

ONTARIO AGRICULTURAL SERVICES

CO-ORDINATING COMMITTEE

(OASCC)

ANNUAL REPORT

Presented to the

Canadian Agri-Food Research Council

2002 – 2003

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SECTION A – EXECUTIVE SUMMARY

OASCC held its **annual meeting** on February 26, 2003 in Guelph, at which time highlights of the annual reports of the nine main Research and Services Committees were presented, along with recommendations and updates on research and service activities for the purpose of planning and for general information.

OMAF has identified five new research directions: environment, food quality and safety, life sciences/bio-opportunities, production and market development and rural economic development.

The Agricultural Economics & Business, Rural and Soil, Water & Air Research and Services Committees along with the Rural Environment sub-committee of the Agricultural and Food Engineering Research and Services Committee developed their four year strategic plans during the past year in preparation for the 2003 review of The Sustainable Rural Communities and the Resources Management and Environment Research Programs.

The focus of this year's Ontario Animal Research and Service Committee (OARSC) and subcommittee meetings was to identify and prioritize technology transfer priorities. The agreed upon definition of technology transfer was the dissemination of information to facilitate the efficient and timely adoption of beneficial technologies and management practices on Ontario livestock and poultry farms.

The Ontario Agricultural and Food Engineering Research and Services Committee's Crop, Food and Livestock Engineering Sub-committees met in the fall of 2002. Crop Engineering did not identify any new research priorities from their previous year's strategic report. Livestock Engineering rearranged the existing priorities but did not identify any new ones. Food Engineering's top research priority is the improvement of technologies for pasteurization.

Food Engineering's top three service priorities are: 1-qualified food engineering graduates and trade personnel and continuing education; 2- setting up water quality standards for different products (beer, wine, meats, etc.) and standardized odour measurement method and 3-developing stream lined and harmonized food inspection regulations at all three levels of government (federal, provincial and municipal) for all sizes of food processing facilities.

The Ontario Food Processing Research and Services Committee (OFPRSC) met in December 2002 to develop a process for developing strategic research priorities for 2003-2007. Trend analysis of future directions of the Ontario food industry and on the emerging areas of food science research will be completed. An OMAF Strategic Working Group comprised of representatives of the Food Industry Division and the Innovation and Risk Management Branch will present their findings to the Ontario Food Processing Research and Services Committee in May/June, 2003 for discussion/feedback/approval.

The Ontario Field Crop Research and Services Committee (OFCRSC) developed three broad priority area for research: 1- Agronomic systems and environmental stewardship; 2- Innovative and enhanced germplasm development and utilization and 3- Market responsiveness.

OFCRSC's one service priority is efficient and effective technology transfer.

The Ontario Horticultural Crops Research and Services Committee (OHCRSC) has 16 subcommittees concerned with a wide variety of fruit, vegetable and ornamental crops. In 2002, the OHCRSC looked at service issues. Research priorities are similar to last year.

The Ontario Pest Management Research and Services Committee (OPMRSC) focuses on the crop protection needs of the field crop and horticultural crops grown in Ontario. Key issues are: the increased incidence of alien species of pests and diseases and the continued use of pests and diseases as non-tariff trade barriers. Human resource issues in the research community continue to concern the committee. The OPMRSC continues its action to address the issue of rapid diagnostics for Ontario. A committee, led by Ministry of Agriculture and Food (OMAF) is exploring opportunities with a private laboratory in London.

The "Rural Affairs" mandate was transferred from the Ministry of Agriculture and Food to the Ministry of Municipal Affairs and Housing (MMAH) in April 2002. Brian Coburn was named the Associate Minister with responsibility for rural issues and rural development. Both ministries are currently working out the details of the change of mandate. OMAF will continue to fund rural research through the Agreement with the University of Guelph and through the competitive research programs. MMAH will provide direction on research priorities.

A new, 5-year agreement between OMAF and the University of Guelph took effect April 1, 2002. The current transfer payment for OMAF's research, education and laboratory programs is \$50.5 million.

OMAF supported two competitive research programs during the year. The New Directions in Agri-Food and Rural Research supported research in 5 areas: new value-added food, non-food products from Ontario agricultural raw materials, alternative livestock species in Ontario, a healthy environment and pest management. The Food Safety Research Program is in its third year of operation and funded research to assist in the implementation of a science-based food safety system.

National issues and specific recommendations identified by the major committees will be forwarded to the respective Canada Committees.

SECTION B – STATE OF THE AGRI-FOOD and RURAL SECTORS IN ONTARIO

Ontario General Economy:

The Ontario Ministry of Finance reported a 1% increase (3.9% annualized) in the real GDP during the third quarter of 2002. Personal disposable income rose by 2.0%, 1.5% and 1.1% during the first, second and third quarters respectively of 2002. Real consumer spending increased by 0.9% during the first and second quarters and 0.4% during the third quarter. Expenditures on restaurants, accommodation and health increased while auto sales weakened and tobacco sales fell. Residential construction output increased by 6.7% while non-residential construction decreased 0.7%. Manufacturing output grew 1.1 % in the third quarter, mostly due to an increase in car exports to the U.S. The manufacturing sector generated more than 80,000 net new jobs during the first three quarters of 2002. Wholesale and Retail trade changed little (0.1% and 0.4% respectively). Cultural and communications industries rose 1.2% in the third quarter, mostly due to increased use of internet and mobile communications. For more information, see Ontario Economic Accounts, July-Sept 2002:

<http://www.gov.on.ca/FIN/english/economy/eca023e.htm>

Ontario Agri-food Sector:

Ontario's agri-food sector is the largest and the most diversified in Canada, marketing more than 200 agricultural commodities with an estimated on-farm production value of nearly \$8.47 billion in 2002. Food and beverage processing industry is the second largest manufacturing sector in Ontario and contributed \$9.5 Billion towards the GDP in 2001; during the first nine months of 2002, their contribution to GDP rose by 5%.

There are approximately 97,000 operators of the 67,500 census farms in the province, 95,000 employees in the food, beverage and tobacco processing sector, 275,000 jobs in the foodservice industry and 160,000 jobs in food retailing.

Agriculture

Ontario's 2002 total farm cash receipts were \$8.47 billion, slightly down from \$8.53 billion in 2001. Farm cash receipts for the major commodities were: corn \$450 M; soy \$460 M; wheat \$210 M; vegetables \$739 M; dairy products \$1.35 B; cattle \$1.07 B; hogs \$822 M and hens and chickens \$472 M.

Hog prices fluctuate in a four-year cycle. The low of this cycle arrived in late 2002. Hog prices are expected to recover to above \$125/ckg in first quarter 2003.

Milk and hog receipts are a high proportion of farmer income on dairy and hog farms with sales over \$100,000. In contrast, most income comes from off-farm sources on beef farms.

The ideal fall conditions coupled with high yields and prices during the past 4 years caused winter wheat acreage to increase to over 1 million acres. Conversely, the poor yields and low prices experienced in 2001 have caused soybean acreage to decline from 2.2 million acres in 2001 to 2

million in 2002. Corn acreage remained the same at 1.88 million and is expected to decline further in 2003 due to increased acreage of winter wheat seeding in the fall of 2002.

The cool wet spring, and the late frost in May affected horticultural crop production. Apple production was down 26% from 2001. Grape harvest decreased due to the late frost and dry summer. The potato industry remained stable at about 43,000 acres.

The value of farm assets not including quotas have grown from \$40 Billion in 1996 to \$50 Billion in 2001. If quota values were included, the increase in the value of capital employed would be even greater. Several factors contributed to the increase in land values. High grain and oilseed prices in 1996-1997 and individual farm expansion within the dairy, swine and poultry sectors have provided increased competition for land within the agricultural sector. Urban pressure continues to support higher land values. Lower prices for many farm products (especially grain and oilseeds) since 1996 is bound to place downward pressure on asset values in the future.

The Walkerton tragedy and the resulting report by Justice Dennis O'Connor raised the public awareness of zoonosis mediated through domestic water supply. Issues associated with the protection of both surface and ground water sources in agricultural and urban regions were also thoroughly reviewed. The Ontario Government responded to the Walkerton tragedy by accelerating its nutrient planning process. The Nutrient Management Act, 2002 received Royal Assent on June 27, 2002.

Agricultural Policy Framework: The current federal, provincial, territorial Agricultural Policy Framework is to be a broad and long-range vision for a self-sustaining and progressive agriculture industry. It is envisioned to be “an agriculture policy that is comprehensive, integrated and ensures that farmers have the tools to address issues, be competitive and capture opportunities in the areas of science, food safety and environmental stewardship.”

The framework has five pillars:

- Food Safety and Food Quality;
- Environment;
- Renewal;
- Science and Innovation; and
- Business Risk Management (including safety nets).

As well, the framework seeks to build international markets for Canadian agricultural and food products by “branding Canada” as the world leader in food safety, innovation and environmentally responsible production.

The Agricultural Policy Framework can be found at the following website:

http://www.agr.gc.ca/cb/apf/index_e.html

The Odyssey Report: In September 2002 The Agricultural Odyssey Group of Ontario Farm Leaders released it's Odyssey Report with recommendations in the following areas:

- Consumer Trends;
- Food Safety;
- Environment;
- Agriculture Extension and Technology Transfer;
- Farm Income and Marketing;
- Technology and Research;
- Land Use and Rural Planning;
- Rural Development and Leadership and
- Farm Organization and Strategic Direction.

The Odyssey Report can be found at the following website:

<http://www.ofa.on.ca/site/searchview.asp?filename=/whatwedo/odysseygroup.asp>

Food Processing

The Ontario food and beverage sector is fourth to transportation, electrical/electronic products and primary metal and fabricated metal products in terms of its contribution to the Ontario economy. Ontario generates 45% of the GDP of the total food industry in Canada (2000).

Ontario's food industry is very diversified. The total value of shipments from the Ontario food industry in 2001 was 31.5 billion dollars. Beverages and tobacco account for the largest value of shipments (20.2%), followed by meat and meat products (18.8%), fruit and vegetables (11.5%), dairy (10.6%), grain and oilseed milling (9.0%), bakery (7.7%) and sugar and chocolate confectionery (7.9).

In 1998, approximately 54% of the value of shipments in Ontario was done by medium sized industry firms (firms with annual sales between \$10-200 million), as compared to large sized firms with approximately 39% of the value of shipments and small firms with 7%.

In 2001, Ontario agri-food exports totaled \$7.83 billion, an increase of almost 6% over the previous year. While the dollar value of Ontario exports continues to grow, the value of imports has also increased at a similar rate.

The Rural Sector:

'Rural' in this report describes the area of Ontario south of Muskoka, excluding the upper tier municipalities of the Greater Toronto Area (GTA) and the following six large urban centres: the City of Windsor, the City of London, the Region of Kitchener-Waterloo, the Region of Niagara, the City of Hamilton, and the City of Ottawa. Lower tier municipalities within the GTA, of less than 100,000 population, are defined as 'rural'.

Rural Ontario today is facing changes in demographics, education and employment rates similar to urban centres. The significant challenges for rural people and their communities are largely the result of population densities and distance from urban centres. The other primary difference

is the important role agriculture and agri-food industries, and other primary resource sectors play in the local economies.

Ontario's population is expected to grow by approximately 31% over the next 25 years. As a percentage of Canada's population, Ontario's share will continue to increase. While the rate of natural increase in population will continue to decline (births – deaths), net migration will drive Ontario's population growth.

The provincial trend to higher education will continue. Occupations requiring a university degree will account for 25% of projected new jobs and those with some post-secondary requirements will account for another 29%. Among the skills and occupations expected to continue experiencing labour shortages are: high tech occupations; industrial/manufacturing occupations, e.g., tool and die maker, pattern maker, industrial electrician; construction and other trades; some health and social/community service occupations.

Issues

Agriculture and Rural Conflict: There is continued conflict between some rural communities and large livestock operations, especially since the Walkerton incident. Some municipalities have prohibited the construction of any new, large livestock facilities. The agri-food sector faces the challenge of restoring the confidence of the public that our food is safe and is produced in an environmentally responsible manner.

Farm Labour: The agri-food sector requires affordable, skilled and trained workers to remain competitive and sustainable. The agri-food sector will continue to compete for labour within an expanding provincial economy. The trend to an increase in farm employees reflects the trend to larger farms. In 2001, 24,000 farms reported 2.29 million weeks of hired labour up from 1.93 million weeks of hired labour reported by 27,900 farms in 1996. Sixty percent of the reported hired labour is full-time employment. The Coroner's Inquest into the death of three farm workers near Drayton in August 2000 concluded that the industry and governments can and must do a more effective job of protecting the safety of farm workers.

Farm Transfer of Assets: It is estimated that 120,000 Canadian farmers will reach 65 years of age in the next decade. These farmers manage \$50 billion dollars worth of farm capital. How this capital is transferred, the cost and who retains ownership will impact the industry's ability to continue to grow, individual manager's abilities to deal with both financial and human resources management issues, and the social infrastructure of rural Ontario.

Genetically Modified Organisms (GMO): GMOs continue to be an issue. An increase in GMO corn and soybean acreage may decrease the industry's ability to maintain identity preservation, which could affect new and established export markets. Consumers are still concerned about GMO foods. National labeling standards for GMO derived foods and food ingredients are still under development. Organizations such as Greenpeace are demanding mandatory labeling of GMO foods and derived ingredients.

Nutrient Management Act: The Ontario Ministry of Agriculture and Food (OMAF) and the Ministry of the Environment (MOE) are responsible for the regulation for the *Nutrient Management Act 2002*, that was enacted in late June 2002. The Act is a comprehensive, province-wide approach to nutrient management that protects water, the environment and the well-being of communities in rural Ontario, while ensuring that farmers can invest in and operate their farms with confidence. The need for this approach has been confirmed by farmers, municipalities, environmental groups and others during the many consultations held over the last three years.

Renewable Energy: A mix of environmental regulations and economic feasibility will drive industry and government decisions around renewable energy sources such as Ethanol, Biodeisel, and electricity from Manure Digestion or from On-Farm Wind Generation. By sheer necessity due to the capital outlay required, large scale renewable energy production would also be a significant opportunity for strategic alliance between agriculture and the broader business and municipal community.

Rural Labour Shortages: Rural communities in Ontario are experiencing tight labour supply conditions and immigration is expected to be the major source of new labour force entrants. Although Ontario receives more than half of the immigrants that come to Canada (148,534 individuals in 2001), only five percent initially settle outside of the major urban centres of Toronto, Ottawa, London and Windsor.

Some of Ontario's key economic sectors, where industry groups are reporting current or emerging skill shortages are: automotive manufacturing, plastics manufacturing, machining industries, chemical processing industries and construction trades. A shortage of health care providers is also a serious concern for rural Ontario. An aging workforce threatens to compound these problems further in the future.

Trade: The most recent US Farm Bill threatens growth through trade in three respects: 1- its continuation of practices that support the dumping of corn and soybeans onto the North American market while providing direct subsidies to US grain growers will keep grain and oilseed prices at recent low levels; 2- Under Country of Origin Labeling (COOL), meat, fruits, vegetables, fish and peanuts not born, raised and processed in the US must be labeled to identify country of origin and 3- it could impact our trade with Third World countries, if the protectionist sentiments in the Farm Bill are sufficient to derail trade reforms in the Doha Round of WTO.

Life Science Opportunity for Agriculture, Food and Rural Ontario: While Ontario's agri-food sector and rural communities must deal with many risks and uncertainties, they are also faced with many opportunities that could put them at the centre of the next wave of economic growth. What the computer and the Internet did for the economy in the latter part of the twentieth century, advanced agri-food technologies, or the life sciences revolution, could do in the first part of the twenty-first century. Life science is the process of using our growing knowledge of living things to produce new products that will benefit society and create new jobs and economic activity. These new products would come from renewable sources such as agriculture and forestry. Such products would provide benefits to the environment, human health and the quality of life. Some products of these new, advanced technologies might include foods that have a

higher nutritive value or are designed to produce a desired medical benefit. Other examples include using crops produced in Ontario to manufacture non-food products like pharmaceuticals, plastics and gasoline substitutes.

Certain sectors of Ontario agriculture could benefit by having stronger demand for their products, resulting in new sources of income, from an expansion of the life sciences. Some Ontario food processors may benefit from capturing new domestic and export markets. Many other Ontario processing sectors could also benefit from these new products, and they may choose to locate new facilities in rural areas to be near their suppliers. The net result would be new investment in manufacturing facilities in the province, promoting the growth and development of rural Ontario. While the life sciences revolution will not provide benefits to all, it has the potential to offer unique rewards and opportunities to those who are in a position to take advantage of them.

SECTION C – OVERVIEW OF OASCC COMMITTEE ACTIVITIES

The Ontario Agricultural Services Coordinating Committee (OASCC) operates under the following terms of reference:

1. To review regularly the broad aspects of agri-food research, extension, and education in Ontario with the object of:
 - Facilitating communication and coordination among different groups at the management level;
 - Assessing immediate and future needs, and developing proposals for ways to take care of them;
 - Advising on joint uses of facilities and people;
 - Contributing information and ideas about regional and national policies affecting agriculture and food;
2. To carry out special assignments on behalf of the Canadian Agri-food Research Council (CARC) which are appropriate to the above objectives;
3. To meet at least once a year and report through a delegated representative to the annual meeting of CARC. Summary reports are sent to the Chairman of CARC with copies to the Deputy Minister of Agriculture and Food for Ontario.

OASCC held its **annual meeting** on February 26, 2003 in Guelph, at which time highlights of the annual reports of the nine main Research and Services Committees were presented, along with recommendations and updates on research and service activities for the purpose of planning and for general information.

OMAF has identified five new research directions. These are: environment, food quality and safety, life sciences/bio-opportunities, production and market development and rural economic development. The research priorities identified by the nine OASCC committees can be summarized as follows (in alphabetical order) :

Environment:

- Biosolid / Waste Application and Treatment
- Business impacts of environmental sustainability and food quality/safety
- Greenhouse Gas Emissions/Climate Change
- Identification / Validation of Best Management Practices
- Manure Management
- Nutrient Use Efficiency
- Rural Air Quality
- Soil and Crop Management
- Water Management

Food Safety and Quality:

- Development/validation of testing methods for the detection of pathogens and chemicals for use in laboratory and field settings

- Identification and analysis of emerging hazards and contaminants
- risk analysis, risk assessment, risk management and control in food safety.

Life Science/Bio-products:

- Animal health products
- Bio-terrorism threats
- Early detection methods for food safety and animal disease
- Germplasm development and reproductive technologies

Production and Market Development:

- Agronomic systems, profitable production
- Add value to Ontario products
- Animal health and welfare
- Competitiveness of the agri-food industry
- Development and availability of crop protection technology
- Germplasm development
- Food grade corn and alternate products
- Infrastructure – trade barriers, research capacity, communication
- Innovative new products
- Innovative technologies to produce new products, improve production efficiency, enhance flavour, and increase shelf life
- International trade opportunities and threats
- Market responsiveness
- Pest management including pest ecology and biology
- Risk management

Rural Economic Development:

- Agri-food industry and rural countryside linkages
- Community Capacity Building
- Environmental Sustainability
- Immigration/Migration
- Labour Force Development
- Rural Innovation
- Rural energy – small power generation facilities
- Services
- Water rights/allocation and other rural environmental issues.

Complete reports for 2002, with the detailed recommendations and priorities from the nine major committees of OASCC are available from the OMAF website:

<http://www.gov.on.ca/OMAF/english/research/oasccindex.htm>

Highlights of the research and service priorities as identified by each of the committees are outlined in Section D.

SECTION D – COMMITTEES WITH FOUR YEAR STRATEGIC REPORTS

The four following Ontario Research and Services committees developed four year strategic reports during 2002:

- Rural Environment sub-committee of Agricultural and Food Engineering
- Agricultural Economics & Business
- Rural
- Soil, Water & Air

Many of these committees met two or more times during the year. Two of the committees used facilitators and expanded stakeholder groups to develop their four year strategies for research.

ONTARIO AGRICULTURAL ECONOMICS & BUSINESS RESEARCH AND SERVICES COMMITTEE

The Agricultural Economics & Business Research and Services Committee (AE&BRSC) is in its 5th year of operation. AE&BRSC, along with additional stakeholders representing a wide range of agricultural businesses, held a facilitated visioning meeting on June 18, 2002 to develop strategic research priorities. Committee members met again on September 17, 2002 to further refine and rank the research priority areas and their corresponding issues. Strategic service recommendations will be developed next year.

Participants at the June 18th meeting were asked the following questions:

1. What are the opportunities and/or barriers facing primary agriculture and the agri-business sector in Ontario over the next five to ten years?
2. What agricultural economic and agri-business sector research is needed to address these opportunities and/or barriers?

Research Priorities

1. Competitiveness of the Agri-Food Industry: The Ontario agri-food industry competes with global exports and imports on a daily basis. The innovative application of technology, knowledge, and skill to available resources increases profitability by creating added value or reducing costs. With the continued movement to a global marketplace it is critical to have accurate economic data and effective benchmarks to enhance Ontario producers' and agri-businesses' ability to compete in that marketplace.

2. Business Impacts of Environmental Sustainability and Food Safety/Quality Requirements on the Agri-Food Industry: The goal of an environmentally sustainable agri-food industry in Ontario is driven by: the stewardship ethic of the industry to maintain and enhance the resource base for future use, groundwater safety concerns by rural residents, concerns around air quality and climate change, and consumer demand for both “green” products and product traceability. Producing and processing safe quality foods in an environmentally sustainable way brings both

business costs and opportunities to the industry.

3. Risk Management: Managing risk to minimize loss exposure while maintaining profit opportunities is an age old and ongoing business challenge. In addition to national efforts to improve publicly supported safety nets under the current Agricultural Policy Framework discussions; producers and agri-food businesses need information and tools for to help them more effectively manage their own financial and business risks within their own business. As well as traditional financial and production risks, businesses now need to understand and manage such things as environmental, food safety and biosecurity risks.

4. Agricultural Business Management Practices: Continuous improvement in farm business management is needed to meet the opportunities and challenges provided by changes in government policies, technology, environmental and food safety concerns, labour issues, industry consolidation, value added and I.P market development, globally influenced markets, business growth and ownership transfer.

5. Market Opportunities: Ontario has developed strong marketing systems to meet the needs of producers and consumers. However, every agricultural sector is faced with constantly changing challenges when marketing its products. Niche marketing and the demand for new products, including such things as identity preserved products, pose challenges for buyers and sellers in terms of meeting market demands. The consolidation in wholesale and retail sectors has meant that there are fewer buyers than ever striving to meet profit targets and the ability to market effectively in that environment is challenged.

6. International Trade Opportunities and Threats: The ongoing move to a more global marketplace and the continued development of trade partnerships or alliances will create challenges and opportunities for Ontario agriculture. Each round of the WTO and the creation and update of trading alliances such as North American Free Trade Agreement brings new changes. As the US remains Ontario's largest export market, the US Farm Bill and US Trade actions have a major impact on trade. Issues such as Bio-safety protocols and perceived trade barriers as the result of crop or livestock disease outbreaks could have serious impact on our agri-food industry because of our dependence on trade with other countries, especially the United States.

7. Agri-Food Industry and Rural Countryside Linkages: Direct agriculture and related industry jobs continue to decline in rural Ontario. As it does, the influence of agriculture as a direct engine of economic growth will decline. As fewer people in rural Ontario actively derive their livelihood from the industry, agriculture is becoming valued more as an amenity to rural communities than as an economic force. This often puts the commercial interests of the industry at odds with the very amenity issues that other rural stakeholders value.

ONTARIO AGRICULTURAL AND FOOD ENGINEERING RESEARCH AND SERVICES COMMITTEE– Rural Environment Sub-Committee

The Rural Environment Engineering sub-committee of the Ontario Agricultural and Food

Engineering Research and Services Committee (OAFERSC) developed a strategic report outlining the environment engineering research needs of the Ontario agri-food sector.

The research priorities identified are listed in priority order:

- Develop diagnostic tools and procedures to allow farmers to rapidly detect the presence of contaminants in tile water and establish appropriate benchmark standards.
- Identify sources of microbiological and pathogen related water contamination in agricultural watersheds, put into perspective the various contributors, and their relative contribution to the situational problem.
- Develop improved systems for applying manure to no-till, hay, pasture land, and more sensitive areas such as two year capture zones and shallow topsoil over bedrock areas cost effectively, with more accuracy, and in an environmentally safe manner.
- Study the survivability and die off rates of pathogens followed by developing storage, application, and management techniques to minimize pathogen survival. A pathogen index should also be explored and developed as a management tool.
- Develop and test manure and wastewater treatment technologies that are economically feasible for use on livestock farms.
- Evaluate and quantify the impact of large livestock operations on the rural environment.

ONTARIO RURAL RESEARCH AND SERVICES COMMITTEE

The Ontario Rural Research and Services Committee (ORRSC) is in its 5th year of operation. The ORRSC, along with additional stakeholders representing a wide range of rural organizations, held a facilitated visioning meeting on June 25, 2002 to develop strategic research priorities. Committee members met again on September 26, 2002 to further refine and rank the priorities. Strategic service recommendations will be developed next year.

Participants at the June 25th meeting were asked the following questions:

1. What opportunities may arise over the next 5-10 years that could benefit or strengthen Ontario's rural economy?
2. What are the challenges/ barriers that will affect Ontario's rural economy over the next 5- 10 years?
3. What new information, provided through research, is needed to best meet these opportunities and challenges/barriers?

Research Priorities

A. Labour Force Development: The need to address projected shortages in the quantity and quality of the rural labour force by understanding: factors affecting workers' decisions to locate; the relationship between demographic shifts and labour-force development needs; predictive models of future labour structures; and, the factors which attract industry investment and how these factors affect community development.

B. Environmental Sustainability: The need to understand environmental impacts of rural economic development by: analyzing the extent of integration of environmental concerns in local municipal policy; determining the degree of environmental sensitivity in community development; and examining models of development where environmental concerns are part of the equation.

C. Services: The need to understand, through regional research collaboration, existing delivery models for social, recreation, health/wellness, municipal and business services in rural communities by comparing and assessing according to the following indicators: rural specificity, sustainability, accessibility, and extended support.

D. Immigration/Migration: The need to identify, understand and apply appropriate models of successful rural immigration with particular emphasis on marketing rural communities to attract immigrants.

E. Community Capacity: The need to understand models or approaches directed toward engaging citizens in community building through: assessing leadership skills development resources; examining organizational capacity; exploring urban-rural linkages; and understanding the impact of volunteer and youth development programs.

F. Rural Innovation: The need to identify barriers and enhancements of innovation through understanding: social and cultural attitudes; the affect of economic clustering; locational factors; and institutional and community context in rural places.

ONTARIO SOIL, WATER AND AIR RESEARCH AND SERVICES COMMITTEE

In their 2002 strategic report, the Ontario Soil, Water and Air Research and Services Committee (OSWARSC) identified a total of 8 research priority issues as areas confronting the Ontario agri-food industry. Although these issues are not listed in priority order the committee reported that the first 3 areas in their list were of approximately equal importance and of a higher priority than the other areas:

- Manure Management
- Nutrient Use Efficiency
- Water Management
- Soil and Crop Management
- Identification / Validation of Best Management Practices
- Biosolid / Waste Application and Treatment
- Rural Air Quality
- Greenhouse Gas Emissions/Climate Change

Specific recommendations on needed research were provided and grouped into high, medium and low priority areas. The titles of the recommendations are listed below:

High priority

- Nitrogen and Phosphorus Management of Manure and Biosolids to Minimize Losses and to Maximize Availability to Field and Horticultural Crops
- Effect on Nutrient Availability, Pathogen Reduction, Greenhouse Gas Emissions and Economics of Various Treatment Systems for Liquid and Solid Manure and Biosolids
- Nutrient management planning for horticultural crops
- New Nitrogen Recommendation Systems for Crops.
- Nitrate N test for Horticultural Crops
- Standard methods for manure analysis
- Establish a Watershed Nutrient Loading Capacity and Identify Sources and Pathways of Contamination
- Development and Establishment of a Sustainable Water Extraction and Sharing Policy, and a Monitoring System to Ensure Future Supplies are Protected.
- Best Management Practices Economic and Environmental Cost-Benefit Analysis
- To continue to support the measurement and modelling of greenhouse gases emissions, quantify emissions of these gases from agricultural activities and to expand the work on atmospheric transport of gases.

Medium Priority

- Temporal and Spatial Variability of Soil Properties in Agricultural Fields.
- Fertility Management for Improved Yield and Quality of Corn, Soybeans, Cereals and Canola.
- Integration of Research Results into the Development of Information Systems and Decision Tools for Nutrient Management.
- Development of a Method to Conduct and Present Scientific Research to the Public
- Development of tests and procedures for predicting nutrient release and availability from manures and biosolids.
- Development of management practices to improve the physical and biological quality of the soil.
- Municipal Well Head Protection and Groundwater Vulnerability Criteria.
- Continue to support the development and testing of weather based predictive models.
- Continue to quantify the benefits and detriments of climate change on Ontario agriculture and how to adapt to increased variability.

Low Priority

- Site specific management and its use in the Horticultural Crop Industry.
- Soil pH and liming
- Manganese index review
- Effect of N and Ca on tobacco yield and quality
- Establish Guidelines for Site Investigations and Continued Monitoring of Proposed Intensive Farming Operations and Biosolids Application.
- Quantify Current and Future Farm- and Watershed-Scale Hydrologic Water Cycles.
- Nutrient demand for new harvest systems
- Impacts of Alternative Irrigation Methods on Tobacco Production
- Crop Water Management for Increased Yield and Improved Water Quality
- Impacts of Organic Wastes and Biosolids on Horticultural Crop Production

- Compaction Reduction and Amelioration
- Corn Cropping Systems
- Rural air quality and impacts of air pollution on crop yields and quality.
- Development of Best Management Practices (BMPs) to Deal With Pathogens and Other Contaminants (Bioaerosols, Endocrine Disrupters, Antibiotics, Pharmaceuticals, Heavy Metals etc) in Manures and Biosolids

SECTION E – COMMITTEES WITH ANNUAL REPORTS

ONTARIO ANIMAL RESEARCH AND SERVICES COMMITTEE

The focus of this year's Ontario Animal Research and Service Committee (OARSC) and subcommittee meetings was to identify and prioritize technology transfer priorities. The agreed upon definition of technology transfer was the dissemination of information to facilitate the efficient and timely adoption of beneficial technologies and management practices on Ontario livestock and poultry farms.

OARSC met for its annual meeting on October 30, 2002. Several issues were identified that are expected to impact the Ontario livestock sectors over the next five years including:

- U.S. Country of Origin Labelling
- Agricultural Policy Framework
- Animal Identification and agri-food system traceability
- Use of antibiotics in livestock production
- Medicated feeds mixing regulations
- On-farm HACCP based food safety programs
- WTO negotiations and trade challenges
- Animal welfare legislation
- Endangered species legislation

Successful Technology Transfer:

The OARSC committees concluded that successful technology transfer is reliant on addressing four major challenges:

- Defining the target audience
- Presenting the information in a useful and practical form
- Credibility and trustworthiness of individuals and organizations involved
- Defining technology transfer objectives and measuring performance

Common Themes Emerging from the Discussion Included:

- OMAF is a major and critical player involved in technology transfer
- Many commodity organizations have a very focused mandate for technology transfer
- Agri-business can serve as valuable partners in technology transfer initiatives
- Veterinarians are a trusted source of information
- The University's mandate in technology transfer is primarily the publication of scientific peer-reviewed papers
- Print publications, workshops and management clubs remain the most successful methods of information dissemination to farmers
- Electronic means of information dissemination are increasing
- Increasingly, partnerships are involved in successful technology transfer initiatives
- Agricultural awareness and information dissemination to the public remains a very large issue

Technology Transfer Priorities:

- Environment
- Quality Assurance
- Animal Health and Food Safety
- Production Efficiency
- Animal Housing
- Financial Management
- Livestock Production and Human Health

ONTARIO AGRICULTURAL AND FOOD ENGINEERING RESEARCH AND SERVICES COMMITTEE

The Ontario Agricultural and Food Engineering Research and Services Committee's Crop, Food and Livestock Engineering Sub-committees met in the fall of 2002.

Crop Engineering did not identify any new research priorities from their previous year's strategic report.

Livestock Engineering rearranged the existing priorities but did not identify any new ones. The top ranked research priority is now development of standards for construction of manure storage structure and handling systems.

Food Engineering's top three **research** priorities are: 1-improved technologies for pasteurization; 2-baking and frying processes modeling to improve baked and fried products' quality and 3- image processing for inexpensive in-line methods for detecting contaminants in food processing and separation.

Food Engineering's top three **service** priorities are: 1-qualified food engineering graduates and trade personnel and continuing education; 2- setting up water quality standards for different products (beer, wine, meats, etc.) and standardized odour measurement method and 3-developing stream lined and harmonized food inspection regulations at all three levels of government (federal, provincial and municipal) for all sizes of food processing facilities.

ONTARIO FIELD CROPS RESEARCH AND SERVICES COMMITTEE

The Ontario Field Crop Research and Services Committee (OFCRSC) is chaired by Clarence Swanton, University of Guelph and has subcommittees concerned with Corn, Oilseed and Protein Crops, Forages, Cereal Crops, Pulses, Tobacco, Weeds and Crop Protection. The OFCRSC has developed the following list of three broad priority area for research along with one priority area for services.

Research Priorities:

1. Agronomic Systems and Environmental Stewardship: Research leading to production systems and their components which enhance competitiveness, food quality and safety and environmental sustainability.

2. Innovative and enhanced germplasm development and utilization: This section will include crop breeding, performance evaluation, physiology and the development of new molecules, gene discovery, genomics, and bioinformatics to produce knowledge and materials to advance the industry.

3. Market Responsiveness: Research strategies to address market development, new product development, food safety and enhancement.

Service Priority:

Efficient and effective technology transfer: Development and implementation of strategies to ensure the verification and uptake of appropriate technological advancements by the field crop sector. These recommendations represent the areas of research and technology transfer that FCRSC considers essential to the strengthening of the field crop industry in Ontario. Within each core area are commodity and pest management specific priorities. Activity is documented in each area, and rate of progress, industry needs and potential for success should dictate the shifting of resources within and across these priorities.

ONTARIO FOOD PROCESSING RESEARCH AND SERVICES COMMITTEE

The Ontario Food Processing Research and Services Committee (OFPRSC) met in December 2002 to develop a process for developing strategic research priorities for 2003-2007. To ensure that a strategic approach is taken to the priority setting process, and to broaden the participation of industry stakeholders, a pilot consultation to determine four year strategic research priorities will be undertaken in the first half of 2003 with industry, consumers, researchers and other stakeholders. Two to three focus group sessions will be held with food companies, food industry associations, academia, consumers and government representatives to discuss the issues and opportunities that need to be addressed through publicly funded food processing research.

Trends analysis of future directions of the Ontario food industry and on the emerging areas of food science research will be completed. Competitive intelligence on research programs and priorities in Canada and other jurisdictions, and on the research capacity in Ontario will be conducted. A report on the findings of these activities will be published and recommended research priorities drafted.

The consultation and competitive intelligence phase of the priority setting process will be completed by an OMAF Strategic Working Group comprised of representatives of the Food Industry Division and the Innovation and Risk Management Branch. The working group will present their findings to the Ontario Food Processing Research and Services Committee in May/June, 2003 for discussion/feedback/approval.

ONTARIO HORTICULTURAL CROPS RESEARCH AND SERVICES COMMITTEE

The Ontario Horticultural Crops Research and Services Committee (OHCRSC) is chaired by Annette Anderson, OMAF and has 16 subcommittees concerned with a wide variety of fruit, vegetable and ornamental crops.

In 2002, the OHCRSC looked at **Service Issues** and identified the following themes for service needs of the horticultural sector.

- Nutrient management planning
- Integrated Pest Management experienced personnel, scouting
- Pest diagnostics
- Pesticide Minor Use Registrations
- Water quality and quantity/irrigation information and assistance
- Financial information, cost of production data
- Access to weather data
- Technology transfer and information services
- Energy planning
- Post harvest facilities

Research themes remained similar to last year's report and included:

- Environment
- Food Safety and Quality
- Infrastructure
- New Product and Market Development
- Productivity and Sustainability/Competitiveness
- Pest Management

Recommendations

A number of concerns were also put forward in the form of recommendations to various government and non-government organizations. Common themes found in the recommendations include:

- Nutrient Management
- Integrated approach to horticultural research
- Diagnostics
- Continued improvements to the Minor Use Registration System for new pesticides

ONTARIO PEST MANAGEMENT RESEARCH AND SERVICES COMMITTEE

The Ontario Pest Management Research and Services Committee (OPMRSC) is chaired by Hugh Berges, OMAF and focuses on the crop protection needs of the field crop and horticultural crops grown in Ontario. The Committee considers weeds, insects, diseases and other plant pests.

Several issues were identified and discussed by OPMRSC in 2002, including the increased incidence of alien species of pests and diseases and the continued use of pests and diseases as non-tariff trade barriers. The need for improved access to low risk, environmentally friendly

crop protection materials, including biological and biorational materials, continues to affect the industry at all levels. Concern was expressed from the greenhouse sector regarding the potential negative impacts of registration requirements of biocontrol agents. The delivery of extension and IPM services continues to evolve albeit in an uncoordinated fashion. Human resource issues in the research community continue to concern the committee.

The OPMRSC continues its action to address the issue of rapid diagnostics for Ontario. A committee, led by Ministry of Agriculture and Food (OMAF) is exploring opportunities with a private laboratory in London.

Five recommendations were formulated from the reports and discussions. Access to crop protection materials continues to be a top priority. Two recommendations address the need for continued research on crop protection issues, including an increase in funding for this research and maintaining the research teams needed to address the interrelated crop protection problems. Finally, one recommendation addresses the industry concern regarding capacity, expertise and implementation of IPM programs in Ontario.

SECTION F – ONTARIO MINISTRY OF AGRICULTURE AND FOOD (OMAF) PROGRAMS

CHANGE OF NAME AND MANDATE

The “Rural Affairs” mandate was transferred from the Ministry of Agriculture, Food and Rural Affairs to the Ministry of Municipal Affairs and Housing (MMAH) in April 2002. Brian Coburn was named the Associate Minister with responsibility for rural issues and rural development. Both ministries are currently working out the details of the change of mandate. OMAF will continue to fund rural research through the Agreement with the University of Guelph and through the competitive research programs. MMAH will provide direction on research priorities.

AGREEMENT WITH THE UNIVERSITY OF GUELPH

The original 5-year, Enhanced Partnership between OMAF and the University of Guelph for the delivery of research, education and laboratory programs funded by the ministry, expired on March 31, 2002.

A new agreement between OMAF and the University of Guelph took effect April 1, 2002. The current transfer payment for OMAF’s research, education and laboratory programs is \$50.5 million.

COMPETITIVE RESEARCH PROGRAMS

OMAF recognizes that research and technology development is essential to the competitiveness and sustainability of Ontario's agri-food and rural sectors. Competitive research programs are funded to support areas of research which will enhance Ontario's position as a leader in agriculture and food and build upon existing research programs funded by OMAF through the Agreement with the University of Guelph.

During the 2002-2003 fiscal year, OMAF supported two competitive research programs, the New Directions in Agri-Food and Rural Research Program (formerly called “Special Research”) and the Food Safety Research Program.

1. New Directions in Agri-Food and Rural Research Program

The Special Research Program was renamed “*New Directions in Agri-Food and Rural Research*” during the fall of 2001. Maximum award per project is \$100,000 over three years. The program was open to researchers from academia, government and industry both inside and outside of Ontario. Similar to the Special Research Program, proposals were required to address defined priority areas and demonstrate a benefit to Ontario.

This fiscal year’s program supported research in 5 areas: value-added food, non-food products from Ontario agricultural raw materials, alternative livestock species in Ontario, a healthy

environment, and pest management.

2. Food Safety Research Program

In February 2001 OMAF launched a four-year, \$4 million, competitive Food Safety Research Program. The program is a part of the Ontario Food Safety initiative commenced by three ministries: OMAF, Ministry of Natural Resources (MNR) and Ministry of Health and Long Term Care (MHLTC), four years ago. The initiative, being led by OMAF, is helping the Government of Ontario plan and implement food safety enhancements through establishing:

- A modernized, science-based food safety system founded on the principles of risk analysis/risk management;
- A seamless system that covers the food chain from field to fork;
- Market-friendly systems consistent with Ontario's trade responsibilities and industry needs.

The purpose of the program is to support food safety research in priority areas:

- identification and analysis of emerging hazards and contaminants
- development/validation of testing methods for the detection of pathogens and chemicals for use in laboratory and field settings
- risk analysis, risk assessment, risk management and control in food safety.

The research outcomes generated through this program will enhance knowledge and new technologies that will help scientists carry out systematic assessments of risk to public safety, support the implementation of HACCP and quality assurance programs and provide diagnostic tools to support field and laboratory testing for regulatory programs.

The program provides funding of up to a maximum of \$250,000 per project over up to two years.

The Innovation & Risk Management Branch is managing the program by facilitating development of research priorities, issuing Research Requirement Document, facilitating expert review of proposals and managing research contracts.

The program has completed three rounds of competition (2000/01 FY, 2001/02 FY and 2002/03 FY). A total of \$3 million dollars has been allocated to 25 projects at seven research institutions.

Twelve of these projects are focused on new food testing methods – some for microbial testing, others for chemical testing. Ten projects are designed to look at emerging hazards and risk assessment. Three projects are focused on risk management and control.

Descriptions of funded research projects are available from the web site:

<http://www.gov.on.ca/OMAF/english/research/food/foodsafes.htm>

Since OMAF is committed to ensuring the broad dissemination of research results it hosted a food safety research forum on October 1, 2002. Forum attendees had an opportunity to learn about progress in food safety research funded by OMAF, through presentations by researchers

and a number of poster displays.

The Compendium of OMAF Funded Food Safety Research was compiled. The Compendium provides an overview of five OMAF programs supporting food safety research and 60 project abstracts. The abstracts describe research projects that are in progress or have recently been completed at a number of private and public research institutions. The Compendium is also available on the website at:

<http://www.gov.on.ca/OMAF/english/research/food/foodsafety/compendium.htm> .

Food safety research in Ontario is resulting in enhanced lab efficiencies, new and improved food safety knowledge and understanding and enhanced capability to deal with food safety issues. Project results are shared with government and industry representatives. Successful applicants are encouraged to publish their results in the appropriate journals, as well as to commercialize the inventions where possible.

The process for the last round of proposals has begun and the program will allocate \$1 million to successful projects.

SECTION G – NATIONAL ISSUES

National issues and specific recommendations identified by the major committees will be forwarded to the respective Canada Committees.

SECTION H – OASCC COMMITTEE ORGANIZATION AND MEMBERSHIP

The OASCC operates under the following terms of reference:

1. To review regularly the broad aspects of agri-food research, extension, and education in Ontario with the object of:
 - Facilitating communication and coordination among different groups at the management level;
 - Assessing immediate and future needs, and developing proposals for ways to take care of them;
 - Advising on joint uses of facilities and people;
 - Contributing information and ideas about regional and national policies affecting agriculture and food;
2. To carry out special assignments on behalf of the Canadian Agri-food Research Council (CARC) which are appropriate to the above objectives;
3. To meet at least once a year and report through a delegated representative to the annual meeting of CARC. Summary reports are sent to the Chairman of CARC with copies to the Deputy Minister of Agriculture and Food for Ontario.

MEMBERSHIP OF OASCC 2002-2003

Chair: Dr. Deb Stark, Assistant Deputy Minister, Research and Corporate Services Division (RCSD), Ontario Ministry of Agriculture and Food (OMAF)

Recording Secretary: Ms. Leah Jones, RCSD, OMAF

Chairs and Vice-chairs/Secretaries of Major Subcommittees

Agricultural Economics Research and Services Committee

- Mr. Clarence Haverson, Manager, Agriculture and Rural Business Development, OMAF

Agriculture and Food Engineering Research and Services Committee

- Mr. Ron Fleming, Ridgetown College of Agriculture and Food Technology, University of Guelph

Animal Research and Services Committee

- Gwen McBride, Director, Livestock Technology Branch, OMAF

Field Crops Research and Services Committee

- Dr. Gary Ablett, Ridgetown College, University of Guelph

- Dr. Clarence Swanton, Plant Agriculture, University of Guelph

Food Processing Research and Services Committee

- Mr. Doug Chapman, Director, Food Industry Competitiveness Branch, OMAF

Horticultural Crops Research and Services Committee

- Ms. Annette Anderson, Crop Technology, OMAF

Pest Management Research and Services Committee

- Dr. Mary-Ruth McDonald, University of Guelph

- Hugh Berges, Horticultural Technology, OMAF

Soil, Water, and Air Research and Services Committee

- Mr. Keith Reid Crop Technology, OMAF

- Dr. Ivan O'Halloran, Ridgeway College of Agricultural Technology, University of Guelph

Ontario Rural Research and Services Committee

- Ms. Lera Ryan, Rural Development, OMAF

Ontario Ministry of Agriculture and Food

Dr. F. Ingratta	Deputy Minister
Mr. J. Wheeler	Assistant Deputy Minister, Agriculture and Rural Division
Dr. B. Archibald	Assistant Deputy Minister, Policy & Farm Finance Division
Mr. Don Taylor	Assistant Deputy Minister, Food Industry Division
Mr. Rod Stork	Chair, Farm Products Marketing Commission
Mr. Bill Ingratta	Director, Crop Technology, ARD
Mr. D. Hope	Director, Policy and Programs Branch, PFFD
Mr. C. Lalonde	Director, Resources Management, ARD
Mr. D. Chapman	Director, Food Industry Competitiveness Branch, FID
Mr. K. Smith	Director, Communications Branch
Mr. T. Hagerty	Director, Economic Development, ARD
Dr. G. Zellen	Director, Food Safety Policy Branch, PFFD

Agriculture and Agri-Food Canada

Dr. Y. Martel	Director General, Eastern Region, Research Branch
Dr. J-M Deschenes	Director, Eastern Cereal and Oilseed Research Centre
Dr. G. Saindon	Director, London Research Centre
Mr. G. Poushinsky	Director, Food Research Program
Dr. G. Whitfield	Director, Harrow Research Station

University of Guelph

Dr. A. Wildeman	Vice President, Research
Dr. C. Pearson	Dean, Ontario Agricultural College (OAC)
Dr. A. Meek	Dean, Ontario Veterinary College (OVC)
Dr. A. Weersink	Acting Chair, Dept. of Agricultural Economics & Business, OAC
Dr. C. Brown	Chair, Dept. of Clinical Studies, OVC
Dr. K. Armstrong	Director, Equine Research Centre
Dr. A. Gibbins	Chair, Dept. of Animal & Poultry Science, OAC
Dr. M. Goss	Director, Agrifood System Resources and Environment Research Program

Dr. J. Prescott	Chair, Dept. of Pathobiology, OVC
Dr. R. Hacker	Director, Animal Research Program, Dept. of Animal Science,
Dr. C. Swanton	Chair, Dept. of Plant Agriculture, OAC
Dr. S. Hilts	Chair, Department of Land Resource Science, OAC
Dr. J. Fitzgibbon	Executive Director, Faculty of Environmental Design and Rural Development
Dr. D. Hume	Associate Vice-President, Research, Argi-Food Partnership
Dr. C. Ribble	Chair, Dept. of Population Medicine, OVC
Dr. T. Fuller	Director, Sustainable Rural Communities Program, University of Guelph
Dr. J. Leatherland	Chair, Dept. of Biomedical Science, OVC
Dr. John O'Sullivan	Director, Plants Research Program, Department of Plant Agriculture
Dr. G. Ablett	Director, Ridgetown College of Agricultural Technology
Dr. P. Collins	Director, Laboratory Services Division
Mr. B. Curnoe	Director, Kemptville College of Agricultural Technology
Mr. G. Heroux	Director, Alfred College of Agriculture & Food Technology
Dr. Yoshi Mine	Director, Food Research Program, Dept. of Food Science
Dr. A. Hill	Acting Chair, Dept Food Science