Plotting the Future of Food

Putting ecologically-driven, community-based policy at the heart of Canada's food economy

By Michael Heasman & Tim Lang

Canada made its name as one of the powerhouses of modern agriculture. Yet the innovations that led to its global agricultural prominence over the past 100 years are now the very factors serving to crumble Canada's agricultural foundation and endanger its future success.

The historic innovations that saw Canada's agriculture blossom in the 20th century included the intensive application of chemicals, high-energy inputs, industrial-style mass production techniques, and export-led commodities – all supported by production-centric state policies and assistance. In addition, over the decades it is agribusiness, often controlled by non-Canadian interests, that has risen to dictate the direction of Canada's agriculture and food supply priorities.

Unfortunately, Canada's current agricultural problem and crisis in farm income is still understood largely in terms of "production" in need of a new "technical fix." Genetic modification (GM) is one fix that is rapidly gaining ground thanks to the efforts of Monsanto and other agribusiness corporations newly re-branded as "Life Science" organizations.

But around the world, food business and innovation paths rooted in community development are emerging as alternatives to the Productionist and Life Science economic models. Into the future, ecological thinking is highly likely to be a key determinant of not just what works but what thrives.

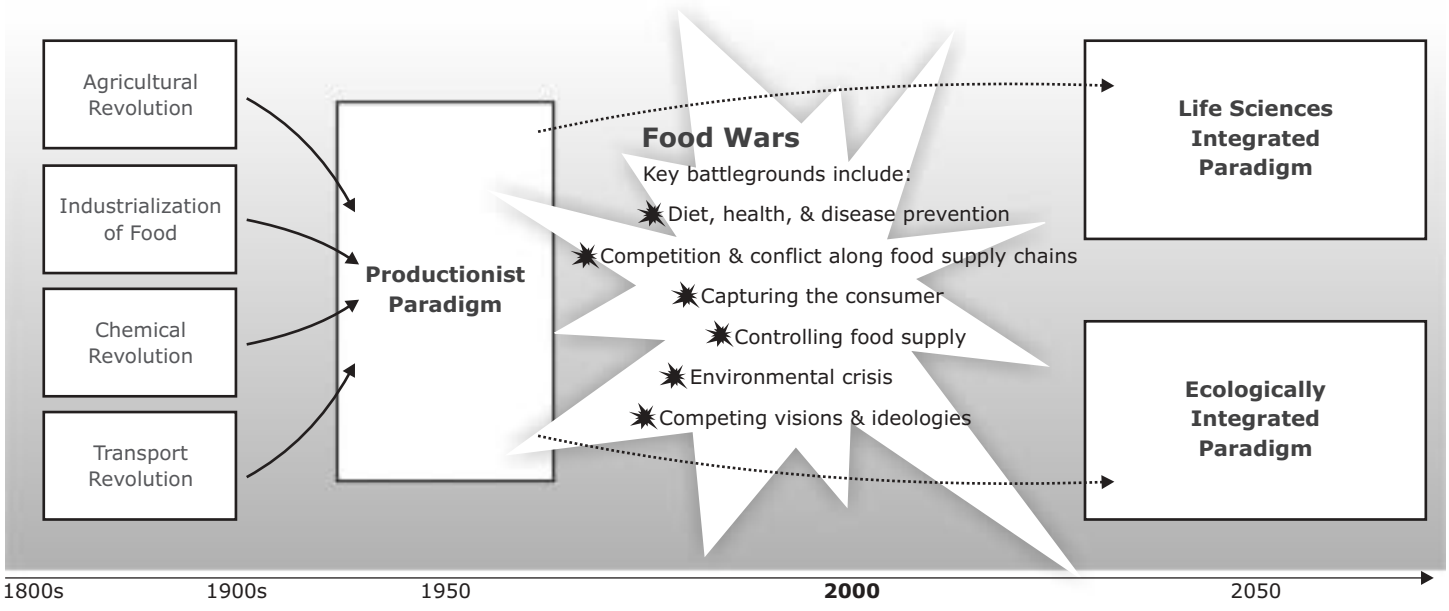
Once, Canada's agricultural direction was framed by the needs of its then ruler Britain. Today its role, like that of other rich producer countries, must surely be to think more strategically, both for its own people and the world. This is an opportunity that we must not miss. By embracing wholeheartedly the ecological modernization of society and applying it to food and agriculture, Canada and Canadians could help carve out a new approach instead of waiting for climate change or oil shortages to force change upon us all.

An ecological vision would provide a strategic coherence for building a Canadian food system based on local communities, on a healthy environment, on healthy people, and in "food citizenship" that defines access to (and the sheer pleasure of consuming) nutritious food as a basic human right.[1]

Such a vision will require some fundamental changes in our dominant *food culture* – that is, to prevailing beliefs, practices, and knowledge about agriculture and food. In fact, a new food culture is already present or emerging throughout the country. It takes shape in numerous community-based food initiatives, in sustainable food businesses, in resistance to agribusiness monoculture on and off the land, and in support for family farms and rural communities.

Unfortunately, this new culture has yet to fully penetrate the corridors of power and much of the provincial and the Ottawa policy-making machine has yet to respond to this growing food movement.

Life Sciences vs. Ecology: The Paradigm Battle[2]



3 Paradigms For Food Policy

Our book *Food Wars*[2] suggests that food policy can be understood as a tension between three competing paradigms. The dominant paradigm – that we term the Productionist Paradigm – came to full dominance during the last 50 years of the 20th century. Its core ethos is "production almost at all costs." This is now giving way before two big new agendas.

One is premised on integrating the Life Sciences into food policy which we term the Life Sciences Integrated Paradigm (LSIP). The other paradigm – which we call the Ecologically Integrated Paradigm (EIP) – roots food supply in social and ecological needs. (See diagram, this page.)

Both the LSIP and EIP are grounded in differing aspects of the biological sciences and are based on complex evidence. They both offer responses to a food system (characterized by the Productionist Paradigm) under severe duress. But the LSIP takes up many of the themes that characterize productionism, for example being driven by big science and capital with state support through finance and policy. A key point of departure for the LSIP is a new emphasis on "personalized" health rather than relying on the assumption that increased production alone equates with human health outcomes. In contrast the EIP looks to structure environments and develop sustainable food cycles to create the infrastructure for population health.

Although many criteria distinguish the three paradigms, examples of the differences between the LSIP and EIP are that the LSIP is defined by market power and access through corporate control and is powerfully supported by state and corporate funding. There is a tendency towards a "medicalized" solution to health problems related to food and the environment, and many of the "costs" of food production on and off the land remain externalized. The EIP until recently was fragmented and weak by comparison and dominated by smaller players. Yet the market success of "organics" and "natural foods" has brought some powerful and unexpected corporations into the ecological fold. It should be noted that the burgeoning multi-billion dollar organic niche has been led and created by consumers with little state or large corporate support. In fact organics has often been vilified by these interests. For these people it is a missed opportunity. One market report published in May 2006 estimated that, given their current momentum, natural/organic foods ought to grow 63% to surpass the $46 billion mark by 2010.

While the EIP is not "organics" alone, organics has become the flag-bearer for many of the tendencies captured by our concept of the EIP. (Similarly, the LSIP is not just about GM foods; this has to date been a key characteristic of the LSIP mindset.) The EIP, with strong movements in developing countries, promotes environmental sustainability based on ecological principles, a holistic view towards human health solutions, social justice in food systems, highlighting the importance of the "public" good, and seeks to minimize external costs.

Policy-makers cannot be neutral about these paradigms. They offer competing visions of the future. Each interprets biological and societal systems in ways that offer different choices for our food future: how food is produced, who produces it and how it is sold; questions of social justice; where the food is produced (global versus local sourcing); the place of food in human health;

(page opposite) Photo courtesy of Agriculture and Agri-Food Canada.

and just as important, the scientific and technological agenda and its funding. Each vision has to be critically assessed, taking into account ideological and political agendas. Business and policy making can use the logic of the 3-paradigm model to "test" which decisions serve which model for the future of food supply.

Although the Productionist Paradigm is too crude for today's complex policy world, even it has legitimacy. In a world of six billion people there *are* food pressures. For a world of nine billion in a few decades, not even Canada can assume that every belly will be full. On its own terms, the Productionist Paradigm has proven highly successful. But the costs of this success, such as environmental degradation, ill health, corporate concentration and market control, are now undermining the very foundations and future viability of the production-first approach.

Behold, the Productionist Paradigm at the very pinnacle of success. So why does Canada's food system appear to lurch from crisis to crisis? .... The productionist food system, like some of the foodstuffs in our refrigerators, is "past its peak."

Canada's Food Industry

As the world's third largest agricultural exporter after the U.S.A. and the European Union, Canada offers in some respects the perfect illustration of the crisis of the Productionist Paradigm.

The National Farmers Union (NFU) is a keen observer of Canada's food system. While biased toward the family farm as the primary unit of food production, the NFU is unique in that it is a direct-membership, voluntary organization. Research it published in 2002 details the level of agri-business chain concentration in Canada.[3] At that time, just

- 3 companies retailed and distributed gasoline and diesel fuel
- 3 produced most of the nitrogen fertilizer
- 9 companies made pesticides
- 4 companies controlled the seed market
- 3 companies produced most of the major farm machinery
- 9 companies collected all Canadian grain
- 2 railways hauled it
- 4 companies dominated beef packing
- 4 companies milled 80 percent of Canada's flour, and
- 5 companies controlled food retailing in Canada

Current Canadian government figures show there are 270,000 farms in the country, down from 430,522 in 1966. Of the survivors, the largest 30% (farms with sales over $100,000) account for 87% of production and receive 75% of program payments.

These are all signs of what neo-classical economists would call "increasing efficiency." Yet it is neither channeling benefits to agricultural communities nor is it fostering rural development. In 2004 the NFU calculated that the farm income crisis had reached "excruciating intensity" with farm families seeing their net incomes fall to the second worst in Canadian history. (By contrast, the NFU shows that 2004 was the best year in history for agribusiness profits.)[4]

A recent study by the Conference Board of Canada shows increasing industrial concentration, with fewer companies accounting for an increasing share of production, applies not just to agriculture but to our entire food industry. "Canada's Food Industry: Industrial Outlook" reports how three companies, Agropur, Parmalat Canada, and Saputo, process 70% of all milk produced in Canada. The four largest food retailers account for more than 90% of supermarket retail sales. The four largest hog processors increased their share of pigmeat slaughter from 53% in 1994 to 74% by 2004. For beef, the top four plants increased their kills from 66% in 1994 to 88% in 2004.[5]

The lack of strong local or regional food economies becomes apparent from the study's export and import figures. Since 1993 the share of shipments bound for foreign markets has risen from 17% to 29% in real terms (of which 72% goes to the U.S.) In addition to this rising export intensity, the import share of the domestic market has also risen sharply over the past decade to 22%. So while Canadian-based companies focus on exporting more, imports are capturing more and more of the domestic market!

Behold – an example of the Productionist Paradigm at the very pinnacle of success. So why does Canada's food system appear to lurch from crisis to crisis? Why are the sustainability of this food system and the quality and healthiness of foodstuffs it produces being questioned and challenged as never before? Why are so many major corporations committing to greater transparency and to better corporate citizenship – from their business' marketing methods and environmental footprints, to how they treat their workforce and their suppliers, and to their role in the communities in which they operate?

In part, all this is happening to soften what can be seen as the unacceptable face of food capitalism. For example, food and beverage corporations are reacting to the condemnation of their child-targeted marketing methods, to concerns about their environmental damage such as overfishing, to the public outcry over new food safety concerns such as BSE and last but not least alarming rates of obesity and diabetes. The failure of food capitalism as an equitable distributor is also unmistakable. For example, in March 2004, more than 840,000 Canadians needed to access food banks (including over 300,000 children) to get enough to eat. Since the 1980s the Canadian Association of Food Banks has grown to more than 250 members that serve over 2,600 member agencies – primarily community-run organizations that rely on volunteers to distribute food.

In part, the policy and societal framework of Western countries now differs vastly from that in which the Productionist Paradigm took shape. Today's "value-based consumer" has developed a very different conception of food from that of his or her grandparents. We emphasize convenience, snacking, ready meals, eating out, and a food lifestyle that meets time constraints and recognizes a wider role for women in society. The burgeoning concern for health and well-being, because of such issues as obesity, diet-related illness, or the cost of caring for an aging population – this too is very different from the way people lived in the decades after World War II.

In short, whichever way you cut the analysis, the productionist food system, like some of the foodstuffs in our refrigerators, is "past its peak."

Articulating the Ecological Vision

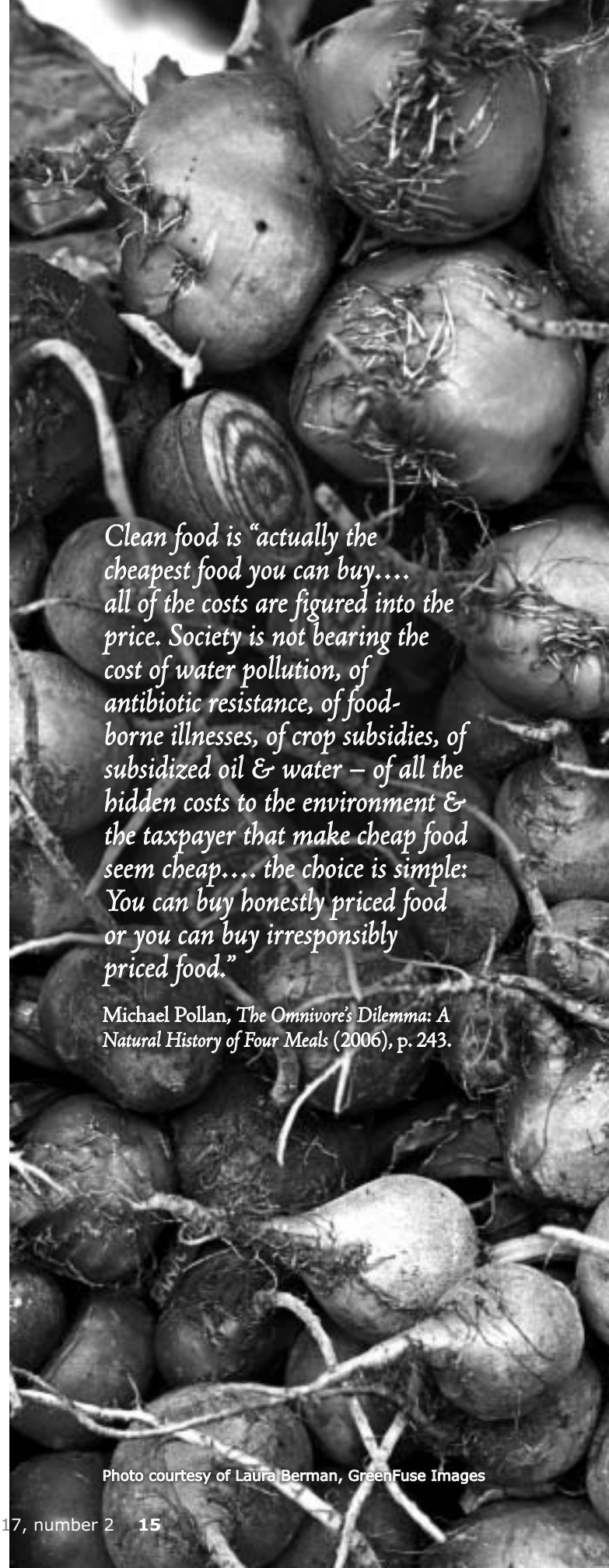
Within the world of food policy, there is creeping recognition that we are on the cusp of a fundamental re-structuring of the global food supply, and that radical solutions might be needed. But "solutions" are always framed to answer "problems." How the problem is defined and perceived will directly affect the sorts of solutions that are proposed.

Much of the current food policy debate in Canada and worldwide paints a choice between the Productionist or the Life Sciences paradigms. Some policy-makers and business executives, wedded still to the Productionist Paradigm, argue for "business as usual." They want to "mix and match" primarily through further intensification via application of the Life Sciences. Alternatively, in light of climate change, military threats, and not least rocketing oil prices, they expect merely to "bolt on" an environmental safety valve or eco-friendly "niche market" to address the crisis of food and the environment.

All these approaches are too narrow. To square the circle of human and environmental health will require a complete re-orientation of what we eat and in the way it is grown and processed. What would Canada's food supply chain look like if it really incorporated ecological goals by the mid 21st century?

Certainly, it suggests food economies rebuilt to satisfy a food culture that places great value on local self-reliance and community health.

But it is important to recognize our current food culture is very divided. On the one hand there are celebrity chefs with top rating TV shows, cookery and diet books on the bestseller lists, and popular media concerns about food quality, safety, and availability. Every food company mouths the "consumer first" mantra and feeds consumers' sense of entitlement to endless choice in food selection. On the other hand, a crisis of food supply still dominates great tracts of the world. Hunger, malnutrition, and insecurity stalk many lands alongside obesity, and premature death due to mal-consumption and over-consumption.



Clean food is "actually the cheapest food you can buy.... all of the costs are figured into the price. Society is not bearing the cost of water pollution, of antibiotic resistance, of food-borne illnesses, of crop subsidies, of subsidized oil & water – of all the hidden costs to the environment & the taxpayer that make cheap food seem cheap.... the choice is simple: You can buy honestly priced food or you can buy irresponsibly priced food."

Michael Pollan, *The Omnivore's Dilemma: A Natural History of Four Meals* (2006), p. 243.

Photo courtesy of Laura Berman, GreenFuse Images

In an ecologically determined world, food culture might once more have to live with limits. Building a food supply chain that offers choice and variety, as well as simplicity might be crucial. The future of food is about reconciling dichotomies: over- and under-consumption, over- and under-production, over- and under-availability, "intensification" versus "extensification," hi-tech solutions versus upgrading traditional, culturally-based ones.

Note that in this vision Canada does not cease or curtail agricultural exports, but re-casts them with a new, societal value-added. This is not business-as-usual but a new definition of business. Canada could become a beacon, especially with respect to such emerging economies as China, India, and Brazil – all important markets for Canadian production. Canada could become an innovative exporter that has the competitive advantage of being sensitive to the needs of local food cultures.

An ecological vision would provide a strategic coherence for building a food system based on local communities, on a healthy environment, on healthy people, & in "food citizenship" that defines access to nutritious food as a basic human right.

For many food producers, such a food supply will mean a fundamental rethink of their basic business models and even how they conduct their business. Rather than focussing on how to get consumers to "eat this product that I made," industry will address the question "what product and production process would contribute most to health and well-being?" At the heart of this thinking will have to be innovation and policy boldness to develop what we call an "authentic, health-centred food supply" that embraces both human and environmental health.

"Authenticity" is a key buzzword in business circles – not just food – and is seen as the crucial concept to successful 21st century marketing and business practice. Taking this concept further, much of the EIP logic relies on defining and developing what might become framed as an authentic health-centred food supply – linking "healthy" food and agricultural production processes with "healthy" food consumption. This in practice would mean much experimentation, investment in R&D, development of the science base, and government commitment and policy action.

Such authenticity would need to permeate the entire food chain. For example, at the agricultural end of the food chain an authentic, health-centred food supply would see a different emphasis towards soil health, a marked reduction in chemical farm inputs, less reliance on an increasingly narrow range of plant and animal species to provide our food, a complete re-think in factory farming and other animal production methods (including feed) and so on. In distribution, community-driven local markets would, given sustained support, permit wide access to affordable healthy foodstuffs. At the consumption end, there would need to be a recasting of the relationship between processed foodstuffs and beverages and "healthy eating." Particularly, this would mean moving away from empty "nutri-junk" solutions (like the many "medicalized" functional foods and nutraceuticals that result from the nutritional "dumbing down" of so much processed food) to restoring nutritive values through miminal processing and better growing techniques. It also puts a renewed responsibility on many individuals, families, and communities to redefine their own consumption patterns with respect to healthy eating.

With the knowledge and insights available today, the opportunity is waiting to be grasped to develop such an authentic, health-centered food supply, especially as consumers continue to openly assess the biological relationship between what they eat, the way it is produced, and their long-term well-being.

Critical Juncture

If language is taken at face value, opportunities already exist at both the federal and provincial levels within the context of Canada's Agricultural Policy Framework (APF) for the development of an authentic, community- and ecologically-based food system. Officially launched in June 2002, the APF purports to steer Canadian agriculture towards world leadership in food safety and quality, environmentally-responsible production, and innovation. One objective of the APF agri-innovation program is to create new value chains and to differentiate commodities into a wide range of new products and markets while moving rural communities up the value chain. The APF environment program is strongly worded in terms of the "sustainability" of soil, water, air, and biodiversity.[6] A new APF agreement is due in 2008 and presents a unique opportunity at both the provincial and federal levels to argue for the inclusion of more progressive policies towards the rural economy, agriculture, and other aspects of food supply.

But the future of food policy is as much about the battles for the mind as for markets and products. We need to think through and develop a wider range of solutions to the hard choices looming in the next 10-20 years to see us through to the mid-century. Can consumers continue to expect ever-cheaper food? What sort of intensification in production is best for human and environmental health? Can the patterns of food trade be reconfigured to benefit more people? What limits can we set to the concentration of market share by giant food companies? To what extent should public money support food production? How can

we communicate with people about the food choices for optimum nutrition and wellness? How do we define business sustainability and environmental sustainability really in the context of global food systems? The purpose of the Food Wars paradigm framework is to help us to confront these questions – and to realize how policy assumptions frame what businesses do in the food economy from farm to foodservice.

We have reached a critical juncture in the nature of choices for the future of food. Food policy in general needs to develop a range of alternative food scenarios, at the very least as "insurance policies" against future, unexpected outcomes and to tackle the unacceptable legacy and burden of disease, ill-health, and environmental destruction wreaked by the Productionist Paradigm. The development of an ecologically-driven and community-based food system deserves to be at the heart of future Canadian agriculture and food policy, social innovation, and entrepreneurship – not a subsequent bolt-on.

References

[1] For a detailed discussion of ideas such as food as a human right and food democracy see Frances Moore Lappé and Anna Lappé, *Hope's Edge: The Next Diet for a Small Planet* (New York: Putnam, 2003).

[2] T. Lang and M. Heasman, *Food Wars: The Global Battle for Mouths, Minds and Markets* (London: Earthscan, 2004).

[3] National Farmers Union, "'Free Trade': Is it working for farmers?" (Saskatoon, 2002).

[4] National Farmers Union, "The Farm Crisis & Corporate Profits: A Report by Canada's National Farmers Union" (Saskatoon, November 30, 2005).

[5] The Conference Board of Canada, *Canada's Food Industry: Industrial Outlook* (Ottawa, 2006).

[6] The Agricultural Policy Framework announcement came with the promise of $5.2 billion in new federal investments over a 6-year period. Under the framework Canada will take action in five key areas: food safety and quality, environment, renewal and international, science and innovation, business risk management. See Program Planning, Integration and Management Directorate, Agriculture and Agri-Food Canada, "Agricultural Policy Framework: Federal-Provincial-Territorial Programs" (Ottawa, Spring 2005) for full detail of progress to date.

MICHAEL HEASMAN is a researcher and communicator on food policy specializing in food and health, social responsibility, and corporate activity. He is the founder and editor of *Food for Good* (www.foodforgood.com), a business newsletter that tracks and promotes a critical understanding of corporate citizenship and sustainable food business. In addition to *Food Wars*, he is co-author of *The Functional Foods Revolution: Healthy People, Healthy Profits?* (2001) and *Consumption in the Age of Affluence: the World of Food* (1996). Contact Michael at 204-783-4596 or Michael.Heasman@shaw.ca.

TIM LANG is Professor of Food Policy at City University, London. He works on how policies shape the food system. He was a member of the Horizon Scanning Project Team of the United Kingdom's Department for the Environment, Food & Rural Affair, and has recently chaired a year-long national review of Scotland's food and health policy. He has been an advisor to four Parliamentary Inquiries, most recently the Health Committee's into Obesity (2004). In July 2006 he was appointed Natural Resources, Agricultural and Rural Commissioner in the U.K.'s Sustainable Development Commission. He is the co-author of nine books including (with Erik Millstone) *The Atlas of Food* (2003). Contact: t.lang@city.ac.uk.