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Livestock and Animal Products Section

Working Paper

A Review of the Livestock Estimating Project with Recommendations for the Future

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Preface

This publication is one of a series of working papers prepared by the Agriculture Statistics Division of Statistics Canada. The presentation focuses on the mandate of the Livestock Estimating Unit and charts a direction for the future.

Material for this publication was completed by Bernard Rosien and Elizabeth Leckie of the Livestock Estimating Unit, Agriculture Statistics Division.

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EXECUTIVE SUMMARY

Purpose

This presentation sets out the role of the Livestock Estimating Unit so as to focus on its present mandate and to chart future directions.

Serving a Vital Industry

The Unit is associated with one of the country's foremost industries - interaction of elements within the agriculture and food system accounts for an estimated 20% to 25% of all jobs in Canada. The livestock industry's $7.7 billion in cash receipts for 1979 eclipsed receipts from wheat. Direct contributions to the economy include exports, wages, purchases of supplies, services and equipment as well as considerable ripple effects on the slaughtering and meat packing industry, and the wholesaling, retailing, and service (e.g. hotels, restaurants, institutions) industries.

Who Uses Agriculture Statistics?

The principal users include provincial and federal government departments, processors, farmers, marketing boards, banks, transportation firms, suppliers of machinery and equipment, wholesalers and retailers, the food service industry, consultants and researchers, embassies and the United Nations.

What the Unit Does

As its contribution to statistics of agriculture, the Unit collects and publishes statistics on intercensal livestock inventories, apparent per capita consumption of meat, estimated farm output of meat, wool production and supply, and livestock sales from which cash receipts are calculated. The Unit has full responsibility for various quarterly, semi-annual and annual surveys as well as responsibility for the livestock portion of the Agriculture Enumerative Survey (AES) and Farm Enumerative Survey (FES).

Data Dissemination

The Unit's output is available to users via a quarterly publication reporting on livestock surveys, four annuals and one occasional handbook. Data are also released in the Statistics Canada DAILY, through CANSIM, microfiche, custom printouts, computer tapes, as special tabulations and by telephone within the Division and User Advisory Services offices across the country.

Recommendations

To improve operations and the overall efficiency of the Unit, there are recommendations in this report on regional staffing, data processing, integration and increased responsibility for the future.

PURPOSE OF THIS PRESENTATION

This presentation sets out the role of the Livestock Estimating Unit(1) so as to focus on its present mandate and to chart future directions. Our role is presented in the context of the agriculture industry, agriculture statistics, and the users of those statistics.

The present program, developed over many years, has served users well. But we must be prepared to review the system regularly, to change when needed and to grow. With this in mind, we have not only reviewed the entire program, but have also detailed some recommendations for the future.

It is the intent that separate co-operative agreements be prepared and appended to this paper, as required, for those parts of the project involving organizations, other sections, divisions, or departments, both Federally and Provincially. These agreements would outline the work to be performed so that there would be a clear understanding among all contributors to the project of their specific input. In this way, project management of the livestock estimating function would be carried out more efficiently and effectively.

We look forward to pursuing our mandate in line with the needs of the 80's.

AGRICULTURE TODAY: ENGINE OF THE FOOD SYSTEM

The Agricultural Economics Research Council of Canada estimates that 20% to 25% of all jobs in Canada are in the agriculture and food system.

Agriculture today spans the entire country, forms the economic base of the three prairie provinces, generates jobs across the nation as a leading purchaser of goods and services, supplies the raw materials for much value-added processing and boosts foreign exchange earnings.

Sales from Canada's 327,000 farm holdings reached $13.9 billion in 1979.

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(1) The Livestock Estimating Unit is in the Livestock and Animal Products Section of the Agriculture Statistics Division of Statistics Canada.

CONTRIBUTION OF THE LIVESTOCK INDUSTRY

Livestock farms numbered approximately 127,000 at the June 1, 1976 Census. Investment in cattle inventory totalled $3.7 billion, pigs, $475 million; and sheep, $21 million.

Cash receipts from the sale of livestock and animal products in 1979 stood at $7.7 billion or 55% of the total cash receipts from farming operations of $14.0 billion. The distribution of farm cash receipts by sector is shown in APPENDIX C.

Cattle and calves, $3.5 billion or 23% of total cash receipts from farming

Pigs, $1.3 billion or 9% of total cash receipts from farming

Dairy products, $1.7 billion, (plus $255 million in dairy supplementary payments)

Livestock's $7.7 billion eclipses the $1.9 billion derived from wheat.

In 1979 Canada accounted for 13% of the continent's hog marketings and 16% of its output went into the export market.

Exports of live cattle, calves, sheep and pigs totalled $216 million in 1979.

Exports of meat (beef, veal, mutton, lamb, pork and offal) came to $385 million.

Livestock industry production in 1979 included:

Beef, 2,022 million lbs.
Veal, 63 million lbs.
Mutton, 9 million lbs.
Pork, 1,653 million lbs.
Offal, 135 million lbs.

Other products include dairy products, wool, hides.

Other Highlights of the Industry's Role

FEED purchases by the livestock sector amounted to $1,482 million or 17% of total operating expenses for 1979.

BREED association fees, Artificial Insemination fees and veterinary expenses totalled $123.1 million in 1979.

PURCHASES by livestock producers include machinery and equipment, buildings, fencing, chemicals, drugs, feeds, manure handling systems, etc.

SERVICES are provided by veterinarians, truckers, drovers, stockyards, auction markets, railways and others.

The slaughtering and meat packing industry ranked fourth in Canadian manufacturing

- with a value of shipments totalling $5.5 billion in 1978. (APPENDIX D).
- with 491 establishments employing 25,710 in production and related work
- paying wages of $367.8 million
- cost of materials and supplies of $4.6 billion

BESIDES THESE DIRECT CONTRIBUTIONS TO THE ECONOMY, THE ACTIVITY OF THE LIVESTOCK AND MEAT INDUSTRY PRODUCES RIPPLE AND MULTIPLIER EFFECTS IN MANY SECTORS SUCH AS WHOLESALING, RETAILING AND SERVICES (E.G. HOTELS, RESTAURANTS, AND INSTITUTIONS).

DEMAND FOR LIVESTOCK STATISTICS

Users of livestock statistics require data on the supply and potential supply of meat products to monitor changes in availability and price of the product to the consumer.

Economists and market analysts are constantly modelling and projecting trends in marketing, production and prices of livestock products. These projections are closely observed by buyers, processors, producers, farmer organizations, lending institutions, consultants, extension specialists, input suppliers, etc. in making decisions and providing advice to their clients. Construction and maintenance of these models or projection techniques require data on many series over long periods of time. To keep projection techniques up to date and sensitive in monitoring changing situations, input data must be timely, objective and accurate. Current and projected estimates are used in advising political bodies on such things as:

- the requirement for putting import quotas on particular commodities into place (e.g. the present beef import law);

- the cost of payouts to producers over a given period if a stabilization program were put in place (e.g. the federal Agriculture Stabilization Board has made payouts for hogs, market beef, and cow-calf operations in recent years);

- anticipated impact of a particular product on the Consumer Price Index.

Beef import quotas are adjusted to take into account changes in beef consumption in Canada and the level of cows and heifers slaughtered. Factors such as the supply and price of other meats and restrictions affecting cattle or beef trade with other countries are also considered. If supplies of Canadian beef are falling, import quotas are automatically raised, and vice versa.

Statistics on the livestock sector (especially the quarter-to-quarter change in livestock inventories) are an important component of the "accrued net income of farm operators from farm production," published quarterly as one component of the Gross National Product.

Livestock production is a labour-intensive industry, relative to grain, with large benefits forthcoming from processing, distribution and retailing. Statistics on the acceleration of inventory levels of the livestock industry by geographic location gives slaughtering, packing and processing plants lead time to gear-up or re-direct their facilities and man power by the time the animals reach the market. Geographic concentrations of the various classes of livestock are required to determine the impact on the industry and to assess the size of aid packages required in the case of drought, flooding, etc. in any specific region.

In addition, general information on the livestock sector is demanded by the Food and Agriculture Organization, embassies, and various government departments for market analysis and the determination of trade policy.

WHO USES AGRICULTURE STATISTICS?

In general, the main users are governments, processors, farmers, marketing boards, banks, transportation firms, suppliers of materials and services.

PROVINCIAL AND FEDERAL GOVERNMENTS need data for forecasting, budgeting, planning and conducting programs.

FEDERAL DEPARTMENTS making wide use of our data include:

Agriculture Canada
Bank of Canada
Department of Finance
Industry, Trade and Commerce
Consumer and Corporate Affairs

AGRICULTURAL OUTLOOK CONFERENCE: Each year, comprehensive analytical statements on the agricultural situation and outlook are published by this conference, based in large part on statistical series provided by the Agriculture Statistics Division. This information is brought directly to the farmers' attention through reports in the media (newspapers, farm journals, radio, television), the extension services of government departments and through the activities of farm organizations.

FARM ORGANIZATIONS such as the Canadian Cattlemen's Association, Hog Marketing Boards, and the Sheep and Wool Commissions use statistics in presenting briefs and in developing recommendations on agricultural policy.

FARMERS themselves are making increasing use of prices, production, and marketing statistics in planning their operations.

THE UNITED NATIONS FOOD AND AGRICULTURE ORGANIZATION (FAO) has as one of its principal objectives the provision of accurate statistics relative to the world's supply of foodstuffs. As a member of FAO, Canada is pledged to provide regular data on agricultural prices, suppliers, and production and these are furnished by the Agriculture Statistics Division.

BANKS need data in forecasting production and prices as a basis for their loan business that runs into the millions of dollars.

EXTENSION AND FARM MANAGEMENT SPECIALISTS use information to help farmers make management decisions. They help farmers to determine their profitability and cash flow situation and to make enterprise profitability comparisons and they advise farmers whether to build new facilities, to purchase land, or to change the size of their operation.

FARM INPUT SUPPLIERS of chemicals and drugs, livestock handling machinery and equipment, livestock feeds and farm credit require livestock information for market analysts to determine future demand for products by market area and for analysis of credit extension.

LIVESTOCK-RELATED SERVICES: transporters, veterinarians, sheep shearers, and others use information to analyse the demand for their services.

In response to the statistical demands outlined above, the Livestock Estimating Unit regularly produces and publishes estimates of inventory levels of each major class of livestock by province. Quality, quantity and timeliness are essential to all users.

THE LIVESTOCK ESTIMATING UNIT'S CONTRIBUTION TO STATISTICS OF AGRICULTURE

The Livestock Estimating Unit is responsible for collecting and publishing statistics on intercensal livestock inventories, per capita disappearance of meat, estimated farm output, wool production and supply, and livestock sales from which cash receipts are calculated. The Unit is in touch with the livestock industry and tries to be responsive to user needs.

Surveys for which the Unit has Full Responsibility

Semi-annual mail survey - January 1 and July 1.
Pig Survey - April 1 and October 1.
Sheep and Wool survey - July 1.
Quarterly survey of slaughter houses not covered under federal inspection.

General Purpose Surveys for which the Unit has Responsibility for the Livestock Portion

Agriculture Enumerative Survey (AES) - July 1.
Farm Enumerative Survey (FES) - July 1.

Survey Methods

The Census of Agriculture collects and publishes data on agricultural statistics for all farms at five (5) year intervals. Historically, Census figures have been used as benchmarks for intercensal estimates.

Partial coverage mail surveys are used to collect information on cattle, sheep, and pigs at January 1 and July 1 and for pigs at April 1 and October 1. These surveys are conducted in all provinces except Newfoundland. Census benchmarks are updated during the intercensal period by applying measures of change, as reported by producers to successive surveys, to arrive at current estimates.

An annual sheep and wool survey is mailed to sheep producers in all provinces at July 1. Information collected on this survey includes inventory, births, deaths, purchases, sales and wool production and disposal.

In recent years the Agriculture Statistics Division has been developing a system of enumerative surveys; a Farm Enumerative Survey (FES) in the Prairies and the Peace River portion of British Columbia, and an Agriculture Enumerative Survey (AES) in Newfoundland, the Maritimes, Quebec, Ontario, and the non-Peace River portion of British Columbia.

These surveys are multi-purpose probability surveys conducted on a personal interview basis. Segments of land about 1 mile by 2 miles are selected by a random process. Farmers who have all, or a part of their farm in the segment are approached by an interviewer and asked to participate in the survey. All land in the segment must be accounted for. Provincial estimates are arrived at using raising factors. Very large operations are singled out for enumeration as "specified farms". Their commodity totals, without raising factors, are added to the provincial estimate.

Strengths and weaknesses of personal interview probability surveys and mail surveys are listed below:

Personal interview probability surveys	Non probability mail surveys
Complete population coverage (every farmer has a chance of selection)	Population list is not complete (based on Farm Register list)
High response rate	Low response rate
High cost to run and process	Low cost to run and process
Measures of sampling error are available	The only measure of accuracy of estimates is to review the size of previous revisions
Estimates stand alone (but are subject to revision) (procedures to relate data to response on previous survey are not well developed)	Calculation of estimates depends on benchmarks

In arriving at estimates for publication, results of both the enumerative and the mail survey are analysed. As a further estimating tool, supply disposition balance sheets are generated. The supply for a given period consists of the beginning inventory plus births and imports during the period in question. Disposition, which includes deaths, exports, and slaughtering during the period are subtracted. The remainder should be very close to the inventory level on farms obtained through survey results. If this is not the case, further analysis of the survey inventory estimates and/or the component estimates in the balance sheets is required.

When estimates are arrived at and tested in the balance sheet, provincial statisticians are consulted before estimates are released.

The "Quarterly Slaughter Survey" collects data on livestock slaughtered in plants not under federal inspection. This survey is only conducted in those provinces from which the information is not available through provincial departments, namely Nova Scotia, New Brunswick, Quebec, Manitoba, and Saskatchewan.

Data collected by this survey are not published but used in the supply disposition balance sheet explained earlier.

Apparent Per Capita Meat Consumption

Estimates of production and apparent per capita consumption of meat are calculated for beef, veal, pork, and mutton and lamb on a quarterly basis while those for offal and lard are calculated annually.

Animals slaughtered in federally inspected plants, commercial plants not under federal inspection and farm slaughter are included when determining estimates of production and apparent consumption. Conversion factors are applied to warm dressed carcass weights to allow for shrink and larding fat.

In calculating supply and disposition, stocks at the beginning and the end of the period in question are used. Conversion factors are applied to imported and exported meat to bring them to a cold dressed carcass basis. Total domestic disappearance is arrived at by adding beginning stocks, imports, domestic production and subtracting ending stocks and exports.

Apparent capita consumption estimates are calculated by dividing total domestic consumption by the estimate of the human population.

Other Estimates

The Unit generates estimates of value of inventory of livestock on farms, farm output for pigs, cattle and calves, sheep and lambs and grain consuming animal units. These estimates are prepared at the provincial and national level.

LIVESTOCK ESTIMATING PROJECT TEAM

The Livestock Estimating Unit consists of a project manager, a livestock statistician, a technical officer, and three clerical staff. Assistance and "trouble shooting" is provided by staff in the Division's regional offices in Truro, Nova Scotia and Regina, Saskatchewan. Questionnaire design, editing, data capture, computer programming, etc. are performed by the Systems Co-ordination and Production Section in the Division. The Activity Element Manager and the secretary of the Livestock and Animal Products Section perform duties as required in both the Livestock Estimating Unit and the Dairy, Cold Storage, Poultry and Fur Units.

Various areas such as Institutional and Agriculture Survey Methods Regional Operations, and Administrative Services also contribute to the project.

The budget for the project for fiscal year 1980-81 is $328,000 compared to a budget for the Livestock and Animal Products Section of $694,000 and the Agriculture Statistics Division budget of $5,382,000.

DISSEMINATION OF DATA

Estimates generated by the Livestock Estimating Unit are available to users in traditional "hard copy" publications and via the bureau's computerized data bank, CANSIM.

The vehicle of first release is the Statistics Canada DAILY. Coincident with the DAILY's release time, much of the data can be accessed on CANSIM and the CANSIM interactive system.

Further, data are made available on microfiche, custom printouts, computer tapes and as special tabulations on a cost-recovery basis.

Telephone requests are received on a daily basis and users requesting only a few estimates are given these figures on the spot. Users are asked to check with the Agriculture Statistics Division or User Advisory Services to arrange for data in the most convenient form.

FUTURE DIRECTION

Agriculture statistics in the 1980's will be influenced by the trends that emerged in the 1970's whereby the idea of farming as a narrow activity was replaced by the concept of the agriculture and food system.

This concept embraces all food, including synthetics and fish as alternative foods, all land and water activity where large substitution possibilities exist in producing food, fibre, or by-products. In general, all farm and closely allied production activities are included.

The system, in short, takes into account direct and indirect activity, the interaction between various segments, the so-called ripple effect where the actions of each industry affect other areas of the economy.

Agriculture statistics will become increasingly linked with input-output analysis. This is an accounting method of double-entry bookkeeping. Purchases of all the industries and sectors of the economy must equal the sales made by these same industries and sectors.

As for the livestock estimating project, specifically, we see a continuing demand for estimates of livestock inventories because there can be no substitution for these numbers among our network of users.

For the immediate future, we are submitting the following recommendations on how the unit could better contribute to the Division and the Bureau.

All Publications Prepared by the Unit will be Produced by Computer Directly from CANSIM or Word Processor

On the date of release in the Daily Bulletin printouts of the publication will be produced on a high quality printer and sent directly to the print shop. This will speed up the release of publications by at least 2 weeks over the procedure now being used. Manuscripts are being manually prepared, sent to planning, then to typing and then on to the print shop.

A Livestock Statistician be Stationed in Alberta

With the proposed transfer of the Division's regional officer in the West from Regina to Winnipeg where he/she will enhance collection and dissemination of grain statistics, there will be a gap in the livestock area. As Alberta is the centre of the industry, and Edmonton the marketing centre, a livestock statistician should be located there. The Edmonton location has the added advantage of a User Advisory office with a collection of publications and access to CANSIM, not to mention telephone facilities for easy communication with Ottawa. Further details are given in APPENDIX (A).

The Livestock and Animal Products Section have a Terminal Connected to the Bureau's Data Processing Facilities

With increased emphasis on supply-disposition, livestock flows, and the use of administrative data, access to the bureau's computer through a terminal installed in the Section is becoming essential.

The Livestock and Animal Products Section would make frequent use of the terminal connection throughout the year and full use during peak periods when estimates are being prepared from the various surveys. The terminal would be particularly time-saving when data must be manipulated to study the ramifications of changing entries in the estimating system. At the moment, a change in calving rate or death loss necessitates a daisy-chain of calculations through the estimates -- all at considerable cost.

Details of cost, programming, testing and training would be worked out with the Systems Co-ordination and Production Section.

The Livestock Estimating Team Follow Livestock Flows from Birth through the Life Cycle

Any time that counts and estimates are carried out, there are cattle, sheep and pigs on farms at each stage of the life cycle.

There is also considerable shuffling within the inventory as births and imports add to the supply. As time goes on, animals move from one class to the next, as when heifers become cows, and deaths, slaughterings and exports remove animals from each class.

A reliable estimating system must ensure that animals entering the system tie into subsequent estimates by class and disposition data. The end result is consistency and dependable marketing forecasts.

A flow chart of the cattle life cycle is attached as APPENDIX B.

Livestock Statistics from Various Sources be Fully Integrated

Various groups within Statistics Canada, plus provincial bodies and Agriculture Canada, collect, analyse and publish data on livestock according to their own points of view and specific mandates. Decisions are often made in isolation and without consultation.

Better co-ordination and co-operation are required.

Livestock steering committees must be set up with a view to serving users in a more meaningful way without overburdening respondents.

The Livestock Estimating Unit have Responsibility for Data on Cash Receipts for Livestock

Removing the responsibility of calculating livestock cash receipts from the Farm Income and Prices Section would not seriously affect the Section's operations and would greatly enhance the work of the Livestock Estimating Unit.

Under such an arrangement, errors and inconsistencies which creep in between the Cash Receipts Unit and the Livestock Estimating Unit would be identified more easily. Revisions could be carried out with a minimum of disruption.

All aspects of livestock from inventories through to value, consumption and cash receipts would be looked after by the same project team.

Particular attention would be given to value added for livestock moving interprovincially or internationally. This would entail collecting information on the weight of livestock produced and the value per pound.

APPENDIX A

REASONS FOR AN ALBERTA LIVESTOCK STATISTICIAN

Agriculture Statistics Division

Situation

The value of sales at the farm gate of crop and livestock production in the Prairie Provinces amounted in 1979 to approximately seven billion dollars. Exports for the same period of wheat, barley, rapeseed and flaxseed, almost all of which are produced in the Prairie Provinces, amounted to almost three billion dollars. Alberta is the hub of the livestock industry in the West.

Problem

The Agriculture Statistics Division's estimates of crop and livestock production and stocks are key statistical series, providing decision making data to these very economically important industries. The nature of these industries and the channels of marketing have become extremely complex. It is no longer possible to monitor and measure changes in the grain and livestock industries from Ottawa.

Suggested Solutions

To improve the accuracy of the livestock and animal products statistics, it is suggested that an Agriculture Statistics Division representative be located in Alberta. Although this person's work will be concentrated in Alberta, it will be necessary on occasion to make contacts and visit Saskatchewan and British Columbia. The person selected should be a mature self-starting individual who can develop programs with various levels of government and the private sector.

Edmonton has some distinct advantages for locating this new office, including: (1) the User Advisory Services office which is equipped with computer facilities, (2) the Alberta government statistical and markets information offices are located there, (3) Statistics Canada field staff are situated in Edmonton, (4) Agriculture Canada has regional office staff in Edmonton, (5) provincial commodity specialists are located there, as well as (6) the Alberta Hog Producers Marketing Board. Stockyards are located in both Edmonton and Calgary.

However, Calgary has the offices of the Canadian Cattlemen's Association and the Alberta Cattle Commission. Calgary is also a good location because of its proximity to large livestock enterprises in southern Alberta. In addition, many meetings of the livestock industry are held in Calgary. Final decision on location should be made after consulting with provincial officials.

Briefly the benefits of locating a livestock specialist in Alberta are:

(1) The three most westerly provinces could be served better from Alberta, as it is the center of the livestock industry in the West.

(2) There are a great number of suppliers of data located in Alberta.

(3) The Edmonton U.A.S. offices have computer facilities, giving access to data in Ottawa and vice versa.

(4) A high degree of co-ordination of statistical systems within the three most westerly provinces is anticipated.

(5) This will be a major step in co-ordinating the National Data System.

TERMS OF REFERENCE

1. The work of the Alberta office must be co-ordinated with the efforts of the Livestock and Animal Products Section.

2. Develop a detailed knowledge of all aspects of the livestock industry in Alberta, British Columbia and Saskatchewan. (Manitoba to be covered by the Winnipeg office).

3. Use this information as an input to Agriculture Statistics Division estimates of livestock and livestock products.

4. Act in a user advisory role for Statistics Canada, in the subject matter area of livestock and promote the use of agriculture data.

5. Collaborate with the Canadian Cattlemen's Association, Alberta Cattle Commission, Agriculture Canada local officials and the Provincial Departments of Agriculture in improving and disseminating livestock statistics.

6. Develop an awareness of the livestock industries' present and future statistical requirements; make these known to the Agriculture Division and assist in meeting these demands.

7. Develop administrative data to produce existing and required estimates and thus reduce response burden.

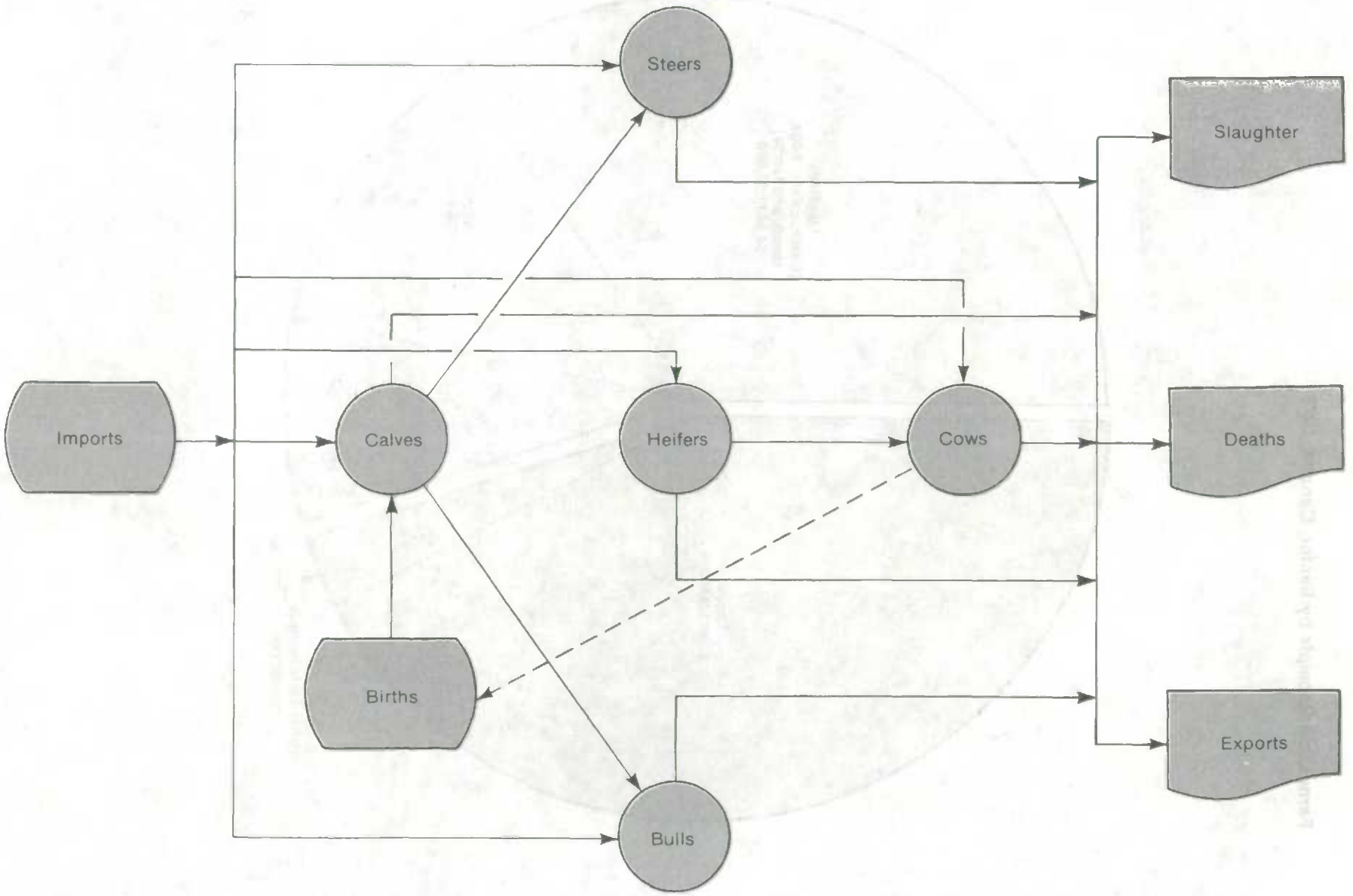
8. Collaborate with all suppliers of data to ensure an harmonious relationship with Statistics Canada.

9. Monitor and evaluate the accuracy and use of Statistics Canada livestock data.

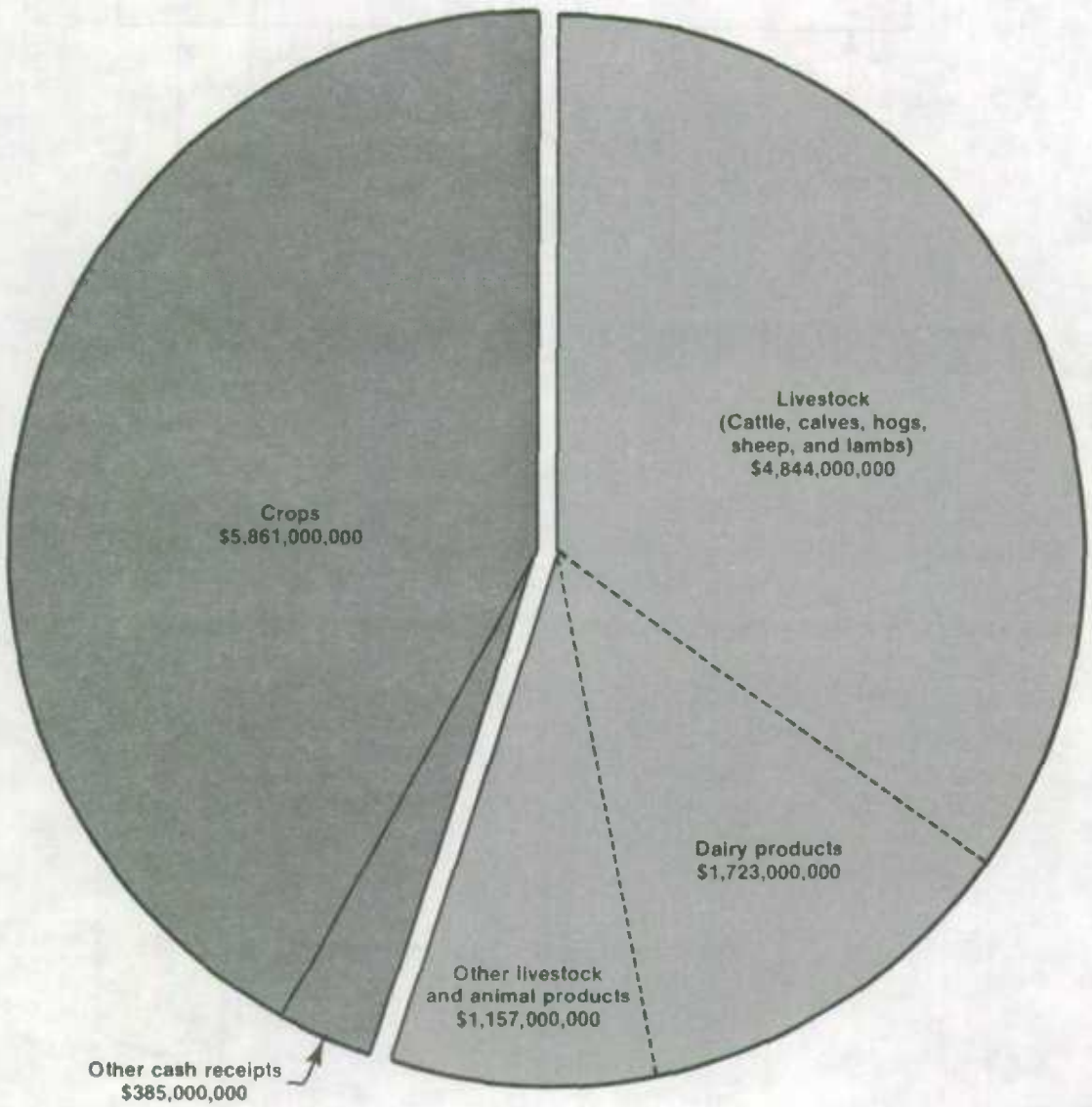
10. Assist the Agriculture Statistics Division's statisticians in the other Sections wherever possible.

11. Participate in data collection and data capture of survey returns for that region of Canada.

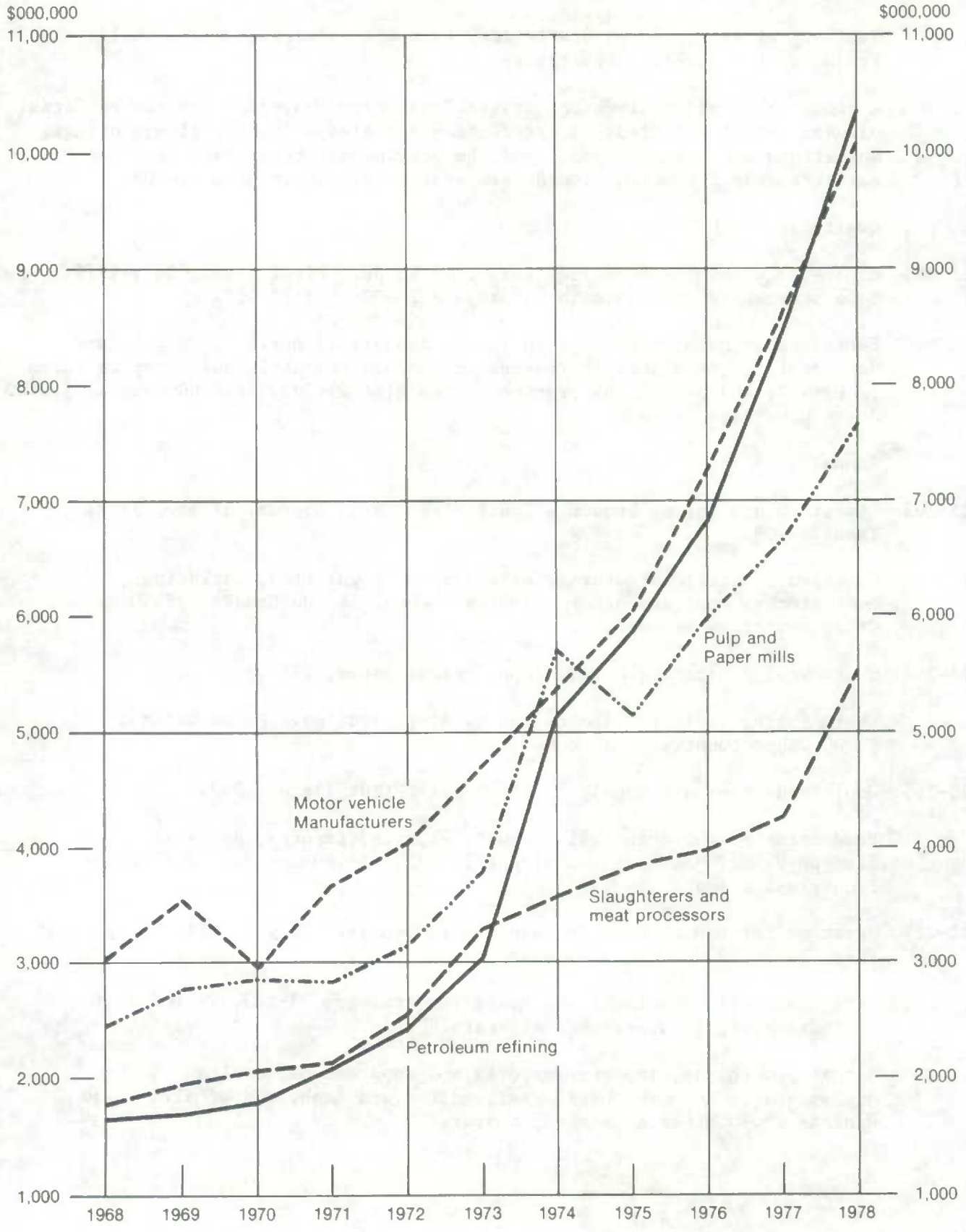
Cattle Flow Chart



Farm Cash Receipts by Sector, Canada, 1979



Value of Goods Shipped by Canada's Four Leading Manufacturing Industries, 1968 to 1978



PUBLICATIONS

Occasional

21-514 Handbook of Agricultural Statistics, Part VI: Livestock and Animal Products, 1871-1973. Bil. 126 pp.

A handbook of major livestock statistical series covering numbers on farms, values, output and disposal, production and disappearance, slaughterings, marketings and prices; Canada and the provinces. Data start from the earliest year for which records are available. Supersedes 21-508.

Quarterly

23-008 Report on Livestock Surveys. Bil. 8 to 16 pp. First Issue, July 1979. Data previously available in Catalogues 23-004 and 23-005.

Estimates of numbers of pigs on farms, January 1, April 1, July 1, and October 1, by province. Estimates of numbers of cattle and sheep on farms January 1, and July 1, by province. See also 23-203. $16.00 Canada; $19.20 Other countries, a year.

Annual

23-203 Livestock and Animal Products Statistics. Bil. Approx. 68 pp. First Issue, 1909.

Detailed statistical coverage of livestock population, marketings, meat stocks, wool and other animal products. $7.00 Canada; $8.40 Other countries, a year.

23-204 Shorn Wool Production. Bil. 2 pp. First Issue, 1931

Sheep shorn, yield per fleece and total production. $3.60 Canada; $4.00 Other countries, a year.

23-205 Wool Production and Supply. Bil. 2 pp. First Issue, 1939.

Production of shorn and pulled wool, exports, imports, domestic disappearance. See also Catalogue 21-003. $3.00 Canada; $3.60 Other countries, a year.

32-229 Apparent Per Capita Food Consumption in Canada. Part I. Bil. 28 pp. First Issue 1979.

Data previously available (on meat) in Catalogue 32-220, Estimate of Production and Disappearance of Meats.

Annual production, imports, exports and apparent per capita disappearance of pork, beef, veal, mutton and lamb, and offal. $4.50 Canada; $5.40 other countries, a year.