

**cities<sup>plus</sup> FOUNDATION PAPER**  
**SERIES :**  
**AGRICULTURAL SYSTEMS**

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## INTRODUCTION

The authors have prepared this paper at the request of **cities<sup>plus</sup>** in order to help participants in the **cities<sup>plus</sup>** process understand 'where we are at', and 'where we are coming from' with respect to agri-food systems in greater Vancouver. For more information about **cities<sup>plus</sup>** see <http://www.citiesplus.ca/>.

Our own civilization produces food so efficiently that economies have been created allowing and encouraging people to have no, or virtually no, connection to the natural world—and little understanding of it. As that disconnect from nature has occurred, technologies and their institutional supports have developed systems of rationales to help us to convince ourselves that this artificiality is real. "Coke™ is the real thing". Mainstream economics do not differentiate between the production of food and the production of widgets, or of biological weapons. They all add to the Gross National Product. They all purportedly add "wealth" to the Society.

Historically, Corporations were granted the rights of a person and then, through trade agreements, claimed further rights. Today virtually every major link in the food chain—from the seed to the table—has fewer than five transnational corporations dominating their sector.

The question we have is - Is the prevailing system sustainable?

## THE AGRI-FOOD SYSTEM IN GREATER VANCOUVER

### WHAT IS AN AGRI-FOOD SYSTEM?

An agri-food system includes the primary agriculture sector and related service industries (e.g. veterinary and crop dusting services, the food and beverage, tobacco and non-food processing sector, the distribution sector (wholesale and retail), and the food services sector.<sup>1</sup> It therefore includes the sectors providing inputs to farms, all the financial and management services farms use, and all aspects of food movement from the farm gate to the consumer's plate. In some definitions, the handling of food wastes is also considered part of the agri-food system, and for our purposes we include it, since managing the food waste stream is an important aspect of creating sustainability.

*[Note: (Until final draft) hand out the diagram that Herb has selected ('Agri-food System')]*

## **WHAT ARE THE BASIC HUMAN NEEDS PROVIDED/SATISFIED BY AN AGRI-FOOD SYSTEM?**

Food is essential to life. A sustainable agri-food system would provide the following additional benefits:<sup>2</sup>

### **SECURITY**

A sustainable agri-food system would provide greater Vancouver residents with access to food in sufficient quantity, quality and with a sufficient degree of choice to achieve optimal physical and mental health.

It would provide every resident with a reliable food supply - free from social, political, economic or environmental disruption.

### **ECONOMIC**

A sustainable agri-food system would create synergies between businesses, government and civil society to support healthy and appropriate business enterprises. Replacing imports with local supply would create additional business opportunities.

It would provide opportunities for creative and fulfilling paid and unpaid work, and minimize danger to workers and consumers.

Local economies would flourish, and farmers would make a living wage.

### **SOCIAL**

A sustainable agri-food system would substantially eliminate hunger from greater Vancouver, provide area residents with the nutrition their bodies need, make people healthier and reduce health care costs.

It would make cities more affordable, neighbourhoods more vibrant. It would enhance connections between urban and rural residents, and provide support to rural communities.

It would increase the number of wholesome passive recreational sites - e.g., nature walks.

It would interact with the food systems of other nations in such a way that other nations are able to achieve a sustainable food system

It would enable area residents to grow, evolve, be creative and experiment when dealing with climatic, economic and political stresses and variability. It would allow all sectors of the population to determine its future.

## ENVIRONMENT

A sustainable agri-food system would considerably reduce the unsustainable pressure on greater Vancouver's air, water, and land resources. It would decrease cross-border heavy truck transport—reducing noxious fumes, heavy metals, road maintenance, noise and congestion.

It would minimize energy use and reduce the region's greenhouse gas emissions.

It would protect forests, fish and wildlife, increase green space and enhance biodiversity in the area.

It would maximize food quality and safety for greater Vancouver residents.

## WHAT ARE THE ISSUES OF CONCERN?

### THE CURRENT AGRI-FOOD SYSTEM IS UNSUSTAINABLE

We all need to eat, but what we eat, how we produce food, and how we bring food to our tables, are each complex environmental, economic, social and cultural issues with local, national and international dimensions.

A brief survey of food trends suggests the world—including greater Vancouver—is not growing and transporting food in a manner that is sustainable (a sample of trends is set out below). The reasons are many and varied, but underlying today's food practices are laws and economic policies (or in many cases the lack of laws and economic policies) that impede genuine attempts to act responsibly and allow unsustainable practices to flourish.

Sustainability as a term has been over-used and is not clearly understood. The concept is, however, integral to farm security and food security. Background papers prepared for a September 1999 FAO/Netherlands conference on the Multifunctional Character of Agriculture and Land ([www.iisd.ca/linkages/sd/agr/](http://www.iisd.ca/linkages/sd/agr/)) update the sustainability concept for agriculture as follows:

Thinking crystallised in the 1990s as an approach that became known as "Sustainable Agriculture and Rural Development (SARD)." The SARD approach aims to foster sustainable development (in the agricultural, fisheries and forestry sectors) that "conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable."

A more recent interpretative framework is called the Multifunctional Character of Agriculture and Land (MFCAL). MFCAL helps to capture the complexity and continuing importance of emerging agricultural patterns

and land-use systems and assess their relationships with other sectors of the economy and society. The concept of MFCAL has evolved from and builds upon SARD. It encompasses the entire range of environmental, economic and social functions associated with agriculture and related land use.

The key dimensions of the MFCAL framework for agri-food policy are:

- food security;
- environment (enhancement of positive effects, mitigation of negative effects);
- economy (primary production, goods and services, other businesses related to agri-food);
- society (rural communities and livelihoods, and cultural values).

A sustainable food system would be designed as "production - consumption - recycle" semi-closed loop. Unfortunately, current food systems are not cyclical, but linear and long-distance, with the focus on production and consumption. Consequently, conventional food systems use vast quantities of synthetic fertilizers (to replace unused organic matter), water and non-renewable fuels to move food around. Canadian cities have largely divorced themselves from the food system cycle, focusing on processing and distribution (largely the consumption phase) and ignoring production and organic materials (fertilization) recycling, leaving that largely to rural areas.<sup>3</sup>

*[Note: (Until final draft) hand out the diagram that Herb has selected ('Farmers' Environment')??]*

Under MFCAL, a Greater Vancouver agri-food system would be ecologically appropriate - have low environmental impacts, use fewer rather than more external inputs and would be intimately connected to its community. It would also be committed first of all to buying local and thereby supporting local producers, distributors and suppliers.

This paper explores the challenge of making a sustainable agri-food system for greater Vancouver. To measure performance towards this goal, the paper suggests some performance indicators (see 'How do we measure performance' below) and recommends performance indicators and targets be developed for each of the following functions of the agri-food system:<sup>4</sup>

#### Production Functions

- Food, feed
- Fibre (wood, wool, hemp, etc.)

- Other (e.g. Medicinals, grains for ethanol fuel, etc.)

#### Environmental Functions

- Conserving topsoil, microbes
- Conserving biodiversity
- Water and water quality
- Saving &/or generating energy
- Treating animals well
- Recycling wastes
- Regenerating renewable resources

#### Social Functions

- Raising future Citizens
- Contributing to community cohesion
- Sharing resources and services

#### Cultural Functions

- Practicing and teaching essential skills and knowledge
- Nourishing creativity and resourcefulness
- Preserving aesthetic landscapes
- Strengthening regional and multicultural heritage
- Integrating old and new ways

#### Economic Functions

- Supporting local businesses and services
- Providing jobs
- Creating recreation and tourism opportunities
- Sprouting value-added businesses, crafts and other enterprises

## GLOBAL, NATIONAL AND LOCAL TRENDS: SPECIFIC AREAS OF CONCERN

The following global, national and local trends (presented in the MFCAL categories) are specific areas of concern:

### Food Security

#### **Global trends**

- Access to food is still perceived by many as a privilege rather than a basic human right, and hunger and malnutrition continue to prevail. It is estimated that about 35,000 people around the world die each day from hunger. Ill effects of malnutrition hurt even larger numbers of people, mainly children, women, and elderly. Far from disappearing, hunger and malnutrition are on the increase even in advanced industrialized countries like Canada. It is estimated that in Canada 2.5 million people a year are dependent on food from food banks. About 30 million people in the United States were reported as unable to buy enough food to maintain good health. The continuing reality of hunger and the unsustainability of the current practices, both locally and globally, make food security an essential concern. Attention is now focussing particularly on urban areas where overpopulation and the absence of insufficient infrastructure are creating optimal conditions for grinding poverty and major food insecurity.<sup>5</sup> The causes of hunger are quite different in Canada than in other parts of the world. In North Korea, for example, increasing trade or local policies that promote water conservation in agriculture may be the most cost-effective way of reducing hunger. In Vancouver, hunger is more closely associated with social problems such as unemployment (especially for single mothers) and psycho-social illness/drug use (especially in Vancouver's Downtown east side).
- The American Farmland Trust reports that the US is losing two acres of mostly prime farmland every minute to development—the fastest decline in American history.<sup>6</sup>
- Given current environmental trends, and archaeological evidence of Mesopotamian, Roman, and Mayan civilizations, the Worldwatch Institute believes the food system is likely to be the sector through which environmental deterioration eventually translates into economic decline.<sup>7</sup> Worldwatch predicts that continued environmental degradation will seriously impair the capacity of fishers and farmers to keep up with the growth in demand, leading to rising food prices. The social consequences of rising prices (particularly among the 1.3 billion in the world who live on a dollar a day or less) will become unacceptable to more and more people, and the resulting political instability will reach the point where economic progress is no longer possible.<sup>8</sup>

- From 1993 – 1995 Canada’s food exports to the US and Mexico increased by C\$6 billion. Net farm income in Canada declined C\$600 million.<sup>9</sup>

#### Canadian/BC/GVRD trends

- BC supermarket shelves are brimming with food. Food as a proportion of disposable income is the lowest in the world for the average Canadian and British Columbian. At the same time, however, food bank usage continues to climb. With growing populations and rising energy costs, access for the safest, healthiest and most nutritious food may become less affordable for the average person. Culturally appropriate food that is affordable and of high quality may not be available. [*sources?*]
- Since the introduction of NAFTA, BC consumers have become more dependent on American food suppliers, and BC farmers and processors have become more dependent on American customers.<sup>10</sup> Trade liberalization has also led to rationalization of cross-border food trade as farmers concentrate on goods for which they hold a competitive advantage.<sup>11</sup> The result in BC is a stronger reliance on imports for products produced more competitively across the border. In 2001, total consumer sales of food were estimated to be \$18.5 billion.<sup>12</sup> Statistics BC says limits in trade data make it impossible to accurately calculate BC-US trade balances.<sup>13</sup>
- Even though greater Vancouver produces more of the food it consumes than any other region of BC, it too is still heavily dependent on imports. No reliable figures exist but staff in the provincial ministry of agriculture, food and fisheries estimate that the region is about 60% self-reliant [*Note: is this figure too unreliable to mention? Does it strengthen or weaken the case for local self sufficiency?*]. This estimate assumes 20% of consumption is production of dairy, eggs, chicken and turkeys and that post-September 11<sup>th</sup> US exporters might succeed in cancelling contracts in an emergency. Other estimates differ widely and all figures will need to be authenticated.
- There is a new awareness of the connection between food security and national security. The complexity of the food supply chain creates the distinct possibility that there will be natural or intentional disruptions
- Between 1901 and 1996, the Canadian supply of dependable agricultural land declined by 16% as a result of increased use of the land for urban and other non-agricultural purposes.<sup>14</sup> Much of the loss occurred around urban centres of southern Ontario. Statistics Canada reports that the irreversible conversion of dependable agricultural land has forced more agricultural production onto unreliable marginal land.<sup>15</sup> Production on marginal land can be

more environmentally harmful because it is often susceptible to soil damage resulting in erosion, and requires greater input of fertilizers, pesticides and water to achieve a given yield.<sup>16</sup> By using permaculture principles, however, marginal land can be very productive with no inputs.

- British Columbia is a vertical province, largely made up of mountains, river valleys and deltas. Only 3 percent of total provincial land is considered arable, although up to 30 percent of the province has some agricultural potential. Since 1973, however, land in BC designated as "agricultural land" under the *Agricultural Land Commission Act* cannot be used for any purpose other than farm use.<sup>17</sup> Despite 30 years of development pressure, 97% of the land in the agricultural land reserve (ALR) is still intact.<sup>18</sup> In 2002, however, a group of Okanagan fruit growers launched a suit against the Province and the Agricultural Land Commission, arguing the ALR deprives them of their liberty and security contrary to s. 7 of the *Charter*.<sup>19</sup> Expecting the suit to snowball into a class action, the orchardists believe restitution costs for development rights across the province could be as high as \$10 billion.<sup>20</sup> The current provincial government campaigned in part on changing the ALR to make it 'more regionally responsive to community needs. To deliver on its mandate, the government has rewritten the legislation, restructured the Commission, and reduced the 'regulatory burden' in the regulations by 35%.<sup>21</sup> Widening the range of uses permitted in the ALR and delegating non-farm use and subdivision decisions to local governments facing economic heat could result in the erosion of farmland protection from inside the ALR.
- In Canada, production is shrinking from the margins, and consolidating in the main production areas on fewer farms.<sup>22</sup>
- The Dieticians of Canada and the Community Nutritional Council of BC reported in 2001 that it cost 5% more to eat in BC than it did the year before.<sup>23</sup> The monthly cost to feed a family of four increased by \$30. Combined with flat and in some cases reduced rates for social assistance, the rising costs compelled the authors of the report to question the ability of people on low incomes to purchase a healthy diet. [*Note: do we want to speculate why food costs have risen?*]. The authors report that food insecurity is significantly associated with poor/fair health, multiple chronic health conditions, obesity, distress and depression. They also report that undernourished children are more susceptible to illness, have diminished attention spans and are unable to perform tasks at school as well as their nourished peers. The Canadian Association of Food Banks (BC Branch), and the Social Planning and Research Council of BC endorsed the report.
- Real Estate owned by the supermarket companies is often a more valuable asset than the retail operation built upon it. When

converted to other uses for business reasons, neighbourhoods with low-income and elderly populations are often left significantly under served—causing the least able people in the population to have to travel the furthest distance for food. The trend towards big box stores is replacing local markets. If this trend continues, most of the population could be in the same position. [Sources?]

## Economic

### Global trends

- World trade organizations are promoting a high volume, export-oriented model of agriculture world wide, emphasising large corporate-run plantations with extensive use of machinery, irrigation, fertilizers and pesticides.<sup>24</sup> Under this worldview, family farms are considered inefficient relative to the large agribusinesses.<sup>25</sup>
- Traditional large-scale farms such as dairy, poultry, hogs, and beef are highly mechanized and provide few jobs outside the farm family. Highly mechanized field vegetables and fruit farms provide seasonal work. Intensively managed greenhouse, nursery and new farms producing specialized and differentiated products are the major users of farm labour. [source?]
- Major farm inputs—such as fuel, fertilizer and seeds—are controlled by a handful of companies, leading to rising costs for farmers.<sup>26</sup>
- The seed industry consolidation is dramatically narrowing the availability of non-hybrid vegetable varieties and a wealth of seed diversity is being lost forever.<sup>27</sup> In some countries seed legislation forces farmers to use only 'registered' varieties and farmers unable to afford the costs of registration are slowly pushed into dependence on the seed industry.<sup>28</sup>
- In southern countries, formerly self-sufficient communities now face starvation because local land and water is being diverted to provide products for the more affluent consumers in northern countries.<sup>29</sup>
- Since 1983, a farmer's share of every dollar spent on food has fallen from 37 cents to 23 cents.<sup>30</sup>
- Now that organic food is established as a viable market, large agribusinesses are interested in controlling it.<sup>31</sup> Five large farms now control one-half of the \$400 million organic produce market in California.<sup>32</sup> Many worry that, as a consequence, the term "organic" will be stripped of all important meaning.<sup>33</sup>

- A new US farm bill, which provides C\$300 billion in support to US farmers, has made the stability of the global food trading system questionable.<sup>34</sup> The Organization for Economic Cooperation and Development estimates that the average Canadian farmer receives less in subsidies per tonne of wheat (\$31) than a farmer in the US (\$108) or in the European Union (\$130), but more than a farmer in Australia (\$7).<sup>35</sup>

#### **Canada/BC/GVRD trends**

- Less than 5% of BC's land is arable,<sup>36</sup> and for economic and population-growth reasons there is continuing pressure on this land base for non-farm development.
- The federal government believes international markets will continue to be a source of growth for both high-value products and bulk commodities. As a result, it is actively pursuing a trade policy that will improve market access and 'level the playing field' through negotiations related to the World Trade Organization (WTO) and the Free Trade Area of the Americas (FTAA).<sup>37</sup> To gain a competitive advantage for Canada's agri-food industry, a joint federal-provincial-territorial program has set out to make Canada 'the world leader in food safety, innovation and environmentally responsible production.'<sup>38</sup> Generally, the vast majority of Canadian agricultural policy is understandably geared to the Prairies. BC is unlike any other jurisdiction, however, and national policies are therefore often at odds with BC's requirements.
- The globalization phenomenon accelerates the financial pressures on farmers. Many now recognize how export sales do not translate into higher profit margins. In fact, because input costs are rising more rapidly than farm gate prices, globalization is actually increasing the cost-price squeeze that has long characterized bulk commodity production in Canada. This reality is strengthening the view within farm organizations that government policy is wrong-headed and creates new opportunities for unusual alliances between farm, environment and community organizations.
- In 2001, there were 30,000 fewer farms across Canada than six years previously—continuing a trend that began five decades ago.<sup>39</sup> The number of farms in BC dropped 7.1% since 1996.<sup>40</sup> The average Canadian farm got 11.2% larger, and a 25% decrease in summer fallow led to an increase in productivity.<sup>41</sup> Prices farmers received for products declined by 4.6% while the prices farmers paid for fertilizer and fuel increased by 10%.<sup>42</sup> The number of farmers who use computers has doubled since 1991 (now at 4 out of 10).<sup>43</sup> Canadian farmers spend 87 cents on operating expenses for every dollar in gross farm receipts (up from 83 cents in 1995).<sup>44</sup> BC leads the country in the number of women who operate farms, but like the

rest of the country, the province is experiencing a sharp drop in the number of young farmers.<sup>45</sup>

- Agricultural operations in BC are generally smaller and less industrialized than most of the US and Canada. BC's hot house and organic orchards, however, are as sophisticated as anywhere. BC's dairy farms are also amongst the largest in the country, and are about the same size as dairy farms in Wisconsin—which is the second largest dairy state in US.<sup>46</sup> About 1/3 of all animal operations are considered 'high density, 2/3 medium density, and 1% low density. Most of the high-density operations are South of the Fraser River in the Lower Mainland. [source?]
- Four major supermarkets dominate the BC retail market.<sup>47</sup>
- Canadian and BC farmers are facing an imminent labour shortage. Farm operators are older than the general labour force. In 1996, about 84% of all farm operators were over the age of 34 up from 80% five years earlier. At 46.7 years of age, the average female farm operator was two years younger than her male counterpart (49.0). Almost one-third (32%) of farm operators were aged 55 and over. By comparison, people aged 55 and over accounted for only 10% of the general labour force. Farm operators tend to be older on average than the general working population since they retire later. Often an older farmer will pass the farm down to the next generation, or scale back production while remaining an active farm operator. As well, those who retire from a non-farm job may continue to farm as a retirement activity, thus contributing to a higher average age.<sup>48</sup> Children of farm families are not staying, or planning on staying on the farm. Skills and knowledge are rapidly being lost. The resource pool for new farmers will have to come from immigrant populations and young people.
- Wages and salaries remained the biggest source of income for farm families on unincorporated farms. In 1995, wages and salaries accounted for 55 cents of every dollar in total farm family income. Net farm income was the second highest contributor to total family income at 19 cents of every dollar. One reason that wages and salaries have grown in importance is the volatility of agricultural prices. Over time, farm families have diversified their income sources by seeking work off the farm as one way to stabilize total income. For other families, farming could be considered a secondary occupation or even a hobby, and is not expected to provide the family with significant disposable income. Those families who earned at least half their income in agriculture were more likely to be involved in grain and oilseed farming, cattle, wheat or dairy farms. They were also likely to be involved in farms operated by more than one person. [source?]

- Food is produced in an increasingly complex regulatory environment. The Ministry of Agriculture and Food Web site identifies about 65 provincial statutes that govern agriculture—many with comprehensive subordinate regulations.<sup>49</sup> In today's complex regulatory environment, 'green growers' like other BC businesses face regulatory requirements that unnecessarily restrict the operation of their businesses. Many of these barriers will be easily identifiable and specific—such as zoning and health regulations that make it difficult to hold farmers' markets in many communities.
- Others barriers will be larger in scale, such as supply management, regulated marketing and marketing boards. Food marketing policy has not changed fundamentally over the past 40 years: products are still regulated by eleven commodity marketing boards/commissions, each with a unique structure and set of powers authorized by OIC.<sup>50</sup> Fraser Valley producers of free-range and organic eggs believe the provincially marketing boards impede sustainable practices and support unsustainable practices.<sup>51</sup> The Auditor-General of Canada recently reported on deficiencies in the management and transparency of Canadian Wheat Board operations.<sup>52</sup>
- Processing plants have largely moved out of the BC to Alberta and Washington State thus increasing demands on transportation infrastructure. Between 1984 and 1995, the contribution that food and beverage processing made to provincial GDP declined by approximately 40 per cent.<sup>53</sup> There was a 13 per cent drop in the number of businesses (including 1-person establishments) between 1988 and 1994, and the industry became concentrated with the largest 40 per cent of companies producing 91 per cent of shipments.<sup>54</sup> The reason is likely higher costs in B.C. relative to the rest of the country.<sup>55</sup> As a result, BC is likely Canada's largest net importer of food and beverage products from other provinces.<sup>56</sup> Recent changes to the *Agricultural Land Commission Act* have added encouragement for small-scale processing facilities to locate on farmland, potentially mitigating the need for large centralized processing.<sup>57</sup>

On the positive side, BC is blessed with highly diverse ecosystems, clean soil and water, and highly skilled producers that grow fine-quality products.<sup>58</sup> As a result, BC is well positioned to embrace a sustainable agri-food system. Among BC's most valuable "assets" are:

- Agriculture, including processing, employs about 50,000 people in BC—more than logging and more than mining and fishing combined.<sup>59</sup> Agriculture and food is the only resource industry in BC that is still growing: it employed over 250,000 people in 1996. By 2004 it is projected to include half of all resource workers in the province. [source?]
- Despite the world trends, more than 90% of the province's farms are still family-run.<sup>60</sup> In the South Coastal Region, for example, there

are 11,963 lots classified as farm covering 230,000 acres in the ALR. 6,600 or 55% of the lots are less than 10 acres and these lots represent 13% of the ALR classified as farm. The growth in farm numbers between 1991 and 1996 has been in the medium annual sales range and in specialty farms. Miscellaneous specialty crops have increased 211% in the same period. There is not a strong correlation between size of farm and level of output. Production efficiency of small agriculture lots is not related to lot size, but to the production techniques and level of management used on the lots. The highest dry matter output per acre is often associated with small intensively managed farms as compared to large mechanized farms. Year round food production is possible, practical and economic using various crop covers.<sup>61</sup> Small intensively managed farms also use less fossil fuels, and are more efficient harvesters of solar energy [source?].

- BC currently produces over 200 agricultural and 80 seafood products<sup>62</sup>—more different products than in all the rest of Canada combined.<sup>63</sup> With some notable exceptions (berries and greenhouse vegetables) food produced in the South Coastal regional is consumed primarily by British Columbians. A provincial government-funded program called 'Buy BC' raised consumer awareness for BC agriculture and food. The funding has now been cut.
- Growing conditions are particularly favorable in four regions: Southern Vancouver Island, The Okanagan, the Peace River and the Fraser Valley. The climate and soil factors make greater Vancouver a prime growing area. The Fraser Valley is one of the three most fertile valleys of Canada [sources?].
- The Fraser Valley produces \$1.04 billion annually in farm gate sales from 6,600 farm operations supporting approximately 7,500 full time equivalent farmed based jobs [source?]. This represents 56% of the agricultural production of the province from only 6% of the agriculture land reserve land [source?]. The average size Lower Mainland farms is about one-tenth the size of comparable farms just south of the border in Washington state.<sup>64</sup> The Lower Fraser Valley's major food commodities are dairy, chicken, eggs and turkey. Producers also feed a significant number of local secondary industries such as food retailing, inputs (feed and fertilizer), processing, tourism, restaurants and hotels.<sup>65</sup>
- BC has a considerable opportunity for economic growth by replacing imports with local production. If you assume that each of today's 4 million British Columbians spends an average of \$1200 per year on food for a total of \$4.8 billion, and that current farm gate and fish sales total about \$2 billion, and the value added sector \$600-800 million, then there is an untapped market opportunity of around \$2 billion.

- Canadian (and particularly BC) farmers have made a significant contribution towards sustainability.<sup>66</sup> Lower Mainland farms are homes to the few remaining fish-bearing streams in the region, and BC farmers are world leaders in Integrated Pest Management (IPM) [source?].<sup>67</sup> Farmers argue they would be the first to suffer if they don't act as stewards on their own land. Unlike forestland, however, most farmland is privately owned. Farmers therefore argue that if there are other values on farmland in need of protection such as biodiversity, society should bear the costs. [Note: mention delta farmland & wild life trust, and their grassland set aside programme?]
- With limited industry and government support, markets for BC organic products have steadily grown. Consumer demand for organic foods in BC is steadily increasing and currently far outruns supply.<sup>68</sup> Canadian markets for organic products have been growing 20 percent annually and are expected to be worth \$3 billion by 2005.<sup>69</sup> Last year BC organic production exceeded \$12.5 million in sales from some 500 certified organic growers,<sup>70</sup> but many BC stores and distributors are bringing in organic product from the US and elsewhere to meet demand. Within the sector, however, there is much fragmentation and consequently considerable potential to enhance its industrial and political strength.
- BC is far ahead of other provinces in the amount of land being devoted to organics, with organic production representing 8.7% of the vegetable area and 3.2% of the fruit area of the province.<sup>71</sup>
- In addition to a vibrant local industry, BC and in particular Vancouver Island, is home to a emerging critical mass of committed community groups and knowledgeable people committed to sustainable food production/distribution.<sup>72</sup>
- The Capital Region is home to a number of successful agri-tourism operations including the Sooke Harbour House, Feast of Fields harvest celebrations, Taste of the Islands, and farm tours on the Saanich Peninsula.<sup>73</sup>
- There have been a considerable number of government, industry and community programs in British Columbia aimed at encouraging voluntary stewardship activities on farms and ranches.<sup>74</sup>
- Direct government subsidies to farmers have decreased by 73% since the early 1980s.<sup>75</sup> Among Canadian farmers, however, BC farmers face the lowest "effective" property tax burden in the country, and as a result, benefit from the highest level of tax savings in the country.<sup>76</sup> Most supplies of agricultural products (including fertilizers and pesticides) are essentially GST-exempt.<sup>77</sup>

- The average age of farmers in BC tends to be lower than in the Prairies, Ontario and Atlantic Canada [source?].

## Environment

### Global trends

- In an April 2001 study, 10 North American scientists concluded the impacts of environmental change and degradation generated by world agriculture are in many respects more tangible and worrying than global warming.<sup>78</sup> Vast tracks of forest and grasslands have been cleared for crops,<sup>79</sup> agricultural runoff is fouling drinking water, fertilizers and manure are creating marine "wastelands", pesticides are showing up in mother's milk, and common ingredients of fertilizer (nitrogen and phosphorus) are altering the chemistry of air and water. If trends continue, the authors predict "massive, irreversible environmental impacts" by 2050 when nine billion people are expected to live on the planet.<sup>80</sup> Pesticide use is expected to increase threefold, and twice as much fertilizer will be polluting the finite supply of the planet's water.
- 'Conventional' or 'industrial' agriculture has been described as farming that relies on synthetic fertilizers, chemical and weed controls, mono-cropping, mechanical tillage and harvesting, and a complex of world wide distribution channels." The ecologically adverse impacts associated with this type of practice have been described as numerous, documented and dire.<sup>81</sup>
- Canada's international record in agriculture is poor. When ranked among 28 other OECD nations (a ranking of first meaning least environmental impact), Canada ranks 22nd on pesticide use, 25th on commercial fertilizer use and 16th in terms of livestock (cattle, pigs, sheep and goats).<sup>82</sup> Canada's Commissioner for the Environment and Sustainable Development reported in 1999 that Canada has no ability to accurately measure amounts of pesticides used and released into the environment.<sup>83</sup>
- The world's appetite for meat is soaring, increasing the threat to soil, air and water quality: The number of four-footed livestock on earth at any given moment has increased 60 percent since 1961, and the number of chickens, ducks and other fowl, has quadrupled. Livestock produce 130 times more manure than humans do.<sup>84</sup> A 6,000 hog farm will produce approximately 50 tons of raw manure a day. A large hog farm, like the Premium Standard Farm in northern Missouri, will generate five times the sewage of Kansas City.<sup>85</sup> Manure carries a number of toxic materials, including the *E. coli* bacteria. Cattle are a major source of methane—a much more potent greenhouse gas than carbon dioxide.<sup>86</sup> 5,200 gallons of water is needed to produce one pound of meat. Water consumption in meat operations has been shown to lower water tables.<sup>87</sup> At certain densities and in certain

ecosystems, however, pastured animals are an important component of a sustainable agri-food system (i.e. it's not a good idea to produce wheat everywhere). Many parts of the country are suitable only for pasture and can be used only to produce meat. Properly managed grazing systems can increase soil fertility, diversify forage, and can help return native flora to local landscapes. [source?]

- World wide, fish provide 17% of the animal protein in the human diet,<sup>88</sup> but since the early 1970s, marine fish stocks have been in a global free fall.<sup>89</sup> Dozens of individual species have been fished to commercial extinction, the rate of growth in marine harvests has plummeted to near zero, and the composition of global catches has downshifted to smaller, bonier, oily fish that eat low on the food chain.<sup>90</sup>
- Food distribution is a major cause of pollution and climate change. Some studies conclude the food and agriculture system is the major contributor to greenhouse gas emissions globally.<sup>91</sup> Unpublished estimates from Dr. Jules Pretty at the University of Essex, England reveal that a meal sourced globally produces 200 times more external costs from GHG emissions than a meal sourced within 50 miles of its consumption. An unpublished estimate for the City of Toronto shows that substitution of 10% of vegetable consumption, with production from within the City's borders, would reduce GHG emissions by 38 Ktonnes CO2 equivalent and saves \$5.25 million in externalized costs [Add source]. The major culprits are long-distance truck and air transport of food. Canada is heavily dependent on California and Florida for fruit and vegetable consumption, an estimated 80% of which comes in by tractor trailer. Government officials know that Kyoto targets will be difficult to achieve without reducing food miles, but are extremely reluctant to discuss this reality, given the federal commitment to food exports. The current federal export strategy is incompatible with Kyoto obligations; a more local food economy would help Canada meet its international obligations.
- Recent reports estimate the average food morsel travels 2000 - 4000 km,<sup>92</sup> and the fixings for a British Turkey dinner travel 24,000 miles,<sup>93</sup> before they are consumed. The food system in many countries results in the 'swapping' of food: in 1997 the UK imported 33 million gallons of milk while exporting 71 million gallons.<sup>94</sup> Even some organic food involves assembly, packaging and processing that takes place over several states/provinces.<sup>95</sup> Trucking is becoming more and more the transportation mode of choice. A fully loaded big-rig diesel averages only two to three kilometres per litre, and emits exhaust pollution equivalent to 150 cars.<sup>96</sup> The trucking industry is expected to grow 40% by 2010.<sup>97</sup> Last year, to settle suits filed by the Attorney General and environmental groups, several of California's largest grocery chains agreed to warn residents about the cancer-causing risks of diesel exhaust exposure, reduce idling time, and to conduct alt-fuel demonstration projects.<sup>98</sup>

- Losing the bio-diversity of food is a growing concern and a growing ecological vulnerability. Despite the worldwide abundance of edible plants, only 4 species (rice, maize, wheat and soybeans) provide most of the world's calories and proteins.<sup>99</sup> Of 7,000 varieties of apples once grown in the US, for example, 6,000 are now extinct.<sup>100</sup> The seed industry consolidation is dramatically narrowing the availability of non-hybrid vegetable varieties and a wealth of seed diversity is being lost forever.<sup>101</sup> In some countries seed legislation forces farmers to use only 'registered' varieties and farmers unable to afford the costs of registration are slowly pushed into dependence on the seed industry.<sup>102</sup>
- Dwindling genetic diversity increases the vulnerability of our ecosystems. Although an increase in the number of crops planted in an area doesn't necessarily translate into a better environment,<sup>103</sup> diversity can improve the robustness or resilience of a farm system so that it is able to deal with pest infestations or variable weather patterns.<sup>104</sup> Diversity can also reduce the pollution caused by conventional farming.<sup>105</sup> Farms that have high diversity may also preserve species by promoting indigenous forms of crops, or by providing and protecting habitat.<sup>106</sup>
- A January 2002 the UK Policy Commission on the Future of Farming and Food concluded that the UK farming and food industry is on a path that cannot be sustained in the long term.<sup>107</sup>
- The US Environmental Protection Agency reports that animal waste from US farms pollutes American waterways more than all other industrial sources combined.<sup>108</sup> Despite the tightening of environmental laws, conventional agriculture in California increased its use of the most dangerous toxic pesticides by 37% and its use of carcinogenic pesticides by 127% during the period 1991 to 1998.<sup>109</sup> Currently, the US Federal Department of Agriculture finds pesticide residues in 30 to 40 percent of the food it samples.<sup>110</sup>
- Agriculture is the world's largest source of ground water pollution.<sup>111</sup> In North America, the combination of intensive farming and substantial chemical use has resulted in considerable water pollution and the loss of more agricultural soil than can be regenerated.<sup>112</sup>
- Some reports estimate that up to 40% of the food produced in the world becomes waste - not even compost. [need source]

#### **Canadian and BC trends**

- BC citizens and voluntary organizations are becoming more and more concerned about the environmental impacts of mainstream food production. Key issues are agricultural land conservation, reducing harmful air and water emissions, resource use, energy/climate

change, soil health, fertilizer/pesticide reduction, habitat conservation, and urban development issues.<sup>113</sup> Food-related issues like the following are increasingly dominating the country's newspaper headlines:

- *Rivers in danger of dying.* Growing concerns about the effects of agricultural practices on environmental and human health have forced the Outdoor Recreation Council of BC to add Fraser Valley farm belt waterways and aquifers to the annual list of BC's most endangered rivers.<sup>114</sup> The Fraser River runs through greater Vancouver and is one of the world's great Salmon rivers, and harbours almost all of the 80 sea-based marine foods found in BC. A federal-provincial study concluded that intensive farming has seriously polluted many of Alberta's waterways with nutrients and bacteria far above provincial standards.<sup>115</sup>
- *Food safety issues like "hoof and mouth disease" and "mad cow disease" in the UK and Japan.*<sup>116</sup> Some farm experts argue the crises could have been prevented if farms had adopted organic farming practices.<sup>117</sup>
- *Agricultural waste and drinking water.* The Walkerton Inquiry concluded that the source of the contamination that killed 7 people and harmed 2300 others was manure that had been spread on a farm near a drinking water well. (Note: the Inquiry also concluded that the owner of the farm followed proper practices and should not be faulted).<sup>118</sup>
- *Over-harvesting.* The collapse of fish stocks on both coasts is still in recent memories.
- *Bio-safety and Genetically engineered seeds and crops.* Growing public concern over the long-term safety of GE foods.<sup>119</sup> Strong public support for labelling of GE foods.<sup>120</sup> Legal challenges to GE foods: for example, two Saskatchewan organic farmers seeking a class action suit on behalf of all certified organic grain farmers in Saskatchewan against Monsanto and Aventis. The farmers are seeking compensation for damages caused by their genetically engineered (GE) canola and to get an injunction to prevent Monsanto from introducing GE wheat in Saskatchewan.<sup>121</sup>
- *Regulatory Barriers.* Fraser Valley producers of free-range and organic eggs argue provincial marketing boards are trying to drive them out of business for failing to acquire quota. These organic farmers feel they've developed the organic industry with no help from the marketing boards, and that buying a quota will result in money from organic food sales going to support a food production system they believe is unsustainable.<sup>122</sup>

- More and more people find biotechnology and genetic engineering alarming because they feel these technologies are insufficiently tested and can create totally new organisms with unforeseeable consequences for human health and the web of life.<sup>123</sup> Since 1980, US patent law has permitted industrial patents on plants, seeds and other life forms (an area that was previously off limits).<sup>124</sup> The vast majority of Canadians, regardless of how they feel about GE safety, want to know which of the foods they buy contain GE material.<sup>125</sup> Mandatory labelling bills been tabled before Parliament and the BC Legislative Assembly, but despite strong public support, neither has been enacted.<sup>126</sup> In addition to safety and labelling issues, legal issues are becoming more and more prevalent. Examples are tort-based liability (claims arising when genetic drift and crop contamination occur), contract-based liability (under farmers' Technology Agreements with seed companies or farmers' assurances to crop purchasers), and regulatory liability (if farmers' actions or circumstances result in violations of statutes and regulations).<sup>127</sup>
  
- More and more, people in BC want to know who is responsible for ensuring that their food is grown in a responsible manner and safe to eat, and (whoever it is) whether they are doing an adequate job.<sup>128</sup> For greater Vancouver residents, the answer to the first question is a patchwork of federal and provincial agencies. Although the answer to the second question may still be a matter of speculation, there are some disturbing signs the system isn't working:
  - Ontario's Provincial Auditor concluded in November that Ontario's food isn't safe: slaughterhouses are rusty and dirty, meat inspectors don't have proper equipment, most goat's milk contains illegal levels of bacteria, and fruits and vegetables have up to 80 times too much pesticide.<sup>129</sup>
  
  - Health Canada says we receive 80% to 95% of our total daily intake of dangerous chemicals such as persistent organic pollutants through our food—and children are especially vulnerable.<sup>130</sup>
  
  - The US federal government is currently struggling to address the 'fragmented' nature of its food safety structures—both organizational and legal (which many states have used as a model).<sup>131</sup>
  
  - Some environmental groups argue Canada's food safety laws are outdated, ineffective, based on old data, and slow to change.<sup>132</sup>
  
  - A national panel of scientists is calling for much tighter restrictions on the use of antibiotics in farm animals to combat the rise of antibiotic resistance in the country.<sup>133</sup> The panel predicts that the health care cost of antibiotic resistance will

rise from \$700 million to \$1.8 billion if antibiotic resistance increases to US levels.

- A study published in the Journal of Epidemiology and Community Health reports that 20 per cent of the food we eat is contaminated with toxic chemicals such as DDT, dieldrin and dioxin-pesticides that have been banned for decades.<sup>134</sup> The data suggests five chemicals are routinely found salmon, cheese, and cucumbers.
- A study conducted by the Canadian Food Inspection Agency shows abnormally high levels of furans, dioxins, and PCBs in food such as beef, pork, and eggs.<sup>135</sup> The study showed beef from Canada was far more contaminated than beef tested in Europe, but that Canadian poultry had the lowest levels of toxic agents (two to three times lower than poultry tested in Europe).
- Surprising to many, "Grade A" designation is no guarantee of food quality. Set by provincial legislation, grading specifications are designed for economic reasons to promote uniform size and appearance. Nutritious food that does not meet this cosmetic standard is in many cases rendered economically worthless and is wasted as a result. Because prices for Grade A are so superior, the incentive for farmers is to use more pesticides, antibiotics, hormones, and genetic engineering in order to meet size and appearance specifications.
- For the federal government, Canada's environmental issues related to food as: water quality and use; use and management of agricultural inputs (nutrients, pesticides, and energy), land use, land management, and soil quality; agro-ecosystem bio-diversity; climate and air quality.<sup>136</sup> Related issues are environmental liability, compliance with provincial requirements for agricultural practices, and international scrutiny of the potential risks associated with agricultural inputs.<sup>137</sup>
- A recent nation-wide scientific report on environmental impacts of agriculture concluded that although efforts by industry have yielded many positive results, much remains to be done.<sup>138</sup> Where conditions have worsened, the main factor has been the intensification of agriculture resulting from structural changes in farming and increased market demand for some products.<sup>139</sup> BC environmental conditions and trends between 1981 and 1996 are mixed: moderate improvements in managing soil, but still almost half of BC's agricultural land base have areas at risk of unsustainable soil erosion by water and tillage.<sup>140</sup> Total emissions of GHGs remained stable, but are relatively high in BC on a per-unit basis.<sup>141</sup> In the Lower Mainland, habitat areas are significantly smaller now, and nitrogen content in water is estimated to be near or above the drinking water standard on almost all farmland.<sup>142</sup> Across BC, more

energy is going into agriculture (e.g. fertilizers, fossil fuel use) than is coming out (e.g. in plants and meat).<sup>143</sup>

- Government and industry experts estimate that 10% of Canadian GHG emissions are attributed to agricultural production activities—and this figure does not include the use of fossil fuels or the indirect GHG emissions from fertilizer production.<sup>144</sup>
- BC is the only province lacking groundwater legislation. A substantial manure management program, however, has been established in the dairy-dense area of central Fraser Valley [sources?].
- Alarming, experts studying the environmental implications of food say they don't yet have an adequate supply of information to fully assess them.<sup>145</sup>

Social (global, national and local trends)

#### **Hunger**

- Hunger is an ongoing phenomenon in Canada: use of food banks has doubled in a decade and increased 11 per cent since 1998.<sup>146</sup> We have hunger in our own communities where food is plentiful.

#### **Health and Nutrition**

- Despite increases in food production, as many as one billion people are getting less food than their bodies require. According to a 1992 study, the amount of food grown in an average year is sufficient to feed the world population adequately, but not lavishly—but because of waste and unequal distribution, it feeds part of the population lavishly, part moderately, and another part totally inadequately.<sup>147</sup>
- There are now as many overweight people as malnourished ones (1.1 billion each).<sup>148</sup> Both underfed and overfed share high levels of sickness and disability, shortened life expectancies and lower level of productivity. In the US, 26% of all adults are obese and the US Surgeon General says obesity has replaced smoking as the most lethal epidemic in the US.<sup>149</sup>
- Many in the public health community are very concerned about the emergence of relatively new pathogens or the re-emergence of old ones thought to be under control.<sup>150</sup> Numerous food-related, sociological and economic forces are thought to be responsible for this, including: economic impoverishment, population migration, patterns of antibiotic use, immuno-suppressing drugs, globalization of the food supply, travel, ecosystem destruction, crumbling public health infrastructure, and microbial adaptation.<sup>151</sup> An emerging ecological theory is that as we see increased centralization and

distance in the food system, there will be increases in the number of places for disease organisms to thrive<sup>152</sup>. The food safety policy system is ill equipped at this point to address the root causes of such problems, in part because it does not willingly examine how food system forces contribute to their spread. As the pressures mount on the food safety system, and as there are increased associated costs and disease outbreaks, more attention can be brought to how local systems reduce the likelihood of major outbreaks, and how organic production reduces the generation of food safety risk<sup>153</sup>

#### **Employment Standards**

- For decades, BC has struggled with serious farm labour issues.<sup>154</sup> Today, 98% of farm workers and 96% of farm labour contractors in BC's Fraser Valley are Indo Canadian with limited or no fluency in English.<sup>155</sup> Although there has been some recent improvement, four years ago 72 of 87 licensed farm operators in this region were out of compliance with BC's *Employment Standards Act*.<sup>156</sup> [gender?]

#### **Treatment of Animals**

- More and more people are becoming aware of and concerned about the way animals are treated as they are raised for human consumption. On many factory farms cows, calves, pigs, chickens, turkeys, ducks, geese, rabbits, and other animals are kept in small cages or stalls, often unable to turn around.<sup>157</sup> They are deprived of exercise so that all of their bodies' energy goes toward producing flesh, eggs, or milk for human consumption.<sup>158</sup> They are fed growth hormones to fatten them faster and are genetically altered to grow larger or to produce more milk or eggs than nature originally intended.<sup>159</sup> Because crowding creates a prime atmosphere for disease, animals on factory farms are fed and sprayed with huge amounts of pesticides and antibiotics, which remain in their bodies and are passed on to the people who eat them, creating serious human health hazards.<sup>160</sup>
- Animal welfare is a much bigger issue in the US than in Canada, and is 'orders of magnitude' bigger in Europe than in the US. The US National Council of Chain Restaurants and the Food Marketing Institute are investigating auditable standards for animal welfare.<sup>161</sup>
- In 2002, the Winnipeg Humane Society became the first animal-welfare group in Canada to launch a product line of pork and turkey produced from animals the society says led an appreciably better life than those on conventional farms.<sup>162</sup> Winnipeg stores sold out of the product within days.<sup>163</sup> BC's SPCA has now introduced its own line of SPCA-labelled chicken and eggs.<sup>164</sup> Demand is so high it could exceed supply.

- US and Canadian animal-welfare groups are calling for a consumer boycott of a Canadian grocery chain because its US parent refuses to commit to new animal-welfare regulations recently adopted by the US-based Burger King, Wendy's and McDonalds restaurants.<sup>165</sup> Canadian-based Burger King and Wendy's restaurants have also agreed to adopt the standards.<sup>166</sup> Canadian McDonald's restaurants have not.<sup>167</sup>

### Choice

- Following years of accepting the standardization and industrialization of food, consumers are increasingly demanding of producers, processors, and distributors foods with more taste, greater variety<sup>168</sup> and more nutritional value. Associated with this is a growing market for products of local farmers and a greater desire to buy foods from the region where people live<sup>169</sup>. Increasingly, consumers are associating higher quality with a reduced distance between producer and consumer. As well, the rapidly changing ethno-racial mix of the [Ontario] population has created demands for new foods grown and processed in different ways.<sup>170</sup>
- Ninety percent of British Columbians believe we should produce as much, if not more, of the food we consume.<sup>171</sup> Eighty-five percent agree that the provincial government should limit urban development to protect farmers and farmland.<sup>172</sup>
- Fifty-five percent of British Columbians believe that additives, preservatives, and chemical residues in food have a negative impact on human health.<sup>173</sup>
- Increasing numbers of BC consumers prefer to buy from socially-responsible, environmentally-responsible, and locally-based companies.<sup>174</sup>
- The BC Legislative Assembly's Select Standing Committee on Agriculture and Fisheries has assembled a very current record of public opinion on food issues from recent province-wide hearings.

### Governance

- The federal government has publicly committed to the goal of sustainable agriculture, integrating sustainability into policies, legislation and programs, and to seizing market opportunities in order to promote sustainable agriculture.<sup>175</sup> A national government and industry climate change committee believes agriculture has a "large potential" to reduce net GHG emissions.<sup>176</sup> By international covenant, Canada and several other countries have committed to respect, protect and fulfil the right of every person to "adequate food", the core content of which is described as:

- The availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture, and
  - The accessibility of such food in ways that are sustainable and that do not interfere with the enjoyment of other human rights.<sup>177</sup>
- The provincial government has publicly committed to the (qualified) goal of sustainable agriculture<sup>178</sup> and has suggested the goal of 75% self-reliance can be achieved in 25 years.<sup>179</sup> Finding solutions, however, will be compounded by cuts to provincial agricultural land and environmental protection programs. The BC Government has recently announced a 41% reduction in the budget for the agency mandated to protect agricultural land.<sup>180</sup> It has also announced a 35% reduction in what used to be services provided by the environment ministry (now split into two ministries)—including cuts of 100 positions in Pollution Prevention and Water Management, at least 25 conservation officers.<sup>181</sup> Over the previous seven years, services had already been reduced by as much as 50%. Over the next five years, 46% of the agronomists and 62% of senior managers at the Ministry of Agriculture and Food will reach age 55 or older and be eligible to retire. Although this will result in a considerable loss of knowledge, it also represents an opportunity to introduce new ideas.<sup>182</sup>
  - Provincial regulators and the agriculture industry have recently struck a "Partnership Committee on Agriculture and the Environment" and as a result, the potential for constructive dialogue is the strongest in many years.<sup>183</sup>
  - The Ministry of Agriculture has recently announced a new \$5 million "Agriculture and Environment Green Fund" to help producers address and manage environmental challenges. Consisting of matching federal and provincial dollars, the Green Fund is expected to grow considerably over the next few years and will be managed at arm's length from government by a committee set up by the BC Agriculture Council.<sup>184</sup>
  - More and more local governments in BC are recognizing agriculture as an important part of their community planning processes.<sup>185</sup> Several planning processes and studies have been directed at the rural and farm areas of the province to ensure agriculture's continued place in their communities. This momentum, which started in the early 1990's, is continuing. In the last decade, several notable local government projects were completed or started including the Delta Agriculture Study 1992, the Langley Rural Plan 1993, the Delta Rural Land Use Study 1993, the Agriculture Strategy for the Saanich Peninsula 1997, the Vision Maple Ridge Rural Plan 1997, and the Kelowna Agriculture Plan 1998.

## Culture

- The present generation of children in North Americans is the first in human history not being socialized around the dinner table. For many the roots of agriculture, are the roots of culture. Food is an intimate commodity, one of the very few things we take into our bodies on a regular basis that becomes a part of us. From birth to death food and agriculture impact all social structures Perhaps many of the social and ethical dilemmas facing our society have their roots in the growing disconnect between us and what truly sustains us-The Sun, Earth, fresh air, clean water and nourishing food?

## Community

- Across the Pacific Northwest, communities and professionals are talking more and more about 'locally-based community food systems.'<sup>186</sup> A community food system is one that 'provides for all segments of society a safe and nutritious food supply grown in a manner that protects health and the environment and adds economic and social value to rural and urban communities.'

## HOW DO WE MEASURE PERFORMANCE?

### HOW OTHERS MEASURE PERFORMANCE

The BC Government has as a goal of food safety and quality: 'the ability of the industry and the province to address this issue depends on being able to implement improved product tracking and food safety programs throughout the food system, and make federal and provincial standards consistent' (HACCP).' Even if they do, the optimistic but realistic time-line set out in the Premier's Offices own core review process expects only 30% of the food industry will have adopted HACCP standards by the year 2005.

Output Measures: Adoption of Hazard Analysis Critical Control Point (HACCP) principles by x. The BC government has adopted the following HACCP targets:

	Baseline	2002/03	2003/0	2004/05
			4	Target
agriculture operations	0%	Increase to 30% over 3 years		
the shellfish industry at the farm level	0%			
seafood harvesting sector	<5%			

[http://www.gov.bc.ca/prem/popt/corereview/srv\\_pln/agf/core\\_business\\_areas\\_6.htm](http://www.gov.bc.ca/prem/popt/corereview/srv_pln/agf/core_business_areas_6.htm)

Government budget cuts and downsizing, however, has led to offloading of safety inspection systems to the private sector, often with minimal oversight. This form of regulatory regime is of course controversial. Given the economic and political realities, HACCP is probably a

reasonable approach. By the government's own measures, this has not been taken up very substantially. At the present time, there does not appear to be any better alternative. However, we may expect serious health and environmental problems as a result of low targets or non-compliance.

While the government expects its programmes to have as an outcome "Enhanced economic growth and consumer confidence through reliable food safety/quality programs" BC is starting from close to 0 adoption of HACCP. Notwithstanding the fact that there is virtually no on-farm established, rigorous, safety regimen, both the provincial and federal governments have reduced their role in inspections, expecting the industries to fill in the gaps. Even if they do, the optimistic but realistic time-line set out in the Premier's Offices own core review process expects only 30% of the food industry will have adopted HACCP standards by the year 2005.

The Royal Society of Canada in its critique of the regulatory system for the introduction of genetically-modified foods basically argued that perhaps Canada has the best regulatory system in the world but went on to make 50 recommendations for improvements. They indicated that the gaps (areas needing improvement) were so large as to make the generally positive nature of the system unacceptable. Two major overall findings in their report were: (1) the government is in conflict of interest with itself as being both regulator and promoter of products and processes (including biotechnology), and (2) to a growing degree the scientific and medical communities are also in conflict with themselves given the privatization and commercialization of intellectual property. In other words, physicians and scientists are seeking to profit from what in the past has been deemed to be public knowledge for the public good. Therefore, all food safety, health and environment indicators become minor measures in comparison to the overall institutional systemic issues of corporate concentration, globalization, free trade, and patenting of life forms.

#### GENERAL

For all categories a key indicator is percentage of local supply to local markets *[Note: Do we want to say why? One reviewer thinks a self-reliance indicator won't tell you much about these three areas of concern that seem to motivate this paper]*

*[Note: One reviewer says: 'There is a pretty well developed literature on indicators of food security, environmental assessment, and sustainable agriculture. We can talk about this at length if you think that would be helpful.']*

#### SECURITY

Food security index (number of days of food supply?)

Number of acres of fertile agricultural land protected for production (e.g. not subdivided or approved for non-farm use)?

Percentage of food consumed locally, produced locally?

## ECONOMY

Corporate concentration in manufacture and retail sectors.

Number of food processors in BC

Farmer's net income

Percentage of local supply to local markets?

Opportunity costs associated with vast amounts of money going into technologies that are, or may be, creating more problems than they solve. Opportunity costs associated with technologies that don't work. *[Impossible to measure?]*

Opportunity cost associated with not pursuing technologies that advance ecological solutions. *[Impossible to measure?]*

*[One reviewer writes: do you have any of Darrin Qualman's recent papers?]*

## ENVIRONMENT

For access to good quality food for consumers, the best indicator is price of good quality food, or % of income spent on food.

For quality of agricultural practices, then key indicators is level of ground water pollution due to agricultural-runoff.

Chemicals in human breast milk *[Note: one reviewer wonders how this is relevant: 'most women are not living in rural areas...chemicals in human breast milk in Vancouver would tell more about the quality of the urban environment, and perhaps show little about agriculture']*

Bottled water usage

Average distance a food morsel travels (food miles). Percentage of food that arrives by tractor-trailer?

Degree to which agriculture farmers use best management practices to protect water and soil quality and prevent damage by wildlife <10% of BC farms now have an environmental farm plans in place; the provincial goal is for 25% to have a plan over the next 3 years

Outcome Measures: % of industry production under voluntary quality certification programs - Baseline 2002/03 (6% now only VQA and organic), 2003/04 (increase to 15% over 3 years); 2004/05 Target

Integrated pest management (IPM):

- Number of apple growers who have achieved highest level (stage 3) of IPM adoption (only 10% of growers continue to calendar spray)
- Number of canola growers that adopt IPM (adoption is currently low, but about 1/3 are read to adopt if the right supports are in place (Canola Council survey)
- Percentage of greenhouse growers that adopt IPM (already fairly advanced: 80-90% practicing)
- Percentage of corn and soybean growers.

See also indicators summarized in McRae, T., C.A.S. Smith, and L.J. Gregorich (eds). *Environmental sustainability of Canadian agriculture: a report of the agri-environmental indicator project* (Ottawa: Agriculture and Agri-Food Canada, 2000).

## SOCIAL

For viability of rural economies, the key indicator is farm incomes, # of local business in farming communities, or other quality of life indicators.

Rural employment

Urban employment

Rural-urban/Urban-rural migration ratio

Percentage family farms?

Percentage of population that is obese

The number of people malnourished by having too much of the wrong kind of food

The number of people malnourished by not having enough food

## **HOW DOES GREATER VANCOUVER COMPARE TO THE BEST PERFORMERS?**

A brief survey of international best practices suggests there are many successful models that may make sense for greater Vancouver, or that could inspire more original ideas.

## General

- Leading jurisdictions and companies are embracing environmental excellence as a way to achieve competitive advantage.<sup>187</sup>
- Sweden's new Environment Minister has announced he will try to reach voluntary agreements with agriculture industry organizations to reduce agricultural losses of nitrogen into both air and water.<sup>188</sup>
- The largest farming organisation LRF (Federation of Swedish Farmers) has carried out its own environmental campaign "Heading for the World's Cleanest Agriculture".<sup>189</sup> Among other things, the LRF is aligning its business strategies with the four system conditions of *The Natural Step*.<sup>190</sup>
- The State of Iowa has introduced a successful "tax shift" on agricultural chemicals, and are now actively working with the farming community on renewable energy and carbon sequestering programs.<sup>191</sup>
- Japan's determination to protect its rice land with land-use zoning has led to hundreds of small rice fields within the city boundaries of Tokyo and rice self-sufficiency.<sup>192</sup>
- The U.S. Conservation Reserve Program successfully promotes the conversion of highly erodible cropland into grass before it becomes wasteland, and denies farmers with excessive soil erosion the benefits of government programs if they do not adopt an approved management program.<sup>193</sup>
- A coalition of family farmers and citizen groups in Wisconsin has prepared an omnibus bill designed to level the economic playing field for family farms relative to industrial farms while ensuring adequate environmental protection.<sup>194</sup>
- 11% of Sweden's arable land is managed organically, and the government is committing the equivalent of US\$4.5 million each year over the next four years to increasing that land base to 20%. Similar targets are also being met in Austria and Switzerland, which now devote 10 percent of their farmland to organic management.<sup>195</sup>
- Other jurisdictions are actively supporting organic and growth rates are even more dramatic.<sup>196</sup> Sweden, Austria and some German states have set a target of 10% by the year 2000. The Bavarian State government in Germany actually has plans to have 25% of their agriculture converted to organic production by the year 2000<sup>197</sup>. Finland has set a target of 5% [by when?]. In Denmark anticipates that organic will occupy 15-20% of market share by the year 2000, with 7% of agricultural land in organic production<sup>198</sup>. Organic milk already occupies 20% of the market and is expected to rise to 50% by

2005<sup>199</sup>. UK cultivated acreage in organic production has risen 5 times in the past year, inspired in part by government supports provided through the EC's agri-environmental programme<sup>200</sup>. Major food retailers and the UK Soil Association have called on the U.K. Government to set a 10% organic target for food produced in the UK by 2005<sup>201</sup>. Within the European Community as a whole, organic foods are projected to reach 2.5% of the total market by the year 2000. Since the mid-80s, the market has grown at a rate of 25% per year. There are now more than 50,000 organic farmers in the EU<sup>202</sup>. No government in the USA has set targets, but the nation has experienced a 20-30% increase in organic sales since the beginning of the decade and the entire sector now sits at \$5 billion in retail sales<sup>203</sup>, somewhere between 1 and 2 % of the food retail market. In the USA, between 1 and 8% of farmers use organic farming methods. These include organic grain operations of 3000 acres, and ranches of over 7000<sup>204</sup>. Over half the states in the US have laws or rules governing the production and marketing of organic foods<sup>205</sup>

- Growth in organic foods is significant but, unfortunately, little is known about organic food multipliers.<sup>206</sup> [Explain]

#### Food production

- A feasible food production target for Canadian cities, according to Van Bers, is 20% of fruit and vegetable consumption<sup>207</sup>. Her estimates are based on yields from intensive organic gardening, and the assumption that 4 hectares of open space / 1000 people would be devoted to growing food (about 15% of open space in the average large Canadian centre).<sup>208</sup>
- Cities in the South have achieved or exceeded such targets (e.g., Havana, Singapore, Accra). Closer to home, the City of Burnaby, BC, has Canada's most extensive urban farming network, comprising 70 acres, and producing 10% of all vegetables produced in Fraser Valley, including 80% of spinach and Chinese vegetables consumed in the Lower Mainland. Berlin, Germany has about 80,000 allotment gardeners, 1 for every 45 inhabitants of the City. The gardens cover approximately 150 hectares of land, about 7% of the total area of the former West Berlin. More than US\$2 million in commercial crops were harvested in San Francisco in 1998, including designer lettuce produced in an industrial park and neighbourhood based honey production. Many vegetables are sold in farmers markets and restaurants. Much of the food production is organized by 2 non-governmental organizations [who?].<sup>209</sup>

#### Food distribution

- No OECD municipality is currently pursuing a comprehensive local food distribution program, but projects in many cities reflect the

creative ways in which local food products can be distributed locally.<sup>210</sup> Hendrix College in Conway, Arkansas, implemented a local food project beginning in 1987. Three years later, they had increased their local food purchases from seven to 30 percent, several new farms had been started to help supply their needs, and several others had expanded operations. This change redirected US\$200,000 of the college's annual food budget back to the local economy. The Berkeley, California school board recently approved a plan to have its school cafeterias buy local organic foods. The food would be grown in school gardens and purchased from local organic farmers. Numerous cities in the USA, Europe and Japan have Community-Supported Agriculture (CSA) projects within their borders. Non-governmental agencies help farmers locate families who subscribe to an annual share of the farm's production at a set price. Farmers usually deliver to neighbourhood drop-off centres where subscribers pick up their produce. Many restaurants buy from urban farmers. San Francisco's Chez Panisse restaurant is buying vegetables and salad ingredients from The Garden Project, operated by the San Francisco League of Urban Gardeners (SLUG), which employs recently released inmates to work its half-acre market garden. Farmers markets are one of the few more common initiatives within many North American cities, including Toronto. Economic development improvements have been attributed to areas with viable farmers' markets [*such as?*].<sup>211</sup>

Take advantage of growing organic markets.

Embrace local distribution businesses.

SPCA Humane treatment of farm animals

Leaders in box programs, ethical treatment of animals, 'feast of fields', etc.

Washington State Farm link programme

*UK's organic target? UK's Sustainability Commission?*

## **WHERE ARE WE COMING FROM?**

*[Herb: add something about People's Food Commission]*

Ten years ago, 180 people attended a GVRD-led conference in Langley on Agriculture in the Lower Mainland. The conference centred on the notion of 'green zones.'<sup>212</sup>

Today, South-western BC is internationally known for its exquisite local cuisine. Creative chefs, buying products from local producers join with innovative marketers and dynamic community organizations to present what could be the dominant food culture of the next 100 years.

## WHERE DO WE WANT TO BE?

On the threshold of the 21st century, the world's peoples stand at a crossroads: the authoritarian path leads towards deepening corporate oligopolies of farming and food, the democratic and ecological path leads towards agro-ecological, cultural and culinary diversity. These paths exist in unstable and unequal relation to one another, expressed in the growing tensions around the institutions, conventions, technologies, and structures associated with farming and food systems. These tensions inform debates about land rights, trade rules, food standards, technological choices, food security discourses, farm organization, intellectual property rights, culinary patterns (fast food/slow food) and nutrition.

The tragedies of September 11 bring home the fact that our security and safety in an increasingly interconnected world is far from guaranteed. As our urban regions continue to expand, they will continue to rely on the steady and secure supply of key resources like food and clean water. Our food supplies are often obtained from the far-flung production centres over which we have little or no control and which rely on expensive and vulnerable transportation infrastructure. If the borders to the U.S. were closed, how long would it be before the residents of Toronto, Ottawa, Vancouver or Hamilton began to run out of food? The average greater Vancouver supermarket contains but 3 days of fresh foods.

The future development of a secure, prosperous and innovative urban regional economy will undoubtedly rest on its ability to increase its level of self-sufficiency while simultaneously maintaining global competitiveness. A critical examination of regional food systems in the Greater Toronto Area and Greater Vancouver Regional District offers a unique opportunity to implement research, policies and projects that can help address multiple and shared social, economic and environmental challenges facing our urban regions.

To gain a competitive advantage in world markets for Canada's agri-food industry, BC has joined the federal government, other provinces and the territories in an exercise to make Canada 'the world leader in food safety, innovation and environmentally responsible production.'<sup>213</sup> The authors of this paper do not accept that an export- and high technology-driven food and agricultural sector is sustainable.

British Columbia is uniquely situated to provide a model for sustainability in agriculture. If we are not able to create such a model for sustainable agriculture and food systems here, it may not be possible to do it elsewhere.

For the purposes of generating discussion and setting a vision, here are two possible scenarios for agri-food futures for BC, at opposite ends of a spectrum.

## Scenario 1: Transnational rule

The loss of processing facilities and agricultural infrastructure businesses is followed by the loss of small and marginal farms. Offshore interests buy up farms in large numbers. Farm ownership is consolidated; a few companies contract almost all of BC's farmers to grow a limited number of crops. Consumers are even more distant from their source of food than they are now. The two or three top transnational super-conglomerates have so effectively produced and marketed meal replacements (meals in a can like Boost or Ensure, or pills) that the few remaining farmers have only a small, specialty market to which they can sell.

## Scenario 2: Farm security and food security

Currently, BC produces more than 200 land-based foods and 80 sea-based foods, but many times that number. Food production is year round. The products are local, safe, wholesome, nutritious and of highest quality. Full-cost accounting and tax shifting have resulted in significant changes in public priorities. Industries causing pollution, ill health and resource depletion are paying significantly more, and industries and services that promote population health and well-being are substantially relieved of taxes.

These changes have led to somewhat higher food prices than before, but everyone can afford the new and still reasonable prices because new jobs are being created in agri-food and money is staying in the communities where it is generated. Rural communities are repopulated with vibrant economies rooted in an ecological approach to integrated resource management.

*[Note: One reviewer writes, 'we should explore this a little bit - depending on what is used as the baseline for comparison, I'm not sure it has to be true once we shift all the production, distribution and consumption variables'. One reviewer responds: If we look at Pretty's final paragraph, this is an ongoing issue, and instead of being overly parsimonious with the allocations, we should look to funding the ongoing maintenance of food systems at a respectably high level.]*

Individual shops, friendly, warm, welcoming, will begin to reappear.<sup>214</sup> For many items the shop comes to the house.<sup>215</sup> Science and technology will again take its proper place in society, as a contributor, not a dominant player.<sup>216</sup>

*[Note: from one reviewer] Agricultural land will be protected from urban sprawl. Food will not be transported long distances. Waste food will be composted. Waste heat and storm water will be recovered.*

We are convinced that scenario 2 is a real possibility and is the vision to work towards. There is significant capacity in BC to achieve such

thriving, sustainable agri-food systems. We have highly diverse ecosystems with clean soil and water, and highly skilled producers that can grow fine-quality products for discerning consumers. Many socially responsible businesses and progressive foundations around the world view BC as a potential world leader in terms of safe and sustainable agri-food systems.

## **WHAT ARE THE THRESHOLDS, CONSTRAINTS AND OPPORTUNITIES?**

### THRESHOLDS

- Climate change
- Natural disasters (e.g. floods)
- Availability of fresh water
- Suitable agricultural land
- Population
- Corporate hegemony
- Political will
- Administrative competence
- Sustainable harvest of seafood
- Water resources

### CONSTRAINTS

Urban food production is limited, very little of greater Vancouver's food processing is consistent with the development of a green economy, organic food sellers and buyers have difficulty finding each other, and little of Vancouver organic waste stream finds its way back to food production. Other jurisdictions provide examples of what is feasible.<sup>217</sup>

The Provincial Government's intentions regarding the Agricultural Land Reserve are unclear for the moment.

The C\$300 Billion Farm Bill will have monumental and perhaps catastrophic effects on Canadian agriculture by distorting the world's agriculture economy, and by destabilizing not only Canada's export industry but such matters as valuation of farmland. BC's agriculture industry may be less constrained than other provinces if we support local production for local consumption to an even greater degree than present.

One half of the land in the Agricultural Land Reserve is not farmed. Only half of the land that is farmed is used to its full potential. (ALC, personal communication)

The question is how to take advantage of opportunities? A rapidly expanding industry will present added challenges for organic growers, and will exert new pressures, particularly on small-scale farmers. These growers, for example, will face greater competition from multinational corporations that have recently added organic practices to existing conventional production. Small-scale growers will also face increased pressure to comply with regulations and standards established for conventional farming (e.g. conventional board policies and trade agreements).

#### OPPORTUNITIES

There is a great potential for local food to replace imports from California and elsewhere. The result should be a healthier local economy and a dramatic reduction in the pollution and climate change associated with transporting food from hundreds of kilometres away (e.g. more BC apples instead of the apples from New Zealand commonly found at BC grocery stores).<sup>218</sup>

One answer may lie in cultivating and maintaining unique market niches using concepts such as 'community-shared agriculture' and other types of direct-farm marketing (including community markets, farm-gate sales, and home delivery programs). These concepts offer the promise of helping small-scale organic growers adapt to changing markets while ensuring adequate on-farm income.

To the best of our knowledge there has been no rigorous analysis undertaken to test the conventional wisdom that, "Direct Farm Marketing *has not and can not* (emphasis added) replace large scale commodity agriculture operations but has filled a local demand for locally grown products that compliment large scale agriculture through diversity of products and diversity of production method and is very efficient use of smaller agriculture lots around urban centers."<sup>219</sup>

#### Protection of Agricultural Land

Agriculture is the last and best use for agricultural land. Agriculture land is not land waiting to be developed "for a higher and better use". It is already at that use, even if it is lies fallow waiting for future generations.

#### Green Enterprise Zones

In this changing environment there are substantial new farming and processing opportunities. This section outlines the opportunity for developing a sustainable urban food production and distribution system,

with a green food enterprise zone (or eco-industrial park) as the center piece of the economic development strategy. As discussed above, with this concept the zone would provide a focal point for community-based food entrepreneurs and agencies, operating within the zone and in multiple associated sites across the City. These entrepreneurs and agencies would be involved in food production, processing and distribution.<sup>220</sup>

### Green Markets

Growing demand for 'green' food - Internationally, there is a movement towards 'green' food that the globalization process can not accommodate. Canadian farmers are now subject to pressures from international customers to follow 'green' production regimes, or risk losing export markets. Changes to pesticides and animal health regulations in both the US and EU are shifting what production aids Canadian farmers can use to produce, and to whom they can sell. This creates a huge opportunity to work with growers on sustainable agriculture, one that environmental NGOs are just beginning to exploit.

The rising use of agricultural land for non-food production (e.g. bio-fuels, biomass energy, etc.) needs to be weighed against the need to maintain food production standards. The dire economic plight of some farmers is creating pressure to convert 'food lands' to 'fuel lands' (source?)

## **WHAT ARE THE KEY POLICIES, PROGRAMS AND REGULATORY TOOLS THAT SHAPE THIS ISSUE TODAY?**

### IN THE REGION

Attempts to deal with small lot agriculture and intensive agriculture through the 'Agri-food Futures Fund' have unfortunately stalled.

Most greening the city (Smart Growth) initiatives do not adequately concentrate attention to food production, distribution and consumption systems.

Urban agriculture has the potential to provide as much food as is currently produced in all of the Fraser Valley. Virtually no policies, programs and regulatory tools are in place to capture these opportunities.

*[Note: one reviewer writes, 'what about subsidies'??]*

### IN GREATER VANCOUVER CITIES

Closer link with food producing lands and people.

Availability of space for greening roof tops, boulevards, common spaces.

Organic waste cycling is rudimentary.

## IN THE PROVINCE AND IN CANADA

### Production-related

- Crop insurance is largely still organized by commodity rather than on a whole farm basis. This skews to some degree what farmers grow and also has some negative environmental impacts (according to an AAFC study).
- Grading standards - use this here
- Pesticide legislation and regulations. Until this year, no substantial provisions for favouring registration of reduced risk pesticides.
- Gutting of public extension which increasingly results in farmers looking to chemical and seed companies for agronomic advice
- GE regulatory regime that favours registration of GE crops by its lack of rigour - see Citizen's Guide to Biotechnology ([www.cielap.org](http://www.cielap.org)) for more details).
- Agricultural science infrastructure - whole series of obstacles to ecological research at both government and university levels (I have a full paper on this if we need it)
- Marketing boards - very beneficial for farm income, but it remains a struggle to establish alternative production regimes within regulated commodities. Some success now with dairy in some provinces, still battles over turkey, chickens and eggs.
- Tax regimes - problems identified with GST exemptions for farm inputs, which disfavours labour over chemical production systems. On-going questions about how accelerated capital cost allowances in agriculture contribute to overcapitalization.

### Distribution:

- Extensive network of energy and transportation subsidies that drop considerably the cost of moving food goods (see Real Food for a Change, chapter 4 for a discussion)
- All the policies (or lack thereof) that contribute to oligopolization in farm inputs, food processing and distribution
- Canada's commitment to international trade regimes

## **WHAT OPPORTUNITIES EXIST TO ENGAGE WITH OTHER JURISDICTIONS ON THIS SUBJECT?**

Other jurisdictions are interested in working with British Columbia to share experience and innovative approaches. Examples of dynamic organizations are: Toronto Food Policy Council, Food Share Toronto, the Institute for Agriculture and Trade Policy (Minneapolis), Slow Food, Sustain UK, Cuba 'Farmer to Farmer Exchange', Food First.

## **WHAT'S HOT?**

In the global food trade, the following technologies, methods and products are considered 'hot': Nutraceuticals, phyto-chemicals, functional foods (e.g. calcium in orange juice), genetically modified organisms (GMOs), irradiation (or as it is now called 'cold sterilization'), and manipulation of life forms through 'nano-technology' (e.g. insertion of nutrients directly into cells).

What the authors consider 'hot' is that in growing numbers, individuals and organizations do not view the coming technologies, methods and products as 'silver bullets' to be applied to what is essentially a social and cultural issue.

BC Chefs.

Organic home delivery services.

Leading-edge food purveyors (e.g. 'Food Fair', 'Capers', 'Choices')

Cottage industries producing sublime food products for local markets (e.g. cheese, wine, beer).

Celebratory events such as 'Feast of Fields'.

Granville Island Market, farmers' markets.

## **HOW DO WE WIN?**

In his comprehensive and thoroughly documented break-through tome, *Regenerating Agriculture: Policies and Practice for Sustainability and Self-Reliance*<sup>221</sup>, Jules Pretty specifies twenty-five 'tested policies that are known to work for sustainable agriculture.' The authors of this paper feel that we cannot improve upon the intense thought, research and experience that have gone into creating them. They are:

1. Declare a national policy for sustainable agriculture.

## ENCOURAGING RESOURCE-CONSERVING TECHNOLOGIES AND PRACTICES

2. Establish a national strategy for integrated pest management.  
Please note the World Wildlife Fund's progression beyond IPM towards an 'agro ecology' [*insert chart from WWF*]
3. Prioritize research into sustainable agriculture.
4. Grant farmers appropriate property rights.
5. Promote farmer-to-farmer exchanges.
6. Offer direct transitional support to farmers.
7. Direct subsidies and grants towards sustainable technologies.
8. Link support payments to resource-conserving practices.
9. Set appropriate prices (penalize polluters) with taxes and levies.
10. Provide better information for consumers and the public.
11. Encourage the adoption of natural resource accounting.
12. Establish appropriate standards and regulations for pesticides.

## SUPPORTING LOCAL GROUPS FOR COMMUNITY ACTION

13. Encourage the formation of local groups
14. Foster rural partnerships
15. Support for farmers' training and farmer field schools.
16. Incentives for on-farm employment
17. Assign local responsibilities for landscape conservation
18. Permit groups to have access to credit

## REFORMING EXTERNAL INSTITUTIONS AND PROFESSIONAL APPROACHES

19. Encourage the formal adoption of participatory methods and processes.
20. Support for information systems to link information, extension, and farmers.
21. Re-think the project culture.
22. Strengthen the capacity of NGOs to scale up.

23. Foster stronger NGO-government partnerships
24. Reform teaching and training establishments. Note: UBC has embarked on just such a path.
25. Develop the capacity in planning for conflict resolution and mediation.

Pretty's final sentence in his book is as follows:

'The greatest challenge, therefore, will be reform of policy processes themselves. These will have to focus more on participation and social mediation if the contested complexities and uncertainties of sustainability are to be continually addressed.'<sup>222</sup>

The authors summation of Jules Pretty's eloquent policy recommendations is that 'we wish to bring food home.'

SPECIFIC GOALS??

*[Note: do we want to add the 'goals' that we developed at the citiesplus workshop?]*

#### **ARE THERE ANY POTENTIAL MINI-RESEARCH PROJECTS?**

Full food-flow analysis of the Greater Vancouver region.

Transportation impacts of Food from production, through consumption

Effects of supply management and marketing boards

#### **WHO WAS INVOLVED IN PREPARING THIS PAPER?**

Herb Barbolet, Lawrence Alexander, Rod MacRae, Kathleen Gibson

Reviewed by Art Bomke, Steven Peck, Luke Garnham, Evan Fraser.

# APPENDIX A: WHO ARE THE KEY PLAYERS IN GVRD [ INCOMPLETE ]

## ADVOCACY AND PUBLIC EDUCATION ORGANIZATIONS

FarmFolk/CityFolk

Ag-Aware.

Community nutritionists

Certified Organic Association of BC (COABC)

## PRIVATE SECTOR ORGANIZATIONS

VanCity

Capers, Choices, Happy Planet Juices

Chefs, restraunteurs

SPUD and other home delivery programs



## APPENDIX B: WHAT ARE THE KEY PUBLICATIONS? [ INCOMPLETE ]

### GVRD REPORTS

[Add]

### PUBLICATIONS

Small lot agriculture

FarmFolk/CityFolk's 1999 Brief to the Select Standing Committee on Agriculture contains much relevant information (in addition to the following, on this subject - 41 pages plus appendices .

[www.ffcf.bc.ca/selectbrief.html](http://www.ffcf.bc.ca/selectbrief.html)

[Add]

### KEY LITERATURE

[Add]



## APPENDIX C: ENDNOTES

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<sup>1</sup> Agriculture and Agri-Food Canada, *A Portrait of the Canadian Agri-Food System*, (Ottawa, AAFC, 2000)  
<<http://www.agr.gc.ca/policy/epad/english/pubs/chrtbook/june2000/pdf/sec1.pdf>>

<sup>2</sup> Many of the benefits are paraphrased from the Toronto Food Policy Council's '10 goals of a sustainable food system'. See MacRae, R.J., S.B. Hill, J. Henning and A.J. Bentley. 1990. 'Policies, programs and regulations to support the transition to sustainable agriculture in Canada. *American J. Alternative Agriculture* 5(2):76-92. Some of the benefits were also borrowed from background material to: Task Force on Food and Hunger. 2001. *The Growing City: Phase II Report on Food and Hunger in the City of Toronto*. City of Toronto, Toronto. See also Ministry of Agriculture and Fisheries, *Securing Our Food Future: An Agri-Food Policy for British Columbia* (1995 Draft document), which describes 'food security' as:

- Everyone has assured access to adequate, appropriate and personally acceptable food in a way that does not damage self-respect.
- People are able to earn a living wage by growing, producing, processing, handling, retailing and serving food.
- The quality of land, air and water are maintained and enhanced for future generations.
- Food is celebrated as central to community and cultural integrity.

<sup>3</sup> See Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. *Supporting Green Business Sectors Through Community Economic Development*. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto

<sup>4</sup> The authors wish to thank Steven Peck of the Cardinal Group Inc. for his idea of developing indicators and targets for each agri-food functions. The list of agri-food functions is from Forsey, H., "The Many Functions of Farming" *The Union Farmer Quarterly*/Spring 2002.

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<sup>5</sup> Koc, M., R. MacRae, L.J.A. Mougeot and J. Welsh. 1999. Introduction: food security is a global concern. In: M. Koc, R.J. MacRae, L. Meugeot, and J. Welsh (eds.). *For Hunger-proof Cities: Sustainable Urban Food Systems*. International Development Research Centre and the Ryerson Centre for Studies in Food Security. Ottawa. Pp. 1-7.

<sup>6</sup> American Farmland Trust, *Farming on the edge: Sprawling development threatens America's best farmland* (Washington DC: AFT, 2002) <<http://www.farmland.org/farmingontheedge/index.htm>>

<sup>7</sup> Brown, Lester, R., *The Agricultural Link: How Environmental Deterioration Could Disrupt Economic Progress*, *Worldwatch Paper 136* (Washington D.C.: Worldwatch Institute, 1997) at p. 7. Brown argues that the decline of early Mesopotamian civilization was tied to the waterlogging and salting of its irrigated land, that soil erosion converted into desert the fertile wheatlands of North Africa that once supplied the Roman empire, and that a reduction in the food supply due to deforestation and soil erosion led to the decline of the Mayan civilization that flourished from 600 BC to 900 AD.

<sup>8</sup> *Ibid.* at p. 7-9.

<sup>9</sup> Public Citizen - [www.citizens.org](http://www.citizens.org), NAFTA's seven year war on farmers and ranchers

<sup>10</sup> BC Statistics, 'Growing Cross Border Trade In Agricultural Food Products' (January 2000), p. 1-2 <<http://www.bcstats.gov.bc.ca/pubs/exp/exp9911.pdf>>.

<sup>11</sup> *Ibid.*

<sup>12</sup> BC Ministry of Agriculture, 'British Columbia Agriculture, Food and Fisheries at a Glance, 2001 (based on 1999 data),' <<http://www.agf.gov.bc.ca/stats/stat01.pdf>>.

<sup>13</sup> BC Statistics, 'Growing Cross Border Trade In Agricultural Food Products' (January 2000), p. 1-2 <<http://www.bcstats.gov.bc.ca/pubs/exp/exp9911.pdf>>.

<sup>14</sup> Statistics Canada, *Econnections: Linking Environment and the Economy, Indicators and Statistics 2000* (Ottawa: Minister of Industry, 2001), pp. 8-9.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*

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<sup>17</sup> *Agricultural Land Commission Act*, R.S.B.C. 1996 c. 10, s. 17.

<sup>18</sup> Agriculture Policy Analysis/Community Engagement Working Group, Georgia Basin Futures Project, Sustainable Development Research Institute, University of British Columbia, *The Lower Fraser Valley Agricultural Region: A Summary Profile* (undated).

<sup>19</sup> See A.L.R. Legal Challenge, [www.land-reserve-action.ca](http://www.land-reserve-action.ca). See also Plant, D., 'Fruit growers suing BC government,' *Penticton Herald*, May 9, 2002.

<sup>20</sup> Plant, D., 'Fruit growers suing BC government,' *Penticton Herald*, May 9, 2002.

<sup>21</sup> See *Agricultural Land Commission Act*, S.B.C. 2002, c. 36. See also *Agricultural Land Reserve Use, Subdivision and Procedure Regulation*, B.C. Reg. 171/2002, which (among other things) replaces all previously existing regulations and the *Soil Conservation Act*.

<sup>22</sup> Statistics Canada, *2001 Census of Agriculture - Canadian farm operations in the 21st century* (Ottawa: Statistics Canada, 2002) <<http://www.statcan.ca/Daily/English/020515/td020515.htm>>

<sup>23</sup> See Dieticians of Canada, and Community Nutritional Council of BC, *The Cost of Eating in BC -The Challenge of Healthy Eating on a Low Income* (October 2001) <<http://www.foodbank.bc.ca/pdf/costeating2001.pdf>>.

<sup>24</sup> Lee, Marc, "Farms and the Future of Food in BC" in *BC Commentary* Vol. 3, No. 4, (Vancouver: Canadian Centre for Policy Alternatives: 2000).

<sup>25</sup> Critics argue that this view fails to take into account resource use. See Shiva, Vandana, *Stolen harvest*, *supra* note 5, at p. 13.

<sup>26</sup> *Ibid.*

<sup>27</sup> FarmFolk/City Folk Newsletter, Fall 2000 No. 27 at p. 3 "Earmarked for Extinction?: Seminis Eliminates 2000 Varieties" (excerpted from longer item from Rural Advancement Foundation International).

<sup>28</sup> Shiva, Vandana, *Stolen harvest*, *supra*, note 7, at p. 90.

<sup>29</sup> *Ibid.* at p. 13.

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<sup>30</sup> Schlosser, Eric, *Fast Food Nation*, (USA: Houghton Mifflin, 2001).

<sup>31</sup> Pollan, Michael, "Behind the Organic-Industrial Complex", *supra*, note 11.

<sup>32</sup> *Ibid.* The author reports a gulf opening up between "Big" and "Little" organic farms, and indicates that many of the original organic farms are convinced the time has come to move "beyond organic."

<sup>33</sup> *Ibid.*

<sup>34</sup> See for example the comments of Lyle Vanclief, Canadian Minister of Agriculture and Agri-food in, *Agriculture and Agri-food Canada, News Release June 11, 2002, 'Canada calls US farm bill a barrier to international development goals,'*  
<<http://www.agr.gc.ca/cb/news/2002/n20611ae.html>>

<sup>35</sup> Foss, K., and Walton, D., "Lean, mean growing machine under siege", *Globe and Mail*, Tuesday, August 13, 2002, p. A3.

<sup>36</sup> British Columbia, "Provincial response to Feed our Future—Secure our Health" (Victoria: Ministry of Agriculture and Food, 1998) at p. 28.

<sup>37</sup> See for example, 'Challenges facing Canadian Agriculture: Competition and Subsidies in Global Markets', part the *Putting Canada First: An Architecture for Agricultural Policy in the 21<sup>st</sup> Century* (2002) <[www.agr.gc.ca/puttingcanadafirst](http://www.agr.gc.ca/puttingcanadafirst)>

<sup>38</sup> See *Putting Canada First: An Architecture for Agricultural Policy in the 21<sup>st</sup> Century* (2002)  
<[www.agr.gc.ca/puttingcanadafirst](http://www.agr.gc.ca/puttingcanadafirst)>

<sup>39</sup> Statistics Canada, *2001 Census of Agriculture* (Ottawa: Statistics Canada, 2002). See also Mofina, R., 'Farms fewer but larger', *Victoria Times Colonist*, May 16, 2002.

<sup>40</sup> *Ibid.*

<sup>41</sup> *Ibid.*

<sup>42</sup> *Ibid.*

<sup>43</sup> *Ibid.*

<sup>44</sup> *Ibid.*

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<sup>45</sup> Statistics Canada, '2001 Census of Agriculture: Profile of farm operators', *The Daily*, November 20, 2002 <<http://www.statcan.ca/Daily/English/021120/d021120a.htm>>. See also Canadian Press, 'BC leads in female farmers,' Thursday, November 21, 2002.

<sup>46</sup> See for example, Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 118.

<sup>47</sup> Lee, "Farms and the Future of Food in BC", *supra*, note 25.

<sup>48</sup> See for example, Duckworth, B., 'Agri-business losing to other industries', *Western Producer special report*, February 4, 1999. <[http://www.producer.com/articles/19990209/special\\_reports/help\\_wanted/02041999help2.html](http://www.producer.com/articles/19990209/special_reports/help_wanted/02041999help2.html)>

<sup>49</sup> Ministry of Agriculture and Food, *Planning for Agriculture*, Appendix II: Provincial Legislation (Ministry website: <http://www.gov.bc.ca/agf/>).

<sup>50</sup> See Ministry of Agriculture and Foods website (<http://www.agf.gov.bc.ca/ministry/bcmb.htm>) and BC Marketing Board, *Performance Plan 2001 - 2004*. Supply managed boards, which have the strongest set of powers to regulate production and marketing, include: milk, chicken, turkey, eggs, and broiler hatching eggs. Other commodity boards include: cranberries, grapes, hogs, mushrooms, tree fruits, and vegetables. Federal-provincial arrangements now exist for five commodities: milk, chicken, turkey, eggs, and broiler hatching eggs (for chicken production), in recognition of the concurrent federal and provincial constitutional responsibilities for national agricultural markets. The regulated system does not include recent government initiatives such as support for organics, and co-funded research and promotion bodies such as the Salmon Marketing Council.

<sup>51</sup> See *supra*, note 40 [marketing boards].

<sup>52</sup> Office of the Auditor General, *Canada Wheat Board: Special Audit Report* (Ottawa: Canada Wheat Board, 2002) [report available at <http://www.cwb.ca/finance/audit/index.shtml>]. See also, Foss, Krista, "First-ever wheat board audit fails to satisfy wary farmers", *Globe and Mail*, Thursday, February 28, 2002, p. A5.

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<sup>53</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 102.

<sup>54</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 102.

<sup>55</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 103.

<sup>56</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 103.

<sup>57</sup> See *Agricultural Land Commission Act*, S.B.C. 2002, c. 36 <[http://www.legis.gov.bc.ca/37th3rd/3rd\\_read/gov21-3.htm](http://www.legis.gov.bc.ca/37th3rd/3rd_read/gov21-3.htm)>.

<sup>58</sup> "Brief from FarmFolk/CityFolk Society", *supra*, note 34.

<sup>59</sup> Danard, Susan, "Rooster Logo to Identify Locally Grown Food" (Times Colonist, Tuesday July 13, 1999, p. C1).

<sup>60</sup> Lee, "Farms and the Future of Food in BC", *supra*, note 25.

<sup>61</sup> See Coleman, E., *Four Season Harvest*, (Chelsea Green, revised) [need fuller cite?]

<sup>62</sup> Ministry of Agriculture and Foods, "Industry Fast Facts," (Ministry website, *supra*, note 49).

<sup>63</sup> "Brief from FarmFolk/CityFolk Society", *supra*, note 34.

<sup>64</sup> [Get full citations for: 'Farm labour - <http://www.island.net/~awpb>- Agricultural products - <http://www.bcfarmfresh.com/default.asp>']

<sup>65</sup> *Ibid.*

<sup>66</sup> See for example, McRae, *Environmental sustainability of canadian agriculture*, *supra*, note 17, at p. vii: "The findings ... confirm that the agricultural industry's efforts to address environmental challenges have yielded many positive results...";

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and Ministry of Agriculture and Food, Partnership on Agriculture and Environment, "10 Point Action Plan": "British Columbia's farmers continue to make significant strides on environmental sustainability" (on MAF website, *supra*, note 49).

<sup>67</sup> [Get reference].

<sup>68</sup> "Brief from FarmFolk/CityFolk Society", *supra*, note 34.

<sup>69</sup> Ministry of Agriculture and Food, News Release 01-09, "Organic Certification Program to Meet International Standards." (Friday, February 16, 2001).

<sup>70</sup> *Ibid.*

<sup>71</sup> Lee, "Farms and the Future of Food in BC", *supra*, note 25.

<sup>72</sup> Examples are: farmers, fishers, restaurateurs and chefs, small-scale farm and food businesses; organic producer associations; agriculture professionals; health providers; community food policy organizations; food banks and emergency food services; food production food banks (collective growing for collective distribution); consumer food co-ops and worker co-ops; community-supported agriculture and box delivery programs; community gardens, school gardens, therapeutic and literacy gardens, back or front yard gardens; urban agriculture or permaculture demonstration sites; programs linking land and facilities with people who want to grow and process food (including access for First Nations people for traditional gathering); agri-food entrepreneurship (e.g., with community economic development programs and venture capital); community kitchens (cooking, canning, freezing, storage); gleaning projects (from farms, private and public trees, restaurants); breastfeeding programs (including community facilities) [from "Brief from FarmFolk/CityFolk Society", *supra*, note 34.].

<sup>73</sup> *Ibid.*

<sup>74</sup> See Ministry of Agriculture and Food, "Principles on achieving environmental goals on farmland" (MAF website, *supra*, note 48). Examples include: Agri-Food Regional Development Subsidiary Agreement (ARDSA), Agricultural Land Development Assistance (ALDA), National Soil Conservation Program, Green Plan for Agriculture, Fraser River Action Plan, Interior Wetlands Program and current programs such as Pacific Coast Joint Venture, Georgia Basin Ecosystem Initiative, Salmon Enhancement Fund, DFO's New Direction Program, Delta Farmland and Wildlife Trust, CARD program being delivered by the Investment Agriculture

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Foundation, Habitat Conservation Trust Fund and Fisheries Renewal B.C.

<sup>75</sup> Canada, Standing Committee on Environment and Sustainable Development, *Keeping a promise: towards a sustainable budget* (Ottawa: Canada Communication Group, 1995) at p. 20.

<sup>76</sup> Groenwegen, J.R., *Agricultural property tax concessions and government transfers to agriculture* (Ottawa: Agriculture and Agri-Food Canada, 2000) at p. xiii. The value of concessions in BC to the farm sector is the sum of: lower assessment on farmland, exemption of farm buildings from the school tax, and exemption of the first \$50,000 in farm buildings in municipalities. "These three separate concessions suggest a value of \$96 million in tax savings to the British Columbia farm sector, before considering the savings to farm residences" (at p. A-7).

<sup>77</sup> Listed supplies of agricultural products are "zero-rated" which means a tax rate of 0% applies. See Canada Customs and Revenue Agency, GST/HST Memoranda Series, Chapter 4 (CCRA website), and Agricultural and Fishing Property (GST) Regulations, SOR/91-39.

<sup>78</sup> See Munro, Margaret, "Beware the green peril: The dark side of successful revolution: Which one is more dangerous: global farming or global warming?" *National Post*, Page A14, April 24th 2001 and the study itself by Tilman, D., Fargione, J, Wolff, B., D'Antonio, C., Dobson, A, Howarth, R., Schidler, D., Schlesinger, W.H., Simberhoff, D., Swackhamer, D., "Forecasting Agriculturally Driven Global Environmental Change," (2001) 292 *Science* 281.

<sup>79</sup> *Ibid.* Of 12 billion hectares of land on the planet, five billion have been cleared and ploughed for agriculture.

<sup>80</sup> *Ibid.*

<sup>81</sup> Funders Agriculture Working Group, *Roots of Change: Agriculture, Ecology and Health in California*, (San Francisco: FAWG, March 2001), at p. 1. *Roots of Change* refers to Temple, Steven, et al. "Conventional, Low-input and Organic Farming Systems Compared," 48(5) *California Agriculture* 14 (1994).

<sup>82</sup> Boyd, D.R., *Canada v. the OECD: An Environmental Comparison* (Victoria: Eco-Research Chair in Environmental Law and Policy, University of Victoria, 2001).

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<sup>83</sup> Emmett, B., *Report of the Commissioner for Environment and Sustainable Development to the House of Commons, 1999* (Ottawa: Minister of Public Works and Public Services, p. 4-30), reported in Boyd, D.R. *Canada v. Sweden: An Environmental Face-off* (Victoria: Eco-Research Chair in Environmental Law and Policy, University of Victoria, 2002), at p. 12.

<sup>84</sup> World Watch Institute, News Release "All-You-Can-Eat Economy is Making the World Sick" (Thursday, May 24, 2001).

<sup>85</sup> See Rowell, J., "Consumption of meat spawns, pollution, sickness, waste," CCPA Monitor, December 2001-January 2002, at p. 11.

<sup>86</sup> *Ibid.*

<sup>87</sup> *Ibid.*

<sup>88</sup> Shiva, Vandana, *Stolen harvest: the hijacking of the global food supply* (Cambridge, MA: South End Press, 2000) at p. 37.

<sup>89</sup> Platt McGinn, Anne, "Freefall in Global Fish Stocks," World Watch Magazine, May/June 1998.

<sup>90</sup> *Ibid.*

<sup>91</sup> See for example, Roberts, W., MacRae, R., and Stahlbrand, L., *Real food for a Change* (Toronto: Random House Canada, 1999).

<sup>92</sup> Food miles research is pioneered by British Scholar Tim Lang. See Lang, T., *Health Should be Key to New Farming and Food Policy* (January 24, 2002), and Hendrickson, John, "Energy Use in the US Food System: a Summary of Existing Research and Analysis," (Madison: Center for Integrated Agriculture Systems, University of Wisconsin - Madison, 1996). See also Halweil, B., *Home Grown: The Case for Local Food in a Global Market*, (Washington DC: Worldwatch Institute, 2002).

<sup>93</sup> Planet Ark, Reuters, December 11, 2001 ([www.planetark.org/dailynewsstory.cfm/newsid/13658/story](http://www.planetark.org/dailynewsstory.cfm/newsid/13658/story)).

<sup>94</sup> *Ibid.*

<sup>95</sup> Pollan, Michael, "Behind the Organic-Industrial Complex" New York Times Magazine, May 13, 2001. A Cascadian Farm TV dinner, for example, involves the following steps: "Fresh broccoli ... travels from a farm in the Central Valley to a plant in Sanger,

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Calif., where it is cut into florets, blanched and frozen. From California, the broccoli is trucked to Edmonton, Alberta, to meet up with pieces of organic chicken that have travelled from a farm in Petaluma, Calif., with a stop at a processing plant in Salem, Ore., where they were defrosted, injected with marinade, cubed, cooked and refrozen."

<sup>96</sup> McKay, Paul, "Big trucks, big pollution: SPECIAL REPORT," Vancouver Sun, May 23, 2001, p. A4).

<sup>97</sup> *Ibid.*

<sup>98</sup> "Attorney General Lockyer, Environmental Groups Announce Ground-breaking Proposition 65 Settlement with Major Grocery Chains Over Diesel Pollution" California Attorney General Press Release 00-077 (April 27, 2000). The settlement was reached with three grocery chains (Albertson's/Luckys, Ralph's and Von/Safeway), the Natural Resources Defence Council, Coalition for Clean Air, and the Environmental Law Foundation. Proposition 65, otherwise known as the *California Safe Drinking Water and Toxic Enforcement Act* of 1986, is designed to protect the public from exposure to toxic substances known to cause cancer or be harmful to reproductive health. The law requires businesses to provide "clear and reasonable notice" warning before exposing anyone to a chemical on a list. This warning is required unless the business can show that the exposure poses no significant risk. The A-G's news release states "[w]hile it is impossible to prove that any individual developed cancer as a result of being exposed to diesel exhaust from any of the distribution centers, state investigators determined that community residents near the grocery distribution centres were being exposed to levels that pose a risk and require a public warning under Proposition 65." See also "California, Grocers Settle Diesel Dispute," (Transport Topics—Trucking's Electronic Newspaper, May 8, 2000)]. Environmental groups were also awarded \$895,000 in costs and the settlement is reported to create the largest private fleet of alternate-fuel big-rig engines in the US [see McKay, Paul, "Big Trucks, Big pollution," *supra* note 12]. Six months later, another California chain (Slater Brothers), reached a similar settlement [see "Another California Supermarket Settles Diesel Lawsuit" (Procert.com Trucking Industry News, November 11, 2000)].

<sup>99</sup> Shiva, Vandana, *Stolen harvest*, *supra*, note 5 at p. 79: "Of the 250,000 to 300,000 species of plants alive today, at least 10,000 to 50,000 are edible. Seven thousand species have been farmed or used for food. Just 30 species provide 90% of world caloric intake, and only 4 species - rice, maize, wheat and

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soybeans - provide most of the calories and proteins consumed by the world's population through global trade." See also "Sowing the Future," *The Westchester County Weekly*, 12 September 1996 as reported in MacGregor, Lesley, *Feed our future, secure our health : a plan to put B.C. at the forefront of food and nutritional health in Canada : a submission to the government of British Columbia* (Vancouver: Heart and Stroke Foundation of B.C. & Yukon, 1997) at 26.

<sup>100</sup> *Ibid.*

<sup>101</sup> FarmFolk/City Folk Newsletter, Fall 2000 No. 27 at p. 3 "Earmarked for Extinction?: Seminis Eliminates 2000 Varieties" (excerpted from longer item from Rural Advancement Foundation International).

<sup>102</sup> Shiva, Vandana, *Stolen harvest*, *supra*, note 5, at p. 90.

<sup>103</sup> See for example, Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002). The report describes at least three situations where a "high-diversity farm" is less sustainable than a farm with a lower diversity. One example is a field with only one species present may be more desirable or more sustainable than a field with a larger number of species if these species compete with the crop that the farmer is trying to grow (at p. 30).

<sup>104</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 31.

<sup>105</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 31.

<sup>106</sup> Fraser, E. D. G, 'Ecologies of Scale: Socio-economic obstacles to sustainable agriculture in the Lower Fraser Valley, British Columbia, Canada' (Vancouver: unpublished PHD thesis, 2002) at p. 32.

<sup>107</sup> UK Policy Commission on the Future of Farming and Food, *Farming and Food: A Sustainable Future*, (<http://www.cabinet-office.gov.uk/farming>).

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<sup>108</sup> Reported in Motavalli, J., "Special Report: The Case Against Meat," E Magazine, Volume XIII, Number 1, January-February 2002.

<sup>109</sup> Funders Agriculture Working Group, *Roots of Change: Agriculture, Ecology and Health in California*, (San Francisco: FAWG, March 2001), at p. ix.

<sup>110</sup> Pollan, Michael, "Behind the Organic-Industrial Complex," *supra*, note 11. The author says many of the pesticides "are know carcinogens, neurotoxins and endocrine disrupters - dangerous at some level of exposure. The government has established acceptable levels for these residues in crops, though whether that means they're safe to consume is debatable: in setting these tolerances the government has historically weighed the risk to our health against the benefit - to agriculture that is. The tolerances also haven't taken into account that children's narrow diets make them especially susceptible or that the complex mixtures of chemicals to which we're exposed heighten the dangers."

<sup>111</sup> Gliessman, S., *Agroecology* (Chelsea: Annarbour, 1998)

<sup>112</sup> North American Commission for Environmental Cooperation, "The North American Mosaic: A State of the Environment Report" (Montreal: CEC, 2001): "[A]lthough soil erosion is declining in many parts of North America, on balance more soil is still being lost in agricultural areas than is being regenerated. Part of the problem is lack of humus because of a heavy reliance on chemical fertilizers rather than on traditional fertilizers and soil amendments such as manure and compost that help maintain soil structure [at p. 19]." See also "Intensive farming with substantial chemical use has resulting in considerable water pollution" [at p. 21].

<sup>113</sup> See for example, "NRCB to Regulate Intensive Livestock Operations" *EnviroLine* Vol. 12 No. 19&20, p. 17: "The Alberta legislature has passed a new bill that hands the power to regulate intensive livestock operations to the Natural Resources Conservation Board ... whose authority will override municipalities. The new legislation comes amid growing concern about water, soil, air and noise pollution from existing operations and opposition to new developments."

<sup>114</sup> See Simpson, Scott, "Farm wastes put Fraser Valley waterways on endangered list: List of at-risk rivers influenced by Walkerton contaminated tragedy," *Vancouver Sun*, Monday, March 18, 2002, p. A1.

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<sup>115</sup> Nikiforuk, A., 'Pollution alarm sounded: farming blamed for bad water,' *Edmonton Journal*, January 28, 1998 referring to a study conducted by University of Alberta professor David Schindler.

<sup>116</sup> See for example Hall, K., "Mad-cow disease worries scare Japanese away from eating beef," *Globe and Mail*, Friday, January 11, 2002, p. A9.

<sup>117</sup> See for example, Read, Nicholas, "Sweden sets example for 'sensible' farming," *Vancouver Sun*, April 12, 2001, p. B7.

<sup>118</sup> O'Connor, D., *Report of the Walkerton Inquiry: The Events of May 2000 and Related Issues*, (Toronto: Ministry of Attorney General, 2002).

<sup>119</sup> See for example, Stewart, Lyle, "GM food meeting left bad taste," *Montreal Gazette*, March 1, 2002; Institute of Science in Technology, "Citizen's vigil exposes bad science in GM crop trial" ([www.i-sis.org/MunlochyVigil.php](http://www.i-sis.org/MunlochyVigil.php)); Stainsby, M., "Food for Thought," *Vancouver Sun*, Monday January 7, 2002, p. B7; and Strauss, Stephen, "Modified piglets turned into chicken feed could force scientists to alter their methods," *Globe and Mail*, February 19, 2002, p. A7.

<sup>120</sup> See for example, Greenaway, Norma, "MP expects mandatory GM food labelling," *Ottawa Citizen*, Monday March 11, 2002, p. A3.

<sup>121</sup> Organic Agriculture Protection Fund *News Release*, January 10, 2002 ([www.saskorganic.com](http://www.saskorganic.com)). See also Mahony, Jill, "Prairie organic farmers sue two biotech firms," *Globe and Mail*, Friday January 11, 2002, p. A6; McInnis, D., "As more farmers plant GMO crops, legal issues multiply" *Soybean Digest*, February 2002;

<sup>122</sup> See Read, Nicholas, "Moratorium sought in action on organics" (*Vancouver Sun*, April 4, 2001, p. A3); *Vancouver Sun* Editorial Board, "End marketing board tyranny" (*Vancouver Sun*, April 3, 2001, p. A10); Read, Nicholas, "Organic farmers threatened with fines" (*Vancouver Sun*, April 2, 2001, p. A1).

<sup>123</sup> "Brief from FarmFolk/CityFolk Society To the Select Standing Committee, *supra*, note 55. See also Shiva, Vandana, *Stolen harvest, supra*, note 5, at p. 16: "Genetically engineered crops manufactured by corporations pose serious ecological risks. Crops such as Monsanto's Roundup Ready soybeans, designed to be resistant to herbicides, lead to the destruction of biodiversity and increased use of agrichemicals. They can also create highly invasive "superweeds" by transferring the genes for herbicide

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resistance to weeds. Crops designed to be pesticide factories, genetically engineered to produce toxins and venom with genes from bacteria, scorpions, snakes, and wasps, can threaten non-pest species and can contribute to the emergence of resistance in pests and hence the creation of "superpests." See also endnote 64.

<sup>124</sup> *Ibid.*

<sup>125</sup> See for example, Council of Canadians 2001. Results of Environics Poll on Canadian Consumer Attitudes to Genetically Engineered Foods: <http://www.canadians.org/campaigns/campaigns-genfoodpub-poll.html>

<sup>126</sup> See Bill C-287 *An Act to amend the Food and Drugs Act (genetically modified food)*, 37<sup>th</sup> Parliament, 1<sup>st</sup> Session ([http://www.parl.gc.ca/37/1/parlbus/chambus/house/bills/private/C-287/C-287\\_1/C-287\\_cover-E.html](http://www.parl.gc.ca/37/1/parlbus/chambus/house/bills/private/C-287/C-287_1/C-287_cover-E.html)), and Bill 18 *Genetically Engineered Food Labelling Act*, 2001 Legislative Session: 5th Session, 36th Parliament ([http://www.legis.gov.bc.ca/2001/1st\\_read/gov18-1.htm](http://www.legis.gov.bc.ca/2001/1st_read/gov18-1.htm))

<sup>127</sup> See for example, Moeller, D.R., "GMO Liability Threats for Farmers," (St. Paul: Farmer's Legal Action Group, Inc., November 2001). See also Institute for Agriculture and Trade Policy, *News Release, "GMOs Pose Liability Threats for Farmers, New Paper Finds,"* December 4, 2001; Organic Agriculture Protection Fund *News Release* January 10, 2002 ([www.saskorganic.com](http://www.saskorganic.com)); Mahony, Jill, "Prairie organic farmers sue two biotech firms," *Globe and Mail*, Friday January 11, 2002, p. A6; and McInnis, D., "As more farmers plant GMO crops, legal issues multiply" *Soybean Digest*, February 2002.

<sup>128</sup> Three in four Canadians are either 'very concerned' or 'somewhat concerned' about food safety issues. Canadians are most concerned about contamination that enters food before it gets to the local grocery store [source: Environmental Defence Canada: Foodwatch ([www.edcanada.org/foodwatch](http://www.edcanada.org/foodwatch))]. See also Cavoukian, Raffi, "We're poisoning our children," *Globe and Mail*, Monday, February 25, 2002, p. A13.

<sup>129</sup> Office of the Provincial Auditor, *Annual Report 2001* (Toronto: <http://www.gov.on.ca/opa/english/r01t.htm>, 2001). See also Smith, G., "Ontario food safety blasted," *Globe and Mail*, Friday, November 30, 2001, p. A3.

<sup>130</sup> See Environmental Defence Canada: Foodwatch, *supra* note 78: "Children are especially vulnerable. to toxic chemicals through

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food because they eat more of it proportionally to their body weight, and their developing systems are more susceptible to the toxic effects of contaminants."

<sup>131</sup> See Robinson, R.A., Managing Director, Natural Resources and Environment, "Food Safety and Security: Fundamental Changes Needed to Ensure Safe Food," Testimony Before the Subcommittee on Oversight of Government Management, Restructuring and the District of Columbia, Committee on Governmental Affairs, US Senate, Wednesday October 10, 2001.

<sup>132</sup> See Environmental Defence Canada: Foodwatch, *supra* note 78: "Our food production systems rely on toxic chemicals and our current regulatory systems cannot adequately control their use. The laws governing toxic contaminants and food safety in Canada are out-of-date. For example, the Food and Drugs Act (FDA) was gazetted in 1954 (and has since been amended about 800 times). Progress on new laws has been slow and sporadic - Bill C80, created to replace the FDA but widely criticized, was shelved in 1999 but may be revived this year. The heavily flawed Pest Control Products Act is also being reviewed this year. The tools used to assess the potential risks posed by toxic chemicals are based on old data (the last Nutrition Canada Survey, used in risk assessments and standard setting, was conducted in 1972), and they fail to protect vulnerable populations such as children (children are not considered separately in the human health component of risk assessments by the Pest Management Regulatory Agency)."

<sup>133</sup> Canadian Committee on Antibiotic Resistance, *News Release*, 'Important Threat to Public Health Addressed at Meeting of Canadian Committee on Antibiotic Resistance,' (Ottawa: CCAR, October 7, 2002). See CCAR website for supporting material <<http://www.ccar-ccra.org/agrifoodlinks-e.htm>>. See also 'Restrict antibiotic in farming panel urges,' *Globe and Mail*, Tuesday, October 8, 2002, p. A21, and Health Canada, *Advisory Committee on Animal Uses of Antimicrobials and Impact on Resistance and Human Health*, (Ottawa: Health Canada, June 2002).

<sup>134</sup> K S Schafer and S E Kegley, 'Persistent toxic chemicals in the US food supply,' *Journal of Epidemiology and Community Health* <<http://jech.bmjournals.com/>>. See also Picard, A., 'Pesticides banned many years ago still in some foods,' *Globe and Mail*, Tuesday, October 15, 2002, p. A10.

<sup>135</sup> SeGuin, R., 'Carcinogens in some foods exceed accepted limits, study finds,' *Globe and Mail*, Monday September 16, 2002, p. A5.

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<sup>136</sup> Canada, Agriculture and Agri-Food Canada, *Agriculture in harmony with nature: strategy for environmentally sustainable agriculture and agri-food development in Canada* (Ottawa: Ministry of Public Works and Government Services, 1997) at p. viii

<sup>137</sup> *Ibid.*

<sup>138</sup> McRae, T., C.A.S. Smith, and L.J. Gregorich (eds). *Environmental sustainability of Canadian agriculture: a report of the agri-environmental indicator project* (Ottawa: Agriculture and Agri-Food Canada, 2000) at p. vii.

<sup>139</sup> *Ibid.* at p. 197.

<sup>140</sup> McRae, *Environmental sustainability of Canadian agriculture*, *supra*, note 43 at p. 182.

<sup>141</sup> *Ibid.*

<sup>142</sup> *Ibid.* at p. 184-5.

<sup>143</sup> *Ibid.* at p. 185: "The amount and rate of energy input significantly exceeded the amount and rate of growth in energy outputs "

<sup>144</sup> Canada, National Climate Change Secretariat (Canada), *Agriculture and Agri-food Climate Change Table, Options report : reducing greenhouse gas emissions from Canadian agriculture /* (Ottawa: Agriculture and Agri-Food Climate Change Table, 2000) at p. i.

<sup>145</sup> *Ibid.* at p. ii: "The research directed toward GHG reduction in agriculture is still in a very preliminary phase—this is a brand new problem" (at p. ii); See also McRae, *Environmental sustainability of Canadian agriculture*, *supra*, note 43 at p. 197: "The ... study identified key limitations in the national capacity to assess the environmental sustainability of agriculture"; Organization Economic Development and Cooperation, *Environmental indicators for agriculture* (Paris: OECD, 1997) at p. 3: "Currently, the supply of quantitative information on agri-environment linkages is inadequate. Without such information ... governments and other users cannot adequately identify, prioritize and measure the environmental impacts associated with agriculture, which makes it difficult to improve the targeting of agricultural and environmental programmes and to monitor and assess policies;" and Chambers, P.A., Dupont, J., Schaefer, K.A., and Bielak, A.T. *Linking Water Science to*

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*Policy: Effects of Agricultural Activities on Water Quality* (Ottawa: National Water Research Institute, 2002): "[T]here is not enough data to evaluate risks to humans and aquatic biota from agricultural sources..."

<sup>146</sup> "Brief from FarmFolk/CityFolk Society", *supra*, note 34. See also MacGregor, *Feed our future, secure our health*, *supra* note 13, at p. 28.

<sup>147</sup> Meadows, D.H., Meadows, D.L., and Randers, J., *Beyond the limits: confronting global collapse, envisioning a sustainable future* (Toronto: McClelland and Stewart, 1992) at p. 48: "Of the earth's 5 billion people [in 1992] over 1 billion at any one time are eating less food than their bodies require." The authors note that a successful and tremendous increase in food production has not resulted in feeding hungry people more because there are more mouths to feed [at p. 40].

<sup>148</sup> See Picard, A., 'Growing obesity likely to strain health systems,' *Globe and Mail*, February 18, 2002, p. A14. Article refers to reports from Worldwatch Institute and others.

<sup>149</sup> See Saunders, D., 'All-you-can-eat warning: Ever-increasing food portions declared public enemy in US war against obesity,' *Globe and Mail*, February 21, p. A19.

<sup>150</sup> See, for example, Toronto Board of Health 1996. *Emerging and re-emerging Infectious Diseases*. City Clerk, Toronto. May 27, 1996; Toronto Board of Health. 1997. *Is Food the Next Public Health Challenge?* City Clerk, Toronto, Aug. 1997.  
<[http://www.city.toronto.on.ca/health/tfpc\\_discussion\\_paper.htm](http://www.city.toronto.on.ca/health/tfpc_discussion_paper.htm)>

<sup>151</sup> CDC. 1994. Addressing emerging infectious disease threats: a prevention strategy for the United States. Executive Summary. *MMWR* 1994;43(RR5):1-18.

<sup>152</sup> Waltner-Toews, D. *Food, Sex and Salmonella*. NC Press, Toronto.

<sup>153</sup> See studies reviewed in FAO. 2000. Food safety and quality as affected by organic farming. Twenty Second FAO Regional Conference for Europe, Porto, Portugal, July 2000.

<sup>154</sup> [Get references]

<sup>155</sup> See Public Service Awards - 2000, Vancouver Island/Powell River Region, "Excellence in establishing the credibility of the Employment Standards Branch with farm labour contractors,

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producers and workers in the Fraser Valley" (PSERC website: [www.pserc.gov.bc.ca](http://www.pserc.gov.bc.ca)) .

<sup>156</sup> *Ibid.*

<sup>157</sup> See for example, People for the Ethical Treatment of Animals, 'Factory Farming: Mechanized Madness,' <<http://www.peta.org/mc/facts/fsveg3.html>>. See also, Schlosser, E., *Fast Food Nation* (Boston: Houghton Mifflin, 2001).

<sup>158</sup> *Ibid.*

<sup>159</sup> *Ibid.*

<sup>160</sup> *Ibid.*

<sup>161</sup> Personal communication with Professor David Fraser at the University of British Columbia.

<sup>162</sup> See Read, N., 'Appetite growing for meat certified as 'humane',' Vancouver Sun, April 3, 2002, p. B2.

<sup>163</sup> *Ibid.*

<sup>164</sup> See Read, N., 'SPCA-certified eggs, chickens go on sale: Standards guarantee birds raised more humanely,' Vancouver Sun, May 23, 2002. See also BC SPCA Farm Animal Program, 'Labelling & Certification Program Progress Report (February 2002) <[www.spca.bc.ca/farm](http://www.spca.bc.ca/farm)>

<sup>165</sup> See Read, N., 'Appetite growing for meat certified as 'humane',' Vancouver Sun, April 3, 2002, p. B2.

<sup>166</sup> *Ibid.*

<sup>167</sup> See Read, N., 'Canadian McDonald's lags U.S. on animal rights: Shareholders reject bid to match standards across the border,' Vancouver Sun, May 24, 2002, p. A4.

<sup>168</sup> Not in the traditional definition of variety (defined by the food industry as the production of large volumes of only marginally difference), but rather variety of foods truly distinct from each other.

<sup>169</sup> OMAFRA's evaluation of the Foodland Ontario program demonstrates this, as does focus group testing of consumers regarding the emerging organic milk market in Ontario.

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<sup>170</sup> Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

<sup>171</sup> British Columbia, "Provincial response to Feed our Future—Secure our Health", *supra*, note 53, at p. 28.

<sup>172</sup> *Ibid.*

<sup>173</sup> Angus Reid Group, *The Canadian Food Study: Consumer Behaviour and Attitudes for the 90s* (Toronto: Angus Reid Group, 1992) as reported in MacGregor, *Feed our future, secure our health*, *supra*, note 5, at p. 24.

<sup>174</sup> Angus Reid Group, *Corporate Social Responsibility and the BC Public* (Toronto: Angus Reid Group, 2000): Corporate social responsibility, or at least the appearance of it, has a dramatic effect on how consumers in BC spend their money and select their place of employment. 84 percent of British Columbians surveyed claim that they would be more likely to purchase a product or service from a company or organization that is socially responsible. Environmental responsibility was one of the top two factors mentioned by respondents when defining social responsibility. 91 percent would be "more likely" to want to work for a company that does business in a socially responsible way.

<sup>175</sup> See: Canada, Agriculture and Agri-Food Canada, *Agriculture in harmony with nature*, *supra*, note 15, at p. vii.

<sup>176</sup> Canada, National Climate Change Secretariat (Canada), *Options report*, *supra*, note 19, at p. ii.

<sup>177</sup> International Covenant on Economic, Social and Cultural Rights, adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966, *entry into force* 3 January 1976, ratified by Canada May 19, 1976. See also Committee on Economic, Social and Cultural Rights, Twentieth session (1999), "Substantive Issues Arising From the Implementation of the International Covenant on Economic, Social and Cultural Rights: General Comment 12."

<sup>178</sup> See Ministry of Agriculture and Food, *Performance Plan 2001/01 - 2003/04* (Ministry website, *supra*, note 49). Although the Ministry's mission is stated as "To foster the socioeconomic viability and sustainability of the agriculture and food sector

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throughout British Columbia," the agriculture and food operations division is committed to "environmental responsibility and sustainability *while keeping farm operations viable* [emphasis added]."

<sup>179</sup> Ministry of Agriculture, Fisheries and Food, *Securing Our Food Future: An Agri-food Policy for British Columbia*, draft (Victoria: Ministry of Agriculture, Fisheries and Food, 1995), p. 7. as reported in MacGregor, *Feed our future, secure our health, supra*, note 13, at p. 7. This document is no longer available on the MAF website.

<sup>180</sup> Ministry of Sustainable Resource Management 2002/03 - 2004/05 Service Plan, p. 15.

<sup>181</sup> See, for example, 2002/2003 - 2004/2005 Ministry of Water, Land and Air Protection Service Plan ([http://www.gov.bc.ca/prem/popt/corereview/srv\\_pln/wlap/wlap\\_resource\\_summary.pdf](http://www.gov.bc.ca/prem/popt/corereview/srv_pln/wlap/wlap_resource_summary.pdf))

<sup>182</sup> BC Auditor General, "Maintaining Human Capital in the British Columbia Public Service: the Role of Training and Development" (Victoria, OAG website, 1999).

<sup>183</sup> See "Partnership Committee on Agriculture and the Environment" (Ministry of Agriculture and Foods website, *supra*, note 49). The Committee's members are committed to a "growing and developing agriculture industry that is environmentally and economically sustainable and operates within an environmental regulatory framework that is transparent, consistent and efficient; involving an acceptable level of regulations, rules and guidelines developed in a coordinated manner and administered equitably."

<sup>184</sup> Ministry of Agriculture and Food, News Release 01-17, "Green fund helps agriculture protect environment" (March 16, 2001).

<sup>185</sup> British Columbia, Ministry of Agriculture and Food, *Growing Together, The Rural - Urban Connection*, Fall 2000, Vol 1, No. 2.

<sup>186</sup> See 'UBC Farm Summer 2002 Newsletter' for information on community food systems and all of the upcoming events listed below.

<sup>187</sup> MacNair, Emily, "International "Best Practices" in Comprehensive Sustainability Policy" (Victoria: BC Green Economy Secretariat, 2000): At a national level, Sweden and the Netherlands arguably have the most comprehensive and proactive sustainability policies. Several American states have developed

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outstanding comprehensive policy approaches: Oregon has recently passed the Sustainable Oregon Executive Order (EO-00-07) committing the state to sustainability within one generation; New Jersey and Minnesota have both made substantial efforts to integrate sustainability into state policy. Growing numbers of the world's largest corporations are adopting sustainability into their business plans through frameworks like "The Natural Step for Business" (e.g. Nike, Electrolux, IKEA, and Home Depot) [see Natrass, B, and Altomare, M, *The Natural Step for Business* (Gabriola Island: New Society Publishers, 1999)].

<sup>188</sup> *Swedenvironment*, No. 3, November 1998 (Stockholm, Ministry of Environment, Environmental Protection Agency, and the National Chemicals Inspectorate, 1998).

<sup>189</sup> *Ibid.*

<sup>190</sup> See Karl-Henrik Robert, *The Natural Step: A Framework for Achieving Sustainability in Our Organizations*, (Pegasus Communications Inc., Cambridge Mass., 1997).

<sup>191</sup> Pers. comm. with David Osterberg, former Iowa State Congressman, March 2000.

<sup>192</sup> Brown, *The Agricultural Link*, *supra*, note 37, at p. 62.

<sup>193</sup> *Ibid.* at p. 62-63.

<sup>194</sup> Wisconsin Citizen Action's Family Farm Stewardship Campaign (<http://www.wi-citizenaction.org/>). The Bill is designed to (1) Eliminate Collusive and Anti-Competitive Practices including establishing an agricultural anti-trust division in the state Attorney General's office and requiring the state to investigate the socio-economic impacts of concentration, (2) Establish Price and Market Reform including requiring mandatory price reporting and prohibiting volume premiums, (3) Promote Development of Produced-Owned Processing Facilities (4) Reform the Credit and Agricultural Financing System to benefit small farms (5) Strengthen Environmental Standards for Large-scale Operations including defining all livestock operations over 1,000 animal units as "industrial operations," establishing air quality standards for hydrogen sulfide and ammonia, and restoring local control over permitting decisions, (6) Address Small Farm Environmental Issues including cost-sharing on farm research for lower cost alternatives and "Purchase of Development Rights" legislation, and (7) Establish Tax Incentives and Disincentives to promote family farms over industrial operations."

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<sup>195</sup> Read, Nicholas, "Sweden sets example for 'sensible' farming," (Vancouver Sun, April 12, 2001, p. B7).

<sup>196</sup> Note: the following information is reprinted from Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

<sup>197</sup> Tate, W.B. 1994. The development of the organic industry and market: an international perspective. N.H. Lampkin and S. Padel (eds.). **The Economics of Organic Farming: an international perspective**. CAB International, Wallingford, Oxon, UK. Pp. 11-26.

<sup>198</sup> Anon. 1995. Danish organic market sizzles. **New Farmer and Grower** 47:6.

<sup>199</sup> Institute for Agriculture and Trade Policy. 1999. **Marketing Sustainable Agriculture: case studies and analysis from Europe**. IATP, Minneapolis.

<sup>200</sup> **Reuters** Wire Service, August 2, 1999.

201. Cooper, M. 1999. Stores Call on Government to Support Organic Farms. **PA News** July 5 /99.

202. Lampkin, N. 1997. Impact of EU Regulation 2078/92 on the development of organic farming in the European Union. **Working Paper #7, Welsh Institute of Rural Studies**, Aberystwyth, Wales.

203. Welsh, R. 1999. **The Economics of Organic Grain and Soybean Production in the Midwestern United States**. Henry A. Wallace Institute for Alternative Agriculture, Beltsville, MD.

204. Duram, L. 1999. Factors in organic farmers' decision making: diversity, challenge, and obstacles. **American Journal of Alternative Agriculture** 14:2-10.

205. Fernandez-Cornejo, J. et al. 1998. Organic vegetable production in the US: certified growers and their practices. **American Journal of Alternative Agriculture** 13:69-78.

<sup>206</sup> Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

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207. Van Bers, C. 1991. Sustainable Agriculture in Canada: a scenario of the future. **M.A. Thesis**, University of Waterloo, Waterloo, ON.

<sup>208</sup> Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

<sup>209</sup> Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

<sup>210</sup> Note: the following information is reprinted from Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

211. Lyson, T.A. et al. 1995. Farmers' markets and the local community: building the formal and informal economy. **American J. Alternative Agriculture** 10:108-113.

<sup>212</sup> Proceedings: Greater Vancouver Agriculture Conference, November 2, 1991 (Vancouver: GVRD, January 1992).

<sup>213</sup> See *Putting Canada First: An Architecture for Agricultural Policy in the 21<sup>st</sup> Century* (2002)  
<[www.agr.gc.ca/puttingcanadafirst](http://www.agr.gc.ca/puttingcanadafirst)>

<sup>214</sup> Ford, Brian J., *The Future of Food*, 2000, Thames & Hudson, N.Y. pgs 93-102.

<sup>215</sup> Ford, Brian J., *The Future of Food*, 2000, Thames & Hudson, N.Y. pgs 93-102.

<sup>216</sup> Ford, Brian J., *The Future of Food*, 2000, Thames & Hudson, N.Y. pgs 93-102.

<sup>217</sup> See for example, Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto].

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<sup>218</sup> See endnote 8 to 14, *supra*.

<sup>219</sup> Robbins, M., *Small Lot Agriculture: The Role of Small Lot Agriculture in the South Coastal Region*, (pg. 10), MAFF

<sup>220</sup> Local Solutions, with the Toronto Food Policy Council and Bridgit Haworth. 1999. Supporting Green Business Sectors Through Community Economic Development. Report to the City of Toronto Environmental Task Force, Green Economy Workgroup. Part III. Local Solutions, Toronto.

<sup>221</sup> Washington, D.C.: Joseph Henry Press, 1995.

<sup>222</sup> See p. 279.