Economics & Competitiveness

Alberta
AGRICULTURE, FOOD AND RURAL DEVELOPMENT

Economics Unit

A Review of the Competitive Position of Alberta's Primary Beef Production Sector

Economics & Competitiveness Division
Alberta Agriculture, Food and Rural Development

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Foreword & Acknowledgments

Preparing a comprehensive review of the global beef complex represents a significant challenge. In order to give a full appreciation of the breadth of the business world-wide, and an understanding of our industry's role in it, all of the key elements needed to be brought together and put into context under the same cover.

We embarked on this project full of energy and enthusiasm. We were armed with our knowledge, experience and the strength of industry consultations that could, with a bit of effort, be translated into a valuable reference source. Our intention as well was to stimulate critical thinking and action on the part of producers, industry organizations and governments alike.

The breadth of this document is reflected in the listing of project contributors. Many individuals have contributed to bringing this project to fruition. I would like to acknowledge the time and effort of the following staff from Alberta Agriculture, Food and Rural Development, Alberta Economic Development and Agriculture and Agri-Food Canada:

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While each of these individuals has contributed to this project in some way, large or small, the responsibility for the conclusions drawn, based on the input and information available, rests with the primary author.

My thanks to you all.

Dale A. Kaliel
Sr. Economist: Production Economics

2001 Premier's Award *of* Excellence

Executive Summary

This is an extensive document, covering beef industry structure and performance in some depth. As such, this Executive Summary is designed to introduce the context of the study and deliver a thumbnail of the key observations and conclusions drawn.

Study Context (Section 1: Introduction)

! The beef industry is at a crossroads. Consumers are demanding an increasing variety of safe, nutritious, convenient and consistent foods. The public is demanding, in a somewhat nebulous fashion, that agricultural producers be responsible stewards of the resources in their control. Beef production margins are generally declining. In order to maintain its competitive position in global beef markets, the Alberta industry will have to keep pace with the economic evolution occurring world wide.

! The intent of this project is to add to the knowledge set of beef industry participants by providing information on Alberta's current industry status relative to other global beef industry participants. This information and analysis will complement the knowledge of individual producers and provide insight for consideration in their short and long term planning and decision making.

! Project objectives revolve around providing information and analysis regarding industry structure, resource use, production, consumption, trade, market fundamentals, and key industry issues, all funneling to an assessment of Alberta's competitive position relative to a group of significant global beef producing regions. Countries selected as comparators include Canada (with specific reference to Alberta and Western Canada), the United States (with attention given to specific state groupings), Brazil, Argentina, Uruguay and Australia. These countries are referred to as the "Focus-6" (Foreign Other, Canada and the United States).

Key Observations and Conclusions (Section 7: Overall Assessment and Conclusions)

! At present, the primary Alberta beef industry is relatively competitive with its global peers. The perception of a threat from "low cost" countries does not take into consideration the evolving divergence of "commodity vs. product" producing regions.

! Looking forward to the future, the pace of change in the industry will quicken. This will involve changes throughout the primary and secondary levels in terms of:
  < how products are produced and moved through market channels,
  < the technology and business management skills required by primary producers to stay on the leading edge of unit production cost control,
  < how primary producers work together to attain unit cost efficiencies,
  < how primary producers work together, and with upstream clients, to attain value chain efficiencies and a product focus,
  < the relative importance of research, technology development, business knowledge and skills, and
  < investment and infrastructure development throughout the industry.

  Intensive production oriented regions will evolve to service higher-valued product-based markets. Extensive production oriented regions will generally evolve to fill the more generic commodity beef markets. This differentiation is not intended to imply that one approach is superior to the other. From a broader perspective, it does imply a rational approach to more efficiently meeting the needs of consumers.

- A "Conceptual View of Beef Production and Marketing Systems" describes the evolving roles of extensive vs. intensive production systems in adapting to the notion of beef as a commodity vs. specific beef products. Product-oriented production and marketing channels can be viewed as a series of focused production chains, or distributions, containing:
  - groups of efficient producers with focused products,
  - integrated information value chains,
  - integrated, efficient and consumer-driven product streams, and
  - (relative) premiums for delivering products with specified attributes.

  Commodity-oriented production and marketing channels can be viewed as one broad undifferentiated production chain, or distribution, which the market place can access to meet its further value-added and/or processing needs. This distribution has no definable premium structure and as such specifically requires lowest unit cost sources.

- North America is at a vulnerable stage in moving to a product vs. commodity emphasis. To slide back now to a commodity orientation would put the industry in direct competition with South America and, to some extent, Australia. The structure of the North American industry and its prevailing unit cost structures would not support this movement.

- While there is considerable concern regarding South America as a potentially significant competitor to Canada and the U.S. in global beef markets, because of the predominance in servicing commodity markets, this concern is currently not as great as it is perceived. However, Australia, with its emerging cattle feeding industry and substantial inroads in existing value-based markets, should be viewed as a real and imminent threat.

- Developed nations and mature industries re-invest in themselves. For the Alberta, and North American beef industries to maintain their competitiveness, the pace of:
  - production and economic research and technology development,
  - business management skills extension,
  - adoption of innovative business arrangements, and
  - consumer preference and product development research

  must be quickened. To stay at today's pace, or to reduce public and private re-investment in these areas at this time, would be equivalent to giving up the current, hard fought competitive edge this region enjoys ... likely forever.

Supporting logic and rationale behind these observations and conclusions can be found in the following "Summary of Findings" section and, from there, the related sections within the body of this report.

Summary of Findings

The Summary of Findings is designed to:

- summarize the detail presented in each of the main study sections, and
- act as a "spring board" into each of the detailed main study sections, following the key observations and conclusions back through to the root information, analysis and logic paths.

The intent of each section is also noted to put context on the summarized findings.

Primary Resource Base (Section 2)

Intent: describe the resources used in primary beef production by the Focus-6 countries, yielding insight into:

- how they produce,
- how big they are, and
- relevance of industry size.

! From the point of view of the resource base employed in beef production, Alberta, and Canada, are small. Compared to the other Focus-6 countries, Canada ranks 5th in terms of cow herd, slaughter volumes and grazing acreage.

! The resource base profiles intuitively advance the understanding that the cost of producing beef cattle, and the associated rates of return on assets, play an important role in establishing a country's competitiveness in the global beef complex. For Alberta to have developed the presence it now has in competitive beef markets, the Province's producers and further processing industries must be reasonably competitive.

! Moreover, by deduction from the resource profiles, size of the industry is important regarding production of a "critical mass of the commodity", sufficient to:

- support internal infrastructure within the region, and
- gain recognition from importing nations as a reliable, longer term supplier.

The combination of an established cow/calf industry, an expanding cattle finishing industry, and relatively new, world scale packing businesses indicate that the Province has developed, and is building upon the critical mass required to be a global player.

! The intensity of production systems employed in each of the regions is generally reflected in their extraction rates (ie. a region's ability to bring slaughter cattle to market relative to the size of its breeding herd). The South American countries employ more extensive production systems (lower animal productivity; higher age at slaughter; lower stocking rates) and this is reflected in their lower relative extraction rates. Alberta, as a sub-region, and the United States, through their higher intensity production systems, have much higher extraction rates and are far more responsive in bringing slaughter cattle to market. Coincidentally, Canada's overall extraction rate is lower than Australia's and modestly higher than Argentina's.

Beef Production, Consumption and Trade / Markets (Section 3)

Intent: describe the linkage between the aspects of world production, consumption and trade, yielding insight into:

- the magnitude of the market,
- the presence and relative importance of the major players, and
- factors that can have short and long term effects on the momentum of established production and consumption patterns and trade flows.

- The U.S. led the world in beef production in 1999 with a share of 24% of the total. Other regions ranked in descending order by share of production are: the European Union (15%), Brazil (13%), China (10%), Argentina (6%), Australia (4%), Canada (3%) and Uruguay (1%). The balance of 24% was produced by the remaining countries.

- World-wide production of fresh, chilled and frozen (FCF) beef has grown from 31.8 mmt in 1965 to 57.2 mmt in 2000. North American production over the same period increased from 10.3 to 15.0 mmt. Similar data sources charted global pork and poultry production rising from 42 to 157 mmt during this time frame.

- Global major meat production (poultry, pork and beef) has grown from 167 mmt in 1996 to 193 mmt forecasted for 2001. In 1999 shares of global meat production stood at 31% for poultry, 43% for pork and 26% for beef and veal.

- On the consumption side, in 1999 the U.S., with 4.6% of the world's population, accounted for roughly 26% of the world's total beef consumption. Canada consumed 2%, the Focus-6 consumed 46.7%, the European Union consumed 15.1% and China consumed 10.4%, with the remaining 28% consumed in other nations. This consumption was driven by population shares of 0.5%, 8.9%, 6.3%, 21.3% and 63.5%, respectively.

- Although the total consumption of beef is important in a broader sense, the characteristics of the products consumed, and the prices paid for them, are of more long term significance to the beef industry. Beef demand is a longer term, more dynamic notion incorporating:
  - drivers of longer term per capita consumption trends (such as tastes and preferences; cultural factors; product acceptance; income levels and distribution; etc.)
  - response to prices of the product and its substitutes, and
  - population.

  These elements focus on beef as a series of specific products as opposed to a generic commodity. The differentiated product vs. generic commodity notion is becoming increasingly important in understanding global consumption patterns and emerging trends.

- World beef import and export statistics relay massive volumes and values of products moving internationally. Although the magnitude of these movements draws the most attention, the global beef trade hinges on:
  - the residual volume of beef available for trade after netting out consumption from available production, and
  - the composition of the products traded in terms of their unit values.

  For instance, the U.S. produces and consumes vast quantities of beef, it's a net importer of beef in quantity, yet its's also net exporter in terms of value. Australia, ranked fourth among the Focus-6 in terms of size of beef herd, leads the world in net beef trade, both in quantity in value. Canada is a modest net exporter of beef in both quantity and value. The differential between average unit export and import values for these countries is quite revealing. The U.S. imports sizable quantities of lower valued commodity while exporting reasonable quantities of much higher valued product. Australia's average export value is much lower, indicating the predominance of lower value commodity exiting the country. Canada's average export and import values are quite close, suggesting a mix of product and commodity moving into and out of the nation. This underpins the notion of intensive production systems supporting the creation of differentiated, higher-valued products for export.

- Longer term projections of volume-based world beef market shares indicate gains on the part of Brazil and Canada. More importantly, the estimates show the U.S. moving from a net import to a net export position by the latter half of this decade. This changes suggests a fundamental shift within global trade and may be interpreted in part as a solidification of the product vs. commodity notion.

- Historically, Australia, Uruguay and Canada lead the Focus-6 with respect to export dependence (the percentage of a country's production that is available for export). Projections for American export

dependence shares emphatically drive home the key notion of the U.S. becoming an even more dominant player in the beef (volume and value) export complex. Projected export dependence shares for the EU shed little promise for a major breakthrough in that market, unless it's on a value basis.

! The implications of export dependence within a country are far reaching. Export dependent countries tend to be more sensitive to their costs of producing the commodity. There is added pressure within export dependent countries to deliver lower cost commodity to remain competitive in commodity-based export markets. Furthermore, if the production and/or productivity growth rate exceeds the population growth rate, export dependence shares advance. This impacts extensive vs. intensive production systems in different manners, but with similar effects.

! Livestock diseases such as FMD and BSE have two major areas of effect. The first is in long term productivity reductions. These have a greater impact on regions with intensive productions systems. The second, and more immediate impact is on the trade front with producing (and in some cases consuming) nations blocking access. The story on major-scale livestock diseases begins and ends with the value of lost productivity. The extent to which countries will go, and the investment they will make in maintaining their disease-free status is directly related to the value of lost productivity plus the economic benefit associated with maintaining their export business. The greater the productivity and second round economic losses, the more stringent "disease-free" status countries will be in maintaining this status.

Market Analysis, Outlook and Export Market Features (Section 4)

Intent: describe the world market and fundamentals, linking the impact of world beef production, consumption and trade to local product values, through a review of:
- < domestic and world beef and meat markets, examining supply, demand and pricing, and
- < selected export markets and opportunities in these markets.

! The outlook for the Canadian cattle industry remains positive for the short term. Record level market prices, driven in part by recent gains in beef demand, should benefit from the reduced beef supplies ahead. In the longer term, these prices will come under pressure from increased supplies once the herd expansion of the next cattle cycle is underway.

! Market fundamentals and an analysis of cattle price-volume cycles suggest a tightening of North American feeder cattle supplies over the short-run as more heifers are diverted from the feedyard to pasture in order to expand beef herds. As calf crops eventually increase, a larger supply of feeder calves will be added to the production mix. The peak in animal production (and the offsetting reduction in prices) is not anticipated for another five to six years.

! Although long term price forecasts are difficult to estimate with any degree of certainty, what is more significant is the general trend in pricing and the ability to identify cost benchmarks to deal with the general price trends that are projected.

! Forecasted growth in the world economy and a more liberalized trading environment should lead to increased global demand for beef, pork and poultry. Growth in meat production will be constrained by lower beef supplies in the short term, mainly from production and trade uncertainties related to disease outbreaks and drought-related impacts on cattle inventories.

! In the longer term, increases in global meat demand will in part be met by increased production from herd rebuilding in the major cattle producing regions of North America and Oceania. World pork and poultry production is also forecasted to rise which will exert more competitive pressure.

! The timing and magnitude of outlook elements will be affected mostly by uncertainty about consumer responses to BSE concerns, a continued and deeper slowdown in the U.S. economy, and the impact these events would have on beef demand. Weaker product demand (in domestic and key export

markets) in the face of rising beef supplies over the next decade would not be supportive to cattle prices. Forecast growth in pork and poultry production will pressure world meat prices and beef market share. Locally, increases to feed grain costs and the reallocation of herd resources will also affect the bottom line for may producers.

! In the longer run, beef operations must achieve some form of competitive advantage - either lower than average costs of production or higher than average market returns - in order to stay profitable.

! As the beef production system becomes more closely aligned with the end consumer, coordination among participants will continue to increase. Moving from a "supply-push" to a "demand-pull" system will have a marked influence on beef cattle producers.

! The world market is becoming increasingly segmented. Strong demand for grain-fed beef among the leading importers, particularly Japan, South Korea and Mexico, should favour higher exports from Canada and the U.S.

! The "Overview of Selected Export Markets and Opportunities" section provides a brief review of issues, concerns and opportunities over the near term in servicing the following priority market areas:
  < Mexico
  < European Union
  < United States
  < Japan
  < South Korea
  < China

Costs and Returns (Section 5)

Intent: describe the relative competitiveness of the Focus-6 countries through a review of:
  < economic and financial performance within each region, in context with the production systems employed in each.
  < a "systems approach" to other considerations affecting the relative competitiveness of countries in beef production.

! Classical competitiveness analysis follows the route of comparing unit production costs. It assumes reasonably comparable industry structure, production systems and products brought to market. There is considerable variance among the Focus-6 regarding these conditions, particularly:
  C the structure of the industries (marketing systems, business infrastructure, regulatory control, etc.) varies widely,
  C production systems ranged from highly extensive to highly intensive, and
  C the range in commodity vs. product orientation covers almost the full spectrum possible.
  Even if full unit cost comparability were possible, the relevance would be questionable. Moreover, assessing the competitiveness of a primary industry (producing cattle) can only be done indirectly by interpreting the manner in which it delivers an array of beef products to the market place.

! The importance of cost competitiveness is more relevant in assessing how an individual or locale performs within a region's (or country's) predominant production system. General cost competitiveness, at the primary level, is necessary at the interface with the global market place. The ability of a region's beef industry, viewed as an aggregate of individual producers, to bring a definable product to the market in a cost-effective manner is paramount. If this is not present, the ability to maintain a reasonable presence in longer term markets for cattle and beef is diminished.

! When comparing production costs between competitive regions, rushing to the conclusion of which nation has the highest or lowest unit cost (either per lb. or per head) can lead to erroneous interpretations. Maintaining strict comparability and reliability regarding economic and financial

information among the Focus-6 group was a challenge. However, sifting through the economic and financial information from these countries did reveal a few substantive findings. Ranging over the full breadth of production systems within the group:

- the extensive producing regions exhibited lower costs per head, but these were also accompanied by lower revenues. There was not as much differentiation in net returns (primary production margins) as might be expected.
- the most significant finding of the economic review was the near identical rates of return on assets across the group. Average returns on assets invested in beef production, ranged in the order of 3% to 5% for 1999.

Alberta, as an element of the Focus-6, can be considered as competitive among its peers. Moreover, from a global perspective, there is a reasonable balance with regard to cost competitiveness, and more importantly, there is a high degree of competitiveness within the Focus-6 regarding returns to assets used in the primary production of beef cattle ... regardless of production systems employed.

! Reasonable cost competitiveness at the primary level within a region can be considered as a necessary condition for longer term participation in global beef markets. However, there are other considerations throughout the "value chain" that can add to, detract from, or overcome minor shortcomings in primary cost competitiveness and affect a regional industry's overall competitiveness at the interface with the global market. For instance:

- infrastructure, information systems and business arrangements can reduce total transaction costs throughout the production system, from "pasture to plate". A trace back and verification system is a key feature to enable these cost savings.
- formal or informal integration throughout the value chain improves the efficiency of translating consumer product needs into secondary and primary industry product traits. Not only is the industry more focused on delivering the products desired by end consumers, but this information is transferred up and down the production chain efficiently.
- a positive policy environment can promote environmentally sound production practices, delivery of "safe" food products, facilitate producer business management and technical skill development, and minimize business uncertainty through non-intrusive, producer-driven regulations.

The Danish pork industry case holds out an example of a target for the evolution of the North American beef industry.

Issues and Opportunities (Section 6)

Intent: describe the myriad of issues facing the Alberta beef industry today in its quest to solidify and expand its position in the global beef complex. Issues are reviewed by broad "focus" area, identifying key areas, observations and opportunities.

Focus on Unit Production Costs

! *Adoption of Management Skills, Information and Technology*: The rate of adoption of management skills, information and tools will have to increase significantly for Alberta to maintain its cost effectiveness at the primary level. An ongoing investment in the development of business management skills, targeted at operations with the long term business goal of economic growth and sustainability, will contribute significantly to the beef industry's prosperity. Key areas include:

- producers are resilient, creative, flexible and, in particular, responsive to improving management skills and information use.
- create a visible linkage between economic and business management research and downstream extension efforts. Public extension services are positioned to effectively create this linkage and are perceived as knowledgeable, unbiased and relevant.

Producers will be better equipped to make better decisions.

- *Research and Development: Production and Business Management Technology*: For the primary beef industry to keep its competitive edge, the pace of production research and technology development will have to be quickened and focused. Moreover, economic and business management information, research and technology development must be enhanced to complement the production side. Key areas include:
  - coupling production based research with an economic evaluation and complementary economic research will expedite the flow and adoption of research and technology, creating production and management efficiencies.
  - integrated beef and forage systems research and technology development, with associated economic analysis and extension, will form the basis for effective long term on-farm resource allocation.

  Information and technology will be available to advance the industry's long term cost competitiveness.

- *Innovative Business Arrangements*: There is reluctance in the industry, based on entrenched business mindsets and/or mistrust, to form business arrangements that effectively reduce unit production costs. Business alliances, partnerships, cooperatives and joint ventures regarding input procurement, asset sharing and focused volume-based marketing hold significant potential for reducing unit production costs.

- *The Beef Production "Dichotomy"*: Primary beef producers are pressured to:
  - match their herds and production systems to the local environment in the most cost effective manner for their farms, and
  - match their products with what consumers, at arm's length, are demanding.

  These can, at times, be perceived as being at odd's. The challenge for beef producers is to turn these potentially opposing pressures into a business advantage. There will be little choice to do otherwise as consumers are focused on food products, not the "commodity", beef.

Focus on Products

- *Products, not Commodities*: The transition from a commodity to a product business approach must be made by individual business and the industry. Targeting the beef industry, at each level of the production chain, to deliver on specific preferences, or requirements of the next successive step in the chain will bring along with it the associated premiums. The direction for the industry will be to import low-valued commodity and direct higher-valued product, produced and/or processed locally, into the domestic and export markets that pay premiums. Key areas include:
  - conscious, strategic alignment of groups of cow/calf and feeder cattle operations focused on meeting the specific needs of the finishing industry. Further development of a forage-based backgrounding component would act as a "bridge" to meet timing, frame and type needs of intensive lots.
  - sufficient slaughter cattle volumes would support differentiation and segmentation, at the packer level, of "carcasses" into "product streams".
  - strategic organization of the production chain to deliver specific product, packaging and portion traits.
  - consumer product development, linked to associated product research, keying in on traits, markets and branding schemes.

  The focus will be on producing what the next leg of the production chain, ending with the final consumer, demands.

- *Innovative Business Arrangements*: There is reluctance in the industry, based on entrenched business mindsets and/or mistrust, to develop business arrangements that enhance the ability to meet specific client needs throughout the value chain. Business alliances, partnerships, cooperatives and joint ventures linking specific product needs regarding input specifications, down-stream client needs, strategic information sharing, and focused volume-based arrangements hold significant potential in improving overall value chain revenues and reducing unit production costs of value chain participants.

- *Research and Development: Products, Preferences, Markets and Value-Chains*: Product development, market and consumer preference research creates market opportunities for Alberta beef products. Increasing the value, volume and share of Alberta beef products in domestic and export markets is key to the long term viability of the industry. It is critical to have a sound understanding of consumer preferences and demand drivers in priority markets. The functioning of value or product chains, in terms of participant relationships, performance of chains, and the implications of aspects of revenue, cost and risk sharing, are not fully understood. Linked with market area and preference information, "product" research can become more focused.

- *Adoption of Management Skills, Information and Technology*: There is a significant role to be played by smaller value-added processing, retail and food service business in expanding beef's profile in both domestic and export markets. The issue is whether or not their knowledge base, marketing and business skills, and information systems are sufficient to reach the potential in this area of opportunity. The strength of small businesses lies in the energy and creativity they employ in servicing customer's needs. Business development, market and product information, and management training assistance builds on these strengths. Regulatory compliance, in both domestic and export markets, challenges small businesses.

Focus on Investment and Infrastructure

- *Resource Base*: There is concern among producers that it is increasingly difficult to earn a reasonable rate of return (living) and that the value of their assets may be in jeopardy. However, the Alberta industry is well positioned to be a significant player in primary beef production. The upcoming generation's producers will be prepared to manage their businesses within this "new reality". In short, unless there is an unforeseen shift in global beef production, the resource base devoted to primary beef production will likely remain in that use, although the manner in which operations are managed will evolve over time. Assets (equity) will remain in the business but the composition of the farming population will change.

- *Labour Availability*: Difficulties in finding and maintaining capable labour has been voiced as an agriculture-wide issue. Training programs, promoting working in agriculture as a career choice, are in part working to fill this gap. However, the fact remains that to maintain qualified labour in the industry, pay and benefits will have to be competitive with other industry sectors.

- *Role of Industry Organizations*: Concern has been voiced as to the future role of industry organizations in the evolution of the beef industry. A few key opportunities exist for producer organizations in the regard:
  - act as a "voice of producers", bringing forward the priorities of the industry to the public policy forum.
  - act as a "voice of producers", working as key partners in developing proactive strategies and operational plans to deal with many of the industry "issues of the day".
  - act as a "peer voice", working as a key partner in developing and gaining acceptance for inter-regional trade arrangements.

- *Investment in Packing Facilities*: There is concern that the expansion of the feedlot finishing industry may soon exceed packer capacity in the Province. However, with the shift from a commodity to a product focus, so too will the emphasis of the major packing facilities. What is produced, not how much is produced, will play a major role in further investment in packing facilities in Alberta. Packing capacity in any location will adjust more to accommodate a product emphasis as opposed to commodity volumes.

- *Investment in Value-Added Processing*: There is concern that, while slaughter capacity has expanded and consumer demand for processed products has increased, value-added processing in Alberta has not followed suit. On the domestic front, there are opportunities for investment in processing firms to meet refined and differentiated consumer preferences. Value-added processing tends to locate near the

market as opposed to the source. Extending expanded processing capacity in any large way to export markets is largely controlled by major packers. Local investment in processing facilities will be driven by targeted, smaller-volume penetration of processed beef into export markets.

Focus on Balancing Business, Public and Consumer Needs

! *Overarching Issue - Public Perception of Agriculture*: With urbanization of the population over time, the linkage to, and understanding of agriculture has diminished. Subsequently, public perceptions are formed regarding the actions and motives of the industry that are not founded in fact, science and/or majority. These perceptions can influence government decisions on how the industry should operate, or how they will be controlled. Production technology, management systems and producer-driven stewardship standards have undergone positive dramatic changes over time. Collaborative public and private sector efforts to objectively and proactively inform the public of these developments, their implications to the public, and the industry's sense of responsibility would improve the image of agriculture.

! *Business Needs: Business Risk / Disaster Management*: Sources and impacts of business risk in agriculture are increasing. The industry requires options for managing risk that respond to "disaster" at the industry level while maintaining opportunity for individually-driven business success and failure. "Disaster" situations can result in business failures at a broad industry level in the short run while longer term prospects are for viability and growth. The primary beef industry, and individual producers, are recognizing that they bear the responsibility to manage the bulk of their business risk. They also realize the need to develop the knowledge, skills and information systems to deal with these risks. There is a role for government, however, to offer programs designed to bridge the industry over disaster situations. These programs must find the fine balance between providing sufficient protection to maintain the industry on its long term course, and remaining relatively production and investment neutral.

! *Business Needs: National "Herd Security"*: Transmittal of livestock diseases can result in productivity losses and/or reduced public acceptance of beef as a safe food source. It is the role of government, in consultation and partnership with industry, to define, monitor and police compliance in health of animals and disease control standards. Key areas include:
  - zero-tolerance in regulations and trade protocols regarding FMD and other "industry stopping" or catastrophic diseases,
  - trace back and contingency planning in the event of potentially epidemic diseases, and
  - risk assessments and common sense in facilitating livestock movement in North America.

! *Public Needs*: Production agriculture has been implicated in compromising air and water quality. As well, agriculture is but one user of public lands that have other business, wildlife and recreational options. The role of the Government, in consultation with stakeholders, is to:
  - provide balance at the interface of multiple, and often conflicting uses of public resources, and
  - work with industry to develop acceptable production and joint-use standards based on "good science and good sense". This includes, for example, consistent standards and protocols for siting livestock operations and for humane husbandry practices.

  Measures are directed to promoting sound, responsible stewardship and then creating public awareness of same.

! *Consumer Needs*: Consumers demand a safe food supply. Food production systems, from gate to plate, have intensified resulting in increase opportunities for health related hazards (perceived or real) to occur. It is the role of government to define, monitor and police compliance in food safety standards. Industry recognizes the importance of stringent sanitary and processing standards and generally works with government to ensure compliance. Key areas include:
  - work proactively with processors, retailers and food service industries to ensure compliance, and
  - education of the public regarding appropriate handling and preparation of foods to minimize post-purchase hazards.

Focus on Trade and Trade Relations

! *Domestic & North American Level*: Integration into a "North American beef production region" has been taking place gradually for some time. Consolidation and growth-to-scale of packing and intensive feeding businesses have quickened this process. However, there are still vestiges of regulation and vested interest, based on "nationalistic" fears carried forward to today, that slow this process. A number of inter-related issues revolve around this evolution of Canadian and American beef trade and trade relations. Because of this high degree of inter-relationship, issues are flagged together in a section and opportunities applying in part, or in whole, to all follow separately.

Issues

< Dependence on the U.S.: Concerns regarding the dependence of the Alberta beef industry on the U.S., as an outlet for product and a supply of feeder cattle, tend to be based on fear of "losing control of one's destiny". The level of mutual knowledge and trust required for free flowing business relationships has not yet fully developed.

< Protectionism: When the economy slows, pricing and producer margins, on both sides of the border, tend to be squeezed. This results in grass roots lobbies to "protect the local industry" and has brought on responses such as countervailing duty petitions, punitive inspection and grading actions, country of origin labeling requirements and strict enforcement of health of animals import regulations.

< U.S.D.A. Inspection & Grading: The "U.S.D.A. inspected and/or graded" label has value in the American and international markets for commodity beef. A significant portion of this value is being conveyed to higher-valued beef product streams. The U.S. has a considerable investment in getting this "acceptability and related preference" into place. The recent Canadian grading system changes provide comparability but do not carry the U.S.D.A. label that elicits the market premium. Discontinuities occur in movement and value of product and create market inefficiencies, particularly with respect to essentially identical products.

< Brand Labeling: The movement towards branded products, in both domestic and export markets, is an attempt to associate quality characteristics with a specific set of consumer preferences. Quality is in "the eye of the beholder". Although branding may in part circumvent the issue of "U.S.D.A." labeling, if product branding is to be in the purview of international corporate businesses, should the "Alberta Beef" label be required?

< Disease Control and "National" Herd Security: Maintenance of "national" herd health presents some difficult trade-offs for Canada and the U.S. regarding freer-flowing, reciprocal movement of cattle and beef. There is suspicion that import regulations are used to unduly restrict trade flows beyond the levels required to maintain disease control.

Opportunities

< Efforts to improve trade relations begin with producers and producer organizations gaining a fuller appreciation of the nature of the industry, particularly the common ground, on both sides of the border.
< Collaboration of producer organizations at the national level to proactively address common trade and policy issues to the benefit of the mutual "Canadian-American region" will reflect leadership, commitment and direction to local, state, provincial and federal policy makers.
< The role of the various levels of government is twofold:
  C act as both a partner and facilitator in the trade relations and issues resolution activities among producer organizations, and
  C implement regulatory, program and policy changes reflecting the consensus achieved through the collaborative efforts of producer organizations.

- Key areas include:
  - increased knowledge and understanding, by producers, of the nature of the industry across the continent, and the benefits of working together as partners in a global context,
  - strive towards "grading equivalencies" to remove product discounts derived through regulation,
  - develop transparent protocols regarding the movement of livestock between the two countries as well as importation from other countries,
  - reinstatement of USDA grading of Canadian beef carcasses in the U.S. and removal of country of origin requirements, and
  - recognition that the definition of product characteristics, to be encompassed by brands or labels, is specified by consumers, not government or industry. Country of origin, carcass grade, inspection, etc. may or may not play a role in product specifications.

The intent is to promote cooperation and transparency between the two countries.

! *Multilateral Trade and Trade Relations*

- Beyond NAFTA: The aim of moving beyond NAFTA to include other Central and South American countries ("Free Trade of the Americas") is to open up market access among the participants. With improved access, however, comes increased competition from other beef producing nations. The opportunity in such agreements is to solidify the "commodity vs. product" approach, promoting the ongoing industry structural evolution towards more "globalized" trade in beef. Access will require logical resolution of trade barriers yet maintain the ability to protect herd health status.

- The World Trade Stage: The aim of the WTO agricultural trade agreement (negotiations in progress) is to reduce subsidization and trade barriers globally. Although this brings opportunities to expand trade and rationalize subsidization (dumping) activities, a number of needs and trade-offs are brought into play among industries, nations and trading blocks. Key areas include:
  - sanitary and phytosanitary concerns among nations,
  - protectionism has made resolution of trade barriers and impediments difficult, and
  - potential to increase access to North America by subsidized products.

1. Introduction

Background

Long term business unit profitability, and competitiveness of the primary beef industry as a whole, is an ongoing concern to Alberta cattle producers. As the industry matures on a global level, maintaining a reasonable return on beef production assets becomes more challenging. Information, as a means to:

- improve the cost effectiveness of day-to-day operations, and
- lead the development of appropriate long term strategic business plans,

has become a valued "production input". The information needs of Alberta beef producers, as well as producer organizations, agribusinesses and government agencies, have increased substantially and become much more diverse over the past ten years. Globalization of markets and increased competition are the primary drivers of this need.

Currently, each of these client groups accesses information from a variety of sources to gain a perspective on the elements affecting their individual operations, or the industry as a whole. Beyond the collection of this basic information, there is an additional investment in converting it into ***knowledge***, a form that is useful for management decisions.

The intent of this document is to provide a compilation of key basic information elements (industry structure, markets, costing, competitor profiles, domestic and international issues review), supplemented by insights and analysis of their influence and impact on the primary Alberta beef industry. It should serve as a comprehensive source of information, which decision makers can fold into their own "knowledge set", guiding their short and long term planning and decision making.

Objectives

With the intent to add to the knowledge set of beef industry participants in mind, project objectives are outlined as follows:

1) describe for the Alberta beef industry regarding:
   - the structure of the primary industry
   - the role of "technology" as it affects productivity and/or product quality characteristics
   - types of products and markets served
   - the economic and financial performance of the industry
   - domestic market analysis and outlook for the near term

2) describe competitors to the Alberta beef industry, in domestic and export markets, regarding:
   - the structure of their primary beef industries
   - the markets and commodities in which they compete with Alberta
   - comparative costing, relative to Alberta, in areas of current and potential competition

3) describe domestic and international issues and events that could impact the viability and growth of the Alberta beef industry in serving its current and potential (targeted) markets

4) describe the competitiveness of the Alberta beef industry relative to other producing regions and/or countries regarding landing commodities and products into domestic and global markets

Achievement of these objectives should yield the following "key results":

- industry clients will have an information and knowledge reference upon which they can base their own analysis, planning and decisions to enter, exit, focus, or restructure their businesses (eg. cost control, product focus/positioning), and
- industry clients will have information and analysis regarding near term market direction, strengths, opportunities and threats.

Considering the breadth and complexity of the global beef complex, information presented has been screened based on its strategic value, either on its own or in support of a broader theme, observation or

conclusion. Discussions build from basic industry structure through to the interaction of "players" in the global beef business in meeting the evolving needs and preferences of consumers.

"Focus-6" Group Defined

"Competitiveness" is a statement of a country's or region's relative ability to economically compete with its rivals in landing product into a defined market. The selection of beef producing regions for this study is not intended to be exhaustive. Moreover, regions were selected to represent a cross-section of the current and potential major participants in beef markets world-wide.

"Focus-6" is an acronym for Foreign-Other, Canada and the United States. The "Foreign-Other" group includes Australia plus the South American countries of Brazil, Argentina and Uruguay. Within Canada, Western Canada is the primary focus. In the U.S., three sub-regions with a significant portion of beef production activity are frequently singled out. Although there are a number of other regions with significant beef production, the Focus-6 have been selected as representative of the majority of the beef production and trade activity in the global beef complex.

Approach

Comparative information for the Focus-6 regions is presented according to themes. The first section provides a review of the resource base employed in beef production regionally. The intent is to reveal the productive capability of the respective primary beef cattle production sectors. This is followed by a review of global beef production, consumption, trade and markets putting the Focus-6, and Alberta in particular, in context with world beef trade. The third section delves into domestic and world market analysis, outlook and an overview of selected export markets and opportunities. In Section 4, cattle production cost and returns profiles are presented and put into context regarding the "competitiveness" of each region with respect to their niche in the global market place. This is followed by a review of issues, opportunities, and challenges facing the Alberta beef industry to maintain and expand its role in world beef markets. The final section draws together the information presented in the theme areas, and offers conclusions and future direction for Alberta's industry.

Cautionary Notes

The world meat complex is immense. Many factors within this complex, including resources, productivity measures, time, preferences, and relative competitiveness, can affect changes in volumes, values and sources of products. The information herein provides an introduction at a broader level only.

Information comparability in assessing the beef complex is paramount. However, the nature of the data and multiple sources pose a challenge. Caution is urged in interpreting charts. They are intended to represent the significant elements of each component but may not include full volumes and values of production and trade that occurs. From time to time, sources could not provide information on an entirely comparable basis so the clarity of the analysis may suffer. The intention is to give reliable relative comparisons of "presence" on the world scene.

In most instances, international trade in live cattle is not specifically presented although it does filter through in some of the "carcass weight equivalent" comparisons. This element can be significant in trade between specific countries or country groups but is of relatively smaller impact at the global level.

Charts and statistics are intended to provide an indication of trends and order of magnitude. Observations and conclusions are drawn on this basis and are not the result of rigorous statistical analysis. Caution is advised in interpreting the results and conclusions as "statistically significant".

Time is a critical element in assessing the performance of the global beef complex. Much of the information presented is available on a short term basis only. Care should be taken in extrapolating short term trends to longer term expectations.

2. Primary Resource Base

Purpose: *- to describe Alberta's primary productive resource base (land, labour, capital) as it pertains to the production of cattle and beef*
- to put into context the size and scope of the Alberta primary beef industry relative to the rest of Canada and other competitive regions

The intent of this section is to describe the resources used in primary beef production in the Focus-6 group, plus subsets within Canada and the U.S. In so doing, two key questions are at hand:

- how big are they?, and
- is size of industry relevant?

Production systems in the Focus-6 group have evolved to take advantage of the resources at hand, ie. the beef industry in each region has evolved following the "best use" principle. The resources employed receive their best return as applied to beef production, given the production systems and alternatives available within the region.

Contents

For each cattle and beef producing region, core industry information is provided in the following areas:

Core elements

- size of the beef cattle herd
- slaughter cattle production volumes
- land use relating the forage base available to the production of beef cattle

As available, or appropriate, the core information is supplemented by the following:

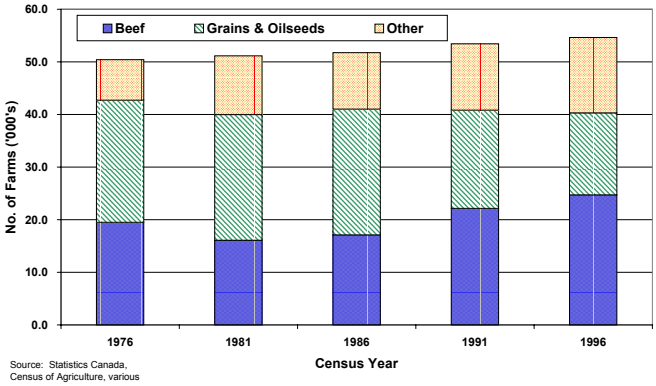
Supplementary elements

- number of farms involved in beef production.
- beef operation investment
- intermediate (feeder cattle) production and feeding capacity

A listing of "key elements" is provided for each region, highlighting the important characteristics to keep in mind when moving forward to subsequent sections.

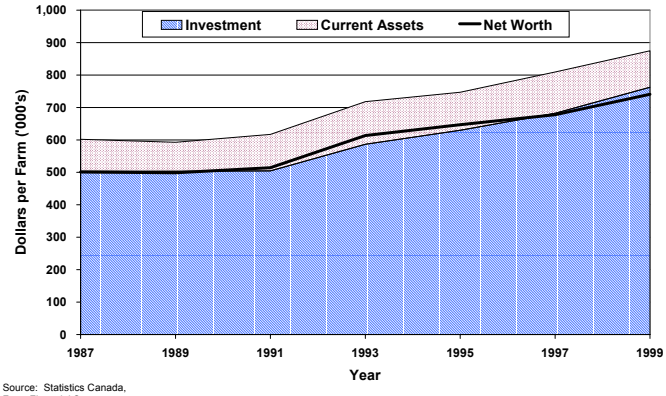
a) Alberta

Alberta Farms by Commodity Specialization



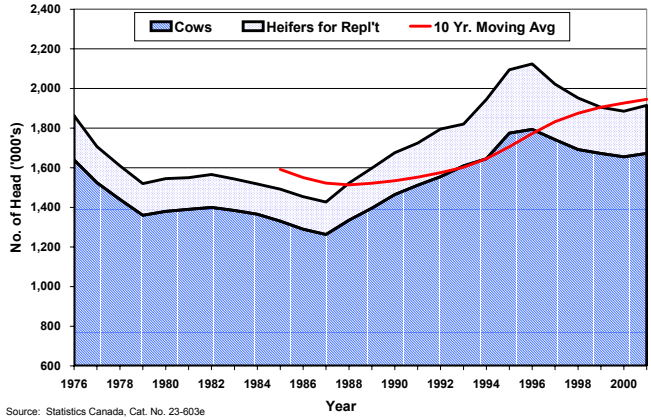
Source: Statistics Canada, Census of Agriculture, various

Average Beef Farm Investment, Assets & Net Worth - Alberta



Source: Statistics Canada, Farm Financial Survey

Beef Cow Herd - Jan. 1st Inventories - Alberta



Source: Statistics Canada, Cat. No. 23-603e

Farms

The Statistics Canada "Census of Agriculture" yields insight into the evolution of the Alberta beef industry over the longer term. At the 1996 census 24,700 Alberta farms (gross income in excess of $2,500) were classified as "beef" operations, ie. the majority of their revenues were generated from the production of beef cattle. This is compared to 19,500 beef operations 20 years previous.

Although the total number of farms increased over the 1976 - 1996 period (from 50.4 to 54.6 thousand), a significant shift was occurring in the composition of farms by type. The shares of beef and other (mixed; specialty crops; other livestock) operations increased from 38.7% to 45.2% and 15.3% to 26.2%, respectively. This shift was at the expense of the cereals and oilseeds industry, which fell from 46.0% in 1976 to 28.5% in 1996.

Investment

Average total investment in Alberta beef operations has risen by 45.3%, from $602.0 thousand to $874.6 thousand per farm, over the 12 year period ending in 1999. The current asset portion of the balance sheet increased a modest 14% while intermediate and long term assets (buildings, equipment and land, primarily) have gone up by 51.4%. As land is a significant part of the extensive operation's balance sheet, the movement in balance sheets tracks along with the increase in land values observed across the province.

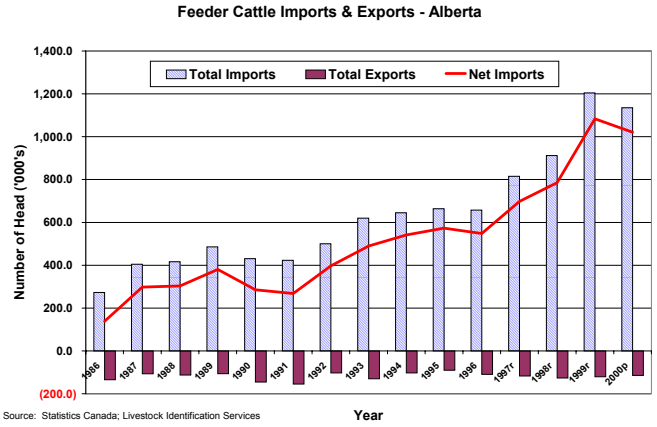
Average beef farm net worth has moved consistently with total asset values indicating, in aggregate, stability in the overall debt structure. Looking at liquidity, operations generally are carrying sufficient liquid assets to cover debt requirements. On the solvency side, the industry average debt to asset ratios ranged from 13.4% to 16.8%. Although this suggests a stable, solvent industry in aggregate, there will be significant variance on a farm-by-farm basis.

Cow Herd

Beef cow and replacement heifer inventories, taken at January 1st each year, are considered as a reasonable periodic estimate of the size of the productive cow herd. Alberta's herd has "cycled" from 1.86 million head in 1976 down to a low of 1.43 million head in 1987. From there it rebounded to its highest level of 2.1 million head in 1995, and has since tailed off to 1.9 million as at Jan. 1st, 2001. The latter is still above the plateau of the mid-80's and another gradual upturn is anticipated in response to industry-wide price cycle signals.

Feeding & Finishing Activity

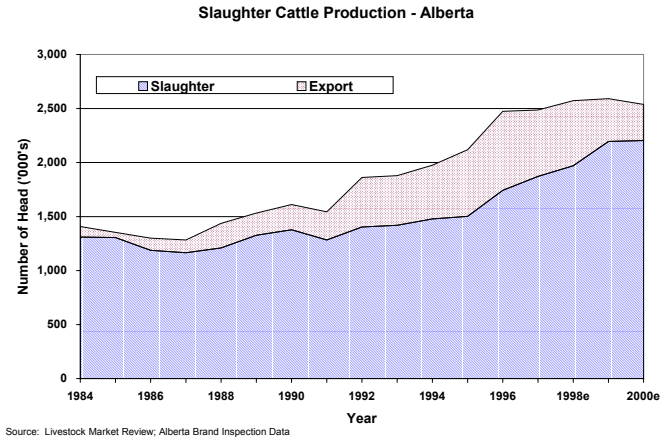
Over time, Alberta has solidified its position as a major beef feeding region, moving light feeder calves and feeder cattle to heavier feeder or slaughter weights. In general, statistics show net imports of feeder cattle into Alberta, from other provinces and the U.S., rising steadily from 138 thousand head in 1986 to over 1 million head in 2000(p). These additional feeders complement the output of Alberta's 2 million breeding cows.



Source: Statistics Canada; Livestock Identification Services

Slaughter Cattle Production

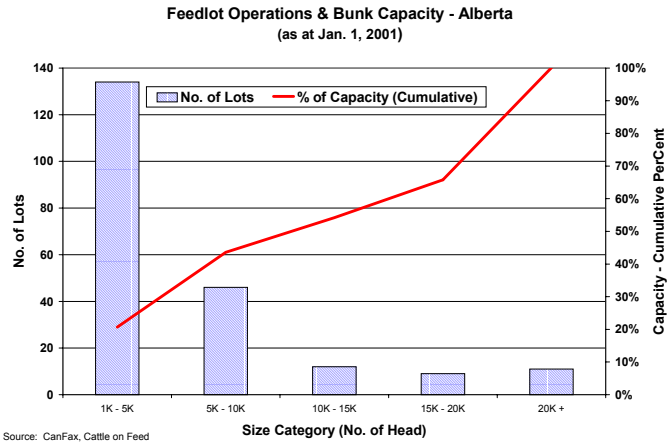
As a result of expansion in Alberta's feeding infrastructure, the production of slaughter cattle in the Province has increased substantially from roughly 1.4 million head in 1984 to 2.5 million head in 2000. During the early to mid-90's, slaughter cattle exports expanded to a peak of 732,000 head but steadily dropped back to an estimated 1/3rd of a million head by 2000. Expanded slaughter capacity and markets for Canadian beef have been key drivers in this transition from live cattle to beef production.



Source: Livestock Market Review; Alberta Brand Inspection Data

Feedlot Capacity

Significant investment in intensive cattle feeding operations has taken place over the past decade. The Canfax "Cattle on Feed" report indicates that, as of Jan. 1, 2001, 63% of the Province's feed yards fall into the 1,000 to 5,000 head capacity range and hold 21% of Alberta's feeding capacity. Number of yards in the larger size ranges drops sharply thereafter. The large size operation group (20,000+ head standing capacity), comprising 5% of the total number of operations, holds 34% of total feeding capacity.



Source: CanFax, Cattle on Feed

Forage Base

As beef cattle require a significant portion of their life time diets in the form of forage dry matter, to sustain a sizable and growing beef industry requires a productive and dependable forage base. Alberta's tame hay and pasture acreage has grown consistently from 7.1 million acres in 1976 to an estimated 12.0 million acres in 2000.

Native pasture, commonly viewed as a lower cost and less productive source of grazing dry matter, comprises a significant portion of the Province's grazing resource. In 1996, 16.3 million acres, or 63.3% of the forage base acreage, was available as native grazing. Of the remainder, 18.4% (4.8 million acres) was tame hay and 18.3% (4.7 million acres) was tame pasture.

Key Elements

< longer term shifts in the farming population "mix" are generally a reflection of changes to relative profitability and risk over time.

< aggregate balance sheets suggest long term financial stability in the industry. However, considerable variation is expected about the "average" with respect to individual operations, farm types and so on.

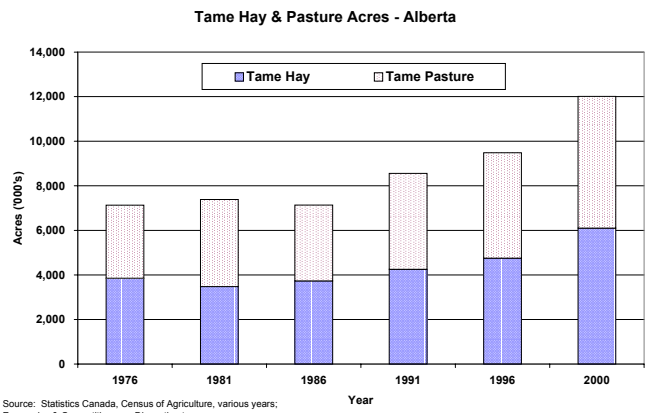
< although the Alberta cow herd is subject to the same cyclical movements as the rest of the world, there has been visible growth.

< Alberta's beef feeding industry has grown beyond the bounds of the roughly 2 million head basic cow herd, with placements of an additional million head obtained from outside the province.

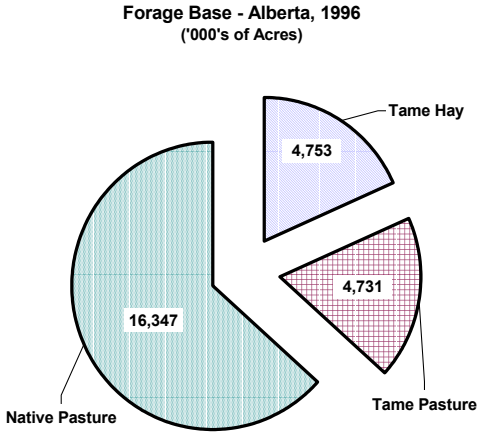
< growth in slaughter cattle production has mirrored breeding herd and feeding expansion. A short term trend in slaughter cattle export appeared in the early to mid-90's but dissipated towards the end of the decade.

< Alberta's intensive feeding industry is concentrated in larger feeding units with roughly 46% of the total feeding capacity in the hands of operations capable of feeding in excess of 15,000 head at any given time.

< beef industry growth implies a complementary growth in sources of storable and grazable forages. The farm counts "by type" are one indication of a transition from grain production to forages. Expanded (cultivated) hay and pasture acreages over time are another. As increased productivity from native grazing is limited, increased cultivated forage acreage and improved productivity will be necessary to support sustained cow/calf and backgrounding industry growth.



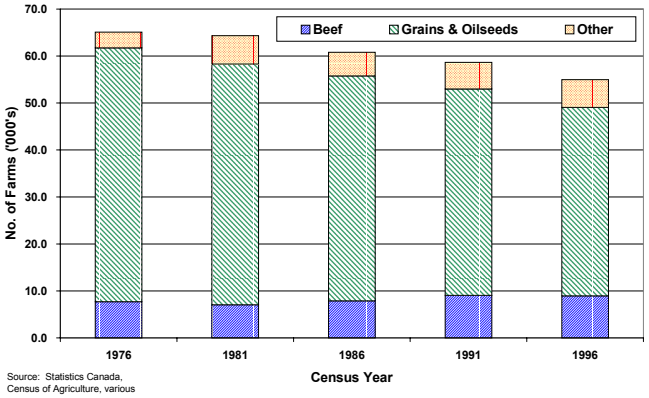
Source: Statistics Canada, Census of Agriculture, various years; Economics & Competitiveness Div. estimates



Source: Statistics Canada, Census of Agriculture, 1996.

b) Saskatchewan

Saskatchewan Farms by Commodity Specialization



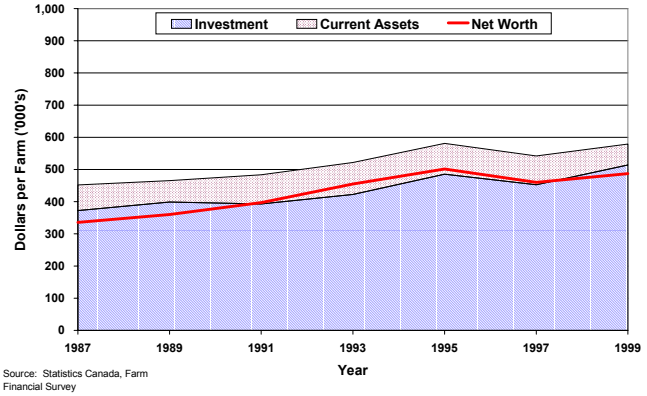
Source: Statistics Canada, Census of Agriculture, various

Farms

Historically, Saskatchewan's agriculture industry has been predominantly based in crop production. With domestic regulatory changes and structural changes in the global grains and oilseeds complex, maintaining profitability and viability in the cropping sector has become increasingly difficult.

The transition of Saskatchewan's agriculture industry has two major elements as reflected in numbers of (census) farms over time. Firstly, the total number of farms has declined substantially over the 20 year period of 1976 to 1996 from 65.1 thousand to 55.0 thousand. Secondly, the composition of the farming community has shifted. Although cereals and oilseed operations dominate, their share has diminished substantially. The number of grain and oilseed operations has declined from 54.0 thousand to 40.1 thousand, an average of roughly 695 per year. Beef operations have steadily increased from 7,700 to 9,000 over the same period and are expected to show a similar increase in the 2001 Census.

Average Beef Farm Investment, Assets & Net Worth - Saskatchewan



Source: Statistics Canada, Farm Financial Survey

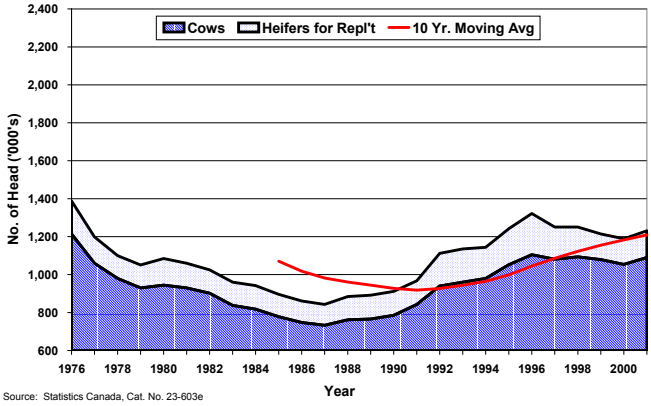
Investment

Average total investment in Saskatchewan beef operations has generally mirrored Alberta's experience. However, the rate of increase and magnitude of investment are lower. Average Saskatchewan beef farm investment (per farm) rose by 44.1%, from $401.7 thousand to $578.9 thousand during the period of 1987 to 1999.

A host of factors are involved in the "slow" growth picture. The poorer returns to cropping and the transition of land to beef may have held land values down. It also takes time to develop momentum in the industry, in terms of developing a critical mass of operations that can solidify industry volumes and lead the next leg of expansion. Both economic and anecdotal information point to significant beef investment opportunities in the Province.

Net worths, liquidity and solvency are following similar patterns to Alberta as well. In aggregate, there is stability in the debt structure, operations are liquid and solvency levels are more than adequate (ranging down from 25.7% in 1987 to 15.8% in 1999).

Beef Cow Herd - Jan. 1st Inventories - Saskatchewan



Source: Statistics Canada, Cat. No. 23-603e

Cow Herd

The chart of Jan. 1st Saskatchewan cow and replacement heifer estimates has been kept on the same scale as the Alberta version to give perspective to Saskatchewan's contribution to

the local production of calves. Their highest cow herd inventory was in 1976 when the provincial tally stood at 1.39 million head. The decline through to 1987 was precipitous, when cow inventories stood at 60.7% of the tally from 11 years previous. The herd has grown back through the next cycle just as aggressively, peaking at 1.32 million cows and replacements in 1996. Similar to Alberta, the slide back since has not been as dramatic and herds are expected to build through the next cycle.

Feeding, Finishing & Slaughter Activity

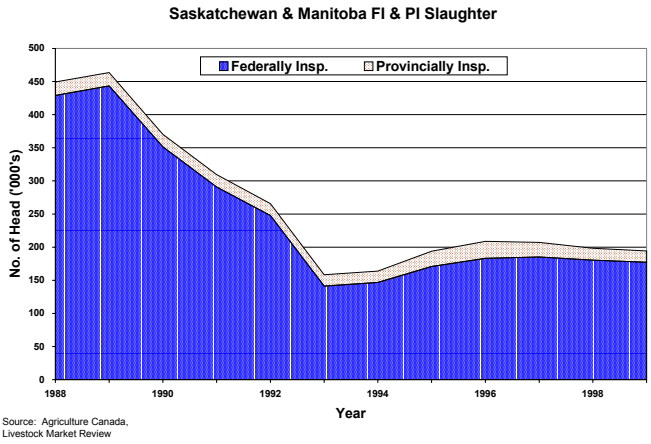
Packing industry consolidation, local herd reductions and the development of large feeding industry in Alberta has lead to a shortage of usable and or meaningful information on this segment of the Saskatchewan beef industry. With the renewed interest in beef production in the Province, however, this situation is turning itself around. Anecdotal information will be combined with a few statistics to bring perspective to Saskatchewan's feeding & finishing business.

Production of feeder calves is a product of cow herd inventories. Saskatchewan has gone through a period of time where relatively little backgrounding and finishing has taken place. Calves and mid-weight farm-raised feeder cattle were predominantly shipped to backgrounding and finishing operations out of the province. This is reflected in the 59.7% decline in slaughter cattle production (aggregated with Manitoba) from 429.0 thousand head in 1988 to 177.2 thousand head in 1999.

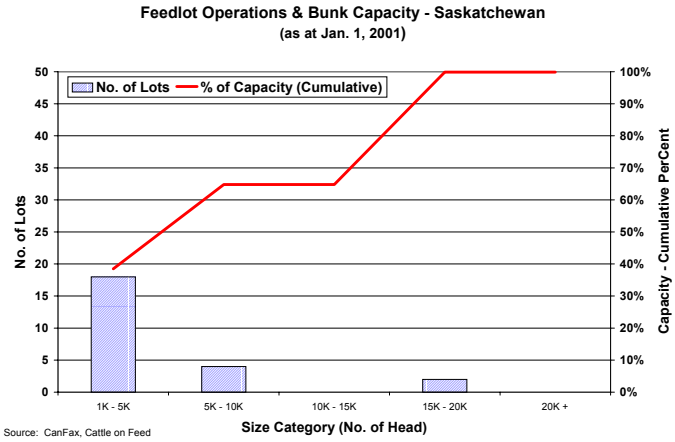
In recent years, however, there has been renewed interest in backgrounding and finishing cattle in Saskatchewan. This has been lead by a resurgence in cow herd numbers, combined with being viewed as alternative land use relative to cereals and oilseeds production. As at Jan. 1/01, the Province has developed finishing yards with standing capacity of approximately 114 thousand head. This complements the existing critical mass of feedyards in Alberta in servicing the volume requirements of Western Canadian packing facilities.

Forage Base

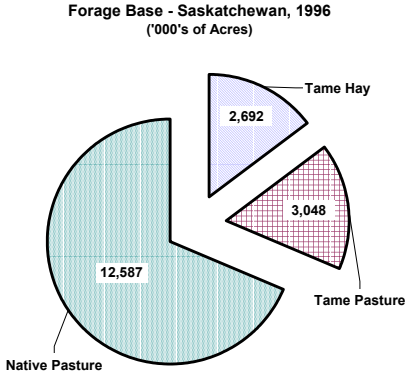
At the 1996 Census, Saskatchewan's forage base stood at 18.3 million acres - 14.7% in tame hay (2.7 million acres); 16.6% in tame pasture (3.0 million acres); 68.7% in native grazing (12.6 million acres).



Source: Agriculture Canada, Livestock Market Review



Source: CanFax, Cattle on Feed



Source: Statistics Canada, Census of Agriculture, 1996.

In order to support a growing beef industry, increased forage acreage and productivity are necessary ingredients. Census acreage counts have shown a 45.3% increase in Saskatchewan tame hay and pasture acreage from 1991 to 1996, following the Province's herd expansion.

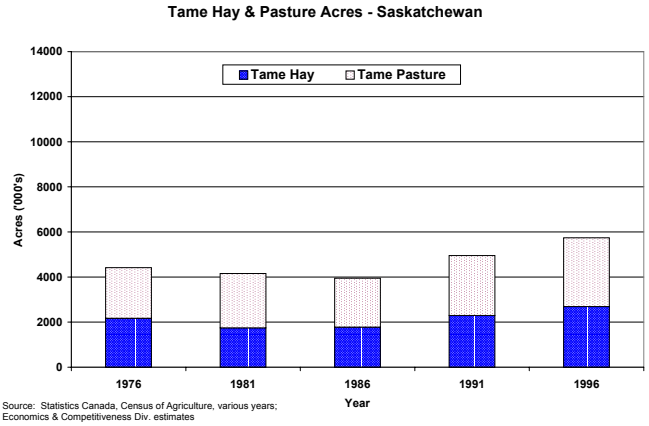
Key Elements

< industry structure changes have lead to shifts in the cereals and oilseeds dominance in Saskatchewan. Beef and forage production opportunities are likely looking preferable as a "best use" choice in areas, and in farm financial situations, where small to intermediate scale cropping ventures cannot sustain themselves economically.

< aggregate financial stability and investment patterns are similar to Alberta. Shifts from a crop-based emphasis to beef, and developing maturity and critical mass in the industry can create additional instability on a regional or individual basis, however.

< Saskatchewan shares the same cyclical and growth patterns in cow herd inventories as Alberta, and for that matter, North America.

< Concentration of major packing concerns outside of the Province and a reduction in local source stock for further feeding likely lead the sharp decline in the backgrounding and finishing business in Saskatchewan during the 80's. Although, the major packing concerns (now nested around the concentration of cattle feeding in Alberta) are not likely to return to the province, cattle feeding and finishing is once again on the rise.



< should world grain and oilseed markets remain in their current stocks and price conditions, additional pressure will be put on Saskatchewan farmers to find another "best use" for their land. The Province has significant acreage that can be devoted to forage production (harvested and grazed) - at a reasonable cost. If this transition occurs, a substantial increase in primary beef production, from cow herds through to finished cattle, can be anticipated.

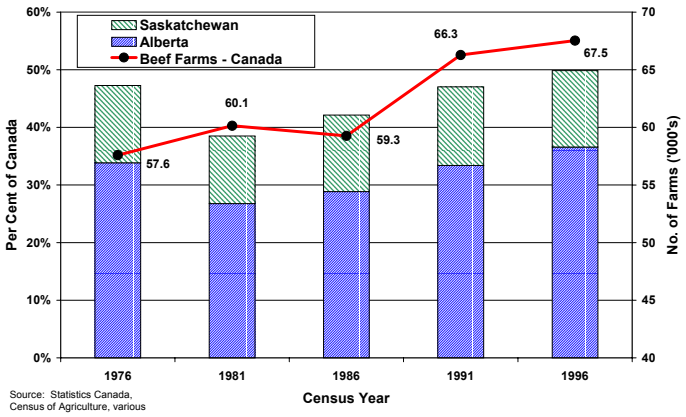
c) Canada

The dominance of Western Canada in terms of cow herd and slaughter cattle production is apparent through this section; discussions put into context the contribution of these Provinces to the country's overall beef production.

Farms

The number of beef farms in Canada has increased from 57.6 to 67.5 thousand over the two decade period ending in 1996. Alberta's share has gone from 33.9% to 36.6% during this period, while Saskatchewan's has remained relatively constant, ending with 13.3% in 1996.

Shares of Alberta & Saskatchewan Beef Farms of Canada



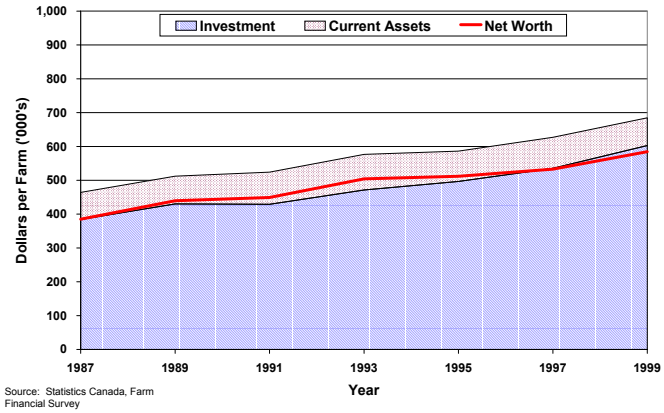
Source: Statistics Canada, Census of Agriculture, various

Investment

Average total investment per beef farm in Canada has grown to $684.8 thousand by 1999. By comparison, Alberta averaged higher at $874.6 and Saskatchewan was below the national average at $578.9 thousand per farm.

Longer term balance sheet trends, as presented in the Canadian investment chart, are generally a reflection of a lower margin industry. Liabilities track fairly closely to current assets suggesting that beef operations, in aggregate, remain relatively current. This is indicates the industry attempts to deal with risk over the longer term by maintaining liquidity and solvency ratios at reasonably high levels.

Average Beef Farm Investment, Assets & Net Worth - Canada



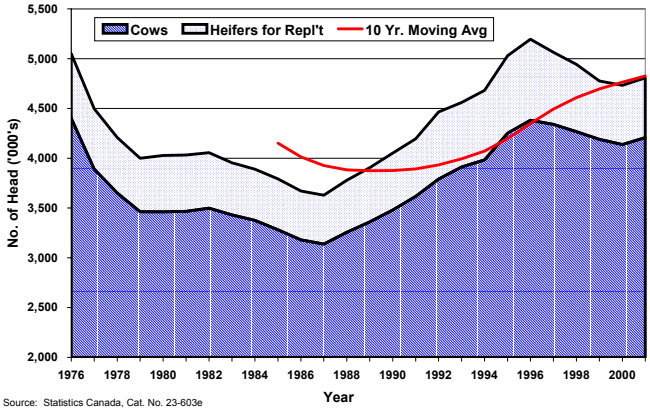
Source: Statistics Canada, Farm Financial Survey

Cow Herd

The January 1st national cow herd inventories moved from a mid-70's peak of 5.0 million head, bottomed-out in 1987 at 3.8 million head, and reached a new high of 5.2 million head in 1996. Since this period, herd numbers have declined with the down swing in the cattle cycle (to 4.8 million head in 2001) but are expected to rise again with the anticipated pricing pressure bringing more animals into the breeding herd.

Longer term industry inventory statistics can also be used to estimate the average turnover, or lifetime, of female breeding stock. At the national level, the breeding herd turns over on average every 7 to 8 years. The significance of this turnover is twofold. Firstly, the shorter the turnaround, the greater the industry's ability to adjust to technological change. Secondly, in terms of meeting the needs of the market place, shorter term ability to adjust the characteristics of the breeding herd suggests greater responsiveness to market signals of preference.

Beef Cow Herd - Jan. 1st Inventories - Canada

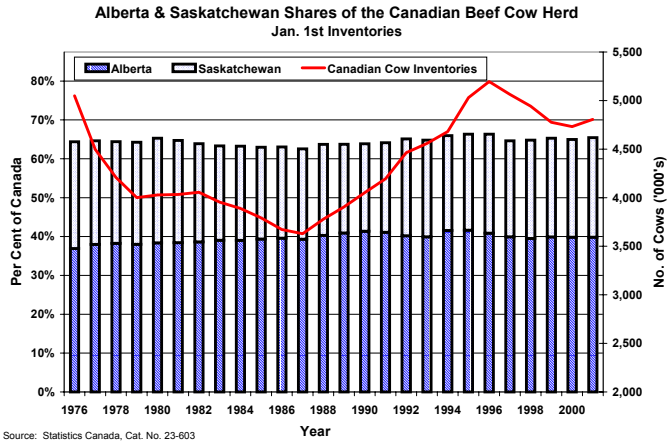


Source: Statistics Canada, Cat. No. 23-603e

Although information on average herd size has not been provided directly herein, the average number of cows on Canadian farms has been on the rise. This, combined with the inventory

statistics are an indication of an industry that has gone through a significant restructuring and re-trenching.

Alberta and Saskatchewan have maintained a reasonably consistent share of the nation's cow herd through expansion and contraction phases. From 1987 to 2001, the share for these two provinces has grown from 62.6% to 65.5%.



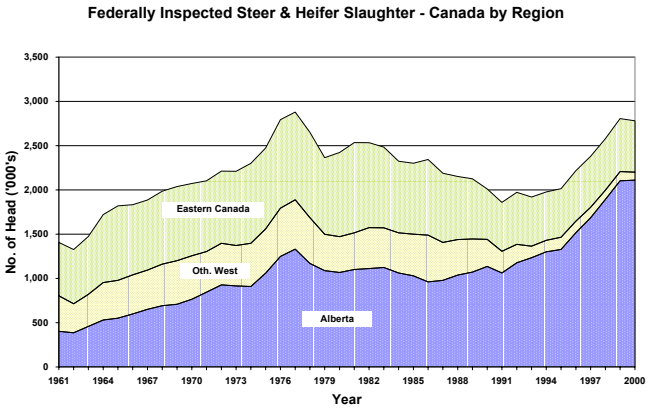
Source: Statistics Canada, Cat. No. 23-603

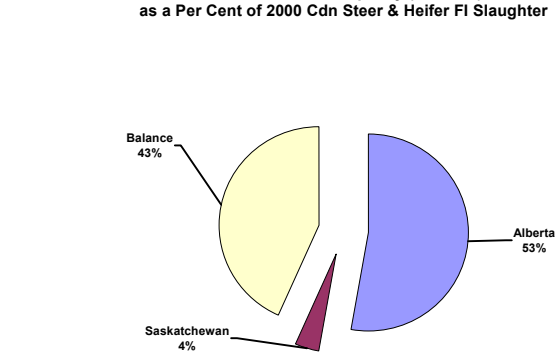
Slaughter Cattle Production

Federally inspected (FI) steer and heifer slaughter statistics give an acceptable proxy of the ebb, flow and growth of the Canadian cattle finishing industry. They do not, however, reflect the magnitude, trends and year-to-year variation in exports of slaughter cattle.

Alberta's share of national fed cattle FI slaughter methodically advanced from 28.6% in 1961 to 75.9% in 2000. The Western Canadian total moved from 57.2% to 79.1% over the same period of time. Given the consolidation of slaughtering facilities, predominantly in Alberta, the convergence of the Provincial and Western Canadian shares is expected.

In terms of magnitude, Western Canadian slaughter has grown from 0.7 million head in 1962. It rose to a mid-period peak of 1.9 million head in 1977 and then slid back to 1.3 million head in 1991. Since that time, the volume lost has been regained and built upon, with FI slaughter in the West reaching an all-time high of 2.2 million head in both 1999 and 2000. The Canadian total followed a much similar pattern, with a low of 1.3 million steers and heifers slaughtered in 1962, moving to an all-time national high in 1977 of 2.9 million head, and settling in the vicinity of 2.8 million head in the last two years of record.





Source: CanFax, Cattle on Feed;
Agriculture Canada, Livestock Market Review

Feedlot Capacity

Although size distribution statistics for feedlots across Canada are not readily available, cumulative Alberta and Saskatchewan statistics, complemented by anecdotal industry knowledge, lead to a few key observations. Roughly 57% of the nation's finishing feedyard space is situated in these two provinces. Within Alberta and Saskatchewan, the ability to aggressively finish beef to slaughter is becoming more concentrated in the hands of larger, technologically and financially advanced operations. This evolution is not taking place to as great an extent elsewhere in the country.

Furthermore, the backgrounding business, which is a key industry link between the cow/calf industry (producing weaned calves) and the finishing industry (producing slaughter cattle) is developing at a greater rate in Western Canada. This industry segment is comprised of operations ranging in size and specialization (ie. from a supplementary enterprise to other

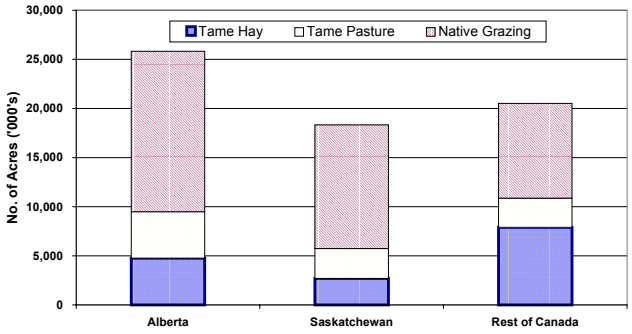
farming businesses (such as a cow herd), to stand alone scale size backgrounding operations). The backgrounding segment plays a key role in the cattle production chain. It effectively smooths out the supply over time of heavier weight feeder cattle into finishing yards, employing more extensive forage based feeding and grazing systems in doing so.

Forage Base

Using tame hay, tame pasture and native grazing acreage statistics to represent the country's forage base, the strength of the beef industry in Western Canada, supported by the forage base, is clear. In 1996, 48.5% of Canada's tame hay acres, 72.4% of the tame pasture acreage and 75.0% of the nation's native pasture was situated in Alberta and Saskatchewan.

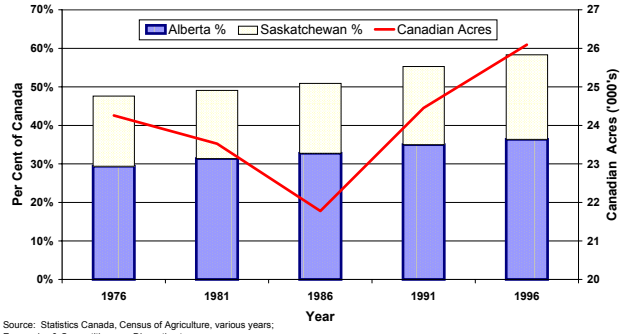
Acreage growth to support expanding beef production, is evident from the chart depicting Canadian acreage of tame hay and pasture, and the proportions attributable to Alberta and Saskatchewan over time. The nation's cultivated forage acreage declined by roughly 2.5 million acres from the 1976 to the 1986 census years. These lost acres were regained almost twofold over the next two census periods, bringing the combined Canadian acreage to 26.1 million acres. Alberta and Saskatchewan's share of the total has progressively increased by almost 10 percentage points during this time.

Total Canadian Forage Base - 1996
(Tame Hay, Pasture & Native Grazing Acreages - by Region)



Source: Statistics Canada, Census of Agriculture, various years; Economics & Competitiveness Div. estimates

Alberta & Saskatchewan Shares of Canadian Tame Hay & Pasture Acreage



Source: Statistics Canada, Census of Agriculture, various years; Economics & Competitiveness Div. estimates

Key Elements

< although the number of beef farms in Canada has been expanding over time, the bulk of the increase has occurred in Alberta and Saskatchewan.
< from an asset base point of view, equity exists in the Canadian beef industry that can be levered to solidify and expand the domestic business. Considering the "low margin" nature of the business, however, the liquidity and solvency displayed by the sector, in aggregate, will be necessary to weather the risks and support any growth.
< the size of the Canadian herd in the mid-70's is an indication of the capacity of the land to support beef cattle. Significant technological change in management systems has occurred over this period, suggesting the land base should be able to carry in excess of the equivalent of the earlier herd size.
< a feature of the Canadian cattle industry is a reasonable proportion of breeding stock held in smaller herds, primarily as a supplementary enterprise using marginal lands on larger farming concerns. The shift to increased herd sizes over a longer time frame suggests farms are striving to achieve scale economies.
< Canadian cattle slaughter has expanded over time, shifting predominantly to Western Canada. This shift was facilitated by a combination of cow herd expansion, cattle feeding, and development of world scale slaughter facilities in the West.
< Feedlot finishing and backgrounding activities are expanding in Western Canada, creating a critical mass of slaughter stock to support the beef packing and processing industry. Linking these elements to strength in breeding cow herds complements the Provinces' forage and feed grain production capabilities.
< the bulk of Canada's native grazing and a growing proportion of the tame hay and pasture acreage is situated in Alberta and Saskatchewan. A critical mass of forage acreage has developed to sustain beef industry expansion.

d) United States

The structure of the primary beef industry and production systems in the United States and Canada have much in common. Discussions focus on highlights of the U.S. resource base at a national level. Recognizing the size and diversity of the American industry, explanation at the regional level is also provided. Regional titles are used to represent specific state groups and may not conform to other published titles.

Farms

Over the 10-year period of 1988 - 1997, the number of U.S. farms reporting beef cows has declined 9.9%, ending at 872.8 thousand operations. Regionally, Southwest (TX, NM, OK) beef operations rose by 4.8% to 193.9 thousand farms; Northern Plains (ND, SD, MT, WY) declined by 7.6% to 46.4 thousand farms; Midwest (KS, MO, NE) shrunk substantially by 11.1% to 112.0 thousand farms with beef cows.

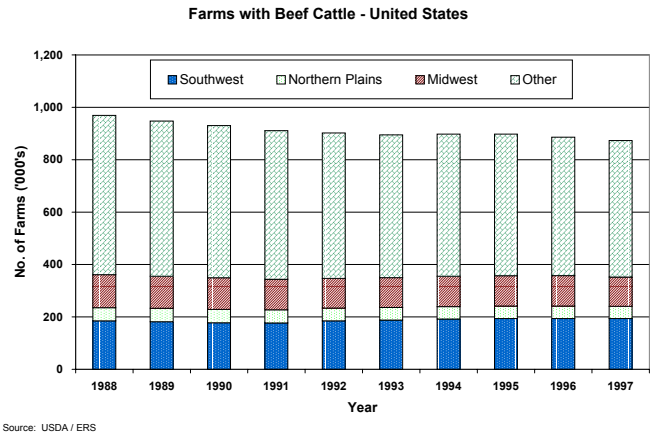
Cow Herd

U.S. January 1st cow herd inventories have gone through a couple of cycles during the period 1976 to 2001. At the start of this period the national herd stood at 51.1 million head. The tally fell sharply and then rose back to the next peak of 45.8 million head in 1982, followed by a lengthier trough extending to the next peak in 1996 of 41.6 million cows and heifers. By Jan. 1st 2001, the U.S. beef breeding herd stood at 39.0 million head.

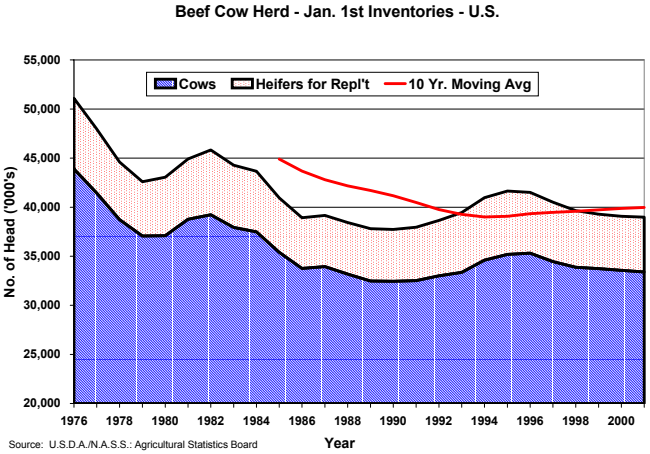
Although it may appear that the U.S. herd is in a continued state of reduction, beef production (which is covered in the next section) has not generally followed suit. Over this period of time, there has been a trend to larger finished cattle and carcass weights offsetting much of this decline in the basic herd count.

The average turnover time of the U.S. herd ranged from 6.4 years to 7.7 years, based on the ratio of cows to breeding herd inventory. This is marginally lower than for the Canadian herd.

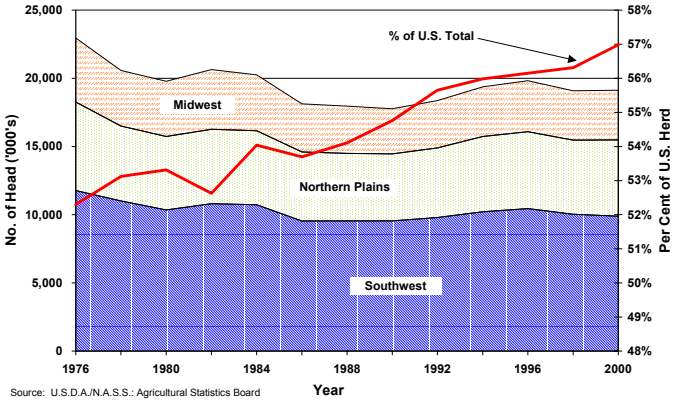
Keying in on the major cow/calf areas, from the 1976 peak to the 1996 peak the Southwest's herd shrunk by 1.3 million cows, (11.3%); the Northern Plain's herd declined by 13.1%, or 852.0 thousand cows; and the Midwest's herd contracted by 950.0 thousand cows, or 20.2%. Given an even larger reduction of 26.0% in the balance of the country the combined share of the key state groups has risen to 56.2% of the American breeding herd compared to 52.3% at the starting point.



Source: USDA / ERS



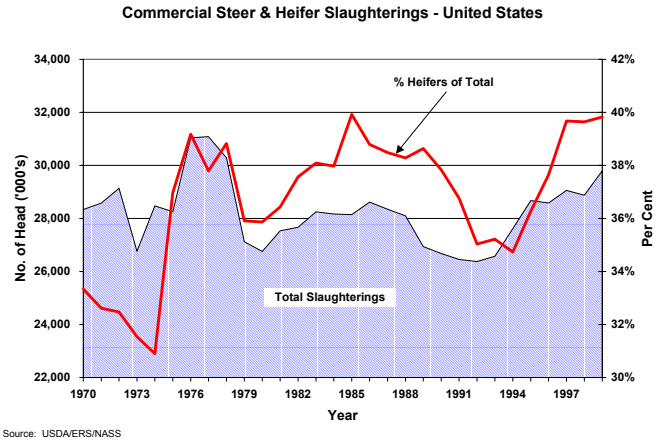
Source: U.S.D.A./N.A.S.S.: Agricultural Statistics Board



Source: U.S.D.A./N.A.S.S.: Agricultural Statistics Board

Slaughter Cattle Production

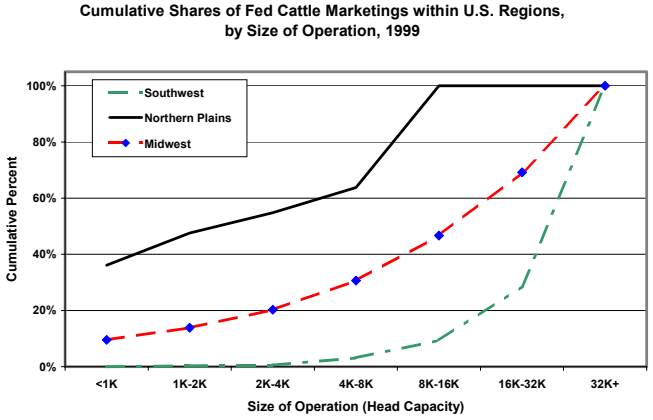
From 1976 - 1999, annual U.S. commercial steer and heifer slaughter averaged 28.2 million head, ranging from a low of 26.4 million head (1992) to a high of 31.1 million head (1977). Although there is substantial variation in the proportion of heifers of total slaughter over time (and through cycles), there appears to be a rising trend. This supports the contention of intermediate term breeding herd reductions in that higher slaughter rates translate into lower heifer retention.



Source: USDA/ERS/NASS

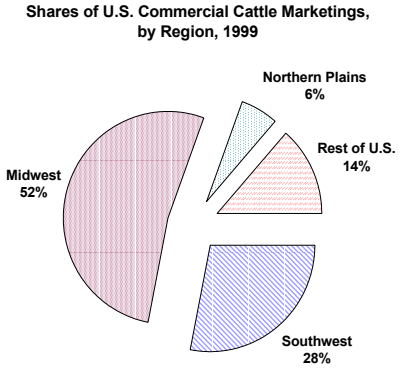
Feedlot Capacity

States included in the major cattle feeding regions are not exactly the same as those included for the cow herd tally, although they refer to a similar area. 1999 marketing statistics, by size of operation within each region, have been converted to cumulative percentages (similar to the Alberta presentation). This offers an indication of concentration of cattle feeding by size of operation.



Source: USDA / N.A.S.S Agricultural Statistics Board

In the Southwest (TX, AZ, OK, CA), feeding activity is almost the exclusive domain of the larger feeding concerns. Only 9.4% of the cattle marketed in this region originated from lots with a standing capacity of less than 16,000 head. On the other end of the spectrum, the Northern Plains area (SD, MN, ID) had 100% of the 1999 fed cattle marketings arising from lots of 16,000 head capacity or less. The Midwest region's distribution of marketings by feedyard size was more evenly spread out. 46.7% of fed cattle marketings arose from operations of 16,000 head capacity or less, with the remaining 53.3% originating from the larger two size categories.



Source: USDA / N.A.S.S Agricultural Statistics Board

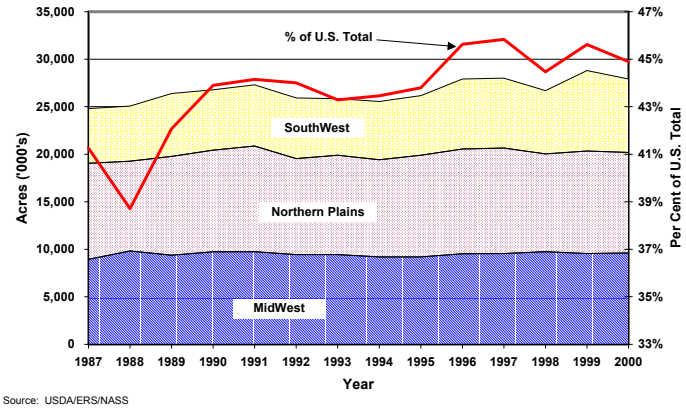
Forage Base

Compared to the Canadian forage base, U.S. acreage in cultivated forages and native grazing is massive. 1997 total U.S. acreages were 61.1 million acres in tame hay, 64.5 million acres in tame pasture and 580.1 million acres in native grazing. Comparably, in 1996 Canadian forage acreage tallied 15.3, 10.7 and 38.6 million acres in tame hay, tame pasture and native grazing, respectively.

U.S. tame hay acreage in the 1987 - 2000 comparison period started at 60.1 million acres, spiked briefly to 64.8 million acres in 1988, and then ranged between 58.9 and 63.2 million acres over the balance of the period. In 1999, shares of the American total for the three major state groupings (tallied in the same manner as for the cow herd) were 6.6, 10.3 and 9.5 million acres for the Southwest, Northern Plains and Midwest regions, respectively. These three regions have steadily increased their share of the U.S. total over the period (factoring out the 1988 anomaly), and stood at 45.6% in 1999.

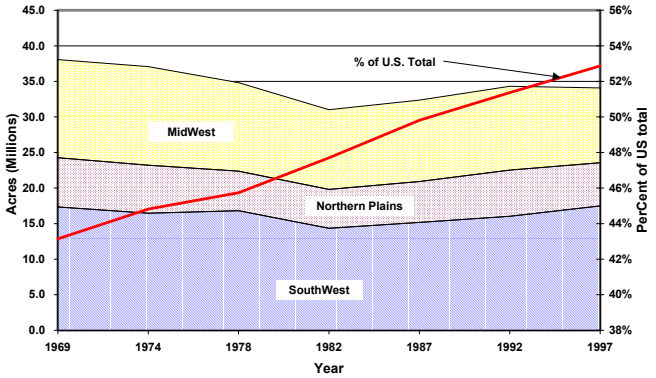
A longer term perspective is taken with pasture acreage, accessing U.S. Census information to establish "transition trends". U.S. seeded pasture acreage has declined by 23.7 million acres, or 26.9%, from 1969 to 1997, ending at a total of 64.5 million acres. The three identified "beef" regions also experienced a tame pasture acreage reduction during this period, but only declined by 10.4%, from 38.1 to 34.1 million acres. Native grazing acreage tends to be more static over time and nationally fell 3.9% over the roughly 30 year period, ending at 580.2 million acres. In 1997, the Southwest, Northern Plains and Midwest regions had 167.4, 124.8 and 40.4 million acres of native grazing, respectively, comprising 57.3% of the nation's total.

Tame Hay Acreage - Selected US Regions



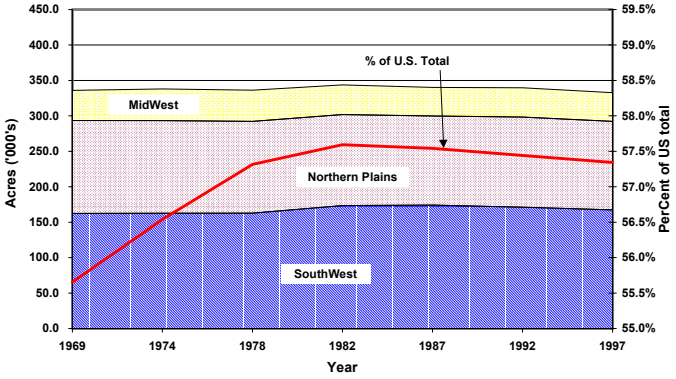
Source: USDA/ERS/NASS

Tame Pasture Acreage - Selected US Regions



Source: USDA/ERS/NASS

Native Grazing Acreage - Selected US Regions



Source: USDA/ERS/NASS

Key Elements

< although numbers of farms with beef cows have been shrinking at the national level, the major beef regions have declined at a slower rate (U.S. at -9.9% vs. 3 region total at -2.5%). Moreover, while the nation's count of beef operations declined over the late 80's to late 90's, the number of farms with beef cows actually rose in the Southwest region.

< 25 years of beef breeding herd inventory data suggests that the U.S. herd has essentially "restructured", moving to a lower plateau. Although almost 1/2 of the herd still exists outside of the identified key production areas, there has been a longer term consolidation of herds in this direction.

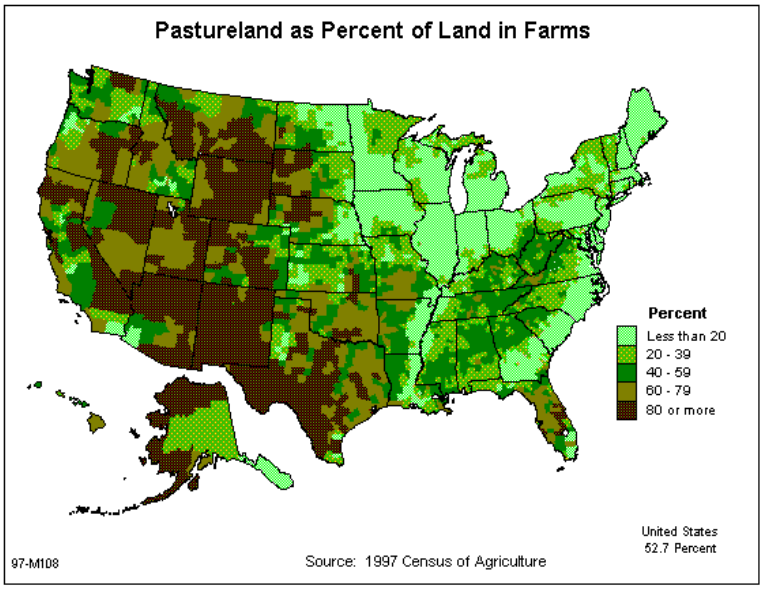
< changes in the size of the cow herd must be taken in context with volumes of beef produced (from the reduced herd) and how the U.S. meets its beef requirements now vs. the mid-70's

< U.S. commercial steer and heifer production and slaughter has mirrored the pattern of the cow herd inventories over time, with the appropriate lags associated with the beef cycle. Although there is considerable variation in finished cattle production over time, there appears to be a slight downward trend. It is likely that this trend will change somewhat given intermediate term forecasts of rising beef production. Whether this is to be achieved through higher yields, increased production, or both remains to be seen.

< similar to Canada, the concentration of intensive feeding activity is evolving to larger operations. These yards are able to capture scale economies, specializing in feeding volumes of cattle. The transition to increased specialization in the U.S. will likely be more drawn out than in Canada given the size and diversity of American primary industry.

< the intermediate and long term U.S. forage base statistics generally confirm the ties between the forage and beef industry and how forages become, relatively speaking, the land use of choice as the beef business evolves.

< relative shares of tame hay acreage are indicative of the concentration of the forage-based beef industry in the Southwest, Northern Plains and Midwest state groupings.
< the U.S. faces many of the same regulatory and public land use pressures for native grazing that are arising in Canada. The Americans are a few years ahead of Canada in dealing with these multiple and conflicting use issues. There tends to be less pressure in this regard in the less populated areas, where the cattle business tends to be migrating.



e) South America - Brazil

Cow Herd

Defining the basic cow herd through Brazilian statistics is a process of deduction, using aggregate livestock counts and estimates of populations by type and use. Total Brazilian cattle inventories rose by 2.7% over the ten year period from 1991 to 2000(e). Breeding cattle, feeding stock, dairy and draft animals tallied 153.3 million head in 1991, moved to a low of 151.0 million head in 1996, then rose rapidly to 157.5 million head at the 2000 estimate.

Estimates on the distribution of cattle by use divide the inventories into roughly 21% as dairy cattle and 79% for use as meat. In 1999, this was equivalent to 32.2 million head for dairy and 124.7 million head for meat production.

Similar share estimates are available based on type of cattle, with cows comprising 32.6% of 1999 cattle inventories, and the proportions for heifers (1-3 years), calves and steers (1-3 years) coming in at 18.3%, 26.2% and 17.1%, respectively. This amounts to approximately 41.2 million cows, 28.2 million heifers, 41.1 million calves and 26.9 million steers. Oxen and bulls comprise the remaining 5.8%.

Slaughter Cattle Production

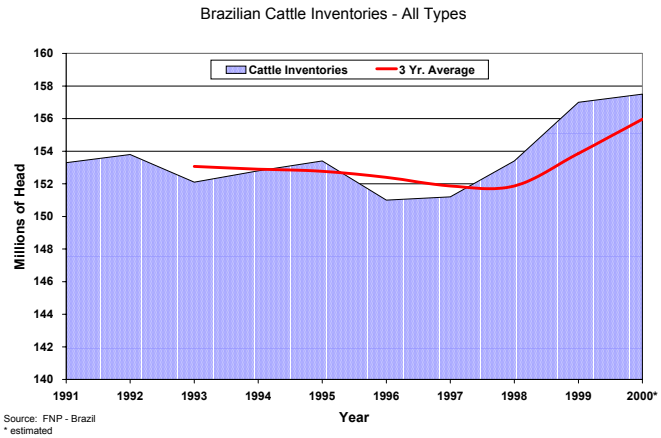
Brazilian slaughter cattle statistics do not offer the definition among animal types that is available in North American information systems. Total slaughterings began the decade at 28.2 million head for 1991, climbed gradually, mirroring the inventory counts, through to an estimated slaughter of 35.7 million head in 2000. This equates to a 26.6% increase over the course of 10 years.

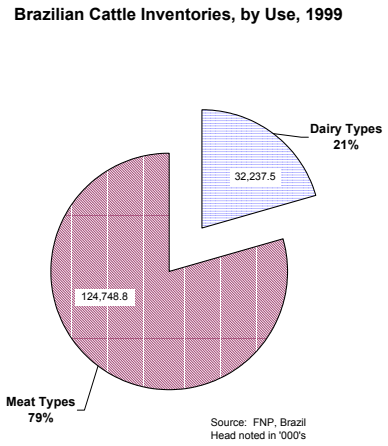
Land Use

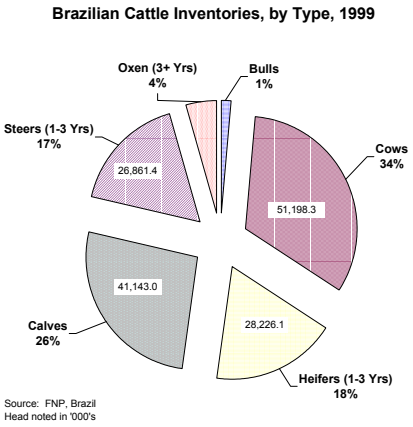
The Food and Agricultural Organization of the United Nations (FAO) provides aggregate estimates, by country, on land use in agriculture, regarding:

- "arable land" - generally annual crops plus shorter term forage crops and pastures
- "permanent crops" - cultivated crops that generally do not have to be replanted after each harvest (includes shrubs, fruits, vines, nuts; excludes trees for wood and timber), and
- "permanent pasture" - land used permanently for herbaceous forage crops and generally usable for grazing.

A distinction within these groups to define harvestable forage vs. grazing acreage is not







directly possible. The sum of these three categories is defined as "agricultural area".

As of 1998, Brazil had a total of 618.0 million acres of agricultural area. According to FAO estimates, this has remained reasonably flat from 1995 to 1998. Of this total, 457.0 million acres are in permanent pasture, with a portion that may be harvested as forages. Roughly 60% of the arable land is attributable to cash crops, leaving about 55 million acres of cultivated area available for other uses including short term fodder, forages and grazing uses.

Key Elements

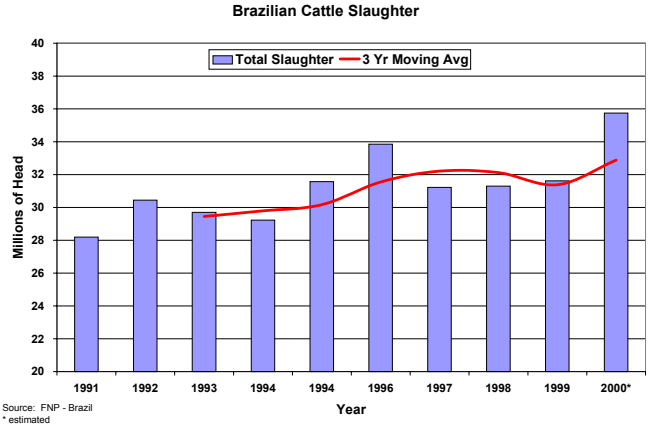
< the structure and production systems of the Brazilian, and for that matter South American, cattle industry is geared to a more extensive approach than observed in North America. Cattle production revolves around using the grazing resource for the beef cow herd through to the finished slaughter product.

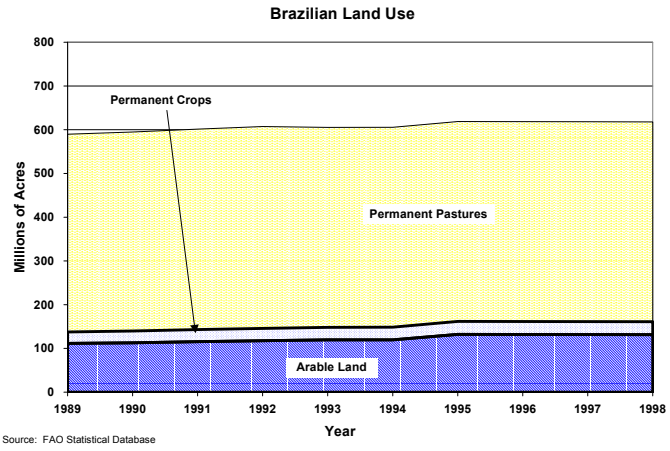
< Brazil's beef cow herd is large. A rough estimate, separating out dairy types, would peg their inventories in the vicinity of 40.4 million head for 1999.

< the buildup in Brazilian inventories is beginning to appear in slaughter cattle production, lagged by the extended period of time it takes to move cattle to slaughter weights under an extensive production system.

< the momentum displayed in the inventory aggregate, in terms of total head counts, is likely mainly attributable to beef cattle types. Slaughter cattle production should follow suit.

< Brazilian acreage available for grazing and forage production is large and growing. Even though this acreage is considered of lower productivity per acre compared to North American standards it has considerable potential to support an expanding beef cattle production system.



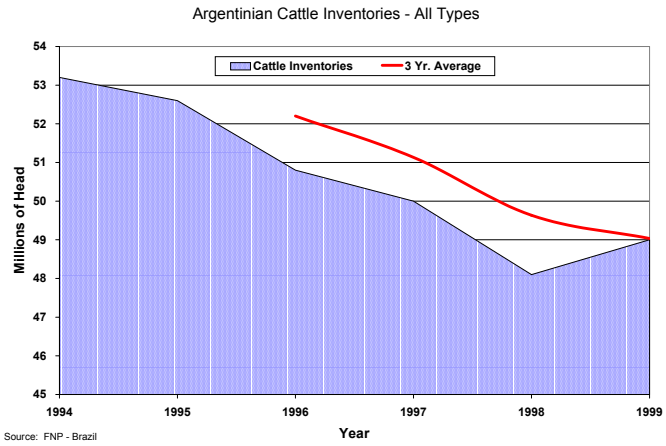


South America - Argentina

Cow Herd

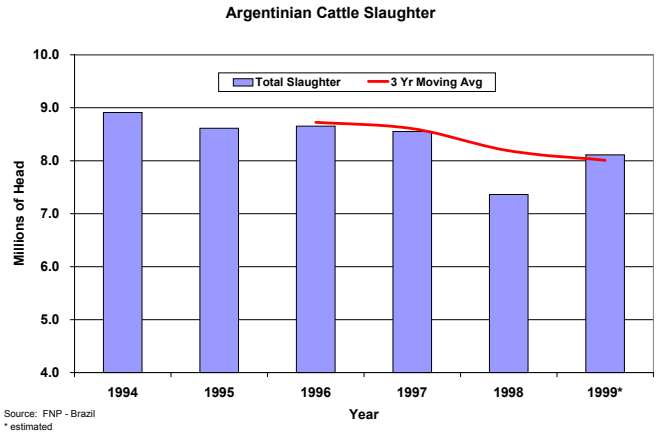
Statistics to define Argentina's cow herd (as a productive asset) are generally not available. Deduction is used to estimate this base using the proportion of the types and uses established for Brazil.

Argentinian cattle inventories have gone through a period of significant decline. In 1994, total cattle inventories stood at 53.2 million head. They proceeded to drop 9.6% to 48.1 million head over the next four years ending in 1998. The 1999 estimates show a reasonable recovery back to 49.0 million head.



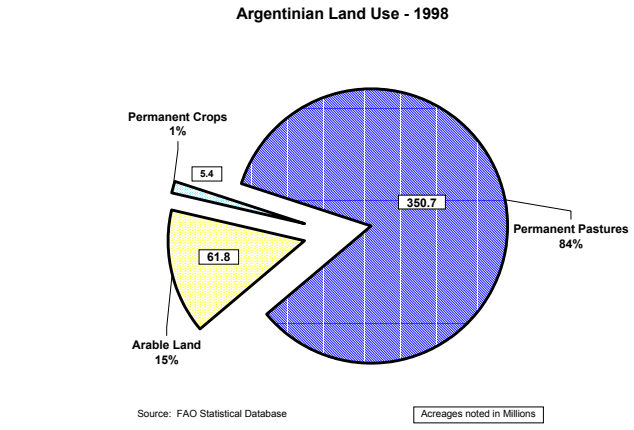
Slaughter Cattle Production

Argentinian beef slaughter, including all types of animals, has declined from 1994 through 1999, tracking along with the decline in inventories. They opened the period with total slaughter of 8.9 million head and then hovered in the range of 8.6 - 8.7 million head for the next three years. 1998 slaughter fell substantially to 7.4 million head and then rebounded to an estimated 8.1 million head in 1999.



Land Use

According to FAO estimates, as of 1998, Argentina's agricultural area tallied 417.9 million acres. Compared to Brazil, Argentina's land base is weighted even more so to "permanent pastures". 83.9%, or 350.7 million acres of Argentina's total are in long term cultivated or native forages, mainly for grazing. 14.8%, or 61.8 million acres are in "arable lands", primarily devoted to annual and/or short term crop use.



Key Elements

- < assuming distribution of cattle by type and by use is similar to Brazil, by deduction, of the 1999 year end total Argentinian cattle inventory, the breeding cow herd would amount to roughly 12.6 million head.
- < disease problems, mainly Foot and Mouth Disease (FMD), have pressured substantial reductions in the Argentinian herd. Unless a solution is found, the lack of a trade outlet will hamper industry recovery, let alone growth.
- < the land base is overwhelmingly devoted to grazing. Argentina has shown in the past its ability to carry larger cattle inventories than currently on hand. They have room to expand beyond those levels. However, as cattle production is an extensive business in Argentina, larger acreages are required (than considered the norm in North America) to carry the additional head-days to slaughter.

South America - Uruguay

Cow Herd

Uruguayan total cattle inventories moved up substantially in the early 90's, from 8.9 million head in 1991 to 10.5 million head in 1994. From that time through to 1999, total beef cattle on hand wavered in the range of 10.3 to 10.6 million head.

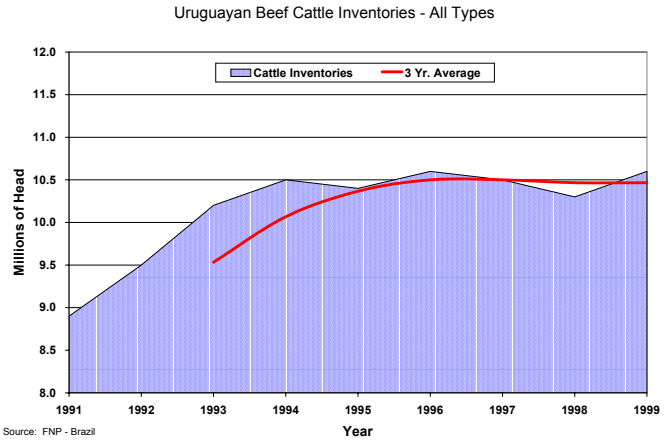
Separating these 1999 inventories out by type, 39.3% (4.2 million head) were cows, 13.8% (1.5 million head) were heifers (> 1 year old), 22.1% (2.3 million head) were steers (> 1 year old) and 23.5%, or 2.4 million head, were calves.

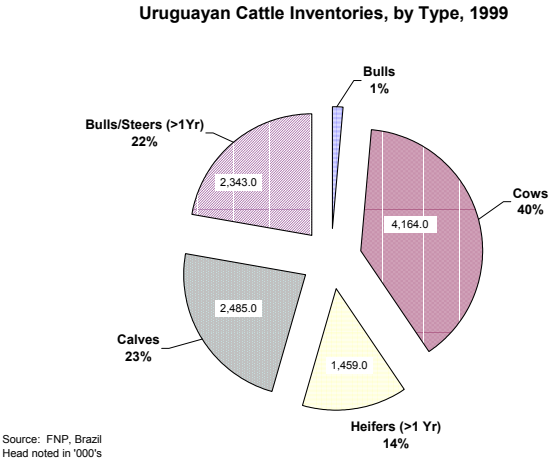
Slaughter Cattle Production

Uruguayan slaughter cattle production varied in the range of 1.4 to 2.0 million head per annum over the period of 1994 to 1999. Roughly 14% to 19% of annual cattle inventories come to slaughter each year.

Land Use

Although smaller in size, Uruguay's land use pattern is the most dedicated to extended grazing on "permanent pastures" of the three South American countries reviewed. 91.2% of land classed as agricultural is in long term pasture and forage use. This amounted to roughly 33.4 million acres in 1998. Permanent crop acreage was essentially negligible at 0.2%, or 100,000 acres. Annual (or "arable") crop covered 3.1 million acres (8.5%).





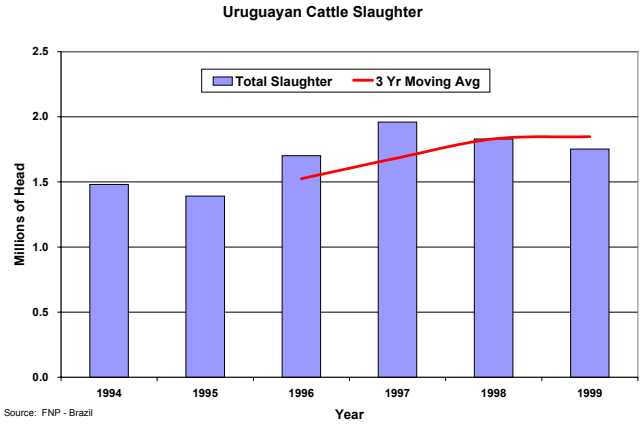
Key Elements

< Uruguayan cattle inventories went through an early 90's growth phase but leveled off in the range of 10.5 million head, in total, thereafter. Recent events on the FMD front will have serious implications over the next couple of years regarding future expansion.

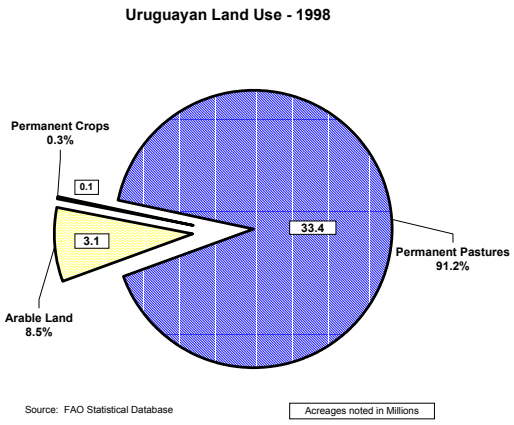
< assuming a dairy - beef split similar to that in Brazil, Uruguay's 1999 breeding herd would be in the vicinity of 3.3 million cows.

< slaughter cattle production, as a percentage of inventories is reflective of the extensive, grazing-based production systems employed.

< it's difficult to say if Uruguay is poised to join the South American beef production expansion. They may have simply hit a constraint and this is the limit of their production capabilities. Constraints to expansion include sufficient land area upon which to graze cattle, infrastructure in terms of markets and transportation, and capital to fund growth.



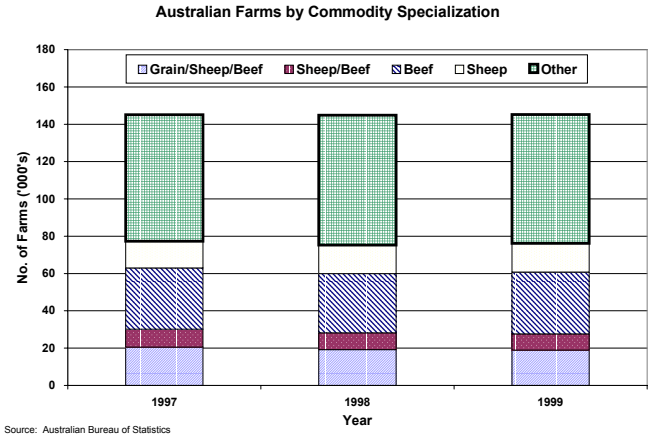
< alternatively, Uruguay has a substantial land base to go along with a sizable cow herd. If the flattening out of inventory and slaughter is simply a result of pent up production due to local disease issues, then when this issue disappears, Uruguay may take strides similar to Brazil and Argentina.



f) Australia

Farms

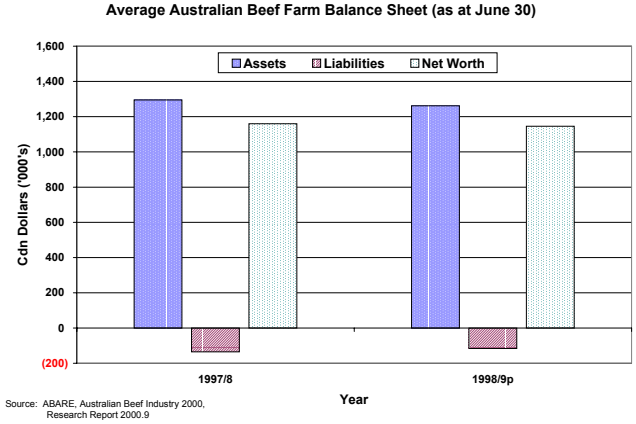
Over the 1997-1999 period, an average of roughly 42% of Australian farms had substantial activity in primary beef production. In 1999, 22.8% (33.2 thousand) were rated as "specialty beef properties" with the majority of revenues arising from beef sales. 19.0 thousand farms (13.1%) and 8.7 thousand farms (6.0%) were rated as "Grain/Sheep/Beef" and "Sheep/Beef", respectively. For this 3 year period, basically "non-grazing" operations averaged about 47.5% of the farming population.



Source: Australian Bureau of Statistics

Investment

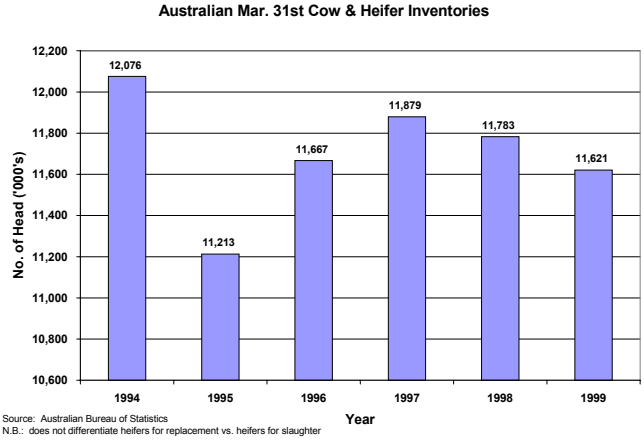
Average total investment in Australian specialist beef properties was in the vicinity of $1.3 million ($Cdn) for 1998 and 1999. These balance sheets included a land component averaging 30 to 35 thousand acres per farm. Liability levels were reasonably low during this period, with debt/asset ratios in the 9% - 10% range.



Source: ABARE, Australian Beef Industry 2000, Research Report 2000.9

Cow Herd

Over the six years from 1994 - 1999, Australian breeding herd inventories started at a high of 12.1 million head, dropped rapidly in the following year to 11.2 million and then moved back through the balance of the period in the 11.6 - 11.9 million head range. In the absence of comparable longer term data, it is difficult to draw a conclusion on growth or contraction of the Australian herd.



Source: Australian Bureau of Statistics
N.B.: does not differentiate heifers for replacement vs. heifers for slaughter

Distribution statistics for Australian beef specialist properties reflect common themes regarding the concentration of production activity in fewer, larger operations. The small size group (< 300 cows) contained 50.2% of the operations, held 9.7% of the country's cow herd, and was responsible for 15% of the nation's gross sales of live cattle. Operations in the 1,000 - 2,800 cow range comprised 13.9% of the farms, held 29% of the herd and earned 29% of the gross sales. Although the operations in larger size groups (2,800+ cows) held about 40% of the herd, they only generated approximately 30% of the gross sales.

Feeding / Finishing Cattle

The general perception of beef production in Australia relays the dominance of grass finished beef. There is, however, a small and growing feedlot industry. As at the end of March, 2000, the Australian Lot Feeders Association reported cattle on feed, in intensive lots, to be in excess of 570 thousand head. The bulk of these cattle are destined for the Japanese market while about 40% are consumed domestically.

Slaughter Cattle Production

Australian cattle slaughter jumped 9.6%, from 7.3 million head to the 8 million head range, from 1993/94 to 1998/99. Putting this into context with the cow herd inventories, this is not necessarily a long term growth trend. It appears the Australian herd was building back to previous levels.

Land Use

As at Mar. 31st, 1999, Australia's total agricultural land base stood at 1.12 billion acres. 5.1% (57.6 million acres) were devoted to crop production, 5.0% (55.6 million acres) were in "sown pastures and grasses", and 89.9% (1,007.5 million acres) was classified as "other agricultural land". The latter is considered as extensive areas similar in concept, but not necessarily productivity, to North American native grazing acreage. This is the underpinning of the Australian "grazing-based" beef and sheep industries.

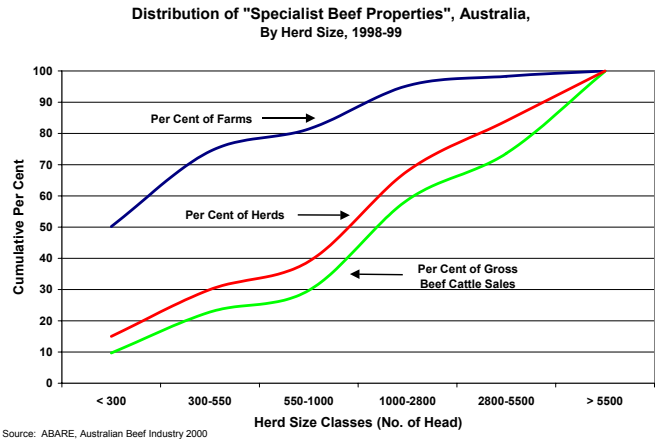
In the six years ending at 1999, there has been a shift in land use and a general reduction in land applied to agricultural enterprises. Cropped acreage has moved up 29.4%, or 13.1 million acres. The area in sown pastures and grasses has declined 23.7%, down from 72.9 to 55.6 million acres. The "other agricultural land" category has contracted by 33.9 million acres, or 3.2%. In total, agricultural land use has contracted by 3.3% over the six year period.

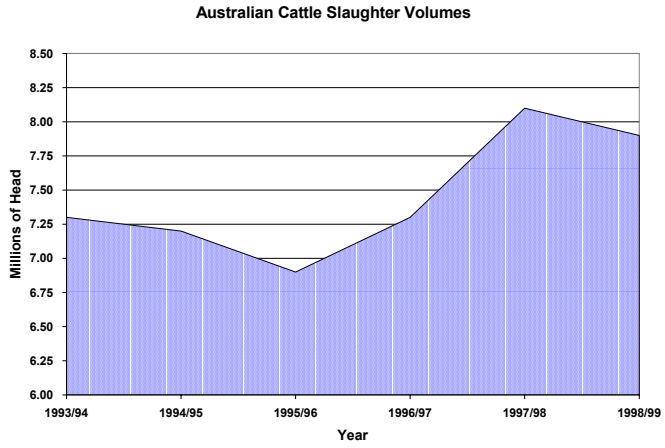
Key Elements

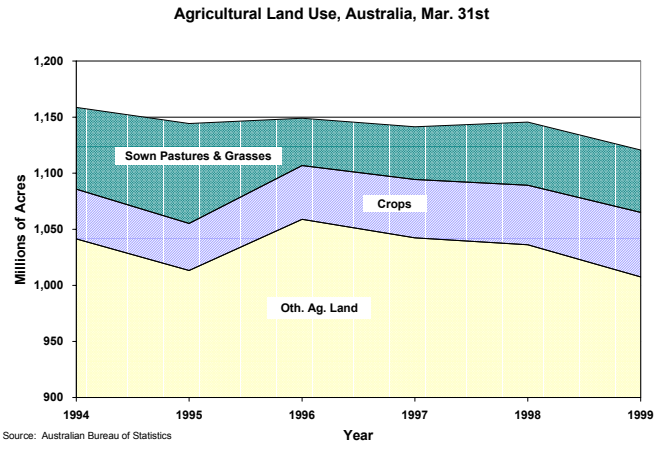
< although trend information on the evolution of farm numbers and size are not readily available, the grazing-based component of Australian agriculture is significant.

< industry level balance sheet information masks much of the farm-to-farm variability in financial activity and performance. However, at the industry level, beef specialist operations can be considered as quite solvent.

< Australian beef production systems share many similarities to the South American industries in their extensive use of the grazing resource (supporting both the cow herd and grazing slaughter cattle to finish). Cow types and productivity are generally suited to meet these production systems and the climates. The size of the cow herd and the nature of the methods of production give Australia considerable momentum in the primary production of beef cattle.







< distribution of Australian beef specialist properties reflects the concentration of the herd on fewer, larger operations. However, the distribution of gross income by size of operation does not completely follow suit. It suggests that the larger operations are even more extensive relative to their smaller peers.

It does not, however, suggest that their cost structures are the same.

< Australia is strategically building a small and growing intensive (feedlot) finishing industry to service specified markets. Cattle on feed has grown ten-fold over the last 10 years.

< although slaughter cattle marketings moved up sharply, this is likely not as much a new "plateau" as it is a return to earlier levels

< deviations in the patterns of cow herd inventories and marketings are indicative of the extensive grazing and finishing systems employed in Australia. There is more latitude, or choice, in the timing of moving cattle to market from an extensive finishing system compared to intensive feedlot systems.

< the strength of the Australian beef business has been the vast acreages deployed in grazing cattle. Two (potentially related) forces are at work in reducing this acreage. Firstly, there has been a shift in acreage out of grazing into cropping. Secondly, grazing management practices of past generations have resulted in some serious soil and productivity issues. The first element follows in part with the ebb and flow of the relative profitability between crops and grazing. The second is a long term "reclamation" of sorts, that can hinder the country's ability to expand its industry.

g) Differentiating Between Extensive and Intensive Production Systems

A host of productivity and economic factors combine to define a region's predisposition to employing extensive vs. intensive production systems. Generally speaking, industries based on a lower valued land base tend to follow extensive systems. Grazing and/or forage production is typically the economic "best use" of the land. Regions employing more intensive systems have more pressure from alternative land uses and, therefore, in the longer term require that beef production be more productive, (ie. produce more of, and a higher valued product) to justify the use of the land in this enterprise choice.

Regions are not exclusively devoted to one system relative to another. There is typically a range in intensity of operations, positioned to take advantage of local opportunities and needs. However, intensity of production in a region does show distinctive tendencies, and this is reflected in the relative productivities.

Production Intensity: North America & Brazil

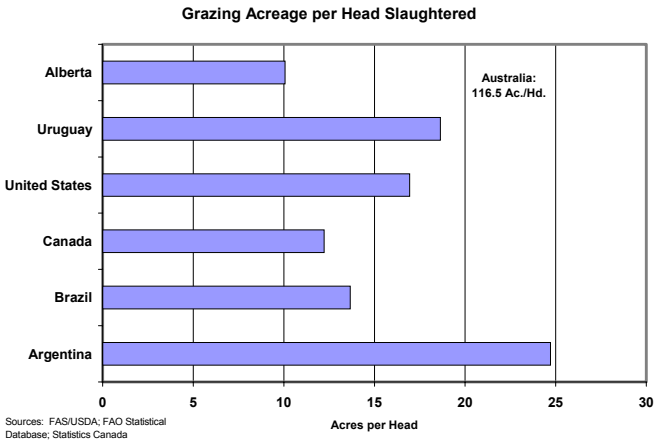
A variety of primary beef production parameters are listed below to give perspective to the differences in relative productivity between extensive production systems (eg. Brazil) and intensive production systems (eg. U.S. and Canada). These are rough estimates only, but sufficient to make the point.

North America	Productivity Measure	Brazil
85%	Birth Rate	60%
5%	Mortality to Weaning	8%
80%	Weaning Rate	54%
2%	Mortality Post-Weaning	4%
24 mo.	Age at 1st Calving	48 mo.
12 mo.	Calving Interval	21 mo.
18 mo.	Slaughter Age	48 mo.
375 kg.	Carcass Weight	200 kg.
58%	Carcass Yield	53%

When comparing among regions, the issue is not "which system is better?" The key is "are the assets deployed in their best (economic) use?"

Cattle per Acre

Land, as devoted to the production of grazed forages, is a defining factor in assessing production intensity and a region's potential to produce cattle for slaughter. The following chart highlights the relationship between the (long term) grazing acreage and slaughter cattle output for the Focus-6 countries, plus Alberta.



As expected, Alberta and Canada exhibit lower ratios of acres per head. Surprisingly, Brazil's ratio is lower than that of the U.S. If comparable estimates for the key U.S. sub-regions were available, they likely would be substantially lower. Argentinian, Australian and Uruguayan ratios are considerably higher, reflecting the extensive nature of their production systems.

The Australian average, at 116.8 acres per head, was not displayed as a bar on the above chart for clarity of presentation. Note, as well, that the carcass weight differential among regions was not factored into the calculations and would likely have shrunk the North American ratios.

Key Elements

- regional production intensity is driven by the value of the underlying assets in their "best use". Higher valued alternative uses apply pressure for increased production intensity.
- judgements as to "which system is better" miss the point. Beef cattle production focuses on delivering a commodity, with defined characteristics and an associated value, and provides a reasonable economic return.
- grazing acreage per head slaughtered provides a rudimentary indication of production intensity only. Instilling a measure of forage productivity per acre plus weight produced per acre would refine the estimates.

h) Extraction Rates

The concept of extraction rates bridges the worlds of production of livestock vs. production of beef. "Extraction rate" is defined, in percentage terms, as the number of head slaughtered in a region relative to total inventory of animals on hand. It relates a region's ability to bring quantities of beef into the market place.

Generally, extraction rates are driven by the degree of production intensity in a region. As the turnover rate increases, so does the extraction rate. Based on 2000 USDA slaughter and inventory statistics (supplemented by Statistics Canada regional statistics), estimated extraction rates, in descending order by region are: Alberta at 44.7%, the United States at 38.3%, Australia at 32.5%, Canada (national total) at 30.7%, Argentina at 26.7%, Brazil at 20.6%, and Uruguay at 18.8%. Comparable series were not available for the three key U.S. sub-regions.

Typically, extraction rates change slowly over time reflecting gradual, industry level structural adjustments. Estimates for smaller regions will display a greater degree of variability associated with larger inter-year variation.

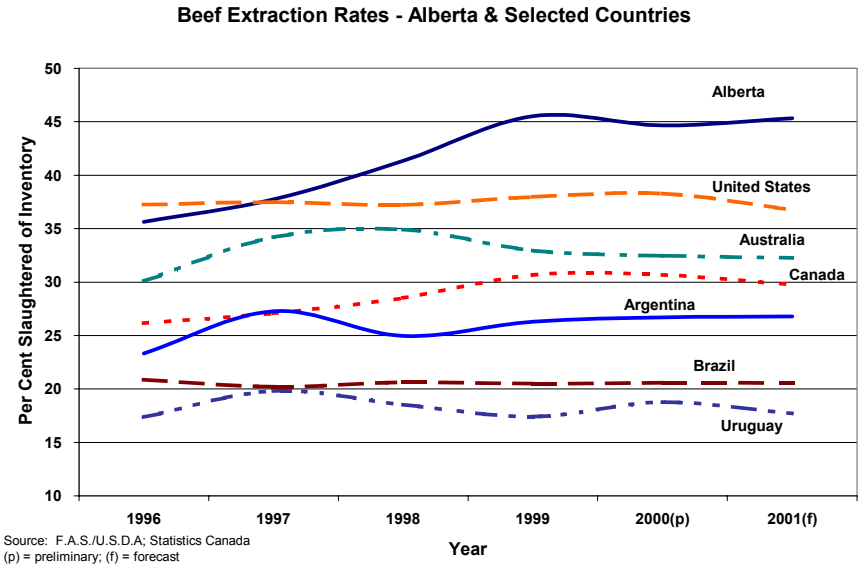
Key Elements

< Development of slaughter capacity, the associated feeding capacity, and the move to import feeder cattle into Alberta resulted in a 10 percentage point increase in the Province's rate. Alberta moves cattle into slaughter position at a very high rate.

< Argentina, Brazil and Uruguay take 4 to 5 years to turn over their inventories. Collectively they hold large herds, but the pace at which they come to market is relatively slow. On the other hand, because of the "momentum" they have in the size of their herds, marginal improvements in extraction rates can result in sizable quantities of beef appearing on the market.

< Conversely, intensive production regions such as Canada and the U.S. would not be expected to be able to affect significant changes in extraction rates unless their industries, nation-wide, go through significant structural change.

< all-in-all, extraction rates are one of the first major "levelers" among regions regarding size of the industry. A large basic cow herd, the primary productive asset, does not necessarily equate to a similar capability to bring slaughter cattle to market.



Source: F.A.S./U.S.D.A; Statistics Canada
(p) = preliminary; (f) = forecast

i) Summary

The intent of this section was to put into context the resources in the Focus-6 directed to, or available for, the primary production of beef cattle. Key statistics are summarized in the table below.

Upon review, the main question arising is, "Is industry size relevant in defining a country's competitiveness?" The resource base profiles do not, directly, provide an answer. They do, however, advance the understanding of two main points:

< the cost of producing the primary product, and the associated rate of return on assets employed in beef production, play an important role in establishing a country's competitiveness in the global beef complex, and

< by deduction, size of the industry is important regarding production of a "critical mass of the commodity", sufficient to:
- C support internal infrastructure within the region, and
- C gain recognition from importing nations as a reliable, longer term supplier.

At the junction of each region's resource base and the global beef market place is its extraction rate. This rate relates the regions' ability to bring beef into the market place, employing the resources at hand. The linkage to competitiveness, then, is the determination of whether or not the region efficiently translates its resources into commodity in such a fashion that a long term profit can be derived.

Competitiveness, requires these resources to be present and used effectively. There are, then, other conditions that must be met for a region to be "competitive".

Summary Statistics - Primary Resource Base

(Estimates for the base period of 1999 unless otherwise noted)

	Breeding Herd	Slaughter Volume (2)	Extraction Rate (%)	Forage Base (5), (6), (7) Tame	Native	Total
	- - - Millions of Head - - -			*- - - - - Millions of Acres - - - - -*		
Canada						
Total	4.8	2.8	30.7	26.1	38.6	64.7
Alberta	1.9	2.1	45.5	9.5	16.3	25.8
Alta. & Sask.	3.1	2.2 (3)	n.a.	15.2	28.9	44.1
United States						
Total	39.2	29.8	38.0	125.6	580.2	705.8
MidWest	3.6 (1)	14.6	n.a.	20.1	40.4	60.5
Northern Plains	5.4 (1)	1.6	n.a.	17.2	124.8	142.0
SouthWest	10.0 (1)	7.8	n.a.	24.8	167.4	192.2
Brazil	40.4	31.6 (4)	20.5	n.a.	457.0	n.a.
Argentina	12.6	8.1 (4)	26.3	n.a.	350.7	n.a.
Uruguay	3.3	1.7 (4)	17.4	n.a.	33.4	n.a.
Australia	11.6	7.9 (4)	33.0	55.6	1,007.5	1,063.1

(1) Excluding bred heifers.
(2) Commercial cattle slaughter of steers and heifers unless otherwise noted.
(3) Includes B.C. and Man. with Alta and Sask. slaughter totals.
(4) Total slaughter (commercial cattle & cull stock).
(5) Canada - 1996 - tame acres represent tame hay and seeded pastures.
(6) United States - 1997
(7) Brazil, Argentina & Uruguay - 1998 - estimates of annual and short term cultivated forage crops and pastures not available.

3. Beef Production, Consumption & Trade / Markets

Purpose: *to describe what and how much of Alberta's production of cattle and beef goes into its major markets plus insight into the rationale behind Alberta's presence in these markets.*

The intent of this section is to link the aspects of world beef production, consumption and trade in such a manner as to reveal:

- the magnitude of the market,
- the presence and relative importance of the major players, and
- factors that can have short and long term effects on the momentum of established production and consumption patterns and trade flows.

A key question in understanding the world beef trade is "relative to what?". Beef is produced in a wide variety of production situations, each yielding products of varying characteristics or traits. Consumer preferences, and subsequent consumption patterns, vary world-wide. These preferences, and shifts in these preferences, are impacted by a broad range of income, social and societal factors. Global trade of the "commodity" beef is an example of the principles of "supply and demand" in its simplest form. As products become more defined, although these principles still hold, the ability to understand the nuances of pricing and volume movement fades. Dynamic choices are made in a dynamic production and marketing system. Each of these are based on "relative to other influencing factors".

Contents

Although the components of global production, consumption and trade work together in a dynamic system, they are presented individually in this section to highlight important features within each. The section closes by drawing each of the components back together, highlighting the role and interactions of each in the global beef and meat complex.

Information is organized into the following areas:

a) Who Produces Beef?
   - identifying the major players in world beef production and putting this in context with the major competing sources of meats.

b) Who Eats It?
   - identifying the major consuming countries or regions, and touching on factors that drive the consumption of beef relative to other protein sources.

c) Who Trades It?
   - identifying the major players, and the magnitude of their presence, or market influence, in the global import and export scene, and

d) Export Dependence
   - focuses on the "residual", ie. the significance of product available for export after production, consumption, imports and exports have been netted out.

The section closes by tying together the observations on each of the components. Insights into the current and future relative performance of the Focus-6 within the global beef complex are offered.

Discussions throughout this section tend to center on the Focus-6. The importance of other producing and consuming regions or countries is highlighted to add perspective on their role in the global market place, or provide an indication of a potential "opportunity", "threat" or "agent of change" within the existing system.

a) Who Produces It?

Beef

Total world beef production is pressing the 50 million metric tonne (mmt) mark. The Focus-6 countries produce roughly half of this total.

The world's top four beef producing regions during 1999 were the United States (24.7%; 12.1 mmt), the European Union (15.3%; 7.5 mmt), Brazil (12.8%; 6.3 mmt) and China (10.3%; 5.0 mmt).

Rounding out the Focus-6 countries in order of the proportion of world production (1999) has Argentina with 5.8% (2.8 mmt), Australia at 4.0% (2.0 mmt), Canada with 2.5% (1.2 mmt) and Uruguay at 0.9% (0.4 mmt).

Of note from the "Other" 24% of the world's production of beef are Mexico (3.8%), the Russian Federation (3.8%), India (3.4%), and New Zealand (1.1%). These four countries cumulatively produced 12.1% of the world's beef in 1999 (roughly 5.9 mmt) with the remaining spread over the balance of the world's producing regions.

FAO long term statistics indicate that world-wide fresh, chilled and frozen (FCF) beef production, a subset of the total, has grown from 31.8 mmt in 1965 to 57.2 mmt in 2000. North American production over the same time period has expanded from 10.3 to 15.0 mmt.

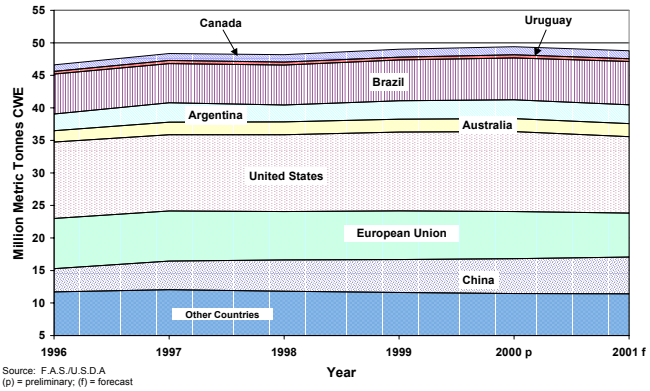
Key Elements

< Beef production, due to physiology, changes slowly. Volumes produced adjust over a period of years to meet population growth and subtle changes in demand factors.

< The magnitude of annual global beef production can be difficult to comprehend. There is a significant momentum behind the production and stocks of beef world-wide. This has two implications:

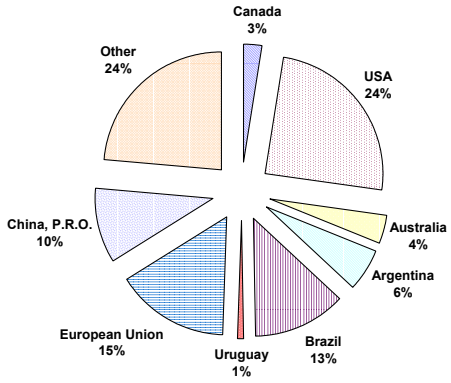
- a small percentage change in production equates to a large change in quantity. The related effects on pricing are magnified as it is based more on the quantity traded vs. produced.
- it takes a major event to make a small percentage change in volumes produced in a short period of time.

World Beef Production - Selected Countries



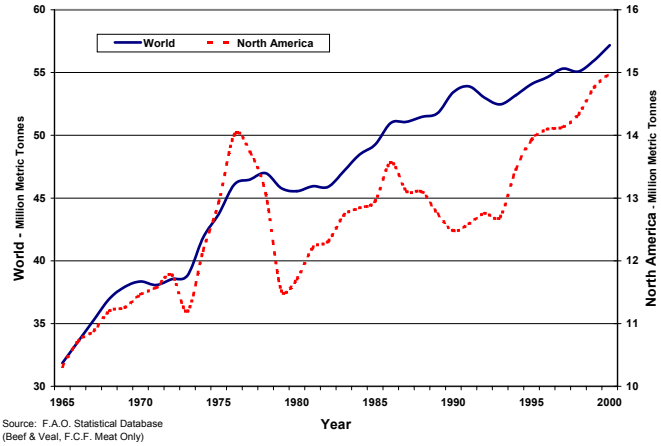
Source: F.A.S./U.S.D.A
(p) = preliminary; (f) = forecast

Shares of World Beef Production - 1999



Source: F.A.S./U.S.D.A
(p) = preliminary; (f) = forecast

World & North American Beef & Veal Production, 1965 - 2000



Source: F.A.O. Statistical Database
(Beef & Veal, F.C.F. Meat Only)

< the Focus-6 represent three distinct geographical areas. This buffers the impact of variability in global production arising from variation in weather and productivity.

Catastrophic events (such as Foot and Mouth Disease), tend to appear and spread on a regional basis. While these events can hasten the adjustment in global beef availability, the momentum of production in the balance of the world's producing regions smooths out the full impact.

< two of the three Focus-6 regions are generally FMD free. From a total production viewpoint, the appearance of FMD (or other productivity depressing diseases) would have a marked affect on longer term beef production.

< China and the European Union, not generally considered as major traders in the world market, both have significant production capabilities. Under the right circumstances both could readily shift to becoming major contributors to global beef supply.

< The "beef cycle" is visible in the longer term production information. It is more apparent at the regional (North American) level than it is at the global level.

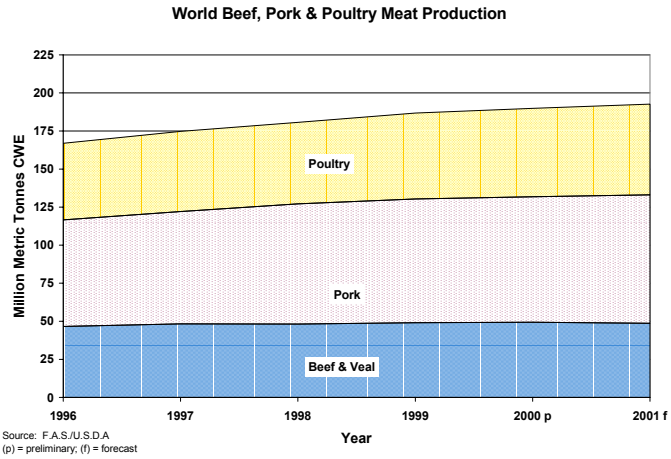
To gain a full understanding of global beef markets, it is important to recognize that "production" is only one of the elements affecting "supply and demand". Short to intermediate-term price signals take considerable time to be translated into production responses.

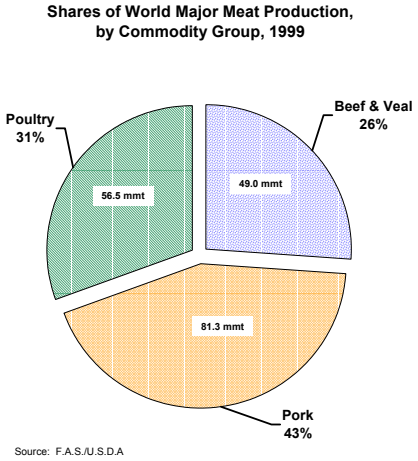
Major Meats

Beef is but one commodity, or "consumption choice", in the global meat complex. Poultry, pork, lamb, fish and other meat production comprise a large proportion of alternate animal protein sources. World production statistics for pork and poultry provide perspective into beef's relative role.

Global production of major meats (poultry, pork and beef) has ranged from 167 mmt in 1996 to 193 mmt forecasted for 2001. Over this time, annual poultry production has ranged from 50.4 to 59.6 mmt; pork has gone from 69.9 to 84.3 mmt; beef has ranged from 46.6 to 48.7 mmt.

At first blush the global beef production complex appears very large. However, beef comprises a relatively small, but significant proportion of the total meats produced world-wide. Using 1999 as the period of comparison and looking at only the three major meats, beef's





share of total production was 26.2%, followed by poultry at 30.2%, and capping out with pork at 43.5% of global production.

Key Elements

< Animal physiology implies that poultry and pork "supply responsiveness" (ie. the ability to adjust volumes produced) would be more sensitive than that of beef. This is generally a function of days from the beginning of gestation to slaughter.

< Most of the gains in increased meat production over the 1996-2001(f) period are attributable to pork and poultry. Beef's share appears to have slipped marginally. However, this time frame is generally too short to conclude that this is a long-lasting trend.

b) Who Eats It?

There is a subtle difference between consumption and demand for a product. Generally speaking, consumption refers to the disappearance of a product subject to short term supply (or availability) at a prevailing price. Demand is a longer term, more dynamic notion incorporating:

< drivers of longer term per capita consumption trends (such as tastes and preferences; cultural factors; product acceptance; income levels and distribution; etc.)
< response to prices of the product and its substitutes, and
< population.

Typically, consumption (or disappearance), a short term observation, cannot be directly related to the longer term relationships of "demand" per se. Simplistically, consumption equals production plus/minus change in stocks. This section relays information on consumption. Later sections refer to adjusting product attributes to meet segments of demand.

Beef consumption is closely linked to the events occurring with other meats. Some of this interaction will be covered jointly in the Major Meats consumption section.

Beef

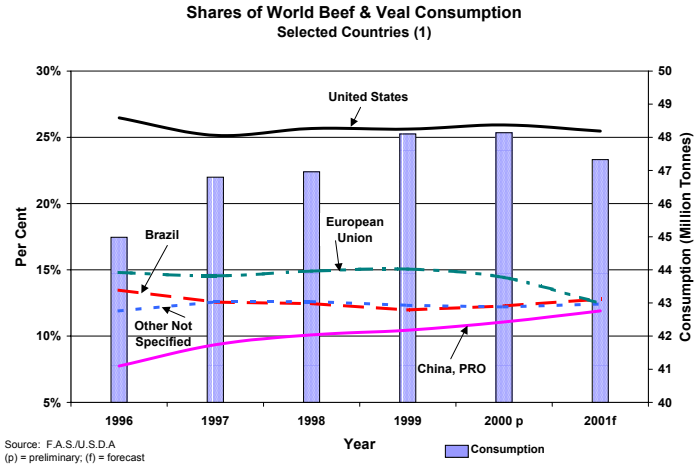
World beef consumption has averaged in the vicinity of 47.0 mmt over the period of 1996 through 2001(f). With the exception of 1996, consumption has varied within 2% of this average.

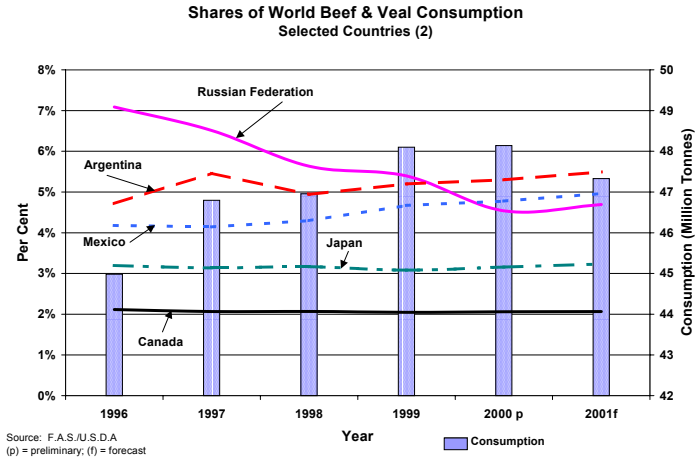
Beef consumption (quantities and shares of total) and proportion of the world's population, by selected countries and regions are summarized as follows:

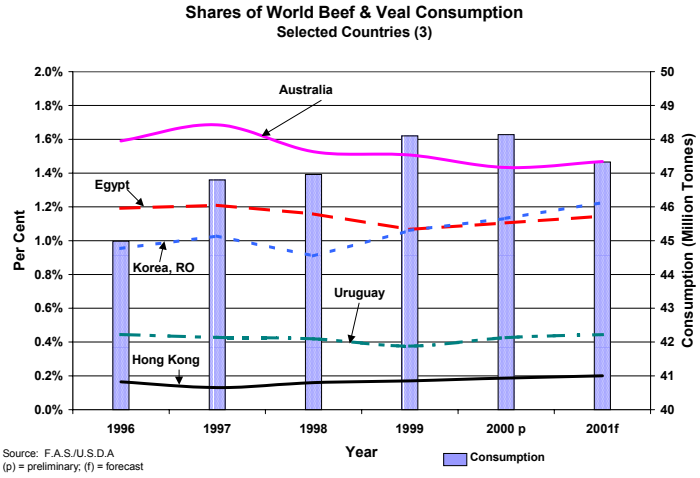
World Beef Consumption and Population, 1999

Country / Region	Consumption mmt	Consumption % World	Population % World
United States	12.3	25.6	4.6
Canada	1.0	2.0	0.5
Focus-6	22.5	46.7	8.9
European Union	7.2	15.1	6.3
China	5.0	10.4	21.3
Other	13.4	27.8	63.5

Source: FAO; FATUS / USDA







The U.S. and the European Union constitute the largest share of world beef consumption, driven by the sheer size of their populations.

The Focus-6 group, with 8.9% of the world's population, consumed 46.7% of the beef. China has over 20% of the world's population, yet consumes only 10% of the beef. The "rest of the world" (not included in the above) consumes 28% of the total on the weight of close to two-thirds of the population.

Key Elements

< Most of the countries and regional groupings display reasonably consistent consumption share patterns over the period in question. Some notable exceptions include:
  C the European Union's consumption of beef has tailed off in recent years. The FMD and BSE situations within both the Community and some of their more significant trading partners may have a role.
  C The Russian Federation's consumption share has declined fairly drastically over the period. This could be rooted in a combination of shortage of foreign currency and a general decline in income levels, or buying power.
  C China's share of global beef consumption has risen over four full percentage points, from 7.7% to 11.9%. This is in part attributable to population growth and advancing income levels.

< Share measures are "relative" and, in times of changing total volumes, require close scrutiny. For instance:
  C Australia's share of global consumption seems to have fallen over the 1996 - 2001(f) period. Absolute volumes have only declined marginally while consumption in other regions has been rising. Relatively, Australia's situation appears worse than it might be.
  C When countries "gain" in share, others must be drawing back. For instance, the "Asian Flu" reduced the buying power of a number of Pacific Rim countries. This was reflected in reduced consumption shares. can appear directly in their shares (Korea for example). On the other hand, countries that simply maintained consumption levels appear to have stronger percentages.

< Quantities as presented do not relate product characteristics or their associated value. For example:
  C North and South American consumers have historically been buyers of "commodity beef" (ie. relating to basic cuts). These tend to trade at a lower value than what is perceived in North America as specialty, or further processed items.
  C Products consumed outside of the Americas tend to be more focused in their traits or characteristics (ie. to suit local needs and preferences). This is particularly the case in some of the more import-dependent countries such as in the Asian Pacific Rim. Volumes consumed may be lower, but the product specification relates to specific dietary and preparation requirements. These products can trade at a higher relative value.

Major Meats

Beef is one choice among an array of meat protein sources. Other plant-based sources also play a significant role in meeting the dietary protein requirements of the world's population (although this is outside the bounds of this review, its affects should be kept in mind). This section provides perspective on the global market place in which beef is one of many players, and helps put the "supply and demand" relationships into context.

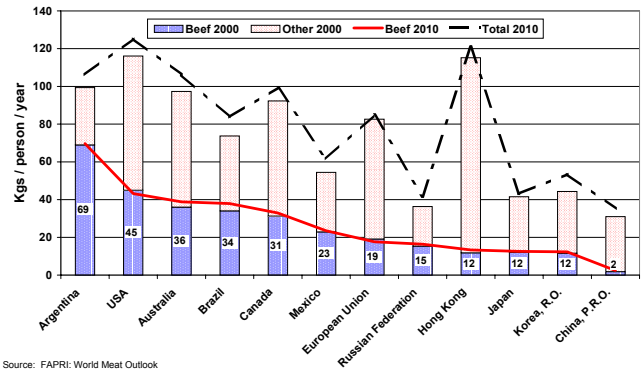
Consumption patterns of meats vary significantly by region, and by country, based on the factors noted previously. Food and Agricultural Policy Research Institute (FAPRI) per capita consumption (PCC) estimates for beef and other meats by selected countries for 2000 and projections through to 2010 are provided as reference.

The chart illustrates the variability in total meat consumption, and beef as a component of the total. Hong Kong and the United States lead the "selected countries" group with a meat PCC of 115.2 and 116.1 kg. per person per year, respectively. Beef's shares of these totals are vastly different, however. In 2000, Hong Kong averaged 11.8 kg compared to the U.S.'s 45 kg. The comparable Canadian average consumption was 92.3 kg. of meat per person per year, of which roughly one third was beef.

Change in PCC over time is a gradual process. Of the countries presented, beef PCC changes are modest. Brazil, Australia, Canada and Hong Kong have the largest projected PCC increases over this 10 year period at 3.9, 2.8, 1.6 and 1.5 kg. per person per annum respectively. Argentina, Mexico, the Russian Federation, Japan, Korea and China are projected to increase beef consumption to between 0.5 and 1.0 kg. per person per year. The U.S. and the European Union are actually projected to decline by 1.8 and 1.4 kg. per year lower than their 2000 consumption levels.

Increases in other meats' PCC are more aggressive, however. Of the countries presented, Japan is the exception with a predicted increase of only 1.0 kg. per person per year. At the top end, the U.S. and Korea are expected to increase PCC of other meats by 11.0 and 8.5 kg. Argentina, Australia, Brazil,

Per Capita Consumption of Meat, 2000 & 2010e
Selected Countries



Source: FAPRI: World Meat Outlook

World Population - 1999
Selected Countries &/or Regions

Country / Region	Population (millions)	Share of World (%)	Annual Growth (% 92 to 99)
Australia	18.7	0.3%	1.1%
Canada	30.9	0.5%	1.1%
Korea, R.O.	46.5	0.8%	0.9%
Mexico	97.4	1.6%	1.7%
Japan	126.5	2.1%	0.2%
Former Soviet Union	197.9	3.3%	-0.2%
United States	276.2	4.6%	0.9%
South America	340.8	5.7%	1.6%
Uruguay	3.3	0.1%	0.7%
Argentina	36.6	0.6%	1.3%
Brazil	168.0	2.8%	1.4%
European Union	375.0	6.3%	0.3%
China	1,274.1	21.3%	1.0%
Other	3,194.5	53.4%	1.9%
World	5,978.4		1.4%

Source: FAO Statistical Database

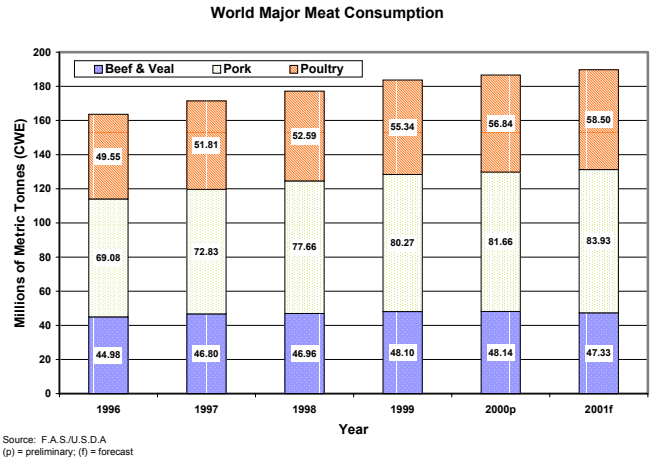
Canada, Mexico will see increases in the range of 5.5 to 6.5 kg. The Russian Federation, Hong Kong and China are projected to increase PCC of other meats by 4.4 kg., 4.4 kg. and 3.6 kg., respectively.

Looking at the population element, according to FAO, the world's population has risen 10.1% from 1992 to 1999, roughly 1.4% per annum. The global total stands at roughly 5.98 billion people at the end of this period.

In terms of magnitude, China has the largest population of the countries presented, at about 1.3 billion, or 21.3% of the world's total. The "Other" grouping, which includes all of the countries not specified in the chart, accounts for 3.2 billion, or 53.4%.

Population growth varies from region to region as well. Developing regions tend to have higher growth rates, such as South America at 1.58% per annum. The "Other" grouping noted above contains a broad cross-section of countries but is generally dominated by developing countries. This group has experienced a 1.87% average annual rate of population growth. The U.S., European Union and China experienced growth rates of 0.91%, 0.26% and 0.98% respectively over the period. The Russian Federation actually had a negative growth rate of -0.19%.

Total world meat consumption is a product of consumption patterns and population. World major meat consumption rose gradually from 165.6 mmt in 1996 to 189.8 mmt in the 2001 forecast period. During the 1999 comparison year, shares of consumption, as expected, roughly mirrored that of production with beef and veal at 26.2%, poultry at 30.1% and pork at 43.7%. This follows with the axiom, "sell it or smell it!"



Key Elements

Discussions on the key elements of beef and meat consumption revolve around those factors that define the choices made in meeting dietary protein requirements.

Income Effects

< Propensity to consume meat relative to other protein sources tends to increase as income levels rise.

< Propensity to consume beef relative to other meats tends to increase with income levels. Nested within this factor are a myriad of observations and relationships:

C low average income and/or "Lesser Developed Countries" (LDC's) tend to have lower per capita beef consumption. Exceptions occur in regions with pent up supply, reducing the local cost of beef.

C as developing nations experience economic growth, general income levels rise. Other factors remaining constant, beef consumption rises in concert. This is the main rationale behind considering developing regions as having potential for expansion in beef consumption.

C regions experiencing economic depression or set-backs may in effect revert to "low income spending patterns". This puts beef, as a consumption choice, at a lower priority relative to pork, poultry, fish, etc.

C rising income levels within developed economies yield a greater level of disposable income. This additional income can be directed to fulfilling more refined preferences. This leads the tendency to shift from beef as a "commodity" to beef as a "product". The product traits relate to purchasing specific characteristics such as convenience.

Population Effects

< these are generally straight forward in that the product of population and per capita consumption yields total disappearance. For instance, although the PCC of beef in China or Japan appears relatively low, the magnitude of their population translates into significant volumes consumed.

< rates of population growth, combined with PCC trends are important in identifying consumption growth opportunities.

Preference Effects

< the societal component of preferences relates to consumption patterns based on the nature of products typically consumed or accepted by a population segment within a region. For instance, religion, customs or tradition may preclude the consumption of beef, or favour another meat relative to beef.

< the product trait component of preferences refers to those characteristics that influence the general preference of one product relative to another, within or among the major protein source categories. These include perceptions of convenience, safety, health, flavour, acceptability in presentation, and so on.

- income levels permitting, preferences generally relate to value-adding opportunities. More specifically, this is the opportunity to manipulate product's traits, targeting characteristics to a specific "demand segment". This yields the opportunity to increase value and/or volume, improving overall revenues. Generally speaking, the basic pork and poultry commodities have made significant strides in this type of "manipulation". Beef has yet to make similar inroads.

Relative Pricing

- product pricing, both "own price" and that of substitutes, are the culmination and focal point in the choice of meats. How meat is priced relative to alternate protein sources, and then how beef is priced relative to other meats has a significant impact on volumes consumed.
- relative pricing has two significant elements. Firstly, in the shorter term meat production is the subject of production and pricing cycles, which can result in substitution of one meat for another as relative prices change. Secondly, longer term trends in relative product prices can result in "embedded" consumption choices, ie. if a one product is consistently less expensive, consumption patterns become set, forming the basis of preferences.

Sidebar: Affect of Trade Liberalization

- the anticipated outcomes of trade liberalization should technically enable each of the previously mentioned factors to give momentum to consumption of meats, in particular beef. These outcomes include:
  - increasing income levels resulting from advanced economic growth, and
  - reduction in product pricing resulting from freer access and improved availability.
- NAFTA, Free Trade of the Americas, WTO, etc. all aim at improving trade, generating growth and making lower cost products available to a wider population base.

c) Who Trades It?

The trade in beef among countries relates the "netting out" of production less consumption, leaving a "residual" available for trade. It is also important to lay over this net the notion that preferences for certain cuts or product types will also affect trade flows.

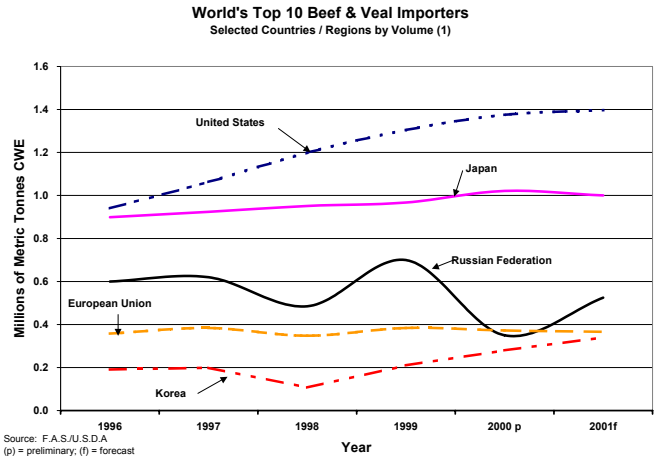
Imports

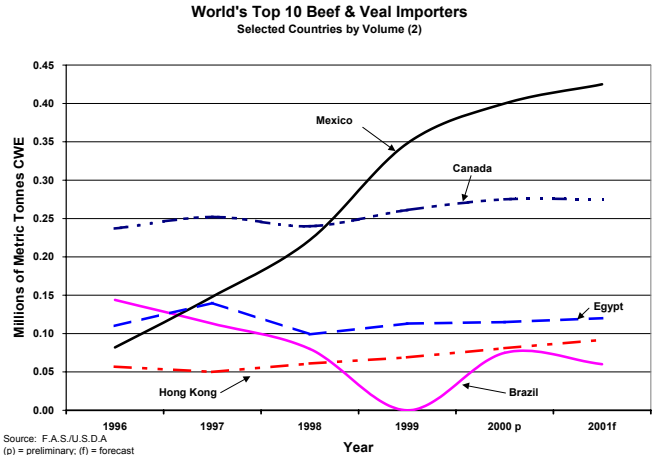
The record of the world's top 10 beef importing countries is used to give perspective to this segment of trade. Cumulatively, imports of beef by this group has grown by approximately 1.0 mmt, from 3.62 mmt to 4.60 mmt over the 1999 to 2001 forecast period.

The major players on the beef import scene are the United States and Japan. The U.S.'s large and rising share (1.3 mmt in 1999) relates to feeding its population base and its presence in targeted export markets (as per the following section). Japan's reliance on beef imports (0.97 mmt in 1999) arises from the combination of its population base and the focus of domestic beef production resources on high valued, focused products.

Mexico and the Russian Federation are notable in that circumstances occurring in their countries have affected their beef import patterns. Mexico's beef imports have risen dramatically from just under 0.1 mmt in 1996 to over 0.4 mmt in the 2001 forecast period. Economic and political instability in the Russian Federation, compounded by foreign currency shortfalls, have resulted in relatively large year-to-year variability in beef imports, ranging from a high of 0.7 mmt to a low of 0.35 mmt.

Japan, the European Union, Canada, Korea, Egypt and Hong Kong consistently accessed the world market for their beef supplies over this period, with 1999 import volumes of 0.97, 0.38, 0.26, 0.21, 0.11 and 0.07 mmt, respectively.





Key Elements

< to give perspective to the magnitude and importance of the beef import volumes of the top 10 group, in 1999 their import volumes were roughly equivalent to:
  C 75% of the product offered into the world market as exports
  C 9.0% of the world's total consumption of beef
  C 2.3% of the world's total consumption of major meats.
< the charts express carcass weight equivalent volumes but do not differentiate by type of product imported or the associated value. In the case of the U.S. particularly, imports tend to be of lower valued commodity
< although the volume from country-to-country may vary from year-to-year, the total quantity moving stays relatively consistent.

Exports

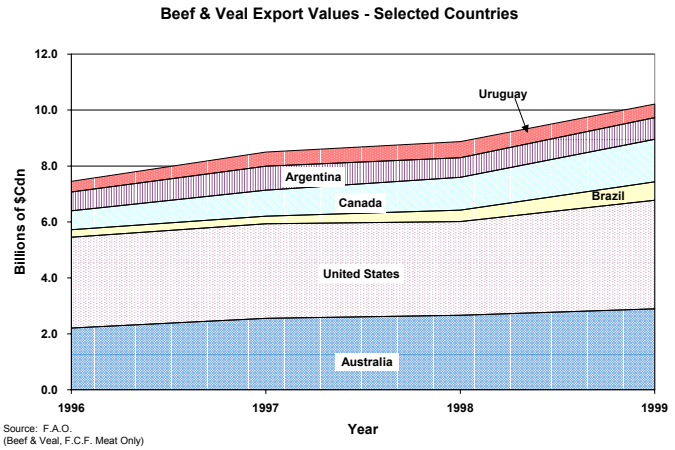
USDA short term statistics on world beef exports show total volumes ranging from 5.1 mmt in 1996 to 5.8 mmt in 2001(f). FAO's estimate of the value of beef exports pegs this volume at approximately $18 to $21 billion.

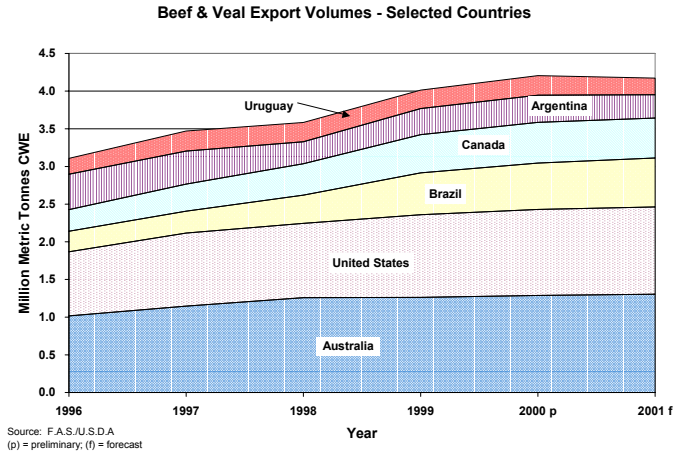
The Focus-6 share of world beef exports in 1999 was 68.8% of the volume and 47.8% of the value traded. Within this group the break out of volume and value sheds some light on the roles of the trading partners within the world.

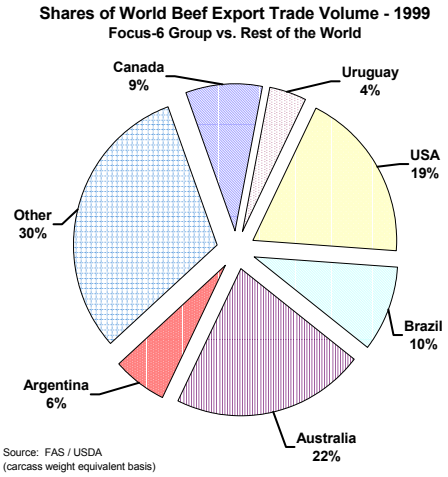
Generally speaking, short term export volumes are tracking in the range of population growth with the value of exports tracking along side. Export value information has been converted to Canadian dollars for consistency of comparison but this requires closer scrutiny due to changes in relative exchange rates.

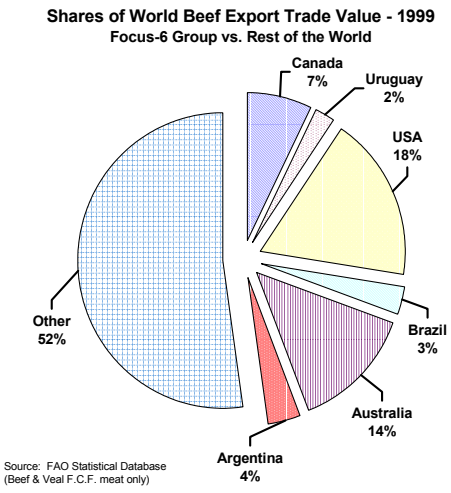
Key Elements

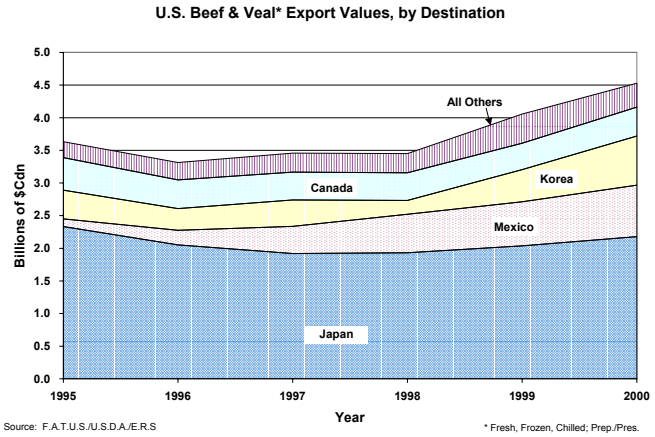
< the United States and Australia are the dominant players in beef export circles with 41% of the volume and 32% of the value.
< significant differentials between the share of volume vs. the share of value indicate the composition of product traded. A value share for a country in excess of its volume share implies the product traded is of relatively higher value. Particularly,
  C the "Other" block moves 52% of the value compared to 36% of the volume. This suggests that the product traded is likely specialized, "value-added" product, processed to meet a specific market need.

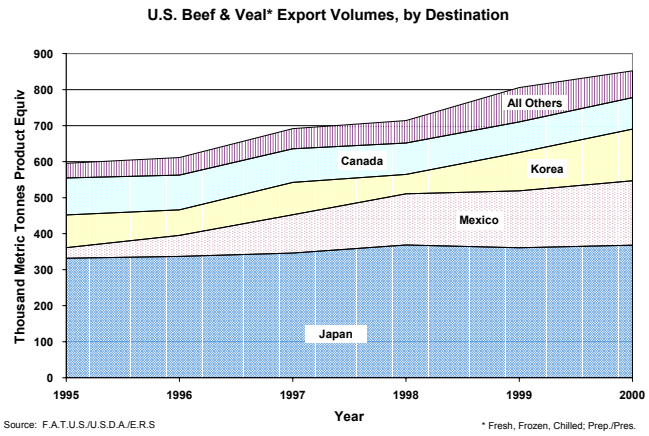


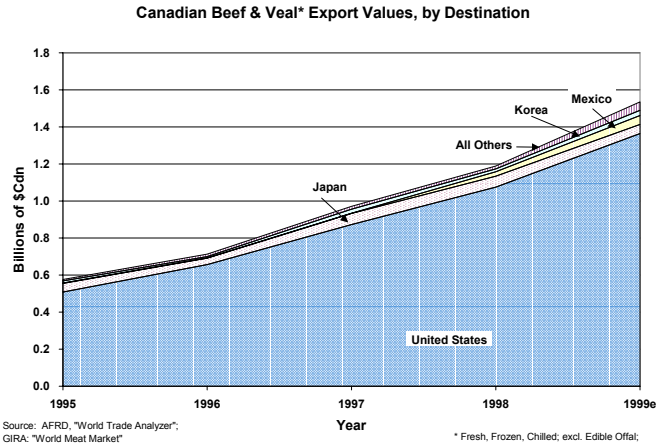


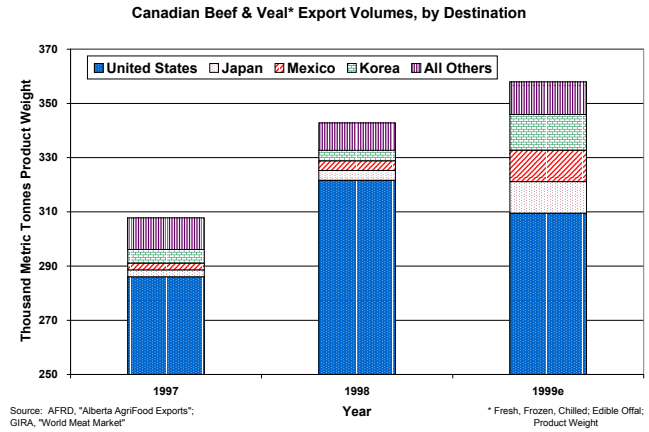


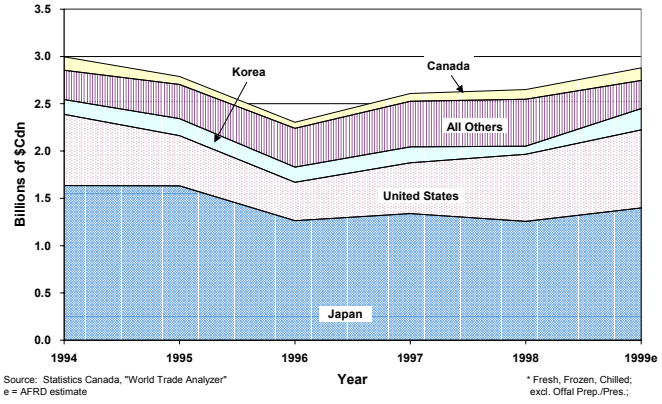


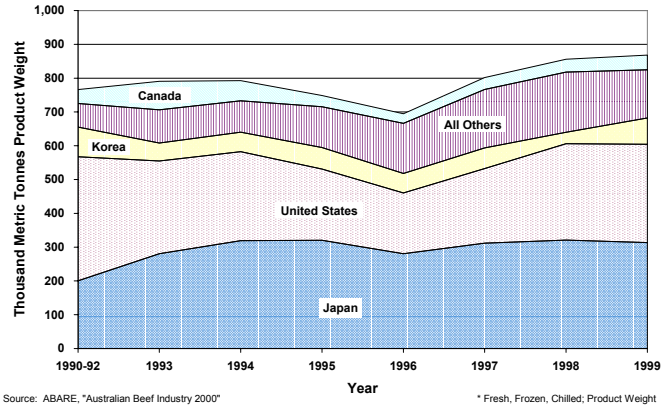








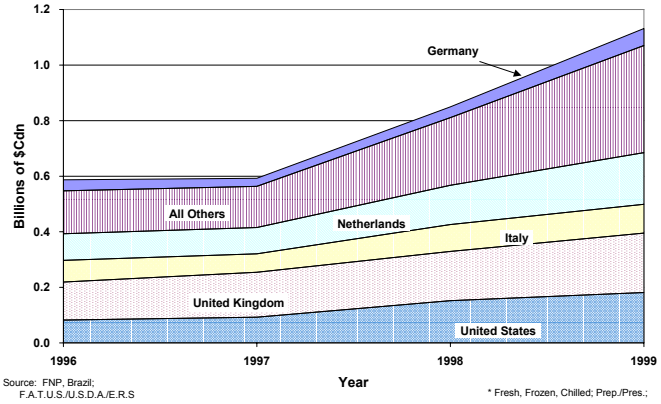




- Conversely, the "Other" shares imply that the Focus-6 group are weighted more heavily to the "commodity beef" trade.
- the volume shares for Australia and Brazil lead the value shares by a wider margin suggesting a predominance of lower unit valued product traded. Canadian and American shares are almost on par implying a more even balance. Argentinian and Uruguayan shares are too small to venture a definitive interpretation.

- the "export by destination" charts highlight established export trade patterns and give insight to emerging shifts and opportunities
  - in 1999, 44.7% of the U.S. beef export volume was targeted to the Japanese market. This comprised 50.2% of the total U.S. value. American exports are focusing on higher valued market segments.
  - the U.S. is the dominant destination for Canadian beef, taking in 80.8% of the volume and 90.4% of the value of product leaving Canada. Over the short time frame of information available, Canadian volumes and value of shipments have expanded significantly. Volume-based in-roads have been made into the Japanese, Korean and Mexican markets.
  - the primary destination for Australian beef is the Japanese and American markets, combining for 69.6% of Australian volume and 77.2% of their value in 1999. Product entering the U.S. market, however, is roughly half the unit value of that going to Japan.
  - Brazilian export volumes have doubled across its major trading partners, and almost tripled in the "other destinations" group from 1994 to 1999. In this latter year, a few specific European Union countries absorbed 44.9% of Brazil's export volume and 49.8% of their export value. Average unit values of product shipped are comparable with that coming from Australia but generally less than Canadian and American export product values.
  - Argentinian and Uruguayan trade statistics, by destination, are available for value only. Without volume statistics it is difficult to surmise whether the root of changes is in exchange rate fluctuations, or other event or trend-based factors. Both countries export significant product value to other South American countries and have a substantial share of their totals moving into the European Union.

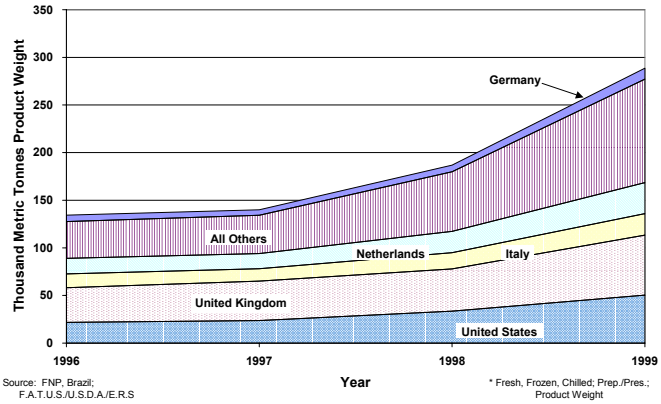
Brazilian Beef & Veal* Export Values, by Destination



Source: FNP, Brazil; F.A.T.U.S./U.S.D.A./E.R.S

* Fresh, Frozen, Chilled; Prep./Pres.;

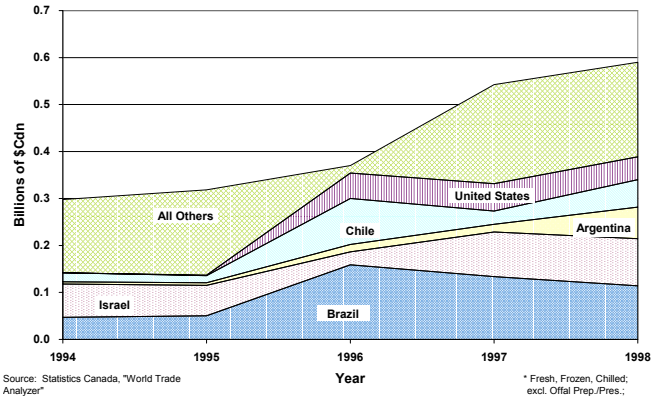
Brazilian Beef & Veal* Export Volumes, by Destination



Source: FNP, Brazil; F.A.T.U.S./U.S.D.A./E.R.S

* Fresh, Frozen, Chilled; Prep./Pres.; Product Weight

Uruguayan Beef & Veal* Export Values, by Destination



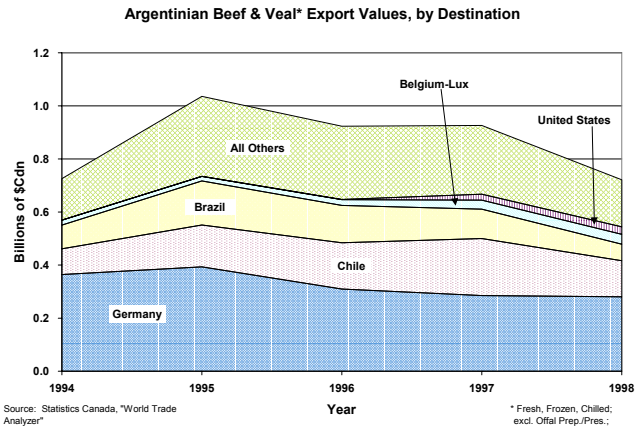
Source: Statistics Canada, "World Trade Analyzer"

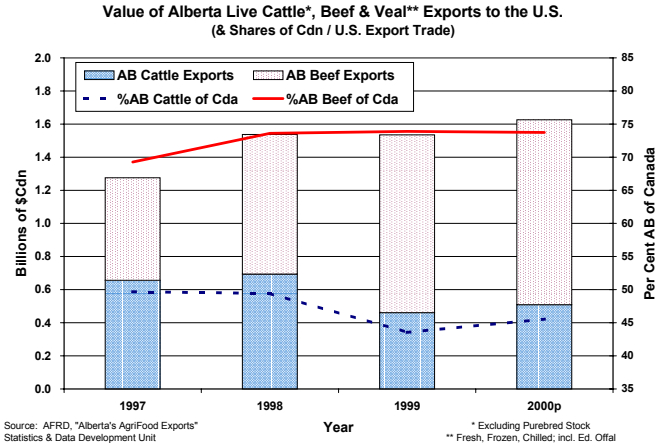
* Fresh, Frozen, Chilled; excl. Offal Prep./Pres.;

- The final leg in the review of global export markets is defining Alberta's contribution to Canada's beef export trade. This involvement is framed relative to the country's largest export market, the United States, over the period of 1997 to 2000(p).
  - the aggregate value of total beef and cattle exports from Alberta to the U.S. has risen by roughly $350 million.
  - Canada's exports of beef to the U.S. have increased by $621 million, of which $498 million was attributable to Alberta sources.
  - The movement of Canadian live cattle to the U.S. has declined over this period, moving from $1.3 billion in 1997 ($657 M from Alberta) to $1.1 billion ($509 M from

Alberta) in 2000.

- Alberta's shares of the Canadian beef (73.7%) and live cattle (45.5%) trade over time are an indication of the transition to greater feeding and slaughter activity in the Province. This trend must be tempered by the knowledge of significant feeder imports from both the U.S. and other Canadian provinces.
- The magnitude of Alberta's share of Canadian export business also relays the Province's prominence in the global export trade scene.





d) Net Trade and Export Dependence

The progression through production, consumption, imports and exports leads to "What's Left Over?", ie. what is the residual commodity available to meet the consumption needs of countries in deficit. Looking at any one of these elements in isolation can lead to unfounded conclusions.

The three key factors driving the world beef complex are:

< Net Trade: after production, consumption and imports are accounted for, the magnitude and value of the "residual" product available for export (if any),

< Market Share: the volume- and/or value-based influence a country exerts relative to competitors, and

< Export Dependence: a country's dependence on export markets to dispose of production in excess of its needs. For current purposes, export dependence is defined in percentage terms as:

*= [(1-(Consumption/Production)]*100*

Each of these three factors are addressed separately.

Net Trade

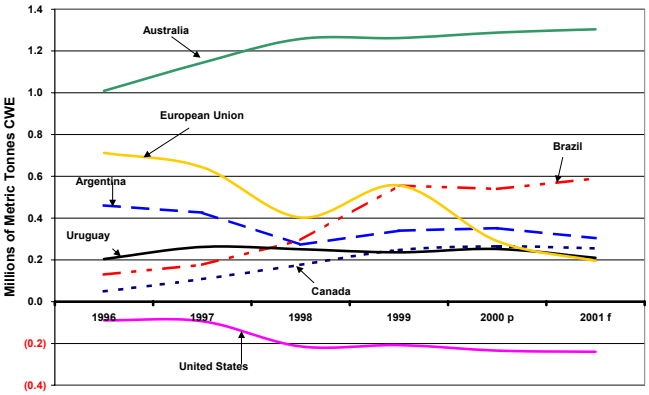
Net export volume statistics are provided primarily for the Focus-6 group to show the relative presence of these countries in world beef trade.

Australia leads the field of countries in terms of net export volumes, moving up from 1.0 mmt in 1996 to 1.3 mmt in 2001(f). Over the same period, Brazil has increased from 0.13 mmt to 0.59 mmt, Argentina has declined from 0.46 to 0.30 mmt, Uruguay has remained relatively constant in the 0.20 - 0.25 mmt range, and Canada has moved from 0.05 to 0.26 mmt in net volume.

The European Union's net export volumes are provided to give perspective to the Focus-6. The Community's volume was highly variable for the period but declined generally from 0.71 mmt in 1996 to 0.20 mmt in 2001(f). The EU information is a soft comparable at best. Intra-Community trading effects may not have been completely removed from the statistics.

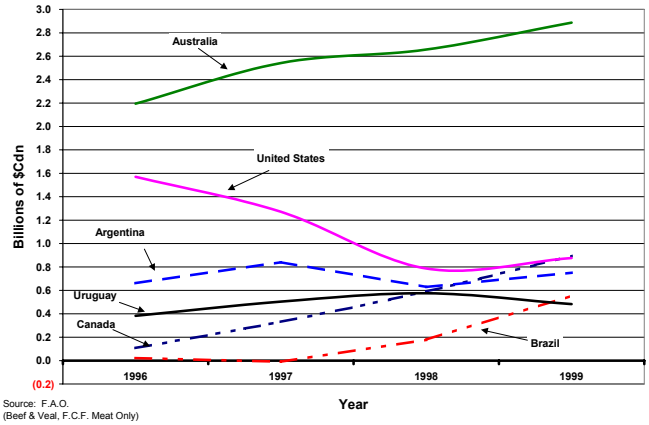
The dominance of the U.S. in terms of production, consumption and exports is put into perspective when viewed from a net export basis. Over the review period, the United States has been a net importer of beef in the range of 0.09 to 0.24 mmt.

Beef & Veal Net Export Volumes - Selected Countries



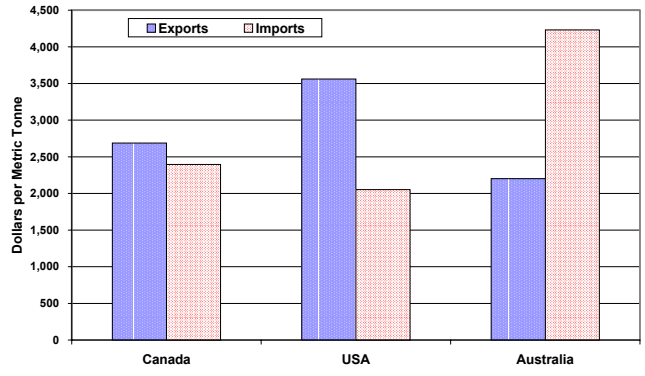
Source: F.A.S./U.S.D.A
(p) = preliminary; (f) = forecast

Beef & Veal Net Export Values - Selected Countries



Source: F.A.O.
(Beef & Veal, F.C.F. Meat Only)

Unit Beef Export & Import Values



Derived from: F.A.O. Statistical Database & FAS / USDA

In many instances, the value side of the picture is similar to the trade volume side. However, the effect of relative exchange rate movements (ie. shifts among countries) must also be considered when undertaking inter-country value-based comparisons.

Australia's net export value has climbed consistently from $2.19 billion in 1996 to 2.89 billion in 1999. Brazil has moved from a position of almost a zero trade value balance to $0.55 billion. Canada has progressed over the four years from $107 million to $0.89 billion. Argentina and Uruguay have grown gradually, ending the period with net exports worth $0.75 and $0.48 billion, respectively.

The U.S. is the exception, however. Although they were net importers of beef volume, they were net exporters on the basis of value. This is roughly equivalent to importing hamburger and exporting steak. The Americans began the review period with a net export value of $1.57 billion and this tailed off to a net value of $0.88 billion in 1999.

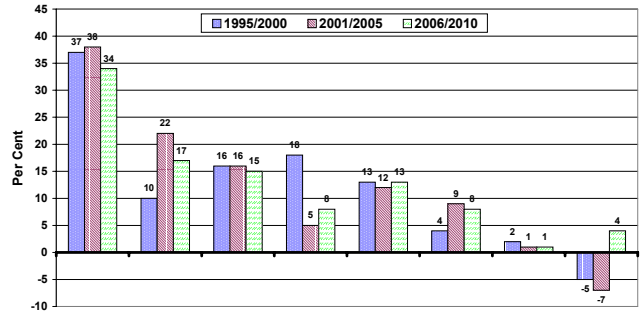
A rough estimate of unit import and values (average Cdn dollars per metric tonne over the review period) has been provided to drive home the value vs. volume differential. Canadian and U.S. exports were generally of higher value than for the commodity imported. There is a marked difference for the U.S. where imports averaged $2,053 per metric tonne (Cdn) while exports average $3,562 per mt. Conversely, Australian exports averaged $2,202 per mt.

Market Share

Beef (net) export market share estimates for selected countries were developed by FAPRI in the U.S. for the recent past (1995/2000), the current (2001/2005) and the intermediate term future (2006/2010). On a volume-only basis, market shares give an indication of market power (influence and momentum) within a trading complex. Although not presented, this power can be eroded by value-based product differentiation and other trade considerations.

Brazilian and Canadian world beef market shares are expected to expand from the past to the current period, with Brazil moving from 10% to 22% and Canada expanding from 4% to 9%. The European Union's share is expect to decline from 18% to 5%. The balance of the

Beef Export Market Shares - Selected Countries
(Averages for Periods Specified)



Source: FAPRI 2001, World Meat Outlook

countries remain relatively static.
Looking to the longer term, however, the most significant element in FAPRI's projection is that the United States will be moving from a net import to a net export position. This will be harvested from current to future period changes in the most part by net share losses by Australia and Brazil. The EU is also expected to regain some lost ground.

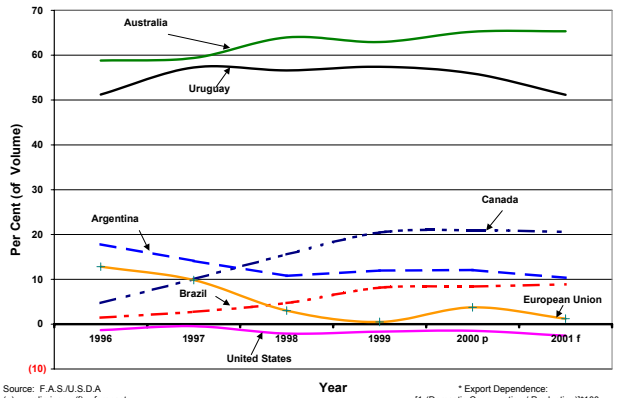
Export Dependence

Stated as a percentage, export dependence relates the share of a country's or region's production that is available for export.

During the period of review, Australia and Uruguay lead the Focus-6 with shares averaging 62.6% and 54.9%, respectively. Essentially, in Australia almost two of every three animals produced must be exported.

Canada's export dependence share has risen from 4.7% in 1996 to 20.6% in 2000(f). Brazil's has followed suit, moving from 1.5% to 8.9%.

Beef & Veal Export Dependence* - Selected Countries

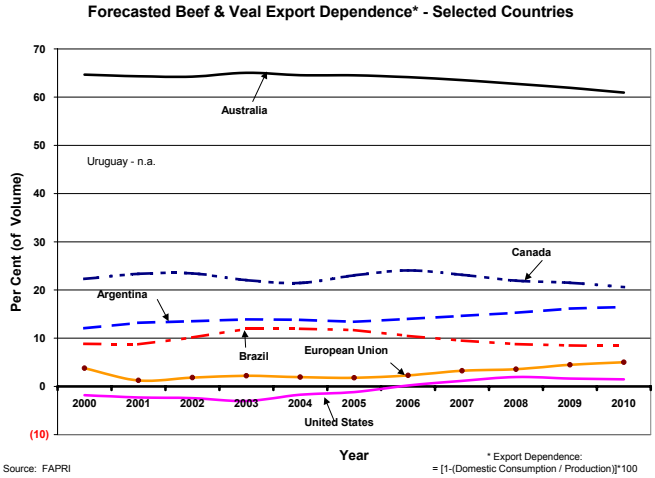


Source: F.A.S./U.S.D.A
(p) = preliminary; (f) = forecast

* Export Dependence:
= [1-(Domestic Consumption / Production)]*100

As a net importer, the American export dependence ratio hovered at just under zero, averaging -1.6% for the period. Argentina's and the European Union's export dependence actually declined through the period, although the reasons for this are not likely the same.

FAPRI intermediate term estimates of country-by-country production and consumption enabled the estimation of a similar projection of export dependence through to 2010. Ranking the Focus-6 in order of export dependence by the end of this period, countries (and %'s), yields: Australia (60.9%), Canada (20.6%), Argentina (16.5%), Brazil (8.4%) and the U.S. (1.5%). Estimates were not available for Uruguay.



The significant observations from this forecast are that the U.S., once again, moves to a net export position and the European Union's share will remain low, but positive as well.

Key Elements

< in 1999, the Focus-6 produced 50.7% of the world's beef yet exports 68.8% of the volume. As the U.S. is a net importer of beef volume, removing it from the estimate leaves the remaining five countries with 26% of the production and 50% of the export volumes.
< Australia leads the Focus-6 in net export volume, and along with Canada and Brazil, advanced their positions over the review period. These patterns held for export value as well.
< the U.S. moved to a larger volume deficit from 1996 to 2001(f), yet remained in a positive, although diminished, net export value position.
< the U.S., and to some extent Canada, appear to be shifting towards importing lower valued "commodity" while exporting higher valued "product".
< volume-based export market shares are lead by Australia and Brazil. Canada holds a small share and the United States is, in the near term a net importer. Looking out to the end of the decade, the U.S. is expected to move into a positive share position. This will impact the countries that to now rely on the U.S. as an outlet for beef and certainly impact those in which they are competitors.
< when market share is calculated on a volume basis, countries with a greater focus on "commodity" beef sales (Australia, Brazil) will be more sensitive to share changes.
< volume-based market shares mask the effects of value-based export activities. The U.S. may continue it's importation of beef as a commodity, but is expected to compete very hard to hold and expand its value-added product markets.
< the implications of export dependence, within a country, are far reaching. Export dependent countries tend to be more sensitive to their costs of producing the commodity. There is added pressure within export dependent countries to deliver lower cost commodity to remain competitive in commodity-based export markets.
< if the production and/or productivity growth rate exceeds the population growth rate, export dependence shares advance. This impacts extensive vs. intensive production systems in different manners, but with similar effects.
< export dependence patterns focus the observations brought forward through the discussions on net exports and market share. Although the U.S. export dependence shares appear small, given the magnitude of their industry even a small percentage change is significant. The statistics emphatically drive home the key notion of the U.S. becoming an even more dominant player in the beef (volume and value) export complex.
< notwithstanding the value vs. volume discussions, projected export dependence percentages for the European Union do not hold much promise for a major break through in that market, unless it's on a value basis.

e) The Impact of Livestock Disease on Export Trade

The intent of this section is not to quantify the potential impacts of animal disease on trade and the agricultural economy. Moreover, discussions highlight linkages and the roots of the fears of countries of having a disease enter and take hold in their production systems.

The story on livestock diseases, Foot and Mouth Disease (FMD) as a particular example, begins and ends with the value of lost productivity. The extent to which countries will go, and the investment they will make in maintaining their disease free status is directly related to the value of lost productivity plus the economic benefit associated with maintaining their export business. The greater the productivity and second round economic losses, the more stringent "disease-free" status countries will be in maintaining this status.

Productivity losses generally relate to:
< reduced reproductive efficiency,
< reduced feed conversion efficiency, and
< poorer rates of gain.
The result, in a nutshell, is that fewer animals are produced (based on the same level of investment), and costs to bring them to slaughter are higher (in terms of feed inputs, and time related turnover costs). Cost per pound of commodity produced escalates, while pricing expectations of consumers do not.

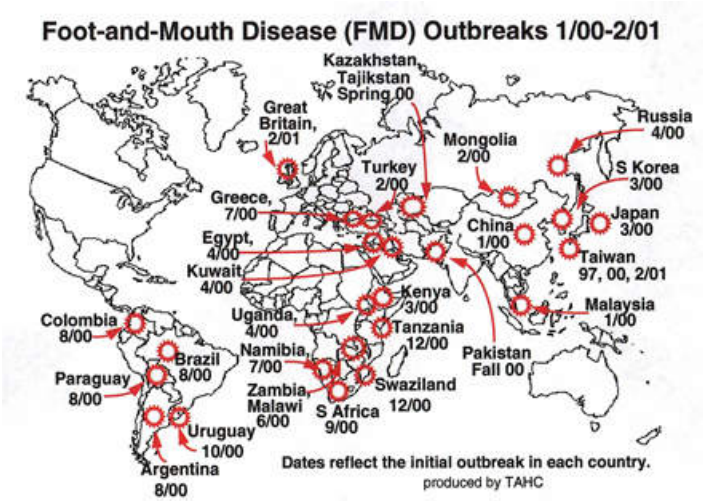
Regions with more intensive production systems are more sensitive to the effects of diseases like FMD. Extensive production systems do not rely on productivity as keenly to create economic margins. Intensive systems, such as those in North America, stake their success and competitiveness on their ability to harvest these efficiencies.

FMD knows no borders and tends to be readily transmitted on a regional basis. Once it enters a region, the likelihood it will be transmitted to surrounding countries rises dramatically. This can be either through trade of infected domestic livestock or through passage to wildlife and subsequently to domestic stock anywhere along the "migratory" path of the wildlife.

Detection and eradication are key considerations. FMD is difficult to definitively detect in a short time span, giving a chance for the disease to spread before the infected animals are contained and treated or destroyed. More importantly, eradication, once a disease like FMD enters a livestock population may be difficult if not impossible. The combination of the detection factor plus transmittal to other domestic and wild species would imply that containment is not feasible.

Because a country does not have a disease free status, does not mean that all animals in the population have the disease. A certain portion of the population will, bringing down the country's aggregate productivity. The likelihood that an individual producer's stock will contract the disease over the intermediate term time frame is higher. The result is poorer long term financial performance and increased business risk.

Although the effects of FMD, and similar diseases, settles in over the intermediate and longer term, the reaction on the trade front is generally immediate. At stake is the value of the productivity losses plus the added economic activity associated with maintaining an export business. Case in point is the recent announcement of renewed outbreaks in Argentina and Uruguay. FAS / USDA forecasts reductions in total beef exports of 29% and 32% respectively for each. Re-establishing disease free status could take in excess of two years.



f) Summary

Building upon the "resource base" section, the "production, consumption and trade/markets" section reveals how the Focus-6 dispose of their primary beef production into a dynamic world market. Summary statistics are provided below.

Key observations arising from the information presented in this section include:

< absolute volume of beef produced by a region is not as important as "what's left over" to enter the world market.

< population and per capita consumption combine as the primary drivers of beef disappearance. In the short term, beef trade is driven by this quantity demanded for local consumption. There are exceptions, however, as the notion of product differentiation occurs.

< beef is but one protein source available to meet consumers' dietary needs. Competition among meats for consumers' dollars is fierce and is fought along the lines of relative product value and associated product traits.

< consumers' income and preference sets define long term product demand. In many markets, beef as a commodity is not as high a priority as generic pork and poultry commodities. With product differentiation, serving specific consumer preferences, "priority" becomes blurred. Market expansion will be based in population segments exhibiting growth in disposable income.

< among the top 10 importers of beef, by volume, are the U.S., Japan, the European Union, Korea, Canada and Brazil. The U.S., Canada and Brazil are also actively involved as beef exporters. This opens the notion of commodity vs. product movement. The U.S., and to a lesser extent Canada, tend to import lower-valued "commodity" while exporting higher-valued "products". Particularly, the U.S. is a net importer in volume yet a net exporter in value.

< differentiation as a supplier of value vs. volume (product vs. commodity) will become increasingly important in the longer term development of beef industries within regions and defining their roles in servicing global markets.

< As Alberta contributes the lion's share of the Canada's beef production, the nation's performance in global markets is a direct measure for the Province.

< Australia leads the Focus-6 regarding world beef export volume shares and is expected to maintain this dominance through this decade. Canada's market share is projected to double by 2010 and, most significantly, the U.S. will move from a net import to a net export basis. These shifts will be primarily at the expense of Australia and the European Union.

< export dependence, as a statement of the proportion of production available for export, relays the reliance of countries on the world stage as an outlet for domestic beef industry activity. Australia and Canada are among the leaders in the Focus-6 in this regard. Export dependent countries are highly sensitive to shifts in market shares, honing their necessity to remain competitive.

< livestock diseases such as FMD and BSE have two major areas of effect. The first is in long term productivity reductions. These have a greater impact on regions with intensive production systems. The second, and more immediate impact is on the trade front with producing (and in some cases consuming) nations blocking access.

Summary Statistics - Production, Consumption & Trade

(Estimates for the base period of 1999 unless otherwise noted)

	Canada	U.S.	Brazil	Argentina	Uruguay	Australia	R.O.T.W.
Production							
- mmt CWE	1.24	12.12	6.27	2.84	0.42	1.96	24.18
- % of World	2.5	24.7	12.8	5.8	0.9	4.0	49.3
Consumption							
- mmt	0.98	12.32	5.76	2.50	0.18	0.72	25.64
- % of World	2.0	25.6	12.0	5.2	0.4	1.5	53.3
Population							
- millions	30.8	276.2	168.0	36.6	3.3	18.7	5,444.8
- % of World	0.5	4.6	2.8	0.6	0.1	0.3	91.1
Per Capita Consumption (1)							
- Beef	31.3	45.0	34.0	69.0	n.a.	36.0	- -
- Total	92.3	116.1	73.7	99.4	n.a.	97.3	- -
Export Volume							
- mmt CWE	0.51	1.10	0.56	0.35	0.24	1.26	1.82
- % of World	8.7	18.8	9.6	6.0	4.1	21.6	31.1
Export Value							
- $Cdn Million	1,515.9	3,884.2	659.3	779.1	482.5	2,894.0	11,158.1
- % of World	7.1	18.2	3.1	3.6	2.3	13.5	52.2
Net Exports							
- mmt	0.25	(0.21)	0.56	0.34	0.24	1.26	- -
- $Cdn Million	893.9	875.4	553.7	750.8	482.4	288.7	- -
Market Share % (2)							
- 1995 / 2000	4.0	(5.0)	10.0	13.0	n.a.	37.0	- -
- 2005 / 2010	8.0	4.0	17.0	13.0	n.a.	34.0	- -
Export Dependence % (3)							
- 1999	20.4	(1.6)	8.1	12.0	57.4	62.9	- -
- 2010	20.7	1.5	8.4	16.5	n.a.	60.9	- -

R.O.T.W. = Rest of the World
(1) per capita consumption estimates are in kgs. per person per year for 2000
(2) percent of world trade volume; averages for periods shown
(3) percentage = [1 - (Consumption / Production)] * 100

4. Market Analysis, Outlook and Export Market Features

Purpose: to describe the main market features driving short and intermediate term prices, demand and supply of Alberta cattle and beef products in domestic and global arenas.

The intent of this section is to link the impact of world beef production, consumption and trade patterns on local product values. These fundamentals will be the primary drivers of cattle and beef markets over the next decade.

Market analysis focuses on the broad fundamentals of supply and demand. Market supply is characterized by the aggregate sum of cattle (and beef) individual producers want to produce and deliver to the marketplace. Market demand reflects the aggregate volume that all potential buyers of beef (and cattle), in Canada and abroad, are willing to purchase. Demand for feeder cattle is 'derived' from the demand for beef. Price determination is the interaction of these market forces which establishes the market price level.

Factors which have a bearing on the amount of product being supplied include: the price of cattle and beef, the number of producers (at each level of the beef supply chain), technology and productivity enhancements, the price of inputs, the price of alternative products which could be produced from the current resource base, and unpredictable events like the weather.

The concept of demand relates to consumer choice. The demand for beef (and cattle) shifts over time as a result of such factors as: consumer demographics (population, age distribution, labour force mix), consumer income levels, the supply and price of related goods (both competing and complementary products), health and food safety concerns, consumer tastes and preferences (health and nutrition, convenience), and expectations about future prices and supplies. While a great deal of effort is expended on tracking and reporting supply and price information, demand analysis tends to be much more qualitative by nature.

Contents
The first two sections, (a) Domestic Market, and (b) World Beef and Meat Markets, review the domestic market fundamentals in relation to the global marketplace as follows:

i) Supply
   - production and consumption trends
   - affect of cycles and positioning of Alberta industry
   - situation for calves, feeders, and fed cattle markets
   - emerging and/or potential market influences
   - summary & outlook

ii) Price
   - situation for calves, feeders, and fed cattle markets
   - affect of cycles and positioning of Alberta industry
   - summary & outlook

iii) Demand
   - pricing & volumes
   - macro factors
   - emerging and/or potential markets
   - summary & outlook

An overall summary of the market analysis is provided in section (c).

The "markets" chapter closes with section (d) Overview of Selected Export Markets & Opportunities

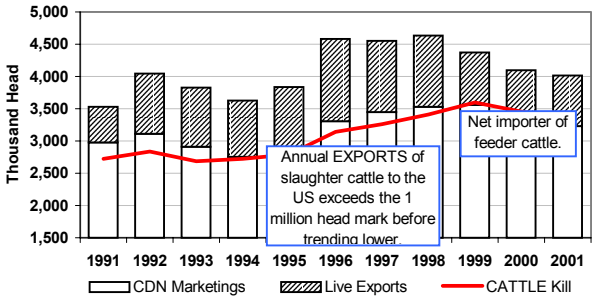
a) Domestic Markets - Situation, Analysis and Outlook

i) Supply

Cattle and Beef Production

Canadian fed cattle marketings, the sum of domestic slaughter and international exports, peaked at just more than 4.5 million head in 1998. Almost 60 percent of these animals are shipped out of Alberta feedyards. In short, while the number of fed cattle heading to market has increased, the volumes of cattle processed in Canada increased more than 24 percent (or almost one million head) from 1995 to 2000. Live slaughter cattle exports have declined from the 1996 peak of 1.3 million head in response to this added processing capacity.

Canadian Fed Cattle Supply



Source: Statistics Canada, *Livestock Market Review*; AAFRD estimate to 2001

The challenge for industry with the continued growth of Canadian feedyard capacity, and the success of the Restricted Feeder Program for importation of US feeder cattle, is to accommodate the larger fed cattle supplies that lie ahead. With the increase in cattle inventories which is projected over the next cattle cycle, fed cattle supplies are estimated to grow at a annual rate of just under 5%. The United States will remain an important residual market for the growth in Canadian beef cattle production.

Canadian Beef Supply - Disposition

	2000	2001	2002	2003	2004	2005
CATTLE (million head)						
Beg. Inventory	12.8	13.3	13.9	14.5	14.9	15.2
Slaughter	3.58	3.55	3.79	3.81	3.81	3.83
Slaughter Cattle Exports	0.695	0.675	0.602	0.762	1.006	1.238
BEEF (thousand tonnes - carcass equivalent)						
Production	1,251	1,256	1,363	1,384	1,400	1,418
Imports	268	264	262	267	270	272
Consumption	962	952	964	976	992	1,010
Exports	553	569	661	674	677	679
Ending Stocks	23	22	21	21	22	22

Source: Agriculture & Agri-Food Canada, Medium Term Policy Baseline - June 2000

Cattle Supply

The Canadian cowherd has been in a liquidation mode for the past five years. However, record high price levels, and the rebound in profitability of cowherds, have many producers 'thinking' about expansion. Until these additional breeding females actually produce a calf, any growth in the supply of feeder cattle will be marginal.

Feeder cattle supplies become even more restrictive in the turnaround phase of the cattle cycle. As more and more heifers are diverted from the feedlot and onto pasture for breeding, this leads to idle capacity in feedyards. One result is an increase in the amount of lighter weight calves in the feedlot placement mix. With fewer yearling cattle to keep pens full, buyers tend to pressure calf prices to even higher levels as competition for available supplies escalates. Overall, Canadian feeder cattle supplies will remain tight through the next couple of years until expanded beef herds start to add to the calf supply.

Beef Supply

Notwithstanding the growth of Canadian processing capacity over the past decade - cattle slaughter varies cyclically as herds expand and contract. Factoring in live slaughter cattle exports does give a better indication of Canadian fed cattle supply. Still beef production has been on a steady trend upwards, gaining 36 per cent from 1995 to 2000. Some of the factors which have contributed to this steady growth include:

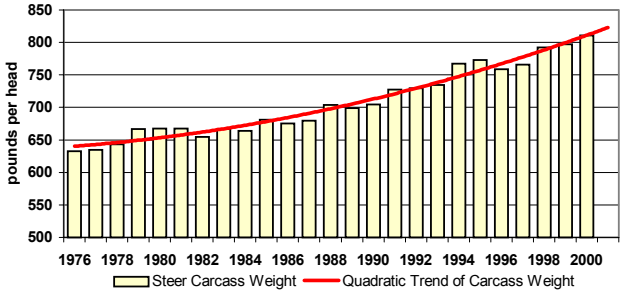
< Rapid development of Alberta feedyards - scale economies and use of new technology,
< Almost all calves are fed out to yearling weights, and
< Productivity gains - more pounds of beef per cow than ever before - more than offset any declines in cattle slaughter.

When heifers are held back total slaughter declines sharply in the beginning of inventory expansion. Tighter fed cattle supplies mean lower beef production. In Canada the pendulum

will continue to swing between live cattle exports and beef exports. The ability to increase Canadian beef production is in part tied to further increases in Canadian processing capacity.

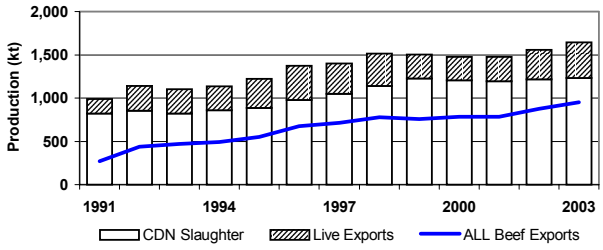
In the short term, strong retail beef movement and a slight decline in beef production through 2002/2003 will keep beef supplies tight.

Canadian Beef Productivity



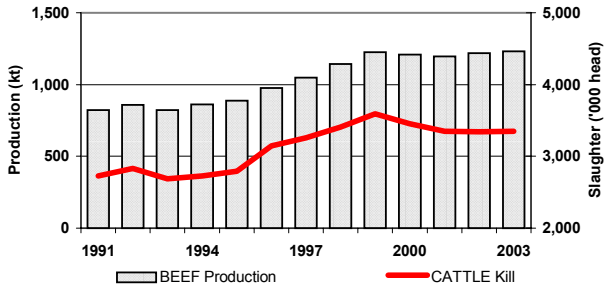
Source: Statistics Canada, *Livestock Market Review*

Canadian Beef Supply & Export Equivalents



Source: Statistics Canada, *Livestock Market Review*; AAFRD estimate to 2003

Canadian Beef Supply

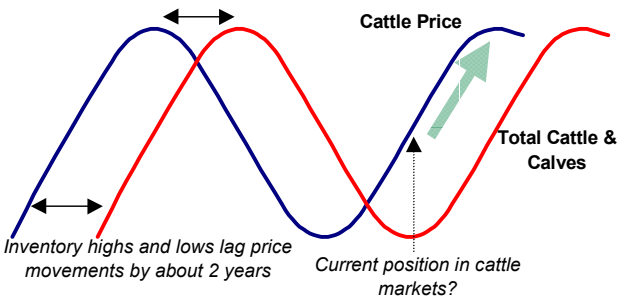


Source: Statistics Canada, *Livestock Market Review*; AAFRD estimate to 2003

Cattle Cycles

In analyzing livestock markets there are three time dimensions closely followed by industry - cycles, trends, and seasonal patterns. Cycles refer to events that tend to repeat over a period of years. The cattle cycle is a much-discussed example of this concept and is in large part a response to the biological nature of beef production and individual producer's attempts to maximize profits by expanding and contracting their operations. The time it takes to respond to these economic signals creates a lag between price peaks (bottoms) and inventory peaks (bottoms).

Price-Inventory Cycles



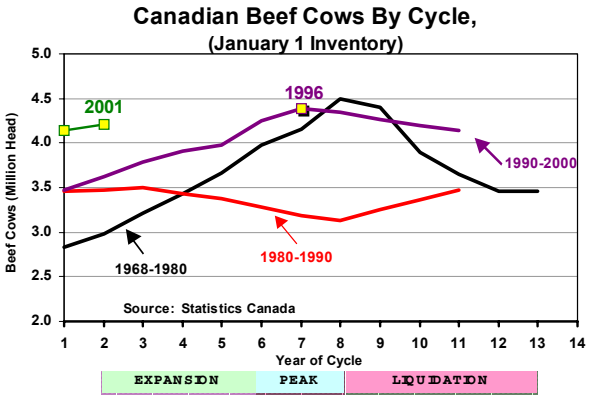
In the case of favourable price expectations, producers begin to retain heifers (and add to the cattle inventory) meaning that there are fewer fed animals available for slaughter, at least initially, which drives fed cattle prices higher. In time, this expansion of the breeding herd increases the available cattle supply, which causes prices to turn lower. Cattle producers will tend to keep retaining heifers until prices have peaked, meaning that these breeding females will continue to add to inventory for another two years. Generally cattle inventories peak (bottom) about once every 10-12 years. Keeping an eye on the cycle helps us understand where prices might be headed.

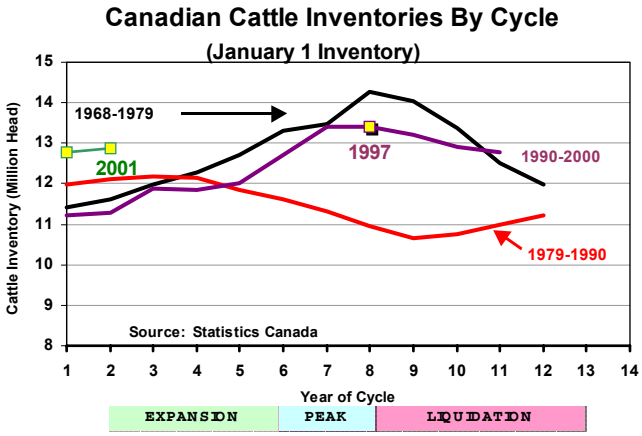
Since the price lows of 1996, the cattle industry has been quickly trimming inventories. Recent surveys of the North American cattle inventory show signs that liquidation phase may be ending and that producers are beginning to expand their herds once again.

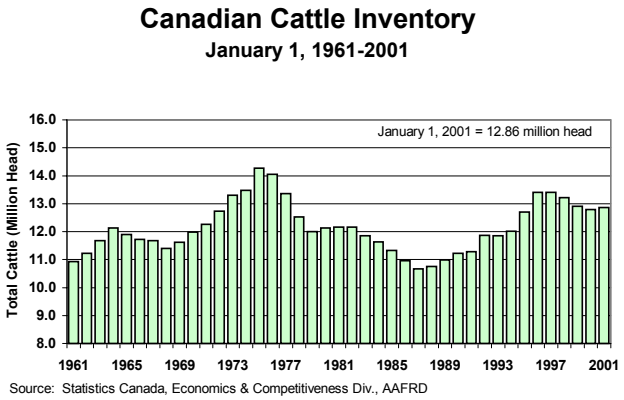
< Different factors affect each cycle, differently
- Weather
- Government policy
- International trade

< Cycle indicators, such as:
- US and Canadian cattle inventories
- Female to Male disposal rates
- Heifer to Steer slaughter rates
- Beef Cow culling rates

These are useful in monitoring annual changes.







Source: Statistics Canada, Economics & Competitiveness Div., AAFRD

So Where are We?

The beginning of the year 2001 marked a slight upturn in what has generally been four years of declining cattle inventories. This is described as the "contraction or liquidation" phase of the Canadian cattle cycle.

< peak cattle inventories occurred in 1997; since then the total number of cattle and calves is down 6%.
< inventory liquidation means bigger slaughter numbers, and increased beef production.
< tracking fairly well with the US lately, though our peak numbers occurred in 1997, one year later in this cycle.
< fairly short liquidation periods followed by longer herd rebuilding pattern.

Lately, there have been signs that this liquidation of beef cattle herds is starting to ease with heifer replacement numbers resisting the downward trend for the first time in five years.

< January 1, 2001 inventories revealed that signs of herd rebuilding are starting to appear with total cattle and calves up 0.6% (versus -0.9% in the US) based largely on increased breeding herd numbers, which rose 1.5%.
< increased profitability of cow-calf operations is reinforcing the economic signal to expand with margins well above breakeven levels.

Herd liquidation and smaller calf crops will shrink the Canadian fed cattle supply in 2001 despite recent shifts in feeder cattle trade with the United States. Even with feedlot productivity factored in (still bigger carcasses) and reduced live cattle exports, Canadian beef production will shrink marginally as fewer animals are processed in Canadian plants.

< sharpest declines in cattle slaughter usually occur during the “transition” phase as heifers are held back by producers to expand their herds - fewer placements into the feedlot reduces fed cattle coming out.

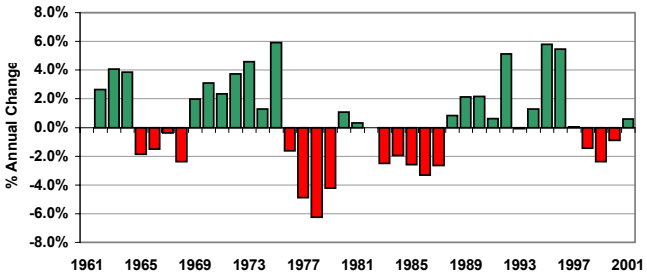
One of the biggest factors weighing on the start of the expansionary phase in Alberta is the weather. Drought conditions extending throughout the Province for 2000/2001 have forced many producers to reallocate feed and pasture resources or tap into cash reserves to maintain basic herds. It remains to be seen just what effect this will have on the first cattle cycle of the new millennium.

Summary and Outlook

< weather impact of 2000/2001 will temper cattle producers expansion plans and likely put the Canadian cattle cycle one year behind the US.
< the biggest decline in fed cattle supply will coincide with the transition from liquidation to expansion.
< as the supply of new breeding females expands the Canadian beef herd, larger calf crops will begin to add to the fed cattle around two years hence.
< trends of industry consolidation will continue and concentrate supply into fewer, larger operations from the cow-calf sector through to retail trade.

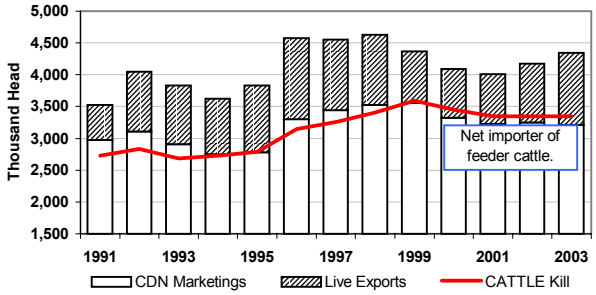
If these early signs hold, feeder and fed cattle supplies should remain tight. Beef production will decline until herd expansion expands calf crops.

Canadian Cattle Inventory Growth Rate



Source: Statistics Canada, Economics & Competitiveness Div., AAFRD

Canadian Fed Cattle Supply



Source: Statistics Canada, *Livestock Market Review*; AAFRD estimate to 2003

ii) Price

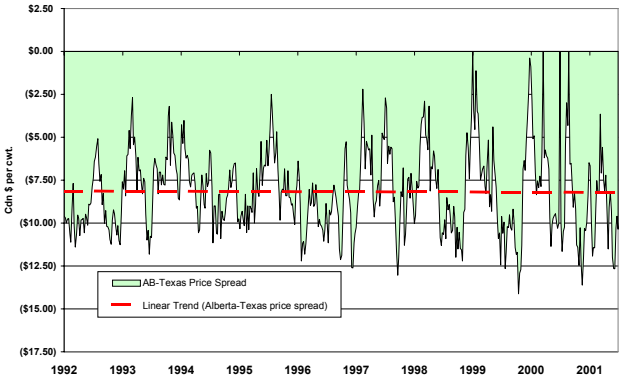
The integration and interdependence of the Canadian and United States beef cattle markets is well recognized. For this reason prices are largely determined in a North American context. Due to the significant difference in size of the two markets, it is commonly argued that cattle and beef prices are determined in the US market, with Alberta prices reflecting the differentials for exchange rates and transportation. While there can be considerable week-to-week variability, the longer term trend for the Alberta fed cattle market is about $8 (Canadian) under the Southern Plains market.

Cattle prices have been healthy in recent years despite record level beef production. These markets should continue to ride the wave of strong demand for beef, low feed costs, and tighter feeder cattle supplies.

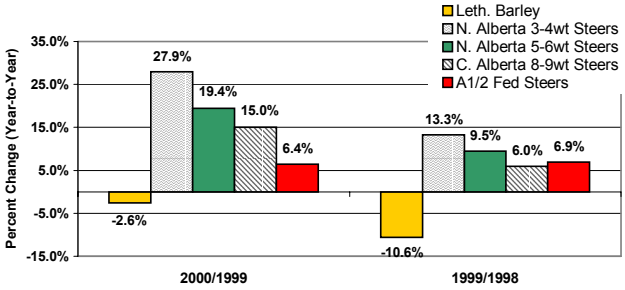
< cattle markets hit record price levels in 2000 on renewed beef demand and low feed costs.
< calf prices improved 20% in 2000 while fed cattle markets were up more than 6% to recent highs of $1.22 per pound.
< high calf prices also meant record level buy-sell margins, sending feedlot breakeven's soaring.

In real terms, calf prices have not exhibited as sharp a declining trend in real prices as have the hog and cattle feeding sectors. Productivity gains from genetics and feeding technology have driven these industries to economies of scale needed to survive on thin margins.

Alberta - US Markets Price Spread (Fed Steers)

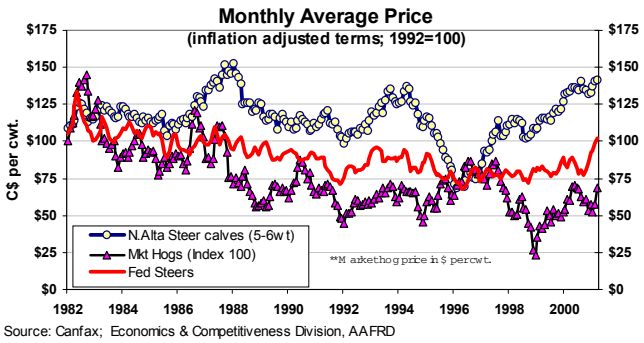


Annual Price Change



Source: Canfax; AGC

Alberta Livestock Markets



Source: Canfax; Economics & Competitiveness Division, AAFRD

Summary and Outlook

< tight supplies of feeder cattle lowers slaughter cattle volumes and precipitates declines in beef production providing a supply 'push' to market prices across the beef sector
< sharpest reduction in fed cattle numbers will coincide with the transition from liquidation to expansion.
< raising input costs, especially feed and energy costs, will continue to push breakeven levels higher and impact producer bottom lines.

Shrinking local supplies of feeder and fed cattle should support cattle prices through the first stages of a Canadian beef herd expansion, likely through 2003. Retail beef prices should also remain strong with lower quantities of beef product available. Stable beef demand is also a big factor in achieving this price scenario.

iii) Beef Demand

The decline in beef demand through much of the 1980's contributed greatly to the structural changes across the entire beef industry. The poultry and pork industries have been much more responsive to changes in consumer lifestyles and have benefitted in terms of market share. Consumers today are more health conscious, want a broader variety of nutritious and convenience *food* products, and are willing to pay for such desired attributes.

< increasing percent of household expenditures spent away from home or on convenience-type products
< willing to pay a premium for tender, especially guaranteed tender, beef products

Retail beef prices averaged $9.19 per kilogram in 2000. When adjusted for inflation, the Canadian retail beef price was up 6% over 1999 and up 8% compared to 1998. Plotting the deflated retail price of beef against consumption provides a *picture* of beef demand... but it is not complete. Simply looking at the price and quantity relationship does not say anything about shifts in demand.

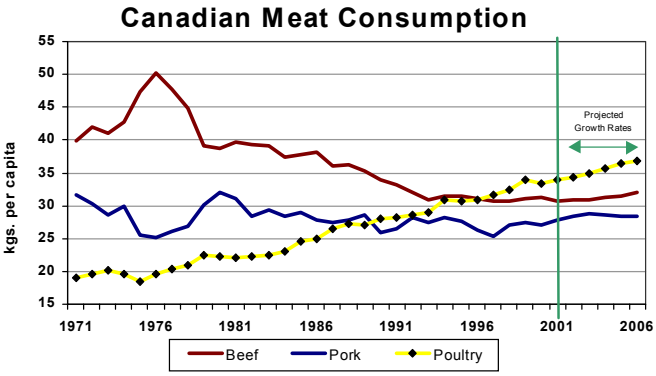
A demand index is calculated by comparing the actual deflated retail beef prices to demand constant prices (holding the per capita consumption at a constant level, or at 1997 consumption levels in this case).

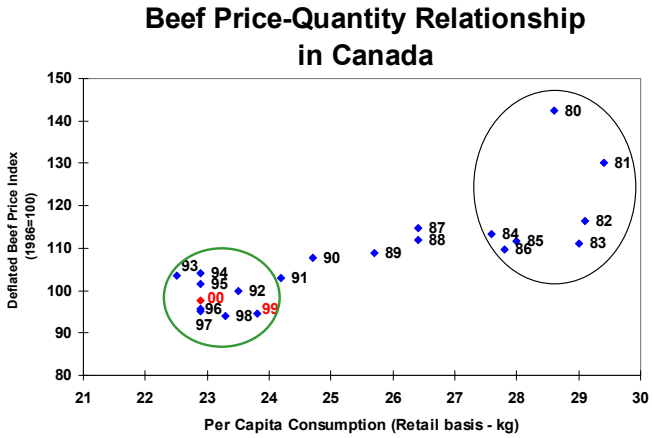
< positive demand of 3% for beef in 2000 over 1999, following a 4% demand increase reported in 1999 compared to 1998.
< although beef consumption was down 4% in 2000 the retail prices were strong enough to maintain a positive demand.

While much attention has been directed at the positive demand index of the last couple of years, these gains still pale in comparison to the cumulative balance of all the years of eroded beef demand.

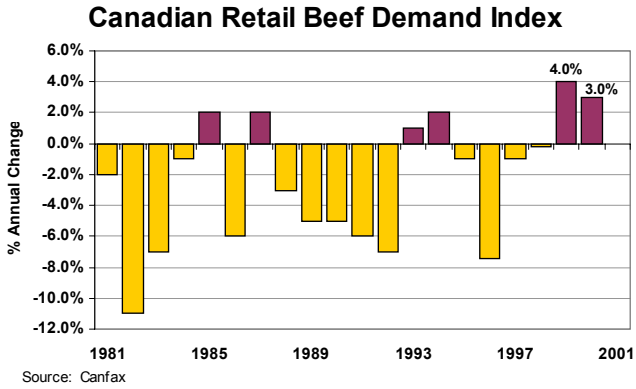
This index values tells us the demand for beef in terms of the price being paid and how demand is changing, but does not answer the question of why demand is changing. Research by US analysts (Schroeder, Marsh and Mintert 2000) indicates that one of the primary factors in the resurgence of beef demand has been increasing consumer expenditures on beef from a robust North American economy. Model results isolated the impact of various factors (demand shifters) on beef demand:

< changes in relative prices (compared to pork and poultry) had only a marginal negative impact on beef demand.
< health information weakened demand by about 0.6% annually from 1982 through 1998.
< food safety concerns (measured by product recalls) lead to significant downward demand shifts.





Source: Statistics Canada; Livestock Market Review



Source: Canfax

< declining time available for meal preparation had a negative effect on beef demand, about 1.3% annually over the 1992 to 1999 period.
< beef demand is highly responsive to changes in total consumer expenditures on all goods.

Summary and Outlook

< a reverse in the negative slide of Canadian beef demand began in 1998, buoyed by a strong North American economy.
< economic slowdown threatens to erode consumer confidence and slow the growth in disposable income levels.
< health and food safety concerns and changing consumer demographics are significant determinants of beef demand.

Product quality and convenience and consistent eating experiences are important to consumers and the retail trade alike. Opening the channels to consumer demand signals helps to ensure that beef products address some of the attributes that are desired would also enhance beef demand. Stable beef demand (at least not more declines) is important in maintaining the retail beef price strength over the next couple of years as beef supplies decline.

b) World Beef & Meat Markets

i) Supply

Cattle and Beef Production

World beef production is forecast to grow at an annual rate of 1.2%, reaching more than 63 million metric tonnes by 2005. Low-cost producers such as the Focus-6 continue to gain export market share while the EU share drops due to BSE concerns. According to the latest Food and Agricultural Policy Research Institute (FAPRI) *US and World Agricultural Outlook (January 2001)*:

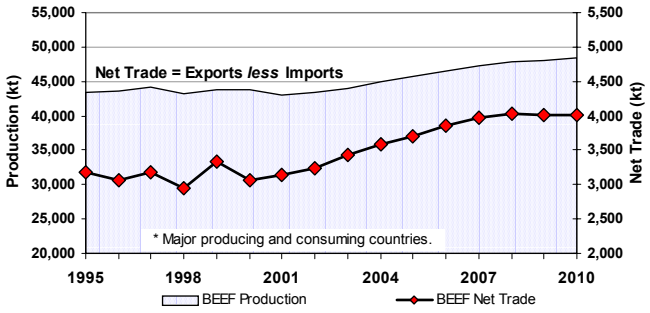
- < productivity improvements and product innovations driven by adoption of new technologies and favorable structural transformation expand production potential.
- < shocks from disease outbreaks in major importing and exporting countries—FMD in the EU, South Korea, Japan, Brazil, and Argentina; CSF in UK; and BSE in most of the European Union—impact the world meat markets and trade flows.

World Beef Supply - Disposition

('000 MT)	World 1999	World 2005	Focus-6 1999	Focus-6 2005	Canada 1999	Canada 2005
Production	58,881	63,260	24,732	23,364	1,224	1,418
Imports	7,333	8,320	1,612	2,033	258	272
Total Use	53,388	62,613	22,376	20,433	994	1,010
Exports	7,761	8,321	3,987	4,965	482	679
Share of World Export Market			51.4%	59.7%	6.2%	8.2%

Source: FAS; FAO Agricultural Commodity Projections to 2005

Beef Production and *Net* Trade of Select Countries*



Source: FAPRI 2001: U.S. and World Agricultural Outlook

While beef is a global commodity, produced and consumed worldwide, relatively few nations are involved in the large-volume trade. Among the major beef exporting and consuming nations, the net trade (defined as exports less imports) constitutes a small (about 10% in 1999) but growing percentage of total beef production. This percentage is almost twice as high for Canada.

The Focus-6 beef producing nations are expected to account for over a third of the world beef production by 2005, with net trade increasing to about 13%. By then the Focus-6 will account for almost 60% of all beef exports and 24% of all beef imports.

With cheaper land and labour costs, major grass-fed beef exporters like Australia, New Zealand and South America will retain their advantage in producing low-cost commodity beef.

Canada's competitive edge lies in producing a high quality, grain-fed product. The root of sustaining this advantage lies more in product differentiation (witness the extent of branded beef products) and extracting premiums for this specialized product.

IBP, Inc.'s merging of case-ready beef packaging and the launch of its branded product line represent a significant shift in product development. Branded, case-ready beef also seeks to capture processing efficiencies.

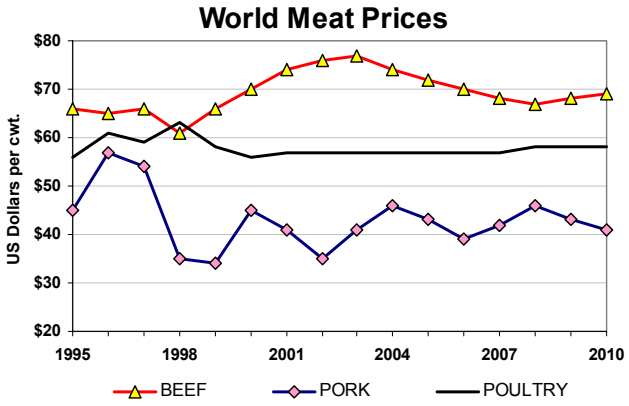
ii) Price

Global economic growth and demand for meat products should lead to a rise in world meat prices over the medium term. FAPRI estimates global meat consumption to increase by more than 4 kilograms per person over the next decade. This translates into more than 2.6 million metric tonnes of increased meat trade.

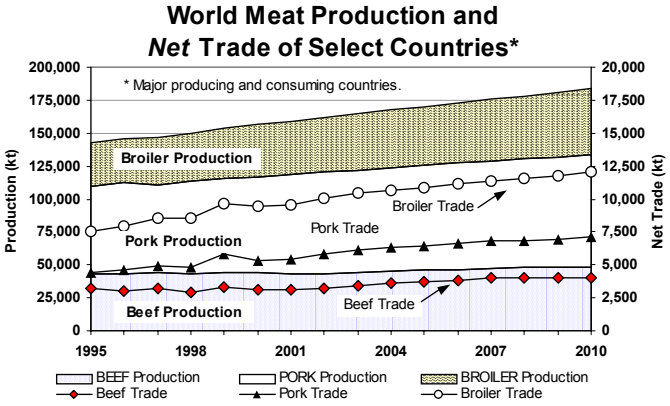
< world price of beef increases by 3.27 percent annually in the next three years, peak price of pork increases by 0.5 to 2.1 percent, while price of poultry sustains an increase of 0.36 percent.

< higher prices induce growth in world meat production by 0.92 percent for beef, 1.49 percent for pork, and 2.51 percent for poultry.

For beef, lower production from declining North American fed cattle supplies until herd rebuilding is underway are supportive to prices over the short term.



Source: FAPRI 2001: U.S. and World Agricultural Outlook



Source: FAPRI 2001: U.S. and World Agricultural Outlook

World beef cattle markets tend to reflect the broad spectrum of beef production and trade. Differences in beef production systems - from animal genetics, feeding management, and processing technology through to the inclusion of dairy animals in the beef supply mix - and government policies are part of the uniqueness of each domestic cattle market. Beef products are differentiated by such factors as the meat cut, quality, country of origin, and cultural differences. For instance, cattle prices in the grass-fed regions of Australia or South America will not compare directly to the major grain feeding region of North America, nor will they compare directly with the EU intervention policy price. For Canada, the benchmark remains the United States. Nebraska fed steer price is expected to increase 3.27 percent annually to a peak in 2003. The Alberta market should peak a year earlier with recovery in the Canadian dollar to plus 70-cent levels.

North American beef prices are expected to remain strong through 2003 before easing in subsequent years once production and exports increase. South American beef prices will continue to be impacted by restricted meat exports from FMD concerns and foreign exchange issues. Until some level of consumer confidence for European beef purchases is restored, EU cattle prices will also remain under pressure.

iii) Demand

Forecasted growth in the world economy is an important driver of beef trade. Global real GDP is projected to range between 3 to 4 per cent annually to 2010. While the U.S. economy is expected to slow in 2001, longer term growth averages 3.5%.

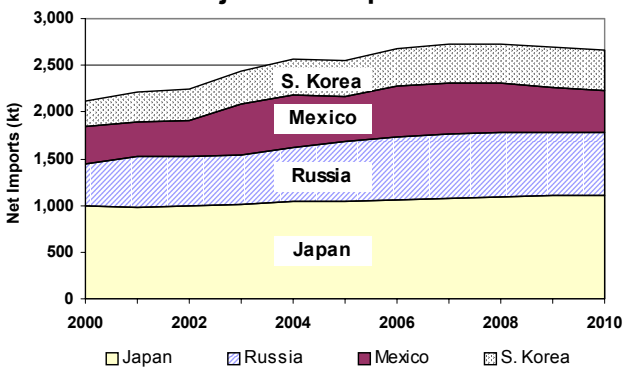
< rising per capita incomes (for example, at 6 percent in Asia), increasing population, market liberalization, and continuing urbanization boost world meat demand.
< FAPRI projects world beef, pork, and poultry import demand to increase annually by 2.71, 3.38, and 1.82 percent, respectively.
< largest increase in imports will come from Japan, Russia, Taiwan, South Korea, and Mexico (for NAFTA partners).

FAPRI projects an increase of more than 30 per cent in beef trade over the next decade. The United States is regarded as capturing the bulk of export potential, becoming a net exporter of high quality beef over the next decade. This increase in beef demand by importing nations will in part be met by increased beef production as North American inventories start to rebuild following the past five years of liquidation.

< Canadian beef export demand increases more than 30 percent, or 180,000 metric tonnes, over the next decade.
< BSE crisis has sharply reduced European beef demand (another 10% for 2001). Animal destruction schemes across the EU have similarly reduced beef supplies and moderated price declines. Meat demand is forecast to gradually recover through 2003.

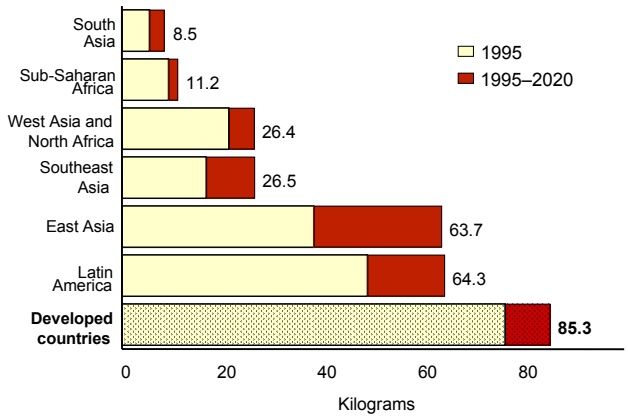
Rising consumer incomes and trade liberalization in developing nations represent a significant opportunity for longer term growth in global beef demand. Industrialization, and increases in discretionary incomes, leads to greater demand for food items. Ultimately, these consumers begin to broaden their diets to include more animal protein and higher valued import meats. The International Food Policy Research Institute (IFPRI) estimates that over half of this increase in the global demand for meat products will originate in China and the developing areas of Asia. The potential exists for beef production to capture a share of this demand for animal-based protein.

Major Beef Importers



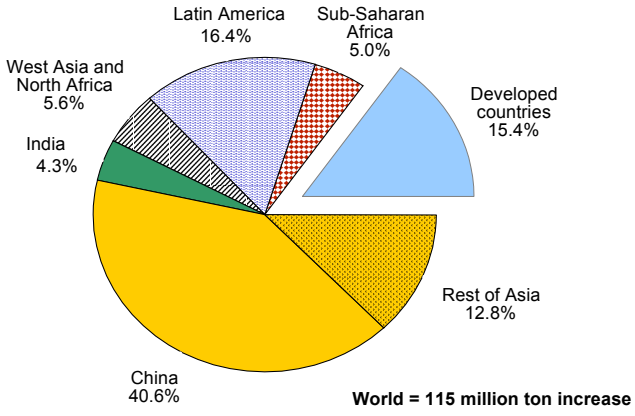
Source: FAPRI 2001: U.S. and World Agricultural Outlook

Per capita demand for meat products, 1995–2020



Source: IFPRI IMPACT simulations, July 1999.

Share of increase in global demand for meat products, 1995–2020



Source: IFPRI IMPACT simulations, July 1999.

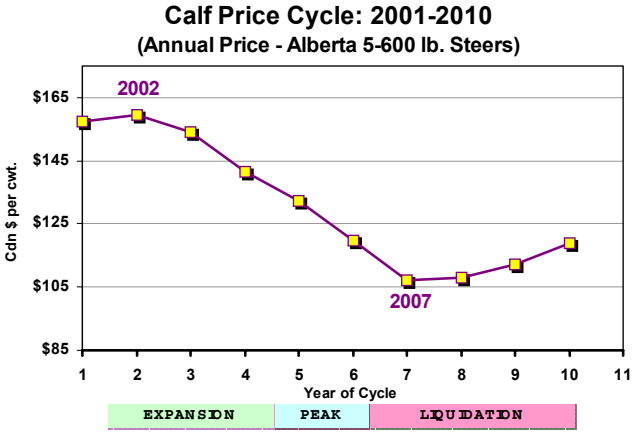
c) Summary - Market Situation, Analysis and Outlook

The outlook for the Canadian cattle industry remains positive for the short term. Record level market prices, driven in part by recent gains in beef demand, should benefit from the reduced beef supplies ahead. In the longer term these prices will come under pressure from increased supplies once the herd expansion of the next cattle cycle is underway.

Market fundamentals and an analysis of cattle price-volume cycles suggest a tightening of North American feeder cattle supplies over the short-run as more heifers are diverted from the feedyard to pasture in order to expand beef herds. As the calf crops begin to increase, a larger supply of feeder calves will be added to the production mix. The peak in animal production (in terms of calf numbers) is not anticipated for another five to six years if this cattle cycle holds true to form. A peak in cattle supply is generally met with a low in calf prices.

Ten years is a long way out to forecast prices. What is more significant is the general trend and the ability to identify cost benchmarks to deal with the general price trends that are projected. Feedyard managers must examine the nature of these price relationships and overall margins. Feeder cattle demand is derived from the demand for slaughter cattle and beef. Prices are essentially a breakdown of expectations about future slaughter cattle prices and expectations about future costs of gain. Margin levels will vary around according to how gains are distributed.

Forecast growth in the world economy and a more liberalized trading environment should lead to increased global demand for beef, pork and poultry. Growth in meat production will be constrained by lower beef supplies in the short term, mainly from production and trade



uncertainties related to disease outbreaks and drought-related impacts on cattle inventories.

International beef prices are witnessing price strength from this supply reduction, though the outlook is tempered by production uncertainties. Longer term, increases in global meat demand will in part be met by increased production from herd rebuilding in the major cattle producing regions of North America and Oceania. World pork and poultry production is also forecast to rise which will exert more competitive pressure.

The predominant risks to this outlook are uncertainty about consumer responses to BSE concerns, a continued and deeper slowdown in the US economy, and the impact these events would have on beef demand. Weaker product demand (in domestic and key export markets) in the face of rising beef supplies over the next decade would not be supportive to cattle prices. Forecast growth in pork and poultry production will pressure world meat prices and beef market share. Locally, increases to feed grain costs and the reallocation of herd resources will also affect the bottom line for many producers.

Food and Agricultural Policy Institute - Baseline Policy Prices

(US$ per hundredweight)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Feeder steers (6-650 lb): Oklahoma City	94.54	96.81	97.92	98.41	94.07	87.24	81.73	77.65	75.07	75.29	77.10
Choice fed steers: Nebraska	69.65	74.49	76.00	76.64	74.16	71.94	67.78	68.08	67.20	67.72	68.76
US retail beef - $/lb.	3.07	3.18	3.26	3.32	3.32	3.29	3.29	3.28	3.32	3.36	3.45

Source: FAPRI 2001 U.S. Baseline Briefing Book

In the long run, commodity beef operations must achieve some form of competitive advantage - either lower than average costs of production or higher than average market returns - in order to remain profitable.

< low-cost producer (volume or operational efficiency)
< high-value producer (quality control or niche market)

As the beef production system becomes more closely aligned with the end consumer, coordination among participants will continue to increase. Moving from a "supply-push" to a "demand-pull" system will have a marked influence on beef cattle producers. In the past each sector brought different production goals to the table. Today, the demands of an ever diversifying global consumer will need to be rationalized within these constraints.

While beef products are viewed in context of the exporting nation (for instance, Canadian vs. Australian beef), the world market is becoming increasingly segmented along perceptions between grain-fed and grass-fed beef. Strong demand for grain-fed beef among the leading importers, particularly Japan, South Korea and Mexico, should favour higher exports from Canada and the U.S.

Cautionary Note:

Benchmark statistics from agencies such as the International Food Policy Research Institute (IFPRI), Food and Agricultural Policy Research Institute (FAPRI), United Nations Food and Agriculture Organization (FAO), or Agriculture and Agri-Food Canada should be interpreted as indicators of trends and turning points that are projected to occur over the medium to long-term horizon. A few things to keep in mind when reviewing these projections:

1) they are not "forecasts" of future values,
2) a number of variables, for instance the weather, can impact agriculture in a fashion that one cannot reliably predict, and
3) each annual data point (price or quantity) is represented by a single number which is in fact the mid-point of a prediction range and generally, the farther out the benchmark in terms of years the wider the confidence interval.

These baseline reports, generated from econometric models of world agricultural markets, are designed to project the course of commodity markets under a no policy change scenario.

d) Overview of Selected Export Markets & Opportunities

Mexico

Concerns/Issues

Mexico has an expanding population and a shrinking availability of fertile farmland. Mexico is subject to periodic droughts and feed costs are high. Currently, Mexico is in the process of rebuilding its livestock populations with the help of government programs.

In addition to Canada, Mexico also has free-trade treaties with the U.S., Chile, Costa Rica, Colombia, Venezuela, Bolivia, the European Union, Israel and Nicaragua. However, negotiations to include most agricultural products in the European Union FTA have been postponed for three years.

Canada is the second largest exporter of beef products to Mexico, after the U.S. Emerging competitors may come from South and Central American countries, particularly if a Free Trade of the Americas agreement is signed.

The Mexican government is planning to extend value-added tax (VAT) to foods that are currently exempt, as part of its initiative to raise its tax income. According to the President of the Mexican National Association of Supermarkets and Department Stores (ANTAD), that could bring about a reduction of sales.

Economic slowdowns in the U.S. (which accounts for 80% of Mexico's exports) have an impact on the Mexican market. As the U.S. demand for Mexican exports decreases, Mexican manufacturers reduce production. This also affects domestic demand. Although many of the middle and upper income Mexicans prefer beef, the market is somewhat price sensitive and consumers will switch to pork or poultry when beef prices rise.

Canadian access to Mexican markets for beef products is both duty and tariff free. However, inspection certificates and other documentation must be properly completed. A commercial invoice must be completed in Spanish.

The dumping case against the U.S. provided Canadian exporters with an opportunity to expand their presence in the Mexican marketplace. Mexican buyers began importing Canadian beef at the time of U.S. tariff restrictions. They are largely continuing to buy the Canadian product, having established relationships with Canadian packers and becoming aware of the quality and yield of Canadian beef.

Supermarkets and distributors used to buy their imported beef through the services of brokers. Now they often deal directly with the Canadian packers. These packers often extend credit for up to 21 or 34 days - the kind of extended credit previously provided only by brokers.

The Canada Beef Export Federation office in Monterrey provides a local presence for members and hosts incoming buyer missions to Canada.

Opportunities / Strengths

Mexican buyers are importing more products from Canada and the U.S., and their consumers are becoming more knowledgeable about the imported products. The Mexican middle class represents approximately 20 million consumers with disposable income.

Canadian beef is well perceived – good colour compared with their local products. Most exports are AA beef and of a variety of cuts.

Alberta producers are more flexible than the U.S. Successful exporters offer consistent quality, service and commitment.

Alberta has a slight per pound freight disadvantage versus Nebraska. However, the Province receives a price premium (sometimes as much as 20%) due to yield advantages through our genetics.

Long range projections are that Mexico and Japan will to continue as major export markets.

European Union

Concerns / Issues

All beef shipments into the EU have to be certified hormone-free. The protocols for certification are detailed, resulting in considerable time and added cost to the producer. Until recently, Alberta had only one EU accredited hormone-free beef company shipping into the Community. As this business outlet is no longer available, opportunities in this regard have all but disappeared.

Currently, we are not competitive in shipping beef into the EU. Prime cuts fare well but the lesser valued cuts do not work in this market due to high tariffs and added costs of production.

The current outbreak of Foot and Mouth Disease has increased the Europeans' concern for food safety and will strengthen their position on not allowing hormone implanted beef into the EU.

There are only two EU approved slaughter facilities in Alberta.

Opportunities / Strengths

The opportunity for shipping beef into the EU is increasing. Since the FMD outbreak, we have been receiving inquiries for alternative livestock and beef product for the EU. There remains a need to re-examine protocols for hormone free beef production.

Organic beef is in demand but the protocols for hormone free beef must be followed.

United States

Concerns/Issues

The Canadian and US cattle and beef markets are highly integrated with relatively free movement of beef, beef products and live cattle.

All meat products imported into the United States are required to bear the country of origin label on the container in which the products are shipped, as well as the establishment number assigned by the foreign meat inspection system and certified by the US Department of Agriculture (USDA). These new country of origin labeling requirements could create a conflict with international trade agreements and be viewed as a technical trade barrier, depending on how they are implemented.

Anecdotally, northwestern states are complaining that American cattle prices are being depressed due to the volume of Canadian fattened cattle being imported into the US.

The USDA passed a Final Ruling on regionalization (1997), eliminating federal testing requirements for brucellosis for Canadian cattle being exported the US. However, many states continue to require Canadian cattle be tested and vaccinated.

Those Canadian livestock producers who wish to market their animals as organically raised must meet a number of requirements. Animals for slaughter must be raised under organic management from the last third of gestation; fed 100 percent organic feed; entirely free of hormones to promote growth and antibiotics (only vitamin and mineral supplements are allowed).

The state of Wyoming has proposed that all meat from a foreign country must be labeled to identify the country of origin. This is counter to the direction of other initiatives in accordance with the Canada-United States Record of Understanding on Agricultural Trade (signed December 4, 1998).

A coalition including the National Cattlemen's Beef Association, the American Farm Bureau Federation, the Food Marketing Institute, the National Meat Association, and American Meat Institute, are petitioning the USDA to consider the use of a voluntary "Beef: Made in the USA" label. This could be considered to be a trade barrier for imported beef from Alberta and could be argued upon the basis of National Treatment.

While some parts of the Canadian beef grading system are getting extremely close to the USDA system, there are also differences. The marbling assessments in both countries are somewhat similar; however, the challenge is to ensure that the Canadian interpretation is the same as the USDA. US consumers have a higher tolerance for fat in their beef products than Canadian consumers. The major differences are in the yield classifications of the two countries. The US has five yield categories while Canada has three.

The onslaught of Foot and Mouth Disease is becoming increasingly global and countries are undertaking measures to control it. This will most likely cause a reduction in the demand for beef in the US.

Opportunities / Strengths

Recent poor forage conditions in the US, may have resulted in increased placements of heifers on feed as opposed to retaining them for breeding purposes. This may have rippled through to western Canadian feedlots (mostly in Alberta) that have been approved to import US feeders under the Northwest Pilot Project (aimed at expediting shipments of live cattle from the states of Montana and Washington to Canada).

As US multinationals continue to make large investments in slaughter facilities in Alberta, their modernization and increased capacity is expected to make them more competitive with US packers.

Demand for organic/natural foods, including beef, is expected to continue to grow.

There is an increasing trend for stores in the US to build their own brands. This presents a good opportunity for Alberta beef producers to merge into the supply chains of the stores given our history of safety and quality.

Japan

Opportunities / Strengths

Based on 1999 estimates, imported beef will account for 64% of Japan's total meat supply. The quantity of beef imports should increase by 2% per year over the next five years and is anticipated to reach over 750,000 MT from the current 680,000 MT. Production of domestic beef has fallen in response to competition from imports and stagnant sales of Japanese Black Beef. In addition, the number of Japanese farming operations has fallen due, in part, to a lack of successors for family farm operations and concerns with pollution caused by farming.

The United States and Australia dominate Japanese beef imports with 48.1% and 45.9% respectively. However, other countries, including Canada, have made headway and are expected to increase their share of the Japanese beef import market at the expense of the US and Australia.

40-45% of beef produced in Alberta is shipped to the US and a considerable amount of that is exported to Japan. Clearly, Alberta is not achieving the full potential of its beef export value. Through targeted promotion and industry-wide improvements, Canada should attain 8% of the beef market share in Japan with Alberta beef making up the bulk of exports by 2005.

Furthermore, Japan's decision to ban cloven-hoofed meat imports from Europe in response to the outbreak of Foot and Mouth disease may have significant impact on the international meat market. The EU is one of Japan's largest suppliers of pork products and although there is some frozen stock available in Japan, the supply is limited and prices have increased dramatically. If the price of pork continues to rise, it is expected that Japan will seek out alternative sources of meat. North America is currently unable to meet the demand for pork and there is speculation that the value of meat such as beef and poultry will rise as Japan modifies its demand. With barley-fed meat becoming an increasingly recognizable brand quality, Alberta is in an ideal position to take advantage of the import shortfall and increase its beef exports to Japan.

South Korea

Opportunities / Strengths

In 1988, the Korean government was petitioned by the United States, Australia and New Zealand to liberalize its beef market under GATT regulations. In response, the Korean government agreed to a 14,500 MT beef import quota in 1988. The National Livestock Cooperatives Federation (NLCF) was given the duty of distributing imported beef. However, protests by Korean farmers and beef exporting countries, lead to the establishment of the Livestock Product Marketing Organization (LPMO) to administer the quota in 1988.

In 1990, Korea agreed to progressively increase the import quota and to establish the "Simultaneous Buy and Sell System" (SBS) for tourist hotels and restaurants. This system is granted a portion of the general quota and negotiates with the packers and exports directly on product specifications and price. The SBS system has been expanded and by 2001 all beef import sales will be done using this system. In 2000, there were 12 companies purchasing under the SBS system. This will open up in 2001 to all companies.

Domestic cattle numbers in Korea have fallen in step with increased beef imports. However, Korea will remain a highly volatile market for imported beef. In the past six months demand for beef in Korea has dropped dramatically. This is in response to the negative publicity in the Korean media covering the BSE situation in Europe. Moreover, deep fear and pessimism over the liberalization has caused producers to reduce cattle feeding and the country's cattle inventory now stands at 1.71 million head, down 18.2% from last year.

With decreasing cattle inventory and lower beef supply, the price of Hanwoo beef, Korea's domestic breed, has risen - thereby weakening its competitiveness. There is also concern that liberalization will bring a rash of new importers/distributors into play resulting in excessive build-up of inventory and further declining beef prices.

It is expected that Korean consumers will return to their long-term beef consumption pattern after the issue with BSE and FMD are resolved. Korean consumer tastes lead to high quality beef creating a demand for chilled beef that is expected to account for 40% of all Korean beef imports by 2003. Canadian beef is recognized as very high quality and, with only 8% of the Korean beef market share, is in an excellent position to increase its presence in that market.

China

Opportunities / Strengths

At only 3 kg. per capita, representing only 8% of total meat consumption, beef consumption in China is very low. Despite this, import of beef, offal and processed beef increased from 7,819 tons in 1997 to 24,647 in 1999. Canada accounts for 9.1 % of those imports and enjoys the fastest rate of growth, up 14 times between 1997 and 2000.

Increases in per capita income, the level of urbanization and population growth are positively affecting consumption of beef products in China. Based on surveyed data, per capita consumption of beef in cities and towns will increase from 5.58 kg. in 1998 to 6.73 kg. in 2005 while in rural areas per capita consumption will increase from 1.89 in 1998 to 2.23 kg. in 2005 (calculated in retail weight).

Urban consumers' expenditures on beef consumption outside the home have increased due, in large part, to more disposable income and a higher standard of living. Beef is difficult to prepare at home and consequently, consumption of processed beef has become popular. In addition, fast food restaurants have become established in urban areas and are encouraging shifts in meat preferences and consumption patterns. Canadian beef producers are focused on gaining entrance into the high-end beef market represented by hotels and restaurants. Expansion into this market is seen as a long-term goal and one that will become more prominent as China's economy grows.

China's entry in the WTO will greatly enhance access of foreign meat into the Chinese market. With accession, tariffs on frozen beef and beef offal will be reduced to 12% and to 25% on fresh/chilled beef by the year 2004. All non-tariff barriers inconsistent with the WTO will be eliminated and others (inspection, testing, domestic taxes) must be made transparent.

Although it is one of the Chinese government's goals to become self-sufficient in agriculture, it is unlikely that their needs will readily be met domestically. Infrastructure, urban population and income growth is primarily in the coastal regions. Situations arise where it is easier to import than ship internally. Therefore, the continuous reinforcement of Alberta agricultural companies' interests and business capabilities in China is a key strategy.

In 1996, AFRD signed a Memorandum of Cooperation with the Ministry of Agriculture (MOA) in China. This agreement has provided new market opportunities for Alberta producers in beef development (currently a priority for the Chinese government). Alberta will continue to build partnerships and use effective networking to help industry identify and address business and market opportunities by taking advantage of Alberta's strong technical base and expertise in China. Trade in cattle genetics will feature prominently in this partnership and is viewed as a favourable short-term export option for Canada and Alberta.

5. Costs and Returns

Purpose: *to describe the economic and financial performance of segments of the Alberta beef industry, leading to a statement of the (static) competitiveness of Alberta industry relative to competitors in our primary markets.*

The intent of this section is to provide beef production cost, returns and financial information for the Focus-6 group, keying in on the major industry components. Based on the information provided in earlier sections, a gap is appearing in the "cost competitiveness" logic based on the nature of the product (or commodity) being produced. A relative comparative advantage in the production of beef cattle is only one of the elements defining competitiveness. However, each region must be cost-effective in these areas.

Contents

Costing and/or financial performance information are provided for the following regional groups:

- Alberta
- Alberta and Saskatchewan
- U.S. and 3 major sub-regions
- Brazil
- Argentina
- Australia

In regions where intensive feeding is undertaken, pertinent cost and economic indicators are also provided.

For the most part, the costing estimates relate averages of specific groupings or regions. It is critical to recognize that there is considerable variation within the regions with regard to location, size of operation, equity and/or financial situation, etc. How the regions' primary beef production industries respond over time with respect to margin pressures and consumer pressures will have a significant bearing on their future role in the global beef complex.

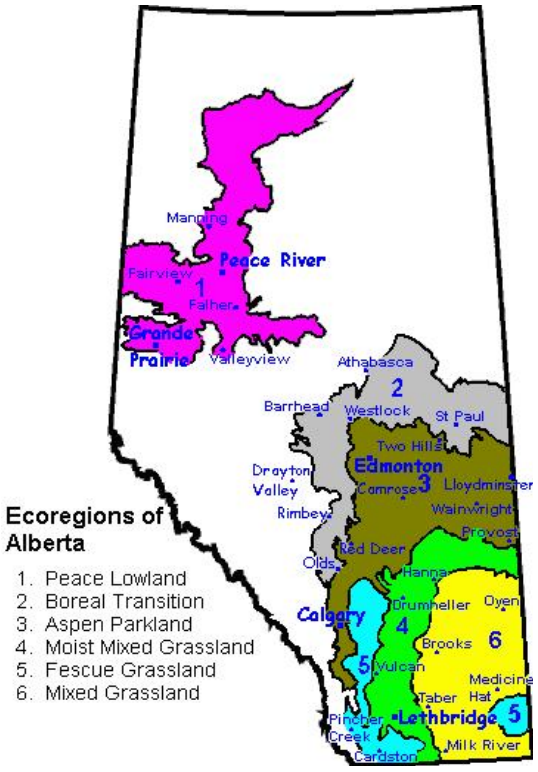
a) Alberta - Economic and Financial Profiles

Cow/Calf Enterprises

The Alberta cow/calf sector covers a broad range of agro-climatic circumstances. The south and south-eastern portions of the province tend to make more substantial use of extensive native grazing resources. The northern and north central regions complement shorter grazing seasons with cultivated pastures.

The regional cost and returns profiles for Alberta indicate average herd sizes ranging from 113 to 152 cows wintered for 1999 with an across the province average of 132 cows. Enterprise investment, including breeding stock, allocated machinery and facilities plus dedicated yard site averaged $1,954 per cow. Feed and grazing costs for these enterprises are costed in at prevailing market value as opposed to cost of production.

Key production performance indicators are included to give insight into the tradeoffs in productivity observed across the various resource types. Calf crop percentages vary from



1999 Cow-Calf Enterprise Overview

AgriProfit$

Economic & Physical Performance Comparisons

Benchmark Comparables: Grass Type (Regional) Averages - Alberta

Economic Performance Indicators:

	Mixed Grassland	Fescue Grassland	Moist Mixed Grassland	Aspen Parkland	Boreal Transition	Peace Lowland	Provincial Total
				$ per Cow Wintered			
Production Stock Sales	686.10	703.65	665.32	671.44	682.45	673.23	682.05
Value of Production	**690.00**	**701.46**	**721.69**	**671.90**	**672.29**	**679.73**	**686.69**
Feed, Bedding & Pasture Costs	279.00	295.09	290.96	311.57	358.01	348.55	320.46
Labour Costs	64.42	78.67	64.16	87.69	73.36	123.36	82.58
Other Variable Costs	100.43	92.53	120.94	98.63	100.43	151.94	106.16
Fixed Costs	94.77	67.05	85.56	79.95	58.85	95.26	76.56
Total Cash Costs	**437.82**	**418.30**	**452.21**	**442.66**	**493.11**	**570.61**	**468.07**
Total Production Costs	**538.62**	**533.34**	**561.62**	**577.83**	**590.65**	**719.11**	**585.76**
Gross Margin	**252.18**	**283.16**	**269.48**	**229.25**	**179.18**	**109.12**	**218.61**
Return to Equity & Mgmt.	**151.38**	**168.12**	**160.07**	**94.07**	**81.64**	**(39.38)**	**100.92**
Total Investment	**1,991**	**2,018**	**2,202**	**2,051**	**1,788**	**1,628**	**1,954**

Physical Performance Indicators:

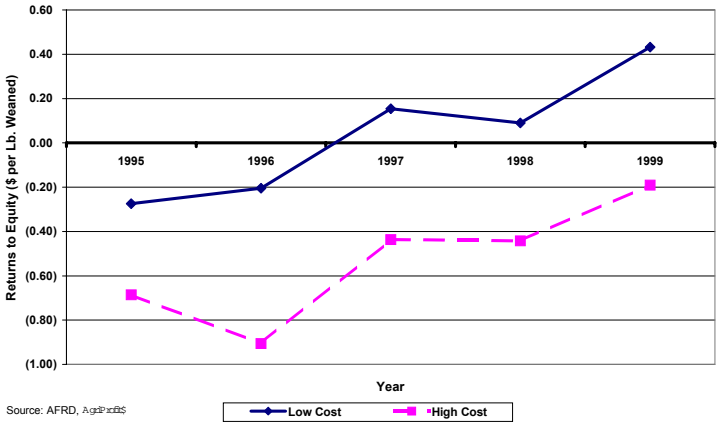
Cows Wintered	152.2	144.2	113.8	133.9	145.3	117.4	132.0
Calf Crop (%)	91.5	90.9	91.6	89.5	83.8	84.2	87.7
Lbs. Weaned/Cow Wintered	520.0	532.9	513.8	524.8	522.4	534.0	524.5
Labour Hours per Cow	6.5	7.9	6.4	8.8	7.5	12.8	8.4
AUM's/Cow Wintered	7.4	7.2	7.5	7.3	6.2	6.5	6.9
Feeding Season Days	154.8	150.4	156.5	182.6	200.9	197.6	179.3
Tonnes Fed per Cow (as-fed)	2.0	2.0	2.6	3.9	5.1	4.0	3.6

roughly 84% to 92% (calves weaned per cow exposed). Lbs. of calf weaned per cow wintered ranges from 514 to 534 lbs. AUM's (Animal Unit Months) / per cow wintered, a statement of total grazing required divided by the opening inventory of bred cows, averages 8.4 AUM province wide. Feeding seasons vary from 150 days in the south to 201 days in the north of the province.

Total production costs average $585.76 per cow, ranging from a low $533 in the south to $719 in the North. Gross margins (returns over cash costs) and Returns to Equity (profit) for the year averaged $218 and $101/cow respectively. Regional variability of enterprise profits is displayed by the range from a $39/cow loss in the Peace region to a $168/cow profit in the Fescue Grassland area.

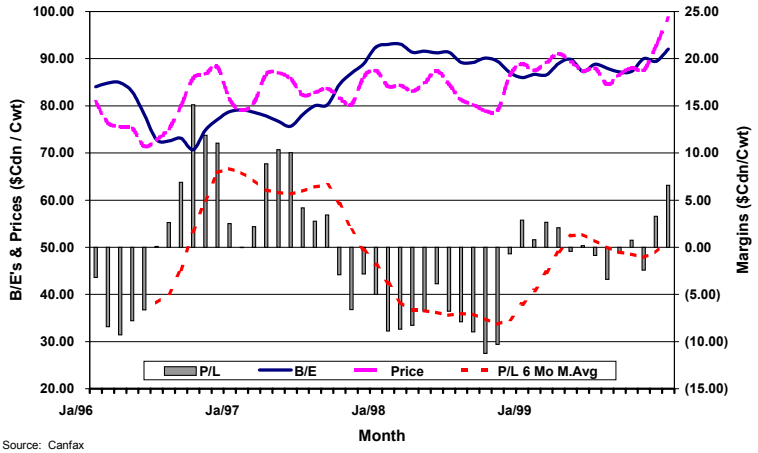
One of the major routes to long term profitability in cow/calf enterprises is through control of unit production costs. The chart portraying returns to equity for low and high unit cost herds offers some supporting rationale. Those herds with higher unit costs did not return a profit to all factors of production from the lower price period of 1995 to the relatively higher priced period of 1999. The low cost operations turned a profit in the last three years of this period. Although the high cost group did cover cash costs to a reasonable extent over this 5 year span, the future for these business, if they are to survive the next beef cycle or two, is to actively pursue unit cost reductions.

Returns to Equity - Low & High Cost Alberta Cow/Calf Enterprises



Source: AFRD, AgriProfit$

Alberta Yearling Steer Feeding Margins



Source: Canfax

Cattle Feeding Enterprises

The Alberta cattle finishing industry has changed significantly over the last hand-full of years. Scale economies are being garnered by the firms investing in feed yards with greater standing capacity.

The cattle feeding business is moving quickly to a high volume - low margin business. The chart presenting estimated Alberta yearling steer finishing margins is indicative of this trend. The Canfax estimates are intended to portray the mid-range businesses. The large scale businesses, dependent upon financial status, will exhibit moderately improved margins. One common element is that the mid- to larger-size range operations stay at the leading edge of feeding technology in order to manage unit costs.

Financial Performance - Cow/Calf Farms

The financial performance of beef farms, as opposed to the cow/calf enterprise alone, offers insight into their longer term viability. The 1999 profiles of the provincial average vs. the "top performers" bring forward a key notion. Rates of return in beef enterprises are not typically high. For the province, the average return on assets for farms specializing in cow/calf (weaned calf) production was 2.2%. The top half of the producers on the AgriProfit$ research program yielded a return on assets of 4.7%.

This estimate of return on assets speaks volumes about the effective use of lower-valued resources. It also can be used as a good comparator of "competitiveness" in a global context. Unit production costs and margins aside, if rates of return across different production systems are reasonably comparable, then the businesses can be deemed to be relatively competitive.

AgriProfit$

Statement of Farm Revenues & Expenses - 1999*
Alberta Cow/Calf Farms - by Management Class**

	Average	Top 50%
	- - - $Cdn per Farm - - -	
Revenues		
Crop Sales	10,091	9,488
Livestock Sales	117,499	143,382
Miscellaneous Receipts	11,106	14,554
Government Programs	1,544	2,799
Adjustments: Product Inventory	24,410	46,882
Accounts Receivable	2,336	2,956
less: Livestock Purchases	(21,660)	(27,269)
VALUE OF PRODUCTION	145,325	192,792
Expenses		
Seed, Fertilizer & Chemicals	8,598	10,323
Feed & Bedding Purchased	12,307	14,363
Vet. & Medicine	3,223	4,299
Trucking & Marketing	2,633	3,126
Fuel, Oil & Lube	6,694	7,716
Repairs & Maintenance	11,823	12,391
Custom Work & Contracting	3,385	4,231
Miscellaneous Cash Expenses	11,566	10,818
Operating Interest Paid	2,167	2,507
Paid Labour & Benefits	2,333	3,489
TOTAL DIRECT EXPENSES	64,727	73,262
Land Rents / Rates / Tax / Ins.	13,224	16,605
Depreciation	20,706	21,165
Capital Interest Paid	8,655	10,522
TOTAL CAPITAL COSTS	42,585	48,292
TOTAL COSTS	**107,311**	**121,554**
NET FARM INCOME	**38,014**	**71,238**
Imputed Contributed Labour Cost	21,621	23,080
Return to Equity & Management	16,392	48,158
Return on Assets (%)	2.2%	4.7%
Debt / Assets (%)	14.0%	15.0%
Operating Expense Ratio (%)	53.0%	45.0%
Beef Cows (head at Jan. 1st)	148	180
Production Stock Sold (head)	140	171
Farm Area (acres)	2,175	2,595

* Source: AgriProfit$ Cost & Returns Research Program, 2000
** Farms specializing in beef cow/calf production. Average represents the whole sample. Top 1/2 represents the average of the top ranked return on assets group.

b) Prairies - Economic Profiles

With the ongoing transition of Saskatchewan farms from cereal to beef production, the cow herds and production of feeder calves in the Western Canadian prairies have become significant in a North American beef industry context. Calves and backgrounders of Saskatchewan and Alberta origin feed into the expanding regional beef finishing sector.

The attached table provides cow/calf enterprise economic and physical performance profiles for the Alberta and combined prairie (AB and SK) region. Both regional averages and top third management groups are presented.

The Canadian prairies top performing group had total production costs, at an enterprise level, of $484/cow wintered. Feed, bedding and pasture costs comprised 58% of the total costs. Fixed costs, another major determinant of profitability, made up another 11% of the total.

AgriProfit$

1999 Cow-Calf Enterprise Overview

Economic & Physical Performance Comparisons
Benchmark Comparables: Alberta & Prairie Averages

Economic Performance Indicators:

	Alberta		Prairies	
	Avg.	Top 1/3	Avg.	Top 1/3
	$ per Cow Wintered			
Production Stock Sales	682.05	722.65	685.55	715.73
Value of Production	**686.69**	**746.91**	**714.50**	**782.33**
Feed, Bedding & Pasture Costs	320.46	287.78	315.66	282.28
Labour Costs	82.58	62.87	80.06	62.82
Other Variable Costs	106.16	83.67	108.69	84.67
Fixed Costs	76.56	55.26	72.56	54.43
Total Cash Costs	**468.07**	**399.15**	**467.43**	**401.00**
Total Production Costs	**585.76**	**489.59**	**576.97**	**484.20**
Gross Margin	**218.61**	**347.77**	**247.07**	**381.33**
Return to Equity & Mgmt.	**100.92**	**257.33**	**137.53**	**298.13**
Total Investment	**1,954**	**1,937**	**1,889**	**1,799**

Physical Performance Indicators:

Cows Wintered	132.0	153.7	127.7	149.3
Calf Crop (%)	87.7	90.5	87.4	88.3
Lbs. Weaned/Cow Wintered	524.5	546.3	525.2	532.8
Labour Hours per Cow	8.4	6.3	8.1	6.3
AUM's/Cow Wintered	6.9	6.9	7.8	7.8
Feeding Season Days	179.3	175.2	170.0	163.3
Tonnes Fed per Cow (as-fed)	3.6	2.9	3.4	2.9

For 1999, the average profit for these enterprises came to $298/cow wintered on an average herd size of 150 cows. Gross margins, referring to the enterprises' ability to cover cash commitments, averaged a healthy $381/cow.

c) Competitor Economic Profiles

i) U.S. (selected state groupings)

Cow/Calf Enterprises

Given the size of the U.S. industry, the general lack of consistent, comparable economic profiles is somewhat surprising. USDA/ERS has developed estimates of cow/calf costs and returns on a national and broad regional basis for 1998 and 1999. The costing information is derived from industry models, focusing primarily on policy and program applications. This limits the interpretability of this information in a competitiveness context.

The following table presents U.S. national and regional level cost and returns estimates. The "Heartland", "Northern Great Plains" and "Prairie Gateway" regions match up with those referred to in previous sections as "Midwest", "Northern Plains" and "Southwest" regions respectively.

The U.S. estimates vary from those for Canada in two major areas. Firstly, the American operations represent an aggregate of cow/calf and feeding activity as opposed to the production of calves. Secondly, the U.S. methodology relies in imputing opportunity costs for some of the major costing elements. This approach tends to inflate the "economic costs" attributable to operations with a cow herd as their basis.

The key observation from these estimates is the apparent lack of profitability in the cow/calf business. Only the Northern Great Plains and

Cow-calf production costs and returns per bredcow, 1998-9 United States & Selected Regions - $Cdn

Item	United States		Heartland		Northern Great Plains		Prairie Gateway	
	1998	1999	1998	1999	1998	1999	1998	1999
					Dollars			
Value of Production								
Calf Sales	307.58	332.66	369.24	399.85	314.66	346.53	317.45	338.49
Yearling Sales	182.41	194.55	60.61	65.50	193.92	210.54	270.60	287.88
Other Cattle Sales	101.96	105.98	89.84	92.99	123.14	128.75	105.04	108.68
Miscellaneous Receipts/Adjustments	8.69	8.97	6.36	6.58	9.84	10.07	9.67	10.04
less: Purchased Cattle for Backgrounding	(83.48)	(88.78)	(29.92)	(33.32)	(46.20)	(51.12)	(140.78)	(149.31)
VALUE OF PRODUCTION	517.17	553.38	496.13	531.60	595.36	644.78	561.98	595.79
Expenses								
Operating costs:								
Purchased cattle for backgrounding	83.48	88.78	29.92	33.32	46.20	51.12	140.78	149.31
Feed & Bedding	257.13	230.26	376.83	352.29	243.47	208.73	223.10	190.77
Grazing	165.48	169.62	125.72	118.01	180.20	190.37	159.15	172.29
Other:								
Veterinary and medicine	32.70	33.69	58.30	60.77	22.82	23.32	28.10	28.51
Bedding and litter	0.55	0.58	1.78	1.83	0.33	0.33	0.04	0.04
Marketing	8.69	8.97	6.36	6.58	9.84	10.07	9.67	10.04
Custom operations	46.02	47.42	60.84	63.22	46.11	47.06	34.82	35.70
Fuel, lube, and electricity	28.39	28.37	24.00	24.07	24.39	24.36	33.13	33.14
Repairs	37.59	38.74	44.00	45.74	33.66	34.61	45.14	46.51
Interest on operating inputs	16.85	16.56	18.80	18.51	16.16	15.91	17.00	16.70
Total operating costs	592.86	573.64	714.86	689.20	576.63	554.45	550.10	533.66
Allocated overhead:								
Hired labor	4.63	4.81	0.71	0.77	0.96	1.01	3.52	3.65
Opportunity cost of unpaid labor	340.58	350.75	279.29	289.11	459.45	474.63	263.91	269.92
Capital recovery cost of machinery and equipmen	181.79	180.22	377.62	355.41	110.90	108.68	175.32	178.84
Opportunity cost of land	3.35	4.07	7.57	7.78	4.29	4.99	2.20	3.05
Taxes and insurance	47.47	47.76	62.77	63.37	48.06	48.07	43.30	43.63
General farm overhead	83.00	84.59	114.39	117.34	76.06	76.94	84.34	85.91
Total allocated overhead	660.81	672.20	842.35	833.80	699.73	714.32	572.58	585.00
Total costs listed	1,253.67	1,245.84	1,557.20	1,523.00	1,276.35	1,268.76	1,122.68	1,118.67
Value of production less total costs listed	(736.50)	(692.47)	(1,061.07)	(991.40)	(680.99)	(623.98)	(560.69)	(522.88)
Value of production less operating costs	(75.69)	(20.26)	(218.72)	(157.60)	18.74	90.34	11.88	62.13
Supporting information:								
Bred cows (head) 1/	83	83	51	51	174	174	78	78
Calves weaned (head) 1/	71	71	45	45	162	162	66	66

1/ Developed from survey base year, 1996.
Source: USDA/ERS

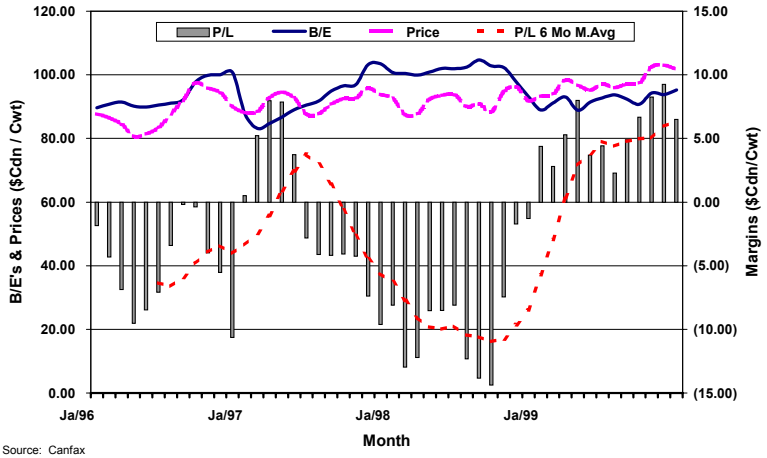
Prairie Gateway regions showed some capability of covering attributable operating costs. Returns over full costs were negative in all cases.

This result is somewhat alarming but at the same time understandable. The herd sizes indicate that the estimates were based on smaller operations which typically have a more difficult time in covering total economic costs. IRM (Integrated Resource Management) program information from North Dakota, Kansas and Iowa (not presented herein) is more difficult to put into a comparable format, but does give an indication that larger units focusing primarily on cow/calf production do display lower per cow costs and improved profitability. All told, the U.S. cow/calf sector is likely far more cost effective than the estimates portray.

<u>Cattle Feeding</u>

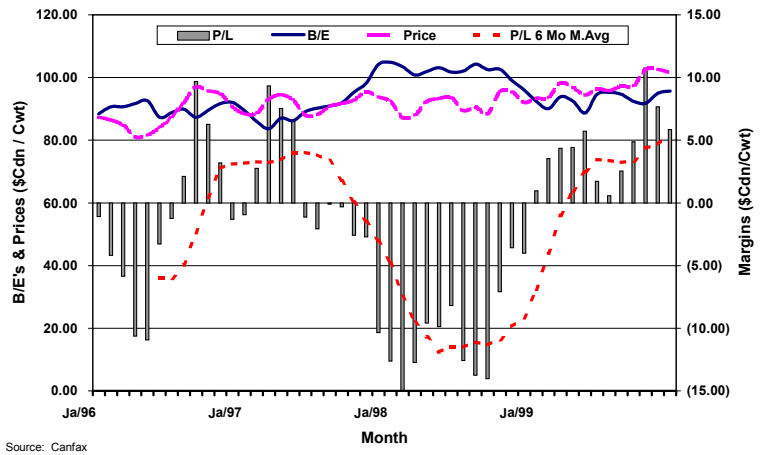
Finish-to-slaughter margins, based on Canfax estimates, are similar to those provided earlier for Alberta feed yards. The costing and margin estimates are indicative of a fast moving business where cash flow management is key (ie. covering periods of negative returns with working capital brought forward from positive periods). Once again, the estimates are more representative of mid-sized operations and the larger operations, with economies of scale will display an upward shift in margins.

Texas Yearling Steer Feeding Margins



Source: Canfax

Nebraska Yearling Steer Feeding Margins



Source: Canfax

Competitor Economic Profiles (cont'd)

ii) Brazil

The Brazilian, and for that matter South American, beef industry is a significant mind set shift from production practices observed in North America. Economic performance is indicative of the extensive, low cost approach employed in that country. It also reflects the orientation towards production of lower-valued "commodity" beef.

The average farm size portrayed in the estimates, 3,087 acres, is not that different from the Canadian scene. The large unit group, however, is just that, averaging 18,550 acres per farm.

Brazilian beef farm costing profiles have been compiled from FNP - Brazil based on information gleaned from their accounting and consulting activities. To put this in context, the estimates are likely more comparable with the "top management" profiles presented in the Alberta section.

Costing estimates are based on an all inclusive system from breeding through to sale of slaughter animals. Feed costs are low reflecting the absence of concentrates. Grazing costs are low reflecting the low intensity management system.

Compared to North America, unit revenues and costs are significantly lower for both the average and large size operation. The net, however, is within range of the Canadian estimates at roughly $97/cow for the average and "large" groups.

Return on capital, that all important "comparator" between regions, is in the 5% - 6% range. This is similar to that observed for Canadian cow/calf operations.

Statement of Farm Revenues & Expenses - 1999

Brazilian Beef Operations - $Cdn

(Extensive Cow/Calf to Finishing)

	Average*	Large Farms
Revenues	*-- $ per Bred Female --*	
Cattle Sales	278.97	271.96
less: Livestock Purchases	(0.57)	(0.60)
Value of Production	**278.40**	**271.36**
Costs		
Feeds	28.27	29.51
Grazing	10.13	10.63
Vet.& Med. / Breeding	15.98	16.26
Fuel & Utilities	9.80	8.15
Repairs & Maintenance	11.08	8.90
Miscellaneous Cash Expenses	26.26	25.84
Paid Labour & Benefits	46.74	43.62
Total Direct Expenses	**148.27**	**142.91**
Rents/Rates/Taxes/Insur.	2.51	2.85
Depreciation	16.93	14.85
Interest Paid	13.50	13.52
Total Capital Costs	**32.94**	**31.22**
Total Costs	**181.21**	**174.13**
Net Farm Income	**97.18**	**97.23**
Return on Capital	**5.6%**	**5.9%**
Total Assets ($ / Bred Female)	**$1,743**	**$1,635**
Bred Female Inventory (Est'd)	1,593	3,700
Total Head Sold	1,351	3,132
Acres	3,087	18,550

Adapted from: FNP Consultoria, Brazil, 2000

* Overall average constructed from 3 average size group reports.

Competitor Economic Profiles (cont'd)

iii) Argentina

Argentinian costing estimates were only available for 1998 in a slightly different format to that employed previously. The source of information was similar to that for Brazil, suggesting that the producers could be considered in the "top management" echelons.

Cow/calf operations averaged over 15,000 acres with assets valued at over $2,300 per bred female. Revenues per cow were low, at $193 per cow and this was offset by a low total cost of roughly $99 per cow for a net farm income of $94/bred female.

Finishing operations tended to be grazing based with some supplemental feeding. Estimated net farm incomes on benchmark finishing operations (1,094 head sold per annum) came to $74/head sold.

Return on capital for 1998 was in line with that observed for Canada and Brazil. The cow/calf enterprises earned a 3.9% return while the finishing operations earned 3.7% return.

Statement of Farm Revenues & Expenses - 1998
Argentinian Beef Operations - $Cdn

	Cow/Calf	Finishing
	$/Bred Female	*$/Head Sold*
Revenues		
Cattle Sales	219.44	578.48
less: Livestock Purchases	(26.01)	(350.79)
Value of Production	**193.43**	**227.68**
Costs		
Feeds	2.36	46.43
Grazing	5.27	17.73
Vet.& Med. / Breeding	14.63	24.02
Mach/Bldg Operating, R&M	6.27	6.31
Miscellaneous Cash Expenses	33.21	26.20
Paid Labour & Benefits	14.11	10.99
Total Direct Expenses	**75.84**	**131.68**
Rents/Rates/Taxes/Insur.	5.13	9.63
Depreciation	9.82	7.36
Interest Paid	8.43	5.35
Total Capital Costs	**23.37**	**22.34**
Total Costs	**99.22**	**154.02**
Net Farm Income	**94.21**	**73.67**
Return on Capital	3.9%	3.7%
Total Assets		
- per Bred Female	2,329	n.a.
- per Acre	n.a.	1,772
Bred Female Inventory (Est'd)	2,200	n.a.
Total Head Sold	1,824	1,094
Beef Produced (total live kgs)		
- per Bred Female	181	n.a.
- per Head Sold	n.a.	198
Acres	15,438	1,235

Adapted from: Ing. Agr. Fabiana Colombo (Argentina)

* Overall average constructed from 2 average size group reports.

Competitor Economic Profiles (cont'd)

iv) Uruguay

Uruguayan costing profiles (1998), sourced similarly to those of Brazil and Argentina, reflect the extensive nature of the primary beef production business in that country.

Beef operations in Uruguay are typically "minimum-input" as reflected in the zero values associated with feed and grazing costs. They do however display a reasonable substitution of labour ($121/cow) for other costing elements.

Total production costs tally to $243 per bred female yielding a net return of $145 per cow and a return on capital in the range of 3.4%. Average herd size from the consultant's benchmarks comes in at 480 cows grazing on 4,900 acres.

Statement of Farm Revenues & Expenses - 1998
Uruguayan Beef Operations - $Cdn
(Extensive Cow/Calf - Finishing)

	$/Bred Female
Revenues	
Cattle Sales	388.69
less: Livestock Purchases	0.00
Value of Production	**388.69**
Costs	
Feeds	0.00
Grazing	0.00
Vet.& Med. / Breeding	19.00
Mach/Bldg Operating, R&M	19.27
Miscellaneous Cash Expenses	21.45
Paid Labour & Benefits	121.58
Total Direct Expenses	**181.29**
Rents/Rates/Taxes/Insur.	45.34
Depreciation	17.34
Interest Paid	0.00
Total Capital Costs	**62.68**
Total Costs	**243.97**
Net Farm Income	**144.71**
Return on Capital	3.4%
Total Assets (per Bred Female)	$2,906
Bred Female Inventory (Est'd)	481
Total Head Sold	384
Live Kgs Produced (/Bred Female)	333
Acres	4,940

Adapted from: Blasina & Tardaguila Consultores Asociados (Uruguay)

* Average represents a selected grouping of operations feeding out own stock.

Competitor Economic Profiles (cont'd)

v) Australia

Australian cost and returns estimates indicate the position of strength of that country's industry. The Australian industry has weathered some difficult financial circumstances yet the top 25% of farms have shown a reasonable net return for the 1998/99 period.

Farm acreage for the Australian "beef specialist" farms comes in at a national average of 29,000 acres and a top quartile average of 76,000 acres. These support breeding herds of 300 and 700 cows, respectively.

Converting the top quartile farm totals to a "per bred female" basis, value of production averaged $488 per cow and total costs (excluding valuation of contributed labour) came in at $310 per cow yielding a net farm income for this group of $178 per cow. Allowing for an imputed operator labour cost of $55 brought the overall net to $123 per cow.

Once again, comparing to primary beef industries world wide, the rate of return on capital for the Australian industry average 0.2% overall and 4.6% for the top management group.

There is one significant element missing from the Australian costing and that is in reference to their expanding grain-fed finishing sector. Although this is a relatively small proportion of the business they, as a country do, approximately half of the fed cattle output is targeted into the higher valued Japanese market. The Australian industry is making a move in some small way from "commodity" beef to "product" beef. For this reason, the Australian industry is emerging as a potential competitor to the North American industry.

Statement of Farm Revenues & Expenses - 1998/99*
Australian Beef Specialist Farms - by Management Class**

	Average	Top 25%
	- - $Cdn per Bred Cow - -	
Revenues		
Beef Cattle Sales	346.93	332.96
Other Livestock & Wool Sales	4.26	6.41
Crop Sales	26.28	42.80
Contract, Custom & Misc. Rec'ts	116.65	114.56
Government Assistance	1.36	1.21
Value of Inventory Change	(16.82)	31.21
less: Livestock Purchases	(47.18)	(40.33)
VALUE OF PRODUCTION	431.48	488.81
Expenses		
Fertilizer & Chemicals	17.02	14.95
Feed Purchased	21.57	19.74
Trucking & Marketing	20.46	20.24
Fuel, Oil & Lube	21.85	20.51
Repairs & Maintenance	39.88	35.00
Custom Work & Contracting	15.07	15.10
Miscellaneous Cash Expenses	103.30	82.65
Paid Labour & Benefits	26.89	28.55
TOTAL DIRECT EXPENSES	266.05	236.75
Land Rents / Rates	16.18	12.83
Depreciation	41.00	30.08
Interest Paid	29.37	30.90
TOTAL CAPITAL COSTS	86.55	73.81
TOTAL COSTS	**352.59**	**310.56**
NET FARM INCOME	**78.89**	**178.25**
Imputed Operator Labour Cost	104.55	55.22
Return to Equity & Management	(25.67)	123.04
Return on Capital (%)	0.2%	4.6%
Beef Cows (head at June 30th)	309	693
Beef Cattle "Turned Off"	314	573
Farm Area (acres)	29,119	76,046

* Adapted from "Australian Beef Industry 2000", Australian Bureau of Agricultural and Resource Economics, 2000.

** Farms specializing in beef cattle production. Average represents the whole sample. Top 25% represents the average of the top ranked return on capital group.

d) Other Considerations in Competitiveness

Conventional industry competitiveness assessments focus on production cost and returns at the primary level. There are elements within the primary industry, however, in addition to considerations from the farm gate to the consumers' plates, that can have a significant effect on an industry's overall competitiveness. Hobbs (2001, pgs. 1-11) describes these elements, citing the case of the Danish pork industry. These elements (excerpts noted in italics), and extension to the North American beef industry, are summarized below.

The farm level Danish pork industry is not considered globally "competitive" in the traditional sense. At the industry level, the opposite is most certainly the case. Factoring in the qualitative elements of transaction costs, vertical industry linkages, the policy environment and the degree of competitive pressure facing the industry, a relative production cost disadvantage has turned to an industry competitive advantage. The interrelationships among these elements and their (direct and indirect) effect on competitiveness is portrayed schematically in the diagram below.

Transaction costs refer to costs associated with:
< information search (products, prices, quality)
< negotiating and carrying out a transaction
< monitoring and enforcement (to ensure adherence to the terms of the transaction)

Transaction costs affect competitiveness because they influence the efficiency with which price and quality information flow along a supply chain, the incentives for investing in specific assets, and the nature of vertical linkages between producers, processors and distributors.

The closer the vertical supply chain linkages, the more the industry is able to respond to the quality needs of different markets, enhancing pricing efficiency and operational efficiency. "Pricing efficiency" refers to the effectiveness with which price signals are transmitted from consumers back to producers and the extent to which, in response to these signals, the market system efficiently allocates resources and coordinates production and marketing.

"Operational efficiency" refers to the cost-effectiveness of the marketing and supply chain activities involved in moving products from producers to consumers.

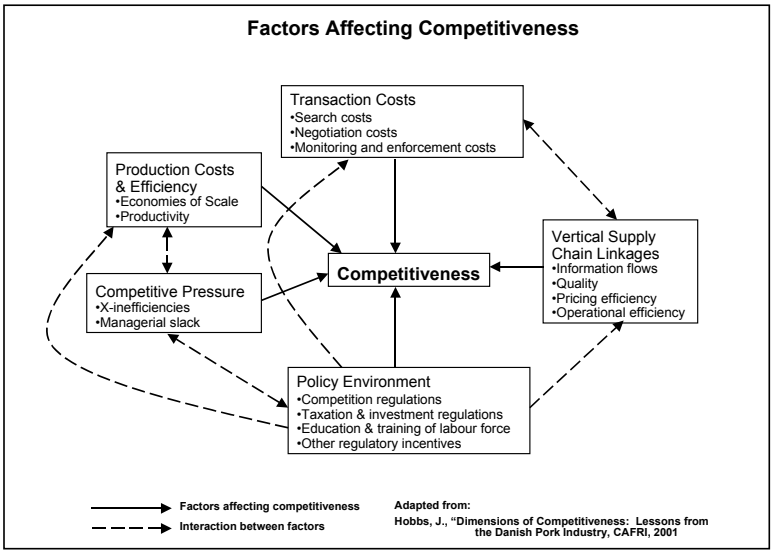
Policy environment influences competitiveness through competition regulations, taxation and investment regulations, education and training of the labour force, etc.

Lack of competitive pressure (from other firms or industries) allows inefficiencies to creep into the system in the form of "X-inefficiencies" or managerial slack.

Production costs and efficiencies embody managerial and/or scale economies and productivity. They relate to those factors directly affecting unit production costs.

Some of the key features of the Danish pork industry influencing competitiveness are:

Production Costs & Efficiency
< productivity in the Danish herds is comparable to that observed in Canada and the U.S.
< new producers entering the industry must complete a series of agricultural college courses, improving managerial skills and technology adoption, which enhances production efficiency.
< hog slaughtering is concentrated in the hands of three major firms, offering scale economies.



Vertical & Horizontal Coordination

< the bulk of Danish hogs are marketed through three farmer-owned cooperatives
< these co-ops belong to an umbrella organization, Danske Slagterier (DS), which consults and negotiates with outside bodies on behalf of the industry, formulates industry strategies and conducts market research, which is linked to breeding, technology and product quality research, providing the industry with information on requirements of different markets. The role of DS is key in that it encourages close vertical cooperation throughout the value chain.

Policy Environment

< the government requires education and training on the part of new primary producers.
< the industry implemented a voluntary on-farm quality assurance program (covering traceability, transportation, environmental standards, animal welfare, food safety, etc.) in response to demands of international markets and domestic policy makers.

Transaction Costs

< the traceability component of the quality assurance program is used proactively up and down the value chain ensuring quality and product definition. There are a multitude of areas in which this system reduces transaction costs throughout the value chain from producers to consumers.
< market specific contracts, with a built-in audit component, reduces transaction costs throughout the value chain, as well.

Competitive Pressure

< recent merger activities have potentially lessened the competition in the industry.

Comparison to the "Beef Complex"

There are a number of similarities and differences, on a region-by-region basis, between the Danish pork case and what is evolving in the global beef complex. A few of the more relevant examples include the following:

< integrated "value chains" are becoming more commonplace in the intensive North American industry. As packers and processors focus on serving product markets, their demands on the feedlot industry become more specific, and this specificity is moved through to cow/calf producers as well. The use of contractual arrangements and premium pricing grids has advanced significantly.
< live cattle pricing information in North America is relatively transparent with bids related to quantity and quality criteria.
< economies of scale are progressing on this continent, especially in cattle finishing and slaughtering operations.
< the Canadian cattle identification program offers traceback capabilities in the event of disease outbreaks. This same system offers considerable upside in terms of creating management information throughout the production chain.
< the policy environment is promoting sound, humane production practices, environmental responsibility and food safety.

For the established, intensive-style beef (product) system in North America to have survived and prospered in the face of extensive-style beef (commodity) systems in South America and Australia, many of these "non-production cost factors" must have evolved. Moreover, putting these in context with the developing finishing industry in Australia (moving higher-valued product into Japan), this is likely the competition the North American industry must be most aware of.

e) Static Comparative Analysis and Summary

Classical competitiveness assessments focus on comparing unit production costs, per lb. produced, by different regions. This analysis only partially achieves this result for the Focus-6 in the global context for two broad reasons:

< the discussion on the Danish pork industry reveals that their is more to industry competitiveness than being the low-cost producer of the primary product, and
< long term series of comparable historical information for both production and economic performance is required for an objective and meaningful cost and returns analysis.

Each of these items is discussed in the following passages, leading to conclusions on the competitiveness of Alberta within the Focus-6, and in the global beef complex. The Summary Table (below) is used as a point of reference.

Product vs. Commodity

The Danish pork reference highlights the importance of "value chains" and viewing beef as an array of products as opposed to a generic (homogeneous) commodity. Each of these can affect improvement in unit cost, market returns and final consumer acceptance -- for what they perceive as a desirable, affordable product.

Many similarities exist between the Danish pork example and the North American beef industry.

< value chain arrangements (both cost reducing and market enhancing) are becoming more commonplace.
< the value of exchanging product specifications (or requirements) up-and-down the production chain is gaining recognition.
< overlaying the evolution of businesses to achieve scale economies (from primary producers through to tertiary processing) creates industry synergy -- directed to delivering consumers the product desired at a competitive price.

Although competitive unit production costs are necessary for the primary industry, economies gained throughout the production chain, through to consumers, are one of North America's key advantages. The long term success of the North American beef industry will depend on further improvements in this area.

Information Needs

The basis for an objective competitiveness analysis is consistent and comparable long term economic and production information. In the absence of this comparability, inferences on competitiveness can be made, recognizing some of the inherent weaknesses. For instance:

< the interaction among producing regions (and consumers) over time is critical. The ebb and flow of local weather, production and general economic forces can cause short term shifts and form longer term trends. The period of comparison for this analysis is one year (in and about 1999).
< information sources and calculation methods vary from region to region -- ranging from detailed to almost non-existent. Analysis of competitiveness relies on comparing "apples-to-apples", representing the whole industry in each country or region. Inferences are drawn recognizing:

Summary Statistics - Costs and Returns

(Estimates for the base period of 1999 unless otherwise noted)

		- - - - Production Margins (1) - - - -		
		Cow / Calf (2)		Finishing
		$ / Cow	R.O.A. (3)	$/Head (4)
Alberta		**$257** (5)	**4 - 5%**	**$8 - $10**
United States		**($20)** (6)	**5%** (7)	**$55 - $65**
Brazil		**$97**	**5%**	**n.a.**
Argentina	(8)	**$94**	**4%**	**$74**
Uruguay	(9)	**$145**	**3 - 4%**	**n.a.**
Australia	(10)	**$123**	**4 - 5%**	**n.a.**

- - values are stated in $Cdn - -

(1) Production margins for cow/calf enterprises, or farms, represent Returns to Equity & Management unless noted otherwise. Production margins for cattle finishing enterprises are similar with the exception that Alberta and U.S. overheads are estimated on anecdotal industry information.

(2) Alberta cow/calf enterprise information focusses on sale of weaned calves. For the U.S. and Argentina, sales focus on weaned calves although some feeding to heavier and/or finished weights occurs. For Brazil, Uruguay and Australia, the cow/calf enterprise is all inclusive, finishing production stock to slaughter.

(3) R.O.A. = Return on Assets

(4) Does not account for death losses and retained stock between the production segments. Values between enterprises are not additive.

(5) Cost & Returns for Alberta - Top 1/3rd management group.

(6) U.S. Return over operating costs -- national.

(7) Return on Assets estimate developed via personal communication with U.S.-IRM program coordinators. As such, ROA is not directly comparable to the production margin shown.

(8) 1998

(9) 1998

(10) 1998 / 99

- full costing per lb. of final product is not possible. Cow herd through to fed cattle margins are not additive.
- "extraction" of beef, comparing intensive to extensive production systems and the element of "days to market", are not fully accounted for.
- cow/calf profiles relate to segments of the industry generating the bulk of the product. The U.S. is the exception. Anecdotally, the U.S. cow/calf industry performs better than the table indicates.
- the Canadian and U.S. cattle finishing estimates are modeled based on average performance and costing. Larger, more technologically advanced production units are known to perform better than the estimates show. Once again, this information is anecdotal.

Other exceptions exist but, generally speaking, the analysis is sound at a rudimentary level. It is certainly sound enough to give a general interpretation of competitiveness. It is certain, however, that nations creating and maintaining this information have an edge over their competitors in building upon the competitiveness of their industries.

Is Alberta (Globally) Competitive?

Considering the range of production systems represented in the summary table, the production margins are quite comparable. Although the cow/calf and finishing margins are not directly additive (and considering the U.S. cow/calf figures likely underestimate the profitability of the core of their industry), a cursory view shows them to be reasonably close indeed -- too close to attribute a definable competitive advantage on such a short time frame.

The most telling statistic in the table is the rate of return on assets (ROA). These are remarkably close given the diversity of the group in terms of resources used and products produced. A range of 3 - 5% across the Focus-6 suggests that, amidst the variation in domestic pressures in each of the countries, these regions are relatively competitive in the beef commodities or products they produce.

6. Issues and Opportunities

Purpose: *to highlight strengths, weaknesses, opportunities and threats pertaining to the long term growth of the Alberta beef industry. Focus is on over-arching areas of performance of the industry from grass - to - consumer, industry level concerns and opportunities, government roles, responsibilities and partnerships.*

The intent of this section is to investigate the myriad of issues facing the Alberta beef industry today. Along with each issue, opportunities in terms of potential actions, solutions, markets and industry development are presented. Key areas within each issue and opportunity are highlighted.

Contents:

Issues and opportunities are organized into the following "Focus" areas:

a) Focus on Unit Production Costs
b) Focus on Products
c) Focus on Investment and Infrastructure
d) Focus on Balancing Business, Public and Consumer Needs
e) Focus on Trade and Trade Relations

Discussions of each issue drive at necessary actions, directions and/or opportunities to build toward long term viability and growth of the industry in a local, national and global context.

Sources:

Issues identified and included in this section came from a broad range of sources. These include:

- consultation with individual producers and businesses,
- the product of AFRD's Beef Product Team consultations with industry, and
- consultation with a broad cross-section of Alberta Agriculture staff.

The thoughts and opinions expressed under each issue are a direct result of, or formulated upon, input provided from each of these sources.

a) Focus on Unit Production Costs

The North American beef industry is maturing. As a result, margins for producing beef cattle will naturally narrow over time. This places significant pressure on the primary sector to be the "low cost" source of product to remain competitive. Human capital and resources exist in Alberta to meet this challenge ... but the drive to ever lower costs will always be with us.

Adoption of Management Skills, Information and Technology

Issue:
The primary beef industry is entering an era where business management skills are becoming increasingly important for producers to manage within an environment of narrowing margins and higher risk. *The rate of adoption of management skills, information and tools will have to increase significantly*.

Opportunities:
Producers tend to focus first on adopting production technology to achieve efficiency in their operations. Benefits are perceived as more immediate. Presentation of production technology in an "economic analysis and decision framework", tailored to local applications, will enhance adoption.

Ongoing investment in development of business management skills, targeted at operations with the long term business goal of economic growth and sustainability, will contribute significantly to the beef industry's prosperity.

Alberta producers are diverse in terms of location, resources employed, business goals and financial status. This provides a challenge to effective delivery of management extension products, services and technology. However, as an "extension audience", producers are resilient, creative, flexible and at this time in particular, *responsive to improving on business management information and skill sets*.

Key Areas:
< As "cost of production" is a natural progression from "production," it's a logical point to start extending "management" topics.
< Tailor extension activities, information and technologies to different audiences and needs.
< Although the aspects of marketing, financial, economic and risk management each require specific attention, they also need to be linked through the overall business planning process.
< Create a visible linkage between economic and business management research and downstream extension efforts. Public extension services are positioned to effectively create this linkage and are perceived as knowledgeable, unbiased and relevant. Public research and extension services also recognize and promote the integration of private service providers in creation and application of business management information and analysis systems.
< Risks and benefits associated with emerging "business arrangements".

Research and Development: Production & Management Technology

Issue:
Commitment to research has been the mainstay of developed economies, yielding technology-based efficiencies and, indirectly, substantial public benefits. *For the primary beef industry to keep its competitive edge, the pace of production research and technology development will have to be maintained and focused.*

Moreover, not only have producers recognized the symptoms of declining margins, they have indicated the need for the information and processes to manage within that environment. *Economic and business management information, research and technology development must be enhanced to complement the production side.*

As the industry matures over time, countries that stay actively in the forefront of research and technology development will be the survivors. Those not making the investment will slowly lose prominence, market share and competitiveness. Their industries will diminish and, for all intents and purposes, disappear.

Opportunities:
Alberta, with partners, has a significant investment in the creation of beef production research, information and technology. *Coupling this with economic evaluation and complementary economic research, will expedite the flow and adoption of research and technology, creating production and management efficiencies*. This will act to reduce individuals', and the industry's, unit cost of bringing beef cattle to market.

Significant opportunities exist at the beef/forage interface. Harvested and grazed forages need to be recognized as a "manageable crop" and a valued input to beef production. *Integrated beef/forage systems research and technology development, with associated economic analysis and extension, will form the basis for effective long term on-farm resource allocation.* Unit cost reduction in both the forage and beef production will be the focus. Presenting this research in an economic evaluation framework will improve the understanding and adoption by producers.

Key Areas:
< economic and financial research information, benchmarks and management tools relating to farm level decision makers.
< focused technology development regarding breeding and feeding.
< mapping of human genome (80% overlap with bovine) may provide opportunities for breeding beef animals specifically for growth, feed efficiency, carcass quality and disease resistance.
< productivity-based research into harvestable, grazable and combined-use forages by region and season of use
< evaluation of alternative feeding management systems (eg. straw-based rations, alternate day feeding)
< evaluation of alternative grazing management systems (eg. swath grazing, stockpiled grazing, grazing annual forages, native range use alternatives)

Innovative Business Arrangements

Issue:
The paradigm of operating businesses as sole ownerships, or owner/operated entities, restricts producers from achieving attributes of "scale economies". *There is reluctance in the industry, based on entrenched business mindsets and/or mistrust, to form business arrangements that effectively reduce unit production costs.*

Opportunities:
Business alliances, partnerships, cooperatives and joint ventures regarding input procurement, asset sharing and focused volume-based marketing hold significant potential for reducing unit production costs

Key Areas:
< information / intelligence gathering and sharing
< machinery and equipment sharing
< strategic management and sharing of land-based assets (forages and grazing)
< input procurement in volume
< volume-based marketing

Beef Production "Dichotomy"
Beef producers in "extensive" production systems (ie. cow/calf through backgrounding) are driven by the two following overarching pressures:
a) matching their herds and production systems to the local production environment, striving for the "type of cow" that gives them optimal returns *on their own farms*
b) match their products with what consumers, at arm's-length, are demanding.

These two forces are not always in synchrony ... but the long term success of the industry relies on meeting the latter. Some creativity, at the farm level, will be required in finding a way to do both.

b) Focus on Products

Consumer needs and preferences are becoming increasingly diverse, creating a whole series of market opportunities. The question for the Alberta beef industry is, "How can these be translated to:

- a reasonably definitive set of messages for producers upon which they can make longer term production & investment decisions?"
- a basis for the formation of 'value chains'?"

One thing is clear. A product focus is about 90° different in terms of business approach and industry structure from the original roots of the industry.

Products, not Commodities

Issue:
Historically, beef production has been commodity oriented. Cattle were raised, slaughtered and people ate "beef". With globalization, growing populations and rising standards of living, the consuming public is demanding product with specific characteristics. These demand signals, and the concept of products, are being passed down through the retail, processing and production chain. *The transition from a commodity to a product business approach must be made by individual businesses and the industry.*

Opportunities:
From the cow/calf producer's gate, each ensuing member of the beef production chain, from the backgrounder to the retailer or food service business, relies on consistent and sufficient volumes of inputs to be transformed into specific products to meet clients' needs. *The Western Canadian beef industry produces sufficient volumes of cattle to support strategic value chain alignments. The primary focus of this alignment is to target the exchange of "products" at each intermediate step, ending up at the final consumer with a beef "product" with specific characteristics to meet a demand.*

The "product chain" is a continuum of musts and wants. Musts include the notion of food safety which is the responsibility of the whole chain. Wants include a set of increasingly refined characteristics. For live cattle, this includes attributes such as consistency, frame type, feed conversion, and cutability. Consumer wants include degrees of "flavor", consistency, convenience, and healthfulness. Musts are expected. Wants, especially the more creative and specific ones, yield a premium. *Targeting the beef industry to deliver on specific wants, or preferences, will bring the associated premiums.*

The United States is a net importer of beef in quantity, but a net exporter of beef in value terms. Their industry direction is built on the concept of *importing low-valued commodity and directing high-valued product, produced and/or processed locally, into the domestic and export markets that pay premiums*. Products created through intensive production systems (grain-fed) are strategically placed into the premium markets. Extensively produced beef commodity (grass-fed) is not a priority for their industry, and one in which they are not likely competitive. Moreover, a shift to intensive systems by the extensive, commodity-based regions, would not necessarily make them competitive in the product-based markets relative to their resource base and "best use" criteria. *The Alberta, and Western Canadian industries share the U.S. model. Expansion and developmental opportunities are directly linked to the success of the combined industries.*

Key Areas:

< conscious, strategic alignment of groups of cow/calf and feeder cattle operations are required to meet the needs of specific feeding industry segments.
< further development of a forage-based backgrounding component would act as a bridge between the cow/calf and finishing industry, to meet the timing, frame and type needs of intensive feedlots.
< sufficient slaughter cattle volumes would support differentiation and segmentation, at the packer level, of "carcasses" into "product streams".
< niche marketing chains, including organic, GMO-free, and other specific product, packaging and portion traits, involve "gate to plate" production systems and can service narrow value-based markets. These should be viewed as limited access markets, not necessarily suitable to the broader-based industry as a whole.

< product development, keying-in on salable characteristics such as convenience, consistency, flavour/tenderness.
< consumer product development focused in domestic and export markets with income and consumption growth potential in terms of the nature of products derivable from North American production systems.
< marketing activities focused on beef products, not beef commodities.
< product "branding" providing the opportunity to create consumer loyalty.
< whereas the demand for commodity beef may be declining overall, the demand for beef "products" is on the rise.

Innovative Business Arrangements

Issue:
The paradigm of operating businesses as sole ownerships, or owner/operated entities, relies on the "marketplace" to deliver inputs and return value for outputs. *There is reluctance in the industry, based on entrenched business mindsets and/or mistrust, to develop business arrangements that enhance the ability to meet specific client needs throughout the value chain.* Pursuit of innovative business arrangements, up and down the product chain can yield both market premiums and cost reductions.

Opportunities:
Business alliances, partnerships, cooperatives and joint ventures *linking specific product needs regarding input specifications, down-stream client needs, strategic information sharing, and focused volume-based arrangements hold significant potential* in improving overall value chain revenues and reducing unit production costs of value chain participants.

Building on the "product vs. commodity" focus, knowledge of targeted product areas can be shared throughout the value chain. In the intermediate term, the knowledge of desired product characteristics, plus the associated premiums and production costs, will form choice points for potential value chain participants. *Members of the value chain, from primary producer to retailer, will be able to formulate investment and operational plans targeted at producing to meet the value chain's, and ultimately the consumers', needs.* For primary producers, this means selecting the product or value chain that best suits their resource base. For processors, retailers and exporters, this implies aligning sufficient upstream suppliers to meet their downstream client demands.

The growing trend towards case-ready beef products is a prime example of building on the "products vs. commodities" approach through innovative business arrangements. Over time, the movement to case-ready products will require volumes of uniform (standardized), and likely lighter, carcasses. Closer linkages with the feedlot industry, communicating desired frame, size and finish, will be necessary. This information, in turn, must be passed along to backgrounding and cow/calf businesses, along with the premium structure associated with becoming part of this particular value chain.

Key Areas:
< creating volume premiums in feeder cattle sales through joint ventures or cooperatives with the focus on martialing consistent, uniform packages.
< information sharing among value chain partners regarding input characteristics required relative to targeted product characteristics.
< strategic product adjustments to fill the needs of downstream chain participants.
< recognition that both premiums and risks must be shared among value chain participants.
< recognition that not all of a "product chain" participants' output will fit into the "product-based" stream. *"Commodity-based" markets will remain as an integral component of the beef production system*, providing a (lower-valued) market for output that does not fit into the product-based stream.

Research and Development: Products, Preferences, Markets & Value-Chains

Issue:
Similar to the production and management technology R&D issue, *product development, market and consumer preference research creates market opportunities for Alberta beef products. Increasing the value, volume and share of Alberta beef products in domestic and export markets is key to the long term viability of the industry.*

Opportunities:
In the intermediate term, in order to penetrate markets and maintain share, it is *critical to have a sound understanding of consumer preferences and demand drivers in priority markets*. This knowledge, gained through economic and demographic research, will lead short through long term product development.

The functioning of value or product chains, in terms of participant relationships, performance of chains (in whole or in segments), and the implications of aspects of revenue, cost and risk sharing, are not fully understood. To facilitate the industry's movement into the new business organization frontiers, it is appropriate to conduct and disseminate economic and management research for the benefit of all.

Considerable private and public sector product development research is undertaken regarding beef products. *Linked with market area and preference information, "product" research can become more focused*.

Key Areas:
< demand drivers / preferences in priority domestic and export markets: dietary changes; cultural and religious influences; shifts and growth in disposable income; specified product attributes relative to food preparation norms, flavour and texture expectations.
< beef does not share many of the traits of pork and poultry that drive their growth. However, much can be learned from the concepts of how they are presented to the consuming public. Beef products, in many instances will be different from competing proteins ... this can be used as a strength rather than viewed as a weakness
< food safety and the perceptions of beef as a safe, healthy food, are a must. Beef must have transparent product integrity.
< with changing demographics and disposable incomes, convenience and consistency of quality take on greater prominence as product traits. "Case-ready meats", "minimal preparation" packages and "meals-to-go" are examples.
< defining live animal traits linked to product requirements.
< performance of business arrangements in information transfer, value- and risk-sharing. Improved knowledge base, incorporated into working arrangements, will reduce "failures" and the tendency to shift back to "old ways".

Adoption of Management Skills, Information and Technology

Issue:
While larger, "corporate" packing, processing and retailing concerns tend to have well defined product, promotion and market area business strategies, *there is a significant role to be played by smaller value-added processing, retail and food service businesses in expanding beef's profile in both domestic and export markets. The issue in this area is whether or not their knowledge base, marketing and business skills, and information systems are sufficient to reach the potential in this area of opportunity*.

Opportunities:
A considerable amount of venture and/or equity capital exists in the small business world. *The strength of small businesses lies in the energy and creativity they employ in servicing customers' needs. Business development, market and product information, and management training assistance builds on these strengths*.

Regulatory compliance, in both domestic and export markets, challenges small businesses. Improved knowledge of local regulatory requirements, plus those associated with placing product in out-of-province or export markets, would strengthen these businesses.

Key Areas:
< marketing, operations and business management / planning skill development.
< information and training in building food safety into operational plans.
< information and training directed to increasing both domestic and export market expertise.

c) Focus on Investment and Infrastructure

The primary differences between developed and lesser developed economies are:
- the magnitude of private sector equity in businesses, combined with
- public and private investment in infrastructure,

linking the businesses, and their products, to markets. Maintaining public investment in infrastructure is a challenge as there are many competing demands and differences of opinion as to how these funds should be directed. However, private sector equity views public infrastructure investment as a statement of commitment to the industry ... shared visions and shared benefits require shared commitments.

Resource Base

Issue:
The maturation of the industry places considerable economic pressure on primary producers. The further back in the production chain, and the closer the ties to the land asset, the greater the pressure on margins. *There is concern among producers that it is increasingly difficult to earn a reasonable rate of return (living) and that the value of their assets may be in jeopardy*. Moreover, for producers desiring to pass on their farm to the next generation (ie. more than an economic tie to their farms), the economic viability of these operations in the hands of their heirs is a concern.

Opportunities:
The resource base in Alberta in terms of land, labour and capital (investment and human), the critical mass of the industry (5th largest "rearing" and feeding area in North America), its proximity to (premium) markets, and the local production and availability of feed inputs (grain and forages) at reasonable cost, indicate that *the industry is well positioned to be a significant player in primary beef production*.

The "production cost focus" emphasizes improving management skills. *The upcoming generation's producers will be prepared to manage their businesses within this "new reality"*. This includes effective within-farm (resource allocation) decisions, longer term strategic business decisions (product focus; innovative business arrangements) and increased emphasis on technology adoption.

The "product focus" emphasizes, again, strategic product plans tied to innovative business arrangements. Value chain opportunities will arise that offset pressures on margins and asset values.

Key Areas:
< unless there is an unforeseen shift in global beef production, the resource base devoted to primary beef production will likely stay in beef production.
< how beef operations are managed and the products produced will evolve over time.
< assets (equity) will stay in the beef industry. The composition of the farming population (ie. the equity holders) will change.

Labour Availability

Issue:
Scale of operations, regarding magnitude of investment and pressures to incorporate and manage new technologies, have increased the need for skilled hired labour (to supplement operator and family sources). *Difficulties in finding and maintaining capable labour has been voiced as an agriculture-wide issue*. It extends beyond primary agriculture to processing and value-added businesses.

Opportunities:
Training programs are emerging, particularly through vocational colleges, *promoting working in agriculture as a career choice*. A variety of production and management short courses are also available through public, private and industry organizations focused on skill and knowledge improvements and technology awareness.

The labour market is competitive, particularly in Alberta where the oil and gas, forestry and high technology industries offer lucrative pay and benefits. Agriculture has little choice but to compete in pay and benefits. Agriculture must also explore use of equity and/or profit-sharing as part of the terms of employment.

Key Areas:
< create appeal for agriculture as a career choice
< offer competitive pay, benefits, security and training opportunities.
< if the labour is worth it, pay it.

Role of Industry Organizations

Issue:
The Alberta beef industry has a rich heritage of active producer organizations. These have acted to benefit the industry through learning opportunities, producer forums, and as a unified voice in representing their membership at the interface with governments. Although these organizations, representing segments of the beef industry, do not always agree on issues, they do together represent the bulk of beef producers. *What is the role of these organizations in the future?*

Opportunities:
There are many broad-based issues coming forward that will have a direct impact on the way beef producers do business and as a result, on their "bottom lines". *Industry organizations are key partners in developing proactive strategies and operational plans to deal with these issues*.

Producers listen and relate to their peers. As the beef industry moves outside the confines of Alberta to a truly North American "market", producers working with their peers from across borders will tend to come to common ground more readily than working through third party intermediaries. *Industry organizations are key partners in developing and gaining acceptance for inter-regional trade arrangements*.

Key Areas:
< strategy and action plan development regarding issues such as: food safety, animal welfare, codes of practice, siting regulations, disease control, industry development.
< inter-regional trade relations regarding access to and movement of feeder and slaughter cattle; reciprocal disease control protocols.
< a common vision for the future of the beef industry must be shared among producer organizations. Harmony and a sense of common purpose, both among producer organizations and in organization - government working relationships, are critical.

Investment in Packing Facilities

Issue:
Alberta has two modern packing / processing facilities with large kill capacities to service Western Canada. Currently, these plants are not running at their full (technical) capacity. In some circles, however, they may be considered as at, or near, their practical capacity. *Expansion of the feedlot finishing industry may soon exceed packer capacity in the Province*.

Opportunities:
As the beef industry shifts from a commodity to a product focus, so too will the emphasis of the major packing facilities. Decisions on the focus of packing facilities are made at the corporate level on a North American basis. Cargill-High River has recently been upgraded to service the Japanese market. IBP will likely follow suit in a similar "value-based" market. The movement to case-ready products will likely require larger scale of slaughter to facilitate sorting into product streams. As this transition occurs, in conjunction with industry expansion, opportunities will arise for investment in additional packing capacity. *What is produced, not how much is produced, will play a major role in further investment in packing facilities*.

Key Areas:
< current packing facilities are not running at capacity.
< industry expansion will support the transition to servicing higher valued markets as opposed to producing "commodity beef".
< primary industry expansion will drive any further investment, although the scale may not be in line with current plants and/or the location may not be Alberta.

Investment in Value-Added Processing

Issue:
Although the slaughter industry has grown in Alberta, further processing activity locally is relatively stagnant at a time when consumer demand for processed products is increasing. In order to meet domestic and export demand, investment in byproduct and meat processing (ie. value-added products) is necessary.

Opportunities:

On the domestic front, there are opportunities for investment in processing firms to meet refined and differentiated consumer preferences. Extending this in any large way to export markets is largely controlled by the major packers. Otherwise, targeted, smaller-volume penetration of processed beef into export markets may induce investment locally into processing facilities.

Key Areas:

< investment in smaller scale plants will likely be directed to domestic and niche export markets.
< value-added processing tends to be located in close proximity to areas of higher population density (and consumption).
< accessing larger export markets for value-added beef products will likely be through integration, merger, or some combination of the two.

d) Focus on Balancing Business, Public and Consumer Needs

Government walks a fine line, attempting to strike a balance in ensuring:
- a business environment conducive to the long term development and growth of the beef industry,
- industry acts as "responsible stewards" of the resource base, and
- food products, when delivered to consumers, are safe.

Regulation and targeted programs have historically been the primary tool of government in balancing these often competing needs. However, in an era of "perception is reality", facilitating consensus (ie. "win-win" solutions) among these groups is taking a larger role.

Public Perception of Agriculture

Issue:
Over-arching the areas of public domain and government responsibility is the "perception of agriculture". With urbanization of the population over time the linkage to, and understanding of agriculture has diminished. Subsequently, *public perceptions are formed regarding the actions and motives of the industry that are not founded in fact, science and/or majority. These perceptions can influence government decisions on how the industry should operate, or how they will be controlled*. Measures based on unfounded perceptions do not benefit the industry, the economy, or the public at large.

Opportunities:
Production technology and management systems have undergone positive, dramatic changes over time. Industry, and industry organizations have taken a number of positive steps to set minimum stewardship standards and be "self-policing". *Collaborative public and private sector efforts to objectively and proactively inform the public of these developments, their implications to the public and the industry's sense of responsibility would improve the image of agriculture*.

Key Areas:
< humane animal husbandry practices
< responsible use of chemicals and other production inputs
< respect for air and water resources shared with the public
< provision of safe and healthy foods

Business Needs
(2 issues specified)

Issue:
Sources (eg. production, price, national herd health status, herd biosecurity, capital and market access) and impacts of business risk in agriculture are increasing. The industry requires options for managing risk that respond to "disaster" at the industry level while maintaining opportunity for individually-driven business success and failure.

Opportunities:
"Disaster" situations can result in business failures at a broad industry level in the short run while longer term prospects are for viability and growth. Government programs designed to bridge the industry over disasters must balance between:
- providing sufficient protection to maintain the industry on its long term course, and
- remaining relatively production and investment neutral.

The primary beef industry, and individual producers, are recognizing that they bear the responsibility to manage the bulk of their business risk. They also realize the need to develop the knowledge, skills and information systems to deal with these risks.

Key Areas:
< transparent guidelines regarding what constitutes a "disaster" at an industry level and what the response of the Government will be. Each individual can then build on this knowledge, implementing the balance of the risk management measures they see as necessary.
< develop and extend risk management tools, information and skill development opportunities.
< promote integrating measures to manage production, market and financial risk into ongoing business strategies

Issue:
Inter-regional transmittal of livestock diseases can result in significant productivity losses

and/or reduced public acceptance of beef as a safe food source. Either of these could decimate the North American beef industry. It is the role of government to define, monitor and police compliance in health of animals and disease control standards.

Opportunities:
In response to FMD and BSE outbreaks around the world, local authorities have increased import screening and identification of potential human "carriers" entering the country.

The National Cattle Identification program has been put into place, to give traceback and isolation capability, in the case of disease outbreak, to the Canadian industry.

In conjunction with industry partners, the limits of the "Restricted Feeder Import Program" are being investigated, based on solid science, to increase the importation of U.S. feeder cattle into Canadian feedyards.

Key Areas:
< zero-tolerance regarding FMD and other "industry-stopping" diseases.
< traceback and contingency planning in the event of potentially epidemic diseases
< risk assessments and common sense in facilitating livestock movement on the North American continent.

Public Needs

Issue:
The role of Government is to provide balance at the interface of multiple, and often conflicting uses of public resources. Production agriculture has been implicated in compromising air and water quality. Agriculture is but one user of public lands that have other business, wildlife and recreational options.

Opportunities:
Industry, through producer organizations, has shown its commitment to work with government and the public to develop acceptable production and joint-use standards, based on "good science and good sense". Moreover, industry is a willing partner in efforts directed to show the public at large its intent to be good stewards and responsible businesses.

Key Areas:
< regulations pertaining to siting of livestock operations are critical to further industry growth and development. These need to be based on science and generally applicable province-wide.
< codes of practice, specifying humane husbandry practices, have been developed in conjunction with industry. Broader-based extension to industry in terms of the rationale behind and benefits of compliance are still required.
< Underpinning Alberta's cow/calf industry is the use of public lands for grazing. Although the industry has shown itself to be good stewards of the resource and responsive to wildlife needs, access regarding recreation and other business uses remains an issue.

Consumer Needs

Issue:
It is the role of government to define, monitor and police compliance in food safety standards.
Consumers demand a safe food supply. Bacterial and other health related hazards originating from the food supply are given zero-tolerance, regardless of the source or cause.

Opportunities:
Industry recognizes the importance of stringent sanitary and processing standards and generally works with government to ensure compliance.

Consumers at-large do not recognize their role in the conveyance, storage and preparation of food with regards to minimizing food safety problems.

Key Areas:
< working proactively with processors, retailers and food service industries to ensure compliance.
< education of the public regarding appropriate handling and preparation of foods to minimize post-purchase hazards.

e) Focus on Trade and Trade Relations

The Alberta and Canadian beef industries are extremely export dependent. The long term success of Alberta's primary industry, similar to that of the U.S., hinges upon its success in establishing and maintaining volumes of high-valued product into growth markets. Given the U.S. is a major market for Alberta beef and, as well, is a partner in this high-valued product theme, two major elements of trade and trade relations emerge:

- integration of the Canadian and American beef industries into a "North American region", and
- resolution of global impediments to the trade in beef.

Being "first in" with significant volumes and being responsive, throughout the production chain, to consumer demands in target markets will yield momentum and competitive advantage.

As the U.S. and Canadian trade issues are highly interrelated, they are presented as a group with discussion of opportunities and key areas undertaken jointly.

An Integrated "Can-Am" Production and Marketing Region

The Canadian and American primary production and further processing industries have grown and matured side-by-side over the past century. Economic analysis prepared for the R-Calf CVD/AD petitions reconfirmed that the Canadian and American primary beef industries share common ground and common costing. *Integration into a "North American region" has been taking place gradually for some time. Consolidation and growth-to-scale of packing and intensive feeding businesses have quickened this process. However, there are still vestiges of regulation and vested interest, based on "nationalistic" fears carried forward to today, that slow this process.* There are a number of inter-related issues pertaining to Canadian and American cattle and beef trade and trade relations. As such, each issue will be laid out first, then the "Opportunities" and "Key Areas" will be expanded upon to address the issues collectively in a "Can-Am" context.

Dependence on the U.S.

Issue:
Concerns regarding the dependence of the Alberta beef industry on the U.S., as an outlet for product and a supply of feeder cattle, tend to be based on fear of "losing control of one's destiny". "Dependence" conveys the meaning "the glass is half empty" whereas "opportunity" says "the glass is half full". On both sides of the border, beef producers through to government representatives are not fully aware of "how business is done over there", thus creating uncertainty. The trust required for free-flowing business relationships has yet to fully develop.

Protectionism

Issue:
When the economy slows down, pricing and producer margins tend to be squeezed. This typically results in grass roots lobbies to protect the local industry from imported cattle and beef. On the U.S. side, trade petitions, the USDA inspection and grading system and (proposed) "Country of Origin" labeling are tools suggested or employed to "protect the local industry". Canadian import regulations regarding health of animals are perceived by Americans as protectionist tools applied here. Restricting movement of cattle and beef in either direction increases costs to producers, the industry and consumers. It may not have the desired effect on the local industry.

U.S.D.A. Inspection / Grading

Issue:
The "USDA Graded / Inspected" label has value in the American and international markets for commodity beef. A significant portion of this value is being conveyed to higher-valued beef product streams. The U.S. has a considerable investment in getting this "acceptability and related preference" into place. USDA labeled beef receives premiums in export markets. Non-USDA labeled products are, conversely, discounted in the American market place. The

"new" Canadian grading system provides comparability but does not carry the label with the value. The inspection and grading certification creates discontinuities in product flow and market inefficiencies. If there is to be a "Can-Am" region, lead by international corporate packers and processors into domestic and export markets, the grading inspection issue must be resolved.

Brand Labeling

Issue:
The movement towards branded products, in domestic and export markets, is an attempt to associate quality characteristics with a specific set of consumer preferences. Quality is in the "eye of the beholder". Customers and consumers are not as concerned about the grass-fed vs. grain-fed issue as they are about a defined set of product characteristics that can be relied upon to be delivered consistently. Zeroing in on providing these characteristics, and attaching a brand label creates brand recognition, brand loyalty and elicits a price premium. However, this does bring to the fore potential problems when the movement of Canadian beef into the U.S. and other export markets is largely through international corporate businesses. Does the label "Alberta" or "Canadian" beef connote value to the target client group? Should the specification of products, customers and brand labels be left to the corporate beef businesses? Simply put, brands relate to product characteristics which may, or may not include a notation of origin.

Disease Control and "National" Herd Security

Issue:
Foot and Mouth, BSE, Blue Tongue, and Anaplasmosis are examples of diseases that can have devastating effects on the productivity of cattle and the marketability of beef. On one hand, countries are taking seriously the responsibility to maintain the security of the health of their "national" herds. Empowered by regulation, they employ surveillance, testing and (disease-free) certification measures upon importation. On the other hand, many of these diseases are "regional" in nature. If they enter and take hold, the probability of transmittal to neighbouring areas, through a variety of vectors, is high. Control and eradication is also managed on an area or regional basis. Maintenance of "national" herd health presents some difficult trade-offs for Canada and the U.S. regarding freer-flowing, reciprocal movement of livestock.

Opportunities (across issues noted):
Efforts to improve trade relations begin with producers and producer organizations gaining a fuller appreciation of the nature of the industry, particularly the similarities, on both sides of the border. This begins at the grass roots level.

Collaboration of producer organizations at the national level to proactively address common trade and policy issues to the benefit of the "Can-Am Region" will reflect leadership, commitment and direction to local, state, provincial and federal policy makers.

The role of the various levels of government is twofold. Firstly, act as both a partner and facilitator in the trade relations and issues resolution activities among producer organizations. This also offers governments the opportunity to bring into context the views of the balance of their constituents. Secondly, implement regulatory, program and policy changes reflecting the consensus achieved.

Key Areas (across issues noted):
< increased knowledge and understanding, starting at the grass roots level, of the nature primary beef industry in a Can-Am context.
< work with national agencies to attain "grading equivalencies", at least between the two countries, with the intention to remove product discounts derived through regulation.
< collaborate with national, state and provincial authorities to develop transparent protocols for the movement of live cattle with the intention of containing livestock diseases.
< reinstating USDA grading of Canadian beef carcasses imported into the US.
< removal of country of origin labeling requirements for American and Canadian products within the continental market place.
< recognize that the definition of product characteristics, to be encompassed by brands or labels, is specified by consumers, not government or industry. Country of origin, carcass grade, inspection, etc. may or may not play a role in product specifications.

Multilateral Trade and Trade Relations

Beyond NAFTA

Issue:
Canada has progressed beyond NAFTA to negotiating free trade agreements with Central and South American countries ("Free Trade of the Americas"). The aim of these agreements is to open up market access among the participants. Along with improved access, however, comes increased competition from other beef producing nations.

Opportunities:
Negotiations may provide new and expanded market opportunities. As well, they will promote the ongoing industry structural evolution towards more "globalized" trade in beef.

Key Areas:
< with increased opportunities comes increased competition (Brazil and Argentina may replace portions of products currently imported from Australia and New Zealand)
< logical resolution of trade barriers.
< maintenance of "herd health" status.

The World Trade Stage

Issue:
Negotiations on the WTO agriculture agreement are in progress. The aim of these agreements, in general, is to reduce subsidization and trade barriers regarding agricultural products. This brings the Canadian beef industry as one of many players into context with the production-trade-consumption complexes for the full array of agricultural commodities.

Opportunities:
Although the WTO provides opportunities to expand markets for beef and rationalize subsidization (and dumping) activities, a number of needs and trade-offs are brought into play among industries, nations and trading blocks.

Key Areas:
< sanitary and phytosanitary concerns among nations.
< resolution of protectionist measures and trade barriers is a difficult, up-hill battle.
< increased access to North American markets by subsidized products.

7. Overall Assessment and Conclusions

Amid the many issues and events occurring in agriculture today, the evolution of the beef industry, globally, appears to be moving forward at an ever-increasing rate. This review has touched on all facets of the global beef complex, with the intent to:

< describe the main industry players world-wide,
< assess the relative competitiveness of Alberta in serving domestic and export markets, and
< review the issues and opportunities facing the beef industry.

Findings yield insight into future direction and actions required, as individual businesses and as an industry to maintain the "competitive edge".

Key Points by Section

The main observations, themes and conclusions drawn are summarized and presented below on a section-by-section basis.

Primary Resource Base

< Alberta has forage, grazing and feed grain production sufficient to support the current and near-term needs of both the extensive (land-based) production elements and intensive feeding businesses.
< Alberta's primary beef production sector has reached a critical mass, generating sufficient volume of slaughter cattle to support a world-scale, modern slaughter industry.
< the extraction ratio represents a region's responsiveness in bringing volumes of beef to the market place, and is reflective of the level of production intensity. Alberta's extraction ratio is very high relative to competitors, and as such, the industry is positioned to be responsive to the evolving consumer product demands through product segmentation.
< size of the primary industry is only an issue regarding generating a reliable and consistent supply of beef products.

Beef Production, Consumption, Trade/Markets

< while the volume produced by the other Focus-6 country's primary sectors are large relative to Alberta's, it is the potential net export volume and value of product that is important. Alberta plays a significant role in the global beef trade through its contribution to the export market.
< differentiation as a supplier of value vs. volume (product vs. commodity) has become increasingly important in the longer term development of beef industries within regions, defining their roles in servicing global markets.
< the Province's beef industry, due to its high level of export dependence, is at greater relative risk to events that restrict trade flows and dampen demand for Alberta products.
< Alberta's beef industry, through its intensive production orientation, is following in the path of the United States by positioning itself to serve the higher-valued, product specific markets. Product arising from intensive production systems offers greater flexibility and is more readily transformable into an array of refined consumer products than generic output arising from extensive systems.

Market Analysis, Outlook and Export Market Features

< the short term market outlook for the Canadian cattle industry (through 2002) remains positive. However, the cyclical nature of beef production, consumption and pricing will present intermediate term challenges for the primary industry regarding profitability and strategic direction.
< beef operations must strive for a competitive advantage - through lower than average production costs or higher than average market returns - to remain profitable.
< commodity beef markets will remain an integral feature of the global industry.
< longer term success in Alberta will depend on coordination of primary production, through "gate-to-plate" channels, to meet differentiated consumer beef product preferences. Moving from a "supply-push" to a "demand-pull" system will have a marked effect on beef cattle producers.
< each priority export market can be defined by its unique:
  C set of product demands
  C economic and population growth situation
  C infrastructure and regulatory environment

  Success in maintenance and growth of value-based exports into these markets hinges on catering to these unique traits.

Costs and Returns

< Alberta is relatively cost competitive on a unit cost basis considering comparable primary products.
< the Alberta industry's economic rate of return to beef production is competitive with the other Focus-6 countries, regardless of intensity of production systems.
< considering the economics of the production environment in Canada and the U.S., reversion from an intensive to an extensive production system is not a choice. This would place them in a non-competitive position relative to extensive-based countries in South America and Oceania. Production employing higher valued resources demands higher levels of productivity to maintain a comparable rate of return on assets.
< industry-wide competitiveness hinges on more than unit production costs. It is a function of transaction costs throughout the industry, system efficiencies through formal and informal vertical supply chain linkages, the prevailing policy and regulatory environment, competitive pressure within the industry, and, logically, production costs and efficiency.
< evolving information transfer opportunities within value chain arrangements will facilitate the translation of product requirements from retailers through packers, feeders and cow/calf producers. The net effect for the industry will be reduced unit production costs and premiums (or lack of discounts) associated with positioning of cattle into value chains.

Issues and Opportunities

Issues facing the Alberta primary beef industry are similar to other Focus-6 countries. In particular, those countries with significant investment in intensive production systems (like Alberta) need to:

< invest in leading primary production and economic research and technology development,
< aggressively facilitate the enhancement of business management skills on the part of primary producers to meet the competitive environment,
< promote innovative business arrangements throughout the production chain to harvest cost and market efficiencies,
< emphasize production of products to meet the needs of the next stage in the production chain, whether it's a feedlot or a consumer,
< deal proactively with consumer and public perceptions of agriculture, creating a positive image of producers and beef,
< seek objective solutions to regulatory and multiple use issues, creating win-win situations for industry and public stakeholders, and
< pursue resolution of trade irritants, constraints and distortions at the international level to remove impediments to rational development and long term prosperity of the beef industry.

The current state of the evolution of the global beef complex highlights a diverging emphasis, by region, according to extensive (commodity) and intensive (product) systems. Therefore:

< without a strong primary production sector, the full transition to a "product focus" is likely not achievable. Going only part way puts the whole industry at even greater economic risk. (Ergo the focus on better technology and management skills, tools and information on the part of primary producers).
< without the knowledge of emerging and/or evolving consumer preferences, development of products, and the associated value chains supporting them, will be undirected.
< a chain is only as strong as its weakest link. Without the commitment and cooperation of all players, from producers, to processors, to industry organizations and governments, the full potential of industry wide efficiencies is not achievable.

This listing touches on a few of the high points. Perhaps the critical question is, "where to from here?"

A Beef Production and Marketing System Concept

Clearly action must be taken. Maintaining the current path, or way of doing business, guarantees that opportunities in the world's evolving beef business will pass by Alberta.

The more conceptual suggestions of "innovative business arrangements" and "product focus" may seem threatening or unfounded to an industry that has built itself on the effort of individual entrepreneurship. However, by stepping back from the flood of "new concepts" and mulling them over, it's apparent that "there's just a lot of plain old common sense" in these new ways of doing business.

The following diagram brings all of the statistics, observations and analysis together in the form of a "conceptual view of beef production and marketing systems". It's a new, but inherently common sense view of the future of the beef business for Alberta and the world. The curves represent distributions of production and marketing of live cattle and beef products moving into the marketplace and on to the final consumer. The broad curve represents the "commodity", or undifferentiated beef market. The smaller curves (distributions) represent focused production and marketing channels, targeted on efficiently creating a beef "product", or "family of products", to meet specifications of individual consumer preferences.

Each of these channels exist in today's beef business. The industry evolved from the basic commodity approach and, over time, begun to address some of the more specific consumer needs. The pendulum is shifting towards actively focusing on these specific production distributions to create value in products that meet consumer preferences. The commodity distribution will likely remain as a feature of the industry, performing the integral role of clearing beef from the market place. Clearly, however, commodity beef will not receive the premiums associated with targeted products.

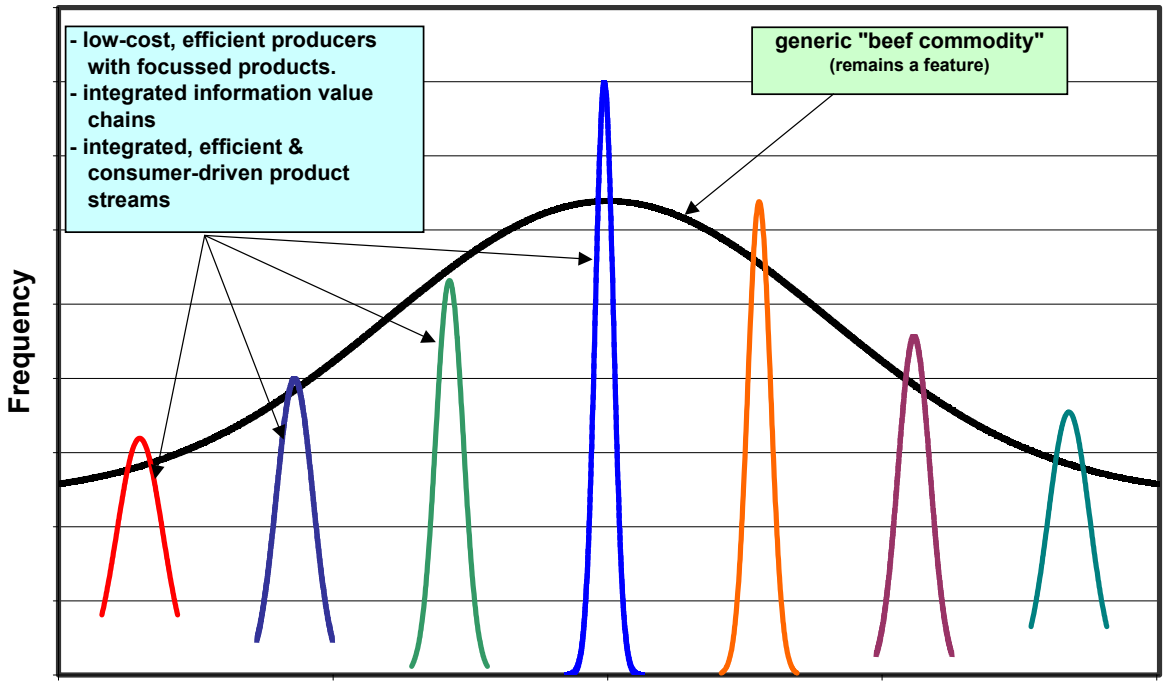
A number of key concepts underly the multitude of smaller curves (product distributions).

< Each distribution addresses the "beef production dichotomy". Producers are driven to achieve low unit production costs yet produce cattle to meet a specific downstream set of consumer preferences. The balance for each producer occurs in finding a "product channel" that suits their most efficient production systems.

< Innovative business arrangements, focusing on reducing unit costs, exist in each distribution. Producers and processors taking advantage of these arrangements will be the most profitable within each channel.

< Each distribution represents a "value chain". Innovative business arrangements throughout these value chains creates a volume of cattle with consistent traits that can be more effectively used downstream by feeders, then packers, and so on. This accumulates to yield sufficient volume to meet specific client needs via single products or families of products.

Conceptual View of Beef Production & Marketing Systems



- Product curves not only represent distribution of cattle (through to products), they represent lines of communication. Visualize an array of consumer preferences above the chart to be met. The specifications of these preferences are communicated from retailers and food service providers through to wholesalers, processors and packers, on down through to primary producers. Each relays not only product specifications but the relative premiums associated with fitting into, and producing according to the requirements. This feature is similar to the Danish pork case where transaction costs were reduced through the system by efficient information flows both up and down the production chains.
- The pursuit of value adding opportunities depends largely on following this approach. The industry cannot expect to produce all products for all consumers. Focusing on specific product lines will send clear messages to beef processors regarding identifiable product development and business opportunities.
- Summing across product distributions leads to a logical conclusion regarding market share. Transition to the value, or supply chain approach may simply prevent the loss of market share that would face the Alberta beef industry if it were to maintain a commodity orientation.

This conceptual approach to beef production systems for North America offers a common sense explanation to how the industry will need to change to meet future challenges.

Other attributes of the global beef complex, as it exists today, can be transposed onto this conceptual diagram.

- South American countries produce primarily "commodity beef". They access the broader distribution and have fewer product specific channels. Australia has evolved to a relatively greater extent, with more numerous product distributions designed to service specific export markets. The U.S., and to some extent Canada, have moved to producing more differentiated products, ie. identifiable product distributions. This is evident in their unit export values.
- The emphasis on research, technology development and adoption of management skills fits into this concept. Without the technological and management capability to profitably meet the narrower product distributions, the system will degenerate and move back toward the commodity-based approach.
- Consumer preference research and subsequent marketing efforts offer the opportunity to focus on specific product distributions.
- Resolution of domestic regulatory issues is a necessary condition to creating the business environment conducive to efficient beef production systems "gate-to-plate". Similarly, trade issue resolution addresses the same areas on a global level.

The production and marketing systems concept adds clarity to how the industry has evolved, the role of research, technology development and extension in the future, and some rationale for resolution of regulatory and trade issues that are holding back the industry from achieving its full potential.

Is Alberta's beef industry globally competitive? Yes ... today. To remain competitive, however, all players in the industry will have to embrace a new way of doing business. Change is a relative concept. Lack of action, by individuals, the industry and governments, will result in the loss of the domestic industry's competitive edge ... likely forever.

8. Glossary of Frequently Used Terms and Acronyms

AFRD - Alberta Agriculture, Food & Rural Development (or AFRD)
AB - Alberta (also Alta.)
BC - British Columbia (also B.C.)
BSE - bovine spongiform encephalopathy
ERS - Economic Research Service (USDA)
EU - European Union, or "the Community"
(f) - forecasted
FAO - Food and Agriculture Organization of the United Nations
FAPRI - Food and Agricultural Policy Research Institute (U.S.)
FAS - Foreign Agricultural Service (USDA)
FATUS - Foreign Agricultural Trade of the United States
FI - Federally Inspected
FMD - Foot and Mouth Disease
IRM - Integrated Resource Management
kg - kilograms
KS - Kansas
LDC's - Lesser Developed Countries
MB - Manitoba (also Man.)
mmt - million metric tonnes
MO - Missouri
MT - Montana
NASS - National Agricultural Statistics Service (USDA)
ND - North Dakota
NE - Nebraska
NM - New Mexico
OK - Oklahoma
(p) - preliminary
SK - Saskatchewan (also Sask.)
SD - South Dakota
SPA - Standardized Performance Analysis
TX - Texas
USDA - United States Department of Agriculture
WY - Wyoming

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