National Farm Products Council
Conseil national des produits agricoles

A Report by the National Farm Products Council on its Forum On Global Awareness

National Farm Products Council

2002

GLOBAL TRENDS AND THE EMERGING PRESCRIPTION FOR CANADA'S POULTRY AND EGG INDUSTRIES

Canada

National Farm Products Council

Created in 1972, the **National Farm Products Council** (NFPC) is a federal body reporting to the Minister of Agriculture and Agri-Food.

It has duties under two laws:

- Under the *Farm Products Agencies Act*, the NFPC reviews the operations of (1) national agencies that run orderly marketing systems for poultry and eggs, and (2) promotion-research agencies.
- Under the *Agricultural Products Marketing Act*, the NFPC dovetails federal and provincial/territorial authority over farm product marketings granted to provincial commodity boards and commissions.

The NFPC also seeks to promote the strength and success of the farm products industries with which it works.

Our mission is to make sure that each agency works in the balanced interests of its stakeholders from the producers through to consumers – and according to its legal mandate and agreed operating rules.

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MESSAGE FROM THE CHAIRPERSON OF THE NATIONAL FARM PRODUCTS COUNCIL

The issuance of this report marks the third phase of the National Farm Products Council's Forum on Global Awareness. This year-long process was truly a national exercise. Forum sessions in Moncton, Montréal, Ottawa, Toronto, Winnipeg, Calgary and Vancouver enabled leaders of the poultry and egg industries to meet, hear from experts and discuss the range and implications of global trends for Canada's poultry and egg industries. As we stated at the outset of this process, the Forum was structured as a learning event and not as a place for policy debate or decision making.

With the conclusion of the National Forum (Ottawa, May 2001) and the six regional sessions during the winter 2001-2002, we are now able to share a synthesis of the presentations we heard from our 11 Forum speakers and their prescription for Canada. We are indebted to them for their participation as they came from across Canada and from Asia, Mexico and South America.

And with the issuance of this report, we move to the fourth and final phase of the project. In this phase, we will turn to industry leaders to determine what findings and conclusions they can support, how they will express leadership and how governments can be supportive of their efforts.

In keeping with the findings, future dialogue may need to involve other sectors, including the retail and research communities and consumers as well as other government agencies whose policies impact our trade, promotion and investment climates.

This Forum on Global Awareness has been an important project for the Council. We believe that Canada's poultry and egg industries can only benefit from informed debate on such important topics. Canada needs an industry that is literate not only on trade policy, but on the broader range of forces that are shaping our business climate in fundamental ways, including technology, social values, industry consolidation and demographics.

We encourage you to read this report and to share it widely with your associates. We look forward to continuing to work closely with the industry on these issues and on the shared goal of a growing, prosperous and profitable Canadian poultry and egg sector.

In closing, I wish to acknowledge the work of Council staff, particularly Terry Hayward and Carola McWade, both of whom were major contributors to the success of this project. I would also like to acknowledge the contributions of Gord Garner and Malcolm Bernard of National Public Relations, Monty Doyle, Derek Ellis and Alain Rabeau of Intersol Consulting Associates, and Lili-Ann Foster of Renaud Foster for their assistance in both the planning and conducting of the Forum events. Very special thanks go to Gordon Butland who participated at every event and who truly put the word "global" into the Forum process. And finally, our thanks to all industry participants who accepted our invitation and the challenge to think "outside of the box" and consider new ideas in a positive, collaborative setting.

Canada works best when the public and private sectors work together — this Forum on Global Awareness is a good example of Canada at work.

Cynthia Currie
Chairperson, National Farm Products Council

INTRODUCTION

GLOBAL TRENDS AND THE EMERGING PRESCRIPTION FOR CANADA'S POULTRY AND EGG INDUSTRIES

Purpose of the Report

The purpose of this report is to present the results of the National Farm Products Council's process on Global Awareness. The report begins with an introduction, which outlines the purpose and process involved in the Forum initiative. Part One of the report presents a discussion of themes and a prescription for Canada, which emerges from the collective wisdom of the speakers. It continues with participants' reactions and questions for further investigation and discussion and a number of conclusions. Part Two provides a summary of the presentation of Gordon Butland, Senior Vice President of Rabobank International, who was the keynote speaker at all Forum events. Biographies for all speakers are included in the appendix.

Background

Since its inception 30 years ago, the supply management system for poultry and eggs in Canada has changed and evolved as required by the times. Throughout this period, the key focus of the system has been on the domestic market and on providing a tool to balance four fundamental tensions. The first concerns the balance of the market power of producers versus processors in the setting of production volumes and determination of price. The second tension relates to the need for balance between continued market share of larger regions and the aspirations for disproportionate growth in smaller regions. The third tension has focussed on the trade environment and maintaining a balance between continued border protection and the larger policy of trading nations, including Canada, toward freer trade. The fourth tension concerns the balance of interests of producers and processors for reasonable returns with interests of consumers for competitive retail prices.

This past decade has seen significant evolution on all fronts with revisions to the *Farm Products Agencies Act*, the appointment of non-producer members to national marketing agency boards, the transition from Article 11 of the General Agreement on Tariffs and Trade (G.A.T.T.) to tariffication under the World Trade Organization (WTO), the change from a formula driven production allocation system for chicken to a more market responsive system, the introduction of a new "eggs for processing" program, and the creation of the first agriculture promotion research agency. This has been a crowded agenda. It has required the dedication of much time and energy by all stakeholders, often to the exclusion of more reflective discussions on the future of the industry and the forces shaping its long term success.

Given this, the National Farm Products Council decided to launch a national initiative on global awareness for leaders of the Canadian poultry and egg industries. The aim was to bring leaders together in a way that allowed them to step back from the "day to day" preoccupations and to reflect on the international and domestic trends which may affect the growth, prosperity and sustainability of Canada's poultry and egg sectors. Examples include:

- the dramatic increases of exports, primarily for chicken, within the larger context of global demand, supply and trade;
- the environment of continuous change being driven by demographics, social values and attitudes, science and innovation and the emergence of consumer centred markets and value chains; and
- the strategies that different countries and regions with lower costs of production for poultry and eggs are putting into play to succeed in the new global order.

Process and Organization

The Forum process was structured to take place over a year. It began in May 2001 with a national workshop in Ottawa targeted to 40 invited leaders. The aim of this event was to build awareness through first-hand exchange and dialogue with experts, industry leaders and government officials drawn from Canada, Asia, Mexico and South America. Their knowledge and expertise provided rich detail on global trends. (See Appendix for speakers' biographies.)

Phase 2 of the project occurred during the fall of 2001 and January 2002, as the Forum process was extended across Canada through a series of six regional sessions. Their objective was to widen the circle of learning and dialogue. The central thrust continued to be awareness building and reflection on implications for Canada.

Approximately 200 leaders from the poultry and egg producer, processor and further processor communities attended the sessions. The dialogue and exchange with presenters and amongst participants deepened the awareness building process. It also served to identify the fears and aspirations of the Canadian industry, their sense of opportunity, their views on how industry can and must lead in this climate of change and finally, their thoughts on the role of governments in helping to shape and support the continuing evolution of supply management.

The third phase of the project involves dissemination of the presentations given at the Forum events as well as the reactions and conclusions arising from discussion. For example, this report will enable Forum participants to learn about presentations given in other regional centres. Readers may access the full text of all presentations at the NFPC website www.nfpc-cnpa.gc.ca.

In the fourth phase, we will turn to industry leaders to determine what findings and conclusions they can support, how they will express leadership and how governments can be supportive of their efforts.

GLOBAL TRENDS & THE EMERGING PRESCRIPTION FOR CANADA

PART ONE

Through the course of the 11 presentations and discussions, the Forum presenters described a series of overlapping pictures of global trends and their implications for Canada. For example, a presentation on demographics led to a discussion on the role of science in increasing productivity to meet new demands. Discussions of science opened questions of social values and citizen concerns for health, safety, and moral and ethical acceptance. In turn, consumer interests led to discussions of marketing and innovation. And so it was that as the Forum progressed, three things happened:

- Although presenters came at the issue from different perspectives, their remarks tended to revolve around the same key trends, the same threats and the same opportunities. What evolved was a highly convergent view of the world and its implications.

- From those presentations, a set of core themes emerged which were descriptive in nature. These include:
  - the intractability of globalization;
  - forces driving agricultural demand and supply;
  - science, innovation and the advent of the bio-economy;
  - social values of citizens and consumers;
  - the emergence of new business models and relationships; and
  - the evolution of global trade arrangements.

- In the course of their remarks, virtually every presenter shifted from description to prescription – the latter being on the elements of success for Canada's poultry and egg industries. Again, the prescriptions offered by the speakers tended to coalesce around a set of core ideas which were repeated as the Forum moved across the country.

Taken together, these core descriptive themes provide an excellent starting point to understand the forces shaping the current business context. In turn, the related prescriptions begin to form the basis of a coherent strategy. Hopefully, these will serve to stimulate further reflection and consideration on the part of all industry stakeholders.

The purpose of this part of the report is to present a synthesis of the descriptive themes and the speakers' prescriptions for the future. All of the views and data in this synthesis are derived from the presenters. Attribution to speakers is provided where appropriate.

1. GLOBALIZATION IS ALREADY AN INTRACTABLE AND INTEGRAL FEATURE OF CANADIAN BUSINESS LIFE

This first theme, while general in nature, was heard repeatedly throughout the Forum process. Presenters and many participants argued that Canada has to accept a number of new realities. We cannot go forward assuming the status quo is an option for the future. Fundamental change has already occurred. It must be understood, embraced and turned to Canada's advantage.

As the Forum progressed across the country, this theme was developed in more detail. Four key messages stood out:

"Globalization is intractable and inevitable."

"The facts are that the Canadian economy is more and more integrated to the world market and certainly with the United States in particular," said the Honourable David Kilgour, then Minister of State (Latin America and Africa). He emphasized that more than any other country in the world, Canada's economy and prosperity depends on global trade. Forty five percent of our GDP is now export related – it was 10% barely 10 years ago. Consequently, Canada has to play its role in the global marketplace to maintain this level of economic performance and its quality of life.

On this same point, the Honourable Frank McKenna, former Premier of New Brunswick, argued that perhaps the force toward globalization will not be a force for all times, but it most certainly is right now. This inevitability is due in part to the reduced costs of access to information and communication. Even if governments were to turn protectionist, it would be impossible to stop trade in products that the public knows so much about in terms of price, quality, availability and so on. For example, Canada has tried to protect the Canadian book selling industry. Despite these efforts, Canadians purchase their books on-line through Amazon.com, which ships them across the border into Canada. After years of experience, debate and reflection, McKenna's conclusion is that Canada would waste a lot of energy resisting what is inevitable instead of trying to adapt to it and shape it to our advantage.

"The trade rules environment will continue to evolve as will the protection-liberalization balance."

At virtually every Forum event, the term "globalization" evoked an immediate reference to the major changes in the trade environment which have already occurred in the 1990s. Speakers talked about the continued evolution of this trend:

- There will be a continued trend to trade liberalization and pressure on governments to modify policies relative to tariff and non-tariff barriers related to agriculture. However, tariff reduction may not materialize as quickly as believed because of the policies of virtually all major blocs, including the U.S., Europe and South America, to protect certain domestic industries.

- At the same time, public interests will press government to shift their trade focus from tariffs to health, safety and environmental considerations.

- The best non-tariff barrier in the world is the domestic consumer. Consumers want local fresh production. Around the world, national branding has proven effective to support this consumer preference. But, this preference must be matched with good product in order to sustain consumer trust.

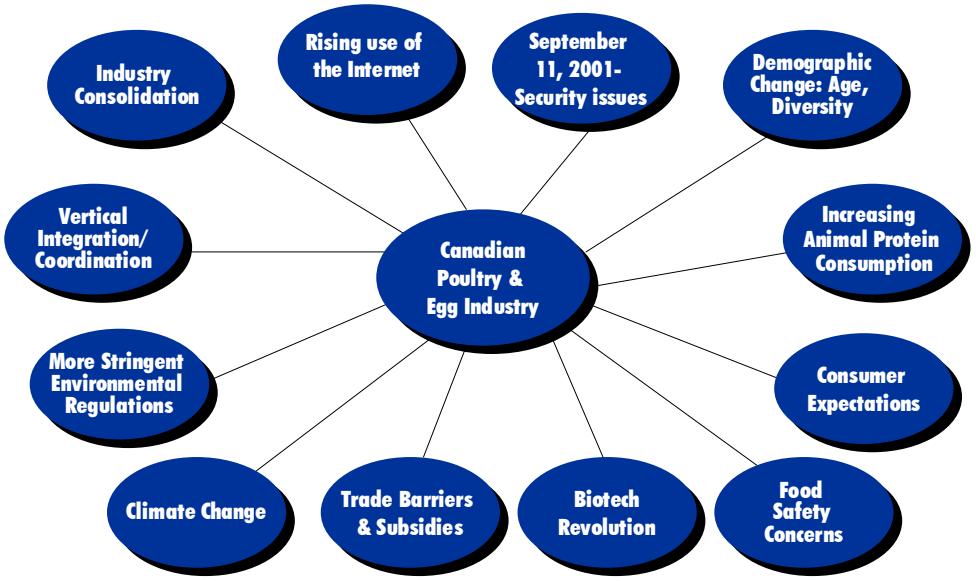
Animal protein consumption is expected to increase with incomes and with that there will be questions of production and supply capacity. Consumers' preferences, social values, incomes and time pressures are shaping the grocery industry. Their expectations touch all aspects of product attributes, including what's in the product, on the product, how it is labelled, packaged, sold and used.

"Globalization is more than trade."

Notwithstanding the almost immediate equation of globalization with trade, speakers emphasized that globalization is much more than that. Chart I illustrates the range of issues discussed by presenters under the title of "Globalization." For example, one of the most potent drivers of change is demographics – at the global level in terms of population growth and in Canada in terms of an aging, wealthier population as well as the growing diversity of Canada's population due to immigration.

Global Trends

CHART I



Food safety stands as a key issue for consumers, especially for poultry products due to perceived risks associated with food borne pathogens.

These and other demand side variables will be addressed with a broad range of new technologies. The advent of the bio-economy raises both promises and concerns – and requires whole new strategies for public education on food and non-food products and the technologies used to produce them.

The regulatory environment for agriculture and for the poultry industry is also evolving rapidly. For example, through the last round of WTO negotiations agriculture finally came under the same rules as the rest of the economy, when quantitative import controls were converted to equivalent tariff protection; export subsidies were reduced by 36%; sanitary regulations were defined; tariffs were reduced by 36% over six years which is especially important for value-added products; and WTO decisions in disputes were made binding. At the domestic level, more stringent regulations on environmental impact and on-farm food safety have practical implications for all producers.

In addition, new business models are emerging. Vertical integration is well known, but newer to the industry is vertical coordination: a collaborative approach to improve supply chain efficiency and to create distinctive new products.

Consolidation in the industry continues at the distribution level and at the processor level. For example, in the United States, four companies slaughter 80% of livestock, four companies control 80% of soya production, while three companies slaughter more than 50% of all broiler chicken.

Traversing all these variables are a number of horizontal factors – the rising use of the Internet gives way to whole new concepts of business practice and communications. For example, Rabobank predicts that Internet-based e-commerce could reach 1% of the $4 trillion international agri-business market during the next few years.

And finally, September 11th, 2001, continues to emanate unexpected shock waves. Biosecurity, food security and personal security are now at the top of the agenda for both governments and citizens.

"Change is constant."

Gaetan Lussier, a food industry consultant and former President of Culinar Inc. and Weston Bakeries, argued that permanence is an outdated concept. Transformations in products, markets, consumer attitudes, industry structures and business relationships will continue to accelerate. Associated with this is the decline of the "old order." As Lussier described, nation states can no longer control capital, ideas, images or even their populations. National governments are no longer the only major players in the political arena – also important are multinational corporations, major religions, and non-governmental organizations such as Greenpeace. Such broad-based change brings risk and uncertainty as well as opportunity and promise. In Lussier's words, this is an integral part of the new reality. It must be accepted, understood and integrated into the plans and strategies of businesses and governments, notwithstanding the pressures and difficulties it brings.

Prescription

The prescription arising from this first theme is that the Canadian industries must understand and accept the reality of globalization and of continuous change. Fortunately, with Canada's system of supply management, Canada's poultry and egg industries have a window of protection and of time. But it means acting now to develop the right strategies to navigate the future.

2. HARNESS THE FULL CAPACITY OF MODERN TECHNOLOGIES IN ORDER TO INNOVATE AT ALL LEVELS OF THE CHAIN

The role of science and innovation was a major theme of the Forum. Presentations and discussion revolved around the new accelerators of agriculture demand, the emergence of the life sciences-economy, a number of precautions and a prescription for the future.

Accelerators of Agriculture Demand

John Oliver, President, Maple Leaf Bio-Concepts, launched the discussion on this theme. It is his hypothesis that there are four accelerators which will significantly impact on world demand for agriculture, food and non-food products.

1. The first accelerator is global demographics. The demand for new products, particularly animal protein and vegetable oil products will grow as the economies of Asia industrialize. Building on the earlier discussion of population growth and demand, Oliver sets out three key points:

- In 1950, almost 30% of the world's population lived in North America and Western Europe. In 2020, 60% will be in Asia and 13% in North America and Europe.
- If we can consider the population of today as a constant (6 billion plus) and the demand for animal protein in Asia reaches 50 kgs plus, the production base would require 2 to 2 ½ times the amount of farm land that exists in the world today.
- Looking ahead 20 years, the consumption of animal protein in China alone could increase from 33 kgs per year in 1993 to 62 kgs in 2020. This on a base of 1.5 billion people.

All of this additional protein will have to be produced in the form of milk, eggs or meat on a diminished land base. By contrast, the dependability of natural catch fish from the seas and oceans as a source of animal protein may be lost through lack of effective conservation practices.

2. The second accelerator is the wellness phenomenon in the developed world. The wellness phenomenon is driven by the baby boomer generation – the biggest demographic bubble in history, and also the most affluent, the most technically literate, the most knowledgeable and the biggest spenders. This is a generation that wants to live forever and pay whatever it takes to stay healthy. The parents of the boomer generation are an energetic, aging population, living longer and happier lives. And then there is the off-spring generation – the Generation X. So there are three generations in a row lined up in this healthier affluent lifestyle. This trend of affluence is expected to continue well into the future with the inter-generational transfer of more than $15 trillion being passed from a generation of savers to a generation of spenders.

3. The third accelerator is the industrialization of agriculture – the bio-economy. Oliver argues that this is where the future is. For example, the whole food system in Canada rolled out completely from farm to supermarket is less than $100 billion. The functional and nutraceutical market alone has the potential of $80 billion of new market value.

4. The fourth accelerator is the increased rate of exchange between societies. Goods, services, capital and people, the flow of information and ideas, are all key to acceleration and to the convergence of markets towards common tastes, standards and consumer expectations.

These accelerators of population growth, affluence and wellness, along with industrialization and exchange have a common conclusion: a significant increase in world demand. Oliver and other speakers argue that the challenge for agriculture and for society more generally is how to respond to such increases in demand for commodities and for value-added, innovative products.

Given the limits of current technologies, soil loss and water depletion, our ability as a world to meet this demand will depend on how well we research, develop and manage the new technologies of the bio, or life sciences, economy.

The Life Sciences Economy of the 21st Century

Where energy was the driver of the 20th century, the 21st century is the age of biology – the century of living things. The science of greatest value will be molecular biology. Biology will be the basis and foundation of technology and molecular biologists will be the scientists of the knowledge-intensive, bio-based economy. Sustainability will be the driver of change. Sustainability of land, water and air and moral acceptance of technological practices will be the counter-balance to advancements in agronomic and process technology. With this vision, Oliver introduced a more in-depth discussion of biotechnology and its promise to meet the challenge of demand.

Virtually all presenters spoke to this issue. And while definitions of a science-based economy varied, the consensus view is that the advent of the life sciences economy represents a new set of organizing principles and relationships that strategically link agricultural producers and processors to end users in the fields of health and well-being, energy, manufacturing, and new markets, while ensuring sustainability of the environment.

Innovation and productivity improvements are not new to agriculture. The post-war increase in production with less labour, livestock, acreage, feed and other inputs is testament to both the innovative capacity and rapid adaptation of new technology throughout the food chain.

The introduction of tractor power, new breeds and species, new crop varieties, improvements in storage, transport and processing technology, minimum tillage, introduction of biotechnologies, application of electronics and information technology and sustainable management practices are but a few examples.

However, the advent of the life sciences economy will allow for a greater pool and range of discovery and the opening up of whole new fields of opportunity.

Dr. Alan Wildeman, Vice President (Research), University of Guelph, describes the life sciences economy as using new knowledge that can be applied to new product discovery, new ways of improving food safety and quality, and new uses for industrial molecules and fuels. Chart 2 presents Wildeman's model of the life sciences economy.

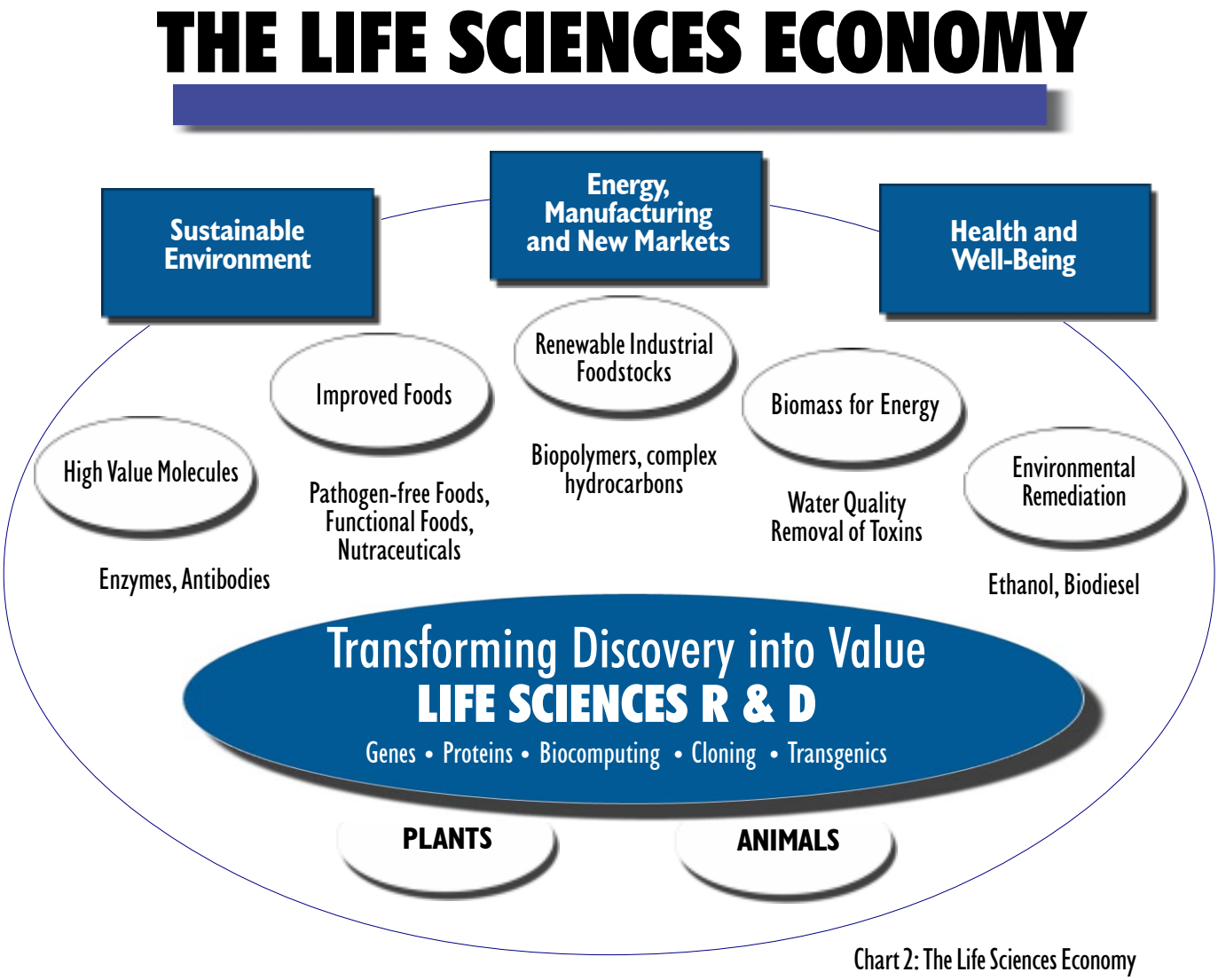


Chart 2: The Life Sciences Economy

Underpinning the life sciences economy are four building blocks:

1. Underlying sciences and the advances in research methodology itself. For example, genomics is advancing at a rapid rate. Researchers now know the whole sequence of the human genome. Soon scientists will have all of the DNA sequences for pigs, cows, poultry and so on.

2. The vast body of data, together with knowledge of gene interactions, will provide the hard science tools to focus in on production traits of interest.

3. Proteinomics is another key area of research to characterize and understand proteins, what they do and how they interact.

4. The advance in computing science and data analysis coupled with broadband capability to share results amongst researchers.

Wildeman is keen to emphasize that the key feature of this economic model is that its value lies not with the creation of new science, but in the application of this new knowledge to create innovation in products, uses and markets. The efficiency and success of innovation will in turn depend on the communication, relationships and partnering between those who own knowledge and those who apply knowledge to innovation from production to end use.

A central characteristic of the revolution occurring in the life sciences is the dissolution of borders between different fields. There is increasing convergence of chemical products, health products, pharmaceuticals, energy and information technologies. If the world, and Canada, are to meet the needs of developing countries for traditional food, feed and fibre, and meet the needs of developed countries for value-added and new products, convergence will have to be mastered. We will have to use every element of science and technology; locate it, adopt it and apply it as safely, efficiently and broadly as possible.

Cautions for a Brave New World

Notwithstanding the tremendous hope that bio-technology brings for nutrition, disease prevention and pollution abatement, it is not without obstacles or cautions. Capacity, ethical challenges and social values are essential elements of this debate as are government policies, stakeholder relationships and human resource renewal. Our speakers touched on a number of these challenges.

❒ Canada's capacity and performance in innovation

> "Today, America gets more than half its economic growth from industries that barely existed a decade ago, such is the power of innovation, especially in the information and biotechnology industries."
>
> — The Economist, Feb. 20, 1999.

This quote reflects the tremendous importance of innovation for economic growth, competitiveness and standard of living.

Currently, Canada has an innovation gap in its ability to translate new knowledge into market value. Chart 3 illustrates Canada's performance over 1981-1997 and its standing at 1997 relative to the other G7 countries. The key message from this chart is that Canada's innovation capacity has slipped and is near the bottom. Worse still, there is a significant gap relative to our main competitor, the U.S.

KEY INDICATORS OF INNOVATION CAPACITY	RANKING		
	1981-97 Canada	1997 Canada	1997 US
National Patent Applications	5	3	5
Human Capital devoted to R & D	1	5	2
R & D Intensity	2	6	2
External Patent Applications	1	5	1
Technology Balance of Payments	3	4	2
Business Funded Expenditures on R & D	2	6	2
Government Expenditures on R & D	6	7	2

Source: Industry Canada

Chart 3

❒ Innovation is about communications and application

The federal government has made the Innovation Agenda a centrepiece of its priorities. However, at a practical level it goes back to Wildeman's comments that at the heart of innovation is communication. Industry has a vital role to play to articulate risks, problems and opportunities, to partner with researchers, to be open to new ideas, and be able to merge cultures with scientists and end users. It is only through these new kinds of relationships that Canada will succeed in achieving application potential.

❒ Innovation and public trust

Without a strong, open dialogue between consumers and scientists, society does not understand the links between biotechnology, innovation and their wants for safe, healthy food. Moreover, disease outbreaks in Europe have created widespread breach of trust in producers, multinationals and other actors in the supply chain.

❒ Human resource capacity

Over the next 10 years, 50% of university faculty in Canada will be eligible to retire. So too, human resources will be lost from the primary production and processing sectors. These are highly skilled resources. In rural communities, the attraction and retention of human resources is a major obstacle to community development. As well, the investment and entry costs to production are significant barriers for potential new entrants. This issue stands as a major challenge for the entire economy in the years ahead.

To summarize on this theme, the shift to the bio-economy has three significant implications for the agricultural sector. According to Oliver:

1. It will increase the wealth creation on the farm as the farmer becomes a more valuable member of an integrated production team, which reaches from the farmer to the producer of the final product.
2. It will put a premium on good managers and their ability to adapt to change.
3. The strategic integration of information, food and health will make farming an essential foundation industry in the new bio-based economy. No longer will farming be classified as a declining industry – farming will be the sunrise industry in the new knowledge-intensive, bio-based economy.

Prescription

The advent of the bio-economy holds great promise for Canadian agriculture. But, it will require a concerted strategy of communication and exploitation of new knowledge as well as plans to address the social concerns and capacity challenges that we face as a nation.

On this point, Wildeman and others argue that innovation will require a new investment in relationships and dialogue between four constituencies: supply chain stakeholders, citizens, researchers and government.

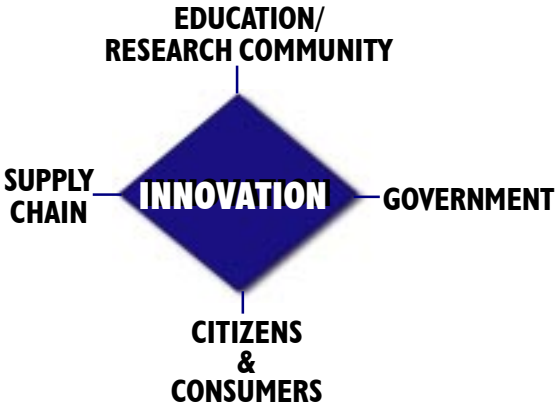


Chart 4

By bringing these four parties together, the poultry and egg sectors can create an innovation environment which can meet future demands for products, exploit economic opportunities of new knowledge, respond to a broader range of end users, including the traditional consumer.

3. PLAN FOR THE FULL SPECTRUM OF OPPORTUNITY THAT THE FUTURE DEMAND SCENARIO WILL BRING

At all Forum sessions, we heard stories and speculation about the expanding scope of opportunity for agriculture products. The notes below characterize several new or evolving areas of opportunity.

Opportunities Arising in a Life Sciences Economy

The scope of opportunity in food products and agri-business was clearly linked to the discussions on the bio-economy. A number of speakers, particularly Dr. Bob Church, educator and medical scientist, Joyce Groote, President of Crossing Sectors Inc., and Gaetan Lussier, offered several examples of innovation in products and applications stemming directly from new science advances, including:

- Entertainment food, health food (low fat), nutraceuticals as delivery systems for vitamins and medicines and functional foods.
- Non food uses such as the genetic engineering of African goat milk to produce "spider silk." The result is the strongest protein spun filament known. This new bio-steel will be used in products such as bullet proof vests and cable.
- Corn to produce ingredients for antibiotics, toothpaste, road salt alternatives, spark plugs, insecticides, plastics, diapers, ethanol fuel and so on.
- Alfalfa to become cellular factories for molecular farming of haemoglobin, interferon and other compounds.
- Enzymes which will reduce the use of chlorine in paper manufacture.

Innovation will enhance and improve traditional foods, create new food products, and see food crops adapted for non-food uses such as pharmaceuticals and bio-products. New technology is also being applied to the systems and methods used in the agricultural production and processing sectors. Precision farming with Global Position Satellite (GPS) technology, pasteurization of carcasses via steam, irradiation of food for safety and shelf life, and e-commerce are examples.

Opportunities for Increasing Consumption

Canadian chicken consumption has reached 30 kgs/year. But this is significantly less than the U.S. consumption level. This suggests that market saturation has not occurred. Further growth will best be found in niche markets that relate to product (grain fed, free range, antibiotic free, etc.), or to people (e.g., Asian, African, etc.), or to regions. A key niche market, for example, is the ethnic food market. Lussier notes that as society becomes more cosmopolitan, people's food experience transcends ethnic lines. Consequently, product development for a Chinese immigrant niche market may also have appeal to a wider Western market.

Opportunity and innovation can also apply to functions such as import replacement and protein substitution, for example, chicken/soya hamburger substitute. At the time of writing, we note the egg industry television advertisements which feature ease of meal preparation. These ads target recent immigrants to Canada and the dialogue is in their native language with sub-titles.

Other Key Areas of Opportunity

- ***Functional Foods and Nutraceuticals***

Pre-occupation with health will intensify as the population ages – creating stronger markets for functional foods and nutraceuticals. Linked to this is the companion notion that perception, not reality, is what sells. The terms "natural," "health food," and "health supplement" have become main stream. And the public generally perceives these products as healthy and safe, notwithstanding that they are not subject to the same standards, regulations and approval requirements that other food products or drugs are subject to.

• ***Marketing and Packaging*** Opportunities are strong at the retail level in terms of offering diversity in product content, packaging, or other marketing features. Speakers noted that product developed specifically for domestic retail innovation purposes are themselves opportunities for export. The most visible example was President's Choice, which is now the number one exporter of prepared foods from Canada worldwide.

• ***Value Added Products*** Lussier emphasized the importance of thinking in value-added terms. He referred to the global trend in growth of trade. By 2005, the global value of agriculture exports is expected to be $745B. Canada represents 3% of this total. If Canada were to increase the value of processed product by 50% and increase world market share by 1%, it would result in 100,000 jobs.

Prescription

The prescription calls for the consideration of the full spectrum of opportunities. The new centres for profitable growth will develop from industry's capacity to integrate technology, social values, a supportive investment climate and new forms of partnership, relationship and alliance. Opportunities exist in all areas of the food system, and particularly for food safety and quality; productivity enhancement; niche markets; and value-added traits for consumers.

Chart 5 illustrates this scope of opportunity.

A CONTINUUM OF OPPORTUNITY

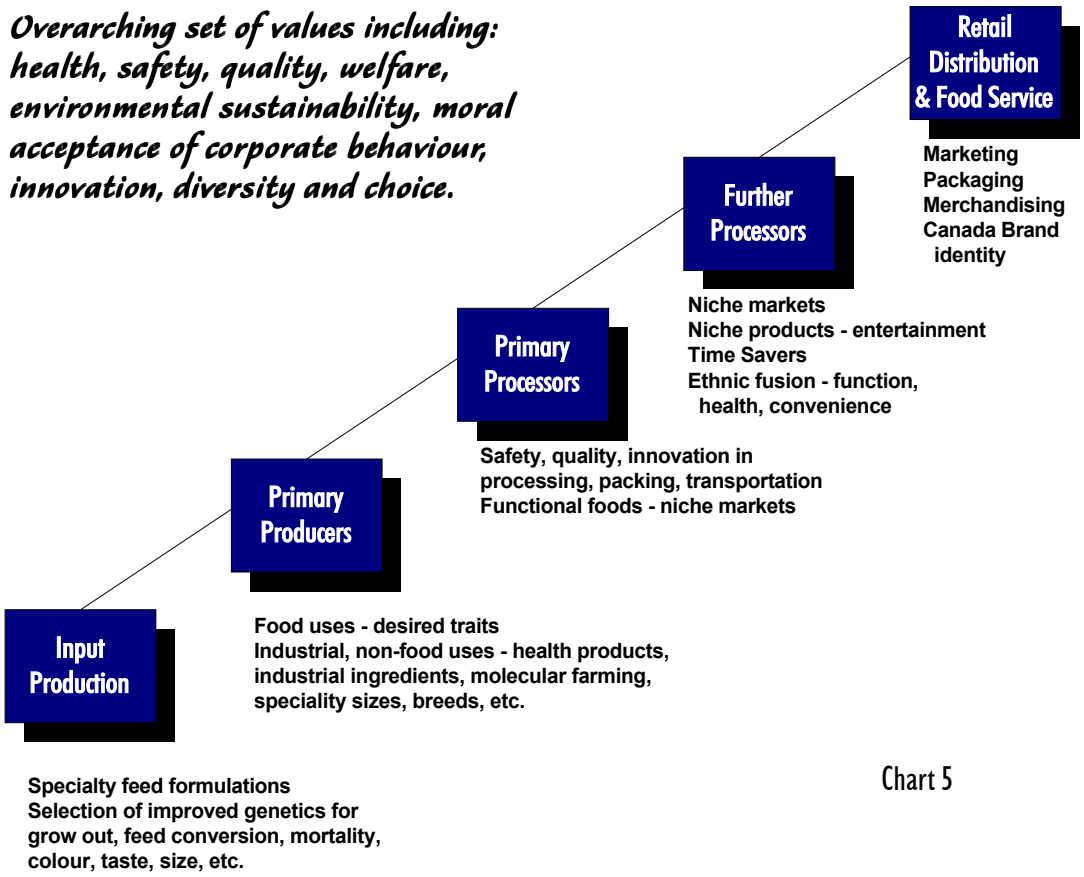


Chart 5

4. UNDERSTAND AND INTEGRATE SOCIAL VALUES

The Citizen as Consumer

Today's better-educated consumer is the driver of the food system. Consumers pay attention to their food as never before:

- in industrialized countries, three consumers out of four have some knowledge about nutrition;
- six persons out of ten say that they read labels;
- in Canada, 50% and in Europe 70% of the population express concerns about food safety.

Because the food health link is so important and so firmly entrenched in the consumer's mind and in his/her market choices, consumers will look to government to mitigate public health risks associated with food safety and quality. Governments in turn may very well shift their policy focus from tariff and non-tariff questions to public health and environmental issues. This shift is reinforced by the need for governments to reduce health costs and to support disease prevention/health promotion strategies.

In addition to food safety and nutrition, consumers are also concerned with trust issues. "Consumers as citizens" critically judge the attitudes, business practices, ethics and other value aspects of companies. More than ever, success in the marketplace will be based on such considerations and national and multinational companies will have to be more open for inspection and transparent in their operations. Enron and other cases reinforce the principle that trust failures become business failures. These consumer value issues are not limited to Canada. They are typical of developed/ Western nation consumers and they transcend nationality, culture and religion.

Consumers' views and attitudes are shaped by a variety of sources. Speakers agreed that special interest groups, non-governmental organizations such as Greenpeace, and other forces have invested heavily in providing one-sided arguments or deliberate misinformation on safety, quality, animal welfare, environmental and other issues. However, perception is reality.

A telling example has been the introduction of new technologies and their connections to the food chain: biotechnology, genetically modified organisms (GMOs), etc., have come to be seen as threats to food safety and to consumer well-being. By contrast, terms such as natural, organic, free-range and so on have come to mean moral as well as nutritional superiority. Again, perception is reality.

And that reality is that consumers expect the agriculture sector to provide an abundant supply of safe food at reasonable prices, protect the rural landscape, ensure the welfare of farm animals and produce food which is good for the health of consumers.

Canadian industry has tended to argue its own virtue. It has not embraced and reconciled the expectations of the *consumer* for readily available safe food, with the interests of the *citizen* for land stewardship, social justice and sustainable development. As suggested by Dick Dawson, retired Senior Vice President Cargill, much has been done to address health, safety and quality, but moral acceptance, welfare, and environmental sustainability remain as critical areas where public trust must be gained.

Increasingly, we see the retail industry weighing in on these issues either via standards applied to suppliers or retail policies, e.g., removal of chemical pesticides.

Oliver referred to these as decelerator issues, meaning that the agriculture and food industries will have to get ahead of these issues – or risk losing societal trust and hence progressive use of new technologies and pursuit of new opportunities. As Church stated, "our biggest challenge is to demonstrate the relationship between responsible stewardship, food quality and safety and personal wellness of the population. That is where the consumer and citizen come together." Only then will the "life sciences" be viewed in a holistic manner in which food-fibre producers will be valued for their contribution to the wellness of Canadians, as major contributors to the economic well-being of the country, and as stewards of our environment

Church offered a four-point strategy to reconcile the perceptions of food producers with the citizen as consumer:

- ***The Challenge*** : the relationship between responsible stewardship, food quality/safety and personal wellness is becoming tighter – tell our story!

- ***The Opportunity*** : is for innovation and diversification based on expansion of what we do well as bioproduct producers, processors and providers – delivering convenience, quality and value.

- ***That Requires*** : a new look at government regulations, a progressive business environment, human resource capacity and a new basis for investment in value added agri-business.

- ***Which may result in*** : a consumer as a citizen who recognizes the farmer as a sustainable land steward, who produces a variety of quality foods, which result in a healthy population enjoying a high quality of life.

Prescription

The conclusion and the prescription on this theme is that social values, with all their complexity and apparent contradiction, must be understood, and integrated into product planning. In addition, government and industry need to undertake a proactive communication strategy to build public understanding about food safety, quality, and bio-technology issues.

5. KNOW YOUR ADVANTAGES

Perhaps the briefest of all themes, this seemingly self-evident prescription is the most important prescription for Canada. Frank McKenna argued that too often we see ourselves solely in the context of others' strengths. Too often we compare ourselves to the United States when comparison to other countries as benchmarks might be more appropriate. Consequently, his prescription challenges us to know ourselves. It calls for a careful consideration of our advantages relative to the rest of the world including the U.S.

Canada has to be quick, nimble and play its strengths to advantage. There is much experience to demonstrate that Canada can compete on a world class basis while taking the high road in terms of quality, jobs, wages and the like. But we need to clearly understand what those strengths are and how to create niche opportunities.

6. BE OPEN TO NEW IDEAS IN MARKETS AND RELATIONSHIPS – THINK LATERALLY

Earlier themes addressed the notion of opening our minds to innovation in products, technology and end users. This theme is more focussed on market and relational trends including industry consolidation.

Trends in Industry Structure

Lussier, Church and others discussed current trends related to industry structure, including consolidation, partnerships and integration. Their comments identified a number of examples.

- Multinationals have a very large role presently in the world. They have to be conscious of issues across many countries where they operate – political, cultural, governmental and social issues.

- International competition, associated with new technology, results in new relations within and between different layers of agri-business. It transforms industry from a chain to a web. It will mean innovative forms of collaboration between market competitors. The example was given of two breakfast food manufacturers who share costs on transportation of similar products to distant markets.

- The whole agrifood sector, from processing to distribution is being consolidated and continues to look for further efficiencies and economies. For example, the supermarket sector is experiencing concentration around the world in order to access supplies and increase buying power:
  - In Germany, five chains have 70% of the market.
  - Three Canadian distributors have 50% of the national market.
  - Wal-Mart is the world's biggest distributor and the world's largest company in terms of revenue.
  - In France, two chains have merged to create the second largest food distributor in the world.

- In the next decade, whenever a food product is made there will be a growing proportion of clients, competitors, sources of capital, suppliers and partners who come from other countries.

- There will be continued integration of the Canadian economy into the U.S. and world economies.

- Consolidation influences price – but also quality, delivery time and format. Using bar codes, manufacturers and retailers can follow production in real time.

- Retail consolidation will have implications for small- and medium-size suppliers because national chains will tend to focus on two national brands and a house brand. This shift will be supported by point-of-sale information technology that identifies consumer behaviour and brand selection on a real-time basis. While this brings risks to processors and producers who supply them, Bob Church would argue that it also creates opportunities. The convergence to a few national brands will create opportunities for local producers to develop and market niche products through traditional or innovative distribution channels, for example the Internet or partnerships, such as schools that warehouse and sell direct to parents.

- To become a private label supplier, a company must be cost efficient. So companies have to invest, merge, consolidate, create alliances to complement strengths, etc., to become the "national" brand or the "low cost" provider for a given set of product specifications.

The conclusion is that Canadian producers and processors will be exposed to a loose-tight environment: loose in the sense that they will partner, create alliances or manage relationships in a much more complex, short term, creative and non-traditional manner; and tight in the sense that more volume will be controlled through fewer distributors. The second conclusion is that retailers, as much as government, will dictate consumer level standards for quality, safety and other factors.

Prescription

The prescription of presenters is that these trends in industry structure need to be monitored closely for what they may mean to national, regional and local markets. They need to be carefully assessed in terms of threats and opportunities. At a minimum, they make the case for closer rapport between producers and processors and the distribution sector.

7. ACT NOW TO DEVELOP AN INDUSTRY STRATEGY

This final theme is really an overall conclusion. When pressed about implications of global trends for Canada, Lussier and Gordon Butland, Senior Vice President of Rabobank International, and others emphasized the need for industry to create a coherent strategy for the future. They agreed that globalization brings new assumptions, trends, threats and opportunities. The winners will be those who embrace change, study and understand its meaning, sift the relevant and proactively shape a plan for their sector.

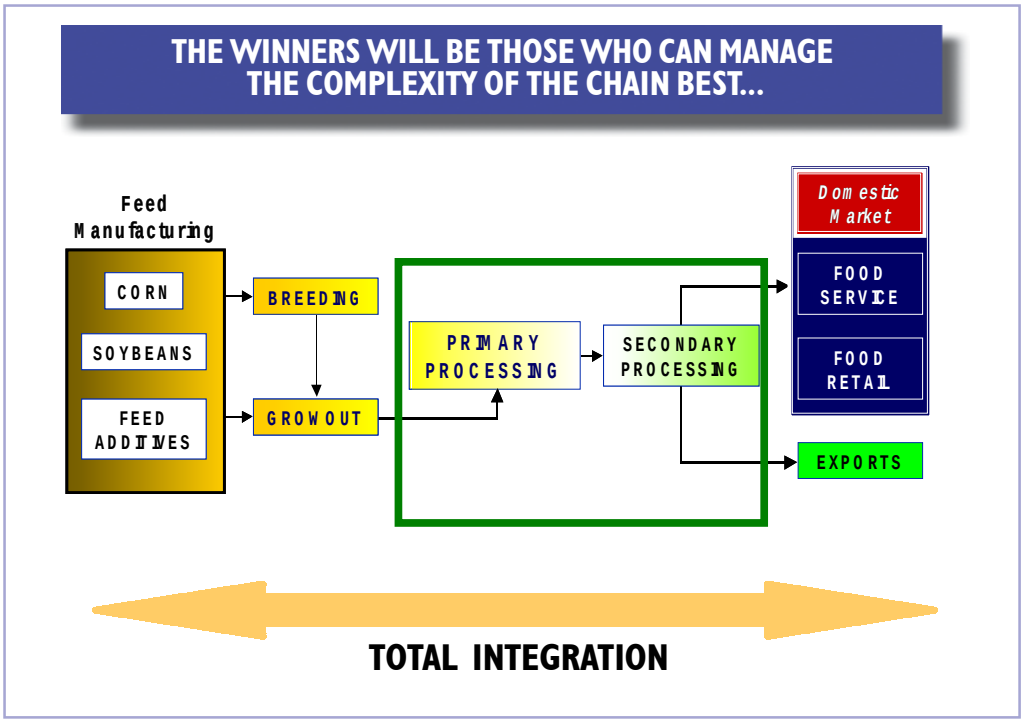
Features of this Plan

Butland offered several points as central to this plan:

- The winners and losers at the international level will be decided by those who can integrate the supply chain the best. Butland spoke of the old paradigm which focussed on production of commodities that pushed through to consumers. Today, the chain is consumer centred. Stakeholders in the supply chain, as presented in Chart 6, must recognize that the orientation of the chain today is from right to left.

It recognizes the capacity to transmit signals back through the chain, and the capacity to "integrate" through collaborative relationships in order to:

- drive out systemic costs;
- introduce innovations at one stage which may profit others;
- maximize the full genetic potential of the commodity, be it chicken, turkey or eggs.



Source: Gordon Butland, NFPC Global Awareness Presentation

CHART 6

- Build the Canadian business model based on the domestic market and the global trend to preference for local, fresh product. Use the export market to exploit niche opportunities and to generate value-added revenues for surplus product.

- Differentiate the domestic market to create niche opportunities in immigrant and ethnic communities for dark poultry meat product.

- Do the homework:
  - On a country basis, do the analysis of Canada's competitive factors relative to competitors for foreign target markets. For example:
    - structural factors, including availability and cost of inputs such as day-old chicks, feed, processing labour;
    - transitory factors (those outside one's control), including weather and resulting requirements for heating or cooling;
    - performance factors, including revenue and operating costs.
  - On a company basis, do the market analysis of whole bird revenue as well as costs – looking to maximize value of waste products and dark meat.
  - Recognize that the most effective non-tariff barrier is the consumer and his/her preference for fresh product which has the desired market values and attributes.
  - Recognize the natural limits to growth in production related to per capita saturation, profitable sale of surplus product, availability of water, and the capacity of land to absorb waste nutrients.

From Lussier, recognize the importance of bringing all players to the table in the development of a strategy including the retail and food service levels.

And from other speakers, recognize that a winning strategy is one which will integrate other elements of the prescription, namely:

- Comprehensive development of opportunities for products, markets, uses and technologies.
- Engagement of all relevant stakeholders to explore innovation opportunities flowing from the bio-economy.
- Engage citizens to understand and integrate social values.
- Continue to deepen awareness, broaden debate and increase literacy amongst Canada's producer sector with respect to global trends and their implications.

To close on this theme, we note the strategies adapted by Mexico and Chile, which present excellent examples of countries that have carefully shaped their plans in light of domestic and international trends. Juan Miguel Ovalle, President, National Poultry Association, Chile, presented a strategy based on cost competitiveness and aimed at developing exports in target countries such as the United States. In Mexico's case, Gerardo Lopez-Noriega, Co-ordinator in Mexico's Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food, described a domestic market in which demand is growing faster than production. Mexico's strategy, based in part on partnerships with U.S. firms, looks at domestic import replacement as a first opportunity and export to the U.S. as a second, incremental step. In both countries, industrial capacity development, achievement of safety standards and trade access negotiation are key elements of their plans. The most important point is that they have a plan and that is providing the basis for investment and growth.

PARTICIPANTS' REACTIONS

The Forum process provided participants with the opportunity to discuss what they heard, ask questions of presenters and other participants, and express their own perspectives on the future direction of the industry. This part of the report provides a recap of participants' reactions to the key themes and messages of our speakers.

These discussions touched on fears and aspirations, opportunities and risks associated with globalization, and the various roles of governments and industry to ensure continued growth, prosperity and stability of the egg and poultry sectors.

❒ Fears

A key fear for primary producers was loss of independence, control and choice through the move to corporate consolidation of the egg and poultry sectors. This concentration of food chain components, processing companies and retailers was seen as creating a marketplace in which there is no room for leveraging one's strengths or negotiating terms rather than a marketplace that is open and competitive.

Another fear is that there could be an erosion or loss of the social structure in Canada, particularly in terms of the family farm. This fear is further exacerbated by the reluctance of youth to pursue farming and remain involved as producers.

There is also concern about the effect of globalization on other countries, societies and people, especially developing countries. Globalization was seen as potentially increasing gaps between individuals, groups, regions and countries. Similarly, there are potential risks to the environment, sustainability and biodiversity as the result of globalization.

❒ Aspirations and Opportunities

At the same time, there is a feeling of anticipation and excitement about globalization, the bio-economy and opportunities for new markets. Biotechnology is seen as providing tools to improve the quality of poultry and egg products by reducing the use of pesticides and antibiotics throughout the production cycle – addressing a key concern of consumers for safe, quality, antibiotic-free product. Other benefits of technology include improved communication, which will facilitate the sharing of information, the building of relationships and the education and knowledge exchange that is necessary to continue to increase and enhance the expertise and competitiveness of all members of the chain.

Many of the participants commented that one of the main opportunities presented by globalization is for Canada to be the top, high-end, niche market, quality poultry producer. The industry should not look to compete with Brazil and Thailand, but rather strive to be number one in its competitive niche and not settle for mediocrity. High-end, value-added products should be the goal, aimed at niche markets. Canada already has a reputation for quality and is perceived as a pristine, environmentally clean country. This reputation and image should be exploited to advantage. "Competitive" does not only mean cheap – it means smarter, faster, harder – using these qualities and the tools and technologies available to create and promote a competitive advantage that is recognized and accepted by consumers.

Participants agreed with presenters that the consumer dictates domestic and international trends, and the industry must meet their wants. The consumer is the most powerful non-tariff barrier – the Canadian egg and poultry industry must look after our consumers or someone else will. Food safety is the number one concern of consumers: people would rather have a safe product than a cheap product. Poultry is perceived as having the highest risk of food borne disease of all animal proteins, yet it is also perceived as being the healthiest choice. Industry must manage this paradox.

❒ Role of Governments

Participants' views are that governments' role is not to lead or fix the industry, but to support the industry so that it can operate competitively by providing the tools and resources to survive, grow and prosper. Governments must recognize the complexity of the industry and of globalization issues, and work to become knowledgeable and to share that knowledge with others.

They suggested that the most important role for governments is to ensure that a level playing field is created amongst all countries. For fair trade to exist, there must be full international harmonization of standards for safety and sanitary practices, environmental protection laws, and other rules along with the elimination of trade distorting practices. The goal for WTO should be to establish rules, balance resources and give everyone equal opportunity.

❒ Role of Industry

Perhaps the strongest message from participants was the need for industry to work together. Decisions should be made as an industry, not as separate entities or individual components of the sector, and must include all stakeholders in the chain "speaking with a common voice." The alliances and structures already exist, and these should be used to build partnerships and collaboration. But shared profitability implies shared risk – therefore the establishment of a high level of trust amongst stakeholders across the industry must be a priority. There must be a move away from a "us/them" attitude to a collective "we" approach.

Participants confirmed that the industry must take a lead role on globalization issues and in other areas that affect the profitability and future direction of the sector. For the sector to prosper, an industry strategy should be developed that aims to make the whole chain more efficient; which stresses communication, relationships, and the sharing and exchange of information and best practices; and which facilitates collaboration amongst all stakeholders. A proactive approach is needed – complacency is not an option.

Industry has a role to play in educating the public about food safety, quality, and about biotechnology issues and to encourage Canadians to buy Canadian. Industry also has a role to educate producers, processors, further processors and retailers about innovations and new technologies and opportunities and challenges in order to expand the knowledge base.

In their conclusions, participants felt that it is important that the dialogue continue and that the complexity and different perspectives of the issues be examined and communicated to all involved. A long term export strategy that seeks to build further processed markets, promotes quality through structured safety programs (record keeping, HACCP, education, etc.) and adds value and innovation in a way that ensures the sharing of profits and benefits throughout the chain should be the collective goal of the Canadian egg and poultry industry.

Questions Arising

Following the discussion of reactions, participants were asked to identify the questions which they want answered. Four common questions were raised. They are clearly aligned with the discussion of fears and opportunities.

- The first question is the most fundamental. It was raised at every session. It asks how as an industry we reconcile participation in an increasingly global environment with the retention of supply management. This is clearly the question which would be at the heart of any industry strategy.

- The second question concerns how producers and other stakeholders will share in the profits and gains from innovation in products, markets, marketing, genetics, etc.

- A third question concerns the social implications of globalization especially for rural communities. Related to this is the question of which farm production model is desired for the future, i.e., the corporate vs. the traditional family farm.

- The final question concerned the continuing commitment of federal, provincial and territorial governments to current government policies regarding supply management.

CONCLUSION

Through the presentations offered and lessons learned, the National Farm Products Council and Forum participants can now see Canada's place in the world with greater clarity and insight.

Canada's poultry and egg industries are well positioned for the future. A generation of solid industry leadership and government policy support has created a profitable industry that provides world class product. Moreover, Canada's system of supply management has evolved in its service to both stakeholders and consumers.

However, Canada's poultry and egg industries cannot sit idle and expect the status quo to remain. The global context presents both threats and opportunities. Threats related to time sensitive issues such as demographics and the aging of our producer and industry base of human resources. Social issues related to land stewardship, corporate trust, water, air and soil quality. Innovation issues related to the commercial application of new knowledge to economic uses. And competitiveness issues related to maximizing the revenues and profitability of all parts of the supply chain.

For their part participants were of mixed minds: enthusiastic about the opportunities; fearful about how to reconcile supply management with these trends; and uncertain about the trust levels needed for stakeholder collaboration.

For its part, the Council has achieved its goal – to build awareness of global trends and to stimulate dialogue on their implications for Canada.

The task now turns to industry to decide which elements of this discussion and of the prescription merit further consideration and how might they work in collaborative ways.

Clearly, this Forum has only been one step in a much larger process of continuing industry evolution. But hopefully, for the men and women who participated it will prove to have been a useful and informative step, and one which will continue to help them shape their plans for the future success of these important industries.

GLOBAL PERSPECTIVES ON DEMAND AND SUPPLY FOR POULTRY PRODUCTS

PART TWO

GORDON BUTLAND, SENIOR VICE PRESIDENT, RABOBANK INTERNATIONAL

A key note for the Forum was the presentation by Gordon Butland on the dynamics of global demand and supply for poultry products. In developing this theme, Butland traced the growth in the industry over the past 20 years and examined the macro factors associated with current and future growth as well as the micro factors related to the competitiveness of nations and companies. This Part of the report presents a summary of Mr. Butland's presentation. Please note that all charts and graphs (with the exception of Canadian data in Chart 19), are provided by Gordon Butland. The charts were as of Fall 2001.

Looking Back – Growth in the Poultry Industry

Chart 7 situates poultry and egg production in the larger context of production of animal protein. At present, milk is by far the largest type of animal protein consumed around the world. The dairy industry is twice as big as all the animal protein and egg combined.

PRODUCTION OF ANIMAL PROTEIN IN MILLIONS OF METRIC TONNES

	WORLD	CANADA
DAIRY	568	8
ALL MEATS	233	4
EGGS	55	0.3
FISH	120	0.3
POPULATION	6 056 M	31 M

CHART 7

Focussing in on meats, Butland described how its consumption changed over the past decade. As Chart 8 illustrates, the world consumption of meat grew by 30.7%. During this period, the mix of meats has changed dramatically: per capita consumption of beef has declined, pork has increased by 13%, while poultry has grown by over 40% per person worldwide.

GROWTH IN WORLD CONSUMPTION OF MEAT

METRIC TONNES MILLIONS	1990	2000	GROWTH %	% CHANGE IN PER CAPITA CONSUMPTION
BEEF	53.4	57.2	7.1	-7
PORK	69.9	90.9	30.0	13
POULTRY	40.9	66.5	62.6	41
TOTAL	**164.2**	**214.6**	**30.7**	**14**

CHART 8

Chart 9 illustrates changes within the poultry industry mix itself. Overall, proportions remain relatively constant with slight transfers from turkey to ducks and geese.

THE POULTRY MIX IN LAST DECADE HAS SEEN LITTLE CHANGE ...

PRODUCTION METRIC TONNES 000	1989	% of TOTAL POULTRY	2000	% of TOTAL POULTRY
CHICKEN	35335	86.5	56877	85.6
TURKEY	3703	9.1	4827	7.3
DUCK	1171	2.9	2809	4.2
GOOSE	616	1.5	1946	2.9
TOTAL	**40825**	**100**	**66459**	**100**

CHART 9

As Chart 10 demonstrates, all segments of the poultry industry have seen significant increases over this decade.

BREAKING DOWN POULTRY ...

	% GROWTH 1990-2000
CHICKEN	61
TURKEY	30
DUCK	66
GOOSE	356
TOTAL POULTRY	63
TOTAL % INCREASE IN POPULATION	15

SOURCE: FAO

CHART 10

Geographically, the change is even more pronounced. Most of the increased consumption has been concentrated in China and South America. Per capita consumption in North America and Europe has seen only modest increases.

The Present Outlook for Global Demand and Supply

Against this background of changing consumption levels and protein preferences, Gordon Butland went on to describe the current outlook of global demand and supply.

Demand for poultry and egg products in the form of fresh food products is largely a function of three variables:

- Demographics – more people eating poultry;
- Per capita consumption – which in turn is a function of income and purchasing more animal protein; and
- Preference for poultry, which is driven by pricing, economics, culture, religion, health concerns and, in the developed countries, marketing and packaging.

Each of these points is developed in more detail.

❒ Demographics and Population Growth

The United Nations and the U.S. Census Bureau predict that over the next 50 years, the world population is forecast to increase by 50% or 3 billion, of which nearly 80% will be in Asia and Africa. Within Asia, the population of the Indian sub-continent (India, Pakistan, Bangladesh) will pass the 2 billion mark.

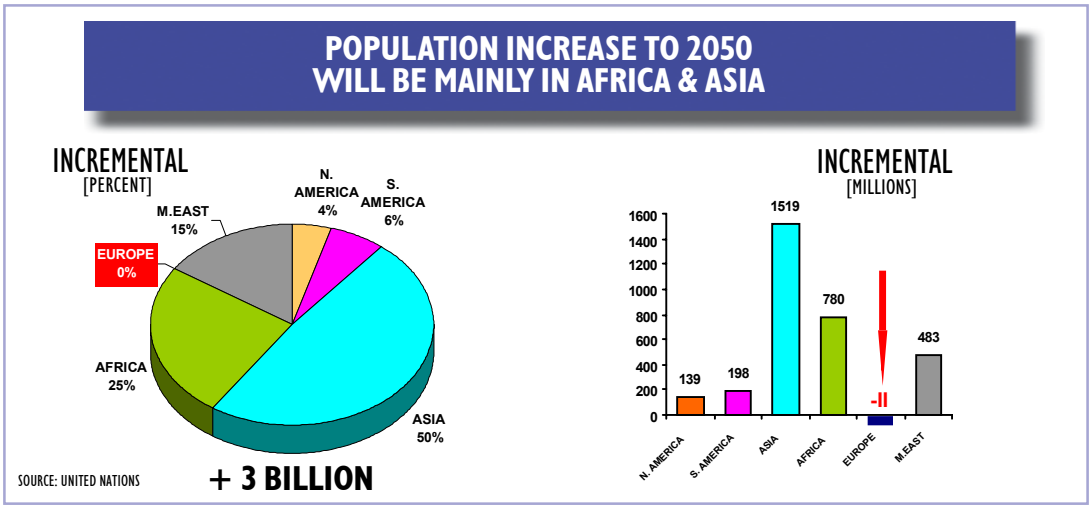


CHART 11

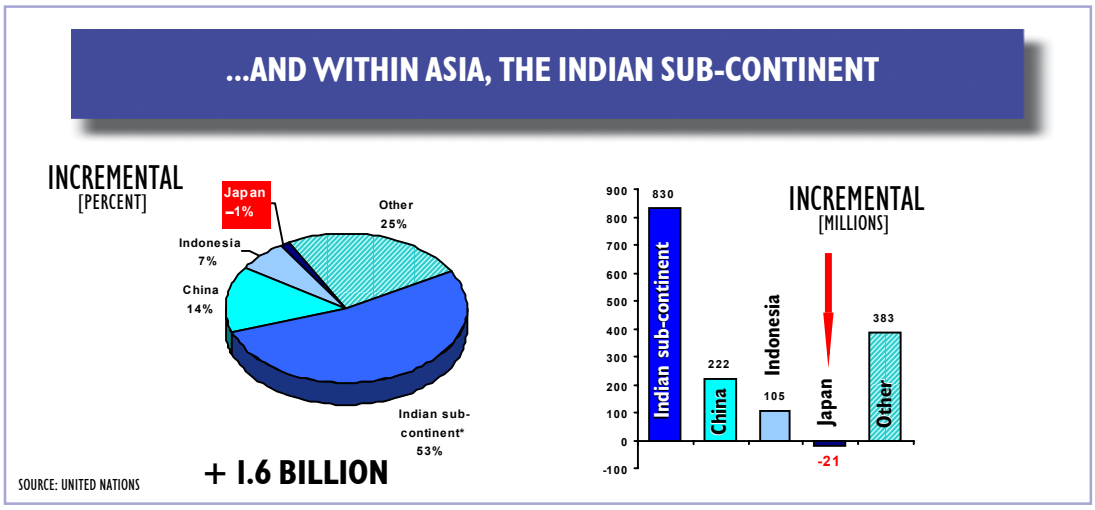


CHART 12

By contrast, the European, Japanese and former Soviet Union populations are expected to decrease. These are the three major importing areas of poultry products, representing 40% of all poultry imports. The world's largest exporters, Thailand, Brazil, and the U.S., are all heavily dependent on exports to these areas. These exporting nations may experience difficulties over the coming years as importing markets decline, while growth markets are increasingly supplied by local production.

Linking these population trends to production, as more of the world's population will be classified as undeveloped, more whole birds produced closer to the consumer, rather than chicken parts/processed poultry, will be the segment with the fastest growth. **This is consistent with the global trend that poultry is largely supplied by the domestic market** – see Chart 13.

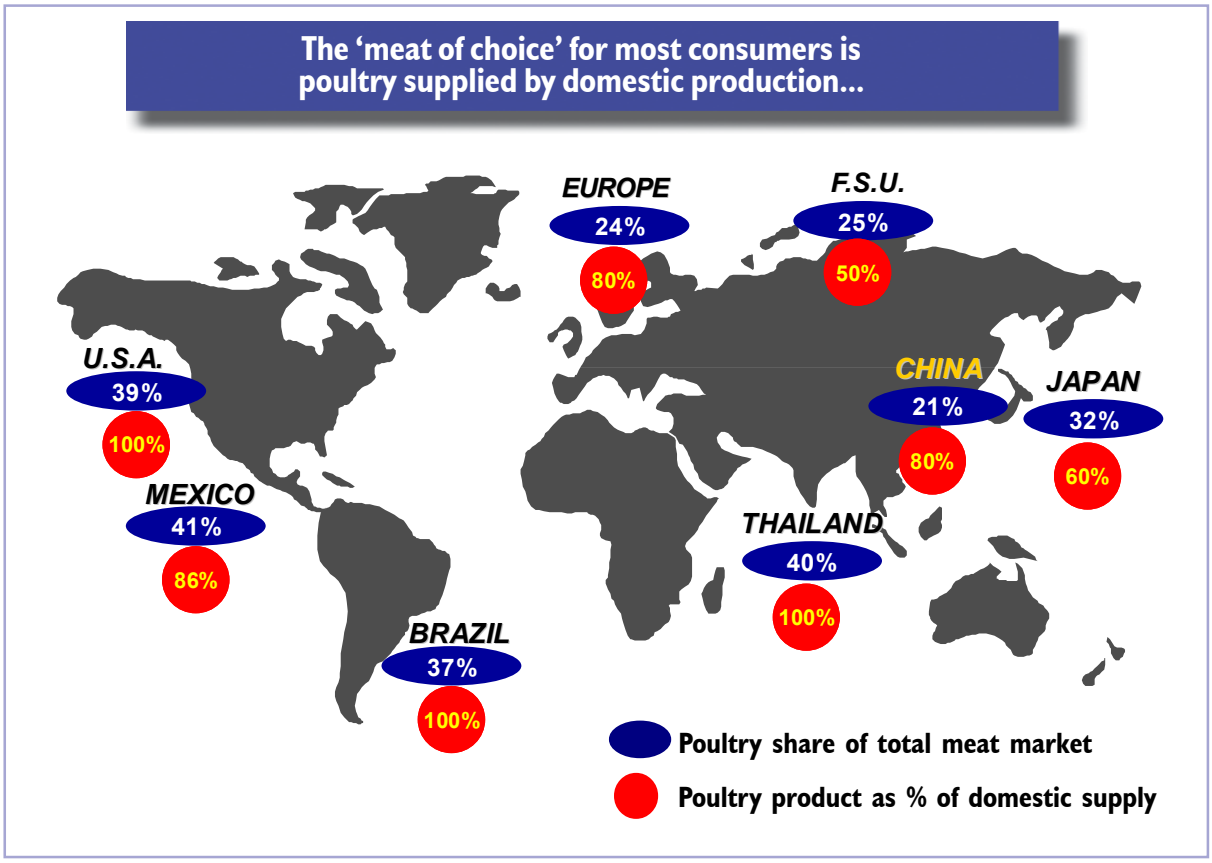


CHART 13

With respect to growth, it is unlikely there will be significant increases in per capita meat consumption in either North America or Europe. There has already been a decline in Europe, which will probably accelerate after recent events with foot and mouth and mad cow disease. In these developed markets, **poultry will have to capture market share from the other meats by capitalizing on the health issues and offering more choice**.

So where is the future growth going to be? There is still room for growth in South America and China. Rather than a large boom, slow and steady growth is predicted over the next decade.

A final trend of note is that world trade in poultry products represents less than 10% of production. And with the exception of the large exporting countries, this is largely the norm. **The conclusion overall is that poultry demand on a global basis is largely satisfied by the domestic market.**

Exports are usually used to balance the exporter's domestic market by shipping to countries which balance their market on the import side. The goal of maximizing revenues is to ship surplus domestic product (e.g., lower valued dark meat) to markets where this product has a premium, e.g., Asia and South America.

While the future of supply is impossible to predict, Butland suggests that balance on a world scale depends on the policies and industry development in four countries: China, India, Indonesia and Brazil.

- China, with a population of 1.2 billion, has a relatively low per capita consumption of poultry at 9 kgs. With population growth and rising incomes, meat consumption is expected to increase, with poultry at an even higher percentage gain. The key question is, will the government make significant grains available to expand the domestic livestock market and to expand exports?

CHART 14

CHINA

- Population 1.2 billion
- Low per capita at 9 kg.

Resumption of exports of breast meat to Europe but this is limited as market hotly disputed by Brazil, Thailand and Hungary. Therefore growth has to PRINCIPALLY target domestic market, with exports taking advantage of low cost/ volume activities.

- India is the last great frontier to be explored by the poultry industry. One billion people and moving rapidly toward 2 billion, with per capita consumption of meat at less than 1 kg. However, growth in production will be constrained by the poor infrastructure and food distribution system and it is difficult to form a large supply base quickly. Unless infrastructure improves, it will be very difficult to meet demand.

CHART 15

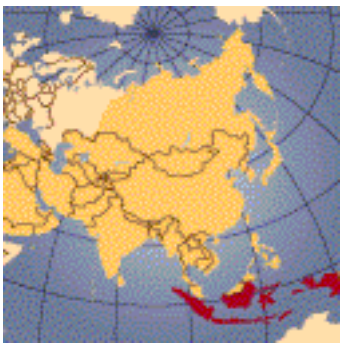
INDIA

- Population - 1 Billion — Growing rapidly
- Difficult to form large suppliers quickly
- Poor infrastructure
- No distribution system

Will capital and infrastructure be available to develop a significant local industry rapidly to meet the potential demand in the near future?

- Indonesia has a population of over 200 million, of which 85 % are Muslim. The per capita consumption of meat – less than 4 kgs – could develop although the political situation and potential lack of expansion capital are the current constraints.

CHART 16



INDONESIA

- Population – 206 Million
- 85% Muslim
- Per Capita 3 – 4 kgs.
- Market is Feed/Day Old Chick driven
- 90% wet market

Where will capital come from for new capacity?

- Brazil sits in contrast with the three other nations. It too will have population growth to support a domestic market, but its expanding grain belt is providing a significant cost advantage for production of high quality product for export. A mature industry, with strategic links to Europe, Brazil is the second largest exporter of poultry products after the U.S. and is positioned to be a key factor in the global trade arena.

BRAZIL

CHART 17

- Population 175 Million
- Per Capita 26.8 kgs.
- Market is Feed/Day Old Chick driven
- 90% wet market

Will Brazil continue to expand poultry exports, and if so to which new markets as traditional markets of Europe and Japan decline?

❒ Income and Consumption Levels

The second factor which affects global demand and consumption of animal protein is the level of disposable income. Around the world, the consumption in animal protein is very closely correlated to GDP and to disposable income. Chart 18 presents a simplified model of consumption levels. Simply put, as incomes rise, populations move to the next level.

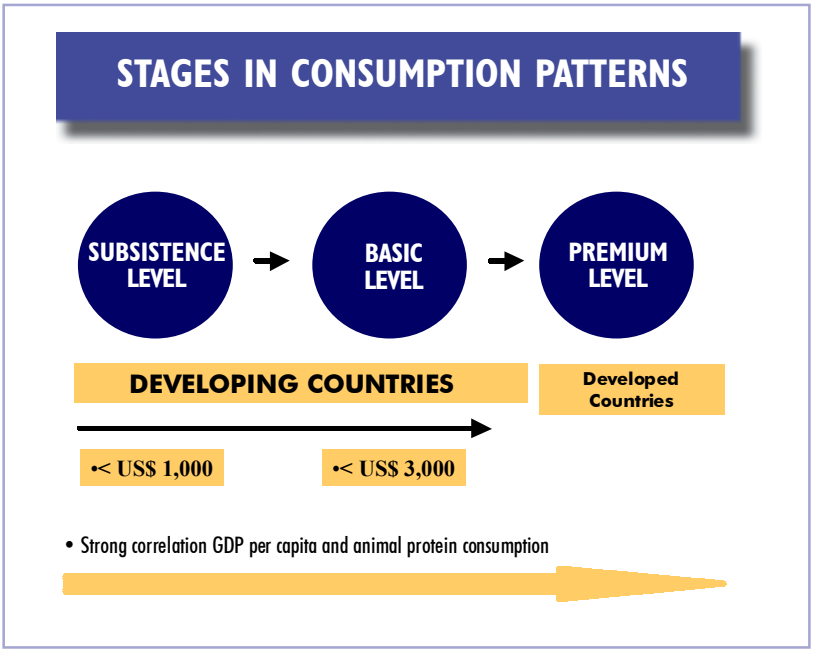


Chart 18

For example, over the last decade, the big jumps in production and consumption around the world have happened when a large part of the population shifts from one income level to another. One example of this is China, which experienced a population shift from rural to urban, increasing the GDP and meat consumption. In Brazil, although the GDP did not increase, in 1994 overnight there was a change from 50% a month inflation to 10% a year inflation. Without any income increase, Brazilians suddenly had more purchasing power. The consumption of most food products jumped by 15% in the first six months.

The reverse scenario is also possible. In the Soviet Union, food consumption dropped 60% over the last decade as people became poorer. In Indonesia the currency was devalued in the Asian economic crisis. As people were forced back to a subsistence level, consumption of food products dropped by 70% over three months. Identifying these shifts is important when we look at the future.

The prospect of rising incomes in Asia is daunting for supply capacities. As John Oliver observed, if one considers the world population where it is today, 6 billion plus, and the demand for animal protein in Asia rises to 50 kgs plus per capita, production will require between 2 and 2 ½ times the amount of farm land that exists in the world today. This has major implications for production growth in developing countries as well as for scientific innovation and productivity.

Given this discussion of population growth, incomes and demand, Butland concludes that nations must understand their target markets extremely well and develop appropriate strategies. For countries like Canada, this means two fundamental conclusions:

- First, the primary market is the domestic market – exports are only a topping up of this market.
- Second, consumer income levels will dictate their preferences and hence business strategy. The low per capita income consumer buys local, fresh, whole birds, on price. The high per capita income consumer will buy on variety, value added, packaging and marketing.

❒ Domestic Consumer Preferences

The third demand factor is consumer preference. As indicated in several parts of the Butland presentation, domestic consumers worldwide have certain preferences that are frequently best understood or responded to by domestic industries. The dominant factor is fresh product, or in some regions, live product. Notwithstanding that consumers may freeze the product at home, the preference is to buy fresh. Beyond that, skin colour, size, and taste are key product factors as are preferences for packaging (no water or blood), appearance (absence of bruises), specific cuts, religious protocols (Halal) and so on. Butland argues that knowledge of and responsiveness to consumer preferences is the most important strategy to protect domestic markets and to increase market potential both domestic and export.

Competitiveness – Managing Both Revenue and Expenses

Another sub-theme developed by Butland concerns the competitive factors which determine where individual countries will fit into the global trade dynamic. In this connection, Butland described three factors of competitiveness: structural, transitory and performance.

❒ ***Structural factors*** would include the availability and cost of factors of production including costs for day old chicks, costs for grow out and processing costs. Within these, feed costs and processor labour are the dominant structural costs. Freight and tariffs round out the picture for exporting countries. Butland encourages countries to know these costs as well as those of competitors in order to understand competitive advantage on a regional basis.

Butland illustrates this point with two charts. Chart 19 presents the cost of grain, soybean meal and processing labour for Brazil and Thailand – two dominant exporters, each with a low cost competitive advantage: grain for Brazil and labour for Thailand. He recommends that Canada or any country should know these costs for itself and its would-be competitors. Chart 20 indicates which countries have the greatest cost advantage for poultry parts.

KEY STRUCTURAL FACTORS

	BRAZIL	THAILAND	CANADA
GRAIN US$/MT	<80	105	93
SOY BEAN MEAL US$/MT	180	>200	209
PROCESSING LABOUR US$/MONTH	350	120	>1000

CHART 19

REGIONAL COMPETITIVE ADVANTAGES COMING FROM PRICES AND COSTS...

PRODUCT	MOST COMPETITIVE (FOB)
WHOLE BIRD	BRAZIL
BREAST	THAILAND/BRAZIL/CHINA/HUNGARY
BONE-IN-LEG	USA
ADDED VALUE (Shaslick/Yakitori)	THAILAND/CHINA

CHART 20

❒ ***Transitory factors*** include weather and other variables which are outside individual control. Little can be done about these factors, but again they need to be understood relative to competitors. They may require risk management strategies to mitigate impacts.

❒ ***Performance factors*** at the production level include those relative to feed conversion ratios and mortality. Here producers are largely input purchasers, therefore management and technology will be key factors affecting feed conversion and mortality. The most important decision at this level is the choice of genetics as this defines the maximum potential not only of production, but the entire supply chain as well.

At the processing level, performance centres on how both revenues and costs are viewed and managed. Butland states that in most instances, firms manage their costs well. However, cost management is only one dimension of productivity. From an overall profitability perspective, Butland argues that firms need to manage the revenue side to ensure that maximum revenue is derived from the individual unit of production (bird, egg) as well as from the supply chain as a whole.

With these three factors in mind, the competitive opportunities lie in four areas:

1 The first is to create a competitive advantage on the revenue side. This requires an understanding of the revenue accounting of the whole bird. Too often companies and countries focus only on the high value part of the product for the domestic market and "dispose" of the balance on the export market. Chart 21 presents the chicken example with the highest global market values. This has implications for how firms manage the product mix given that each part is a different product with different markets, different consumers, different prices, etc. Typically not enough attention is given to this. Any success to increase values of by-products or meat will have an immediate and significant impact on margins.

MAXIMIZE SALES VALUE FROM SUM OF ALL PARTS OF THE BIRD...

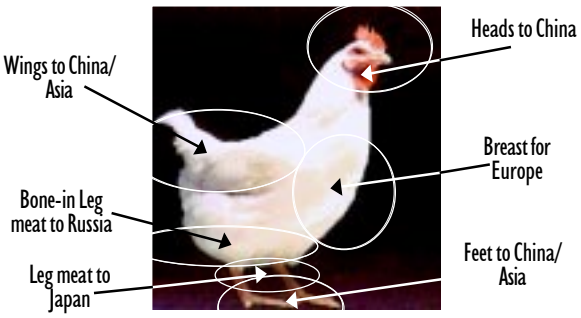


CHART 21

2 The second opportunity lies in adding value to the food product through innovation at the processor and further processor levels such as cutting, marinating, sticking, retail packing, cooking, etc.

3 The third opportunity is to integrate the chain in order to reduce or remove systemic costs and to optimize the value of the genetics throughout.

4 The fourth is to understand the demographics of the domestic market. In Canada's case, Butland refers to the growing immigrant market. It requires research to know this market. Immigrants typically begin consumption at the subsistence level but quickly shift to higher animal protein consumption with rising income. And given the ethnic origin of immigration, it is a ready market for dark meat targeting. For example, in 2000, 44% of immigrants to Canada came from China, the Indian sub-continent and the Philippines.

With these opportunities come certain cautions:

- **Know your competition as well as it knows you.**
- **Understand that the natural limit to production is the profitable sale of product not sold in the domestic market.**
- **Bulk exports will entail risks that don't exist in the domestic market – transportation, spoilage, cancelled orders of custom product, length of time at sea, etc.**

With these views on performance and competitiveness in general, Butland concludes by encouraging firms to select their optimization strategies well, based on structure, revenue from whole product and target markets. For example, will the company compete with other companies which produce and trade commodities, typically fresh or frozen? Or will it compete with those which produce and trade in value added commodities, typically aimed at mature, developed-economy markets?

In the last part of his presentation, Butland discussed who the winners and losers would be in the future. These views and his suggestions for Canada are included in Part One of this report (pages 16-17).

CONCLUSIONS OF GLOBAL OUTLOOK ON DEMAND AND SUPPLY

To conclude on this theme, the global market for most food consumption will grow dramatically with population growth and rising incomes over the next two decades. Canada will need to understand its competitive position and adapt strategies to maximize growth and value in the domestic market first, and to shape export strategies which are incremental to the domestic market and which focus on markets where Canada has a competitive cost, quality and value advantage. The final point is that the best non-tariff barrier in the world is the consumer who prefers local, fresh product.

SPEAKERS' BIOGRAPHIES

The Council was fortunate to have the involvement of 11 keynote speakers whose focus and qualifications were well suited to the Forum objectives. The Forum on Global Awareness included speakers from Canada, Asia, Central and South America, as well as Canadian political and business leaders. These presenters shared perspectives which were fresh, innovative, outward looking, in sync with today's world but poised for tomorrow's opportunities. Their ideas and insights stimulated participants to think in new ways about their industry.

Brief biographies for each speakers are provided below. For their presentations, access the NFPC website – www.nfpc-cnpa.gc.ca.

Gordon Butland, Senior Vice-President, Poultry Sector, Rabobank International

Gordon Butland joined the Bata Shoe Company in 1958, specializing in plastics technology. In 1966 he moved to Brazil, holding a series of senior financial positions including CFO for the Coca-Cola Company in Latin America.

In 1989 Mr. Butland began advising Rabobank on the poultry sector. Since moving to Thailand in 1998, he has participated in poultry projects in Australia, China, Indonesia, Thailand, Europe, Mexico, Brazil and the USA.

Presentation Highlight: global analysis of demand and supply factors as well as a model for assessing industry competitiveness.

Robert Bertram Church, CM, AEO, PhD, LL.D

Dr. Bob Church is an educator, medical scientist, cattleman and entrepreneur. He is Professor Emeritus in the Faculty of Medicine at the University of Calgary, and president of Church Livestock Consultants Ltd. He also operates Lochend Luing Ranch, near Airdrie, Alberta.

Dr. Church serves as Chairman of the Board of the Canadian Science and Technology Growth Fund and as Chairman of the Alberta Science and Research Authority. Dr. Church is a director of several corporate boards including AVAC Ltd. and CV Technologies Inc. He is a director of the Protein Engineering National Centres of Excellence (PENCE) and he counsels the Government of Canada as a member of the Canadian Biotechnology Advisory Committee.

Dr. Church received his PhD in Animal Genetics from the University of Edinburgh. He is a Member of the Order of Canada.

Presentation Highlight : the need to reconcile the competing interests of consumers and citizens into a coherent innovative strategy that integrates health, agriculture and information technologies.

Richard (Dick) L.M. Dawson, Fulcrum Associates

Mr. Dawson operates Fulcrum Associates, a Winnipeg consulting firm that specializes in international agricultural trade, offering particular expertise in transportation, value-added rural diversification, sustainable development and education. Mr. Dawson's career in agriculture spans more than four decades. He joined Cargill Ltd. in 1958 and retired as the firm's senior vice-president in 1993. His work included assignments in the United States, Europe and South America. He has also advised government trade missions, including the Agricultural Advisory Committee to GATT's Uruguay Round. He is a former chairman of the Winnipeg Commodity Exchange, and has served as a director on the boards of several organizations in agriculture, as well as in the public and volunteer sectors.

Presentation Highlight : the critical relationships of democracy, citizenship, social values and sustainable development to globalization and trade, and the implications for Canadian agriculture.

Joyce Groote, B.SC., M.SC., MBA

Joyce Groote, the President of Crossing Sectors Inc., established and provided leadership for five organizations, including BIOTECanada, a national biotechnology industry association. She has also chaired an international industry coalition representing 2,200 companies from 130 nations in the human health, agri-food and forestry sectors to negotiate with the United Nations. She participates in several federal government advisory boards and organizations including two Scientific Advisory Groups for International Trade (Medical and Health Care Products and Services, and Agriculture)

Ms. Groote was the first scientist to clone a gene in a tree. She developed an in-depth knowledge of biotechnology in a 20-year career in university, government, not-for-profit and private-sector organizations.

Presentation Highlight : biotechnology, the advances of science and the challenge of commercialization.

Hon. David Kilgour, P.C., M.P., Secretary of State (Latin America and Africa)

David Kilgour has represented an Edmonton riding in the House of Commons since 1979. He has been Parliamentary Secretary to four Ministers, and served as Deputy Speaker before joining Cabinet in 1997. He has authored three books: Uneasy Patriots: Western Canadians in Confederation; Inside Outer Canada; and Betrayal: the Spy Canada Abandoned.

Presentation Highlight: Canada's interests in Latin America for trade, democratization, capacity development and peaceful growth in the hemisphere.

Gerardo Lopez-Noriega, Co-ordinator in Mexico's Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food

Gerardo Lopez-Noriega has worked closely with free-trade agreements including NAFTA as well as Mexico's trilateral negotiations with Colombia and Venezuela and its bilateral negotiations with Costa Rica and Bolivia. He has worked at the Mexican Secretariat of Agriculture since 1991 and this year became co-ordinator for the Secretariat's export development sector. From 1994 to 2001, Mr. Lopez-Noriega served at Mexico's embassy in Canada, first as Counsellor of Agriculture and later as Minister for Agricultural Affairs.

Presentation Highlight: Mexico's strategy in one of the fastest growing agricultural sectors both for domestic supply and downstream for export.

Gaétan Lussier, Consultant

Gaétan Lussier, B.Sc., M.Sc., D.Sc.O.C., brings a vast experience related to food manufacturing, both in the public and private sectors. Half of his career was as Deputy Minister of Agriculture, both in the province of Quebec and in Ottawa. He was also Deputy Minister of Employment and Immigration and President of the Unemployment Insurance Commission.

In the private sector, he was President of Weston Bakery's Quebec operation and President and CEO of Culinar Inc. During that period, he was also Chairman of the Food and Consumer Products Manufacturing Association. He now sits on various boards of companies with interests in biotechnology and food services. Mr. Lussier is also President of his own consulting company, specializing in market development in the food sector.

Presentation Highlight: the opportunities for Canada emerging from population growth, wealth transfer, and the advent of the bio-economy.

Hon. Frank McKenna, P.C., Q.C.

A lawyer, politician and businessman, Frank McKenna was a member of the New Brunswick legislature from 1982 to 1997. He became leader of the provincial Liberal party in 1985. He was Premier from 1987 to 1997, when New Brunswick achieved fiscal responsibility, cut unemployment, and adopted the entrepreneurial attitude that continues to drive its growth. Mr. McKenna practices law at McInnis Cooper. He holds corporate directorships at the Bank of Montreal, Noranda, Major Drilling Group International, and Acier Leroux.

Presentation Highlight: the intractability of globalization and Canada's plan in the world will depend on its ability to know and capitalize on its industry.

John Oliver, President, Maple Leaf Bio-Concepts

John Oliver joined Eli Lilly in 1965 and became Vice-President in 1976. In 1989 he became President of DowElanco Canada, a joint venture formed by Eli Lilly and Dow Chemical to research, manufacture and market crop protection and plant biotechnology products.

Mr. Oliver is the founding member of the Canadian Agri-Marketing Association, and past chairman of the Crop Protection Institute and the Canadian Animal Health Institute. He is a member of the Agricultural Institute of Canada, the Board of Governors of the University of Guelph, and several corporate boards. He has been consulting on biotechnology and public affairs since 1997.

Presentation Highlight: innovation and agriculture's key role as a platform for the bio-economy.

Juan Miguel Ovalle, President, National Poultry Association, Chile

Juan Miguel Ovalle is an economist at the University of Chile. He is President of the National Poultry Association and a member of the board of the National Pork Association. He is also a counsellor of the Board of the National Agro-Industrial Association and Vice-President of the Latin American Poultry Association.

Presentation Highlight: the aspirations of the Chilean industry for domestic supply, quality improvement, trade access and niche export marketing.

Dr. Alan Wildeman, Vice-President (Research), University of Guelph

Dr. Alan Wildeman was appointed Vice-President (Research) of the University of Guelph in July 2001. He earned Bachelor and Masters degrees from the University of Saskatchewan, and subsequently a PhD. in Genetics from the University of Guelph in 1982. Following postdoctoral work in France, working on DNA tumour viruses, he returned to the University of Guelph in 1985 to take a faculty position in the Department of Molecular Biology and Genetics. He held an NSERC research chair in animal biotechnology from 1987 to 1997. In 1995, he became a full professor, following a year's leave to work in Germany. He was appointed Director of the Food System Biotechnology Centre of the University of Guelph in 1999, a centre that coordinates and supports agri-food research and private sector partnerships in plant and animal biotechnology. Throughout his career, he has maintained research interests in cancer cell biology and on applications of animal transgenic technologies in agriculture.

Presentation Highlight: a model of the life sciences economy, the opportunities it will generate, and the challenges to be overcome by agriculture.

RESOURCES FOR INFORMATION

Agriculture and Agri-Food Canada Online
www.agr.ca

Agri-Food Trade Service
http://atn-riae.agr.ca

AgriWeb Canada – Directory of online resources in Canadian agriculture and agri-food
www.agr.ca/agriweb

Alberta Innovation and Science
www.innovation.gov.ab.ca

Alberta Science and Research Authority
www.asra.gov.ab.ca

AVAC Ltd.
www.avacltd.com

BIOTECanada
www.biotech.ca

Canadian Agri-food Research Council
www.carc-crac.ca

Canadian Broiler Hatching Egg Marketing Agency
www.afns.ualberta.ca/bbo/6/6.asp

Canadian Egg Marketing Agency
www.CanaaEgg.ca

Canadian Science and Technology Growth Fund
www.cstgf.com

Canadian Turkey Marketing Agency
www.canadianturkey.ca

Chicken Farmers of Canada
www.chicken.ca

Fulcrum Associates
www.fulcrumassociates.com

Industry Canada
www.ic.gc.ca

InfoExport Canada (The Canadian Trade Commissioner Service, Department of Foreign Affairs and International Trade)
www.infoexport.gc.ca

Information about Chile
http://www.usembassy.cl/chile.htm

Inside Trade (World Trade Online)
http://insidetrade.com

International Agri-Food Network
www.agrifood.net

Mexico Online
http://www.mexonline.com

RaboBank
www.rabobank.com

Science in Agriculture/Life Science
http://www.atn-riae.agr.ca/science/life-e.htm

Sustainable Agri-Food Production and Consumption Forum
www.agrifood-forum.net

University of Guelph
www.uoguelph.ca

US Department of Agriculture – Foreign Agriculture Service
www.fas.usda.gov

World Trade Organization
www.wto.org