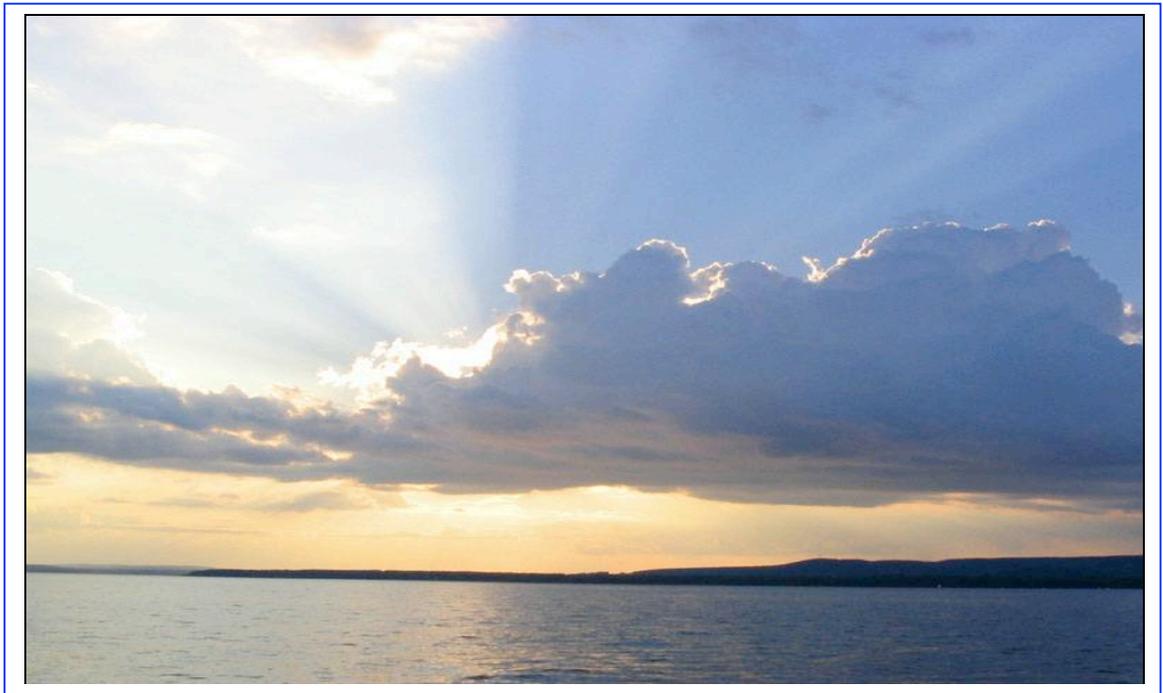


SIPA

A TIME TO IRRIGATE

Volume I



The Economic, Social and Environmental Benefits of Expanding Irrigation in the Lake Diefenbaker Region

Prepared for the Saskatchewan Irrigation Projects Association
By Clifton Associates Ltd. of Regina, Saskatchewan July 2008

This report into the Economic, Social and Environmental Benefits of Expanding Irrigation in the Lake Diefenbaker Region is one of two volumes.

The Second Volume examines the Economic, Social and Environmental Benefits of Expanding Irrigation in Saskatchewan.



Saskatchewan Irrigation Projects Association

Since 1996 the Saskatchewan Irrigation Projects Association (SIPA) has been the voice of the irrigator. SIPA is dedicated to the growth of irrigation in Saskatchewan through both the expansion of private irrigation and the development and expansion of irrigation districts.

SIPA's mandate is to: represent the interests of our irrigation membership in Saskatchewan and to provide a common voice for issues concerning irrigators. SIPA operates on the basis of the following three core values:

1. Development of irrigation policies must occur from the producers up to the decision makers.
2. To protect our environment through good stewardship of irrigation practices.
3. SIPA and its members must partner with government, industry, recreation, wetlands and others who have a stake in our water resources.

SIPA has been established to meet the following four goals:

1. To be the advocate for irrigation projects in Saskatchewan, representing and lobbying irrigation concerns on behalf of the association and its members to government and stakeholders and to make SIPA the point of entry for new projects and to assist in their formation.
2. To develop and implement a strategy to promote the benefits of irrigation.
3. To provide direct input to government and assist in setting policies being made by government departments that have an impact on irrigation and to provide options and recommendations for the implementation of those policies.
4. To develop a process to assist in the expansion of irrigable acres.

SIPA can be reached at the following points of communications:

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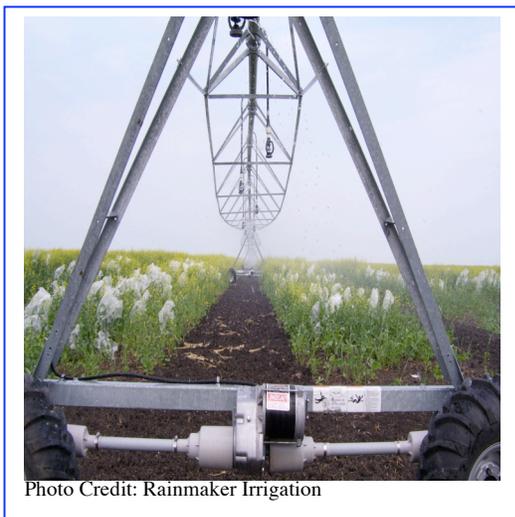


Photo Credit: Rainmaker Irrigation

The Project Team

The study project team consists of several companies and professionals with provincial, national and international experience in irrigation development.

The project has been led by Clifton Associates Ltd., working with KAECI of Saskatoon, Water Resource Consultants and MR2 – McDonald & Associates of Regina, and Toma, Bouma Management Consultants of Edmonton.

The Project team who has completed 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. Darrell Toma, Partner with Toma, Bouma Management Consultants and specialist in Alberta irrigation development and related value chains and rural economic development needs.
- Mr. David Hill, formerly Executive Director, Alberta Irrigation Projects Association.
- Mr. Roger McDonald, President of MR2 – McDonald & Associates 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.
- Mr. Toby Thorp, Environmental Scientist, Clifton Associates Ltd.



Photo Credit: Lake Diefenbaker Tourism Committee

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- The Saskatchewan Ministry of Agriculture and the Saskatchewan Watershed Authority for their assistance in the provision of data and information to the project.
- The Board of Directors of the Saskatchewan Irrigation Projects Association consisting of:
 - Roger Peterson, Chairman, Outlook
 - Kelvin Bagshaw, Vice-Chairman, Birsay
 - Sandra Bathgate, Secretary/Treasurer, Central Butte
 - BJ Boot, Board Member, LDDA, Outlook
 - Jon Könst, Board Member, Outlook
 - Larry Lee, Board Member, Outlook
 - Howard Steinley, Board Member, SWDA, Rush Lake
 - Ron Tittle, Board Member, SWDA, Consul
 - Don Fox, Board Member, SEDA, Moose Jaw
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 - Jason Wildeboer, Board Member, NDA, Warman
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- The many officials, experts and scientists who brought in Saskatchewan, Alberta and from across Canada and around the world who contributed ideas and information that enabled the authors to complete the work.

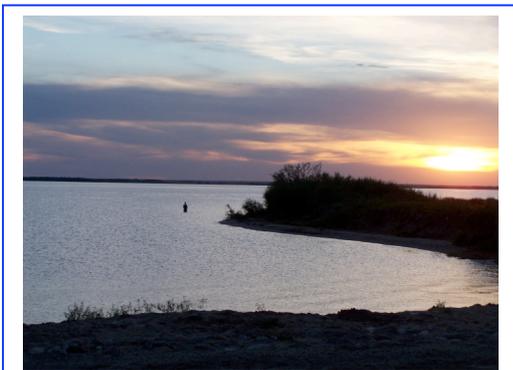


Photo Credit: Lake Diefenbaker Tourism Committee



Photo Credits Lake Diefenbaker Tourism Committee

Executive Summary

The time has come!

In 1952 the Royal Commission on the South Saskatchewan River Project recommended against proceeding with the development finding that: *...at present the economic returns to the Canadian people on the investment in the proposed South Saskatchewan River Project are not commensurate with the cost thereof; though the Project would yield social returns which, while they cannot be measured for the purpose of this Report, would be of great value to the region in which it is situated.* The Commission continued, however, to note in its second recommendation that: *when the time comes that the Project represents the then best use of water for irrigation, the present finding should be reviewed in the light of changing conditions.* (Hogg, T.H. et al., 1952, p.6)

In the years that followed the publication of the Royal Commission Report, the Gardiner Dam was built and the 200 km long Lake Diefenbaker was created. Many of the hydro development, recreational, municipal water supply benefits identified by the Commission were realized, but the promise of over half a million acres of irrigated farmland has remained unrealized. Today there are a little over 100,000 acres under irrigation in the Lake Diefenbaker area in nine active irrigation districts.

Today, Lake Diefenbaker irrigation development still represents a visionary project with the potential to transform the economy and society of the heartland of central Saskatchewan. The five projects under review in this study offer the prospect of large and sustainable benefits for farmers, for rural municipalities and for the largest cities in the province. The projects address the infill of irrigation within existing irrigation districts and the expansion into new irrigation districts. The projects are:

Infill Expansion Projects

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

Expansion and Development Projects

- The Westside Irrigation Development Project
- The Qu'Appelle Irrigation Development Project

Together it is anticipated that these projects could add between 435,000 to 501,079 acres to the existing 100,000 acres of irrigated agriculture in the region to create one of the larger irrigation areas in North America with an irrigation potential of 600,000 acres.

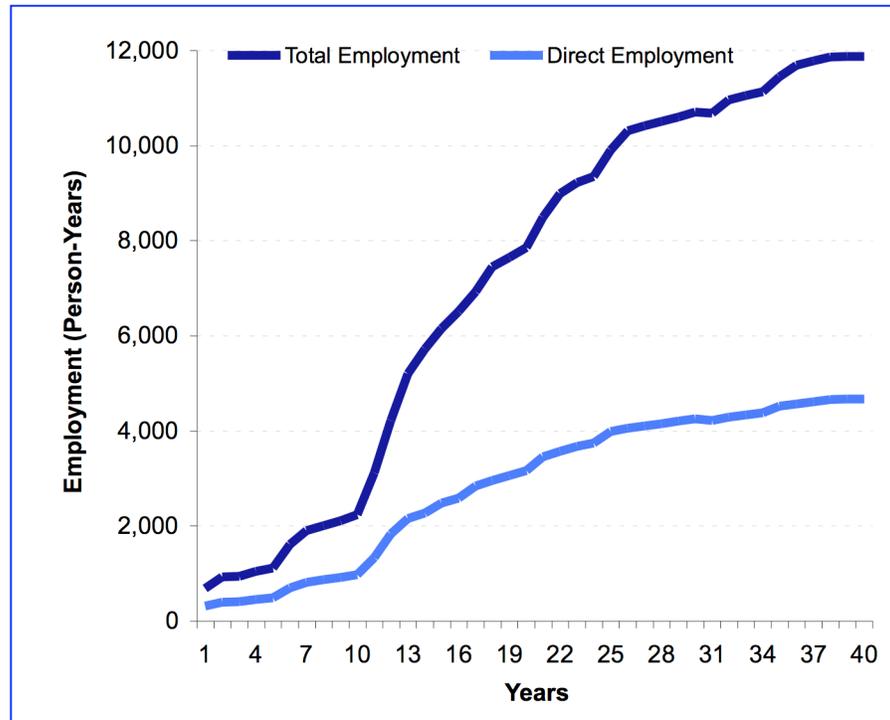
The benefits identified in this report from irrigating over one half a million acres of Saskatchewan drylands arise in five main areas:

1. Economic benefits that can arise from increased production along a developed agricultural value chain and a more water extensive society with a total economic impact on sales of nearly \$60 billion.
2. Employment benefits associated with the increased economic activity that would create some 288,000 person years of employment.
3. Environmental benefits from the water intensive ecology created by the irrigation economy that provides for and finances wetlands and wildlife development.
4. Service benefits for rural and urban water supplies throughout the province in both small rural towns and larger cities.
5. Water security benefits for urban and rural residents from the prospect of water shortages in an era of global warming and drought.

In economic terms these benefits can be estimated from increased incomes and employment for producers, Saskatchewan residents and Canada at large. Together these are estimated to amount to some \$12 billion of increased household incomes with 20% of the increase falling to producers in the local area, and 80% to the province and to Canada. The cost benefit ratios for the proposed developments are positive from increased agricultural production where the ratio at a 5% discount rate amounts to 4:1. The cost benefit ratio is even higher at 14:1 when a fully diversified economy develops around the irrigated agriculture.

The analysis identifies the steady growth in direct and indirect and induced employment that is possible under a diversified irrigation development scenario in which annual employment grows to 12,000 that would present an increase of at least 24,000 in the provincial population.

Figure A - Direct and Indirect Employment Growth Under a Diversified Lake Diefenbaker Irrigation Development Scenario



Significantly, and in marked contrast to the history of the last fifty years, the analysis clearly demonstrates the benefits of a more rapid development of the unique Lake Diefenbaker irrigation resource. When the period of development is shortened from 40 years to 20 years then the returns to producers, society and the province all increase and returns reach 16:1 at the 5% discount rate.

Irrigation in the Lake Diefenbaker area offers clear drought proofing benefits. During droughts irrigated returns are some \$270/acre higher than the drought affected drylands creating an increase in sales of \$165 million and over \$100 million in increased incomes.

The benefits from increased irrigation, however, are far more than numbers alone. Positive social and environmental benefits are identified that will extend throughout southern Saskatchewan, offer an adaptation strategy for global warming, a restructuring of the aging

demographics and more diverse and sustainable natural habitats. There is clear evidence from irrigation projects throughout the Prairies that local rural populations can stabilize and grow under irrigation. For central Saskatchewan the Lake Diefenbaker irrigation has the potential to resolve the enduring dilemma of how to revitalize declining rural populations.

The lessons of history, however, make it clear that public investment alone is not a sufficient pre-condition for irrigation to thrive and prosper in Saskatchewan. Long term coordinated planning will be required on the part of producers, local people, governments and the private sector. Long standing barriers to irrigation development will require resolution including financing, infrastructure, power supply and an aging population. Stable public policy frameworks will be required to last beyond the electoral cycles of government. New institutions will be necessary to sustain the development and investment from both Saskatchewan and out of province sources.

Developing the five Lake Diefenbaker projects can be the start of a new approach towards rural economic development and diversification in Saskatchewan. In an era of global warming when drought is already a reality for much of the Province, the Lake Diefenbaker irrigation infill and expansion projects can be truly transformational in adapting to the climate, increasing rural incomes and employment and creating an economic platform for decades of sustainable growth.

The Time Has Come to Irrigate!

