CASE STUDY

SATELLITE-BASED LOSS ADJUSTMENT TO SAVE IRRIGATION WATER





PRODUCTION CHANGE: Efficient crop irrigation

FOCUS REGION: Southern Plains

EXISTING INSURANCE OPTIONS:

When extreme weather damages crops, the Federal Crop Insurance Program uses the stand count method to adjust yield expectations. This method is a manual process in which a loss adjuster visits the affected field, physically counts surviving plants in representative areas, and uses those counts to estimate remaining yield potential. This adjusted yield determines whether the farmer is eligible for an indemnity payment and sets the yield target that the farmer must continue to manage towards, including through continued irrigation to maintain insurance coverage.

To learn more:

business.edf.org/farm-finance/

INSURANCE GAPS:

The stand count method is labor-intensive and time-consuming. During extreme weather events that affect fields across a region simultaneously, the limited number of available adjusters can cause significant lags between when crop damage occurs and when yield adjustments are completed. Farmers awaiting an adjuster must continue irrigating at their original targeted yield level to maintain insurance coverage — even when the yield benefits of continued irrigation are minimal or nonexistent due to crop damage. This results in overirrigation of the crop, accelerating groundwater depletion in the High Plains Aquifer at a time when conservation is critical.

PROPOSED SOLUTION:

The proposed solution would use satellite-derived Earth Observation data, ground-based measurements, and crop models to (1) rapidly identify and map crop damage from extreme weather at field resolution, and (2) generate on-demand yield forecasts for impacted fields. These tools would enable more rapid crop insurance yield adjustments, allowing farmers to reduce or cease irrigation sooner after crop loss and conserve groundwater. The solution requires co-development with stakeholders including USDA Risk Management Agency, insurance companies, crop insurance agents and agricultural producers to ensure the tools can be integrated into the existing crop insurance adjustment workflow.

KEY STAKEHOLDERS:

Producers and land managers, USDA RMA, Kansas Geological Survey, University of Kansas, Kansas Water Institute, Kansas State University, NASA, OpenET, and EDF.

Case study content provided by Kansas Water Institute, University of Kansas and EDF.

CURRENT STATUS:

Research and development.

Satellite data can transform the speed of insurance loss adjustment.

And save precious irrigation water farmers are required to apply when waiting for an adjustment.

PATHWAY TO SCALE:

Engage RMA in the pilot results and train them to integrate the methodology into the FCIP.

