

Introduction

Irrigation in Saskatchewan today offers a wide range of benefits related to its role in increasing the productivity of dryland agriculture and as a foundation to a diversifying rural economy. In the years ahead, expanding the provincial irrigated acreage will offer the province an opportunity to commence or expand the economic transformation of dryland agriculture in all regions of Saskatchewan with benefits for farmers and rural and urban communities.

This report is designed to examine the economic, social and environmental benefits of irrigation in Saskatchewan. It examines some of the developments that have occurred to date and creates a scenario of future value added benefits that can become available. The report also examines some of the issues and constraints that can limit the full development of the sector.

The Saskatchewan Irrigation Projects Association has commissioned this evaluation of the benefits of irrigation in Saskatchewan to both document the wide range of benefits that have developed from irrigation across Saskatchewan and to evaluate the future potential of expanding the irrigated acreage in the region. This provincial report is one of two, the first of which performed a similar evaluation on the irrigation development potential of the Lake Diefenbaker area.

The study has been undertaken with the financial support of the Strategic Studies Program of the federal provincial National Water Supply and Expansion Program administered by the federal Department of Agriculture and Agri-Food Canada and its Prairie Farm Rehabilitation Administration.

Over the past decade major evaluations were undertaken of the potential for expanding the irrigated acreage in several regions of Saskatchewan. These were:

- The North Saskatchewan River Highgate Dam Evaluation
- The Southwest Saskatchewan Irrigation Evaluation Studies
- The Meridian Dam Cost Benefit Evaluation
- 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
- The Westside Irrigation Development Project
- The Qu'Appelle Irrigation Development Project

Together these recent projects and other evaluations hold the capacity to expand the irrigated acreage in Saskatchewan to well over 800,000 acres by the addition of over one half a million new infill and expansion acres available for irrigation in the Lake Diefenbaker area alone and expanded acreage and production in all other irrigation development regions of the province.

This study examines the benefits that have already occurred from the existing public and private irrigation in Saskatchewan and evaluates the costs and benefits that could be realized from developing an expanded base of irrigation across the Province. While these benefits are founded in the increased agricultural productivity that is associated with irrigation, they also include the benefits for value added processing, population and community growth, municipal stability and expansion, tourism and the environment. In addition the study has evaluated the benefits of a large-scale irrigation development for Saskatchewan's cities and its effects in protecting the province from many of the adverse effects and costs of drought and global warming.

The report is organized into ten sections¹. The second section of the report after the Introduction examines the development of irrigation in Saskatchewan. The third reviews the benefits that have already developed around irrigation today. Chapter Four reviews the irrigation development potential in the province. Chapter Five presents an irrigation evaluation scenario that might reasonably be expected to develop around the water supply investments required for irrigation and includes both agricultural and value added investments. Chapter Six measures the economic costs and benefits of making the irrigation investments and identifies the larger scope of impacts on the environment and society that would be expected from the water investments.

Chapter Seven undertakes a sensitivity analysis to measure how the benefits from irrigation would be expected to change under a different pace of irrigation investment or global warming scenarios with increased drought. Chapter Eight provides an assessment of major irrigation issues and knowledge gaps that can form constraints to the development of an irrigation economy in central Saskatchewan. Finally, Chapter Nine outlines the framework for a provincial irrigation development strategy that will be required for the long term for sustained development of the sector in the province.

This study of the benefits from irrigation in Saskatchewan has been based upon the latest available data and studies completed on Saskatchewan, North America and the World. Data from the Saskatchewan Watershed Authority, Statistics Canada, the Saskatchewan Bureau of Statistics and the provincial Department of Agriculture have all been accessed to develop a comprehensive statistical basis to evaluate the irrigation development opportunities.

Irrigation development in Saskatchewan has seen a chequered past. In spite of the periodic droughts and the huge losses imposed on dryland agriculture, irrigation projects have been abandoned and there have been periodic declines in irrigated acres. These developments occurred in spite of conditions to the east and west that saw irrigation expansion form the basis of highly valuable agricultural value chains in Manitoba and Alberta with clear benefits for the sustainability of rural employment and the municipal community structure.

The projects under evaluation in this study represent a major agricultural development opportunity for Saskatchewan - perhaps the largest since settlement. By adding nearly half a million acres at the centre of Saskatchewan's dry heartland around Lake Diefenbaker and fully utilizing an available and sustainable water resource, huge benefits can be generated for generations of Saskatchewan residents in small towns and large cities throughout the province.

Some benefits from the irrigation economy are already apparent in the changes that have occurred in the Lake Diefenbaker region where irrigation has transformed development to the east of the Lake. Irrigation development, however, is far more than higher and reliable yields for agricultural producers in the irrigation areas. The benefits extend well beyond the farm and include hydropower production, tourism and the ecological yields of wetlands, fishing and other non-monetary aspects of the Lake.

¹ The report includes some sections and materials that were also included in volume I of the study.