Environmental Defense Fund

Assessing and managing climate risk at agricultural lending institutions

Preliminary findings from industry engagement on EDF's climate risk model.

Visit the tool here: https://agcreditrisk.edf.org/

Background

- 94% of agricultural lending institutions expect climate change will pose material risks to their businesses, but only 32% are significantly factoring the issue into major business decision.
- Climate risk models that have been created for the banking industry have not been adapted for agricultural lending and its unique characteristics.
- Responding to this issue, EDF and Praedictus Climate Solutions developed a climate risk assessment model for agricultural lending institutions with advisory support from Farm Credit Canada and three U.S. lending institutions, collectively representing over $200 billion in agricultural lending annually.
- In 2025, EDF presented the model to 22 agricultural lending institutions. During these sessions, the agricultural lenders shared application opportunities for the model and strategies they can take to manage climate-related risks.

The following section describe the preliminary set of climate risk model applications and risk management strategies lenders defined during meetings with EDF.

Climate risk model application strategies

1

Conduct climate stress testing/scenario analysis

Three major agricultural lending institutions are interested in using EDF's model to run climate change scenarios in their portfolio stress testing. Conducting a climate stress test will allow the institution to understand the timing, magnitude and characteristics of climate risks to their portfolio of customers. Specific considerations to run scenario analysis include:

- Chronic climate risks to crop production are more impactful on farmland loans since the term of those loans are exposed to long-term changes.
- Stress testing results can inform future capital reserve requirements.
- The model outputs could be translated into external risk factors the industry currently sourced from vendors.
- Model outputs can project return periods of drought that can be compared to historical PD stress under similar conditions.

2

Inform additional data requirements for loan underwriting

Ag lenders have historically relied on certain water availability and other natural resource assumptions during the loan underwriting process. Lenders we spoke to said that climate models applied to agriculture, such as the one developed by EDF, could inform additional data lenders gather from customers related to access to groundwater and weather-related risks. This additional data could be used to better inform the underwriting process and risk management education to customers.

3

Identify areas needing investment in markets for climate-adapted crops

Ag lenders we spoke to shared concerns that certain crops will no longer be viable in their area under projected climate conditions. These concerns are especially pertinent in heat and drought-prone areas of the High Plains and Southwest. Lenders expressed the opportunity to use climate and crop models to understand which crops are at risks and which alternatives may fare better in the future. The lenders stated that this information could help them direct more capital and take on more risk to support projects that build the markets and infrastructure for climate-adapted crops.

4

Provide climate risk management education to customers

One major tenant of risk management is risk education. Many lenders we spoke to shared that the climate risk model could be used as an education tool for farmer customers. Sharing the tool with customers can be supplemented with other educational materials that describe risk reduction practices producers can implement on their operation. One lender we work with is writing an educational pamphlet for farmer customers on climate risks and adaptation and resilience solutions. The lender's education can also be supplemented with scholarships to participate in risk management education programs with local experts.

5

Integrate climate risk into Enterprise Risk Management

Enterprise risk management is the approach a company takes to manage risks that may threaten its ability to achieve its goals. It involves identifying, measuring, responding , and monitoring risks. Some lenders we spoke to shared that they have already included climate risk into their Enterprise Risk Management library. Some are even gathering climate data that can be integrated into the company's risk dashboards, which are used to monitor risks and continuously evaluate their impacts on strategy. Integrating climate risk into ERM libraries and frameworks, including results from the EDF model, can help ag lenders manage risks proactively.