



CANADIAN ADAPTATION AND RURAL DEVELOPMENT FUND

Manitoba Rural Adaptation Council Performance Report 2000-2001

PROFILE

The Manitoba Rural Adaptation Council (MRAC) was established as a not for profit corporation under the Companies Act of Manitoba in November 1997. The Council membership has representation from across the Manitoba agri-food sector. MRAC's goal is to assist rural Manitobans and their communities in developing and implementing long term sustainable development strategies that will maximize social, economic and environmental benefits. MRAC applies the CARD funds to the CARD objectives: to foster increased long term growth, employment, diversification and competitiveness of Manitoba's agriculture and agri-food industry and rural areas; to promote self sufficiency and self reliance so that the sector is less dependent on government support; to foster greater cooperation, strategic alliances and partnerships among individual companies, segments of the industry and rural stakeholders.

MRAC is funded by a \$11.46 million grant from AAFC's CARD Fund. MRAC provides funding for innovative projects to develop new products, new markets, new technology and new forms of organizations. Commercial and non-profit organizations including corporations, cooperatives, marketing boards, partnerships, individuals, institutions and industry associations are eligible to apply for grants. In general, approved projects may be funded by MRAC up to 1/3 of the total cost with MRAC's share not exceeding \$100,000. Additionally, near the end of the fiscal year, MRAC was allocated a total of \$990,000 under the Agricultural Environmental Stewardship Initiative (AESI). Programming under AESI will commence over the next three years. MRAC was also responsible for administering \$1.9 million in funds from the Canada Agri-Infrastructure Program (CAIP) all of which was committed by June 15, 1999.

MRAC membership includes representatives from not for profit organizations and citizens at large with an interest in rural issues and sustainable development in Manitoba. The MRAC Board of Directors includes 14 elected representatives from across the industry including producers, processors, academia and the financial industry. In addition, the Board includes two appointees from rural Manitoba by the Federal Minister of Agriculture, plus two ex officio Directors each from the federal and provincial governments.

In the fourth fiscal year of funding (April 1, 2000 to March 31, 2001) MRAC contributed over \$1.17 million of CARD funds towards 55 new and continuing projects leveraging a total of over \$2.69 million of industry cash and in-kind contributions alone. Among these projects are five initiatives funded jointly under the Western CARD Council (an alliance between MRAC, Alberta Agriculture and Food Council (AFC), British Columbia Investment Agriculture Foundation (BCIA), Saskatchewan Council for Community Development (SCCD), Territorial Farmers Association (TFA) and Yukon Agricultural Association (YAA)) which was created in the previous year as a way to further a client-service oriented approach to administering projects which impact more than one western province/territory. MRAC continues to emphasize client service through providing the flexibility to fast-track proposals with sensitive time considerations. This year, MRAC is administering a total of 28 projects initiated in previous years, in addition to the 30 projects initiated in 2000-2001 fiscal year. Out of the 92 initiatives to be funded since the first project approval in 1997, 44 projects are complete.

REACH

MRAC's strategic plan indicates that it will encourage individuals, groups, communities and organizations, including First Nation communities, to bring innovative proposals forward for funding consideration. All sectors of the agriculture and agri-food industry including institutions, organizations, agribusiness, commodity groups, and private individuals are eligible for assistance. MRAC is working along with the First Nations community to increase their participation.

Primary Target (Beneficiary)

Following are brief commentaries on projects MRAC has been contributing towards during the 2000 - 2001 fiscal year. These projects are in various states of progress with a number completed as well. Not all projects funded in this fiscal year are included below. More detailed commentaries regarding some of the projects below and additional initiatives not dealt with here appear in subsequent sections of this report.

MRAC provided assistance to the Prairie Fruit Growers Association (PFGA) to conduct research of plant propagation techniques suitable to Manitoba to allow the province's strawberry/fruit producers to obtain their plants locally and open opportunities for export sales based on "Northern Vigour", i.e. increased vigour when grown in southern regions.

A performance analysis of a new propagation method for roses and ornamental plants began this year in an effort to expand the Manitoba nursery industry. This biotech approach could potentially increase propagation efficiency and enhance the ability of Prairie garden centres and nurseries to respond to the growing demand for roses and bring new varieties to the market more quickly.

Flax shives were the focus of research to determine and measure the impact of a substitute for peat moss on the structure and nutrient composition of various greenhouse growing media in an attempt to create a new product and new markets.

The Vegetable Growers Association of Manitoba accessed CARD funds through MRAC allowing them to establish trial growing sites designed to determine agronomic, marketing and production information for the commercial production of oriental-type vegetables in Manitoba.

The results of a study conducted at the Department of Soil Science at the University of Manitoba will provide approximately 140 potato growers with optimum crop rotation options for the production of potatoes in MB. The information will take into consideration how management practices influence the behaviour of pesticides in soil to identify crop rotation practices to reduce the carryover and leaching potential of pesticides. This study is part of a larger research program conducted by the Brandon Research Centre and MDC to define and to ensure sustainable land management during industry expansion.

Provincial livestock expansion was given a boost with MRAC providing funds to the Manitoba Sheep Association to identify adaptation opportunities within the sheep industry and to develop a multi-stakeholder plan or strategy to capitalize on the opportunities identified. Also, the Bison Association of Manitoba embarked on an initiative to strengthen their commodity by increasing sales through improved consumer knowledge of the industry and product, and by providing improved management and marketing skills to existing and potential bison producers.

When completed, the pilot study to implement an ISO 14000 conformable Environment Management System will provide the opportunity for the province's 1,500 pork producers to manage all environmental aspects of their operation under a single management activity and allow for demonstration of their individual environmental stewardship efforts.

Development of a needle-less vaccine delivery and formulation system will benefit all Canadian livestock producers in two ways. Benefits will be derived from increased farm gate receipts through the reduction of meat quality loss due to injection site reactions. Additionally benefits will be gained by Canadian exports through reduced use of antibiotics.

Negative perception and concerns of the public in regards to air and water quality has an impact on the expansion of the hog industry. Although Manitoba producers are compelled in various ways to establish new hog operations with a land base large enough to agronomically use the hog manure produced, residents remain concerned about the unknown impacts of new hog operations on the quality of their immediate environment. Odour associated with manure management practices tops the list of concerns. DGH Engineering, which is part of a consortium committed to the development of facts and solutions for the design and siting of future hog operations, is surveying neighbours of existing hog operations to collect data on the perceived level of odour and nuisance caused by these operations. The survey will provide data which will be used with other data collected from associated projects undertaken by the consortium to determine whether a relationship exists between the level of odour experienced by residents and the manure management practices of the operation. This data will be accessible by all concerned residents, and indeed the public at large, to demonstrate proper siting, design and operations of livestock facilities.

Due to the expanding number of hogs, cattle and poultry, the Keystone Agricultural Producers have taken a pro-active approach to investigate the means by which to provide the Canadian livestock industry with high energy, economic sources of feed. Through the development of the fusarium resistant Ultra High Yielding (UHY) Wheat breeding program, introduction and processing new lines of wheat will impact Manitoba's 8,000 wheat and cereal grain producers, over 1,500 hog producers, and 130 poultry producers. The proposed new lines of UHY Wheat will have the potential to impact the livestock, feed and seed industries across Canada.

MRAC is assisting both the National Sunflower Association of Canada and the Manitoba Flax Growers Association to continue with efforts to establish their respective product check-off levies to facilitate continuing research, development and extension for their producer members.

Pesticide-Free Production (PFP) continues in the development of opportunities for mainstream producers to produce commodities at reduced production costs for emerging no-pesticide food markets.

A panel of experienced no-till producers will be consulted to identify the most desirable characteristics and preferences for a low disturbance no-till airseeder. The survey results will assist in the design and fabrication of a prototype suited for the residue and clayey soil conditions in Manitoba. Existing disk no-till drills fail to cut straw and instead push it to the bottom of a furrow resulting in poor seed to soil contact, thus poor seed germination.

Canola producers across western Canada will benefit by the results of a jointly funded project to study the potential for Integrated Pest Management (IPM) for canola crops. Funded by the CARD Councils in Manitoba, Saskatchewan, Alberta and British Columbia, the Canola Council of Canada will provide over 80,000 Canadian canola producers with additional information to optimize production through the use of integrated pest management (IPM). Practice of IMP will reduce pesticide use in preparation for the US re-evaluation of tolerance set for pesticide residues in food, and improve consumer confidence in the judicious use of pesticides on Canadian farms.

Cross country reach, and beyond, will be attained through the establishment of the Canadian International Grains Institute pilot pasta plant and mill to facilitate research of various types of durum to meet the quality and economic needs of Canadian and off-shore pasta processors. The evaluation and use of new types of durum will increase the market share for both the Canadian processor and producer.

The province's hay industry will benefit by two initiatives funded this fiscal year. A consortium of four local hay processors have created an alliance to take advantage of increasing market demand by addressing needs that are specific to Manitoba in the areas of agronomics, market development, storage and drying. Through attending strategic industry events, the group will use its knowledge about customer needs and preferences to develop processed products suited to these markets. To further facilitate export of hay, an initiative jointly supported by Manitoba, Saskatchewan and Alberta is underway to develop a national grading system for hay. Developing Canadian standards will ensure the value of Canadian hay (especially timothy) is maximized on a global scale. The system will ensure growers receive similar values for similar products. A national grading system would further establish Canada's reputation as being a quality conscious supplier noted for consistency in export quality.

One hundred and ninety two agriculture industry representatives and producers met to discuss the challenges, vision elements, and strategies to best insure farming continues to be a viable option on the Canadian Prairies. The conference, named *Recapturing Wealth on the Canadian Prairies*, was designed not only to facilitate the creation, offering, and recording of innovative ideas on this topic, but to establish a legacy of networks to foster continued innovation.

Ag in the Classroom received funding from MRAC to contribute towards an outdoor field event for Manitoba's approximately 800 Grade 4,5, and 6 students. The event, titled *Amazing Grains*, was comprised of eight interactive stations designed to provide a hands-on experience of different facets of Canadian agriculture. Additionally, a teaching resource developed in Ontario for use at the grade three level to provide hands-on activities in the study of soils, is being revised to pertain to Manitoba soil conditions.

Intermediaries/Co-deliverers

The greater part of MRAC funded initiatives have intermediaries/co-deliverers who provide the technical expertise where needed and contribute to the management, extension, technical transfer, or information dissemination of project results. The following table illustrates the project name and applicant and corresponding co-deliverers.

Project Name and Applicant	Co-deliverers
Agrometeorology Centre of Excellence (ACE)	Manitoba Agriculture and Food
Annual Crop Silage Variety Trial, Blanshard-Hamiota Soil Savers	Manitoba Agriculture and Food
Extending the Grazing Season by using Perennial and Annual Forages, Brandon Soil Management Assoc	Manitoba Agriculture and Food
Pilot Pasta Plant, Canadian Wheat Board	Canadian International Grains Institute
Integrated Pest Management (IPM), Canola Council of Canada	Alberta Agriculture, BC Ministry of Agriculture, Food and Fisheries, Manitoba Agriculture and Food
CDN Malting Barley Tech Centre	Canadian Wheat Board
Delta Waterfowl Multi Functional Use Project, Delta Ag Conservation Co-op	Delta Waterfowl Foundation
Survey of the Perceived Environment Quality Around Existing Intensive Hog Operations in Manitoba, D.G.H. Engineering	Manitoba Livestock Manure Management Initiative, University of Manitoba
Optimum Crop Rotations for the Production of Potatoes, U of M	Manitoba Crop Diversification Center
Ultra High-Yielding Wheat Study, KAP	AAFC Cereal Research Center
Timothy Hay (Harvest and Processing Alternatives), Lake Winnipeg Hay Company	Manitoba Agriculture and Food
Bison Management and Marketing, Manitoba Bison Association	Manitoba Agriculture and Food
M.P. Warehouse Net, Manitoba Crop Insurance Corporation	Manitoba Agriculture and Food and Manitoba Cooperator
Manitoba Value Added Agropreneurship Initiative, Manitoba Food Processors Assoc.	Manitoba Food Agropreneurs
Manitoba Forage Seed Industry Development, Manitoba Forage Seed Association	Manitoba Agriculture and Food, AAFC, University of Manitoba
Manitoba Forage Industry Development Project, Manitoba Hay Processors Assoc-	Manitoba Agriculture and Food
New Network Style Hog Production, Manitoba Pork est	Paterson Grain
MB Sheep Advantage, Manitoba Sheep Association	Manitoba Agriculture and Food
Producer Survey, MAPAM	Manitoba Agriculture and Food
Project Name and Applicant	Co-deliverers
Impact of Tillage System and Rotation on Pea and Wheat Disease, AAFC - Brandon Research Centre	Manitoba Agriculture and Food
Flax Shives for Peat Moss Substitution in Greenhouse Production, Neufeld, D. M.	Manitoba Agriculture and Food, Norwest Labs, Schwetzer - Manduit Canada
Hardy Roses from Somatic Embryos - Field and Pot Growth Trials, Plant Pathways	AAFC-Morden Research Center
Mechanical Harvesting of Sea Buckthorn , Prairie Agricultural Machinery Institute	University of Manitoba, University of Saskatchewan, Prairie Farm Rehabilitation Administration
Fruit Crop Diversification, Prairie Fruit Growers Association	AAFC- Morden and Kentville Research Centres
ISO 14000 Environmental Management System for Manitoba's Pork Producers - A Pilot Study, The Puratone Corporation	University of Manitoba, Manitoba Agriculture and Food
Manitoba-Tanzania Entrepreneurship Training Association, SW Regional 4-	Manitoba Agriculture and Food

Project Name and Applicant	Co-deliverers
H Club	
On-Farm Semen Collection and Preservation, Tag-A-Long Red Angus	Manitoba Agriculture and Food
Industrial Hemp Fibre-based Products Market Opportunities Analysis, MB Ind. Hemp Assoc	Triple R CFDC
Agronomics of Oat Production in Manitoba, AAFC -Brandon Research Centre	Manitoba Agriculture and Food
Oriental Vegetable Production, Vegetable Growers Assoc. of MB	Manitoba Agriculture and Food

SHORT-TERM RESULTS

Environmental Sustainability

Demonstration of methods simultaneously beneficial to the agricultural and wildlife sectors will provide best practises to enable expansion of the province's cattle industry and the conversion of marginal cropland to forage while supporting/ maintaining riparian stream management, agri-eco tourism and land set-aside activities.

A Manitoba land use study will categorize the different institutional arrangements involved in land use decisions and document the factors that affect granting of individual land use permits. Suggestions for reforms to enhance optimal land use decision processes and development of a simple method of determining the economic impact of a new facility on a rural municipality or district, will be generated by this work.

Barley producers will gain information to increase net returns of barley production and reduce the use of herbicides. The research will determine the appropriate herbicide rates for barley cultivars that differ in competitive ability against wild oats, develop the decision support system and a complete agronomic package for new high yielding "hybrid" feed barley.

Success Stories

MRAC funding allowed Interlake Forage Seeds to hire a person to conduct the field research trials to determine new species of native plants to grow and market in the expanding reclamation industry. This information was used to develop methodology to aid in the production of these perennial crops and teach cooperative growers how to maintain their own native plant stands. Two years later, a cooperative of 20 growers is producing approximately 830 acres of 15 species, some which are being successfully grown in Manitoba for the first time: Big Bluestem, Blue Grama, Canada Wild Rye, American Vetch, Slender Wheat Grass, Virginia Wild Rye, Tufted Hairgrass, American Sloughgrass and Water Plantain. Providing the reclamation industry with native grass seeds has benefits not only to the environment, but to three local seed companies who have been contracted to clean the seed the coop has produced and of course, the growers who have diversified into this profitable seed crop.

As government legislation in both Canada and the US requires certain areas to be returned to natural habitat, there is a high demand for the seed of native plants. Currently, Manitoba captures approximately 5% or \$7.5 million of the North American native seed business. The combination of climate suitability, experienced and knowledgeable growers, and proximity to the US border make it favourable for Manitoba's share of the market increasing by up to 15% over the next ten years.

Food Safety and Quality

Research to identify intrinsic sources of THC (delta-9 tetrahydrocannabinol) in the hemp seed has resulted in laboratory documentation that THC is found in all parts of the hemp seed, albeit at far lower levels in the hemp seed nut than that found on the seed coats which receive the highest degree of contamination. This knowledge will impact the processing industry with respect to the direction of cleaning and processing methods to ensure the product is eligible under the Health Canada Industrial Hemp Regulations. The project proponent's seed processing operation has now focussed on more stringent seed cleaning/de-hulling procedures as a way to reduce the THC levels in the processed product. Since the conclusion of the project, this Manitoba processor has struck partnership with an important multi-provincial distributor for consumable and topical products and has increased staffing 50% by two full-time positions.

Innovation

The Ontario Adaptation Council joined the western councils of Manitoba, Saskatchewan, Alberta and British Columbia to assist in the development of a needle-less vaccine delivery and formulation systems for both existing and novel vaccines being developed by the industry. Adoption of this new technology will increase farm gate receipts through reduction of meat quality loss due to injection site reactions. This will also provide benefits to Canadian exports through reduced use of antibiotics. CARD funding will enable expanded investigation of vaccine delivery routes and will serve to expedite the projects thus providing benefits to the producers more rapidly.

MRAC is assisting both the National Sunflower Association of Canada and the Manitoba Flax Growers Association to continue with efforts to establish their respective product check-off levies to facilitate continuing research, development and extension for their producer members. Should the levies be put into place by a majority vote of the respective members, each of these commodity groups will have established a new organization; the hub of their association, which in addition to the above, will provide Manitoba producers with a voice in the national, and international arenas.

A study on extending the grazing season aims to reduce the cost of cattle production by developing a management system for lower cost perennial forages.

Larger canola acreages and shorter crop rotations increase pressure on the currently available resistant cultivars. As a result, alternative strategies for the management of blackleg may soon be required. A study to determine the relative impact of pesticides for control of blackleg will allow for the diversification of crop products and reduction of input costs by providing unique opportunities for disease management. Part of this study will use data obtained by examining the fields of 250 producers annually.

Several initiatives funded in the 2000/01 fiscal year focus on an array of innovative developments in technology. For example, MRAC contributed towards the development and testing of mechanical harvesting equipment for sea buckthorn to remove berries and leaves from standing shrubs. Additionally, MRAC supported the development of a computerized nutrient monitoring system for a manure injection machine, the development of safety chain design criteria for large farm equipment, and the development and testing of an on-farm dryer to be used in the hay processing industry.

Success Stories

The results of a silage variety trial has given much needed confidence for farmers using silage crops especially corn silage. The work consisted of evaluating annual cultivars for silage yield and nutritional value to provide farmers with an alternate source of feed for their livestock. Due to the interest and increase in silage use, an opportunity for custom harvesting has developed in SW MB. One farmer purchased a large planter and will be custom seeding and harvesting corn for producers in the 2001 year. Another producer has purchased a bale wrapper for round bale silage and is wrapping approximately 3,000 bales per year. Two custom harvest (chipped silage) businesses have started and have chopped, hauled and packaged an approximate combined 17,000 acres. Demands for these services are expected to increase.

The Ostrich Producers Marketing Co-op(OMPC) was established as one of, if not the first, new generation cooperative in Manitoba. The coop's main objective was to market and sell ostrich products within Canada and into international niche markets in Asia, Europe and North, Central and South America. The project also explored the feasibility of selling by-products such as fat, offal, bones and organs. Through efforts of the Co-op, Ostrich meat has now received the "Heart

Smart" approval of the Canadian Heart and Stroke Foundation. Public awareness was created largely through trade show and product sampling activities reaching a minimum of 75,000 individuals and through a year-long infomercial campaign on CKY TV. Currently, the OPMC has 52 member producers who, over a period of three years, have supplied over 40,000 kgs of meat product (>1,000 birds) which realized over \$500,000 in sales for mainly meat and hides. By end of year three, export sales to the US, Mexico, Venezuela, Chile, Ecuador, Japan and Thailand comprised 45% of the co-op's total sales with the portion of meat sales increasing 25% over the three year period. The OPMC has increased the overall value of the products derived from ostriches harvested in MB by 213.5% through the processing and marketing of hides and meat products including, to name a few, sausages, smoked, seasoned and rolled loaf products,

Market Opportunities

MRAC provided assistance to the Prairie Fruit Growers Association (PFGA) to help growers develop the Manitoba strawberry industry. This research project studied plant propagation techniques suitable to Manitoba which would enable the province's strawberry/fruit producers to obtain their plants locally and open opportunities for plant sales based on "Northern Vigour", i.e. increased vigour when grown in southern regions such as the United States and Mexico. Results have shown Manitoba growers have considerable room to cover production costs as well as cold storage and still make a profit. As projected costs for plant orders in MB for 2001-02 are \$80,000, the PFGA, who handle the majority of plant orders in the province, are in the position to work with growers to establish a sizable production program to allow local production of plant stock as well as develop fledgling export possibilities to nearby provinces and the US.

Joint funding from the CARD Program from the Adaptation Councils in Manitoba, Saskatchewan, and Alberta will assist farmers across western Canada to gain a greater global market share of malting barley by the establishment of the Canadian Malting Barley Technical Centre (CMBTC). The financial benefits of maintaining and increasing this market share can be substantial—malting barley typically returns \$40 per tonne more than feed barley, with similar input costs. Expanding Canadian world markets for malting barley and its products will provide additional opportunities for farmers in a crop with proven agronomic potential. The largest single challenge facing the industry today is to gain customer acceptance of new malting barley varieties which are more suitable for many areas of the prairies and are higher in yields and lower in input costs than older varieties. Acceptance of these varieties will be aided by the CMBTC which will have the technology, skills and equipment necessary to undertake simulated pilot scale evaluation of the new malting barley varieties and pass on the results of the variety evaluations on to customers to convince them to change to the new generations of Canadian malting barley varieties. The ability to work with customers utilizing their processing conditions and to use much smaller quantities of barley for malt testing will significantly reduce the costs and risks associated with this work. Additionally, the acceptance of newer varieties will allow marketers and malting companies to select better quality barley for sales and improve ability to meet customer specification. Overtime, the CMBTC will help to develop new products to allow Canada to increase its market share which will support value added malt and maintain employment in the malt processing industries in Manitoba, Saskatchewan and Alberta. Furthermore, micro breweries will be able to increase their market opportunities by using the CMBTC to develop new products and improve quality control. In the short term, the CMBTC will employ four highly skilled scientists and/or technicians and will provide the opportunity for researchers from around the world to work at the facility for various periods of time. The CMBTC will be in a position to provide information for growers on the changing quality requirements of the market place to ensure growers can maximize returns by producing corresponding varieties.

What the CMBTC is to malting barley, the CIGI Pilot Pasta Plant and mill is to semolina durum wheat. MRAC provided support towards the partnership of the Canadian Wheat Board and the Canadian International Grains Institute to establish a Pilot Pasta Plant to maintain or increase Canada's market share of semolina durum wheat. The pilot pasta plant and mill allows for the research of various types of durum to meet the quality and economic needs of Canadian and off-shore pasta processors. As with the CMBTC, the plant will house the resources, technology, skills and facilities necessary to undertake simulated pilot scale evaluation of various varieties of Canadian durum wheat to be passed on to customers. Growers will be able to maximize returns by producing the varieties desired by industry.

The Canadian Bison Association, providing services to more than 1,400 bison producers across Canada plus related in the bison industries, received joint funding from the Manitoba, Saskatchewan, Alberta and British Columbia Adaptation Councils for website development. Information regarding current industry news and events, online publications, links to industry partners and the regional associations, membership information, recipes, food ideas, and more can be found at <http://bisoncentral.com/cba/main.html>.

The Medicinal and Aromatic Plants Association of Manitoba conducted a producer needs assessment for medicinal plants

under cultivation. The goal of the initiative was to utilize the information to provide the basis for development of programs to provide decision making support systems and, ultimately, reduce producer risk when embarking on diversification into medicinal plant production. Since this information became available, MAPAM has embarked on two production research projects as a response to producer demand as per the survey findings.

Success Stories

Pesticide-Free Production (PFP) continues in the development of opportunities for mainstream producers to produce commodities for emerging no-pesticide food markets through reduced production costs. With the University of Manitoba's Department of Plant Science at the helm, 37 farmers participated in the first growing season. Twenty eight had fields eligible for certification and a total of 65 fields were enrolled. At the end of the season, 45 fields produced crops which could be certified as "pesticide-free". Due to the number of interested producers, the crop varieties and acres produced using PFP are expected to increase over the duration of this project, ultimately becoming a production method used across western Canada to fill increasingly health conscious consumer demands. The participating producers have since formed the Pesticide-Free Production Farmers Co-op Ltd. under which 10 crop varieties in the farm-research component have been developed. The coop intends to establish a certification program to develop markets capable of attaining a premium price for these products. The coop would provide production and marketing information to growers and potential growers.

The *Manitoba Forage Seed Industry Development Proposal* will enhance opportunities for crop diversification and value-added production. Research activities include new grass seed development, forage legume seed production systems development and forage cultivar evaluation. Information is disseminated to the forage seed industry on a constant basis to facilitate rapid adoption. This is achieved in part through the Manitoba Forage Seed Association quarterly publication *Forage Seed News* which has a circulation of 850, through annual summer tours with average attendance of 200, at the Canadian Forage Seed Conference with over 300 attendees, via a variety of extension meetings, and publications including a forage information section published in *Seed Manitoba '99* circulated by the Manitoba Cooperator. The grasses of focus in this initiative were annual and perennial ryegrass, tall fescue and timothy. The acreage of these crops had grown by the end of the project with some 122 new growers entering the industry with an estimated 15,000 new acres in new grass seed crops. These acres are largely replacing traditional field crops such as wheat, barley and canola.

The Vegetable Growers Association of Manitoba established trial growing sites designed to determine agronomic, marketing and production information for the commercial production of oriental-type vegetables in Manitoba. The extensive agronomic information gained benefited a minimum of 318 vegetable growers in the province as well as other individuals looking to take advantage of the increasing market demand for these vegetable varieties. These products were showcased at the annual Taste of Manitoba Festival in Winnipeg where they were featured in a cook-off followed by media interviews for inclusion in Manitoba's television program "The Farm Report". Articles regarding these vegetables were published in the press including the Manitoba Co-operator which reaches virtually all farms in Manitoba. Diversification among producers has resulted production of oriental vegetables to grow from virtually zero to more than 100 acres. In addition, 10 growers are working together out of the Selkirk area to put together a five acre plot for oriental crops for the upcoming growing season.

Human Resource Capacity Building

The generation of innovative ideas for recapturing wealth on the Canadian prairies was fostered by a conference organized by a committee consisting of government representatives, members of academia and producers of Manitoba. The event brought together key speakers and created a forum for the 192 stakeholder attendees to facilitate the creation, offering, and recording of innovative ideas for recapturing wealth on the Canadian prairies. The momentum from this forum is being maintained through the operations of the organizing committee, now called the Ag Renewal Committee. This group is committed to maintaining contact with past participants through regular newsletters and via the web-site. The committee is now organizing a complementary workshop to build on the results of the original session.

The younger generation was the target of two initiatives funded this year. An outdoor event called *Amazing Grains* allowed Grade 4, 5, and 6 students across Manitoba to partake in eight interactive stations designed to provide a hands-on experience of different facets of Canadian agriculture. As well, nine rural students, through a 4-H Club, took part in a cultural exchange program between Manitoba and Tanzania designed to increase innovative thinking and ability to recognize opportunities in rural communities. As a pilot project, this will provide a template for other regions in the province to develop similar programs for others to explore international marketing opportunities and enhance leadership skills through a similar exchange.

The development of a new technology in the form of a data warehouse (the Management Plus Program (MPP) Warehouse Net) using the MCIC crop production database, will provide producers with data to solve agronomic problems, prove proper land stewardship and identify trends and changes to facilitate adaptation. Farmers will access the data via the internet free of charge, while the service will become self-sustaining through the collection of fees from agri-businesses and researchers accessing data pertinent to them and their realm.

The Western CARDF Council, an alliance between MRAC, Alberta Agriculture and Food Council (AFC), British Columbia Investment Agriculture Foundation (BCIA), Saskatchewan Council for Community Development (SCCD), Territorial Farmers Association (TFA) and Yukon Agricultural Association (YAA), undertook a cooperative effort (Western CARDF Council Joint Initiative) to establish a new agricultural and rural “Think Tank” (the Western Agri-Food Institute {WAFI}). The Institute will gather information and conduct independent research focussing on agricultural, agri-food and rural issues within a global context. The results will facilitate positive action in advancing and protecting the agri-food industry and rural communities in Canada.

Rural Development

The Great Plains Interpretive Centre accessed MRAC funding to complete the facility design and marketing and promotional package for an agricultural visitor centre to be located in Neepawa, Manitoba. This major agri-tourism and educational facility with its anticipated annual attendance of over 100,000, will focus on rural culture supported by an agricultural and natural resource base. The Centre will showcase actual examples of sustainable agricultural practices, typical crops and production methods, environmental demonstrations, and outdoor nature-oriented activities. It will promote regional, national and international issues using local examples whenever possible. It will also emphasize the culture of a rural agricultural based economy. Demonstration projects will also contribute to the long term sustainability of the project by attracting visitors and generating revenues. Some demo projects will be long term, such as lily bulb production, while others will be short term, for example a demonstration of GIS technology.

Success Stories

MRAC provided assistance to Manitoba Pork Marketing Co-op Inc. in partnership with N.M Paterson & Sons Limited for the preparation of a business plan to establish a new network-style hog production system designed to fit Manitoba production conditions for feed and hogs. After seeking consultation with producers, financial institutions, technology suppliers, investors, marketers, a toll mill concept to provide feed milling services to the networks at least cost was developed. The plan materialized into what is known today as the Dynamic Pork Corporation which develops, promotes, and manages investment in the hog production sector. Through the creation of alliances between hog producers and grain processors “Production Networks” were formed. These networks consist of the investors who own the breeding stock and progeny through to market, and the barn owners who are contracted to produce and feed the hogs on behalf of the investors. N.M. Paterson & Sons Limited supplies the barns with feed at cost utilizing production from over 15,000 acres in the surrounding area annually. The hogs will be marketed through the Manitoba Pork Marketing Co-op Inc. The first network, Turtle Mountain Pork, consists of a 3,400-head sow barn which, together with 18, 1,300-head feeder barns, is capable of producing 74,000 finished hogs per year. Annual sales minus cost of production are expected to reach \$1.5 million and create approximately 20 jobs with another 10 being created in the feed mill. The second network will duplicate all but the feed mill component.

LESSONS LEARNED

Since the first major epidemic of fusarium head blight (FHB) hit cereal crops in southeastern Manitoba in 1993, annual rates of infection have gradually spread across the prairies, often rendering infested grain unfit for human or livestock consumption. Proposed research to develop a high-yielding, FHB resistant wheat variety was seen as a high priority by MRAC for two reasons: firstly, because FHB was costing farmers \$50 million per year in yield and quality losses alone, and secondly, because the demand for grain for livestock feed was outpacing supply. MRAC approved funding for the *Ultra High Yielding Wheat Breeding Project* brought forward by the Keystone Agricultural Producers and carried out by AAFC's Cereal Research Branch.

After three years of trials, a variety demonstrating substantial FHB resistance was found satisfactory as a viable short term alternative. AAFC researchers brought this variety, HY644, forward for Interim Registration. This would have allowed producers to grow enough to seed for commercial production by 2002 with the objective to limit distribution to the most affected areas and limit use to feed production. This would have provided some producers with a near disease free crop option and a higher quality of feed and reduced need to import US corn. However, the application was turned down due to the variety's failure of the KVD test (kernel visual distinction), one of the underpinnings of the regulatory system designed to make Canadian grains stand out above all others in the international markets. That is, a particular class (eg. Canada Prairie Spring) must look different than other classes of wheat (eg. Canada Western Red Spring (CWRS)). New varieties will not be registered unless they meet this visual requirement. Some kernels produced by HY644 were indistinguishable from CWRS, thus not meeting the required criteria the Prairie Registration Recommendation Committees for Grain (PRRCG) uses to evaluate variety registration eligibility.

Alternately, it may be possible to consider IP production or a "closed-loop system", but under this, growers may not be able to use their own wheat for their own livestock. However, it would seem that the initial opportunity is lost. In this lies the lesson, that even though carefully planned and executed, other forces, beyond control, can alter the course of an initiative's ability to meet its objectives and impact the intended target. In this case, an opportunity is lost due to a regulatory system which, presently, achieves existing quality standards through application of quality standards in an absolute manner as opposed to taking relative economic benefit into consideration.

RESOURCES

CARD Priorities

CARD Priorities	CARD \$	Industry \$	Provincial \$	Industry In-Kind	Provincial In-Kind	Total	% of Contrib.
Environmental Sustainability	149,641	65,124	137,668	80,095	25,532	458,060	10.2
Food Safety and Quality	10,000	5,000	0	15,000	0	30,000	0.7
Innovation	264,385	604,332	268,591	20,754	34,204	1,192,266	26.7
Market Opportunities	528,410	1,245,096	121,855	212,145	39,294	2,146,800	48.0
Human Resource Capacity Building	176,983	161,534	9,749	119,634	39,471	507,371	11.3
Rural Development	39,556	27,752		69,794	1,022	138,124	3.1
TOTAL	1,168,975	2,108,838	537,863	517,422	139,523	4,472,621	100.0