



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

Registration Number: POR 138-23
PSPC Contract Number: CW2230184
Contract Value: \$58,636.50, excluding HST
Award Date: 2024-03-23
Call up number: CW2353996
Delivery Date: May 2024
Fieldwork Dates: 2024-03-24 to 2024-05-01

Methodology Summary

Canadian Producers' Factors and Barriers to Adoption of Beneficial Management Practices (BMP) and Trusted Information Sources

Prepared by: Elemental Data Collection

Prepared for: Agriculture and Agri-Food Canada

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Ce rapport est aussi disponible en français

Canada 

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Registration Number: POR 138-23

Catalogue Number: A22-685/1-2024E-PDF

International Standard Book Number (ISBN): 978-0-660-72228-3

Agriculture and Agri-Food Canada Number: 13222E

Related publications (registration number: POR 138-23)

Ce rapport est aussi disponible en français sous le titre :

Facteurs et obstacles à l'adoption des pratiques de gestion bénéfiques (PGB) par les producteurs canadiens et sources d'information fiables

Catalogue Number: A22-685/1-2024F-PDF

International Standard Book Number (ISBN): 978-0-660-72230-6

Agriculture and Agri-Food Canada Number: 13222F

Related publications (registration number: POR 138-23)

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Introduction

Agriculture and Agri-Food Canada (AAFC) commissioned Elemental Data Collection to conduct quantitative research to collect data from Canadian farm producers to determine the beneficial management practices (BMP) being used and to better understand the trusted information sources they use. Phone interviews were collected in one wave from March 25, 2024, to May 1, 2024, with the final amount reaching 1,015 Canadians, 18 years of age and older.

1.1 Background

This study gains insights that can be used by AAFC to encourage the adoption of BMPs among Canadian agricultural producers. BMPs are approaches or technologies with environmental benefits that can be used by agricultural producers on the farms they operate. Many BMPs store carbon or mitigate greenhouse gas emissions, while others offer other environmental benefits, such as supporting biodiversity or water and soil health.

This initiative is aligned with the goals of AAFC's forthcoming Sustainable Agriculture Strategy (SAS). The SAS is a long-term plan that will help bring together action on priority environment and climate issues in the agriculture sector.

1.2 Research objectives

This research is intended to provide greater understanding of how and why Canadian agricultural producers use certain sources of information when adopting new on-farm practices.

Specific objectives of this research include, but are not limited to, providing AAFC with up-to-date data on producers':

- 1) Attitudes and behaviours with respect to the adoption of new practices on their farm;
- 2) Trust of various organizations within the agriculture sector as information sources;
- 3) Relationships and communication with other producers; and,
- 4) Use of agrology services.

Through the collection of demographic data (region, commodity type, gender, age, ethnicity, income, and practice adoption history), this research will also provide segmented results for more targeted interventions.

1.3 Contract value

The total contract value of this research was \$58,636.50, excluding HST.

1.4 Political neutrality certification

I hereby certify as a Representative of Elemental Data Collection that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the Communications Policy of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research. Specifically, the deliverables do not include information on electoral voting intentions, political party preferences, standings with the electorate, or ratings of the performance of a political party or its leaders.



Darcy Zwetko
Partner
Elemental Data Collection Inc.
May 16, 2024.

Methodological summary

2.1 Survey methodology

The phone survey was conducted with a sample of 1,015 Canadians, 18 years of age and older. Based on a sample of this size (n=1,015), the overall results are considered accurate to within $\pm 2.9\%$, 19 times out of 20. Details regarding the methodology are outlined below.

2.2 Sample design and selection

As the population size for the project was limited in scope due to sample availability, regional targets were observed but were never considered hard quotas. The sample frame was selected from all available farm producers across the country to allow for reporting along regional lines.

Strata	Completed interviews	Margin of error (%)
Atlantic Provinces	65	± 11.1
Quebec	325	± 5.2
Ontario	228	± 6.1
Prairies (includes Nunavut)	233	± 6.2
Alberta (includes Northwest Territories)	119	± 8.7
British Columbia (includes Yukon)	45	± 14.2
Canada	1,015	± 2.9

Based on a sample of this size, the results can be considered accurate to within $\pm 2.9\%$, 19 times out of 20.

2.3 Fieldwork

The phone survey data was administered in the Spring of 2024. The survey data was collected using computer assisted telephone interviewing (CATI) technology and was carried out by Elemental Data Collection in Ottawa, Ontario. The survey was conducted with 1,015 respondents, from March 25 to May 1, 2024. Surveys were conducted in the respondent's official language of choice. Sample groups were set to ensure each study could be tracked via region, language and respondent gender. The average length of time required to complete an interview was 24.5 minutes.

The sponsorship of the study was revealed to all respondents during the introduction. All survey respondents were informed that participation is voluntary, and information collected is protected under the authority of privacy legislation.

2.4 Participation rate

In total, 11,969 Canadian respondents were approached. The overall participation rate for this survey was 19.41%. This is consistent with typical response rates for phone surveys with this type of business respondent conducted over this length of field period. The table below presents the detailed information.

Disposition table	
Total numbers attempted	11,969
Out-of-scope - invalid	2,366
Unresolved (U)	5,295
No answer/Answering machine	5,295
In-scope - non-responding (IS)	1,038
Language barrier	21
Incapable of completing (ill/deceased)	74
Callback (Respondent not available)	943
Total asked	3,270
Refusal	1,406
In-scope - responding units (R)	1,864
Completed Interview	1,015
Scheduled appointments	179
Incomplete	91
NQ - Q1 - Decision maker	20
NQ - Q2 - Sales	72
NQ - Q3 - Age	0
NQ - No longer a farm	487
Quota full	0
Refusal rate	43.00
Participation rate	19.41
Incidence	54.45
Average length	24.45
Field timeframe	March 25 - May 1, 2024

The response rates were calculated using the formula: $R=R/(U+IS+R)$.

2.5 Data analysis

Weighting adjustments were applied to the survey data to ensure the results were representative of the Canadian population of Canadian farm producers, aged 18 and older, who have decision making responsibility and have a yearly revenue of \$10,000. Specifically, the survey results were weighted by region and revenue derived from the 2021 Census of Agriculture data which can be found here:

<https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2022006-eng.htm>

The following table presents a breakdown of actual and weighted completions by regional strata.

Strata	Unweighted sample size	Weighted sample size
Atlantic Provinces	65	33
Quebec	325	157
Ontario	228	258
Manitoba	75	78
Saskatchewan	158	182
Alberta/Northwest Territories	119	222
British Columbia/Yukon	45	85
Total	1,015	1,015

2.6 Non-response analysis

A non-response analysis was conducted to assess the potential for non-response bias. Non-response is the result of a unit of the sample not participating in the survey—either refusing to take part in the survey (a refusal) or not being reached during the data collection period (non-contact). Non-response results in biases in the survey sample when there are differences between respondents and non-respondents.

To undertake the analysis for this survey, the unweighted sample distribution by gender, age and farm revenue was compared to the actual population (based on 2021 Census figures from Statistics Canada).

	Survey sample (unweighted)	Population (Census 2021)	% difference (plus or minus)	Survey sample (weighted)
18 to34	5.93%	8.63%	-2.69%	3.97%
35 to 54	33.43%	30.88%	2.56%	25.37%
55 and older	60.63%	60.50%	0.13%	70.66%
Male	77.97%	69.60%	8.37%	72.50%
Female	22.03%	30.40%	-8.37%	27.50%

As there were no hard quotas set for any particular parameters within this business study, we did see some small variances in the makeup of the respondents. We did find that there was a slight uptick in male responses and also in the mid-range of age. This is generally consistent with most business surveys of this population. As the table indicates, younger Canadians were slightly under-represented and mid-age Canadians were over-represented in the survey sample. Weighting serves to reduce bias should it be present, but not to eliminate it completely. It is very unlikely that this small sampling bias introduced any meaningful bias to the survey results.

2.8 Appendix

Preamble

Note to interviewers: Be proactive if you feel that respondents are not in a good environment (too much noise) or other good condition to answer the questionnaire. In these cases, schedule a telephone appointment to administer the survey.

[For Quebec phone numbers]

Bonjour, Hello. Je m'appelle _____ et j'appelle de la part d'Elemental, une société de recherche sur l'opinion publique. Préférez-vous que je continue en français ou en anglais? My name is _____ and I am calling from Elemental, a public opinion research company. Would you prefer that I continue in English or French?

[For phone numbers in all other provinces and territories]

Hello, Bonjour. My name is _____ and I am calling from Elemental, a public opinion research company. Would you prefer that I continue in English or French? Je m'appelle _____ et j'appelle de la part d'Elemental, une société de recherche sur l'opinion publique. Préférez-vous que je continue en français ou en anglais?

We are conducting a study of agricultural producers on behalf of Agriculture and Agri-Food Canada, to learn more about your opinions and experiences with the adoption of new technologies or farming practices. Your opinions and experiences are important. Sharing them through this survey will help improve government programs and communications and offer a better understanding of how Canadian farmers make decisions about whether or not to adopt such technologies and practices. Your participation is voluntary, and the survey will take about 15 minutes. Please be assured that your identity and individual answers will be kept strictly confidential, and your decision about whether or not to participate will have no effect on any future interactions you may have with the Government of Canada. This survey is publicly registered in the Canadian Research Insights Council National Survey Registration System with number XXXXXXX. If you would like to respond to this survey using a TTY Relay service, please let me know. Note: If the respondent wants more information about the survey, read the following: The research is designed to provide AAFC with key insights into agricultural producers' experiences with new practices, and how they seek out and share information about new practices with others in the agriculture sector in Canada.

Interviewer note: Record language of respondent.

A. Screening

[ask all]

INT92. Is this a good time to talk? (do not read list)

Yes [continue] 1
No [reschedule callback] 2

INT91. [IF INT92=no read:] We would like to conduct this interview with you when it is comfortable and convenient to do so. Thank you for your time, we will try to call back at a more convenient time.

[ask if RDD1=YES]

CELL1. Are you in a comfortable place to talk on the telephone? (do not read list)

Yes 1
No 2

INT91. [if cell1=no read:] We would like to conduct this interview with you when it is comfortable and convenient to do so. Thank you for your time, we will try to call back at a more convenient time.

[ask all]

INT50. Before we begin the interview, I am required to inform you that for quality control reasons, this interview may be recorded. May we begin?

Yes 01

No, refusal – thank and terminate

Q-A1. First, we'd like to ask you a few questions for classification purposes. May I confirm that you are one of the decision makers for your farming operation? Tracking
[INTERVIEWER NOTE]: If required, read: "In other words, do you make the business and financial decisions regarding your farming operation?"

1. Yes
2. No.....thank/terminate
3. Joint

[If yes or joint, continue. If no, ask to speak to that person, read intro again. If unavailable, arrange callback. If no decision maker, thank and terminate.]

Q-A2. What were the total gross sales of your farming operation last year, that is, in 2023? Just stop me when I reach the correct category. Tracking

Less than \$10,000 [thank/terminate] 01
\$10,000 to just under \$100,000 04
\$100,000 to just under \$250,000 07
\$250,000 to just under \$500,000 08
\$500,000 to just under \$1,000,000 10
\$1,000,000 to just under \$3,000,000 12
\$3,000,000 to just under \$5,000,000 14
\$5,000,000 or more 15

[DO NOT READ] don't know/not applicable [thank/terminate] Q

Q-A3. In what year were you born?

1. [enter number]
 2. [if more recent than 2005].....thank/terminate
- Prefer not to say.....thank/terminate

B. Farm business profile

Q-B1. What province or territory is your farm in? [do not read] [If respondent indicates more than one province or territory, select the province in which most farming takes place]

[A-B1 (1)] British Columbia
[A-B1 (2)] Alberta
[A-B1 (3)] Saskatchewan
[A-B1 (4)] Manitoba

- [A-B1 (5)] Ontario
- [A-B1 (6)] Quebec
- [A-B1 (7)] New Brunswick
- [A-B1 (8)] Nova Scotia
- [A-B1 (9)] Prince Edward Island
- [A-B1 (10)] Newfoundland and Labrador
- [A-B1 (11)] Yukon
- [A-B1 (12)] Northwest Territories
- [A-B1 (13)] Nunavut
- [A-B1 (14)] Prefer not to say

Q-B2. What are the first three characters of the postal code of your primary farming operation's address?[record characters or prefer not to say]

Now, we'd like to know a bit more about your farming operation.

Q-B3. In 2023, what type of production contributed most to your gross farm revenue? [do not read list; accept 1 response]

- [A-B3 (1)] Oilseed and grain farming (for example, soybean, canola, flaxseed, mustard seed, safflower and sunflower, dried peas, dried beans, lentils, wheat, corn, rice, wild rice, or buckwheat) (1111)
- [A-B3 (2)] Cattle ranching and farming (for example, cow/calf, backgrounding, feedlot) (11211)
- [A-B3 (3)] Dairy cattle and milk production (11212)
- [A-B3 (4)] Beekeeping (112910)
- [A-B3 (5)] Forage (311119)
- [A-B3 (6)] Poultry farming (1123)
- [A-B3 (7)] Pig farming (11221)
- [A-B3 (8)] Vegetable farming (11121)
- [A-B3 (9)] Fruit farming (1113)
- [A-B3 (10)] Other types of farm production (for example, greenhouse production, aquaculture, sheep and goat farming) [interviewer type in] _____
- [A-B3 (11)] Prefer not to say [volunteered]

Q-B4. What is the approximate physical area of your farm that is used for growing crops or pastureland? [number] [Record acres, hectares or other unit as a separate variable]

Q-B5. Do you own or rent the land on which you farm? [do not read]

- [A-B5 (1)] Own all of it
- [A-B5 (2)] Rent all of it
- [A-B5 (3)] Mix of renting and owning [specify rough proportion (eg. 10%, 50%) of the land that they own]
- [A-B5 (4)] Other arrangement [specify]

Q-B6. And what year did you start farming?

- [A-B6 (9999)] Don't know/Refused

Q-B7. Are or were your parents farmers in Canada? [read]

- [A-B7 (0)] No
- [A-B7 (1)] Yes
- [A-B7 (2)] Yes - Your grandparents or earlier generations farmed

[A-B7 (3)] Other [SPECIFY if family has farmed outside of Canada]

[A-B7 (9)] Don't know/Refused

Q-B8X. Regardless of whether you own or rent your land, do you own or co-own your farming operation?

[A-B5 (5)] Yes, own or co-own

[A-B5 (6)] No, someone else owns it, but you still make significant management decisions

[A-B5 (7)] Other [Specify]

[If the farm is owned by a corporation or trust in which you hold a substantial interest, code as [Yes].

Q-B8. Who do you co-own your farm with? (do not read list unless prompted)

[A-B6 (1)] Sole owner or own with only your spouse

[A-B6 (2)] You co-own the farm with one or more family members beyond your spouse

[A-B6 (3)] You co-own the farm with one or more other people who are not your family members

[A-B6 (4)] The farm is owned by a corporation or trust in which you hold a substantial interest

[A-B6 (5)] You manage the farm, but it is owned by another individual or group

[A-B6 (6)] You manage the farm, but it is owned by a corporation or trust in which do not hold a substantial interest

[A-B6 (7)] Other [specify]

[A-B6 (8)] Don't know/Refused

C. Adoption behaviour

Are you currently, implemented the following measures on your farm?

[randomize and read list. If asked, interviewer should clarify that these practices could have been ones implemented by the farm operator on their own, or in partnership with a sector/industry association or government.]

Q-C1. Covered manure lagoons for manure management

Q-C2. 4R practices for fertilizer management

Q-C3. Using fertilizers with dual inhibitors [explain these have two types of nitrogen inhibitors, if needed. Further explain they use both nitrification and urease inhibitors , if needed.]

Q-C4. Splitting fertilizer applications and/or side-dressing fertilizer

Q-C5. Precision agriculture technology

Q-C6. Increasing the use of legumes or pulses in your crop rotation

Q-C7. Zero or low-till

Q-C8. Planting trees on agricultural land (e.g. shelterbelts, trees next to waterways)

Q-C9. Converting marginal croplands to grasslands

Q-C10. Low methane pastures (adding alfalfa and high quality forages in pasture/hay)

Q-C11. Rotational grazing

Q-C12. Planting cover crops

Q-C13. Integrated Pest Management

Q-C14. Liquid manure acidification

[For each question, responses are as follows, do not read]

[A-C14 (1)] Yes

[A-C14 (2)] No

[A-C14 (3)] Not applicable to my farm type

[A-C14 (4)] Don't know or don't understand

[If [YES], then add [Start year]]

D. Attitudes towards adoption

Keeping in mind that changes to your farming operation may require a combination of time, effort and money, how important are each of the following goals to you when making decisions about your farm?

[randomize order]

Q-D3. Maximizing soil health on your farm

Q-D4. Prioritizing on-farm practices that help limit future global climate change

Q-D5. Prioritizing on-farm practices that reduce the negative impacts on your farm from more extreme weather

Q-D6. Having a stable, predictable level of profit from your farming operation

Q-D9. Being a leader in your community

[Use the following response options for all of the above items. Read responses the first time only, unless requested by the respondent]

- [A-D3 (1)] Not at all
- [A-D3 (2)] Slightly
- [A-D3 (3)] Moderately
- [A-D3 (4)] Very
- [A-D3 (5)] Extremely
- [A-D3 (6)] Don't know/prefer not to say [do not read]

Q-D6_NEW. Between these two factors, which is more important in your farming practices: using the most input-efficient technologies, even if they are new to you; or using technologies you are already familiar with, even if they are less efficient?

- [A-D6_NEW (1)] Efficiency is more important
- [A-D6_NEW (2)] Familiarity is more important
- [A-D6_NEW (9)] Don't know/prefer not to say [do not read]

E. Experiences with adopting farm practices

The next questions ask about your experience deciding to start using a new practice or technology on your farm.

Q-E1. What has been the biggest change in farming practice or technology you have made on your farm in the past 5 years? [open response]

Q-E2. Which people or organizations were the most influential in helping you decide whether or not to make this change? For example, government agencies, farming organizations, businesses, people you know. [open response, name up to three]

- [A-E2 (1)] Agriculture and Agri-Food Canada [define as the federal department of agriculture if needed]
- [A-E2 (2)] Your province's department of agriculture
- [A-E2 (3)] National Farming Organizations (e.g., the Canadian Federation of Agriculture)
- [A-E2 (4)] Your national commodity association (e.g., Dairy Farmers of Canada or Canadian Canola Growers Association)
- [A-E2 (5)] Your provincial Farming or Commodity associations
- [A-E2 (6)] Community Farming Groups
- [A-E2 (7)] Environmental NGOs or Non-Profits
- [A-E2 (8)] Agricultural input suppliers (e.g. fertilizer, pesticide, and seed providers)
- [A-E2 (9)] Equipment suppliers and Technicians
- [A-E2 (10)] Agrologists, agronomists, extension workers and/or crop advisors
- [A-E2 (11)] Friends and Family
- [A-E2 (12)] Other Local Farmers
- [A-E2 (13)] Online communities related to farming
- [A-E2 (14)] Any other groups [SPECIFY]
- [A-E2 (15)] Don't know/prefer not to say

Q-E3. Did you receive any financial support to help you make this change? If so, from where and how much?

[A-E3 (1)] Yes [specify organization and approximate amount]

[A-E3 (2)] No

[A-E3 (3)] Don't know/prefer not to say [do not read]

Q-E4. Did you receive any non-financial support to help you make this change? If so, from where and what kind?

[A-E4 (1)] Yes [specify]

[A-E4 (2)] No

[A-E4 (3)] Don't know/prefer not to say [do not read]

F. Information seeking behaviours

The next several questions are about your general experiences learning and hearing about new farming practices and technologies.

Q-F1. In general, in what month(s) of the year are you most likely to look for information about new practices or technologies that you could use on your farm? [enter month or months]

Q-F2. Where are you most likely to look for information about new practices or technologies that you could use on your farm? [select up to three]

[A-F2 (1)] An on-farm demonstration

[A-F2 (2)] An agriculture fair, tradeshow or meeting

[A-F2 (3)] A newsletter (e.g., printed or by email)

[A-F2 (4)] Social media

[A-F2 (5)] Other websites or online forums

[A-F2 (6)] Newspapers, magazines or radio

[A-F2 (7)] Friends or family members

[A-F2 (8)] Other farmers that you know

[A-F2 (9)] Another organization, business or government [specify] [different organizations can count as multiple responses]

[a-f2 (10)] other [specify]

[A-F2 (11)] Don't know/prefer not to say [do not read]

Q-F3. To you, how important is learning about new practices or technologies that you could use on your farm?

[A-F3 (1)] Not at all

[A-F3 (2)] Slightly

[A-F3 (3)] Moderately

[A-F3 (4)] Very

[A-F3 (5)] Extremely

[A-F3 (6)] Don't know/prefer not to say [do not read]

Q-F4. To you, how important is sharing information about practices or technologies you use with other farmers?

- [A-F4 (1)] Not at all
- [A-F4 (2)] Slightly
- [A-F4 (3)] Moderately
- [A-F4 (4)] Very
- [A-F4 (5)] Extremely
- [A-F4 (6)] Don't know/prefer not to say [do not read]

G. Relationships with producers

Q-G1. How often do you tend to speak with other farmers about farming practices or technologies, whether yours or theirs?

- [A-G1 (1)] Never
- [A-G1 (2)] About once or twice a year
- [A-G1 (3)] Several times a year
- [A-G1 (4)] About monthly
- [A-G1 (5)] Several times a month
- [A-G1 (6)] Weekly or more
- [A-G1 (7)] Don't know/prefer not to say [do not read]

Q-G2. Where do you tend to speak with farmers the most about your own or their farming practices or technology use? [select up to three]

- [A-G2 (1)] On-farm demonstrations
- [A-G2 (2)] Agriculture fairs, tradeshow or meetings
- [A-G2 (3)] Non-farming public events
- [A-G2 (4)] Private gatherings with friends or family
- [A-G2 (5)] In the course conducting your farming operations and business
- [A-G2 (6)] On the phone
- [A-G2 (7)] Online
- [A-G2 (8)] Other [specify]
- [A-G2 (9)] Don't know/prefer not to say [do not read]

Q-G3. When it comes to learning about new farming practices or technologies, how important are your connections with formal organizations (such as businesses, governments, farming associations, or commodity associations) compared to your connections with individual farmers in your local area? (read list)

- [A-G3 (1)] Formal organizations are much more important
- [A-G3 (2)] Formal organizations are slightly more important
- [A-G3 (3)] Both are about equally as important
- [A-G3 (4)] Individual farmers are slightly more important
- [A-G3 (5)] Individual farmers are much more important
- [A-G3 (6)] Don't know/prefer not to say [do not read]

H. Organizations that you trust

Q-H1. Can you name up to three organizations or people that you trust the most to help you implement new practices or technologies on your farm? [open response] [If names of people are provided, ask them to explain who they are to them, e.g., neighbour, director of county agricultural association, employee at seed vendor, etc. Do not worry about capturing exact name of individuals, but do try to capture name of organization where appropriate]

Q-H2. What about these organizations (or people) makes them trustworthy? [open response]

I. General perception of organizations (environment)

How much do you trust or distrust each of the following people or organizations to help you implement new practices that can improve your farm's financial and environmental sustainability? For each group, do you strongly trust, trust, neither trust nor distrust, distrust, or strongly distrust them to help you implement such practices? If one of the groups does not apply to your circumstances, please say so.

[randomize and read list. Read responses for the first item in the question stem. After that read answer options only if respondent requests.]

- Q-I1. Agriculture and Agri-Food Canada, the federal department of agriculture
- Q-I2. Your province's department of agriculture
- Q-I3. National Farming Organizations (e.g., the Canadian Federation of Agriculture)
- Q-I4. Your national commodity association (e.g., Dairy Farmers of Canada or Canadian Canola Growers Association)
- Q-I5. Your provincial Farming or Commodity associations
- Q-I6. Community Farming Groups
- Q-I7. Environmental NGOs or Non-Profits
- Q-I8. Agricultural input suppliers (e.g. fertilizer, pesticide, and seed providers)
- Q-I9. Equipment suppliers and Technicians
- Q-I10. Agrologists, agronomists, extension workers and/or crop advisors
- Q-I11. Friends and Family
- Q-I12. Other Local Farmers
- Q-I13. Online communities related to farming
- Q-I14. Any other groups [specify]

[For each of the items in this question stem, use the following responses.]

- [A-I14 (1)] Strongly distrust
- [A-I14 (2)] Somewhat distrust
- [A-I14 (3)] Neither trust nor distrust
- [A-I14 (4)] Somewhat trust
- [A-I14 (5)] Strongly trust
- [A-I14 (6)] Not applicable to my farming context
- [A-I14 (7)] Don't know/prefer not to say [do not read]

J. Agrologists

The next several questions deal with your experiences using professional experts to advise you on your farm operations. These experts may be called agrologists, agronomists, extensions agents, or crop advisors. They may be paid for by you, or by another organization. For simplicity, we will use the term "agrologist" to refer to these kinds of experts.

Q-J1. Over the past year, about how frequently have you used the services of an agrologist, if at all? (read list)

- [A-J1 (1)] Never
- [A-J1 (2)] Only when a problem arose
- [A-J1 (3)] About monthly during the growing season
- [A-J1 (4)] About weekly during the growing season
- [A-J1 (5)] Other [specify]

Q-J2. How do you access agrology services?

[may select multiple answers] [If the response describes something about how they literally communicate (Eg. "on the phone", "online", "on my farm"), prompt by asking "and do you hire them yourself, or do you go through an organization" and, if needed, "what type of organization do you use to access your agrologists"]

- [A-J2 (1)] You hire them yourself, directly
- [A-J2 (2)] Through a government department or agency
- [A-J2 (3)] Through an agricultural input business or organization (e.g., seed, fertilizer or pesticide companies)
- [A-J2 (4)] Through an environmental NGO
- [A-J2 (5)] Through an agricultural or commodity association or group
- [A-J2 (6)] Other [specify]
- [A-J2 (7)] Don't know/prefer not to say [do not read]

In general, how much do these agrologists talk about each of the following factors when discussing new practices or technology? [read options for first question. Only read in subsequent questions if requested by respondent]

Q-J5. Financial benefits

- [A-J5 (1)] Not at all
- [A-J5 (2)] A limited amount
- [A-J5 (3)] A moderate amount
- [A-J5 (4)] A very large amount
- [A-J5 (5)] I don't know/not applicable [do not say]

Q-J6. Environmental benefits

- [A-J6 (1)] Not at all
- [A-J6 (2)] A limited amount
- [A-J6 (3)] A moderate amount
- [A-J6 (4)] A very large amount
- [A-J6 (5)] I don't know/not applicable [do not say]

Q-J7. Impacts on your day-to-day farming operations

- [A-J7 (1)] Not at all
- [A-J7 (2)] A limited amount
- [A-J7 (3)] A moderate amount
- [A-J7 (4)] A very large amount
- [A-J7 (5)] I don't know/not applicable [do not say]

Q-J8. Risks and challenges you may face in implementing them

- [A-J8 (1)] Not at all
- [A-J8 (2)] A limited amount
- [A-J8 (3)] A moderate amount
- [A-J8 (4)] A very large amount
- [A-J8 (5)] I don't know/not applicable [do not say]

Q-J10. What barriers do you encounter that prevent you from using agrology services as much as you would like? [do not read, multiple responses allowed]

- [A-J10 (1)] The cost
- [A-J10 (2)] Scheduling them
- [A-J10 (3)] Lack of relevance in their advice
- [A-J10 (4)] Bias in their advice
- [A-J10 (5)] Other [write down]
- [A-J10 (6)] None
- [A-J10 (7)] Don't know/prefer not to say

Q-J11. Why have you not recently used agrology services? [do not read, multiple responses allowed]

- [A-J11 (1)] The cost
- [A-J11 (2)] Scheduling them
- [A-J11 (3)] Lack of relevance in their advice
- [A-J11 (4)] Bias in their advice
- [A-J11 (5)] Other [write down]
- [A-J11 (6)] Don't know/prefer not to say

Q-J12. Have you ever received agrology services in your time as a farming operator?

- [A-J12 (1)] Yes
- [A-J12 (2)] No

K. **Split question on returns on investment**

We've reached our final several questions to finish up the interview.

[randomly ask either Q-K1 or Q-K2, do not ask both]

Q-K1. Many new practices and technologies require an upfront investment before they become profitable. In general, how long are you willing to wait for a financial return on a new farming practice or technology?

- [A-K1 (1)] It would need it to be profitable within the first year.
- [A-K1 (2)] I could wait longer than 1 year but no more than 4 years for it to be profitable
- [A-K1 (3)] I could wait longer than 4 years but no more than 10 years for it to be profitable
- [A-K1 (4)] I could wait longer than 10 years for it to be profitable

[A-K1 (5)] Don't know/prefer not to say [do not read]

Q-K2. Many new practices and technologies require an upfront investment before they become profitable. In general, how long are you willing to wait for a financial return on a new farming practice or technology that offers significant environmental benefits?

[A-K2 (1)] It would need it to be profitable within the first year.

[A-K2 (2)] I could wait longer than 1 year but no more than 4 years for it to be profitable

[A-K2 (3)] I could wait longer than 4 years but no more than 10 years for it to be profitable

[A-K2 (4)] I could wait longer than 10 years for it to be profitable

[A-K2 (5)] Don't know/prefer not to say [do not read]

L. Additional demographic info

Q-L1. What is your gender identity? [do not read]

[A-L1 (1)] Man

[A-L1 (2)] Woman

[A-L1 (3)] Non-binary

[A-L1 (4)] Gender diverse

[A-L1 (5)] Two-Spirit

[A-L1 (6)] Intersex

[A-L1 (7)] Self-describe [interviewer type in] _____

[A-L1 (8)] Don't know/prefer not to say

Q-L2. What is the highest level of education that you have completed?

[A-L2 (1)] Less than high school

[A-L2 (2)] High school diploma

[A-L2 (3)] College diploma or trade certificate

[A-L2 (4)] Bachelor's degree

[A-L2 (5)] Master's degree or higher

[A-L2 (6)] Don't know/prefer not to say [do not read]

Q-L3. Do you consider yourself to be an Indigenous person, that is, First Nations (North American Indian), Métis or Inuk (Inuit)? [do not read]

[A-L3 (1)] No, not an Indigenous person

[A-L3 (2)] Yes, First Nations (North American Indian)

[A-L3 (3)] Yes, Métis

[A-L3 (4)] Yes, Inuk (Inuit)

[A-L3 (5)] Prefer not to say [volunteered]

Q-L4. How would you describe your racial or cultural group or background? [do not read list, multiple response] [IF respondent answered 2, 3, or 4 to Q-L3, ask instead "In addition to being an Indigenous person, do you belong to any other racial or cultural groups"? [do not read list, multiple response]]

- [A-L4 (1)] White
- [A-L4 (2)] Chinese
- [A-L4 (3)] Black
- [A-L4 (4)] Filipino
- [A-L4 (5)] Arab
- [A-L4 (6)] Latin American
- [A-L4 (7)] Southeast Asian (for example, Vietnamese, Cambodian, Laotian, Thai)
- [A-L4 (8)] South Asian (for example, Indian, Pakistani, Sri Lankan)
- [A-L4 (9)] West Asian (for example, Iranian, Afghan)
- [A-L4 (10)] Korean
- [A-L4 (11)] Japanese
- [A-L4 (12)] Another group [interviewer type in] _____

M. Closing

Thank you for your participation in our survey. Your answers will help make government programs for agricultural producers and communications better.

Q-M1. Before we go, is there anything you would like to add to elaborate on any of the questions or themes that I've asked you about? [open response]

Thank you again for your time.