

2013 Progress Report



GLOBAL INSTITUTE *for* FOOD SECURITY

POTASHCORP – A FOUNDING PARTNER



INVESTING IN GLOBAL FOOD SOLUTIONS: 2013 – A FOUNDATIONAL YEAR



**Representatives of the Founding Partners
launched the Global Institute for Food Security
on December 10, 2012.**

L to R:
Bill Doyle, President and CEO, PotashCorp;
Dr. Ilene Busch-Vishniac, President,
University of Saskatchewan;
Brad Wall, Premier, Province of Saskatchewan.

THE FOUNDING PARTNERS

With a shared vision to develop Saskatchewan-led solutions to feed a growing world population, the Global Institute for Food Security (GIFS) was established on December 10, 2012 through a unique public-private partnership of PotashCorp, the Government of Saskatchewan and the University of Saskatchewan.

PotashCorp provided an initial investment to GIFS of up to **CDN \$35 million** over seven years, which represents the largest donation in the company's history and reflects its deep commitment to food security. The donation is one of the largest corporate donations for university research in Canada.

The Government of Saskatchewan invested **CDN \$15 million** over seven

years, with which the Institute will apply Saskatchewan's unique resources, innovation and expertise to address the increasing global demand for safe, reliable food.

University of Saskatchewan, a world-renowned centre of excellence in agriculture and food-system related research, contributed its world-class facilities and centres of expertise critical to the Institute's success.

Through the Institute, Saskatchewan will make contributions to global food security by supplying healthy agricultural commodities and food ingredients, as well as crop production inputs such as potash. It will be a world leader in innovations in agriculture and will be a model for international cooperation in science and technology transfer.

Global food security is achieved when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active lifestyle.

World Food Summit - 1996

MISSION

New knowledge for sustainable food solutions by increasing sustainable crop production, building a prosperous bio-economy in Western Canada, and enhancing global food and nutrition security through innovation and international collaboration

OUR VISION

As a cross-disciplinary institute, GIFS will serve as a catalyst for knowledge, research, and innovation by engaging leading scientists, educators, innovators, and students from research institutes, universities, and industry in Canada and around the world. It will provide unprecedented opportunities for collaboration on sustainable global food security solutions.




LEADING DISCOVERY AND INNOVATION

Building on our mission and vision, GIFS research on food systems will produce solutions that are relevant and transferable to parts of the world where food production and distribution remains a challenge. Developing plant traits for higher yields, examining how soil quality affects the nutritional value of crops, adapting traditional prairie crops to local soils and water – these are a few of the ways GIFS will advance food solutions for growing populations and economies around the world.

GIFS will draw on the unique expertise and technology of a bioscience research cluster that includes the University of Saskatchewan, Canadian Light Source synchrotron, Saskatchewan Research Council, National Research Council and Agriculture and Agri-Food Canada. In addition, GIFS enjoys the support of private-sector business and industry in Saskatchewan whose enterprises foster and depend on agriculture and food.





Dr. Roger Beachy,
Founding Executive Director & CEO

LEADERSHIP

In January, 2013, Dr. Roger Beachy was appointed the Interim and Founding Executive Director and CEO for GIFS.

World-renowned with a prolific body of research over his 40-year career, Dr. Beachy is internationally recognized for his research in food crops, production agriculture, and applications of biotechnology in agriculture and nutrition. As founder of the Danforth Plant Science Centre in Missouri, first Director of the US National Institute of Food and Agriculture, and Chief Scientist of the US Department of Agriculture his experience and expertise has been invaluable to the launch of GIFS.

In its first year under the leadership of Dr. Roger Beachy, GIFS made significant strides in operational and program development. Early developments included the establishment of a Board of Directors that encompassed representation by industry, government and academia, the hiring of operational staff, and the development of thematic strategic planning for research and innovation initiatives all linked to GIFS's mission to increase crop production, build a prosperous economy in Saskatchewan, and contribute to global food and nutrition security. With thematic research and innovations themes established, an inaugural call for research proposals around one of the themes and an extensive review process of the proposals selected took place. An expression of interest involving collaboration with several disciplines at the University of Saskatchewan was also advanced coupled with efforts to recruit an internationally renowned scientific investigator in the area of plant/crop reproduction and seed technology in 2014.

With foundational priorities and research directions established, Dr. Beachy concluded his term as interim and Founding Executive Director and CEO on December 31, 2013. Going forward, he will continue as a senior consultant to the institute. A planned search for a full time Executive Director and CEO began in late 2013. Until a permanent Executive Director and

CEO is appointed in 2014, Dr. Ernie Barber, who served as GIFS's Deputy Executive Director and Chief Operating Officer, was appointed as Managing Director, January 1, 2014.

Board of Directors (as at December 31, 2013)

Four directors, reflecting the synergy that the new institute will promote between industry, government and academia were appointed in 2013:



Mr. Dallas Howe
Chair of the Board of Potash
Corporation of Saskatchewan



Ms. Alanna Koch
Deputy Minister of
Saskatchewan Agriculture



Mr. Peter MacKinnon
President Emeritus of the
University of Saskatchewan



Dr. Lorne Hepworth
President of Crophlife
Canada

A STRONG FOUNDATION

Over the past year, GIFS has advanced a number of initiatives to position itself as a leading-edge food research Institute. These include:

- Working with partners to identify key infrastructure needs to ensure that the Saskatchewan biosciences cluster has the platform technologies necessary to support a new centre of excellence in plant sciences and food production;
- Identifying opportunities to enhance human capital within the cluster by recruiting world-class scientists and their productive research programs to Saskatoon, enabling dramatic progress towards increasing crop production;
- Utilizing research funds to provide incentives to scientists within the cluster to bundle their expertise together with other disciplines and professionals to work on system-based challenges that cannot be resolved any other way; and
- Forming partnerships between scientists in Saskatchewan and those in partner countries of particular interest or relevance to Saskatchewan to ensure we make the best use of talent and infrastructure.



A CATALYST FOR RESEARCH AND INNOVATION

GIFS aims to create a research culture that is interdisciplinary, systems-based, global, and focused on moving solutions from discovery to innovation to commercialization. Its investments will shine a light on food research excellence currently underway, identify opportunities for private-sector involvement and focus research efforts to maximize returns on public-sector investment.

In its first year, GIFS identified three themes to take full advantage of the existing science and infrastructure strengths in the Saskatoon agriculture and biosciences research cluster and the strengths and reputation of the agriculture and agribusiness sector initiatives. These three research and innovation themes are all linked to the mission to increase crop production, build a prosperous economy in Saskatchewan, and contribute to global food and nutrition security:

1 Healthy soils for optimum crop productivity and agricultural sustainability

Research may include topics such as maximizing nutrient and water use efficiency and minimizing soil-borne plant disease. A priority is given to building on local strengths, including the presence of the Canadian Light Source synchrotron and a new cyclotron to enhance the use of high-resolution imaging and analysis of physical, chemical, and biological complexity in agriculture soils.



2 Increasing resiliency of crops and cropping systems

Research will seek genetic and agronomic solutions to substantially increase crop yield and to confront existing and new biotic and abiotic threats to crops. Overall agricultural productivity will be enhanced by developing crops and cropping systems with resilience to predicted/anticipated changes in weather patterns and climate changes, including tolerance to changes in climate.



3 Capturing value in the global food supply system

Research may include processes and systems to add value to agricultural crops and crop products, both to capture value for agricultural producers and agribusiness and to meet the nutritional and health needs of consumers. The value of both food and non-food products and processes contribute to the profitability and environmental sustainability of food production. Issues such as agricultural trade policies, market assurance, food safety, consumer behavior, food waste, and technology adoption may be addressed.



INVESTING IN SCIENCE CAPACITY

The Saskatchewan agriculture and biosciences research community is already rich in its depth and breadth of expertise. GIFS will contribute by supporting the recruitment and retention of world-class scientists to augment this capacity. Our immediate goal is to ensure that there are research leaders within the highest priority areas of science, innovation, and technology transfer.

GIFS scholars will provide strategic research leadership for GIFS research priorities, be advisors to the Executive Director on research initiatives, and participate with the Executive Director as global ambassadors for the Institute. All GIFS scholars will be internationally recognized scientists with a demonstrated commitment to collaborative, interdisciplinary research and to commercialization of technologies. They will have demonstrated an understanding of global agriculture and will have the capacity to link Saskatchewan-relevant research to the global imperative of food and nutrition security.

GIFS has developed and secured all the necessary approvals for a "GIFS Enhancement Chairs Program" at the University of Saskatchewan which creates the policy platform to invest in the recruitment and retention of scientists. While the early investments will be in faculty at the University of Saskatchewan, GIFS is also able to make investments in science capacity within other public-sector institutions.

◻ "The knowledge, research and innovation done through these many resources are of global importance and the bioscience cluster in Saskatchewan which collaborates with GIFS is one of the strongest of its type in North America."

Dr. Roger Beachy

INVESTING IN DISCOVERY AND INNOVATION PROJECTS

One of the strategies to accomplish the goals of GIFS is to catalyze a research culture that is interdisciplinary, systems-based, global, and focused on moving through discovery to innovation to commercialization. GIFS's investments in research programs can shine a light on the existing excellence in the Saskatchewan biosciences community and the opportunities for private-sector investment in R&D. Investment of GIFS funds is expected to help focus research effort around strategic priorities and to increase the overall return to investment in public-sector research derived from the already-significant research funding from multiple sources.

In 2013, GIFS issued a call for proposals within the "value capture theme" and selected seven Letters of Intent (LOI) for full proposals. After rigorous external and internal review, four projects have been selected for further investment, pending receipt of acceptable revised research plans. GIFS will work proactively with the research teams to help coordinate linkages with other interested funding agencies (especially industry funding) and potential commercialization partners.

The four projects selected for final review and consideration:

- **Effects of Biofortified Lentils on Iron and Selenium Status (EBLISS)**
- **Innovative, nutritionally rich processed food products for at-risk domestic and global populations**
- **Upgrading and recovering grain for food use**
- **Developing Camelina (*sativa*) as a modern crop platform**

Approved final projects and funding will be announced in Spring 2014.

60%

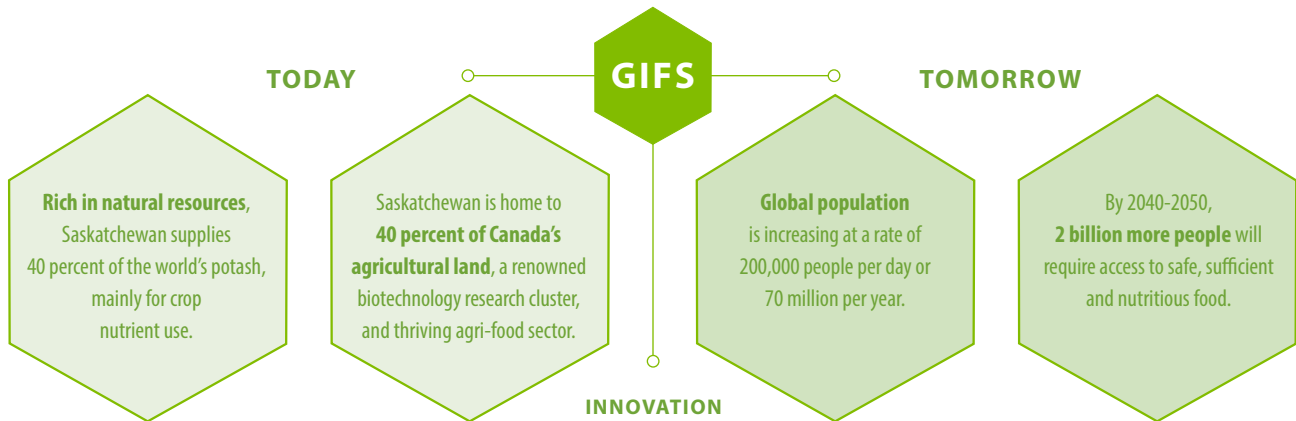
Increase in food production required to keep pace with rising food demand



THE GLOBAL FOOD SECURITY CHALLENGE

In 2013, GIFS initiated programs and partnerships which have begun to meet the ambitious goals of our founding partners in addressing the global challenge of food security:

- The foundation has been set for investments in research that will advance the goals of the provincial economic growth plan, goals that include increasing agricultural production and GDP and positioning Saskatchewan as a global biosciences leader.
- Unique opportunities have been identified for multidisciplinary science and research at the University of Saskatchewan and in partner research institutions, paving the way for talented students and researchers to engage in transformative research.
- Partnerships have been identified with other research institutions in North America, Europe, Africa and Asia which will ensure that the impact of GIFS's research is felt globally.



A FOCUS ON COLLABORATION AND PARTNERSHIPS

GIFS is a catalyst for collaboration between Saskatchewan researchers and those working in other countries who are also focused on global food security. Research partnerships with countries that are important export markets for Saskatchewan are key – as are partnerships with world-leading institutes that have complementary mandates to GIFS.

Collaboration is a key to partnership development. GIFS will focus on optimizing talent and infrastructure for particular research initiatives, as well as the global transfer and adoption of appropriate technologies. Collaboration will also focus on optimizing talent and infrastructure for particular research initiatives, as well as on the global transfer and adoption of appropriate technologies. Additionally, GIFS aspires to have a seat at global tables where debate and action occurs on issues of importance to global food and nutrition security.

Recognizing that many players – in industry, business, government, and academia – are required to contribute solutions that will feed a growing world population, GIFS is building on the contributions made by its Founding Partners to ensure long-term success of programs and operations.

On November 18, 2013, Viterra became the first Innovation Partner through its contribution of \$2 million for GIFS's operations and programs. The five year funding agreement makes Viterra the first grain industry partner. GIFS will continue to advance partnerships that build on collaboration and provide resources that help make the institute viable and successful in this mission.



Kyle Jeworski, Viterra President and CEO for North America, announces Viterra's partnership with GIFS, November 18, 2013.

PRESENTATIONS AND OUTREACH DELIVERED BY GIFS EXECUTIVE IN 2013

During 2013, GIFS Executive presented and participated in key conferences, meetings and forums to advance global food and nutrition security solutions and the institute's role in that mission.

- Saskatchewan Global Food Security Forum
Saskatoon, February 5, 2013
- Grain industry executives meeting, organized by Cargill
Winnipeg, April 3, 2013
- Meeting of Federal-Provincial-Territorial Deputy Ministers and Deans of Agriculture and Veterinary Medicine
Montreal, April 23, 2013
- Government of Saskatchewan Deputy Ministers
Regina, May 2, 2013
- Canadian Institutes of Health Research's Institute of Nutrition, Metabolism and Diabetes – Institute Advisory Board bi-annual meeting
Saskatoon, May 28, 2013
- CropLife Canada's Spring Dialogue Days, keynote address
Ottawa, May 8, 2013
- National Food Security Forum, part one of two-part initiative between University of Saskatchewan and University of Guelph
Saskatoon, May 16, 2013
- Breadbasket 2.0 Summit, keynote address
Saskatoon, June 17, 2013
- Tri-National Agricultural Accord
Saskatoon, September 24, 2013
- Saskatchewan Agriculture's Management Forum
October 22, 2013
- Saskatchewan Consular Corps Program
Regina, October 23, 2013
- Agri-Innovation Forum, keynote address
Winnipeg, November 20, 2013
- Saskatchewan Agriculture's Agronomy Research Update event
Saskatoon, December 11, 2013

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