



Sustainable Food Systems

Summary Report

August 21, 2012

Written By: Roxana Roshon (Ph.D.), Tom Schell (MBA) and Angelica Nef

Graphic Recording By: John Roshon

A Project of the London Training Centre

This project funded in part by the Ministry of Training, Colleges & Universities under the Labour Market Partnerships program.



Table of Contents

1.	Introduction.....	4
1.1	Labour Market Issues.....	6
1.2	Project Funding.....	7
1.3	Scope.....	7
1.4	Report Structure.....	8
1.5	Research Methodology.....	8
2	Trends and Challenges.....	10
3	Summary of Research.....	12
3.1	Feed the Mind: An Overview of Food and Agriculture Educational Opportunities	12
3.2	Agroecological Approaches: Combining Agriculture with Ecology for Resilience	12
3.3	Beginning to Close the Agricultural Loop.....	13
3.4	Appropriate Agricultural Technologies: Combining High and Low Tech.....	13
3.5	Local Food Initiatives: Connecting Eaters to Producers and Growing Food Citizenship.....	14
3.6	Local Food Distribution Models.....	14
3.7	Sector Food Chain Models.....	15
3.8	Alternative Food System – Bringing it All Together.....	16
3.9	Alternative Economics.....	17
3.10	Job Predictions.....	18
3.11	Towards Food Policy: Emerging Policy Initiatives.....	19
4	Recommendations.....	20
5	Conclusion.....	48
6	References.....	49

Table of Tables

Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks	22
Table 2: Sustainable Food System Recommendations for Production	28
Table 3: Food Processing and Storage Recommendations	32
Table 4: Food Purchasing Recommendations	34
Table 5: Economic Recommendations.....	35
Table 6: Sustainable Food System Social Recommendations.....	37
Table 7: System Wide and Other Recommendations for a Sustainable Food System..	44



“Sustainability will be discovered and more clearly defined for agriculture as society experiments with different farming systems and observes their consequences relative to sustainability goals and makes legal, institutional, and management adjustments in response. In that sense, sustainable management of agricultural resources is a journey of discovery and adaptive management, more than a specific destination.”

~ Whitacre ([Ed.], 2010, pg. 32)

1. Introduction

We are living at a pivotal point in history. Here in Ontario we are experiencing challenges including economic volatility, job loss, increased social inequality, rising energy costs, health concerns and environmental degradation. The cost and availability of non-renewable resources for food production and transportation, heightened food insecurity, aging farmer population and farm income crisis, and the decreased nutritional value of highly processed and “long distance” food are casting doubt on the dominance of the current global industrial food system. These and other challenges, combined with the demonstrated benefits of local, organic and seasonal food, are helping re-energize the development of regional food systems. Sustainable food system advocates propose that we focus on food issues as an opportunity to simultaneously address many concerns.

The 2008-09 global economic crisis took its toll on Southwestern Ontario and recovery has been slow. After years of unemployment rates lower than the provincial average, the unemployment rate in several of the region’s counties is greater than Ontario’s rate of 7.4% (Service Canada, 2012). Consequently, new and innovative opportunities are being sought to improve the economy and create new jobs. One such opportunity, being explored, is the replacement of \$18M of food imports into Ontario every year with locally produced and processed food (OMAFRA, 2012).

The modern global industrial food system has been efficient at producing an abundant supply of “cheap food”, allowing Canadians to enjoy the second lowest food costs (9.9% of total consumer expenditures) of all Organisation for Economic Co-operation (OECD) member nations, yet net farm income continues to decrease (Holm, 2009).

Consolidation is occurring across the entire agri-food system (AAFC, 2007; Sparling et al., 2005). Sustainability has been permeating dialogues so much so that is rated as a national priority by 93% of Canadians surveyed (Hoggan & Associates Inc., 2009).

According to de la Salle and Holland (2010), the eight pillars of a sustainable community are:

- Land use for a complete community;
- Transportation and mobility;



- Housing and green buildings;
- Green space, wildlife and recreation;
- Energy, water and waste;
- Agriculture and food;
- Education; and,
- Economic opportunity (de la Salle and Holland, 2010).

This report recognises the importance of all eight factors of a sustainable community, but focuses mainly on agriculture and food, energy, water and waste, education, and economic opportunity.

“...standing on the shoulders of giants.”

~ Isaac Newton

The works of many innovative thinkers have laid important groundwork for our understanding of the intimate and complex relationship between humans and food in the modern world. In particular, the writings of Michael Pollan, Vandana Shiva, Thomas Pawlick, Wendell Berry, Frances Moore Lappe and Marion Nestle have pointed us towards a more sustainable food and agricultural system. In addition, we would like to acknowledge the inspiration of Canadian researchers, including E. Ann Clark, Rod MacRae, Lauren Baker, Wayne Roberts, Alison Blay-Palmer, Charles Levkoe and Thomas Homer-Dixon. Seminal studies from the Metcalf Foundation and the People’s Food Commission (now the People’s Food Policy Project) and others formed the starting point for this research.

Using food as a catalyst for innovative change, Southwestern Ontario can position itself to transform its economic, social, and environmental stewardship to ensure that local communities and ecosystems are healthy enough to adapt. By pulling together the efforts of many, and drawing on our “collective genius” (Hopkins, 2009), we have the ability to implement the necessary changes to achieve a vibrant future that includes an equitable, healthy, ecological and financially viable agricultural and food system. The key is to build resilient capacity in the food and agricultural sector to prepare for and adapt to changes.

In this summary report and associated addenda, we focus on social, environmental and economic factors that could support the development of a sustainable, local food system.



1.1 Labour Market Issues

Rising energy costs are challenging the logic of globalization and refocusing attention on local food systems. Once sustainable food production and distribution systems are implemented, new careers will unfold.

Several current and relevant trends that will impact both on-farm and downstream decision-making are:

- Demographic shifts toward an aging population in Canada;
- Immigration accounting for a large component of the population growth;
- Large urban centers experiencing the fastest rate of population growth (Ontario Ministry of Finance, 2010);
- Increased reliance on imported food;
- Declining number of students participating in agricultural education;
- Canadian farmers worrying about the future of their industry; and,
- Decline in farm operations and farm operators (Canadian Federation of Agriculture, 2007).

Value-added and alternative agriculture could be keys to restoring sustainable and resilient communities and improving quality of life. The training, implementation and restoration of skills associated with local and sustainable agriculture is necessary. This will also include the reintroduction of local, value-added businesses (e.g., abattoirs, bakeries, millers, cheese makers).

Within the last decade, a local food revolution has sprung up and taken root as more people recognize the nutritional benefits, gastronomic pleasures and economic values of eating local agricultural products. This is connected to a broader, more ecological and cultural view of food that is appearing in popular literature (e.g., Pollan, 2008), opening markets for value-trait products.



1.2 Project Funding

Financial support for the first seventeen months of this project was obtained from the Ministry of Training, Colleges and Universities (MTCU) in London, as a Labour Market Partnerships (LMP) project. The initial mandate was to focus on nine counties in Midwestern Ontario, including Bruce, Grey, Elgin, Middlesex, Oxford, Huron, Perth, Waterloo and Wellington. The parameters of this research were determined by the catchment area of the LMP and extended due to the location of the researchers and precedence set by other concurrently running LMPs administered by the London MTCU. Partway through the project, additional funding was received from the McConnell Foundation. At this point a partnership was formed with Southwestern Economic Alliance (SWEA), a membership organization open to fifteen counties, their cities and lower tier municipalities. This expanded the perspective and catchment area of research to include Essex, Lambton, City of London, Chatham-Kent, City of St. Marys, City of Stratford and City of Windsor (SWEA, 2010). In addition, Brant, Haldimand and Norfolk counties are within the SWEA zone, but are not voting members¹. Therefore, some of the research covers only nine counties, with others including the other regions.

In addition, in-kind support was obtained from OMAFRA, Huron Business Development Corporation, University of Guelph, Western University, Value Chain Management Centre located at the George Morris Centre, and many other organizations and individuals.

1.3 Scope

The scope of this research was defined by the project funding. The original purpose was to identify job types, related skills and subsequent training and education necessary to support a transitioning labour market as we move towards greater food and agricultural sustainability in Midwestern Ontario. As the project evolved, the region expanded to Southwestern Ontario, as explained under Project Funding. To identify these jobs, it was necessary to investigate the many elements that could contribute to economic, social, and environmental stewardship within a sustainable food system. Research was initiated by exploring the existing food system, trends and future challenges. Information was obtained from primary and secondary research sources and participatory observation (refer to Research Methodology). The project used a holistic, coordinated systems approach to building local capacity of small and medium size producers and processors, while including the widest possible range of food system stakeholders.

Beyond the time period and scope of this report, lie the planning and implementation phases. It is anticipated that additional job and training opportunities will result from the planning phase.

¹ Personal communication with Serge Lavoie (SWEA president, slavoie@swea.ca) on April 26, 2012.



1.4 Report Structure

In addition to this Summary Report, a Toolkit and the following Addenda were issued as a result of the research undertaken as part of this LMP:

- A. Glossary of Terms
- B. Feed the Mind: An Overview of Food and Agriculture Educational Opportunities
- C. Local Food Initiatives: Connecting Eaters to Producers and Growing Food Citizenship
- D. Agroecological Approaches: Combining Agriculture with Ecology for Resilience
- E. Beginning to Close the Agricultural Loop
- F. Appropriate Agricultural Technologies: Combining High and Low Tech
- G. Alternative Food Systems
- H. Alternative Economics
- I. Sector Food Chain Models
- J. Local Food Distribution Models
- K. Job Predictions
- L. Towards Food Policy: Emerging Policy Initiatives
- M. Agricultural Maps of Midwestern Ontario

1.5 Research Methodology

From February 2011 until July 2012, researchers with Sustainable Food Systems, a Project of the London Training Centre, explored the possibility of developing a more sustainable food and agricultural system in Midwestern Ontario (with a focus on nine counties in the catchment area of the LMP).

At the beginning of the process it was important to engage community members to explore opportunities. Using a method of participatory inquiry, we hosted five Interactive Conversations, with a total of 170 participants:

- October 29: Bring Food Home Conference in Peterborough - 26 participants;
- November 7: Bruce and Grey counties - 33 participants;
- November 15: Huron and Perth counties - 30 attendees;
- November 21: Middlesex, Oxford and Elgin counties - 32 participants; and,
- November 22: Ignatius Jesuit Centre, Guelph; Waterloo and Wellington counties - 49 participants.

The participants were asked to illustrate the food system that existed in the past, map current value chains and vision a desirable food system through the lens of rising energy costs and increased environmental degradation. From there, the participants identified education and training, policy and regulations and future research that would be required to create a resilient, sustainable food system.



In addition, primary research was conducted by interviewing a broad range of local food stakeholders including farmers, growers, distributors, processors, retailers and others involved in the food movement.

Secondary research was conducted by examining journal articles, reports, and on-line information sources. We acknowledge the contribution of researchers and thought provoking documents as a foundation for this report (as discussed in the Introduction).

The Sustainable Food Systems research took a holistic systems approach. This holistic view of a sustainable food system must also include traditional “value chain” members like major grocery stores, as they are part of the new cluster system. The central benefit of a holistic systems approach is its ability to collect information from many perspectives (each branch of sustainability’s “triple bottom line”) and develop recommendations that consider the potential impacts from those varying perspectives.

This research is exploratory and by no means exhaustive. Our intention is for this report to spark conversations around food and agriculture in Southwestern Ontario and provide yet another point of inspiration.

“The complex issues connected with the notion of sustainable development are not just ecological problems, nor economic or nor social. They are a combination of all three. Actions to integrate all three typically short-change one or more. Sustainable designs driven by conservation interests can ignore the needs for a kind of economic development that emphasize synergy, human ingenuity, enterprise and flexibility. Those driven by economic and industrial interests can act as if the uncertainty of nature can be replaced with human engineering and management controls, or ignored altogether. Those driven by social interests often presume that nature or a larger world presents no limits to the imagination and initiative of local groups.”

~ Gunderson and Holling (2002)



2 Trends and Challenges

The dominant global food system is guided by the industrial philosophy that views agriculture as a commodity and is focused mainly on maximizing production and minimizing costs. The transition to the industrial model of food production has not come without a toll on the environment, human health, and the social and economic fabric of our communities (PFPP, 2011; NFU, 2005; Winnie, 2010).

In this report, we examined the following trends and challenges:

- **Wholesome Food: The Path to Health and Nutrition:** Chronic diseases, such as obesity, diabetes, cancer, heart disease, asthma and allergies are on the rise, increasing health care costs and decreasing quality of life. Some chronic illnesses can be prevented or reversed through lifestyle changes, including eating whole nutritious foods and organic when possible (Benbrook et al., 2008; Campbell and Campbell, 2006; Pamplona-Roger, 2004).
- **Environmental Impacts:** The industrial system of growth has led to degradation of the environment on many levels (e.g., deterioration of water quality, soil erosion, deforestation). While many groups are seeking to change this through reforestation, environmental remediation, and biodiversity (e.g., Canadian Geographic, 2010; Environment Canada, 2010; Ontario Biodiversity Council, No Date), groups like PERC (Property & Environmental Research Centre) seek to make changes through economic policy (PERC, 2012).
- **Population Growth and Limited Resources:** The population in Ontario is expected to increase by 4.5 million over the next 26 years, which will place greater pressure on food system resources ([MOF, 2012](#)). The number of people involved in agriculture continues to decline along with the ratio of rural to urban populations ([Statscan, 2009](#)). Forty-two percent of farmland has been lost since 1921 ([NFU, 2012](#)). The amount of water consumed by livestock is greater than the annual precipitation in Southwestern Ontario ([Environment Canada, 2012](#), [OMAFRA, 2007](#) and [Statscan, 2008](#)), and nitrogen fertilizers are causing elevated nitrate levels in ground water. Depletion of potassium and phosphorus will make it impossible to feed a world population expected to reach 10 billion by the close of this century ([Grantham, 2011](#)).
- **Energy and the Economy:** Economies exist because energy resources are available. Most of what is available today is derived from non-renewable energy sources. As world-wide energy consumption is increasing, non-renewable sources are decreasing and it takes more energy to exploit the remainder. The question is: can renewable sources meet our energy demands in the future (Martenson, 2011)?
- **Economics and Debt Crisis:** Our economy, like most global economies, is based on growth, which is deemed necessary to maintain current and future prosperity. To grow, we borrow money with interest rather than finance from available resources. Our monetary system of lending money into existence and



our buy now, pay later culture has created high and increasing levels of debt that can only be serviced by exponential growth. This is not possible on a planet with finite resources. The current total level of debt has reduced our collective capacity to support sustainable job creation programs. Alternatives must be found (Martenson, 2011).

- **Political Dynamics:** Although there are a variety of definitions, in politics it seems to be mainly about swaying outcomes in your favour. The food industry is divided into two main camps, each supporting varying levels of economic, environmental and social outcomes, which often leads to political conflict and the inability to collaborate. Because of expertise, organization, wealth and size, big business is politically suave. The “small” food industry is financially constrained and less collectively organized; however, they do have a ground swell of supporting consumers and are starting to make political inroads that will increase their political currency. All players will inevitably need to rebalance around economic, environmental and social outcomes and work together.

"Focus 90% of your time on solutions and only 10% of your time on problems."

~ Anthony J. D'Angelo – Founder of the EnPower X Educational Group



3 Summary of Research

Below are highlights of the research conducted during the Sustainable Food Systems project. Please refer to the corresponding addendum for more information.

3.1 Feed the Mind: An Overview of Food and Agriculture Educational Opportunities

Formal and informal education and learning opportunities within and outside Midwestern Ontario were examined. The transition to a more sustainable food and agricultural system will hinge on learning and education. Educational opportunities need to be available and accessible for people at all ages and stages of life. The complexity of today's society will require education to move beyond the classroom. The path towards sustainability will require greater adaptive capacity and behavioural changes. A continuum between formal and informal learning and education spanning a life-time should be at the root of this engagement process.

Through traditional and informal learning and education, the social, economic and environmental benefits of sustainable local food and agriculture could be possible. Through education and life-long learning pursuits, local food and agriculture can be linked to responsible economic development opportunities, reinforcing sustainable communities, building capacity and increased adaptability in this sector.

The multiplicities of educational elements required to support the development of a sustainable food system are endless and evolving. Educational and learning processes need to foster the pursuit of life-long learning. It is up to each and every one of us to do and learn what we can... Feed the Mind!

“The essence of life should be continuous creativity: in working out creative and comprehensive solutions to one’s problems, one rises above them.

They become smaller, less tormenting insistent, until, perhaps, in time, one realizes they have just faded away.”

~ Robert Hart

3.2 Agroecological Approaches: Combining Agriculture with Ecology for Resilience

In agriculture there is a range in scale and philosophies from large industrial agri-business corporations through small-scale organic and biodynamic family farms. One of the foci of this project was ensuring small and medium farms are sustainable through education, promotion and job creation. By promoting ecological and cultural sustainability, small farmers and those contemplating a transition to organic can diversify and become more viable.



Agroecology takes an environmentally and socially responsible approach to agriculture, one that focuses not only on production, but also on the ecological sustainability of the productive system. Agroecological farming encompasses:

- Productivity or appropriate level of output.
- Stability, consistency or persistence of output over time, sustainability and ability to recovery from stress and disruptions.
- Equitability or evenness of distribution among various groups (MacRae, 1990; MacRae, 2010).
- Human relations and relationships with our environment are as important to sustainability of agroecosystems as are biotic and abiotic factors (MacRae, 2010).

Protection of agricultural land is required to ensure an adequate land base for food production. Sustainable agriculture is achievable through polyculture, crop rotation, agroforestry, urban agriculture and Small Plot Intensive (SPIN) farming. The diversification of crops, including perennials, is necessary to withstand changing weather patterns. Non-traditional winter vegetable production has potential for growers in areas where cold weather presently constrains production. This promotes greenhouse production of greens and root crops all year long. In addition, eating seasonally and locally will be an important component. Some potential enterprises include grass-fed livestock, urban agriculture (e.g., backyard poultry, edible fruit trees in parks), permaculture and artisanal cheese making.

3.3 Beginning to Close the Agricultural Loop

Agriculture needs to close the loop. An integrated food system will connect producing, processing, transporting, distributing and celebrating food and recovering food wastes with environmental, social, political and economic driving forces. By focusing on the waste recovery and resource reuse component of a closed loop system, agriculture will move towards closing that loop. The quickest and most successful way to improve food availability is to reduce food waste. Therefore, formal and popular education focused on changing patterns of purchasing, consuming, and disposing would benefit Midwestern Ontario. Since there will continue to be some food waste generated (e.g., fruit peels), composting is a very important solution. Reducing water waste and using greywater for irrigation are crucial to long-term agricultural sustainability. The possibilities for closing the agricultural loop and job creation are endless... Be creative!

3.4 Appropriate Agricultural Technologies: Combining High and Low Tech

As a society, we have reached the point where we need to “re-think” development. By integrating information and communication technology to connect people and their cultural concerns, progress on this front can be attained (International Exchange Platform, 2011). People are starting to look for careers that match their natural passions and interests. Individuals are starting to recognize that happiness comes from fulfilling passions rather than working in meaningless jobs and creating unnecessary stuff. With a focus on healthy local food and small-scale agriculture, suitable technology can be



supportive if used wisely. A cursory overview of some technologies, such as production and processing technologies, alternative energy, and computer based solutions, which can support small-scale agriculture, was conducted. It is possible that some of the solutions discussed could be applicable to larger operations.

3.5 Local Food Initiatives: Connecting Eaters to Producers and Growing Food Citizenship

It suffices to say, the local food movement is growing strong. One needs only to take stock of the myriad of innovative food initiatives taking root in communities all across Ontario; the sheer scope of the initiatives is remarkable. Community gardens and urban agriculture, incubator farms and kitchens, fruit tree harvesting initiatives, food charters, food forums, buy local maps, farmers' markets, food festivals, 'Good Food Box' programs, the list goes on and on. The rise and variety of these innovative alternative food initiatives is indicative of the groundswell itching to address the shortfalls of the dominant food system by affecting social change. Each project and initiative seeks to provide a solution to a problem – alienated communities, food insecurity, farmer income crisis, food access, food distribution, diet related chronic disease, etc. But from the plethora of individual food initiatives, we begin to witness the emergence of organizing initiatives that take the form of regionally-based (operating on the county level) local food networking/convening organizations. While these organizations share many commonalities (bring similar *types* of stakeholders to the table, and experience similar challenges), they are as distinct as the communities and individuals that brought them into being.

These initiatives are strongly rooted in relationships, with the knowledge and a sense of place.

“Positive thinkers get positive results because they are not afraid of problems.”

~ Norman Vincent Peale.

3.6 Local Food Distribution Models

A number of on-farm and off-farm food distribution models exist, connecting producers to consumers. They include CSAs, farm gate stands, pick your own, large chain grocery stores, independent grocery stores, food service distributors, farmers' markets and on-line markets. Since one of the key foci of the project is creating a regional sustainable food system, each model was ranked against environment, nutrition, social/cultural and economic returns to the community. This ranking is anecdotal. For example, any model that includes local food, scores high in the economic scale because there is a direct correlation between consumption of local food and jobs, economy activity and prosperity (OASC, 2010). The environmental ranking looks at food miles per calorie of food delivered as some recent studies indicate that transportation of small shipments between small-scale farms and the market can result in less efficient use of energy and actually increase oil consumption ([Policy Innovations, 2007](#)).



The side by side examination helps to determine the strengths and weaknesses of each distribution model and provides ideas for an alternative, sustainable food system.

3.7 Sector Food Chain Models

The Food Chain research examined a mixture of large and small, regulated and non-regulated value chain examples from the Fruit, Vegetable and Livestock sectors with the following notable aspects:

In 2011, Ontario imported approximately \$4.7B in fruits and vegetables (including nuts and fibre products) and exported approximately \$980M. For livestock and meat products (e.g., red meat, fish, poultry, dairy products and other animal products), Ontario imported approximately \$3.6B and exported approximately \$2.2B ([OMAFRA, 2012a](#)).

Agriculture products are clustered in different geographic regions throughout Southwestern Ontario. For example, pork production is highly concentrated in Perth County ([OMAFRA, 2011](#)) and vegetables are grown as the main product in Elgin County ([OMAFRA, 2011a](#)).

Approximately $\frac{2}{3}$ of agriculture producers, processors and other stakeholders are regulated under the Farm Products Marketing Act by various commodity marketing boards. In most cases some minor exemptions exist².

Value chain members engaging in regulated commodities tend to be larger operations. The tight control of production, processing, packaging and marketing to large food purchasers is similar for all regulated commodities involving production quotas, pricing, licensing fees, contracting agreements, single-desk transaction reporting and dispute resolution ([CFO, 2007](#)). Challenges include cheap imports, concurrent importation and sale of products by licensed marketers, unfavorable MPAC (Municipal Property Assessment Corporation) “farm” tax categories, time-of-use electricity and cumulative effects of taxes throughout the value chain (Obtained from industry sources wishing to remain anonymous).

Small and medium farm operations wishing to produce a regulated commodity product are limited to exemptions volumes, as minimum quotas are generally too high. For example, without a license they can produce but not sell 300 broiler chickens per year or have 100 laying hens. The minimum quota is approximately 20,000 chickens per registered premise with a license (Obtained from industry sources wishing to remain anonymous).

Most small and medium farm operations are mixed or engage in non-regulated products such as shelled peas for sale into niche markets. Some producers have on-farm processing capabilities. Farm producers, who have the capacity and capability to meet

² Personal communication with Paul Glenney (OMAFRA; Paul.glenney@ontario.ca) on July 20, 2011.



packaging and traceability requirements, are able to sell to larger format food outlets. In most cases, they operate independently of each other with very little collaboration or leveraging resources (Obtained from industry sources wishing to remain anonymous).

Until the 1950s, small and medium, regionally based processors were common ([Carter-Whitney and Miller, 2010](#)). Because of consolidation, centralization and globalization of the food system and regulations designed for large operations, many regional processors have gone out of business ([NFU, 2011](#)) and were replaced with larger centralized processors. Small chicken producers may have to travel up to six hours to the nearest processor.

While in total agreement with food safety, growers, packers and processors are finding that traceability and safety requirements are placing them in an uncompetitive environment due to administration and implementation costs that are not required in other countries. Some standards are mandatory and some are at the request of buyers although it is expected that they will become a standard requirement.

There are three general levels of distribution: central, regional and local. The central distribution system services the grocery chains with large trucks. Regional distributors service institutional buyers with a range of trucks. Central and regional distributors employ sophisticated logistics management systems that deliver high levels of efficiencies. Local distribution to consumers uses smaller trucks, vans and cars. Some recent studies indicate that transportation of small shipments between small-scale farms and the market can result in less efficient use of energy and actually increase oil consumption ([Dean, 2007](#)).

“The world is limited in land, water, fertility and energy. In such a world, people with moral limits must develop their local economies, must shorten their supply lines and take responsibility for their economic influence. Unless we believe that cheap long-distance transportation is somehow infinite, we cannot justify the destruction of any local capacity to produce necessary goods.”

~ Wendell Berry

3.8 Alternative Food System – Bringing it All Together

Important clues from the project research, when taken together, point the way towards a viable alternative food system. The clues include, but are not limited to, concentration of food types by counties in Southwestern Ontario; lack of consistent product volumes, packaging, selection and traceability; fragmented distribution; declining small/medium processors and storage facilities; high level of food miles per calorie of food delivered and adversarial conditions between value chain members. The proposed system addresses these elements, making it possible for commercial and institutional food purchasers to replace imports with locally produced and processed food and for producers to engage in more efficient farm direct initiatives.



The proposed system has two components that work together, a Sustainable Food Cluster and a Sustainable Food Cluster Network. The basic concept is to grow, process, store, aggregate, package and distribute to consumers, institutional and retail purchasers as much food as possible inside each local Sustainable Food Cluster. What is not available from within each Sustainable Food Cluster would be obtained from other Sustainable Food Clusters through the Southwestern Ontario Sustainable Food Cluster Network.

The Sustainable Food Clusters would be established as a social enterprise non-profit cooperative with inclusive managing membership from grower to food purchaser. To reduce food miles, a “Smart Food Distribution” system would be established that optimizes inbound and outbound distribution routes within the Sustainable Food Cluster and within the Sustainable Food Cluster Network. Each Sustainable Food Cluster would create their own unique branding, aggregate financing, establish a local currency, build strong member relationships, and deliver education and training. Information technology will play an important part in efficiently operating the system.

Benefits include increased access by small and medium producers to mainstream purchasers, reduction in food miles and more community involvement and “ownership” in the local food system.

It should be noted that a review of reports by [USDA](#), [Organic Central](#), Greater Golden Horseshoe ([Metcalf](#) and [GTAAAC](#)) and Blay-Palmer et al. confirm Food Hubs as good starting point for creating local sustainable food systems.

3.9 Alternative Economics

Economic systems form an important part of an array of interconnected systems that must be considered to create a holistic, integrated, coordinated Sustainable Food System.

Growth based, global economic systems are in trouble. We must breakout of old patterns of thinking to reset the table with a new sustainable economic model that puts people above profit, generates permanent jobs, keeps wealth in the community, is resilient to economic shocks, defines levels of production based on ecological carrying capacity, considers external ecosystem costs, and creates equitable distribution of wealth, health and wellbeing for all.

Alternative business structures, alternative transactional value mediums and non-traditional finance sources have the potential to deliver the above outcomes.

Alternative Organizational Structures:

Adversarial conditions often occur along the value chain when profit is the key motivation. Vertical cooperatives with inclusive membership within the food system are transparent and work on fair terms and prices for everyone.

Alternative Value Transaction Mediums (Currencies):



It is important to understand why the current economic system is vulnerable to the effects of global financial difficulties. Countries lend each other money. When a country like Greece gets in economic trouble, it sends shockwaves through financial markets ([Arghyrou and Tsoukalas, 2010](#)). National currencies are tied to each other. When a country's exchange rate declines, further economic problems result. Single national currencies are vulnerable. If there is a problem, it is felt through the entire country ([Broz and Frieden, 2006](#)).

Alternative value transaction mediums are gaining popularity. They can create a more resilient economy and keep wealth in the community. Some examples are local currencies, time banking and bartering.

Non-Traditional Financing/Investment:

There are a number of factors that provide guidance for alternative financing options, including:

- The system of lending money into existence along with interest perpetuates exponential growth, which is needed to service increasing levels of debt ([Martenson, 2011](#)).
- Debt and available money varies from member to member along the value chain.
- Financial risk is higher in competitive systems where adversarial conditions exist between participants in the value chain.
- Traditional sources of funds are drying up and becoming more difficult to obtain.

Members of a vertical cooperative provide loans and in-kind assistance to one another. Loans are repayable, but no interest is charged. The "interest" earned comes in the form of added system throughput which benefits all the members in the value system.

Other money can be provided through Social Impact Bonds ([MaRS, 2010](#)) for improved social outcomes that result in public sector savings. For example, donations could be collected towards establishing a Sustainable Food System much in the same way that donations are made to charities. The goal would be the establishment of a Sustainable Food System Foundation, owned and capitalized by thousands of regional shareholders to support Sustainable Food Clusters.

3.10 Job Predictions

The number of permanent direct and indirect jobs is expected to increase as imported food is replaced by a Sustainable Food System. To arrive at a job creation estimate range, the following factors were considered: imported foods that could be grown in Ontario, potential decline in exports and the correlation between farm revenue and number of jobs³ ([Ontario Agriculture Sustainability Coalition, U.S. Department of Energy, 2012](#)).

³ Personal communication with Paul Nichol (HBDC (Huron Business Development Corporation)); pnichol@smallbusinesshuron.ca on February 8, 2012.



Using 10,000 jobs for every \$500M in farm revenue, a simple calculation, the range is between 146,000 and 340,000 new jobs.

**“Large-scale problems do not require large-scale solutions;
they require small-scale solutions within a large-scale framework.”**

~ David Fleming

3.11 Towards Food Policy: Emerging Policy Initiatives

As discussed earlier in this summary report, the food system is facing many challenges, not the least of which is that Canada does not currently have a comprehensive food strategy. Without a clear vision for the destination of our food system, what we are left with is a series of fragmented – sometimes even contradicting – set of policies (McRae, 2011). It is a piecemeal of agricultural policies interacting with food safety regulations, butting up against land-use planning, within the larger context of international trade agreements. This leaves food-related policies to cross many jurisdictions and notoriously silo-ed ministries. Though the recent agricultural policy framework (agreed upon by federal, provincial and territorial governments) is a step in the right direction as it recognizes the importance of the environment within agricultural policy (and opened up new avenues of communication), “it failed to recognize the full suite of issues that should comprise a national food policy and was particularly weak on health, social, and cultural issues beyond food safety” (MacRae, 2011, p. 426).

The perspective of food strictly as commodity fails to take into account the complex nature of food – our intimate human relationship with food as an essential component of our lives, health and well-being. Widely recognizing the need for a coherent and integrated set of policies to guide our food system towards greater sustainability goals, a groundswell of diverse policy initiatives has been emerging. Driven by many interests (political parties, industry, Non-Governmental Organizations (NGOs), the food movement, and individual citizens), these initiatives are manifesting on many scales (personal, institutional, regional/municipal, provincial, national, etc.) and taking on many forms (e.g. strategies, charters, ‘calls to action’, etc.). The complexity of the issues facing our food system today will require the input and action of all of us. As well, policy change will need to be met with behavioural change. Capacity building, collaborative strategies, and engagement processes will have to be at the core of any process if we are to move towards effective ‘food policy’ that will contribute to the development of a sustainable food system.

**“Hope is beginning to trump despair...
We are the leaders we've been looking for.”**

~ Grace Lee Boggs



4 Recommendations

Below are tables with recommendations relating to planning and implementation of a Sustainable Food System within Southwestern Ontario. Although the recommendations take a holistic and integrated approach, they should be expanded or modified on a community-specific basis.

The recommendations are divided into the following categories:

Table 1: Sustainable Food Cluster and Sustainable Food Cluster Network concept, an overarching framework for the development of a sustainable food system: one that maximizes economic, social and environmental benefits.

Table 2: Ecoagriculture and closed-loops systems.

Table 3: Food processing and storage.

Table 4: Recommendations for food purchasers.

Table 5: Additional economic recommendations.

Table 6: Recommendations that impact and improve social conditions.

Table 7: System wide and other recommendations.

The result will be a Sustainable Food System where....

- Everyone shares in a thriving food culture.
- We work within the limits of our environment.
- Our food contributes to our health.
- Communities are caring, connected and food secure.
- Jobs are plentiful and rewarding.
- Economic systems keep wealth and prosperity in our communities.

We owe this future to our children and grandchildren!

**"Knowing is not enough; we must apply.
Willing is not enough; we must do."**

~ Goethe



Sustainable Food Cluster and Sustainable Food Cluster Network Description:

The Sustainable Food Cluster is a non-profit, vertical cooperative system including area producers, processors, marketers, aggregators, consumers and institutional and commercial food purchasers. Mixed farmers and dedicated growers (e.g., apples) within the area pool into an energy efficient facility that provides storage, minimal processing, traceability and consistency of supply. The food is distributed to restaurants, retirement homes, grocery stores, institutions and the food insecure within the towns and cities of the Sustainable Food Cluster with attention to minimizing food waste. In addition to managing and optimizing distribution, the cooperative is responsible for creating a brand and promoting their unique local products, aggregating no-interest financing from cooperative members and other non-traditional sources, establishing a local food currency, education and training for community members, and delivery of social enterprise programming.

The Sustainable Food Cluster Network distributes primary and processed food from one cluster to another, providing a full complement of different types of foods. (For additional information, refer to the Addendum: Alternate Value Chain System).

Sustainable Food Cluster and Sustainable Food Cluster Network Triple Bottom Line Benefits:

Economic:

- Greater transparency and equitable distribution of wealth.
- Pricing that is acceptable to everyone.
- An internal source of financing for integrated projects that strengthens the value chain system and benefits all members.
- Small and medium producers and processors gain access to larger commercial and institutional food purchasers.
- Positive effect on employment.
- Access to regional markets throughout Southwestern Ontario.
- Increased wealth in the entire geographic area.

Social:

- More urban and rural involvement in the local production, processing, transportation and education creating stronger communities.
- Local production and processing creating revitalized urban and rural areas.
- Delivery of social enterprise programming that provides community members with dignified access to nutritious food while fostering opportunities for personal solutions.



Sustainable Food Systems

...a collaborative approach to a better way of life!

- Closer ties between regions.
- Enjoyment of excellent, nutritious food from other regions.

Environmental:

- Reduced number of food miles and greenhouse gas emissions.
- Energy efficient aggregation facility.
- Focus on bio-diversity, renewable energy and closed loop resource systems will benefit the environment.

To achieve the greatest degree of efficacy, stakeholders within each Food Cluster may wish to create a customized, time coordinated, implementation plan, choosing from the recommendations listed below to complement their existing infrastructure and programs.

Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Establish a Smart Food Distribution online platform to optimize inbound, cross docking and outbound routes within and between the Sustainable Food Clusters.	Decreased transportation energy per calorie of food delivered and associated costs.	Increased communication between urban and rural communities through logistics staff. Closer ties between regions.	Optimization of transportation routes will reduce food miles and greenhouse gases.	Logistics management and operation.	Logistics management. Logistics software application developers. Route designers. Transportation drivers. Shippers and Receivers.



Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Develop information technology to manage commercial transactions of local Sustainable Food Cluster members and within the Sustainable Food Cluster Network in Southwestern Ontario.	Ensures accurate transaction accounting and compensation.	Ensure a more equitable distribution of wealth.	Records external eco-system costs.	Application software.	Financial managers. Accountants and bookkeepers.
Develop renewable energy sources, such as soy oil, to power transportation vehicles along with “fuelling” stations throughout the Sustainable Food Cluster Network.	Reduction in costs associated with reliance on non-renewable energy sources.	Helps to fulfill our social responsibilities to local and regional energy sustainability.	Abatement of greenhouse gas emissions.	Installation, operation and maintenance of renewable energy sources.	Conversion installers and maintenance technicians.
Build strong member relationships within each Sustainable Food Cluster and throughout the Sustainable Food Cluster Network.	Increased economic returns to cooperative members.	Loyalty and commitment between cooperative members.	With more integrity built into the system and with trusting relationships, greater respect will be given to food production and environmental protection.	Personal communication skills, website design and maintenance and social media.	Personal communication trainers. Website designers. Website maintenance. Social Media specialists.



Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Create a Sustainable Food Cluster brand and promote local products within the Sustainable Food Cluster and ones that are unique to other Sustainable Food Clusters.	Increased local and regional food purchasing resulting in greater economic activity and jobs.	Community pride in locally produced food.	Decline in imports and additional sourcing of local foods will reduce food miles and greenhouse gases.	Brand creation and marketing.	Marketing managers.
Provide physical space for advocacy groups and Sustainable Food Cluster members to network and build communities of practice.	Leveraged funding and economic outcomes are possible from increased collaboration.	Coordinated social community programs will evolve.	As people collaborate, environmental protection can become a focus.	Existing and new programming.	Coordinators. Facilitators.
Develop a Sustainable Food System index that measures social, environmental and economic outcomes within each Sustainable Food Cluster and aggregated across the Sustainable Food Cluster Network.	When social and environmental measures increase, greater economic benefits will follow.	A higher social measurement will perpetuate greater social equity and happiness.	Environmental measure provides an indication of sustainability.	Establishing a measurement and reporting system.	Software developers. Auditors. System managers. Accountants.



Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Provide farmer to farmer hands-on and experiential training on permaculture techniques (closed loop, no inputs), eco-agriculture buffers, greenhouse operation, and sustainable technologies on agriculture demonstration lands.	Increased profitability due to elimination of inputs. Increased yields due sustainable technologies.	Opportunity to exchange ideas with other farmers. Greater availability of "out-of-season" food.	Operating within eco-system carrying capacity. Less toxic run-off. Use of sustainable technologies will reduce greenhouse gases.	Permaculture techniques, eco-agriculture buffers, greenhouse operation and sustainable technologies.	Eco- farmers. Permaculture trainers. Eco- agriculture buffer trainers. Greenhouse operation trainers. Sustainable technology trainers.
Provide hands-on and experiential training on urban gardening and small greenhouse operation on agriculture demonstration lands at the Sustainable Food Cluster.	Savings on food costs.	Self-reliance. Improved nutrition and health. Community building through training and networking opportunities. Being part of the sustainable food system solution.	Spreads carrying capacity between rural and urban. Reduces food miles and greenhouse gases.	Urban gardening and small greenhouse operation.	Urban gardening trainers. Small greenhouse operation trainers.



Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Provide physical and virtual space in the Sustainable Food Cluster's certified kitchen for hands-on cooking skills using fresh seasonal ingredients preserving techniques, food waste reduction and nutrition.	Reduction in fast food costs and food waste costs. Reduction in processed food costs.	Self-reliance. Improved nutrition and health. Community building through training and networking opportunities. Being part of the sustainable food system solution.	Reduction in food waste and associated greenhouse gases.	Meal preparation, preserving, waste reduction and nutrition.	Food preparation trainers. Preserving trainers. Waste reduction trainers. Nutrition trainers.
For food service providers, offer hands-on training using nutritious whole foods grown on-site and prepared in the Sustainable Food Cluster's certified kitchen.	Increased job opportunities. Economic spin-offs within the value system.	Increase in nutritional food within the commercial and institutional channels. Shift from fast food to nutritious food.	Additional sourcing of local foods will reduce food miles and greenhouse gases.	Certified chefs and food service staff.	Chefs. Certified Food Service Workers. Chef instructors. Food service staff trainers.
Using the Sustainable Food Cluster's certified kitchen, develop and provide virtual and hands-on training programs for food entrepreneurs wishing to start businesses in minimal processing.	Increased job opportunities. Economic spin-offs within the value system.	Increased nutritional food within all channels.	Reduced imports and additional sourcing of local foods will reduce food miles and greenhouse gases.	Minimal processing, marketing and business operation.	Food processing trainers. Marketing trainers. Business advisors.



Table 1: Recommendations Relating to Sustainable Food Clusters and Sustainable Food Cluster Networks

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Employment centre housed within Sustainable Food Cluster Network to establish local labour pool for coordination and training in order to fill permanent and seasonal jobs within the food value system.	Ensured system throughput stability.	Provides meaningful work in support of community wellbeing.	Reduction of environmental impacts from travel by seasonal migrant workers.	Food system human resource management.	Human resource managers. Job skills trainers.



Table 2: Sustainable Food System Recommendations for Production

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Eco-Agriculture: Incorporation of crop diversification into agriculture. Agriculture and human activities are viewed as part of the ecosystem.	Diversification of farmers' income. Local economic benefits.	Community building.	Ecosystem benefits (e.g., pollinators, birds). Polyculture diversification.	Novel crops. Importance of diversification.	Planting and maintenance of perennial crops. Harvesting and processing.
Closed Loop Systems: Minimize inputs and outputs; Everything is produced and used within the system (e.g., compost).	Less spent on inputs (e.g., fuel, compost).	More connection between eaters and producers.	Less waste. Less environmental impact.	Advantages Technologies Procedures	More local and on-farm jobs. Manufacturing technologists.
Urban agriculture, including community gardens, backyard gardens, greenhouses, cold frames, roof top gardens.	Savings on food costs. Creates local jobs.	Builds community in urban areas. Reduces vandalism.	Reduces food miles. Reduces urban heat islands. Provides green space for wildlife in urban areas.	Urban agriculture. Greenhouses. Urban planning.	Urban gardeners. Garden coordinators. Landscape architects.
Permissive urban agricultural policies	Would turn unproductive land into a source of food and possible income generation.	Reconnect urban population to food production. Build community.	Reduce food miles. Provides green space for wildlife in urban areas.	Urban farming. Food systems planning.	Landscape architects. Urban planners.



Table 2: Sustainable Food System Recommendations for Production

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Determine import replacement foods, world crops and other perennial foods that can be grown in Southwestern Ontario based on soil type and climate zones.	Increased farm revenues by growing food locally rather than importing.	Healthier communities resulting from more nutritious local food.	Reduced number of food miles and greenhouse gas emissions.	Soil and crop sciences.	Extension agrologists and agronomists.
Establish renewable energy sources on-farm (solar, wind, oil-seed) and farm shared (bio-gas).	Reduction in external energy input costs resulting in more economically viable producers. Creation of manufacturing jobs.	Helps to fulfill our social responsibilities to local and regional communities.	Decreased greenhouse gas emissions.	Installation and operation of renewable energy sources.	Renewable energy technicians.
Create water management systems including natural reverse water flow storage and drip irrigation. Reduce and reuse water involved in production.	Increased yields and revenue.	Improved water quality for human consumption.	Reduced erosion from severe weather events. Minimized impact on surface and groundwater.	Eco-water management design.	Water management system designers and installers.
Grow more fruits and vegetables and decrease the amount of meat raised.	Increased revenues by reducing energy costs.	Healthier populations.	Reduced inputs of energy and water per calorie of food produced.	Nutrition. Sustainable Production.	Farm operators. Nutritionists.



Table 2: Sustainable Food System Recommendations for Production

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Agriculture land retention.	Owned by Canadians. Owned by people who care about land (e.g., farmers, growers, ranchers).	Ensure agricultural land and ecosystems for future generations.	Maintain healthy ecosystems.	Land retention policies and monitoring.	Farm operators. Policy makers.
Seed banks.	Money stays local.	Conserve genetic diversity.	Protect ecosystem diversity.	Importance of heritage and heirloom varieties.	Seed collectors. Seed bank curators. Taxonomists.
Harvesting wild plants.	Local revenue stream.	Connection to nature. Ensures knowledge of wild edibles. Discourage dumping in wild areas.	Preserve ecosystem diversity with appropriate harvesting techniques.	Wild crafting.	Harvest labourers.
Source farm implements commensurate with farm size.	Reduced energy operating costs and initial capital costs.	Sharing equipment brings communities together.	Greenhouse gas emission abatement.	Innovative design and fabrication of agricultural equipment.	Equipment designers. Metal fabricators.



Table 2: Sustainable Food System Recommendations for Production

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Establish energy efficient greenhouse operations for off-season production.	Revenue stays local.	Creates community by connecting producers with consumers. Healthier eaters with fresh vegetables.	Fewer food miles.	Greenhouse / horticultural technicians. Greenhouse design and construction.	Greenhouse design engineers.
Farm layout optimization (e.g., flow of operations, heating).	Energy and cost savings.	Improved quality of life.	Healthier livestock. Minimization of impact on environment.	Agricultural architecture.	Architects.



Table 3: Food Processing and Storage Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Determine optimal size and location of local and regional processing and storage (e.g., apples, abattoirs, mills, dairy).	Decreased energy operating costs and initial capital costs.	Builds communities around local and regional food processing.	Reduced greenhouse gas emissions.		Food processing workers.
Minimize or recycle waste within the value system (e.g., Vegetable trimmings returned to producers).	Reduced energy transportation costs and landfill tipping costs.	Helps to fulfill our social responsibilities to local and regional waste reduction in the future.	Contamination of ground water sources reduced.	Systems waste analysis.	System waste auditors.
Sourcing efficient equipment commensurate with processing capacity requirements.	Size optimized equipment reduces energy operating costs and initial capital costs.		Decreased energy consumption, waste production and greenhouse gas emissions.	Innovative design and fabrication of processing equipment.	Equipment designers. Metal fabricators.
Establish renewable energy (solar, wind) to power processing, cold storage and packaging.	External energy input costs reduced resulting in more economically viable processing operations.	Helps to fulfill our social responsibilities to local and regional energy sustainability in the future. Creation of manufacturing jobs.	Diminished greenhouse gas emissions.	Installation, operation and maintenance of renewable energy sources.	Renewable energy technicians.



Table 3: Food Processing and Storage Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Create water management systems to reduce and reuse water involved in processing (e.g., Abattoirs).	Less water used in processing reduces cost.	Helps to fulfill our social responsibilities to local and regional water sustainability in the future.	Decline in waste water treatment and associated energy.	Water system audits and recommendations.	Water management system designers and installers.



Table 4: Food Purchasing Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Obtain commitment from commercial and institutional buyers to purchase from the local Sustainable Food Cluster. Work on packaging, logistics, traceability, commercial terms and other requirements.	Access to larger market channels will increase value system revenues. Keeps wealth in the community.	Involving commercial and institutional buyers will create stronger communities.	Decline in long distance food miles.	Local logistics.	Logistics managers.
Support local procurement policies.	Money stays in the community. Reliable markets for producers.	Farmers and chefs develop relationships.	Reduction in food miles.	Local logistics. Food preparation skills.	Logistics managers.
Engage farm direct to consumer operations (e.g., CSAs, food insecure) to make use of Smart Food Distribution system.	Improved income for small farm direct producers. Decreased cost per calorie delivered.	Maintain relationship between farmers and consumers.	Reduced greenhouse gas.	Dissemination of information about Sustainable Food Clusters.	Marketing and promotions coordinators. Logistics managers.
Promote sustainable local farm sales direct to consumer (e.g., CSAs, farm gate, farmers' markets).	Higher revenue to producer.	Build relationships between food producers and consumers. Fresher food for consumers.	Opportunity to reduce food miles and greenhouse gas emissions.	Local food. Food mile reduction. Sustainability.	Marketing and promotions coordinators.



Table 5: Economic Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Establish ecological carrying capacity to set economic and population goals.	Ensures economic sustainability.	Encourages community collaboration to meet targets.	Protects against environmental degradation due to unbridled growth.	Ecological carrying capacity.	Ecologists.
Establish an accounting system that includes external eco-system costs in the cost of products.	Establishes true cost of product. Increased revenue to producers, processors and distributors who tread lightly on ecosystem. Penalizes those who don't.	Helps to fulfill our social responsibilities to local and regional sustainability in the future.	Natural resource use minimized. Provides a measurement in relation to ecological carrying capacity.	Establishing a measurement system and valuation of product eco-system costs.	Software developers. Auditors. System managers. Accountants.
Determine legal, business and accountability requirements for establishing non-profit, vertical cooperatives.	Provides transparency and a more equitable distribution of wealth.	Encourages collaboration among value system members.	Takes a systems approach to reducing environmental loads.	Corporate structures, business planning, accounting and communication.	Agri-lawyers.
Establish a partnership relationship with a progressive community financial organization to administer alternative value transaction mediums.	Provides economic resiliency. Keeps wealth in the community.	Creates financial trust and reliance within the community.	Reduction in long distance transport and corresponding environmental impacts.	Establishment and administration of alternative value transaction mediums.	Software developers. Accountants. Administrators.



Table 5: Economic Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Establish a partnership relationship with a progressive community financial organization to account for receipt of non-traditional sources of funding and interest free loans.	Internal sources of funding. Eliminates debt servicing. Increased performance of the entire value system.	Creates financial trust and reliance within the community.	Minimizes the need for exponential growth leading to environmental degradation.	Non-traditional, interest free loans.	Loans officers. Administrators.
Establish self-insurance plan for Sustainable Food Clusters.	Mitigates financial risk.	Creates financial trust and reliance within the community.	Mitigates environmental risk. Assists with environmental remediation.	Establishment of self-insurance plans.	Actuaries.



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Develop an SFS index that measures social, environmental and economic outcomes within each Sustainable Food Cluster and aggregates across the Sustainable Food Cluster Network.	When social and environmental measures increase, greater economic benefits will follow.	A higher social measurement will perpetuate greater social equity and happiness.	Environmental measure provides an indication of sustainability.	Establishing a measurement and reporting system.	Software developers. Auditors. System managers. Accountants.
Share responsibilities, farm implements, equipment, labour, resources and many other necessities.	Increased income due to lower amount spent on inputs.	Creates community.	Optimize resource use. Minimizes waste.	Behavioural change. Social learning.	Facilitators. Social artists. ⁴ Social workers. Community development officers. Psychologists.

⁴ “Social artistry is the art of enhancing human capacities in the light of social complexity. It seeks to bring new ways of thinking, being and doing to social challenges in the world.” (Houston, 2012)



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Create spaces for social learning, network building and communities of practice ⁵ to strengthen food movement objectives.	Heightened knowledge exchange could maximize resources and effectiveness, and therefore improve efficiencies.	Increased social connectivity and mutual support.	Greater environmental stewardship.	Able to engage in complexity, maneuver territoriality, and orchestrate effective collaboration. Conflict mediation.	Social Artists. Community development officers. Facilitators. Conflict mediators.

⁵ A community of practice is defined as “a learning partnership among people who find it useful to learn from and with each other about a particular domain. They use each other’s experience of practice as a learning resource. And they join forces in making sense of and addressing challenges they face individually or collectively” (Wenger et al., 2011).



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Support opportunities for food celebrations that venerate food champions (producers, chefs, etc.) and inspire food citizenship.	Income generation for food producers and local businesses. Creates jobs in tourism.	Enhanced culture. Connect communities. Have fun!	The celebration of value-trait foods will lead to greater environmental sustainability.	Event coordination. Food preparation skills. Balanced work / play dynamics. Time of use.	Chefs. Event coordinators.
Explore the 'constellation model' ⁶ of governance when developing multi-organizational, multi-stakeholder collaboration.	Joint fundraising. Efficient use of resources.	Social innovation.	Undetermined.	Complexity theory. Collaborative leadership. Coordination. Facilitation. Conflict mediation. Project development. Planning. Strategy. Partnership development. Fundraising.	Catalysts. Capacity builders. Secretariats. Executive directors with collaborative leadership.

⁶ The constellation model is "a complexity- inspired governance framework for multi-organizational collaboration. It is a way of organizing a group of interested parties to meet a need without having to create a new organization to 'hold' the issue. It is a tool to help recognize and become conscious designers in a complex ecosystem of organizational collaboration... Constellations are "self-organizing action teams" that operate in cooperation with a broader strategic vision. The structures and initiatives of the collaboration take the form of 'constellations' - clusters of activity in which subsets of the partners voluntarily participate. Constellations can be formal projects, occasional and opportunistic initiatives, or committees that guide particular aspects of the work of the partnership."(Surman, 2006)



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Facilitate access to knowledge: through extension services, university community partnerships (community engaged scholarship), as well as keeping information in the commons.	Greater access to the most recent data and information leads to better management decisions.	Increased trust, respect, and community.	Improved environmental knowledge.	Teaching and conveying formal and informal learning and education.	Extension workers. Research officers. Web developers for collaboration software.
Develop, endorse and animate action around a food charter.	Draws the connection between food and sustainable economic development.	Builds relationships between food activists and government officials. Engages communities in a dialogue around the multiplicity of food.	Draws the connection between food and the environment and engages communities in a dialogue about it.	Policy processes. Community engagement. Food sovereignty. Complex systems theory.	Community animators. Engagement coordinators.



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Create a continuum of formal and informal, learning and education focused on food, spanning all ages. Coordinate existing food and agriculture courses and programs to create a more accessible and compressive educational experience.	Builds capacity.	A more educated society able to make the best life choices as they pertain to food.	More environmental knowledge leads to environmental stewardship.	Food skills. Food literacy. Agriculture. Systems thinking. Coordination.	Teachers. Food educators. Food animators.
Use narrative to develop indicators for alternative food initiatives.	Indices for funders.	Validation for social change projects.	Undetermined.	Participatory monitoring and evaluation.	Evaluators.
Share food stories.	Undetermined.	Improved food culture and celebration.	Undetermined.	Story telling. Writing. Language. Communication.	Artists, writers, poets. Bloggers.



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Support and contribute to the Ontario Food and Nutrition Strategy . (Sustain Ontario, 2012)	Lower healthcare costs. Improved labour conditions for food and agriculture workers	Improved health. Improved work conditions for food and agriculture labourers.	Reduced waste. Agroecology focus.	Food skills. Policy process. Agroecology. Nutrition.	Dietitians. Nutritionists. Community food advisors. Chefs. Farm operators. Food processing operators. Food distribution coordinators. Retail vendors. Food service workers.
Develop supportive regulations to increase accessibility to fresh nutritious food at workplaces, and places of recreation (OPHA, 2011)	Lower healthcare costs.	Healthier population.	Undetermined.	Food skills.	Retail vendors. Chefs.



Table 6: Sustainable Food System Social Recommendations

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Advocate for the development of policies that address the issues of food deserts by creating walkable communities.	Increased income for businesses in walkable communities.	Improved street life. Improved neighbourhood well-being. Healthier population.	Reduced food miles. Better use of urban space.	Mixed residential commercial planning.	Planners. Retailers.
Advocate for the development of policies that ensure an adequate income level to ensure the basic necessities (food and housing).	Provides opportunity for families and individuals to step out of poverty.	Increased food security and well-being.		Healthy eating. Advocacy.	Social workers.
Develop programs that address the needs of the low-income populations by taking advantage of all community assets; Straddle the class divide.	Leverage community assets to insure greater equity.	More cohesive communities. Social learning opportunities.		Sensitivity to diversity. Fundraising.	Workshop facilitators.



Table 7: System Wide and Other Recommendations for a Sustainable Food System

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Work with regulators and farm product marketing boards to discover and create opportunities for Sustainable Food Cluster members and Sustainable Food Cluster Network (e.g., Favourable tax rate for on-farm processing, favourable farm product marketing exemptions and agricultural activities allowed in any zoning).	Increased economic activity and system revenues.	Collaborative approach creates better community solutions.	Increased connection between impact of regulations and the environment.	Dissemination of regulatory opportunities.	Presenters. Farm product marketing coordinators.
Work with all food system members to balance economic, environmental and social outcomes.	Increased economic activity and revenues within the food value system.	A balanced triple bottom line is reflective of consumer demand trends.	Greater focus on the environment means a better environment.	Benefits of a balanced triple bottom line.	Facilitators. Food system consultants.
Regional, outcome based streamlined, food safety and traceability. Investigate self-management for Sustainable Food Clusters.	Compliance costs decreased and increased revenues.	Increased food safety.	Can lead to environmental safety.	Food safety and traceability.	Food safety and traceability trainers. Research officers.



Table 7: System Wide and Other Recommendations for a Sustainable Food System

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Municipal and regional planners review official plans with a food systems lens to create more permissive policies, leading to revitalization of struggling rural towns to support food system development.	Food transportation costs minimized.	Provides meaningful work in support of community wellbeing.	Reduced food miles.	Promotion of the benefits of rural life. Systems thinking. Asset based community development.	Facilitators.
Research immigration policy with respect to forecasted population growth and resource availability.	Ensured economic sustainability.	Ensured sustainability of social programs.	Ensured eco-system carrying capacity.	Disseminate immigration information.	Research officers. Presenters.
Reduction in Food Waste. Food is no longer wasted.	Less money wasted. More money to spend on other things.	Community composting. Community kitchens.	Less food waste going to landfills. More being composted and nutrients returned to soil.	Benefits. Shopping habits. Cooking patterns. Composting.	Composters education instructors.
Review and modify international trade tariffs on long distance imported food products that can be produced or processed in Ontario.	Increased economic activity and revenues within the food value system.	Builds communities around local and regional food. Creates value system jobs.	Reduced food miles and greenhouse gases.	Paradigm shift in stable economies. Complex adaptive systems.	Employment impacts across food systems.



Table 7: System Wide and Other Recommendations for a Sustainable Food System

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Breakdown silos. Develop structures for multi-ministerial, multi-departmental, multi-stakeholder and multi-disciplinary coordination to address food and agriculture issues with a systems perspective.	Coordinated policies that lead to greater economic viability for farmers and rural communities.	Better public policies. Food security. Greater confidence in government.	Coordinated policies that truly move towards greater environmental sustainability.	Complex adaptive systems. Coordination. Facilitation. Conflict mediation. Project development. Planning. Strategy. Partnership development. Fundraising.	Facilitators. Executive directors. Secretariats. Capacity builders.
Advance food systems issues by becoming aligned with initiatives with similar objectives (e.g., poverty elimination coalitions, community well-being initiatives).	Efficient use of resources.	Leverage the strength of many to advance social goals.	Align objectives to obtain greater environmental sustainability.	Public policy. Complex adaptive systems. Coordination. Facilitation. Conflict mediation. Project development. Planning. Strategy. Partnership development. Fundraising.	Facilitators. Capacity builders.



Table 7: System Wide and Other Recommendations for a Sustainable Food System

Recommendations and Description	Triple Bottom Line Benefits			Education	Job Creation
	Economic	Social	Environmental		
Develop and embed food policy councils within government.	Coordinated policies that lead to greater economic viability for the food and agricultural sector.	Coordinated policies that lead to more livable, food secure communities.	Coordinated policies that truly move towards greater environmental sustainability.	Public policy. Complex adaptive systems. Coordination. Facilitation. Conflict mediation. Project development. Planning. Strategy. Partnership development. Fundraising	Policy councilors. Capacity builders. Planners. Strategists.
Make the link between sustainable food systems, health and the environment. Recognize the connection between food, agriculture, culture, society and the economy.	Reduce the burden of diet related disease.	Healthier people are happier people.	Improved environmental quality.	Multi-disciplinary understanding. Complexity theory. Food sovereignty.	Dieticians. Nutritionists. Organic farm operators and workers. Sustainability coordinators.



5 Conclusion

A new approach to food is required.

The question is: "Can we do it and how?"

The answer is: "Yes, when we work together to plan and implement a desirable, vibrant future, one that includes a holistic, integrated, resilient and sustainable food system."



"We must be the change we want to see in the world."

~ Mahatma Gandhi



6 References

- AAFC (Agriculture and Agri-Food Canada). 2007. Overview of the Canadian Agriculture and Agri-food Sector. <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1185373277663&lang=eng> Posted 2007-07-25. Viewed July 16, 2012
- Arghyrou, M.G. and J.D. Tsoukalas. 2010. The Greek Debt Crisis: Likely Causes, Mechanics and Outcomes. CESifo Working Papers. Category 7: Monetary Policy and International Finance. www.cesifo-group.de/DocDL/cesifo1_wp3266.pdf. Posted November 2010. Viewed June 11, 2012.
- Benbrook, C., X. Zhao, J. Yanez, N. Davies and P. Andrews. 2008. State of Science Review: New Evidence Confirms the Nutritional Superiority of Plant-Based Organic Foods. The Organic Center, Boulder, CO. Retrieved from: http://www.organic-center.org/reportfiles/5367_Nutrient_Content_SSR_FINAL_V2.pdf
- Broz, L. and Frieden, J. 2006. The Political Economy of Exchange Rates. http://www.people.fas.harvard.edu/~jfrieden/Selected%20Articles/Misc_Works/PE_ofERHandbook.pdf. Posted March 20, 2006. Viewed June 11, 2012.
- Canadian Geographic, 2010. Biodiversity: Ontario Tree Planting. <http://www.canadiangeographic.ca/magazine/jun10/ontario-tree-planting.asp> Posted June 2010. Viewed July 7, 2012.
- Campbell, T.C. and T. M. Campbell. 2006. The China Study. The Most Comprehensive Study of Nutrition Ever Conducted and the Startling Implications for Diet, Weight Loss and Long-Term Health. Benbella Books. Dallas, Texas.
- Canadian Federation of Agriculture. 2007. Trends in Canadian Agriculture Continue. <http://www.cfa-fca.ca/media-centre/news-releases/2007/trends-canadian-agriculture-continue> Posted May 16, 2007. Viewed February 7, 2012.
- Carter-Whitney, M. and S. Miller. 2010. Nurturing Fruit and Vegetable Processing in Ontario. Metcalf Foundation. Metcalf Food Solutions. <http://metcalffoundation.com/wp-content/uploads/2011/05/nurturing-fruit-and-vegetable-processing.pdf> Viewed June 11, 2012.
- CFO (Chicken Farmers of Ontario). 2007. Quota Policies and Regulations. <http://www.cfo.on.ca/PoliciesRegulations.cfm> Viewed. Viewed June 11, 2012.
- Dean, A. 2007. Local Produce vs. Global Trade. http://www.policyinnovations.org/ideas/briefings/data/local_global Posted October 25, 2007. Viewed June 11, 2012.



- de la Salle, J. and M. Holland. 2010. *Agricultural Urbanism: Handbook for Building Sustainable Food & Agriculture Systems in 21st Century Cities*. Green Frigate Books. 250 pp.
- Environment Canada, 2010. Great Lakes Action Plan. <http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=DF30B51A-1> Posted 2010-03-07. Viewed July 7, 2012.
- Environment Canada. 2012. Climate Data Online. http://climate.weatheroffice.gc.ca/climateData/canada_e.html Posted May 29, 2012. Viewed June 19, 2012.
- Grantham, J. 2011. Resource Limitations 2: Separating the Dangerous from the Merely Serious. <http://www.cafanet.com/LinkClick.aspx?fileticket=HEjzKMfWUdc%3d&tabid=95&mid=481> Posted July 2011. Viewed June 19, 2012.
- GTAAAC (Greater Toronto Area Agriculture Action Committee). Food & Farming: An Action Plan 2021. http://www.gtaaac.ca/pdfs/Action_Plan.pdf. Posted January 2012. Viewed July 13, 2012.
- Hoggan & Associates Inc. 2009. Shared Values, Canadians & Sustainability: survey of the general public. <http://hoggan.com/shared-values-canadians-sustainability-survey-general-public> Viewed April 12, 2012.
- Holm, W. 2009. Is Farming Sustainable? Farm Tech; January 28 – 29, 2009. <http://www.theholmteam.ca/HOLM.FARM.TECH.pdf> Viewed April 12, 2012.
- Hopkins, R. 2009. *The Transition Handbook: From oil dependency to local resilience*. Chelsea Green Publishing Company. White River Junction, Vermont. 240 pp.
- Houston, J. 2012. What is Social Artistry? <http://www.jeanhouston.org/Social-Artistry/social-artistry.html> Viewed July 5, 2012.
- International Exchange Platform. 2011. The Well-Being Society: a scenario inspired by Gross National Happiness. Action-Research in Thailand. Retrieved from: <http://www.gnhusa.org/wp-content/uploads/2011/08/THE-WELL-BEING-SOCIETY-scenario-2.pdf>
- MacRae, R. 1990. What is Ecological Agriculture? <http://agrecon.mcgill.ca/ecoagr/doc/sustain.htm> Viewed February 10, 2012.
- MacRae, R. 2010. Definition of the Terms “Sustainable Agriculture” Social Ecology BC. November 2010. Retrieved from: <http://www.bcise.com/CurrentIssuePapers/Nov-2010/definition-of-the-term-sustainable-agriculture.pdf>
- MaRS. 2010. Social Impact Bonds. MaRS Centre for Impact Investing. <http://socialfinance.ca/social-impact-bonds>. Viewed June 11, 2012.



- MacRae, R.J. 2011. A joined up food policy for Canada. *Journal of Hunger and Environmental Nutrition*. 6:424 - 457 (on-line first).
- Martenson, Chris .2011. *The Crash Course: The Unsustainable Future of Our Economy, Energy, and Environment*. p. 45. John Willey & Sons, Inc. New Jersey.
- Metcalf Foundation. 2008. *Food Connects Us All: Sustainable Local Food in Southern Ontario*. <http://metcalffoundation.com/wp-content/uploads/2011/05/food-connects-us-all.pdf>. Posted February 2008. Viewed July 13, 2012.
- MOF (Ministry of Finance). 2012. *Ontario Population Projections Update*. <http://www.fin.gov.on.ca/en/economy/demographics/projections/>. Retrieved June 18, 2012.
- NFU (National Farmers Union). 2005. *The Farm Crisis: Its Causes and Solutions*. Submission to the Ministers of Agriculture Meeting. Kannanaskis, AB. Retrieved from: http://www.nfu.ca/sites/www.nfu.ca/files/Ministers_of_Ag_brief_FOUR.pdf
- NFU (National Farmers Union). 2011. *Farms, Farmers and Agriculture in Ontario*. An overview of the situation in 2011. www.nfu.ca/briefs/2011/farm_ontario.pdf Posted May 2011. Viewed June 11, 2012.
- NFU (National Farmers Union). 2012. *Farms, Farmers and Agriculture in Ontario: an overview of the situation in 2011*. http://www.nfu.ca/briefs/2011/farm_ontario.pdf. Posted May 2011. Viewed June 18, 2012.
- OASC (Ontario Agriculture Sustainability Coalition). 2010. *Measuring agriculture's economic footprint in Ontario*. <http://www.foodandfarmingcanada.com/2010/10/14/measuring-agricultures-economic-footprint-in-ontario/>. Viewed June 11, 2012.
- OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs). 2007. *Water requirements of Livestock*. <http://www.omafra.gov.on.ca/english/engineer/facts/07-023.htm#5> Posted May 2007. Viewed June 19, 2012.
- OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs). 2011. *Number of Cattle by County, July 2010*. <http://www.omafra.gov.on.ca/english/stats/livestock/ctycattle10.htm> Posted May 11, 2011. Viewed June 11, 2012.
- OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs). 2011. *Number of Cattle by County, July 2010*. <http://www.omafra.gov.on.ca/english/stats/livestock/ctycattle10.htm> Posted May 11, 2011. Viewed June 19, 2012.
- OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs). 2011a. *Area, Production and Farm Value by County, April 16, 2012*. <http://www.omafra.gov.on.ca/english/stats/hort/index.html>. Viewed June 11, 2012.



- OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs). 2012. Ontario Agri-Food Trade. <http://www.omafra.gov.on.ca/english/stats/trade/agrifood.htm> Viewed May 25, 2012.
- OMAFRA (Ontario Ministry of Agriculture, Food and Rural Affairs). 2012a. Ontario Agri-food Trade by Commodity Group, 2007 – 2011 (Cdn \$'000). <http://www.omafra.gov.on.ca/english/stats/trade/commod.htm> Posted February 24, 2012. Viewed June 11, 2012.
- Ontario Agriculture Sustainability Coalition. 2010. Measuring agriculture's economic footprint in Ontario. <http://www.foodandfarmingcanada.com/2010/10/14/measuring-agricultures-economic-footprint-in-ontario/>. Viewed June 11, 2012.
- Ontario Biodiversity Council. No Date. Ontario's Biodiversity Strategy, 2011. <http://ontariobiodiversitycouncil.ca/> Viewed July 7, 2012.
- Ontario Ministry of Finance. 2010. Ontario's Long-Term Report on the Economy, Chapter 1: Demographic Trends and Projections, January 22, 2010. <http://www.fin.gov.on.ca/en/economy/ltr/2010/ch1.html> Posted January 22, 2010. Viewed February 7, 2012.
- Pamplona-Roger. G.D. 2004. Foods that Heal. Review and Herald Publishing Association. Hagerstown, Maryland. 94 pp.
- PERC (Property & Environment Research Centre). 2012. <http://www.perc.org/> Viewed July 7, 2012.
- People's Food Policy Project. 2011. Resetting the Table: A People's Food Policy. Creative Commons. Retrieved from: http://peoplesfoodpolicy.ca/files/pfpp-resetting-2011-lowres_1.pdf
- Policy Innovations. 2007. Local Produce vs. Global Trade. http://www.policyinnovations.org/ideas/briefings/data/local_global. Posted October 25, 2007. Viewed June 15, 2012.
- Pollan, M. 2008. In Defense of Food: An Eater's Manifesto. The Penguin Press. New York, New York. 244 pp.
- Service Canada. 2012. Ontario Labour Market Bulletin – March 2012. <http://www.servicecanada.gc.ca/eng/on/offices/2012/03-olmb-mar.shtml> Viewed May 25, 2012.
- Sparling, D., T. Quadri and E. van Duren. 2005. Consolidation in the Canadian Agri-food Sector and the Impact on Farm Incomes. Draft Discussion Document. June 8, 2005. Retrieved from: http://www.westhawk.com/capi-test/archives/pdfs/PapID11_DSparling.pdf



- Statscan (Statistics Canada). 2008. Livestock, poultry and bees.
<http://www.statcan.gc.ca/pub/95-629-x/2007000/4123855-eng.htm> Posted December 1, 2008. Viewed June 19, 2012.
- Statscan (Statistics Canada). 2009. Population, urban and rural, by province and territory: Ontario. <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo62g-eng.htm> Posted September 22, 2009. Viewed June 18, 2012.
- Sustain Ontario. 2012. Ontario Food and Nutrition Strategy Draft. Retrieved from: <http://sustainontario.com/wp2011/wp-content/uploads/2012/04/Ontario-Food-Nutrition-Strategy-Draft-April-24.pdf>
- SWEA (Southwest Economic Alliance). 2010. SWEA Members in 2011. http://www.swea.ca/index.php?option=com_content&view=category&layout=blog&id=41&Itemid=57 Posted 10 November 2010. Viewed April 26, 2012.
- The Canadian Encyclopedia. 2012. Greenhouse Crops. <http://www.thecanadianencyclopedia.com/articles/greenhouse-crops> Viewed June 11, 2012.
- USDA (United States Department of Agriculture). 2012. Regional Food Hub Resource Guide. <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097957>. Posted April 2012. Viewed July 13, 2012.
- U.S. Department of Energy. 2012. State and Local Economics. http://www.eccos.us/index.php?option=com_content&view=article&id=9&Itemid=5. Viewed June 11, 2012.
- Walton, M. 2012. Food and Farming an Action Plan 2021. Greater Toronto Area Agricultural Action Committee. Retrieved from: <http://www.gtaaac.ca/food-and-farming-action-plan/>
- Wenger, E., B. Trayner and M. de Laat. 2011. Promoting and assessing value creation in communities and networks: a conceptual framework. Ruud de Moor Centrum, Open University, The Netherlands. Retrieved from: http://wenger-trayner.com/documents/Wenger_Trayner_DeLaat_Value_creation.pdf
- Whitacre, P (Ed.). 2010. Toward Sustainable Agricultural Systems in the 21st Century. Committee on Twenty-First Century Systems Agriculture, National Research Council. The National Academy Press, Washington. Retrieved from: http://www.nap.edu/catalog.php?record_id=12832
- Winnie, Mark. 2010. Food Rebels, Guerilla Gardeners and Smart Cooking Mamas. Beacon Press.