taxes 5 Surrounding Counties: \$3.5B 36,000 jobs \$900 m more earnings \$155m in business taxes	Multipliers- based on the Minnesota IMPLAN Model. This model shows the overall impact of economic events/shocks on final output, earnings, taxes and employment, The following events were modelled: • More local production of dry goods, dairy, processed fruits and vegetables, sugars and sweets, fats, oils, and all kinds of sweets, of beverages. • More local processing of beef, pork, other meat, chicken, and fish. • More local production of eggs. • More local growing of fruits and vegetables. • More local restaurant spending.
<u>Greenhouse gas emissions of imported and locally produced fruit and vegetable commodities: A quantitative assessment</u> (20) United Kingdom 2015	CO₂ emissions savings Non-European commodities in a fresh/chilled state contained 10.16 kg CO₂e/kg, this is 9.66 kg CO₂e/kg, more emissions compared to a kilogram of the same locally produced commodity. The emissions were generated through production,		Not included

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
Selected local fruit and vegetables modelled include: Apples, cherries, strawberries, garlic and peas. <i>Contains a carbon emissions figure for shipping compared with airfreight which may be useful in Tasmanian context.</i>	air distribution and transportation throughout the UK. Localised production of fruit and vegetables has enormous potential for emissions savings, even though the growing seasons are short. Scenario 1 25% reduction on non-European imports (matched by 25% increase in local production) = could save 28.9 kt CO2e/year Scenario 2 50% reduction on non-European imports (matched by 50% increase in local production) = 57.8 kt saved Scenario 3 25% reduction on non-European imports (matched by 75% increase in local production) = 86.7 kt saved		
<u>The Multiplier Effect of Buying Local Food</u> (21) Ontario, Canada 2012	Environmental benefits: fewer fossil fuel resources required for production and transportation. Food literacy benefits: Become more aware of what foods are available locally and in which seasons. Worker conditions benefits: A local food value chain can mean a system is more likely to pay fair prices to farmers for food that is produced under decent worker payment and conditions. In a supply chain that	Local production may seem expensive initially compared to low cost imports but over long term considering local job creation, decreasing seasonal employment payouts and local multiplier circulation the benefits add up over time Farm subsidies (Minnesota): If area consumers bought 15% of food from local sources in would generate a farm income equal to 2/3 of the farm subsidies paid out in that region (22).	The multiplier effect is the amount of local economic activity that is triggered by the purchase of any one item. The more a dollar circulates in a defined region, and the faster it circulates, the more income, wealth and jobs it creates.

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
	emphasises operational efficiency and costs, imported foods may be produced under very poor conditions where workers are paid very little.		
<u>Economic Contribution and Potential Impact of Local Food Purchases Made by Vermont Schools</u> (4) Vermont, USA 2016 2015 project to assess the economic contribution of Farm-to-School in Vermont. A comprehensive description of how IMPLAN works and models various scenarios for Vermont.	Research depicts a virtuous cycle in which more local food increases school meal participation, allowing schools to leverage more federal dollars and ultimately increase budgets for food, allowing more local products to be purchased (23) While the most frequent impact of FTS is an increase in fresh fruit and vegetable consumption, other studies have highlighted other impacts such as an increase in student knowledge of growing cycles and seasons, food systems, and healthy foods; increased gardening skills/experiential education opportunities; and an increase in student lunch participation (see citations in original report).	Scenario 1: Doubling local procurement from 5.6% to 11.2% for every additional job that directly supports food production in Vermont, an additional 1.3 jobs are created- total number of jobs increases from 7.3 to 10.5. Sales multiplier 1.6 Scenario 2a and 2b: Impact of universal school meals on the Vermont economy 2a 5 schools who meet the criteria of the VT universal meal program participate in the pilot and increase their purchase of local food by 10 percentage points would lead to \$53,800 in sales and 0.3 jobs 2b All 40 schools who meet the criteria of the VT universal meal program participate and increase their purchase of local food by 10 percentage points leading to \$390,000 in total sales and support 1.9 jobs in the Vermont economy Scenario 3: Cease to purchase any local food leading to total loss of \$1.2 million in sales and loss of	IMPLAN input-output model IMPLAN can be used to assess the size of an economy or economic sector, as well as estimate the impact of a proposed change in the economy Data required: total food purchases, number of meals, local food purchases. Helpful to categorise purchases three ways: -Directly from farmers -Directly from food processors -Directly from wholesalers Aggregate NAICS codes Table 1 page 5 includes a review of the economic impacts of Farm to School Programs. The sales multipliers varied from 1.03 in the 2010 Minnesota study to 2.4 in the Florida study. The employment multiplier ranged from 0.49 in the 2014 Minnesota study to 3.3 in the Colorado study. This range of results can be partially attributed to customization of IMPLAN sectors, accounting for loss of sales by the wholesaler sector when more food is purchased directly from farmers and

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
		6.3 jobs. While direct comparisons of Vermont's multipliers with other studies are not recommended, due to varying geographical scales, economic structures, and model customisation, looking at the multipliers across studies allow for some comparison	considering that local food purchases are not additional purchases but a shift in purchases.
<u>The Economics of Local Food Systems: a toolkit to guide community assessments and choices</u> (24) United States Department of Agriculture 2016 <i>A very comprehensive guide to economic assessments and high-level IMPLAN use.</i>	Module 1 lists guiding questions on establishing the economic assessment. Some useful questions may be about broader economic implications or non-economic relationships that bring community benefit. • Are economic relationships changing? • Do farmers have adequate access to appropriate markets? • Are prices fair to all involved? • What are the broader implications in the community to from economic development stimulated by the project?	Module 2 data sources Detailed information about data sources. As this is an American resource it is not directly useful but may hint at the Australian/Tasmanian equivalents that may exist and be useful. Broadly the types of data that inform economic analyses are: • Production Data • Data Sources on Food Handling, Processing, Marketing and Distribution • Food Consumption • Waste Recycling • Demographic and Economic Contexts Module 3 Primary data P44 provides a list of suggested indicators for the following: • Economic prosperity • Public health • Social interaction • Environment and aesthetics	IMPLAN Limitations Modifications Advanced application options Module 5 Input-Output Analysis Beyond scope of this toolkit: Evaluations of extra benefits such as generating local entrepreneurs and local social capital and reducing local obesity rates. P 80 -81 explains how multiplier concept works P 82 provides an example of a Social Accounting Matrix (SAM) for a three-sector model of Wisconsin Local Foods. Module 6 opportunity costs Explains the 'no resource constraints': it is assumed that the expansion of locally produced foods

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
		Survey examples and data analysis guides. Module 4 Data telling stories General guidance on using data to engage and assess, answer questions, tell stories, make visual representations	does not take land, water or resources away from other productive activity. Assumption and the 'no opportunity cost of spending' assumption lost direct sales activity in other food-handling sectors of the economy (typically the wholesale and retail sectors). Module 7 Advanced IMPLAN Technical and detailed information on how to adjust the default settings and create a modeling environment that is more directly reflective of conditions in your community or region using the so ware program IMPLAN.
<u>'Did it work?' Farm to Plate Program's Goal to Increase Local Food Consumption</u> (25) Vermont, USA 2019 <i>The details of the network /structure are interesting. Comprehensive engagement of multiple stakeholder working groups and annual events</i> Initial decade end in 2002 but work underway for a new decadal plan (renewed legislation).	The Vermont 'Farm to Plate Investment Program' had a goal to double the percentage of dollars spent on local food. Sub goals: 1- Increase economic development in Vermont's food and farm sector 2- Create jobs in the food and farm economy Improve access to healthy local foods	The percentage spent on local food nearly tripled. 72% increase in food and beverage manufacturing businesses Food related jobs increased 12% Development of the Vermont Packinghouse (local slaughterhouse and processing facility)	Not included
<u>Healthy food procurement and</u>	Focus of the paper is on <i>healthy</i>	Not included	

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
<u>nutrition standards in public facilities: evidence synthesis and consensus policy recommendations</u> (26) Canada 2018 <i>Consensus conference format may be a useful model</i> <i>Key recommendations for government, publicly funded institutions, health care facilities, decision-makers and professionals, citizens, and researchers are outlined</i>	procurement rather than <i>local</i> procurement.		Not included
<u>Healthy Food Procurement Policies and Their Impact</u> (27) Canada 2014	Focus of the paper is on <i>healthy</i> procurement rather than <i>local</i> procurement. This is the initial review paper produced as part of the project above.	Not included	Not included
<u>Assessing the impacts of Local Hospital Food Procurement: Results from Vermont</u> (28) Vermont, USA 2016		In 2012 \$1.784m spent on Vermont food, this was 44.3% of their food purchases (16% direct from farmers, 23% direct from manufacturers and 61% from wholesalers) Two new full-time positions at the hospital representing \$95, 057 labour income	IMPLAN Input-Output model for direct and indirect effects. Direct: Initial change such as the purchase of local food. Indirect effects come about from how locals respond to the initial change such as the local bakery purchasing locally milled flour to fill the hospital's 'local bread' order. Induced effects

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
		Every job added through additional purchase of local food generates 0.72 jobs in the rest of the economy due to backwards linkages of industries. Local food purchasing represents \$258,671 in labour income Multiplier of 1.68 Industries most affected by local food purchases: • Farming • Food Manufacture • Wholesale • Support activities for agriculture and forestry • Wholesale trade • Private hospitals • Offices of doctors, dentists • Transport by truck • Monetary authorities • Maintenance and repair construction	are the changes household make in response to fluctuations in their income. The indirect and induced effects of any economic impact constitute the multiplier (29) Note that IMPLAN used in this study links to an American database, the North American Industry Classification System (NAICS)
<u>Local Foods: Canadian schools, campuses and healthcare facilities speak up</u> (30) Canada 2013	Survey of Farm to Cafeteria activities across schools, campuses and healthcare facilities. Top 3 reported benefits from surveys across settings. Schools: 1 better quality, freshness, flavour and nutrition. 2 Improved student and staff	Not included	Not included

Resource	Evidence of benefits	Economic benefits	Model for economic benefit
	knowledge of local food 3 New/strengthened partnerships between schools, farmers and others Campuses: 1 Improved environmental sustainability 2 Better quality, freshness, flavour and nutrition. Stimulation of the local economy and 3 Increased markets for farmers or other local food producers Healthcare facilities: 1 better quality, freshness, flavour and nutrition. 2 New/strengthened partnerships between schools, farmers and others 3 Enhanced public perception of the healthcare facility		

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