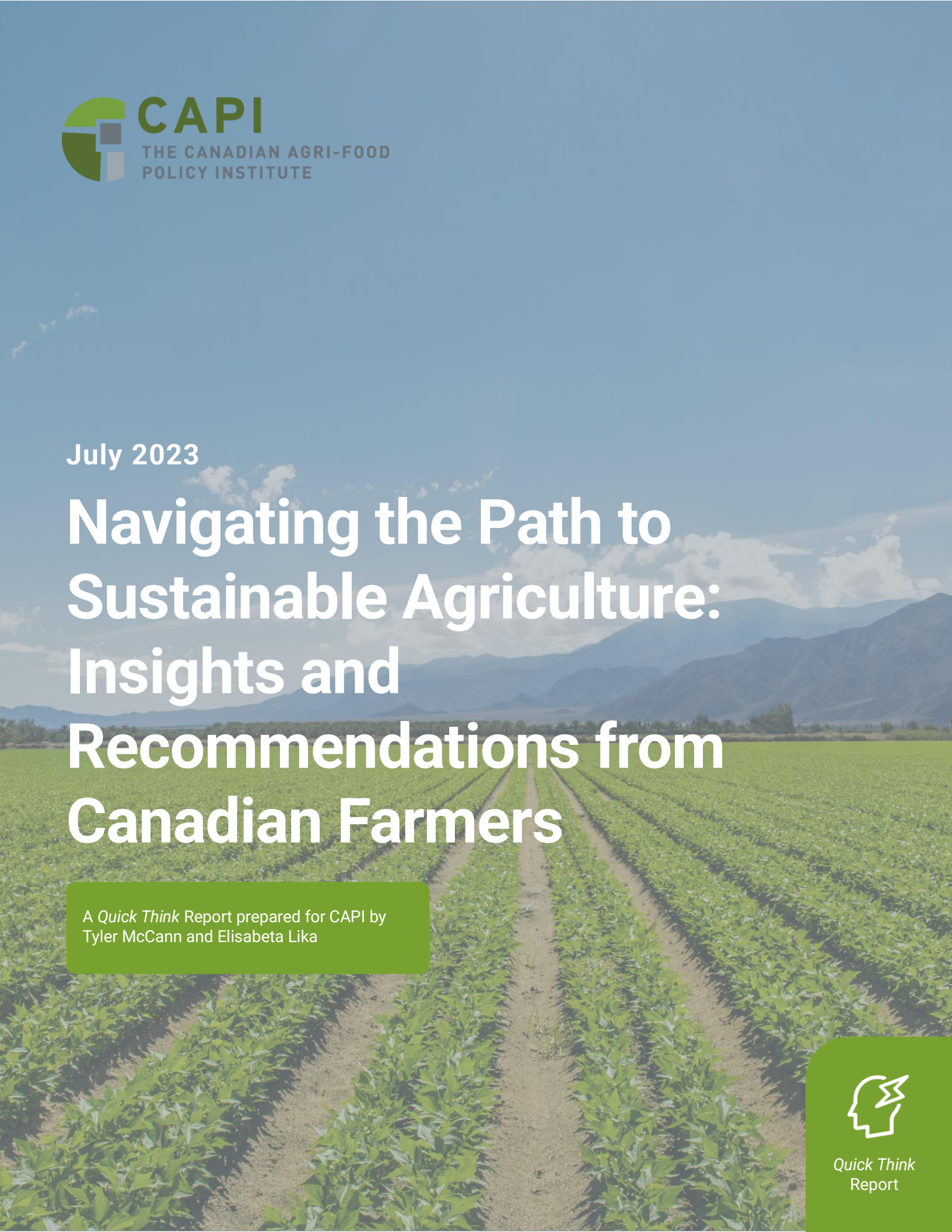

CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

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Navigating the Path to Sustainable Agriculture: Insights and Recommendations from Canadian Farmers

A *Quick Think* Report prepared for CAPI by
Tyler McCann and Elisabeta Lika

Quick Think Report

The Canadian Agri-Food Policy Institute
960 Carling Avenue, CEF Building 60
Ottawa, ON K1A 0C6
www.capi-icpa.ca

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Note from CAPI

In 2023, the Canadian agriculture policy context includes a significant focus on improving agriculture sustainability through improved farming practices. Canadian farmers have demonstrated a willingness to adopt new technologies and practices, but there is an increasing desire to use policy tools to encourage greater adoption of more sustainable practices. Understanding the perspectives of Canadian farmers on adoption and policy is essential to developing effective policies and programs in Canada.

The report aims to provide an understanding of the complex interplay between farmers' attitudes, policy incentives, and the adoption of sustainable farming practices. It leverages a survey of farmers across Canada conducted in partnership with RealAgriStudies. The recommendations provided in this report offer practical steps to improve policy and program design to accelerate the adoption of sustainable farming practices in Canadian agriculture, ultimately contributing to a more sustainable and prosperous future for all.

Key Takeaways

- There is a need for a common and clear definition for sustainable agriculture, sustainable agriculture practices and related concepts.
- Farmers consider themselves good environmental stewards, but also agree there is room to improve environmental performance. Age, region, and farm type all influence the adoption of sustainable farming practices.
- Farmers are interested in participating in sustainability-based incentive programs. Farmers have moderate awareness of programs and perceive them to be inflexible and insufficient, preferring outcome-based incentives.
- Farmers prefer tax credits, and while financial incentives are important, non-financial incentives, including support for extension services, are supported by farmers.
- Existing policies and programs should be improved to better address farmers' needs and preferences. Tailored approaches for different types of farmers and addressing unique barriers are essential for successful policy implementation.

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Introduction

Canadian agriculture is at a critical juncture, facing several environmental concerns, such as climate change, biodiversity loss, and water scarcity. The adoption of sustainable farming and management practices is essential for ensuring long-term food security, environmental stewardship, and economic viability. Farmers have made significant progress adopting new farming practices (Canadian farmers were pioneers in conservation tillage), however, there is potential to increase adoption of more sustainable practices. The understanding of why adoption of sustainable practices may be limited are not fully understood.

To address this knowledge gap and inform government and stakeholder discussions on a sustainable agriculture future, CAPI partnered with RealAgristudies to survey 720 farmers across Canada. The objectives of this survey are to: (1) identify major barriers and incentives to adopting sustainable farming and management practices among Canadian farmers, (2) understand the factors influencing farmers' decisions to adopt these practices and technologies, (3) assess potential usefulness of current policies and programs promoting the adoption, and (4) provide recommendations for policy and knowledge transfer to increase adoption in Canadian agriculture.

Farmers were asked a series of multiple choice and rank order questions related to their experiences with government or private programs, reliance on different sources of information and perspectives on environmental stewardship. Moreover, the survey examined the potential impact of policy changes on farmers' decisions to adopt new sustainable farming and management practices. The survey concluded with an opportunity for farmers to share their opinions, resulting in a considerably high number of responses. These insightful comments effectively complemented the data gathered from the survey questions, and jointly contribute to guiding the development of impactful policy measures and knowledge transfer initiatives aimed at the agricultural community, farmers, producers, and other stakeholders.

Survey Findings and Implications

The survey was conducted electronically from March 23rd – 29th, 2023 with a sample of 720 farmers taken from the RealAgristudies Insights Panel. The RealAgristudies Insights Panel is a collection of farmers from across Canada who have agreed to be surveyed on a variety of topics who are representative of the Canadian agriculture industry. Data has been analyzed using traditional methods including frequencies, means (where applicable) and crosstabulations of demographics. Results of this survey may be interpreted within a margin of error of +/- 4% at 95% confidence.

The survey was conducted in English, and therefore there is a limited response from within Quebec and other French speaking regions. The completed survey, along with detailed questions and response options, can be found in the Appendix section of this document.

Profile of Respondent Characteristics

In presenting our survey findings, it is important to clarify the scope and nature of the sample. The survey was designed to be Pan-Canadian, inviting farmers across both the East and West regions, with most of the provinces represented to varying degrees. This approach allowed us to gather a broad spectrum of views and experiences from diverse farming communities.

However, it is important to note that while our intent was to achieve representation across Canadian farmers, we did not implement a rigorous process to ensure statistical representativeness of the sample. This means that caution should be exercised when extrapolating these results to the entire population of Canadian farmers. Despite this limitation, our study provides valuable insights that can inform policy discussions and initiatives aimed at promoting sustainable farming practices.

Table 1 below provides an overview of the survey sample. The sample includes farmers from both the East (Ontario, Quebec, New Brunswick, Prince Edward Island provinces) and West (Alberta, British Columbia, Manitoba, and Saskatchewan provinces) regions, representing various farm types, sizes and income levels.

Table 1: Profile of respondent characteristics

Category	Subcategory	Percentage
Region	East	38%
	West	62%
Farm Type	Primarily Crops	65%
	Primarily Livestock	9%
	Both	26%
Age Group	Under 35	7%
	35 - 54	35%
	55 and over	59%
Farm Size (Acres)	Under 500	27%
	500 - 999	13%
	1,000 - 2,499	26%
	2,500 - 4,999	18%
	5,000 - 9,999	12%
	10,000 and over	4%
	Under $100,000	13%

Farm Income	$100,000 - $250,000	16%
	$250,000 - $500,000	16%
	$500,000 - $1M	17%
	$1M - $2.5M	23%
	$2.5M - $5M	11%
	Over $5M	4%

Note: The farmers' characteristics presented in this table are grouped according to standard socio-economic categories used by the Census of Agriculture. This allows easy comparison of the survey results with Census of Agriculture data on the characteristics of the farming population.

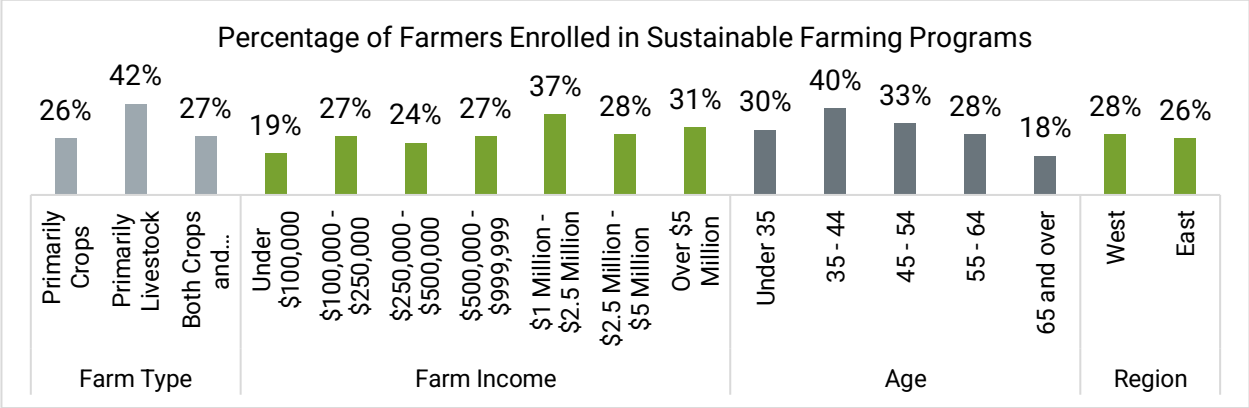
Participation in sustainable farming programs

The participation of farmers in different government or private mechanisms/programs encouraging the adoption of sustainable farming practices (no-till, cover crops, crop rotation, integrated pest management, to name a few[1]) varies across farm types, farm income, farm size, age category, and geographical region.

Livestock farms (42%) show a higher participation rate in sustainable farming programs compared to farms primarily focused on crops (26%) or both crops and livestock (27%). Participation rates also increase with farm size. Younger farmers (35 - 44 years old) show a higher participation rate (40%) compared to older farmers, with the lowest rate observed among farmers aged 65 and over (18%). Data suggests a trend where farmers with a higher income, particularly those earning $1M to $2.5M, are more likely to enroll in sustainable farming programs (Figure 1).

[1] While these examples illustrate a range of sustainable farming practices, it is important to note that they were not explicitly included in the survey. The decision to leave these out was made intentionally in order to avoid limiting or guiding respondents' perceptions of what constitutes a sustainable practice, thereby allowing for a more authentic and comprehensive understanding of how farmers view and engage with sustainability in their unique farming contexts.

Figure 1: Percentage of Farmers Enrolled in Sustainable Farming Programs

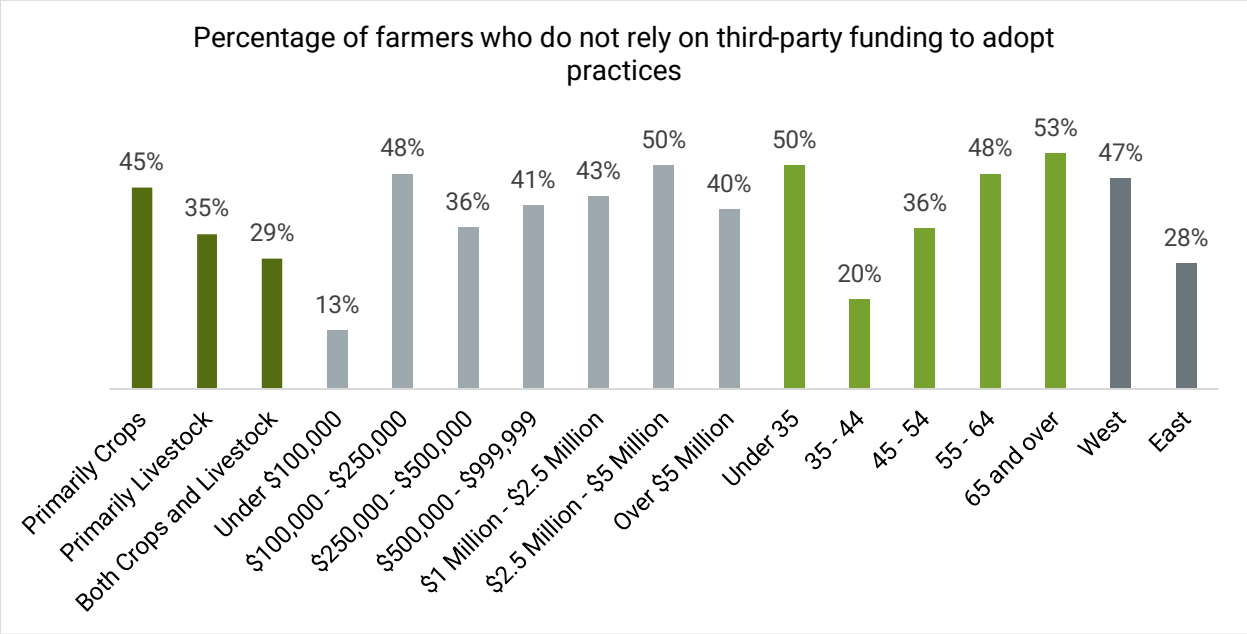


Influence of third-party funding on adoption of sustainable farming practices

Among the farmers who indicated their enrollment in government or private programs promoting sustainable farming practices, we further analyzed their responses to determine if they would have adopted these practices without financial support from third parties. The findings provide interesting insights (Figure 2):

- Across different farm types, a considerable percentage of enrolled farmers do not rely on third-party funding to adopt sustainable practices: primarily crops (45%), primarily livestock (35%), and both crops & livestock (29%).
- Across levels of farm income, a notable portion of enrolled farmers across all income levels adopt sustainable practices without third-party funding, ranging from 13% (under $100,000) to 50% ($2.5M - $5M).
- In terms of farm size, the data shows that enrolled farmers with various farm sizes also adopt sustainable practices without external funding, from 35% (under 500 acres) to 57% (5,000 – 9,000 acres).
- Across age categories, the percentage of enrolled farmers not relying on funding for sustainable practices adoption ranges from 20% (35-44 age group) to 53% (65 and over age group).
- Regionally, the results indicate that 47% of enrolled farmers in the West and 28% of farmers in the East adopt sustainable practices without third-party funding.

Figure 2: Percentage of farmers who do not rely on third-party funding to adopt practices



A significant proportion of farmers currently enrolled in government or private programs promoting sustainable farming practices indicated that they would have adopted these practices even without depending on third-party funding. This likely reflects that farmers are adopting sustainable practices that provide economic and other benefits to their businesses. Non-financial incentives, such as education, training, and technical assistance may also play a significant role in encouraging adoption.

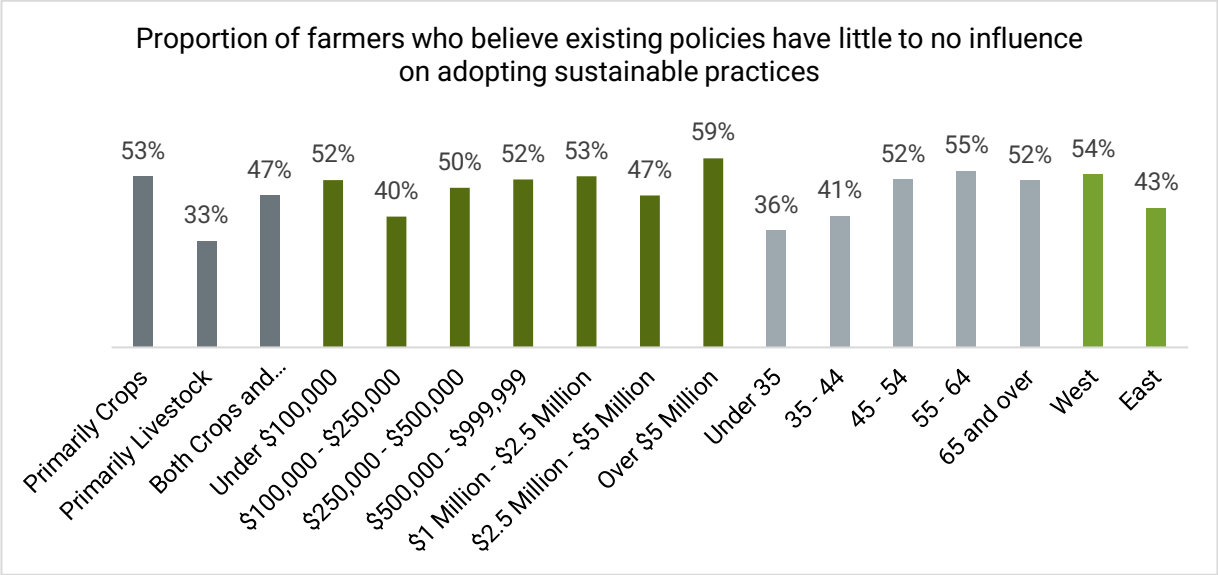
Adoption rates, which vary by age group, region, farm size and income, indicate that a one-size-fits-all policy may not be effective. A multifaceted and targeted policy approach, considering non-monetary incentives alongside financial assistance, is necessary to promote and increase adoption of sustainable practices in agriculture. The large number of farmers willing to adopt some, but not all, sustainable practices without funding indicates potential barriers that prevent full adoption of these practices.

When asked to leave their comments at the end of the survey, some of the farmers expressed concern and confusion around the concept of sustainable agriculture. This definition seemed to vary among individuals, highlighting the need for a clear, consistent, and widely accepted definition of what constitutes sustainable agriculture. Moreover, the varied interpretations and lack of consistency in understanding these practices suggests that the actual adoption rates could be even higher than farmers self report, particularly given the extensive use of conservation tillage, especially in western Canada.

Connecting farmers' perceptions, concerns, and the impact of existing policies

The survey results suggest that a significant proportion of farmers (in many cases, the majority of farmers) believe that existing programs and policies have little to no impact on the adoption of sustainable farming and management practices. This sentiment is consistent across different farm types, income levels, sizes, ages, and regions. Additionally, the data suggests a trend where a significant proportion of farmers across all income brackets believe existing policies have little to no influence on their adoption of sustainable practices (Figure 3).

Figure 3: Proportion of farmers who believe existing policies have little to no influence on adopting sustainable practices



The survey included a series of questions that analyze the effects of various factors, such as information availability, program flexibiliity, interest in participating, payment structures, early adopter rewards, outcome-based payments, and non-financial incentives on farmer perceptions within different categories, including age, income, farm size, and region. The analysis revealed several patterns across different categories of farmers. “Interest in participating” consistently had the highest effect across all categories, indicating a strong interest in participating in sustainable management practices incentive programs. However, “Early adopters rewards” tended to have the lowest effect in most categories, suggesting that farmers may not perceive the rewards for early adopters as adequately motivating.

Among farm income groups, the higher income groups ($ 2.5M and above) showed a preference for “Outcome-based payments”, indicating a desire for payments to be linked to actual outcomes rather than specific practices. The age group 45-54 exhbited a significantly lower effect for “Higher payments to start, decreasing over time”, which differed from the pattern observed in other age groups.

In particular, the results suggest that greater emphasis should be placed on outcome-based payments, especially for higher-income farmers. Additionally, the design of early adopter rewards should be revisited to ensure they are adequately motivating for farmers across different categories.

Some key insights by farmer characteristics include:

- **Farm type:** Regardless of whether farms were primarily Crop (60%), Livestock (72%), or a mixture of both (68%), the highest impact statement was the interest in participating in incentive programs.
- **Farm size:** Smaller farms (Under 500 acres) showed a preference for outcome-based payments (56% of responses). Farms of all sizes expressed a strong interest in participating in incentive programs, with the interest ranging from 62% to 66%.
- **Farm income:** Higher-income farms ($2.5M and above) displayed a 58-63% preference for outcome-based payments.
- **Age:** Farmers in the age group of 45-54 showed a significantly lower effect for "Higher payments to start, decreasing over time" (3%). Younger farmers (Under 35 and 35-44) expressed a strong interest (72-74%) in participating in incentive programs, as did farmers in the 55-64 age group (66%).

- **Region:** Farms in the West region displayed a 59% preference for outcome-based payments, while those in the East had a 72% interest in participating in incentive programs.

To further investigate farmers' views on availability of information on incentive programs and most reliable sources they use when adopting sustainable practices, they were asked to choose from a series of different sources. A general pattern emerges in which smaller farms tend to rely more on local sources like other farmers, while larger farms seem to prioritize industry sources like farm media and crop input retailers.

- Independent crop advisors/consultants are consistently considered the most reliable sources of information across all farm sizes above 500 acres , with the highest percentages in most categories.
- Farmers peers are generally considered a valuable source of information, especially for smaller farms (under 500 acres), but their perceived reliability decreases as farm size increases.
- Farm media ranks highly as a reliable source, particularly for the largest farms (10,000 acres and over), suggesting that large-scale farmers may rely more on industry news and updates for decision-making.
- Crop input retailers are also considered reliable sources, particularly for medium-sized farms (500-2,499 acres).
- University/government extension services are generally perceived as less reliable compared to other sources, and this is relatively consistent across all farm sizes.
- Local conservation groups and equipment dealers are consistently ranked as the least reliable sources across all farm sizes.

Influence of potential policy changes on farmers decisions to adopt new sustainable farming and management practices

The data provides insights into the influence of policy changes on farmers' decisions to adopt new sustainable farming and management practices. A variety of factors, such as farm type, farm size, farm income, age, and region, influence farmers' agreement with different statements related to sustainable farming practices.

Farmers primarily involved in livestock farming show the highest interest in participating in incentive programs (71.6%), compared to those primarily involved in crops (60.1%), or both crops and livestock (67.8%). Interestingly, this pattern also applies to the belief that programs are flexible enough to meet the specific needs of their farms.

Farm size also plays a significant role in shaping these attitudes. Farmers with farms under 500 acres show a high interest in participation (68.4%), followed by those with farms between 1,000 - 2,499 acres (66.4%). However, farmers with farms from 2,500 - 4,999 acres and above 10,000 acres show a reduced interest in participation, indicating that farm size can influence the perceived value and relevance of these programs.

Farm income further nuances these perceptions. Farmers with incomes between $100,000 - $250,000 show the highest interest in participating in incentive programs (76.2%). This interest gradually decreases with income, with the exception of those earning over $5 million annually, who show a slightly increased interest (55.5%).

We also found a discrepancy in the interest towards incentive programs between farmers from the East and the West. Specifically, 71.8% of Eastern farmers expressed interest, while the interest level was lower among Western farmers at 57.5%. The cause behind this disparity is likely multifaceted, encompassing various regional factors such as farming practices, local policies, and economic conditions.

Also, the trade patterns and the influence of buyers could be contributing factors to this difference in response. For example, a growing number of companies include sustainability requirements as part of broader buying programs. Farmers involved with these programs might have a different perspective of what constitutes participation in sustainability initiatives. Those already engaged in such programs may view themselves as active participants, which could influence how they interpret and respond to our survey question about participation in incentive programs. Finally, farmers from the East region show a higher interest in participating in incentive programs (71.8%) compared to those from the West (57.5%).

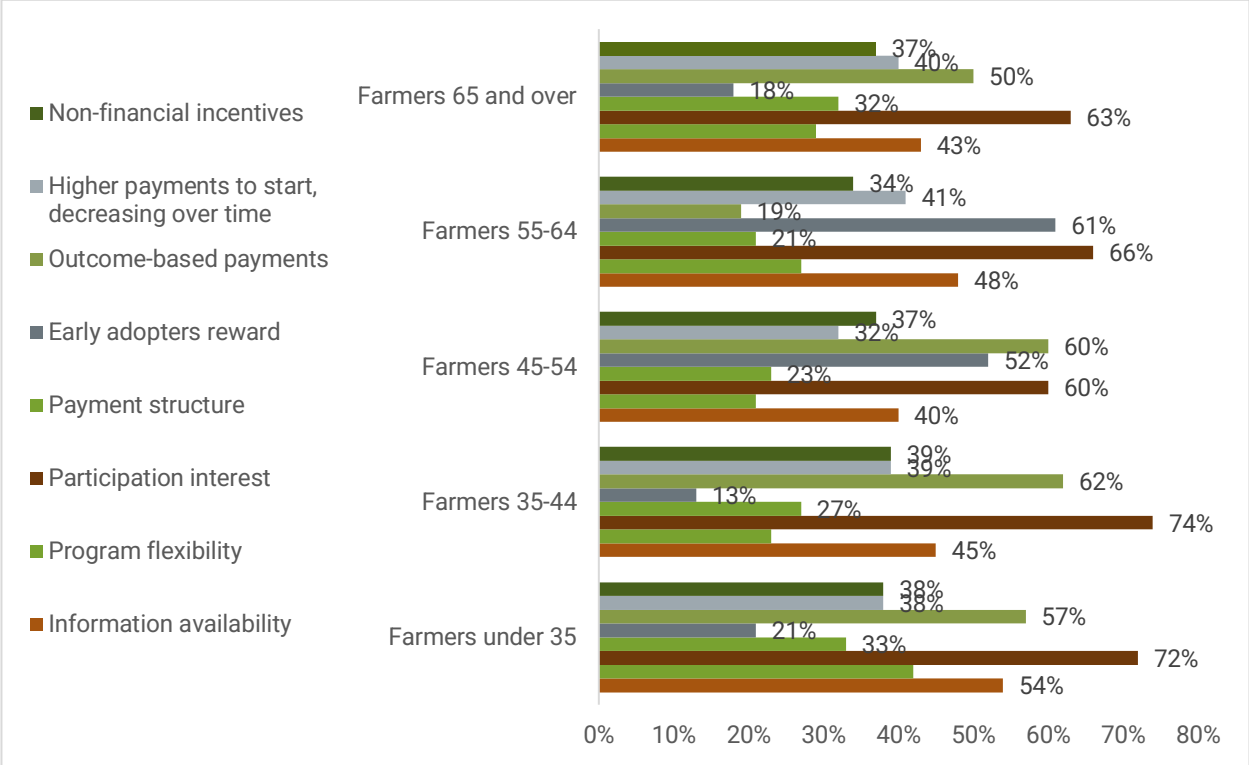
The results suggest that farmers value policies with flexibility and outcome-based incentives. A significant number of farmers across all categories agree that they would prefer if incentives were based on actual outcomes rather than on specific practices. This insight could be crucial for policymakers as they consider how to structure and promote sustainable farming incentive programs.

Also, there is a shared interest across all age groups in participating in incentive programs, with a preference for incentives based on actual outcomes. However, there is less agreement that these programs are flexible enough, adequately reward early adopters, or that the payments are large enough to justify changing practices. This could be an area of improvement for the design of future incentive programs. The following infographic highlights the heterogeneity in agreement levels across different farmers ages. (Figure 4).

In the bar chart presented below, each factor influencing farmers' perceptions of sustainable farming practices is represented by keywords for simplicity. These keywords represent the following concepts:

- *Information availability: Refers to the availability of information about incentive programs for sustainable management practices.*
- *Program flexibility: Indicates whether programs are flexible enough to meet the specific needs of individual farms.*
- *Participation interest: Represents the extent of interest in participating in incentive programs.*
- *Payment structure: Denotes whether the payment structures of existing programs are perceived as large enough to justify changing practices.*
- *Early adopters reward: Relates to whether programs adequately reward early adopters of sustainable farming practices.*
- *Outcome-based payments: Reflects the preference for incentives to be based on actual outcomes rather than on adopting specific practices.*
- *Higher payments to start, decreasing over time: Signifies the preference for the value of payments to start high and decrease over time.*
- *Non-financial incentives: Pertains to the importance of non-financial incentives (such as environmental certification, improved logistics) in the decision to adopt sustainable farming practices.*

Figure 4: Diverse preferences and perceptions across farmers age groups

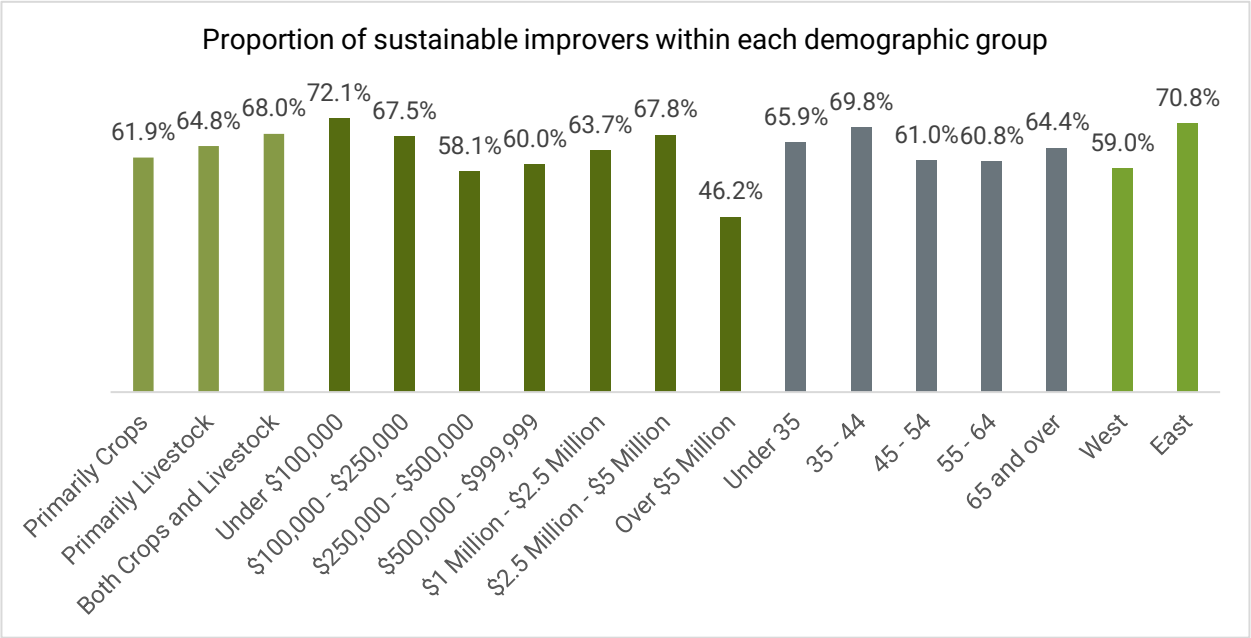


Note: The percentages displayed in the chart correspond to the proportion of respondents in each age group who either moderately or strongly agreed with each statement.

Farmers' Attitudes Towards Environmental Stewardship

Farmers, in general, view themselves as good environmental stewards of the land. There is a general belief that opportunities exist for farmers to improve their environmental stewardship (Figure 5). *In the context of the data, farmers who perceive themselves as effective environmental stewards, while also recognizing there is still room for improvement in their sustainable farming practices are categorized as 'Sustainable Improvers'.*

Figure 5: Sustainable Improvers for the different demographic groups



While assessing the impact of farm type on the adoption of sustainable practices, it was observed that 'Sustainable Improvers' managing both crops and livestock make up 68.0% of the surveyed population. This is slightly higher than the 61.9% for crop farmers and 64.8% for livestock farmers.

With respect to the farm size, we observe a trend where smaller farms tend to have a higher proportion of farmers who consider themselves 'Sustainable Improvers'. Specifically, 71.2% of farmers with under 500 acres identify as such, the highest percentage across all farm sizes. As the farm size increases, this percentage generally decreases, dropping to the lowest percentage of 50.0% for farms with 10,000 acres and over.

Income also seems to play a role in this self-perception. Farmers earning under $100,000 and those earning between $2.5 million and $5 million have the highest percentage of 'Sustainable Improvers', at 72.1% and 67.8% respectively. Interestingly, farmers with the highest income category, over $5 million, have the lowest percentage of 'Sustainable Improvers', at 46.2%. This pattern suggests that perceptions of sustainability can significantly vary based on income.

Younger farmers, specifically those under 35 and those between 35 and 44, tend to see themselves as 'Sustainable Improvers' more so than their older counterparts do, with percentages of 65.9% and 69.8% respectively. This may reflect a generational shift in attitudes towards sustainability and environmental stewardship.

Lastly, the region where the farmers operate also influences their perception of sustainability. The East region has a higher percentage of 'Sustainable Improvers' at 70.8%, compared to the West at 59.0%. This indicates that cultural, environmental, or policy differences between regions may impact farmers' perceptions and practices related to sustainability.

International experience

Insights drawn from international experience

Canada can undoubtedly benefit from the international experience, such as the United States' innovative approaches to delivering incentives for promoting best management practices in agriculture. Two of the main initiatives to promote and incentivize the adoption of conservation practices are the Environmental Quality Incentives Program (EQIP) (which provides financial and technical assistance to farmers and ranchers to

implement conservation practices on their land) and the Conservation Stewardship Program (CSP) (which provides financial assistance to agricultural producers for actively managing and maintaining existing conservation activities and implementing new ones on their agricultural land).The policies are also putting a focus on using the technology (GPS-guided equipment and soil sensors) to promote sustainable practices. In addition to these policies, recently the U.S. Department of Agriculture (USDA) has also launched the On-Farm Conservation Innovation Trials (On-Farm Trials), which aims to encourage the adoption of innovative conservations practices on farms. Under this initiative, farmers receive funding to implement and evaluate conservation practices that are not yet widely adopted.

Another way the U.S. is innovating is through creating partnerships between government agencies, universities, and private organizations to provide education and technical assistance to farmers. One such partnership is the Natural Resources Conservation Service (NRCS) which delivers science-based information, workshops, training and personalized plans to help farmers implement best management practices.

The European Union (EU) is innovating the system of delivering incentives to promote and increase the adoption of sustainable practices in agriculture through the Common Agricultural Policy (CAP), which aims to support farmers and ensure food security while protecting the environment and promoting sustainable agriculture. Under the new reformed CAP, the EU is focusing on eco-schemes which provide financial incentives for farmers who adopt sustainable practices, and mandatory cross-compliance rule that require them to meet certain environmental and animal welfare standards in order to receive CAP funding. These eco-schemes will reward farmers who adopt sustainable practices and penalize those who do not.

Another initiative is the European Innovation Partnership (EIP - AGRI) for Agricultural Productivity and Sustainability, which promotes innovation and knowledge transfer in the agriculture sector. Funding is provided to farmers, researchers, and other stakeholders to work together on innovative projects that improve sustainability and productivity.

Furthermore, the EU has launched several initiatives to promote digitalization in agriculture, such as the Farm to Fork Strategy, which aims to increase the use of digital technologies and data driven farming practices. The EU has also launched the Digital Innovation Hubs for Agriculture, which provide support and farmers and other stakeholders to develop and implement digital solutions that improve efficiency, sustainability, and profitability.

Policy recommendations

Conclusions

Farmers were given the opportunity to conclude the survey by providing comments in an open text box. The feedback from respondants summarizes the findings of the report and are represented in a word cloud (Figure 4). For example, farmers have questions about how sustainability is defined, the role of government, and how regional differences are reflected.

Thesurvey intentionally left the term “sustainable farming practices” undefined. This decision was made to avoid influencing the responses and to allow each farmer’s unique interpretation of the term to emerge, given the varied and nuanced understanding of sustainability in farming.

This lack of specific definition may have led to diverse interpretations among respondents, which underscores the breadth and depth of what sustainable practices can entail. For some farmers, sustainable practices might be synonymous with on-farm improvements that enhance efficiency and productivity. For others, it may involve broader initiatives linked with external programs that provude technical assistance, information, and funding for the provision of public goods.

The findings in this study suggest that farmers may not fully credit themselves for the sustainable practices they have already adopted. A prime example is the widespread use of no-till farming, a practice recognized for its

sustainability benefits. The discrepancy between practice and perception higlights a potential underestimation of the extent of sustainable farming practices currently in operation.

At the same time, farmers raised a wide range of concerns, including the financial impacts, lack of information and access to programs, confusion around the concept of sustainability, financial challenges, regional differences, the importance of research and extension, and the need for improved communications.

In order to more comprehensively understand the attitudes of farmers toward the adoption of sustainable farming practices, we have constructed a dual-modality visual representation-a word cloud (Figure 6[2]) and a thematic infographic (Figure 7[3]). To derive a holistic understanding, it is important to interpret these two infographics in tandem. The word cloud informs us about the terminological frequency, while the thematic infographic guides us to appreciate the interconnectedness of the issues and possible solutions. Thus, these two elements together present a comprehensive visual narrative that offers valuable insights into farmers' attitudes and aspirations towards sustainable farming and governmental support.

Figure 6: Word cloud highlighting farmers' opinions and concerns on the topic

Note: The word cloud is generated from analysis of open-ended question responses, highlighting main themes

[2] The word cloud has been generated based on the open-ended responses from our surveyed farmers. It encapsulates the frequency with which specific words were utilized in their feedback. Notably, the prominence of each word in the cloud directly correlates to its usage rate, with the most frequently used words appearing in a larger, more dominant font. However, it is essential to recognize that the word cloud reflects the linguistic tendencies of the respondent rather than their emotional or qualitative leanings towards a given concept. For instance, 'sustainable farming' in the could indicates its conversational prevalence, not necessarily a positive or negative sentiment.

[3] On the other hand, the thematic infographic provides additional depth and context to these conversations. This infographic provides additional depth and context to these conversations. This infographic organizes the primary concerns of respondents into distinct themes, each complemented by relevant suggestions for governmental action. The pairing of the concerns and the recommended improvements paints a clearer picture of the farmers' perception and potential role of the government in promoting the adoption of sustainable farming practices.

Figure 7: Main concerns and suggestions for improvement revealed from the open-ended responses

Policy recommendations

Understanding farmers' perspectives on sustainability and their views on policy measures is a cornerstone in creating strategies that will foster the adoption of sustainable farming practices. Here are key recommendations for policy:

- **Recognize Heterogeneity**: The varying attitudes towards policy programs and sustainable practices across different farm sizes, types, and regions, as revealed by this survey, highlight the need for innovative policies that account for these differences.

- **Prioritize Outcome-based Incentives**: There's a prevailing perception that current incentives are insufficient to warrant a shift in farming practices. Policies should be oriented towards flexible payment structures that incentivize actual outcomes, not just specific practices.

- **Supplement Financial Incentives**: Consider enhancing financial rewards with non-financial ones such as extension and certification systems. This can further motivate farmers towards adopting sustainable practices.

- **Invest in R&D**: Farmers have shown willingness to adopt sustainable practices even without incentives. Therefore, funding research and innovation, particularly for systemic solutions that can be integrated within existing farming systems, is crucial.

- **Enhance Education and Dialogue on Sustainable Agriculture:** In the light of diverse interpretations of sustainable farming practices, it is crucial to encourage more explicit dialogue about the scope and definition of sustainable agriculture in policy discussions. A shared understanding of what sustainability means in the context of agriculture could bridge the gap between the practice and perception and inspire more farmers to

adopt and acknowledge sustainable practices that they may already implemented without necessarily labelling them as such.

- **Facilitate Public-Private Partnerships**: Promoting partnerships allow farmers to combine government incentives with private sector and philanthropic contributions can be a viable alternative.

- **Tap into Youth Potential**: Leveraging the potential of younger farmers who often show a higher inclination towards policy changes and sustainable practices could be a driving force in encouraging a generation of sustainability-conscious farmers.

- **Engage with Downstream Customers:** Recognize the significant role of food processors and customers in shaping farming practices through their sustainability marketing strategies. Engaging these companies in dialogue and collaboration could help align their consumer messaging with the promotion of sustainable practices among farmers. This engagement is particularly important given the varied influences and market dynamics at play in the larger farming industry.

- **Adopt a Multifaceted Approach**: Promoting sustainability among farmers necessitates a comprehensive strategy that acknowledges the unique challenges faced by different farming communities. This approach should combine a variety of strategies, including financial incentives and extension services, to facilitate and promote the adoption of different and new farming practices.

Appendix

Incentivizing Sustainable Agriculture Practices – Questionnaire

1. To begin, are you currently enrolled in any government or private mechanisms/programs encouraging the adoption of sustainable farming practices?

   Yes
   No

2. In your opinion, would you have adopted these practices without having received funding from third parties? (ie, government or other parties)

   Yes
   No
   Some, but not all

3. How much impact do existing programs and policies have increasing the adoption of sustainable farming practices?

   They impact adoption *a lot*
   They impact adoption *a little*
   They have *very little* impact on adoption They *don't impact* adoption at all

4. Whether or not you participate in programs encouraging adoption of sustainable management practices, please indicate to what extent you agree with the following statements. ***< 1 = Completely disagree, 2 = Somewhat disagree, 3 = May or may not agree, 4 = Somewhat agree, 5 = Completely agree>***

   Information about sustainable management practices incentive programs is readily available

   Programs are flexible enough to meet the specific needs of my farm

   I am interested in participating in incentive programs

   The payment structures of existing programs are large enough to justify changing practices

5. Here are a few more statements related to adoption of sustainable farming practices. Please indicate to what extent you agree with the following statements ***< 1 = Completely disagree, 2 = Somewhat disagree, 3 = May or may not agree, 4 = Somewhat agree, 5 = Completely agree>***

   Programs adequately reward early adopters of sustainable farming practices

   I would prefer if incentives were based on actual outcomes rather than on specific practices

   I would prefer if the value of payments were higher to start but decreased over time

   Non-financial incentives (environmental certification, improved logistics) are as important in the decision to adopt sustainable farming practices as financial incentives

6. Please indicate the degree to which you rely on each of the following sources of information: ***< 1 = I don't rely at all, 2 = I don't rely very much, 3 = I rely a little, 4 = I rely a lot>***
   Other local farmers

Demonstration farms, field days, etc.
Local conservation groups
University/government extension
Farm media
Independent crop advisors/consultants
Crop input retailers Equipment dealers
Family members
Government guidance/support

7. Please indicate your level of agreement with the following statements regarding environmental impact ***< 1 = Completely disagree, 2 = Somewhat disagree, 3 = May or may not agree, 4 = Somewhat agree, 5 = Completely agree>***
   Farmers are good environmental stewards of the land
   There is significant opportunity for farmers to improve their environmental stewardship
   Farmers should be compensated for previously implemented improvements environmental outcomes
   Farmers should be compensated for future improvements designed to improve environmental outcomes
   Reducing greenhouse gas emissions coming from agriculture is important
   I am willing to change my current practices to benefit the environment even more

8. Please indicate the *level of influence* each of the following potential policy changes might have on your decision to adopt new sustainable management practices. ***< 1 = Not influential at all, 2 = Not very influential 3 = Neutral, 4 = Somewhat influential, 5 = Very influential>***
   Increase in the share supported by the government for the sustainable management practices adoption (i.e. strip tilling, fencing for rotational grazing)
   Tax credits for the adoption of the new sustainable management practices (i.e. strip tilling, new irrigation system)
   Payments for reducing greenhouse gas emissions, associated with the adoption of the sustainable management practices
   Increased funding for extension or knowledge transfer