

## Call for Proposals for Research Grants

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The Alberta Land Institute announces a Call for Proposals for its research grants competition. The deadline for receipt of applications is **November 8, 2021**. We expect that successful applicants will be notified by **November 30, 2021**.

### About Alberta Land Institute

The Alberta Land Institute (ALI) is an independent research institute based at the University of Alberta. We are committed to research that supports and enhances land use policy in the province of Alberta and beyond. ALI believes that sound policy development should be informed by thorough consideration of the full range of costs and benefits – economic, social and environmental. ALI's work focuses on the changing landscape and the ways that planning and policy design can ensure the long-term sustainability of Alberta's agricultural sector, its water and its natural areas. Current and completed research projects conducted or supported by ALI can be viewed online at <https://www.albertalandinstitute.ca/research/research-projects>.

**Research Categories:** The Alberta Land Institute funds and conducts research in the following three categories.

**Discovery Research:** Research undertaken to identify and examine emerging and future issues critical to the Institute's mandate. Successful proposals in this category will articulate broad research questions, inform long-range policy development using different disciplines and theoretical perspectives, and offer or inspire new information or innovative solutions to land use and land use management problems. Multiyear proposals may be considered in this category.

**Policy Research:** Projects focusing on a specific issue of immediate and critical concern to ALI's stakeholders, providing concrete analysis of policy alternatives, land use instruments, etc., and supported by comprehensive academic research. The primary purpose of projects in this category is to fill knowledge gaps and support decision making in Alberta.

**Educational Projects:** Projects aimed at translating and transmitting existing or new ALI or other relevant knowledge beyond the academic community in order to shed light on issues specifically relevant to ALI's partners and stakeholders and to support public discussion and policymaking in Alberta.

### Research Areas

ALI is currently prioritizing three research areas: Sustainable Agriculture: Soil Health; Land Use, Resilience, and Environmental Risk; and Ecosystem Service Markets. The theme of this call for research proposals falls under Sustainable Agriculture and is part of the Institute's *Soil Health Initiative* (see below). Research proposals that advance the above priority areas but are



not related to soil health may be submitted after consultation with ALI's Research Director.

## Selection Process

Applications will be pre-screened by ALI staff and reviewed by a Research Advisory Committee (RAC). Upon the recommendations of the RAC, the Research Director will make the final decision on the awards. All prospective applicants are invited to contact ALI's Research Director, Eran Kaplinsky, by email at [eran.kaplinsky@ualberta.ca](mailto:eran.kaplinsky@ualberta.ca) in order to discuss the suitability and scope of the proposal prior to formal submission.

## Requirements

Applicants must submit a completed application form along with a personal data form from a tri-agency for themselves and for each Co-Investigator. Application forms, guidelines, and additional information are available at:

<https://www.albertalandinstitute.ca/research/call-for-proposals>.

Please review the guidelines carefully before completing the application form. Applicants must submit one PDF file containing all required information and documentation on or before the deadline to: [albertalandinstitute@ualberta.ca](mailto:albertalandinstitute@ualberta.ca)

The following must be submitted within two months of project completion (i.e., by February 28, 2023 for one year projects) for publication on the ALI website:

- A Final Report describing the research methodology, findings, and conclusions, as well as — and in a substantive manner — the policy issue that the research addresses and the implications of the report for policy and/or practice. The Research Director may set out other reporting requirements.
- A short (2–4 pages), non-technical summary of the final report.

Subsequent applications will only be considered if satisfactory final or interim progress reports of all previous and existing ALI grants have been fulfilled prior to the new application.

Any published work that is derivative of the research supported by the grant must acknowledge the financial support received from the Institute. ALI must be provided with a copy of any publications.

Please refer to the attached Grant Guidelines and Application for further information on the application process.

## Budget and Project Period

For this Fall 2021 Call for Research Proposals, projects will be funded in one of two streams:

1. A maximum of \$75,000 for a one-year period. The expected date of completion is December 2022. Funding for continuation of the research may be available in subsequent years depending on the potential policy implications and the proposed approach.



2. A maximum of \$150,000 for up to two-years. The research will be funded in partnership with RDAR (Results Drive Agricultural Research). For more information on RDAR, see [www.rdar.ca](http://www.rdar.ca). All applications in this stream are subject to pre-approval.

## Contact

Inquiries regarding the nature of the project can be made by email to [eran.kaplinsky@ualberta.ca](mailto:eran.kaplinsky@ualberta.ca).

All other inquiries may be addressed to: [albertalandinstitute@ualberta.ca](mailto:albertalandinstitute@ualberta.ca) Please clearly indicate the nature of your email in the subject line.

## Fall 2021 Call for Proposals

The Alberta Land Institute is accepting for consideration research proposals in the Sustainable Agriculture research area, specifically focused on our *Soil Health Initiative*. ALI is particularly interested in proposals focused on exploring the linkages between agricultural practices, policies, and soil health. Proposals taking an interdisciplinary or multidisciplinary approach are welcome.

Prospective applicants are strongly encouraged to discuss their proposals with ALI before submitting a formal application.

### Sustainable Agriculture: Soil Health Initiative

Albertans feel a strong tie to the land, and the province is fortunate to have an abundance of agricultural lands. However, there is mounting pressure due to climate change, rapidly growing urban and peri-urban populations, and the continual push for economic growth.<sup>1</sup> Alberta's resilience in the face of these economic and climate-related threats is directly related to the quality of our soil. The loss and degradation of productive soils threaten the value of agricultural land and Alberta's food security for future generations.<sup>2</sup> Maintaining "sustainable" and healthy soil is also important for carbon sequestration and biodiversity.<sup>3</sup> Recognizing that soil is a non-renewable resource on anthropogenic time scales is imperative when managing agricultural and natural lands.<sup>4</sup> Thus, the concept of soil health has emerged as a holistic framework to assess — and manage — the "agronomic and environmental functions" of soil.<sup>5</sup>

Ensuring the sustainable management of agricultural soil is imperative in the Alberta context. Not only is the agriculture sector vital for provincial economic well-being, accounting for 1.2% of Alberta's Gross Domestic Product<sup>6</sup>, agriculture also serves as a source of identity for producers and communities<sup>7</sup>. The management of soil is complex, as it is a private resource, but its degradation and loss are a cost to society.<sup>8</sup> In Alberta, particular concern exists about the contamination and degradation of agricultural soils.<sup>9</sup> Further, although agricultural land conversion has slowed since its peak in 1984-1992, it continues at a concerning rate, and the

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<sup>1</sup> Alberta Land Institute, "Breaking Down Silos: Advancing the Soil Health Research Agenda" (22 January 2019).

<sup>2</sup> Alberta, Alberta Agriculture and Forestry, *Food Security in the Context of Agricultural Land Loss in Alberta: A Policy Research Document* (Edmonton: Government of Alberta, 2017). <https://open.alberta.ca/dataset/7fefa49b-a668-457a-8996-7ca567f02685/resource/65b162c7-5b9e-4d61-b9f4-f483f9e0b574/download/food-security-ab-ag-land-loss.pdf>.

<sup>3</sup> Eric C. Brevik et al, "Connecting the public with soil to improve human health: Connect public with soil to improve human health" (2019) 70:4 *Eur J Soil Sci* 898–910.

<sup>4</sup> Ronald Vargas Rojas et al, "Healthy soils: a prerequisite for sustainable food security" (2016) 75:3 *Environ Earth Sci* 180, s12665-015-5099–7.

<sup>5</sup> Rattan Lal, "Soil Health and Climate Change: An Overview" in Bhupinder Pal Singh, Annette L. Cowie & K. Yin Chan, eds, *Soil Health and Climate Change* (Berlin: Springer-Verlag Berlin Heidelberg, 2011) 3.

<sup>6</sup> Alberta, "Agriculture: Industries in Alberta," online: *Government of Alberta*. <https://alis.alberta.ca/occinfo/industry-profiles/agriculture>.

<sup>7</sup> Brenda Heelan Powell, "Agricultural Lands: Law and Policy in Alberta" (2019) at 110, online (pdf): *Environmental Law Centre*. <https://aref.ab.ca/wp-content/uploads/2020/01/Agricultural-Lands-Law-and-Policy-in-Alberta-November-2019.pdf>.

<sup>8</sup> *Supra* note 1.

<sup>9</sup> *Ibid*.



resulting fragmented agricultural land is particularly vulnerable to conversion pressures.<sup>10</sup>

ALI is seeking proposals for research that can assist decision-makers to enhance stewardship efforts and improve environmental outcomes for soil health. ALI is particularly interested in a better understanding of soil health information and education, regulation and policy, and funding and incentives, as findings from the literature – and our ALI workshop entitled “Breaking Down Silos: Advancing the Soil Health Research Agenda” – suggest that these are key gaps that need to be addressed.

### **Examples of the questions that are of interest to ALI are provided below.**

These are not meant to exclude or discourage other research questions or proposals. For any inquiries, contact ALI’s Research Director at [eran.kaplinsky@ualberta.ca](mailto:eran.kaplinsky@ualberta.ca).

*ALI, with input from its stakeholders, has identified several research gaps within this theme, including, but not limited to the following:*

### **Legal Characterization of Soil & Questions of Jurisdiction**

- What are the intended and unintended consequences of land use regulations on soil health and subsequent broader impacts on the environment and agriculture?
- How active/effective are municipalities and local officials in implementing and enforcing soil bylaws and policies in Alberta?
- Which level of government is most effectively legislating to protect soil health currently? At what level should soil health be championed?
- What lessons can be learned from soil health and sustainable agriculture initiatives in other jurisdictions?

### **Funding & Incentives**

- In general, the current economic climate for producers can make it challenging to break out of existing production cycles and attempt new, more sustainable methods. Is there a lack of market incentives for producers to adopt soil health practices and modify their production behaviours?
- What are the economic implications of policies, regulations, and best management practices on producers, **and** how does that affect the adoption and continued use of soil health practices? What are the economic impacts of policies on both private and public benefits?

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<sup>10</sup> Stan, Kayla Dawne & Arturo Sanchez-Azofeifa, “The Edmonton-Calgary corridor: Simulating future land cover change under potential government intervention” (2017) 63 Land Use Policy 356–368.

- Consumers and supply chains are more aware of the environmental impacts of food choices. Large agri-food processors are demanding additional certifications and proof of sustainable practices. Does soil health play a factor in this? How do Alberta’s current soil bylaws, policies, and Best Management Practices match emerging company demands?

## Science & Technical Information

- Currently, there is no clear definition of the concept of “Soil Health.” The lack of a definition and means to assess existing soil health is seen as a major barrier to the adoption of beneficial practices. How do we define healthy soil? How do we account for differences in terms of that “healthy soil” in one area may look different in terms of chemical and biological composition and physical structure compared to a “healthy soil” in a different zone?
- A lot has been invested into innovations and the promotion of beneficial management practices, but there has been little to no measurement of the impacts of these government programs or research efforts. How can we build impact measurements into agri-environmental programs?
- There is a lack of soil data and insufficient mapping. Moreover, available data and scientific information are not being adopted or utilized fully by producers.<sup>11</sup> How do we educate producers and empower them to use available data, mapping, and resources for soil health? What gaps in data and mapping exist that would aid producers in making informed decisions related to soil health?

## Education

- Farmers currently lack an understanding of soil properties and lack indicators to measure soil health. Given that “inadequate access to this information remains a major barrier to adoption,” it is imperative that education becomes a priority.<sup>12</sup> How can soil stewardship efforts be better aligned? How is research and knowledge currently being disseminated to producers? Is there a better way to engage with producers?
- Challenges exist as producers lack sufficient information on legislative and regulatory standards governing soil. In Alberta, 38% of producers have not heard of standards and requirements in the Soil Conservation Act and, further, 62% have not heard of standards and requirements provided in the Agricultural Operation Practices Act.<sup>13</sup> How can we enable and empower producers to understand and implement the standards and requirements within regulations and legislation?

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<sup>11</sup> *Ibid.*

<sup>12</sup> Liz Carlisle, “Factors influencing farmer adoption of soil health practices in the United States: a narrative review” (2016) 40:6 *Agroecology and Sustainable Food Systems*, DOI: <https://doi.org/10.1080/21683565.2016.1156596>.

<sup>13</sup> Alberta, 2018 Environmentally Sustainable Agriculture Tracking Survey, *Report by Kynetec Canada* (2018), online: Government of Alberta. <https://open.alberta.ca/dataset/4eb85c95-c8de-40c3-ace5-7acc129ff663/resource/db7a2ef7-8ed8-4303-a1da-4717127ee0af/download/2018-environmentally-sustainable-agriculture-tracking-survey-052018.pdf>.

