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A TIME TO IRRIGATE !
The Benefits of Lake Diefenbaker Irrigation for Rural Transformation

Saskatchewan Irrigation Projects Association

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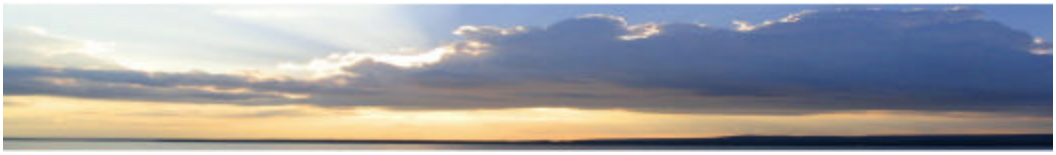

Special points of interest:

- Today some 40% of the World's Food Production is produced with irrigation on 17% of the agricultural lands.
- Five irrigation projects in the Lake Diefenbaker area of Saskatchewan could irrigate over one half a million acres.
- Irrigated agriculture has diversified and increased the incomes of much of rural Manitoba and southern Alberta.

Lake Diefenbaker Irrigation Investments Transform the Economy of Rural Central Saskatchewan

Irrigating nearly 600,000 acres around Lake Diefenbaker and along the Qu'Appelle Valley will create one of the larger concentrations of irrigated agriculture in North America. When the concept of Lake Diefenbaker irrigation development was first considered it was to drought proof the region against the tragedy of the 1930s droughts. Today there are wider opportunities for the region to adapt to global warming, develop diversified value added chains and transform the population and municipal structure of central Saskatchewan. The $2.9 billion of investment today required to complete the regional water supply schemes will create benefits throughout the Saskatchewan economy. Thus the water supply investments over a 20 year period will lead to on farm investments in irrigation equipment, increased crop yields, agricultural value added investments and forward and backward linkages throughout the economy. Additional indirect and induced economic effects mean the original water investment could lead to an additional $12 billion of household incomes, $33 billion of gross domestic product, $58 billion of sales and over 288,000 person years of employment. Beyond these measurable benefits lay numerous other gains for the rural economy, community development and water supply, tourism and the environment.

Lake Diefenbaker Irrigation Benefits Study

The Saskatchewan Irrigation Projects Association completed a major socio economic evaluation of the costs and benefits of irrigating 800,000 acres of agricultural lands, mainly around Lake Diefenbaker and also in other regions of Saskatchewan. The study was undertaken by Clifton Associates Ltd. of Regina, Saskatchewan working with specialists from across Western Canada*.

The study found large benefits for agriculture, value added processing, municipal water supplies, tourism, drought proofing and the natural environment. Together these were estimated to provide the opportunity to increase employment in many Saskatchewan cities and smaller towns.

** The Project team for the work consisted of Dr. Graham F. Parsons, Vice President, Clifton Associates Ltd. and Project Manager; Dr. Surendra Kulshreshtha, President of KAECI and Professor of Agricultural Economics at the University of Saskatchewan; Mr. Ray Pentland, President of Water Resource Consultants Inc. and specialist in hydrology and the management of Lake Diefenbaker waters; Mr. David Hill, formerly of the Alberta Irrigation Projects Association, Mr. Darrell Toma, Partner with Toma, Bouma Management Consultants and specialist in Alberta irrigation development and related value chains and rural economic development needs; Mr. Rodger McDonald, President of MR2 Consulting and specialist in municipal and industrial water systems; Mr. Greg Vogelsang, Senior Vice President, Clifton Associates Ltd. and specialist in environmental impact assessments; Mr. David Kent, Chief Engineer, Clifton Associates Ltd. and specialist in rural agri-processing and environmental licensing; Mr. Keith Schneider and Mathew Kreke, specialists in municipal financing, regional development and tourism and, Mr. Toby Thorp, Environmental Scientist, Clifton Associates Ltd.*

Lake Diefenbaker Construction in the 1960s

Lake Diefenbaker—An Unrealized Investment in the Future

Lake Diefenbaker was created by the construction of the Gardiner Dam on the South Saskatchewan River by the Prairie Farm Rehabilitation Administration as a response to the decade of drought and rural agricultural and municipal collapse in the 1930s. Less remembered in the 21st Century was the environmental disaster of tonnes of fertile topsoil being blown away.

The two hundred kilometer lake was intended to provide the foundation for a sustainable irrigated agriculture economy that would be less vulnerable to the recurring droughts of the region.

In the thirty years since the opening of the Gardiner Dam in 1967 there has been some progress in developing the benefits that Lake Diefenbaker provides.

Many of the hydro development, recreational, municipal water supply benefits were developed. However, the potential to irrigate over half a million acres of drought vulnerable farmland around the Lake has never been realized.

The Five Lake Diefenbaker Irrigation Projects, with the existing irrigation in the area would together form one of the larger irrigated areas in North America.

Five Lake Diefenbaker Irrigation Infill and Expansion Projects

Five irrigation expansion and irrigation projects have been identified on both sides of Lake Diefenbaker. The projects are both to infill within existing irrigation developments and to expand beyond them, particularly on the west side of the lake. The regional water supply costs associated with these projects are anticipated to cost some $2.9 billion over twenty years.

Infill & Expansion Projects

- The South Saskatchewan River Irrigation District Expansion and Infill Project
- The Luck Lake Irrigation Infill and Expansion Project
- The Riverhurst Irrigation Infill and Expansion Project

New Expansion Projects

- The Westside Irrigation
- The Qu'Appelle Irrigation

Together these projects would add between 435 to 542 thousand acres to the existing 107 thousand district and private irrigated acres in the region to create one of the larger irrigation areas in North America with an irrigation potential of nearly 650 thousand acres.

A 40 Year Irrigation Development Scenario

Feedlot Investment Supported by Irrigated Feed

The study evaluated the economic impact of irrigating the Lake Diefenbaker area over a twenty year period to complete regional water works and a forty year period to invest in on farm irrigation equipment and off farm value added processing activities. The off–farm building blocks for a transformation agricultural economy in central Saskatchewan included both forward linked on and off farm value added activities. As development and investment in the region grows, crop mixes change and incomes rise.

Farm Enterprises	Non-farm Enterprises
Cow-calf Production	Cattle Slaughtering & Meat Processing Plant
Small & Large Feedlots (500 to 10,000 head)	
Hog Barns	Hog Slaughtering & Meat Processing
Dairy Enterprises	Cheese Factory
Potato Storage Sheds	Potato Processing Plant
	Bio Fuels Production

Some Benefits from an Irrigation Economy

A Foundation for Sustainable Rural Futures

For many years, Saskatchewan's rural population has declined as farmers left the land. Developing a diversified irrigation economy provides a stable foundation for long term rural futures. The regional water supply investments required for the irrigation expansion are transformative in creating sustainable employment and new competitive, productive and profitable rural economic enterprise. The size of the benefits associated with a diversified agricultural economy can be seen on the ground in the irrigation economy of southern Alberta and are confirmed by cost benefit ratios as high as 16 to 1 at a 5% discount rate and steadily increasing employment and population.

Irrigated yields are consistently higher than dryland yields, equivalent to an additional $270 / acre

Agricultural Value Added Supply and Processing Opportunities

Value added processing has for too long been a distant dream in rural Saskatchewan. The frequent return of drought however is a continual threat to agri value added investments.

Today the opportunities for these value added food investments are better than ever before with the relocation of many of these facilities from water short regions of the United States and the growth in demand from an expanding Prairie and growing world population. Demand for meat products is increasingly linked to the growth and increasing wealth of India and China. Powdered milk consumption in China trebled between 2002 and 2007. 400,000 irrigated acres are expected to be withdrawn from production in southern California by 2020.

288,000 person years of employment would be created from the five Lake Diefenbaker Irrigation Projects and a Diversified Agricultural Development Scenario.

With efficient water management, Lake Diefenbaker can supply the water supply needs of expanded irrigation and the multi-purpose human and industrial uses of the lake.

Alberta Transforms Palliser's Desert into a Vibrant Agricultural Value Chain

The Palliser expedition between 1857 and 1860 recommended against settling much of southern Alberta. Yet a century of irrigation in thirteen irrigation districts has created 1.3 million acres of irrigation accounting for only 4% of Alberta's cultivated lands, but producing 14% of farm cash receipts, 11% of the agricultural value added and 19% of direct agricultural employment.

The value of sales from irrigated agriculture was over five times higher than for dryland crops and over seven times higher than dryland for livestock farming. The returns to value added and employment were both about five times higher on irrigation than on dryland. Alberta has built food manufacturing and processing agricultural value chains in such areas as potatoes and vegetables, sugar, canola, beef, poultry and special crops.

Alberta Spitz Sunflowers at a grocery and ball diamond near you

Irrigation in the Chinn Lakes Region of Alberta

McCains Foods Potato Processing

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Create a Legacy! Become Involved!

Realising the benefits from Lake Diefenbaker Irrigation requires leaders to change the direction of development. For over half a century the potential of the Gardiner Dam and Lake Diefenbaker remains unfulfilled, while Prairie waters are developed in the neighbouring provinces of Alberta and Manitoba.

The Saskatchewan Irrigation Projects Association is committed to fully developing Saskatchewan's irrigation development potential both around Lake Diefenbaker and in other areas of the province. Contact us soon for either a copy of the study or for more information.

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Lake Diefenbaker's Unrealized Potential

Time to Irrigate!

The 2nd Recommendation of the 1952 Royal Commission of Inquiry into the South Saskatchewan River Project recommended that "*when the time comes that the Project represents the then best use of water for irrigation, the present finding (to reject the project) should be reviewed in the light of changing conditions*.

That time has come! The world food shortage, the reduction in North American irrigated acreage in California alone, the prospect of global warming in the Prairies, more frequent and longer droughts and positive economic returns to the project suggest it is now ***Time to Irrigate!***

Today, water allocated to irrigation shows positive benefits throughout the society, the economy and the environment. Benefits are identified for producers, city dwellers and for the sustainable rural diversification of a large part of the Saskatchewan economy. Irrigation has already transformed the agricultural economies of the irrigation districts of southern Alberta and Manitoba.

The future of rural Saskatchewan has been a dilemma for many. Rural folk have left as economic options were reduced. Irrigation offers a real prospect to transform the long term future of central Saskatchewan and create the diversified legacy for which the Gardiner Dam was originally built.

Planning a Growing Future Now with Irrigation

Lake Diefenbaker irrigation development requires a long term regional development and early funding to commence the transformational change that is possible. There will be barriers to development of the resource including an aging population and the need for targeted immigration and investment capital into the region, power and transportation infrastructure, irrigation research and demonstration for new cultural and water conservation practices will be required and a Lake Diefenbaker Irrigation Development Agency will be required to manage the process over many years.

Further study and waiting for better conditions can be costly. Cost benefit ratios for the project all increase when the work is completed over a twenty year period rather than a 40 year period. The cost inflation of the project from less than $100 million in 1952 to $2.9 billion today is further evidence of the costs of delay. The stop and start policy framework practiced by both federal and provincial governments has itself been a barrier to sustained development of and investment in the opportunity.

Long term commitments by federal, provincial and municipal governments and the many agricultural, local and environmental stakeholders will be required to plan for, and invest in a sustainable, long term and transformative future for the Lake Diefenbaker region of central Saskatchewan.