



Sustainable Food Systems

Glossary of Terms

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Sustainable Food Systems

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

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1. Glossary of Terms

During the Sustainable Food Systems project, we were unable to find a single source of terminology used by the 'food movement'. Therefore, this glossary of terms was compiled. The complex nature of the food system is interdisciplinary and borrows terminology from many fields. As food studies, in and of itself, is an emerging field, the terms are evolving over time. Many terms are still being defined. In addition, the perspective of the user also influences the definitions. This glossary includes a broad set of terms related to agriculture, food production, distribution, alternative business, finance and social science traditions often associated with the 'food movement'. This list is a beginning point and expansion by others is welcome. We hope that others find this list of definitions useful.

100-Mile Diet is an eating regime that predominantly includes food produced or raised within 100 miles of the point of consumption (de la Salle and Holland, 2010).

Additive Yielding or **Over Yielding** is when the yield of two or more crops grown in polyculture is more than that of equivalent areas of the two crops grown in monoculture (Jacke and Toensmeier, 2005b).

Agrarian relates to rural matters. It is a way of life and thought that is connected to the land in rural and agricultural areas (Berry, 2000; de la Salle and Holland, 2010).

Agricultural Urbanism is a way of building a place around food. It is an emerging planning, policy and design framework that integrates a wide range of sustainable food and agriculture system elements into a community. The benefit can be seen on a site, neighbourhood, or throughout a whole city. It is an approach to integrating growth and development with preserving agricultural resources and enhancing elements of the food system. The cornerstone of agricultural urbanism is creating an urban environment that activates and sustains urban agriculture with important elements such as educational programs, small-scale processing opportunities, a farmers' market and other sales conduits. Integral to agricultural urbanism is the idea of integration not separation; transition not buffers (de la Salle and Holland, 2010).

Agroecology is the science that explains the successes and potentials of sustainable systems (MacRae, 2010). It incorporates ideas around a more environmentally and socially sensitive approach to agriculture, one that focuses not only on production, but also on the ecological sustainability of the productive system. Using a more narrow definition, agroecology is the study of ecological phenomena within the field, such as predator and prey relations or crop and weed competition (USDA, 2008).

Agroecological farming can be used to design sustainable farming systems (MacRae, 1990a). Essential system properties include:

- productivity or level of output;
- stability, constancy or persistence of output over time; sustainability and ability to recovery from stress and disruptions; and,

- equitability or evenness of distribution among various groups (MacRae, 1990b; MacRae, 2010).

In addition, agroecological theory is concerned with socio-cultural issues. Human relations and our relationships with our environment are as essential to sustainability of agroecosystems as are other biotic and abiotic factors that contribute to a farm. Supporting self-reliance and rural community viability is a central component of agroecology (MacRae, 2010).

Agroforestry is an integrated and intensive agricultural production system that includes trees and shrubs as an essential component to achieve environmental, economic and social goals. This means that trees are not incidental to the farm operation, but contribute to improved productivity, yield, profitability and sustainability. Growing trees and bushes in combination with crops, forage and livestock enhances yields, reduces soil losses, conserves soil moisture, recycles nutrients and reduces environmental impacts of agricultural operations. Trees and shrubs can add directly to a farm's bottom line when they are managed to produce high-value timber or other tree products (e.g., nuts, fruit) (AAFC, 2011).

Algaculture is the large-scale production of algae for conversion into biofuels (de la Salle and Holland, 2010) or food.

Alternative Agriculture includes a vast array of practices and enterprises, including eco-agriculture, organic farming, biodynamic farming, biological farming, ecological farming, sustainable agriculture, aquaculture, regenerative agriculture and permaculture (USDA, 2008). This is a substitute for industrial agriculture.

Alternative Business Structures are functionally and operationally different than conventional, competitive, for-profit business structures in that they reflect a more collaborative approach to doing business for the benefit of members and the community such as non-profit, social enterprise and vertical cooperatives. The benefit is transparency and more equitable distribution of wealth.

Alternative Economic Systems are different than conventional economic systems in that they are more resilient to external economic shocks. They include alternative business structures, internal sources of non-traditional financing and alternative value transaction mediums.

Alternative Food Systems are a reaction to the conventional global industrial food system. Many communities are striving towards a 'community food system' with sustainable food production, processing, distribution and consumption that are integrated to enhance the environmental, economic, social and nutritional health of a particular place (Garrett and Feenstra, 1999).

Alternative Value Transaction Mediums provide additional methods, to the single national currency, for storing value and trading for goods and services. When deployed locally they keep wealth in the community.

Anaerobic Digestion is a process where microorganisms breakdown animal and human wastes, in the absence of oxygen, to produce methane, which can be used as a valuable energy source (de la Salle and Holland, 2010; Transition Towns Totnes, 2010). Digestate, a by-product of anaerobic digestion, is nutrient rich and is an excellent fertilizer (de la Salle and Holland, 2010).

Aquaculture is the farming of fish and refers to the cultivation of marine or freshwater species and can range from land-based to open-ocean production (Department of Marine Resources, 2006; Backyard Aquaponics, No Date).

Aquaponics describes a closed system in which aquatic plants, invertebrates and fish symbiotically co-exist, providing food and nutrient recycling, thus keeping the system clean (de la Salle and Holland, 2010).

Artisan Agriculture is the on-farm production of high-quality agricultural products (e.g., cheese, wine) in limited quantities using traditional methods – often by hand (JobMonkey, 2012; Merriam-Webster, 2012a). Artisan agriculture is often compatible with urban agriculture systems (de la Salle and Holland, 2010).

Biodynamic Agriculture focuses on enhancing the processes of nature. Biodynamic farming is based on relationships between animals that provide fertility for the soil, fields that provide food for animals and people, the plant community (e.g., meadows, orchards, forests and wetlands) and ensuring space for wildlife. These interrelations support a healthy farm capable of producing quality, health-giving products. Farm balance is encouraged by the use of compost preparations and field sprays prepared from medicinal herbs and animal sheaths. A variety of sustainable farming techniques are used, including seed saving, crop rotation, composting, interplanting and careful treatment of livestock to ensure longevity and quality. The farmer identifies weaknesses in the farm and works to strengthen them by working with nature (Society for Bio-Dynamic Farming & Gardening in Ontario, 2012).

Biodiversity is the term used to describe the range of natural living organisms present in a given ecological system (Faith, 2007; Transition Towns Totnes, 2010). In 1985, this term was generated as the contraction between “biological” and “diversity” (Faith, 2007).

Biofuels are solid, liquid or gaseous fuels derived from non-living biological material (Kivits et al., 2011).

Biogas is produced through the anaerobic digestion of organic materials (e.g., manure, food scraps, agricultural waste and wastewater sludge). The gas is slowly produced over approximately forty days. Biogas is similar to natural gas, but has a lower energy value (ReGenerate, No Date).

Biomass includes plant fibre that is used to produce power and heat, as an alternative energy source (de la Salle and Holland, 2010).

Biosolids are nutrient-rich organic matter produced in a wastewater treatment facility from domestic sludge. After treatment and processing, application of municipal biosolids as a fertilizer (de la Salle and Holland, 2010) is a common farming practice in many parts of the world (Lapen et al., 2008). Caution is recommended as these can contain organic pollutants (Hale et al., 2011) and dioxins (Hundal et al., 2008). There is potential for movement of pharmaceuticals and personal care products (PPCPs) from agricultural fields to adjacent surface waters (Lapen et al., 2008; Topp et al., 2008; Sabourin et al., 2009).

Blackwater is the wastewater generated by toilets, kitchen sinks and dishwashers (Sustainable Sources, 2012).

Bonds are a debt investment in which an investor lends money to an entity (corporate or government) that borrows the funds for a defined period at a fixed interest rate (The Free Dictionary, 2012a).

A **Buffer** is a strip of land that is fallow, fenced and/or treed, depending upon the uses, size and regional specifications, to separate one land use from another (de la Salle and Holland, 2010).

Capacity Development is “the development of knowledge, skills and attitudes among individuals and groups of people; the creation of structures, resources, policies and procedures in organizations and networks to sustain and achieve relevant goals, to cope with complexity and to innovate” (Robeson, 2009).

Carbon Optimized Distribution is possible by reducing the distance that products travel, through the creation of more localized supply chains and by shifting from road to rail transport. Transportation innovations can also contribute to carbon optimized distribution by using renewable energy, optimizing vehicle loads, reverse logistics and implementing intelligent transportation management systems (Flint and Larsson, 2008).

Cloches are 18” diameter glass bell jars (or other type of container) turned upside down over vegetable and fruit crops to protect them from cold, wind, and insect damage. Each cloche needs to be individually vented (Coleman, 2009).

Closed Ecological Systems (CES) are ecosystems that provide for the maintenance of life through complete reutilization of available material. All available material, including waste carbon dioxide and other waste products are converted, chemically or photosynthetically, into oxygen, water and food (OECD, 2001).

Closed Loop is a self-sustaining system wherein wastes and outputs from one system element are used as a resource or input for another element of the system (de la Salle and Holland, 2010).

Cold Frames are the simplest and least expensive method of climate moderation. They can be as simple as a bottomless wooden box (2" thick wooden planks; 8 to 12" tall at the back and 6 to 8" high at the front) covered with glass panels. The cold frame will protect plants to approximately -4 °C (Coleman, 2009).

Cold House is a type of greenhouse in which there is no supplemental heating. A cold house is suitable only for plants that will not be killed by a few degrees of frost (Encyclopaedia Britannica, 2011a).

Community Food Security (CFS) "exists when all community residents obtain a safe, personally acceptable, nutritious diet through a sustainable food system that maximizes healthy choices, community self-reliance and equal access for everyone" (Dieticians of Canada, 2007. p2).

Community Food Systems are a "collaborative effort to build more locally based, self-reliant food economies – one in which sustainable food production, processing, distribution and consumption is integrated to enhance the economic, environmental and social health of a particular place" (Feenstra, 2006).

Community of Practice is a voluntary, flexible networks of people with a common interest or passion in a specific area, who come together on a regular or ad hoc basis to develop, share and build their knowledge, and to learn about a practice-related issue (Lave and Wenger, 1991; Wenger, 1998a; Wenger, 2000; Wenger and Snyder, 2000; Wenger et al., 2002. Cited in Robeson, 2009).

Community Shared Agriculture or Community Supported Agriculture (CSA) is a farming and food distribution model that consists of community members purchasing a share to support a farm operation so that growers and consumers provide mutual support and share the risks and benefits of local food production. It involves weekly to monthly delivery or pick-up of vegetables and fruit and occasionally meat and dairy products (de la Salle and Holland, 2010).

Compost is the humus-rich end product of decomposition, made by piling surplus organic matter into a mound or bin and letting it break down (Hemenway, 2009).

Compost Tea is a liquid prepared by steeping compost in water and is used to fertilize plants (de la Salle and Holland, 2010).

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)

Cool House is a type of greenhouse that is maintained at a cool temperature (Merriam-Webster, 2011a) or minimally heated (Coleman, 2009) to force hardy plants, winter storage of dormant plants (Merriam-Webster, 2011a) or mid-winter growing (Coleman, 2009).

Cover Crops are planted specifically to build soil, reduce erosion and smother weeds (Hemenway, 2009).

Crowdsourcing is the research practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people and especially from the online community rather than from traditional employees or suppliers (Merriam-Webster, 2012b).

Culinary Tourism combines travel with local food and drink experiences. In so doing, it provides travelers and tourists the opportunity to understand a culture through its food and folklore (Ontario Culinary Tourism Alliance, 2012).

Debt-to-GDP is a measure of the ability of a country to make future payments on its debt. The higher the debt-to-GDP ratio, the less likely the country will pay its debt back, and the higher its risk of default. If a country were unable to pay its debt, it would default, which could cause a panic in the domestic and international markets (Investopedia, 2012a).

Debt-to-Income is a finance measure that compares a debt payment to the income generated. This measure is important in the lending industry as it gives lenders an idea of how likely it is that the borrower will repay the loan (Investopedia; 2012b).

Deficit is the amount by which a government, company, or individual's spending exceeds its income over a particular period of time. Also called deficit or deficit spending, it is the opposite of budget surplus (WebFinance, Inc. 2012).

Eco-agriculture is a method of sustainable agriculture and associated natural resource management systems that embraces and simultaneously enhances agricultural productivity, rural livelihoods, ecosystem services and biodiversity. The theory is that agricultural landscapes can be designed creatively to take the needs of human populations into account while conserving and enhancing biodiversity. This term was first used in 2000 (McNeely and Scherr, 2001; 2003; Ecoagriculture Implementation Conference, 2002; Ecoagriculture Partners, No Date).

Ecogastronomy recognizes the strong connections between food and the environment and is a concept of the "slow food" philosophy (de la Salle and Holland, 2010).

Ecological Buffers are a linear row of trees and shrubs, native to the ecoregion, planted in a natural arrangement, creating a concentrated group of plants that will establish quickly providing diverse buffers. For optimal environmental impact, ecological buffers should be connected to a natural area, such as a riparian zone or wooded area.

Ecological buffers can provide a valuable source of wood, fruit and other forest products (Schroeder, 2010).

Ecological Farming / Biological Farming is used in a broad sense to encompass specific practices and techniques of sustainable farming (e.g., organic, biodynamic, holistic, natural). Ecological Farming ensures healthy farming and food for present and future generations, by protecting soil and water, and promoting biodiversity without the use of chemical inputs or genetic engineering (USDA, 2008; Tirado, 2009). In Europe and Australia, Biological Farming refer to organic farming, while the term ecological farming relates to organic plus environmental considerations including on-farm wildlife management (USDA, 2008; BioAg, No Date).

Ecological Food Chains exist in all communities through which energy is transferred. Each organism feeds on and obtains energy from the one preceding it and in turn is eaten by and obtains energy for the one following it. All the food chain relationships within a community form a *food web*, which connects all types of life: plants, herbivores, carnivores, omnivores, decomposers. A familiar food chain flows from grass (plant), which gets its energy from the sun, to cow (herbivore) to human (omnivore) (Abercrombie et al., 1985; Pollan, 2011).

Experiential Education / Experiential Learning is a method of engaged learning in which the learner experiences “a visceral connection to the subject matter” (University Alliance for Civic Engagement, No Date).

"Good experiential learning combines direct experience that is meaningful to the student with guided reflection and analysis. It is a challenging, active, student-centered process that impels students toward opportunities for taking initiative, responsibility, and decision making. An experiential approach allows numerous opportunities for the student to connect the head with the body, heart, spirit, and soul. Whatever the activity, it is the learning and teaching process that defines whether a learning experience is experiential. Further, an experiential learning process can be conducted almost anywhere and with any type of activity or learning medium (Warren et al., as quoted in University Alliance for Civic Engagement, No Date).

Exponential Economic Growth is the increase in the amount of goods and services produced by an economy over time measured as the percent rate of increase in GDP. For example, if the economic growth expectation is 2% per year, in 35 years we will need to double our output of GDP (Crossroads Times, 2012; Investopedia, 2012c).

External Ecosystem Costs are environmental and social costs added to traditional internal costs of goods and services sold to arrive at a true “all-in” cost (Bainbridge, 2009).

Fair Trade is a long-term trading partnership that leads to greater equity and contributes to sustainable development by insisting upon better conditions for the producer and workers (First Fair Trade Town, 2012; Make Trade Fair, No Date).

Fair Trade Certified ensures that the food item or products used to produce the food item were purchased at a fair price and that the farmer was not exploited (JobMonkey, 2012). Third party certification is conducted by organizations such as Fair Trade Canada (No Date) and Fair Trade USA (2010).

Farmaceutical refers to farm-grown medicinal crops. This is the opposite of, and does not include, genetic modified plants for producing chemical drugs (Jacke and Toensmeier, 2005a).

Farm Products Marketing Act is the legal foundation of the regulated marketing system in Ontario. Through this act, the Ontario government provides Ontario farmers with the opportunity to market their commodities as a group through a compulsory marketing board system (OMAFRA, 2011a).

Food and Farming Cluster is comprised of enterprises and institutions involved in growing, harvesting, processing, and distributing food, beverage and bioproducts derived from agriculture. The combined activities and outputs of primary production (farmers), food processing, food service providers (e.g., hotels, restaurants and institutions), food wholesalers, distributors and food retailers, and input suppliers (Walton, 2011).

Food Citizenship is defined “as the practice of engaging in food-related behaviors that support, rather than threaten, the development of a democratic, socially and economically just, and environmentally sustainable food system”. (Wilkins, 2004, p 269)

Food Desert describes neighborhoods and communities that have limited access to affordable and nutritious foods. The term characterizes neighborhoods that can encompass many thousands of people and/or an extensive land area as defined by city blocks or square miles. Food deserts tend to be located in urban and rural low-income neighborhoods, where residents are less likely to have access to grocery stores that provide healthy food choices. For communities with few food retailers that stock little or no fresh produce, low-fat dairy, whole grains and other healthy foods, those populations may be more likely to suffer from high rates of diabetes, cardiovascular disease and obesity (Tarnapol Whitacre et al., 2009; de la Salle and Holland, 2010).

Food Footprint refers to the total amount of land required to meet the basic food needs of a given human population (Transition Towns Totnes, 2010).

Food Hub “is an intermediary that, by pooling together producers or consumers, adds value to the exchange of goods and promotes the development of a local supply chain. This added value may be gained through economies of scale, social value, educational work or other services. In other words, the pure function of distribution is only one element of the hub” (Sustain UK, No Date, p5).

Food Literacy is the knowledge of food production, preparation, nutritional content, and its importance within different cultures to allow consumers to make informed decisions (London's Food Charter, 2011).

Food Miles is the distance an agricultural product is transported from place of production to the point of consumption (de la Salle and Holland, 2010).

Food Policy is an area of public concerning the production, distribution and consumption of food. The policy consists of setting goals for food production, processing, marketing, availability, access, utilization and consumption, and describes the processes for achieving these goals. Food policy can be at any level, from local to global, and by a government agency, business, organization or person. In addition, food policy involves schools, regulations and eligibility standards for food assistance programs, and it involves health and safety, food labeling and qualifications of a product. Policy issues can include:

- Food production, trade, marketing and consumption.
- Nutrition and health aspects of food systems.
- Food needs, entitlements, security and aid.
- Food safety and quality assurance.
- Technological and institutional innovation affecting food systems and access (Elsevier, 2012).

Food Precinct is a distinct area where the predominant activities are focused on food and agriculture, including a permanent farmers' market building and plaza with necessary space and infrastructure. It is a variation of a food hub (de la Salle and Holland, 2010).

Foodprint refers to the amount of space required to produce the resources and assimilate the wastes associated with the food system (de la Salle and Holland, 2010).

A **foodshed** encompasses all aspects of food, from production to consumption to disposal, the routes it travels, the markets it goes through, and the tables it ends up gracing. Foodshed is used to discuss local food systems in a holistic manner with efforts to create more sustainable ways of producing and consuming food. Workable, sustainable foodshed mappings tend to take into account time and ease of travel, density of population and productivity of land (Watson, 2012).

Food Security exists "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (World Food Summit, 1996). Food security includes both physical and economic access to food to meet people's dietary needs, as well as their food preferences. Food security focuses on:

- **Food availability:** sufficient quantities of food can be consistently obtained.
- **Food access:** sufficient resources to acquire appropriate food for a nutritious diet.
- **Food use:** appropriate use based on knowledge of basic nutrition and care, including adequate water (World Health Organization, 2012).

Food Sovereignty is the right of nations and people to control their own food systems, including their own markets, production modes, food culture and environments. Food sovereignty promotes local access to culturally appropriate and nutritious food. In 1996, food sovereignty was first discussed at the Second International Conference of La Vía Campesina (Wittman et al., 2010).

Food System is used to define the complex relationships between production, processing, distribution, preparation, consumption, waste and disposal (Schumilas, 2011) of food and agricultural products. It includes the inputs needed and outputs generated during each of these steps.

Food Waste is edible material intended for human consumption that is discarded, lost, degraded or consumed by pests at any stage from production to consumption (Government Office for Science, 2011).

A **Forest Garden** is a multi-storey, food- and habitat-producing landscape, which functions like a natural wooded area (Hemenway, 2009). These systems are self-perpetuating, self-fertilizing, self-watering, self-mulching, self-pollinating, self-healing, and resistant to pests and disease (Hart, 1996).

Forestry is concerned with growing trees for lumber, pulp and other wood products (Jacke and Toensmeier, 2005a).

Free-Range animals have access to large outdoor areas (JobMonkey, 2012).

GDP, Gross Domestic Product, is the monetary value of all the finished goods and services produced within a country's borders in a specific time period, though GDP is usually calculated on an annual basis (Investopedia, 2012d).

Genetically Modified Foods have been modified by genetic manipulation, also known as GM foods, genetically engineered foods or biotechnology-derived foods (Health Canada, 2010).

Genetically Modified Organism (GMO) is a plant, animal or microorganism (e.g., bacteria, fungi) that has been produced through genetic engineering (de la Salle and Holland, 2010).

Gleaning is the practice of harvesting food that otherwise would not be used for human consumption and channelling it to humanitarian agencies (de la Salle and Holland, 2010) or other uses.

Greenhouse is a building designed for the protection of tender or out-of-season plants against excessive cold or heat. The modern greenhouse is a roofed and walled structure built of glass with a minimal wooden or metal skeleton (Encyclopædia Britannica, 2011b).

Grey water is the wastewater produced from baths, showers, washing machines or other washing (Sustainable Sources, 2012).

Ground Water consists of unconfined areas near the surface known as the water table and aquifers located at lower depths beneath a relatively impervious substrate layer (The Groundwater Foundation, 2012).

A **guild** is a group of plant and animal species that partition resources and create networks of mutual support, often centered around one major species, which benefits humans while creating habitats (Hemenway, 2009; Jacke and Toensmeier, 2005a). This term is used by ecologists to mean something slightly different, such as a set of different species that use a common resource in a similar way (Hemenway, 2009).

Harmonized Commodity Description and Coding System (HS) was developed and is maintained by the World Customs Organization (WCO). The HS is an international standard of names and numbers used to classify traded products (Amber Road, 2011).

An **heirloom variety** is a plant that has been passed from generation to generation within a community or family. By this definition, an heirloom is a heritage variety (Ausgarden, 2011).

A **heritage variety** is one that has significance to a particular region or culture. This can include older commercial varieties, as well as some heirloom varieties (Ausgarden, 2011).

Human-scaled Agricultural System includes farming systems that are planned and designed for human labour and small machinery operation (de la Salle and Holland, 2010).

Hybrid is a plant or animal resulting from a cross between parents that are genetically unlike; often restricted to the offspring of two different species or of well-marked varieties within a species. Hybrids may be fertile or sterile (Abercrombie et al., 1985). Cross-fertilization occurs naturally or by human intervention (Ausgarden, 2011).

Hydroponics is the cultivation of plants in liquid nutrient solution rather than in soil (de la Salle and Holland, 2010; Schmidt et al., No Date).

Indigenous Food Systems include the land, air, water, soil and culturally important plants, animals and fungal species that have sustained aboriginal people for thousands of years. The components of indigenous food systems are inseparable and function in healthy interdependence (Indigenous Food Systems Network, No Date).

According to Woodbine Ecology Center (2011), **indigenous permaculture** revolves around five basic principles:

1. The recollection and recognition of and respect for indigenous contributions.
2. Traditional ecological knowledge is specific to a place and a culture.
3. Decolonization of minds, language, work and communities.
4. Being and becoming native to the place we live.
5. Eco-cultural reservation.

Industrial agriculture views food production based on the monetary capital to be gained and technology to be used (Berry, 2000).

Keyline planning is an ordered set of principles, techniques and systems applied to rural and urban landscape through regeneration and enhancement. It is a unique combination of water conservation and farming with nature. When using this design, the soil quickly absorbs and holds water through an improved field capacity (Yeomans, 2008).

Local Food deals with the distribution aspect of the food chain and is defined by shorter distances between the producer and the consumer (Milestad et al., 2010; Renner and Long, 2011). The Canadian Organic Growers (COG) define “local” as “a collectively or personally determined geographic space or distance from within which food produced is deemed “local” (Renner and Long, 2011, pg 4).

Local Food Systems “are characterized by close links and opportunities for face-to-face interactions between consumers and producers of food, and are also institutions where farmers and customers can express and act upon their ethical values concerning food” (Milestad et al., 2010, p1).

Localization is the process of refocusing policies and practices for the economy and society from a local market economy, rather than a wider (regional, national, etc.) perspective. Localization occurs when local needs are met locally (Transition Towns Totnes, 2010).

Market Transformation involves the introduction of innovations into the marketplace with the expectation that these will penetrate a large portion of the eligible market, moving towards a greener economy, positive changes and contribution toward sustainability (de la Salle and Holland, 2010).

In agriculture, **monoculture** involves growing only one species or crop variety in one area (Shiva, 2000; Jacke and Toensmeier, 2005a).

A **milpa** is a small field, cultivated for a few seasons (usually two years), and abandoned for a fresh clearing (Merriam-Webster, 2011b). The area would lie fallow for eight years before cropping again. Traditionally, the milpa contains corn, beans and squash. Other edible plants, such as peppers, tomatoes, melons or amaranth are commonly added to the system (Zeise, 2012). Food grown in milpas generates decent yields and helps reduce soil depletion (Wadgymer, 2011) without the use of fertilizers (Zeise, 2012). These areas are self-sustaining, resulting in less disruption of ecological systems (Wadgymer, 2011).

Minimum tillage is a method of soil cultivation that disturbs only the top few centimeters of the topsoil, avoiding the need for inversion plowing with the associated potential damage to soil structure and energy demand. This method may result in sequestration of more soil carbon (Government Office for Science, 2011).

Multiplier Effect is an effect in economics in which an increase in spending produces an increase in national income and consumption greater than the initial amount spent. For example, if a person buys a loaf of bread, it will employ a baker and their suppliers. Indirectly, the purchase will stimulate employment in laundries, restaurants, and service industries in the community (Dictionary.com, 2012a).

New Urbanism is the process of reintegrating the components of modern life, including housing, work places, shopping facilities and recreational spaces into compact, pedestrian-friendly, mixed-use neighborhoods linked by transit and set into a larger regional open space framework. The principles of new urbanism can be applied to infill and development sites within existing urban spaces. An alternative term is neotraditional planning (de la Salle and Holland, 2010).

Niche is a particular role or set of relationships of organisms in an ecosystem, which may be filled by different species in different geographical areas (Abercrombie, et al., 1985).

Non-traditional Financing delivers stored wealth and terms to provide the parties and community with environmental and social benefits. Examples of non-traditional financing include: No interest loans and in-kind assistance booked against the Time Bank. The “interest” earned comes in the form of added system throughput that benefits all the members in the value chain. Social Impact Bond (SIB) is a contract with the government to pay for improved social outcomes that result in public sector savings. Some of the benefits of SIB are a more reliable source of funding for the duration of a project, flexibility in creating and implementing the program, ability to work across multiple sectors and ability to scale up the project if it is successful (Social Finance, 2012).

North American Industry Classification System (NAICS) is the product of a collaborative effort between the United States, Canada, and Mexico to share a common classification system of industrial work and production. This system allows direct comparison of economic data across borders in North America (NAICS, No Date).

Nutraceutical is “any substance that is a food or a part of a food that provides medical or health benefits, including the prevention and treatment of disease”. Nutraceuticals range from isolated nutrients (e.g., folic acid, lycopene, beta-carotene), dietary supplements, genetically engineered foods, herbal products and processed foods (Helmenstine, 2012).

An **Open Loop** system depends upon external inputs, provides outputs to the external environment and is not self-regulating (de la Salle and Holland, 2010).

Open-pollinated Plants are pollinated naturally, without human intervention. Provided that no unwanted cross-pollination occurs, the plant should breed true. The offspring should resemble the parent(s), or at least resemble the general type (Ausgarden, 2011).

Organic Agriculture is the process of producing food avoiding the use of synthetic chemical fertilizers, synthetic pesticides and genetically modified organisms to influence

the growth of crops. Organic farming aims to develop enterprises that are sustainable, limit their impact on the environment and respect the natural balances between soil, plants and animals. Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people (de la Salle and Holland, 2010; Living Organic, 2011; OMAFRA, 2011b).

Organic Products are agricultural products that have been certified as organic under the Canadian Organic Standards (or other comparable regulations). On June 30 2009, the Canadian government implemented the Organic Products Regulation to regulate organic certification in Canada for organic products. Details on this new regulation are available from the Canadian Food Inspection Agency (CFIA, 2011).

Pastured animals have access to grass, grow at a natural rate and are often antibiotic and drug free (Salatin, 1993; Robinson, 2010).

Permaculture is the conscious design and cocreative evolution of human cultures, settlements and agricultural systems, using ecological principles and indigenous wisdom to mimic the diversity, stability and resilience of natural systems. It is a contraction between “permanent agriculture” and “permanent culture”. This term was originally coined by David Holmgren and Bill Mollison in Australia. It is a complete agricultural ecosystem (Hart, 1996; Jacke and Toensmeier, 2005a; Hemenway, 2009).

A **pole barn** is a farm building with no foundation, simply a roof extended over a series of poles. Walls may be added to pole barns, but are not required for structural integrity. Pole barns are often used for storage or livestock shelter (Oxford Dictionaries, 2012a wiseGEEK, 2012).

Political Expert Power refers to the ability of a person to influence the behaviour of others in the organization by virtue of having some expert knowledge or skill related to the work being performed (Belen, 2008).

Political Positional Power is related to the member’s position in the value chain and relative size and economic clout. For example, small, financially weak members that are separated from the end customer have relatively little power as opposed to larger, financially sound members that are in direct contact with the end customers (Shaking Up The Value Chain, 2012).

A **polytunnel** is a tunnel made of polyethylene, polyvinyl alcohol (or other plastic) or spun-bond fabric and used to grow crops that require a higher temperature and/or humidity than available in the environment. They are similar in principle to greenhouses and cloches (Coleman, 2009; Oxford Dictionary, 2012b).

Polycultures are dynamic, self-organizing plant communities composed of several to many species (Hemenway, 2009). Polycultures involves growing more than one species or crop variety in a patch or space at one time (Jacke and Toensmeier, 2005a).

Public Policy Engagement involves mutually beneficial, two-sided partnership between government and the public or civil society organizations (University Alliance for Civic Engagement, No Date).

Public Policy “is the broad framework of ideas and values within which decisions are taken and action, or inaction, is pursued by governments in relation to some issue or problem” (Brooks, 1989, p. 16; quoted in Smith, 2003).

Quota is a mechanism of the supply management system. It is the legal right to produce a set amount of milk, eggs, chicken or turkey. It is owned by farmers, and is highly valuable because it provides guaranteed access to the market for these commodities. Without owning quota, it is essentially illegal to produce that product for sale off the farm (Aitken, 2012, p4).

Redundant Trade “is simply put, needless trade. It is the simultaneous exporting and importing of the same product to the same region, regardless of season” (Mann Miedema, 2006, p3).

Regenerative Agriculture recommends a new level of local interaction within a complete agricultural cycle. It includes regenerating the soil, human health, the local environment and our communities, recycling organic waste and educating others (Rodale Institute, 2002).

Resilience is the ability of a system (individual, economy, town or city) to withstand external shocks and undergo change while retaining its basic structure and function (de la Salle and Holland, 2010; Transition Towns Totnes, 2010).

Resilient Economies relates to the ability of a self-sufficient economic system to survive external economic shocks, recover quickly and improve its long-term path (Simmie and Martin, 2009).

Scrip is a non-legal form of paper currency accepted by people and businesses within a community. It provides resistance to global economic shock, support to an economic system that keeps wealth and prosperity in communities, and produces a multiplier effect that creates incremental economic activity and generates more jobs (Dictionary.com, 2012b; The Free Dictionary, 2012c).

Silviculture is the art and science of controlling the establishment, growth, composition, health and quality of forest vegetation to achieve a full range of forest resource objectives (BC Ministry of Forests, 1999). In most cases, silviculture strives to mimic the natural conditions that occur in forests (MTE, 2011).

A **silvicultural prescription** is a written document that describes the objectives of the harvest treatment and the manner in which it will be performed (MTE, 2011).

A **silvicultural system** is the specific technique used to modify the stand to meet the objectives of the prescription (MTE, 2011).

The **Slow Food Movement** was started in Italy in 1986. This group of individuals is working to defend biodiversity in the food supply, spread taste education and connect producers of foods with others through events and initiatives. Some of these individuals belong to an international member-supported organization called “Slow Food” (Honoré, 2004; de la Salle and Holland, 2010).

Small Plot Intensive (SPIN) farming is a vegetable farming system, usually in urban settings, that makes it possible to earn significant income from land bases under an acre in size. It is non-technical, easy to learn and inexpensive to implement (de la Salle and Holland, 2010; SPIN Farming, 2012).

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).

Social Enterprise is a revenue-generating business with primarily social objectives whose surpluses are reinvested for that purpose in the business or in the community, rather than being driven by the need to deliver profit to shareholders and owners (BC Centre for Social Enterprise, 2012).

Social Innovation “refers to new ideas that resolve existing social, cultural, economic and environmental challenges for the benefit of people and planet. A true social innovation is systems-changing – it permanently alters the perceptions, behaviours and structures that previously gave rise to these challenges”. (Centre for Social Innovation website, 2012)

Social Impact Bond is an impact investing model used to increase the level of prevention investment in niche social areas. It is an emerging tool that governments are exploring to help attract private capital for public benefit and non-profit organizations that are considering diversifying their sources of revenue (Social Finance.ca, 2012).

Supply Management is controlled by national bodies and by provincial commodity marketing boards. Supply management imposes a set of production controls by setting prices, restricting domestic supply to domestic demand, and operating within quantitative import controls (Skogstad, 2011). The broiler hatching egg, chicken, dairy, egg and turkey industries in Canada are controlled by supply management (Agriculture and Agrifood Canada, 2011).

A **Sustainable** entity should satisfy the following three basic conditions:

- Use renewable resources at a rate not exceeding the rate of their regeneration;
- The use rate of non-renewable resources should not exceed the rate at which sustainable renewable substitutes have been developing; and,
- The rate of pollutant emissions should not exceed the assimilative capacity of the environment (Whitelegg, 1993).

Sustainable Agriculture is the production and harvesting of food or fibre products from nature in a way that enhances and sustains. Sustainable agriculture includes a wide range of practices, including production of organic food, pasture-raised livestock, minimal use of chemical fertilizers and pesticides, and humane treatment of farm workers (Ivanko and Kivirist, 2008).

Sustainable Development is the ability of humanity to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987).

According to the Sustainable Development Commission (2005), **Sustainable Food**:

- Is safe, healthy and nutritious, for consumers in shops, restaurants, schools, hospitals etc.
 - Can meet the needs of all sectors of people
 - Provides a viable livelihood for farmers, processors and retailers, whose employees enjoy a safe and hygienic working environment
 - Respects biophysical and environmental limits in its production and processing, while reducing energy consumption and improving the wider environment.
 - Respects the highest standards of animal health and welfare
 - Is compatible with the production of affordable food for all sectors of society
-
- Supports rural economies and the diversity of rural culture, in particular through an emphasis on local products that keep food miles to a minimum

Sustainable Economies is the ability of the economy to support a defined level of production based on the ecological carrying capacity of the region (Brundtland, 2007).

A **Sustainable Food and Agriculture System** is one in which the fertility of the soil is maintained and improved; the availability and quality of water are protected and enhanced; biodiversity is protected; farmers, farm workers, and all other actors in value chains have livable incomes; the food we eat is affordable and promotes our health; sustainable businesses can thrive; and the flow of energy and the discharge of waste, including greenhouse gas emissions, are within the capacity of the earth to absorb forever (Sustainable Food Lab, 2011). A sustainable food system is designed to enhance the environmental, economic and social health of a particular place. A more locally based, self-reliant food economy is created when farmers, consumers and communities partner (SAREP, No Date).

Sustainable Food Cluster (SFC) is a non-profit cooperative including producers, processors, aggregators and institutional and commercial food purchasers that grow, process and distribute as much food as possible inside each local SFC. Mixed farms and dedicated growers (e.g. apples) pool into an aggregation facility that adds value by providing storage, minimal processing, traceability and consistency of supply. The food is distributed to restaurants, retirement homes, grocery stores and the local correctional institute within the SFCs towns and cities. An inclusive membership ensures better communication, transparency, more equitable distribution of wealth and a focus on

system efficiencies. SFCs differ from Food Hubs¹ in that they cluster together holistic system elements (environmental, economic, social and nutritional) to ensure sustainable food system functionality; elements such as experiential education on food skills, alternative agriculture techniques, alternative business management and financing options, and delivery of social enterprise programming that provides community members with dignified access to nutritious food while facilitating personal solutions.

Sustainable Food Cluster Network (SFCN) is a network of Sustainable Food Clusters (SFC) set-up for the purpose of obtaining food that is not available within the local SFC and providing food that is needed by other SFCs. The term “Sustainable Food Cluster Network” was coined because in Southwestern Ontario there are clusters of food types produced in well-defined geographic areas that need to be networked together with other regions to provide a full complement of food types within all regions.

Time Bank is an alternative monetary system that bases its value on units of time rather than on commodities or other items of value such as cash. Time banking focuses on the value of one hour of labour and was developed during the 1980s in order to increase social capital by focusing on the value of the individual rather than the value of a hard currency (Investopedia, 2012e).

Traditional Financing is a method of direct investment by tapping into personal savings, mortgages credit cards, lending institution loans or loans from friends and family (US EPA, 1998).

Urban Agriculture includes “growing of crops or raising of animals for food at a small scale that is compatible with the surrounding neighbourhood. It may also include small-scale sales of urban agricultural products subject to zoning and other applicable regulations” (City of Guelph, 2012).

Value-added Agriculture is:

- A change in the physical state or form of a product (e.g., milling grain into flour or making fruit into jam);
- The production of a product in a manner that enhances its value as demonstrated through a business plan (e.g., organically produced products); or
- The physical segregation of an agricultural commodity or product in a manner that results in the enhancement of the value of that commodity or product (e.g., an identity preserved marketing system).

¹ USDA working definition of a food hub is “a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products” (Barham, 2010).

As a result of the change in physical state or the manner in which the agricultural commodity or product is produced and segregated, the customer base for the commodity or product is expanded and a greater portion of revenue derived from the marketing, processing or physical segregation is made available to the producer of the commodity or product (Boland, 2009; AgMRC, No Date).

Value Chain Management is an independent approach to business where trading partners improve their combined competitiveness by collaborating to more effectively and efficiently deliver a product or service to the customer. This differs from traditional buyer-seller relationships in that there is a commitment among the partners to share information, risks and rewards in order for everyone to achieve more by working together (Martin Gooch, as quoted in Walton, 2011).

Value-trait is a term used when referring to a food product, food chain or food market that describes the production method in which a food is produced “using practices perceived as environmentally friendly, or that address a particular social concern (such as animal welfare)” (Whitacre [ed], p12).

Vermicomposting is the use of worms to consume and convert organic waste into a nutrient-rich soil, often used as a plant fertilizer (Appelhof, 1997; de la Salle and Holland, 2010).

Verimcompost Tea is the nutrient rich liquid that is produced as a by-product of vermicomposting (Appelhof, 1997).

Vertical Value Chain is most often a series of for-profit businesses that bring a good from production to consumption. When profit is the prime motivation, the businesses along the value chain can experience differential wealth distribution and a lack of communication for the purpose’s system optimization (Gooch, 2005; Gooch and Felfel, No Date).

Vertical Value Chain Cooperative is a membership organization comprised of producers to food purchasers with equal representation on the Board. Decisions are made on a consensus basis for the good of the entire value chain (Karantininis and Nilsson, 2007). An example is the Stroudco Foodhub in the UK (Stroudco, No Date).

Walkable Communities are designed to be safe practical and inviting for pedestrians to get around in their communities. There are a number of elements that make communities walkable including appropriate infrastructure for people of all ages and abilities including those with limited mobility; higher density mixed use areas with stores, schools, restaurants and other services within a short walking distance; direct connectivity between neighbourhoods and amenities; attractive landscaping, shade trees, shelters, washrooms and clean public spaces and; safety elements including maintained sidewalks, lighting, traffic calming and crossing signals. Walkable communities provide healthy physical activity, reduced greenhouse gases, social

cohesion, increased local economic activity and an enjoyable experience (Canada Walks, 2012).

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