Enhancing Competitiveness

of the

Canadian Beef Sector

through

Genomic Innovations

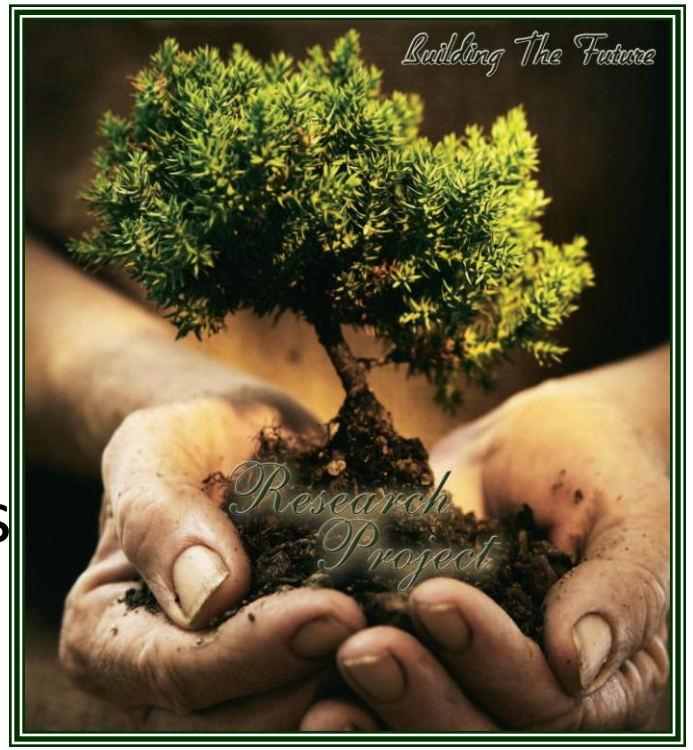
in the

Canadian Simmental Breed

SIMMENTAL

Collaborative Effort

- Canadian Simmental Association
- Garth Sweet Foundation
- University of Guelph
- GenServe Laboratories
- Beef Improvement Opportunities
- Canadian Simmental Breeders
- Industry Cooperator Herds



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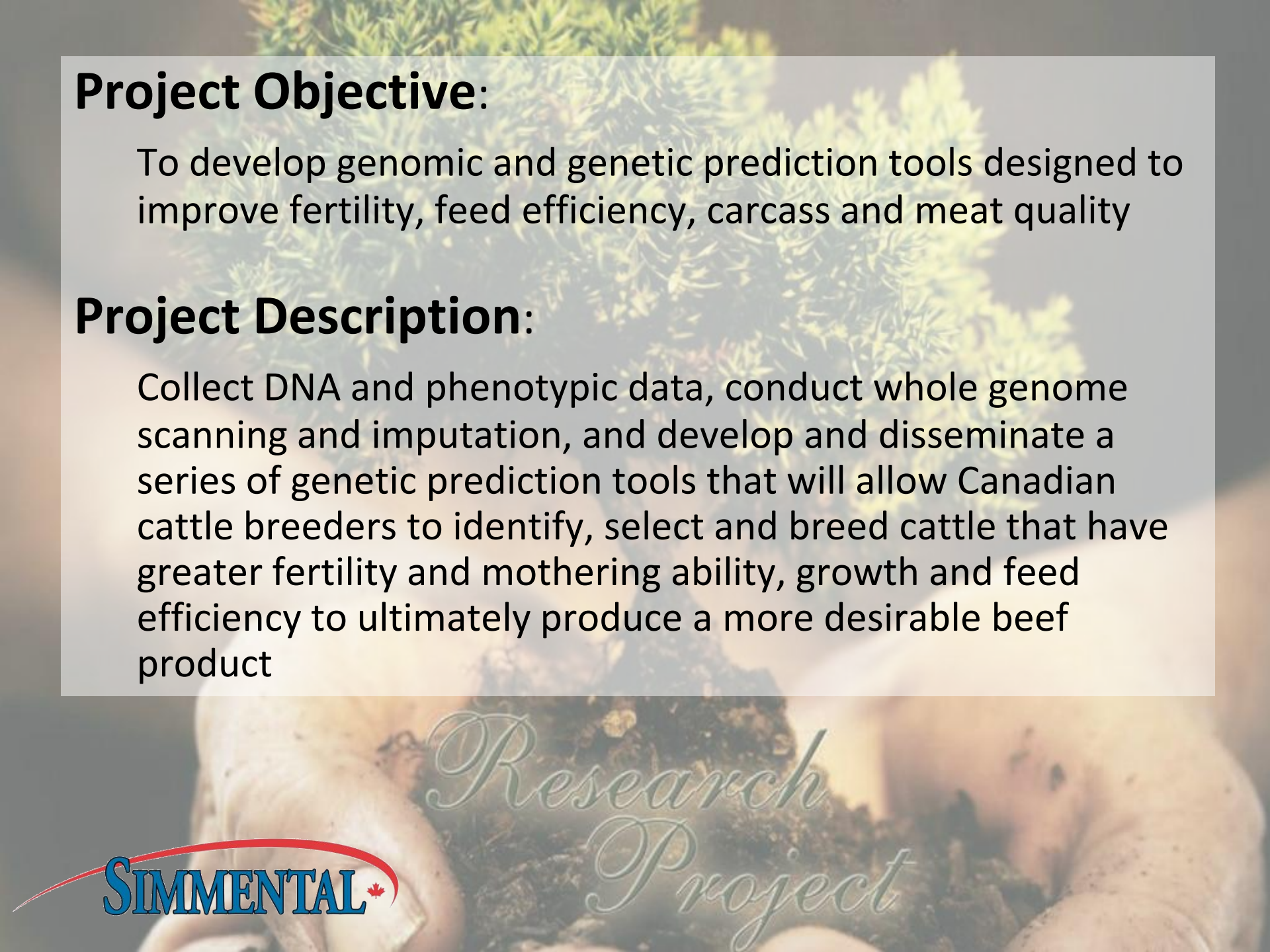
Project Objective:

To develop genomic and genetic prediction tools designed to improve fertility, feed efficiency, carcass and meat quality

Project Description:

Collect DNA and phenotypic data, conduct whole genome scanning and imputation, and develop and disseminate a series of genetic prediction tools that will allow Canadian cattle breeders to identify, select and breed cattle that have greater fertility and mothering ability, growth and feed efficiency to ultimately produce a more desirable beef product



Canadian Agricultural Adaptation Program (CAAP) Funded

- ☑ $1.7 million CAAP Funds (Government)
- ☑ $525,000 CSA/GSF Funds
- ☑ Canadian Simmental In-Kind Contributions

Total Project Cash Budget = $2.225 million

Including data contribution = $3 million

Project Timeline: Apr 1, 2011 – Dec 31, 2013

Research Project

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Activity 1: Database Expansion through Dataset Development

Outputs:

- ☑ Supplement existing database utilizing data from all complementary projects.
- ☑ Approximately 1500 animals incorporated for genomic studies including growth, feed efficiency and meat quality attributes.

Activity 2: Development of Genetic Prediction Tools

Outputs:

- ☑ Improve genetic model and trait definition for fertility and stayability and estimated genetic parameters. EPDs for fertility and stayability and genetic summary developed for the industry.

- ☑ Improve genetic evaluation model and estimated genetic parameters. Increased accuracy of EPDs and genetic summary for industry use.

Activity 3: Genotyping Activities

Outputs:

- ☑ Establish high density genotypes on project animals and determine the association with key phenotypes.
- ☑ Identify informative SNPs used to construct a Simmental panel and validate within an independent population.

Activity 4: Genomically-Enhanced Genetic Prediction Tools

Outputs:

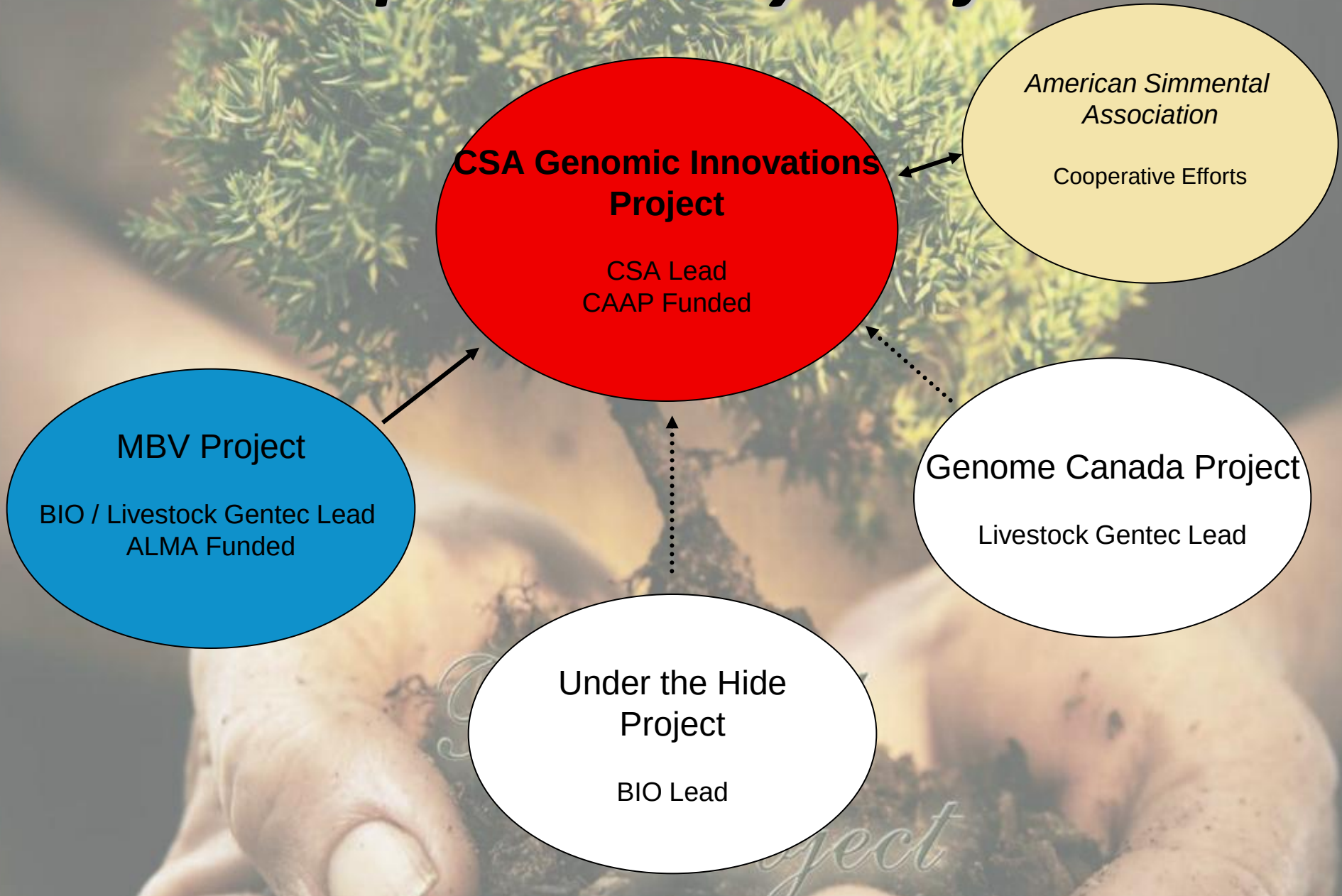
- ☑ Develop methodology to implement genomically-enhanced EPDs.
- ☑ Develop an education and extension program to facilitate the adoption of genomically-enhanced EPDs.

Activity 5: Technology Transfer

Outputs:

- ☑ Develop a project communications plan.
- ☑ Technology transfer programs will be developed to ensure efficient transfer of the findings to the sector.
- ☑ Articles published in industry publications such as *Simmental Country*, *Commercial Country*, *Canadian Cattlemen's Magazine*, etc.
- ☑ Publish scientific articles and develop and deliver seminar presentations.

Complementary Projects

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garthsweetfoundation
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Now the work begins…