



The Impacts of Climate Change on Agricultural Finance

Insights from a survey of 167 agricultural finance institutions



Deloitte.

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Deloitte is the world's largest professional services provider and has deep experience working on climate-related goals, plans, and disclosures, with industry leaders in the agriculture, food systems, and finance sectors.

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Executive summary

The world's agriculture and food systems are under stress from climate change, due to more extreme weather events, increased water scarcity in some regions and severe rainfall in others, altered temperature patterns and increased pest pressure.¹ These impacts will decrease crop and livestock productivity in most regions, though some regions will experience productivity increases.² These effects can impact the price, quantity and quality of food production, and the resulting challenges cascade through supply chains.³ The consequences of these trends for food security and economic and social stability are profound. In addition to experiencing these consequences of climate change, the agricultural sector, including related land use emissions, also accounts for approximately one-third of greenhouse gas emissions globally as of 2018, which presents risks to the sector if governments transition to a low-carbon economy.⁴

The agricultural sector can respond to the challenges posed by climate change by investing in climate-smart agricultural practices and technologies that reduce GHG emissions and build climate resilience. These investments in climate change mitigation and adaptation could involve methane reduction from livestock and dairy production, nitrous oxide reductions from crop fertilizer application, prevention of land conversion associated with agricultural production, crop and livestock diversification, cover crops and reduced soil tillage. Farmers and ranchers also have opportunities to participate in new markets for climate-smart products and credits, which will provide new or improved revenue streams.

The agricultural finance sector is affected by the risks and opportunities associated with climate change. Farmers use finance to purchase land, equipment and farm inputs. An array of institutions offers these financial services to farmers, from multinational banks to local credit cooperatives. These agricultural finance institutions have close relationships with the farmers and ranchers they finance that can span decades and sometimes generations.

The global financial sector has begun to mobilize around financing a zero-emissions and climate-resilient economy, yet little attention has been paid to agricultural finance despite agriculture's vulnerability to climate change. Agricultural finance institutions need tailored information on climate risks and opportunities in order to support their farmer clients in navigating the challenges and opportunities associated with climate change. This first-of-its-kind survey brings insights on climate risks and opportunities specifically to the agricultural finance sector.

In 2022, Environmental Defense Fund and Deloitte conducted a survey of 167 finance institutions serving the agriculture sector in North America, Europe and India to measure the climate change perceptions, actions and challenges at agricultural finance institutions. The survey was supplemented by interviews of 20 executives from 13 agricultural finance institutions. The objective of the survey was to understand how climate change is perceived by agricultural finance institutions and how they are responding. All facts and figures in this report come from this survey unless otherwise specified.

Climate change will present risks and opportunities to agricultural finance institutions.

- Globally, 87% of respondents expect climate change to pose a material risk to their business. The survey revealed that 45% of agricultural finance institutions think that climate change will present both risks and opportunities for their businesses in the short-term and long-term.
- The impacts of changing and extreme weather in the last five years have mostly presented negative impacts to financial institutions due to changes in costs, regulation and operations. Respondents reported that their farmer clients were also negatively impacted through increased drought and more extreme heat.
- Fifty-six percent of agricultural finance institutions expect climate change to negatively impact the financial situations of their clients through higher probability of default and loss given default in the future.
- Fifty-nine percent of agricultural finance institutions also expect climate change-driven business opportunities including increased demand for new financial products and services.





Agricultural finance institutions are still developing their climate change strategies.

- Three-quarters of agricultural finance institutions do not significantly consider climate change impacts in their decision-making processes.
- Nearly 60% of respondent finance institutions have not set goals for climate change for their agriculture portfolio.
- While most (92%) agricultural finance institutions outside the U.S. have dedicated staff managing Environmental, Social and Governance (ESG), weather-related risks or climate risks, only half of agricultural finance institutions within the U.S. (52%), have assigned someone to drive these efforts.
- Many agricultural finance institutions (66%) collect climate and weather data and utilize it for various purposes including weather risk assessments and scenario planning (98% of those that collect that data).
- In addition, many agricultural finance institutions (70%) partner with external organizations to provide additional support for their agricultural clients to manage climate risks and impacts.

Barriers need to be addressed for agricultural finance institutions to take greater action on climate risks and opportunities.

- The key barriers preventing agricultural finance institutions from taking further action to manage the climate risks and opportunities include the lack of climate and client production data to effectively integrate impacts (46% of respondents), and the lack of return on investment from investing in actions to address climate risks and opportunities in their agricultural portfolios (35% of respondents).
- The main drivers that encourage agricultural finance institutions to address climate change impacts include regulation (50%) and client demand (49%).

Key strategies can help agricultural finance institutions address climate risks and opportunities.

To better understand the impacts of climate change on their agricultural clients and portfolios and manage the associated risks and opportunities, agricultural finance institutions can integrate the following strategies:



Strategy 1: Climate risk governance

Building an ESG team is a first step to educate firm leadership on climate change impacts and build a framework to manage climate risks and opportunities in agriculture portfolios.



Strategy 2: Data collection and analysis

Collecting relevant weather data and conducting climate scenario analysis will inform firms about the extent to which their agriculture portfolios are exposed to physical and transition risks in varying climate scenarios.



Strategy 3: Climate-smart product offering

Offering products to match the changing financial needs of agriculture clients due to climate change can enable clients to better manage climate change impacts, improve the risk profile of agriculture portfolios, and potentially boost revenue from offering new products to meet a growing need.



Strategy 4: Partnerships

Partnering with external organizations with expertise in climate change education, data management, transition incentives and technical advice on implementation of new farm practices will provide additional support for agricultural finance institutions and their clients to manage the impacts of climate risks.

This survey is a first-of-its-kind for agricultural finance institutions, and it reveals that many institutions are alert to the risks and opportunities inherent to climate change, but need greater support to take action. The survey results can guide the development of further information, resources and collaboration to support the agricultural finance sector to mitigate climate risks and take advantage of climate opportunities.

About the survey

Survey objective

This survey was conducted to better understand agricultural finance institutions' perceived climate risks and opportunities, and the actions they are taking or plan to take in response. The results of the study can be used to direct the development of further information, resources and collaboration to support action by the agricultural finance sector to mitigate climate risks and take advantage of climate opportunities.

Survey approach

EDF and Deloitte designed a 25-question survey with subject matter experts across the agriculture, finance and risk sectors.

A total of 167 financial institutions were surveyed that either entirely focus on agriculture or have a dedicated agricultural lending arm, and which serve the geographies selected as a focus for the survey (see Respondent Profile, next section). A survey vendor provided 95 double-blinded respondents. To secure the remaining respondents, EDF and Deloitte leveraged existing relationships with partners, clients, and banking associations to ensure high survey response rates. All responses were anonymous.

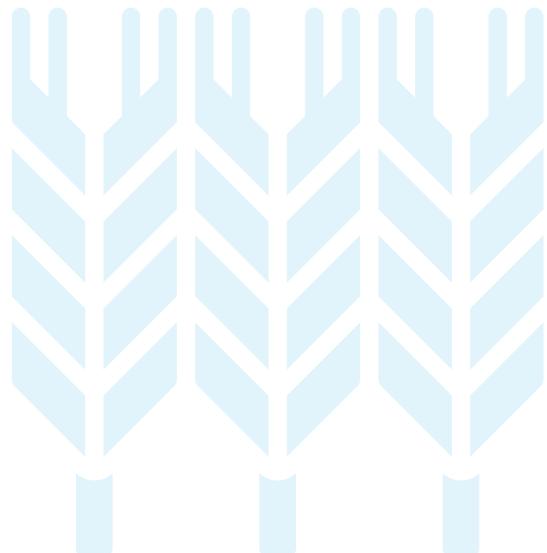
Interviews

To supplement the survey data, 20 informational interviews were conducted to gain a better qualitative understanding of the relationship between agricultural finance institutions and climate risk and opportunity.

Respondent profile

To achieve representative results, the survey respondent pool aimed to reflect the weighting of agricultural loan market share by institution type seen in each geography. To identify more nuanced and emerging trends, the survey also includes a small number of minor players, including local co-ops and startups in relevant geographies.

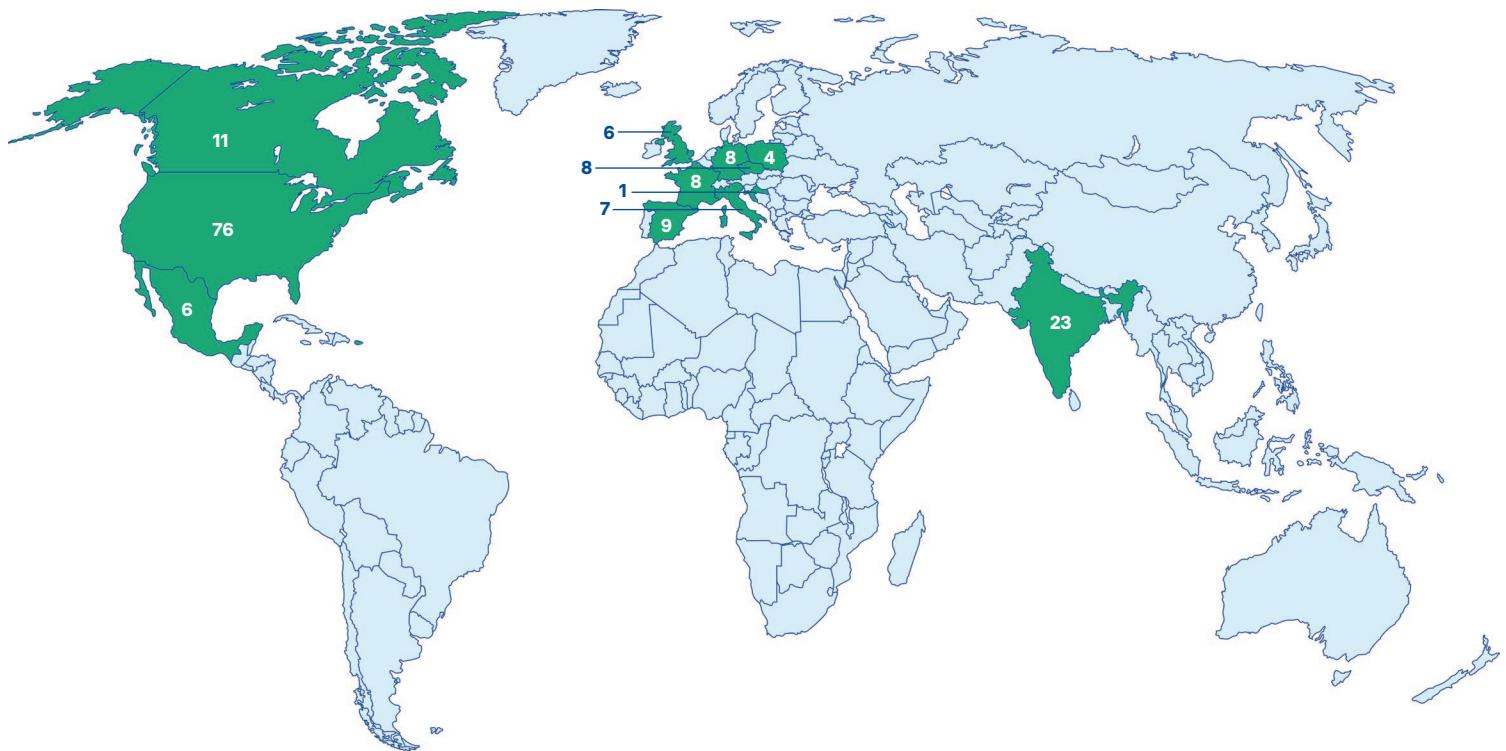
Throughout the report, the data exhibits and global references will present survey results across North America, Europe, and India. If there are noteworthy region-specific results within these geographies, the data will be presented for those specific regions, such as Eastern and Western Europe or the U.S. separate from North America. Respondents face different regulatory and stakeholder pressures in their respective countries that impact their approach to climate risks and opportunities. These regional differences in regulatory and stakeholder pressure should be kept in mind when interpreting differences in regional responses.



Respondent profile

The numbers displayed in the map below indicate the number of respondents in each of those countries.

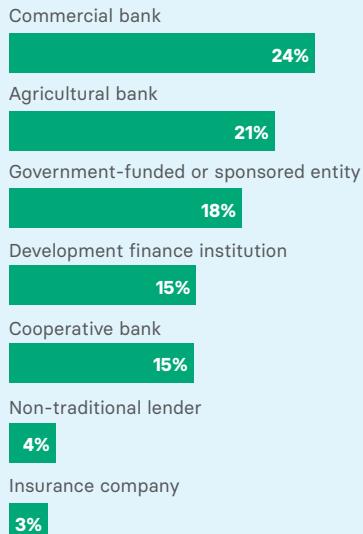
167 respondents from 12 countries



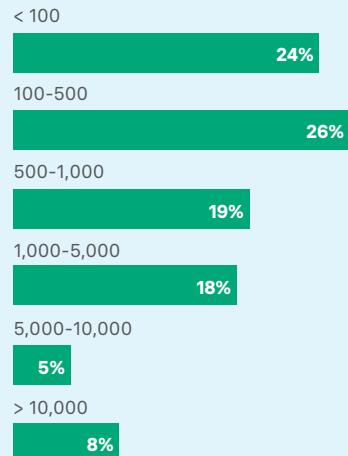
Respondent job title



Institution type



Number of employees



Climate change perceptions

How do agricultural finance institutions perceive the future impacts of climate change on their businesses and their clients?

The survey set out to understand the recent weather changes and extremes agricultural finance institutions and their clients have experienced, and how they expect climate change to impact their businesses in the future.

Agricultural finance institutions were asked how weather changes or extremes have impacted their business and their agricultural clients in the past five years. This information was gathered to set a baseline of weather changes or extremes currently impacting the respondents that are projected to increase in the coming decades because of climate change.

Most (87%) of the agricultural finance institutions surveyed experienced negative business impacts from weather changes or extremes in the last five years.

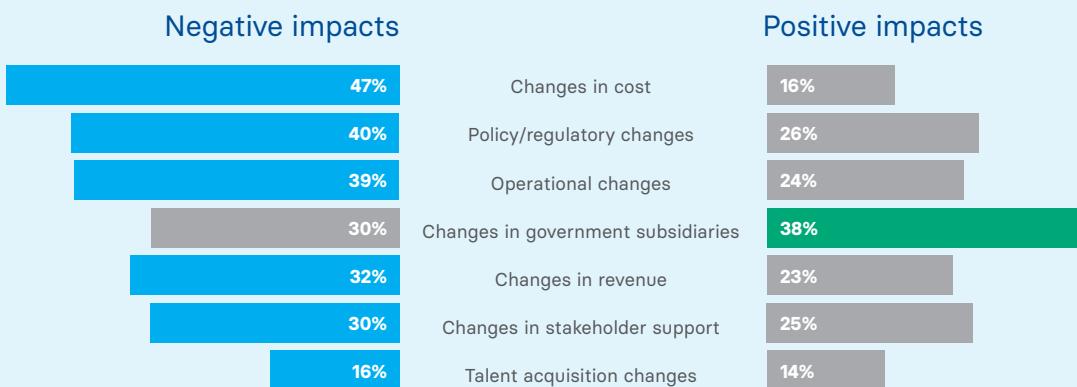
The main negative impacts reported were changes in costs (47%), policy and regulatory changes (40%), and operations (39%).

A smaller percentage of respondents (72%) experienced positive impacts from weather changes or extremes, most notably, a change in policy or regulation. The benefits from changes in policy could include increased funding for disaster response or increased incentives for climate-smart agriculture practices. Figure 1 shows these perceptions of impacts, with the colored bars indicating if more respondents perceived an impact as negative (blue) or positive (green).

Globally, agricultural finance institutions view the impacts from weather extremes or changes as mostly negative.

FIGURE 1.

Impacts from weather changes or extremes seen globally on agricultural finance institutions over the last five years.

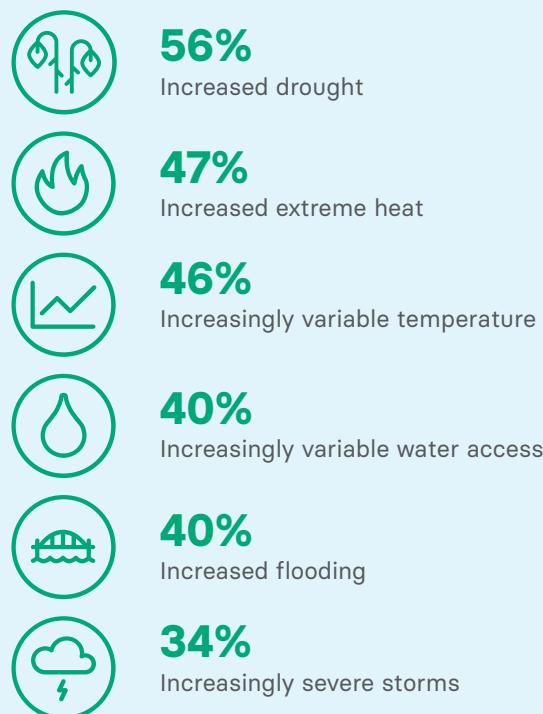


Eighty-seven percent of agricultural finance institutions also stated that weather changes or extremes have negatively impacted their agricultural clients as described in Figure 2. The impacts on agricultural clients highlighted by respondents were increased drought and extreme heat across North America and Europe, and increasingly variable water access and variable temperature in India.

Notably, 29% of agricultural finance institutions in the U.S. perceive there to be no extreme or changed weather impacts on their agricultural clients over the last five years, compared to 0% respondents from other countries surveyed.

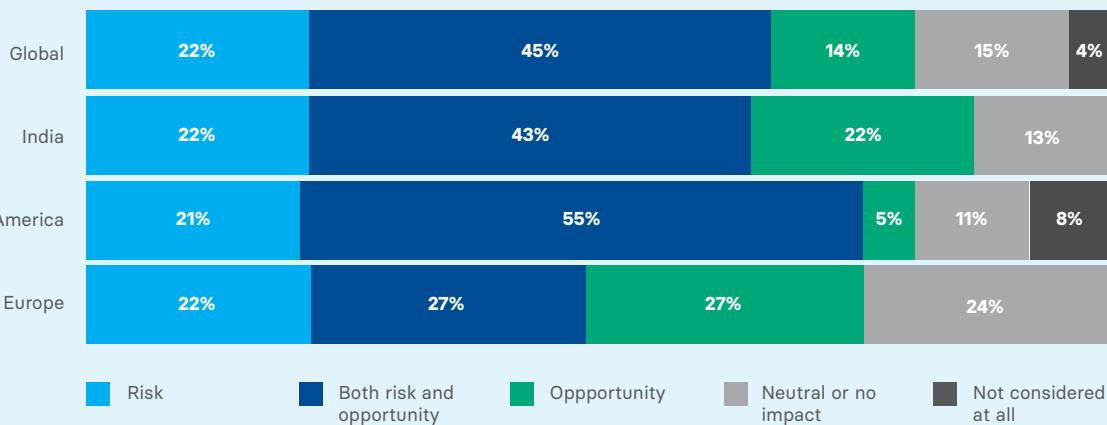
Respondents were then asked whether they perceive weather changes and extremes as risks or opportunities to their businesses. Sixty-seven percent stated that it presented risks and 59% said it presented opportunities. Figure 3 shows that 45% of survey respondents expect climate change to present both risks and opportunities to their business.

FIGURE 2.
Impacts from weather changes or extremes seen on agricultural finance clients globally.



Percentage of global respondents that expressed their clients have been impacted by this weather event

FIGURE 3.
Agricultural finance institutions' overall perceptions of climate impacts.



The survey results demonstrate that agricultural finance institutions and their clients have faced impacts from weather changes and extremes, but do they expect climate change to present greater risks in the future? Respondents were asked if they expect climate change to become a material risk to their businesses in the short- or long-term, and whether they expect the material risk to be associated with physical or transition risk. Overall, 87% of respondents expect climate change to pose a material risk to their businesses (Figure 4).

The risks presented from climate change that directly impact agricultural finance institutions are categorized into physical risks and transition risks.

In North America and India, long-term (greater than five years) transition risks are the main risks that agricultural finance institutions are most concerned over, followed by long-term physical risks. In Europe, firms are most concerned over material risk presented from short-term (less than five years) physical risks, followed by long-term physical risks caused by climate change.



Physical risk

Physical risks are the risks caused by the physical effects from climatic events.

Examples of physical risk include increased frequency or severity of heat, flooding, drought, storms and other related events on facilities and infrastructure, operations, water and raw material availability, and supply chain disruptions.



Transition risk

Transition risks are the risks inherent when a society transitions to a low-carbon economy.

Examples of transition risk include changes in strategies, costs, policy and regulations, operations, technology and consumer demand as industries work to reduce their impact on the climate.



FIGURE 4.

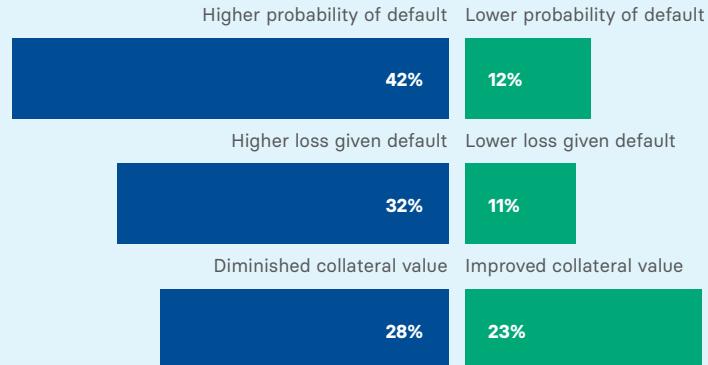
Agricultural finance institutions that anticipate material risk from climate impacts.



Long-term transition risk is a key concern among agricultural finance institutions globally.

Agricultural finance institutions expect climate risks to manifest in part through changes in their client's financial performance (Figure 5). Eighty-three percent of respondents expect climate change to change the financial situation of their clients. Forty-two percent of respondents expect climate change to increase the probability of loan default in their agricultural portfolios, while only 12% expect it to decrease. Thirty-two percent of the respondents expect loss given default to increase, and 11% expect it to decrease because of climate change impacts.

FIGURE 5.
Expected impact on clients' financial situations from extreme and changed weather conditions.



Probability of default: the probability that a borrower will default on loan repayments.

Loss given default: the estimated amount of money the lender may lose when a borrower defaults on a loan.

In India, over 50% of agricultural finance institutions expect to experience a higher loss given default due to the impacts of extreme and changed weather conditions. Over 60% of agricultural land in India is rainfed.⁵ If there is one failed monsoon that leads to insufficient rainwater required for production, farms may experience a loss of crops for the season, increasing the likelihood that farmers will default on their loans due to lack of crop yield and income.

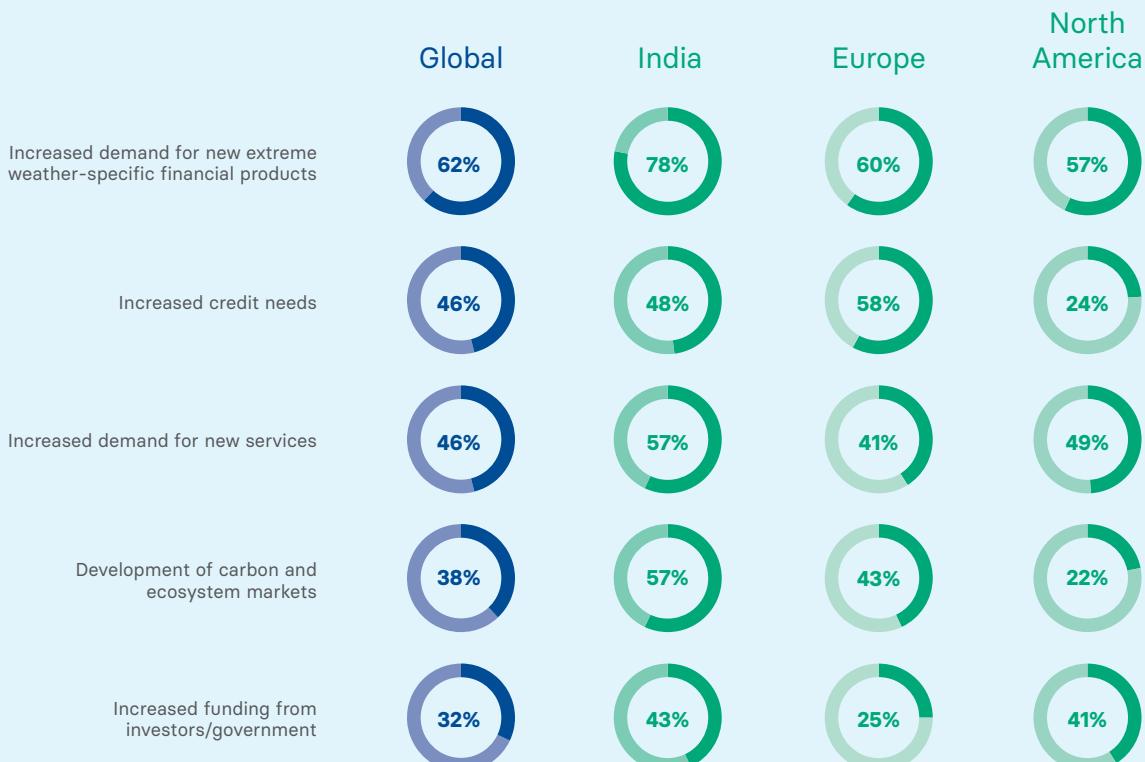
Global respondents expect that collateral values could increase or decrease due to climate change depending on the climate impacts on agriculture in different regions. In some colder regions, the length of cropping seasons may be extended due to rising temperatures⁶, which may improve the financial situation and collateral of some agricultural producers. In other regions, increased occurrence or intensity of drought may reduce multi-year crop

yields⁷ and reduce land value, resulting in diminished collateral value.

In the U.S., 34% of financial institutions do not expect a change in the financial situation of their agricultural clients from climate change, compared to 0% in India, 2% in Europe and 9% in Canada.

Respondents were also asked about opportunities associated with climate change. Fifty-nine percent of respondents expect climate change to present opportunities to their businesses (Figure 3). These opportunities include increased demand for weather-specific financial products (62%), increased credit needs (46%), new services to assist with a transition to climate-smart agricultural practices (46%), development of carbon markets (38%) and increased funding from investors and government entities (32%).

FIGURE 6.
Most commonly identified opportunities from climate impacts.



Agricultural finance institutions' responses to climate change

How are agricultural finance institutions currently responding to the impacts of climate change?

After establishing the extent to which agricultural finance institutions expect climate change to impact their business, the survey looked at how these institutions are responding to climate change risks and opportunities to their business and their agricultural clients.

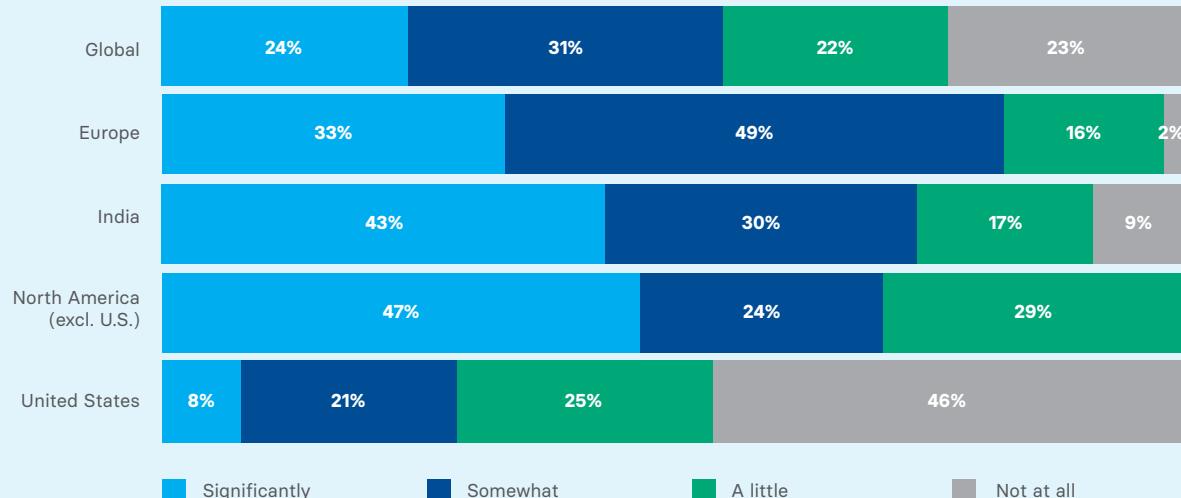
While agricultural finance institutions view climate change impacts as risks and opportunities for their business, many agricultural finance institutions are still developing strategies to integrate climate change into their business. Only 24% of agricultural finance institutions significantly factor climate

change impacts into their decision-making process, while 31% factor it somewhat into decisions (Figure 7). Twenty-three percent of global respondents say they do not factor climate change into their decision-making process at all. Within the U.S., 46% of agricultural finance institutions do not consider climate change impacts at all in their decision-making process.

Among U.S. respondents, 46% do not consider climate change impacts in their decision-making process.

FIGURE 7.

How much does climate change factor in the decision-making process?



Respondents were also asked about setting goals related to climate change, which could include net zero emissions targets, clean energy goals or other internal or external objectives. Forty-one percent of agricultural finance institutions globally have set goals for climate change in their agricultural lending portfolio, while 59% have not (Figure 8). Of the respondents that have not set goals, 42% plan to do so. In the U.S., 71% of agricultural finance institutions have not set climate change goals for agriculture and do not have plans to do so (Figure 8).

A critical component to agricultural finance institutions' ability to consider climate change in

their decision-making or set climate change goals is to allocate internal resources for the staffing and governance needed to manage such efforts. Over 90% of agricultural finance institution respondents outside the U.S. have assigned employees to manage ESG, weather-related risks for agriculture or climate change issues. In the U.S., nearly half of agricultural finance institutions have not hired such employees (Figure 9). Smaller agricultural finance institutions in the U.S., those with less than \$2.5B USD in asset size, were less likely to have assigned ESG employees (47% of smaller institutions vs. 64% of larger institutions). In North America and India, government-funded or sponsored entities were more likely to have assigned ESG employees.

FIGURE 8.
Institutions with agricultural goals for climate change.

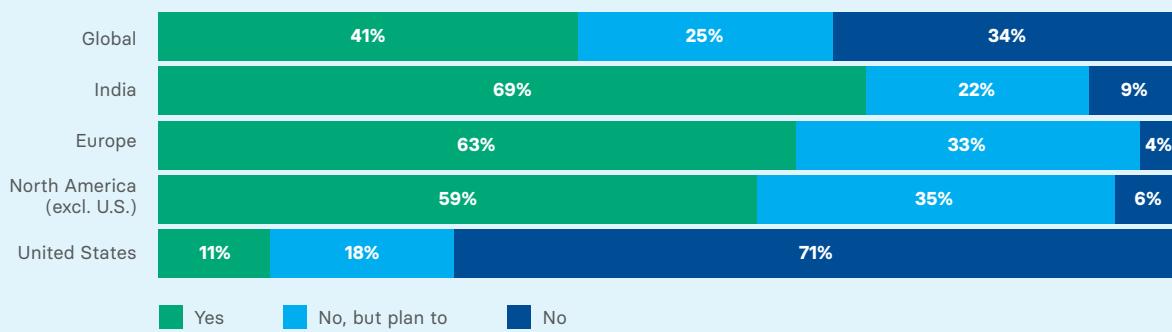


FIGURE 9.
Agricultural finance institutions that have assigned ESG, climate risk or weather risk employees by region and entity type.

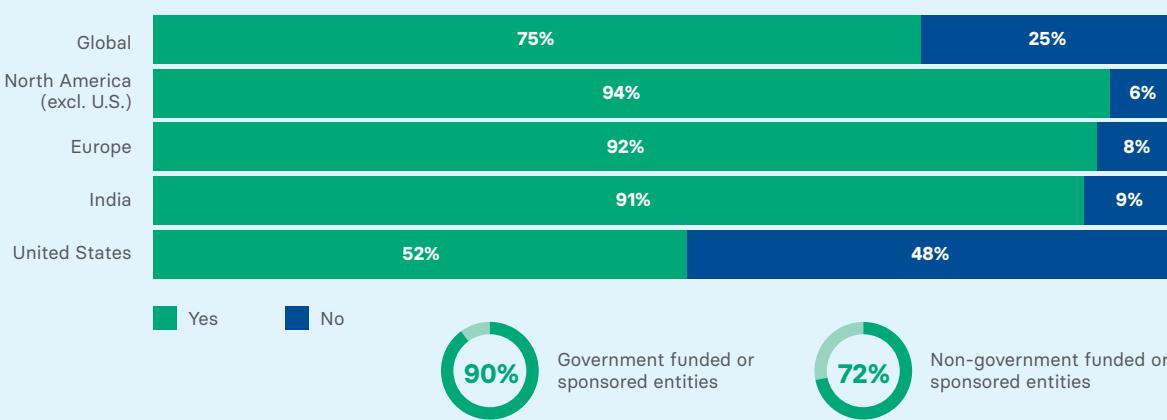


Table 1 displays the percentage of respondents across the survey geographies that have employees focused on ESG, weather-related risk for agriculture or climate change. Globally, agricultural finance institutions are more likely to have broader ESG focused employees (46% of respondents), than employees with a focus on weather or climate change (34% of respondents respectively).

Climate, weather and production data is also essential to evaluate climate risk. The survey asked whether respondents gather climate, weather and production data and how they are using that data.

Outside the U.S., 92% of agricultural finance institutions report that they collect data on climate or weather (Figure 10). In the U.S., 34% percent of U.S. respondents said they gather climate and weather data.

TABLE 1:
Agricultural finance institutions that have assigned ESG employees by role, region, and entity type.

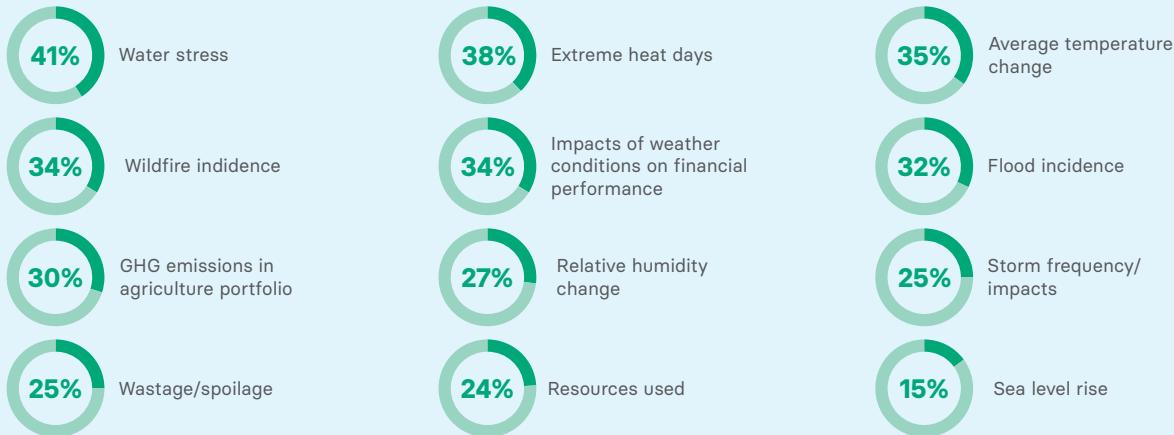
	Yes, ESG focused	Yes, weather related risk for agriculture focused	Yes, climate change focused	No dedicated employee
Globally	46%	34%	34%	25%
North America (excl. U.S.)	65%	59%	59%	6%
Europe	43%	41%	43%	8%
India	48%	61%	57%	9%
United States	42%	13%	14%	48%
Government funded or sponsored entities	62%	38%	24%	10%
Non-government funded or sponsored entities	42%	33%	37%	28%

FIGURE 10.
Institutions that collect climate and weather data.



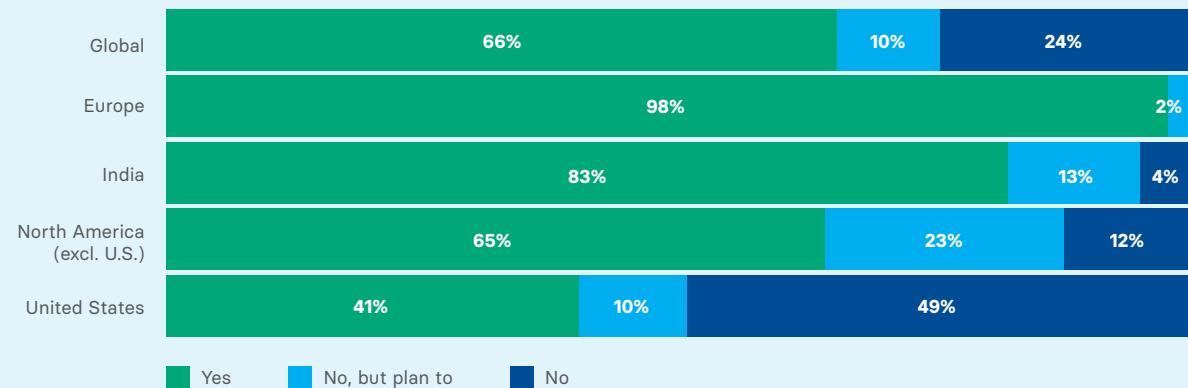
The types of climate and weather data gathered by agricultural financial institutions are described in Figure 11. They include water stress data (41%), extreme heat days (38%), and average temperature change (35%).

FIGURE 11.
Types of climate and weather data collected.



In addition to climate and weather data, most (66%) agricultural finance institutions collect data on their agricultural clients' production practices as displayed in Figure 12. Respondents from the U.S. had lower rates of gathering production data from clients than their global peers at 41%. The type of production data gathered by agricultural finance institutions includes their clients' use of cover crops, manure management, fertilizer application, type of tillage, and grazing management.

FIGURE 12.
Institutions that collect data on customers' production practices.



Types of data collected



FIGURE 13.

How agricultural finance institutions use climate and weather data.

Weather risk assessments, scenario planning, and stress testing

34%

Portfolio assessments

31%

Credit approvals

29%

Portfolio reporting

25%

Loan terms

24%

Collateral requirements

24%

Credit ratings

19%

Of the agricultural finance institutions that collect climate and weather-related data, 98% report that they analyze and utilize this data for business purposes (Figure 13). These agricultural finance institutions use the data for weather risk assessments, scenario planning and stress testing (34%), portfolio assessment (31%), credit approval (29%) and other purposes listed.

Agricultural finance institutions can use climate and weather-related data for risk assessments, scenario planning, credit approval and more.

Another indicator of internal mobilization to address climate change risks and leverage climate change opportunities is to establish partnerships that assist agricultural clients with climate change actions. Currently, 70% of respondents partner with external organizations to provide their clients with education support, incentives to transition to climate-smart practices, data collection and analysis support, and other goals listed in Figure 14. Top partnerships by region included educational support in Europe and the U.S. (49% and 28% of respondents in Europe and the U.S., respectively), farm management software in North America, excluding the U.S. (47%), and subsidies in India (65%).

Globally, 30% of agricultural finance institutions surveyed do not partner with other organizations for climate-related support. This is largely driven by 53% of U.S. respondents that do not have climate-related partnerships. Smaller agricultural finance institutions (less than \$2.5B USD in assets) are also less likely to partner with external organizations, with only 60% having partnerships, compared to 83% of larger agricultural finance institutions (greater than \$2.5B USD in assets).

FIGURE 14.

Financial institutions' partnerships to assist agricultural clients with climate change.

Educational support

38%

Subsidies/other incentives to transition to climate resilient practices

34%

Data collection/analysis of financial performance and environmental impact

31%

Farm management software

30%

Offtake agreements

24%

No partnerships, but plan to

11%

No partnerships, and don't plan to

19%

Barriers and supports to action on climate change

What are the barriers that prevent agricultural finance institutions, and what are the things that support them, in managing the risk and opportunities presented by climate change?

The survey demonstrates that agricultural finance institutions expect climate risks and opportunities to their businesses, and some are taking steps to manage the risks and capture the opportunities. The survey also asked agricultural finance providers about the barriers holding them back from addressing risks presented from climate change and the supports that could enable them to take greater action.

Respondents reported multiple barriers that prevent them from proactively managing risks and seizing opportunities from climate change (Figure 15). Lack of data required to effectively integrate the risks and opportunities of climate change in business decision-making is one of the largest barriers to addressing climate issues faced by agricultural finance institutions globally (affecting 46% of respondents). This is the key challenge identified across all geographies, with the exception of North America where respondents selected lack of client demand as a key challenge, followed by lack of return on investment from actions taken to address climate impacts, and lack of data.

Lack of data is one of the main barriers preventing agricultural finance institutions from taking greater action.

FIGURE 15.

Top challenges preventing agricultural finance institutions from taking more action to address climate impacts.



46%

Data required to effectively integrate risks and opportunities



35%

ROI on these actions on institution's portfolio*



34%

Knowledge of climate change by company's sales team



34%

Client demand



33%

Resources, including staff with sustainability knowledge and skills



32%

Government hurdles



31%

Educational opportunities for leadership



31%

Availability of needed products and services



27%

Support from experts to inform decision making



26%

IT resources to keep up with regulators

*Lack of ROI refers to the lack of ROI from actions taken to address climate impacts

FIGURE 16.

Top drivers to encourage agricultural finance institutions to address climate impacts.



The top driver that could encourage agricultural finance institutions to take greater action to address climate change risks and opportunities are regulation and client demand (Figure 16). Fifty percent of respondents said increased regulation would drive them to take greater action, and 49% said increased client demand would spur them to address climate impacts. Regionally identified drivers were client demand in North America (62%), government assistance in Western Europe (47%), assigned leadership to manage climate impacts in Eastern Europe (46%) and regulation in India (65%).



Strategies for addressing climate risks and opportunities

How can agricultural finance institutions manage the risks and opportunities associated with climate change?

The survey results reveal that many agricultural finance institutions are alert to the risks and opportunities that climate change presents to their agricultural portfolios, but may need greater support to take action. This section presents four strategies agricultural finance institutions can pursue to advance their actions on managing climate risks and leveraging climate opportunities. The four strategies were identified from best practices demonstrated by the survey respondents, interviews with finance

institutions representatives, and climate risk management guidance developed by the financial and professional services sectors. The strategies help to address the challenges that are preventing agricultural finance institutions from taking greater action against climate change. The strategies also are intended to help manage the climate risks respondents expect to materialize and capture the climate opportunities that are emerging.



Figure 17 below outlines the four strategies and how they address some of the main barriers and climate change risks identified by the survey respondents.

FIGURE 17.

Potential solutions agricultural finance institutions can consider to address climate change.

Solution	Barriers addressed	Negative impacts addressed		
1. ESG governance	 31% Educational opportunities for leadership*	 32% Government hurdles	 26% IT resources to keep up with regulators	Transition risks: <ul style="list-style-type: none"> Regulation* (40%) Operations (39%) Stakeholder pressure (30%) Talent acquisition (16%)
2. Data analysis	 46% Data required to effectively integrate risks and opportunities	 35% ROI on these actions on institution's portfolio	 34% Knowledge of climate change by company's sales team	Transition risks: <ul style="list-style-type: none"> Talent acquisition (16%) Increased costs (47%) Physical risks: <ul style="list-style-type: none"> Decreased revenue (32%)
3. Climate-smart product offering	 31% Availability of needed products and services	 34% Client demand	 33% Resources, including staff with sustainability knowledge and skills	Physical risks: <ul style="list-style-type: none"> Higher probability of default (42%) Higher loss given default (32%) Diminished collateral value (28%) Decreased revenue (32%)
4. Partnerships	 34% Client demand	 32% Resources, including staff with sustainability knowledge and skills	 27% Support from experts to inform decision making	Transition risks: <ul style="list-style-type: none"> Talent acquisition (16%) Operations (39%)

*Percentages reflect percent of firms.

The figure demonstrates potential solutions that agricultural finance institutions can consider to address some of the barriers they face preventing them from taking action to address some of the negative impacts of climate change. The barriers listed in Figures 15 and 17 represent the challenges that respondents reported they face when addressing climate risks and opportunities. The percentages associated with the barriers listed represent the proportion of respondents that reported a specific barrier is a current challenge for their bank to address climate change. Similarly, the negative impacts listed and the associated percentages represent the percentage of respondents that reported their institutions or agricultural clients experience these specific negative impacts caused by climate change.

Strategy 1: Climate risk governance

Climate risk governance refers to the integration of climate risks and opportunities into an organization's leadership agenda, decision-making process and disclosure. It helps address barriers by increasing awareness and knowledge and improving the quality of decision-making on climate risks and opportunities as they emerge.

The survey respondents identified several barriers to action on climate risks and opportunities related to

governance. Thirty-three percent of respondents said a lack of resources, including staff with sustainability skills and knowledge, was holding back action on climate issues. Thirty-one percent said that lack of educational opportunities for leadership was a major barrier. Thirty-one percent of respondents also said that assigning leadership to manage climate impacts would drive greater action within the finance institution.

Specific steps that agricultural finance institutions can take to strengthen climate risk governance include:

STEPS TO STRENGTHEN CLIMATE RISK GOVERNANCE

Educate bank leadership

There are a growing number of organizations and resources, including this survey, focused on educating financial institutions on climate risk and opportunities. Agricultural finance institutions must learn from efforts in both the broader finance and agriculture sectors. These resources provide a helpful place to start:

- **Global Association of Risk Professionals (GARP) Sustainability and Climate Risk Certificate:** Sustainability and Climate Risk program to help professionals learn about climate risk assessment and management solutions.
- **United Nations Environment Programme Finance Initiative (UNEP FI) Task Force on Climate-Related Financial Disclosures for Banks:** A set of climate risk management how-to guide developed by a working group of global commercial banks. Includes guidance on scenario analysis, climate risk assessment methodological tools, and principles for integrating climate risks into the business.
- **Principles for Carbon Accounting Financials (PCAF):** Partnership for Carbon Accounting Financials, an industry-led partnership to increase accountability of the financial industry to the Paris Agreement.

STEPS TO STRENGTHEN CLIMATE RISK GOVERNANCE

Build a climate risk team

A majority of survey respondents have staff dedicated to ESG, climate risk or weather-related risk. A climate risk team can develop and implement sound frameworks, risk management practices and goals for agricultural finance institutions. One-quarter of surveyed agricultural finance institutions do not have staff to manage ESG and climate-related risks for agriculture that should consider adding that capacity. For smaller finance institutions that are unable to add capacity specific to climate risk issues, educational courses for leadership and collaboration among finance institutions on these topics can help fill those gaps.

An established climate risk team can develop and implement sound goals, frameworks and risk management practices.



STEPS TO STRENGTHEN CLIMATE RISK GOVERNANCE

Set climate change goals

Forty-one percent of respondents have set climate specific goals for their agricultural portfolios. The survey did not ask whether these goals were internal or public goals, or the type of goal. Setting climate change goals may not be a feasible strategy for all agricultural institutions because of capacity constraints or lack of alignment with publicly sponsored institution mandates. These institutions should still learn how their peers are setting climate change goals and how it could affect their competition in the market.

Climate change goals can serve different purposes, including identification of the most material risks and opportunities for the finance institution, informing external stakeholders and investors, and supporting the alignment of resources with the needs of farmer clients.

Agricultural finance institutions that plan to set public net zero emissions goals should refer to guidance on current best practices and consider joining alliances that will keep them informed and engaged as those practices evolve. Agricultural finance institutions that do not intend to set their own climate goals should still understand how climate goals in their industry will affect them, as half of the global top 100 food and agriculture companies have set supply chain emissions reductions goals.⁸

The [Banking for Impact on Climate in Agriculture](#) initiative is expected to release bank guidance for setting agriculture sector net zero emissions targets. The initiative's guidance is informed by a group of global commercial banks and experts from the World Business Council for Sustainable Development, UNEP FI, PCAF, EDF and Boston Consulting Group.

Align institution's net zero emissions target with country's target

US, UK, EU, CANADA

- Net zero emissions by 2050.

INDIA

- Net zero emissions by 2070.

UNITED NATIONS PARIS AGREEMENT

- Net zero emissions by 2050.
- 45% reduction in emissions by 2030.

Climate alliance examples

GLASGOW FINANCIAL ALLIANCE FOR NET ZERO

Raise ambition, collaborate and impact policy with the goal of reaching net zero by 2050

NET ZERO BANKING ALLIANCE

Reduce GHG emissions, set and commit to climate targets, publish annual emissions

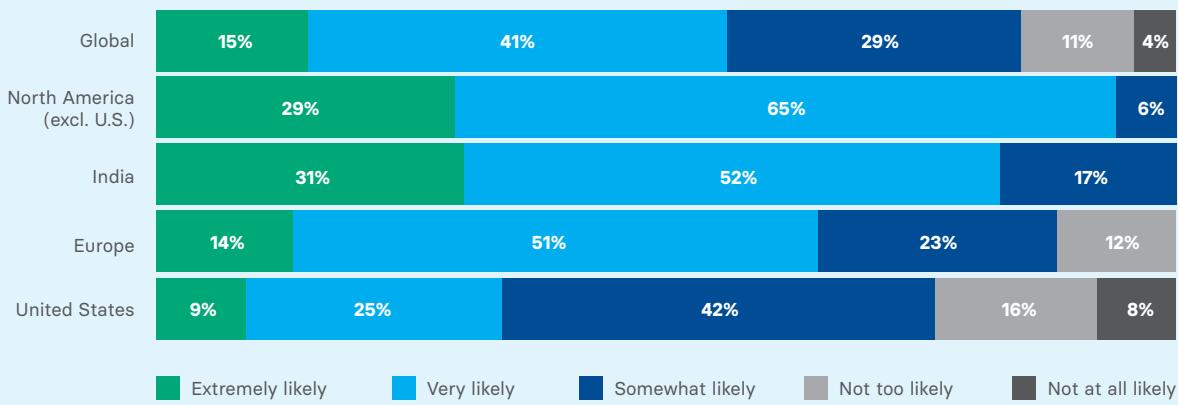
Strategy 2: Data collection and analysis

Globally, the main barrier respondents reported that prevents them from taking action to manage climate risks in agricultural portfolios is the lack of climate, weather and client production data. Forty-six percent of respondents said it was a barrier preventing greater action. Fifty-six percent of agricultural finance institutions believe it is extremely or very likely that climate, weather and client production data will be needed in the future (Figure 18). Taking initial steps to gather this data will help agricultural finance institutions better measure and manage climate-related risks in the future.

Fifty-six percent of respondents predict there will be an extremely or very likely need in the future for climate, weather and customer data.

FIGURE 18.

Perceived future need for data on climate, weather and customer practices.



STEPS TO STRENGTHEN DATA COLLECTION AND ANALYSIS

Collect data

Assessing climate-related risks in the agricultural lending portfolio can help financial institutions identify material risks and opportunities to support clients in adaptation measures. Climate and client production data are important inputs to conducting climate scenario analysis for the agricultural portfolio (described further below). Climate data demonstrates how temperature, precipitation and extreme weather events are projected to change in the future. The climate data can be paired with client production data in crop and livestock models to assess how changing climate conditions will impact the productivity and profitability of the existing production system in the future.

Agricultural finance institutions may consider collecting farm-level production data from individual clients to pair with financial and climate data during a scenario analysis exercise. When conducting climate scenario analysis for the first time, collecting production data from a small sample of clients interested in the results of the analysis can help the financial institution identify how to gather the data in the most efficient way without overburdening farmer and rancher clients.

Where agricultural finance institutions are limited from collecting data from farmer clients, knowledge gaps can be filled with information from governments, academic institutions or private companies. There are tradeoffs among all potential data sources that must be considered depending on the intended use for the data.

STEPS TO STRENGTHEN DATA COLLECTION AND ANALYSIS

Conduct climate scenario analysis

Agricultural finance institutions can better understand their portfolios' potential exposures to climate change by conducting climate scenario analysis. Climate scenario analysis is a tool to guide strategic thinking and develop strategic plans that are flexible to a range of potential future states. This analysis involves performing financial modeling for scenarios with different combinations of climate factors to assess impacts on risk. Scenarios can consider physical risks, such as rising temperatures or more frequent extreme weather events, or transition risks, such as market shifts toward low-emitting products or new government regulations on GHG emissions or resource use. This analysis helps agricultural finance institutions understand the potential business implications of different physical and transition risks. It can also inform stakeholders about the agricultural finance institution's readiness for climate risks and opportunities.

For more detailed information on scenario analysis methodologies, one can refer to [UNEP FI's tools and assessment methodologies](#).

Strategy 3: Financial products and services

Eighty-eight percent of survey respondents expect their agricultural clients' financial needs will change due to climate change. Forty percent expect their clients to require longer-term loans, 35% expect their clients to need higher working capital, 33% expect their clients to need higher loan guarantees, and 30% expect clients will need lower interest rates (Figure 19).

Eighty-seven percent of survey respondents already offer financial products and services that can support farmer clients in addressing climate risks and opportunities. The financial products and services include crop and weather insurance, funding for sustainable farming practices, increased working capital financing and transition finance to support adoption of weather-resilient practices (Figure 20).

Agricultural finance institutions' expectation that farmers' financial needs will continue to evolve in response to climate risks indicates that additional innovation and support will be required to continue to meet clients' needs in the future.

FIGURE 19.
Expected financial needs for clients to manage climate change impacts.

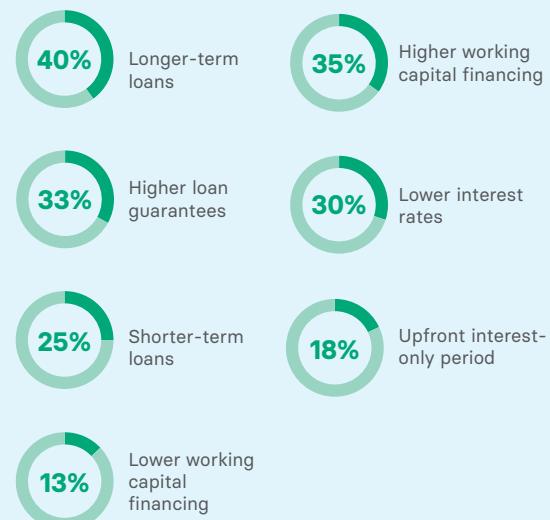


FIGURE 20.
Most commonly offered financial products to address climate risks and opportunities.



STEPS TO STRENGTHEN FINANCIAL PRODUCTS AND SERVICES

Offer climate-smart products

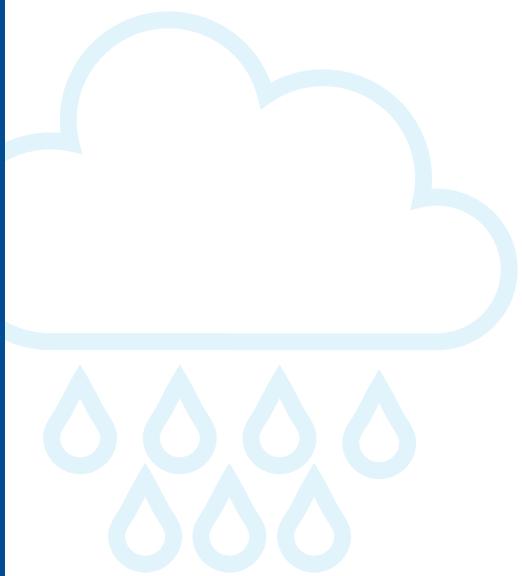
There are a number of financial products that agricultural finance institutions can offer to agricultural clients to help them manage climate risks. This may result in improved risk profiles of agricultural clients and the overall risk in the agricultural portfolio. By meeting growing needs for financial products to help meet climate-related challenges and opportunities, such as investment in new equipment, infrastructure and insurance against risks, agricultural finance institutions may also be able to capture growth opportunities.

Many product innovations are also taking place to finance climate-smart agriculture including:

- Organic agriculture transition loans.
- Outcomes-based interest rate rebates.
- Financing for new infrastructure such as on-farm solar or livestock methane capture systems.

See [Financial Innovations to Accelerate Sustainable Agriculture: Blueprints for the Value Chain](#) for more innovative climate-smart agriculture financial product examples.

By understanding the changing needs of clients and offering revised financial products, agricultural finance institutions can improve the financial risk in their agricultural portfolios.



STEPS TO STRENGTHEN FINANCIAL PRODUCTS AND SERVICES

Train loan officers

Thirty-four percent of survey respondents stated that lack of climate change knowledge within the sales team is a barrier holding back greater climate change actions by the bank. These agricultural finance institutions can consider educating and training their sales and client relationship teams to better understand the impacts of climate change on their agricultural clients. These relationship managers will then be better equipped to manage climate-related conversations with these clients, anticipate their needs and offer targeted products to address changing financial needs associated with climate change.

Strategy 4: Partnerships

Seventy percent of the survey respondents indicated that they have partnerships that help assist their agricultural clients on climate risks and opportunities. The services provided by these partnerships include educational support, subsidies and incentives to transition to climate-smart practices, data collection and analysis, and other services. While 81% of respondents already have partnerships or plan to, there is still 19% of respondents that do not plan to establish partnerships to support their clients with climate issues.

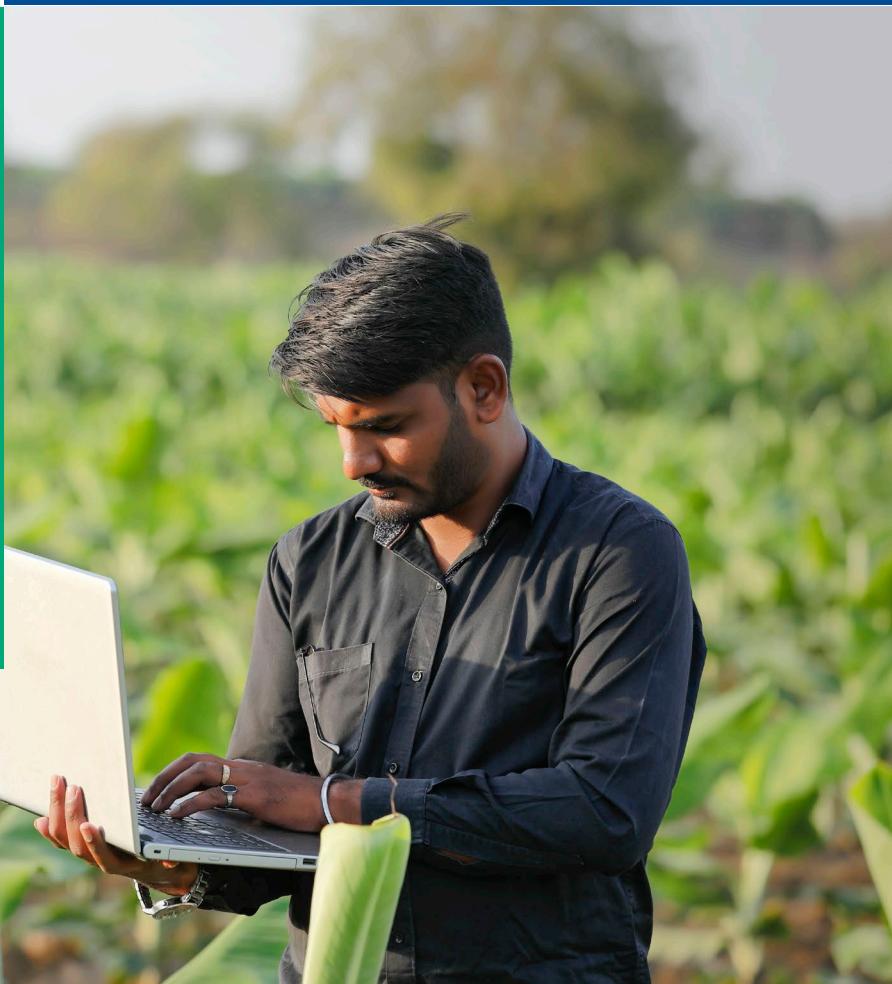
Services provided by partnerships can drive increased client demand for climate-smart products and services.

Visit [EDF's Financial Solutions for Resilient Agriculture website](#) to access more resources to help your agricultural financial institution address climate change risks and opportunities. The resource hub includes reports, blogs and webinars on the financial impacts of climate-smart agriculture, innovative financial solutions and climate risk management guidance.

STEPS TO STRENGTHEN PARTNERSHIPS

Partner with environmental nonprofits or professional services providers

There is demand for greater collaboration, as 29% of agricultural finance institutions said that support from partner organizations and 26% said that pre-competitive industry collaboration groups would help them take greater action on climate risks and opportunities. Agricultural finance institutions should consider partnering with external organizations to help their agricultural clients to navigate the impacts of climate change, and, therefore, lower the risks taken on by their agricultural portfolios.



Conclusion

This survey is the first global effort to assess agricultural finance executives' perspectives on the risks and opportunities posed to their businesses by climate change. The results show that agricultural finance institutions expect the impacts of climate to present both risks and opportunities to their farmer clients and their own businesses. However, many agricultural finance institutions report that they are not significantly incorporating climate change into their business decisions, products, operations or goals. As many of the responding agricultural lending institutions aim to do more on climate risk issues, they face barriers holding back effective action. The most significant barriers include lack of client and climate data, unclear return on investment on internal investments in climate initiatives, and lack of internal knowledge and capacity.

The results from this survey demonstrate that some agricultural finance institutions are taking meaningful actions to address climate change-

related risks and capture climate change-related opportunities that can inform the rest of the sector. There are four strategies for agricultural finance institutions to consider integrating that help address climate change risks and opportunities into the way they do business. These are to increase ESG-focused capacity on their teams, undertake climate scenario analysis and portfolio assessment, expand offerings of financial products and services that support farmers in climate transitions, and form partnerships with external organizations to support these efforts.

As agricultural finance institutions operate at the nexus of the broader agriculture and finance sectors, they require unique information, resources and tools to support their action on climate risks and opportunities. This survey provides a foundation to understand the current perceptions of agricultural finance institutions on climate change and help identify the resources and partnerships that may be needed to chart a path forward.



Endnotes

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