

climate modeling helps Colombian farmers improve decision making

data

a partnership of public, non-profit, and private organizations combined climate and agricultural data to provide location-specific recommendations to rice growers

impact

by predicting high risk planting periods, the project saved farmers millions of dollars in agricultural inputs that would have been wasted on drought-stricken crops

Photo: Neil Palmer, CIAT
Tolima, Colombia

The Clima y Sector Agropecuario Colombiano (Colombian Climate and Agricultural Sector; CSAC) partnership combined climate models predicting local weather patterns with agricultural data on the climatic conditions in which specific rice varieties do best. The partnership provides information to growers and helps them improve their decision making about when to plant or not plant, as well as which varieties are most likely to have the best yields in the forecasted conditions. The site-specific information had an enormous economic impact. In 2013, when CSAC predicted a high risk of crop loss due to drought, farmers who did not plant saved \$3.6 million in agricultural inputs that would have been spent on the failed crop.¹



erratic climate decreases rice production

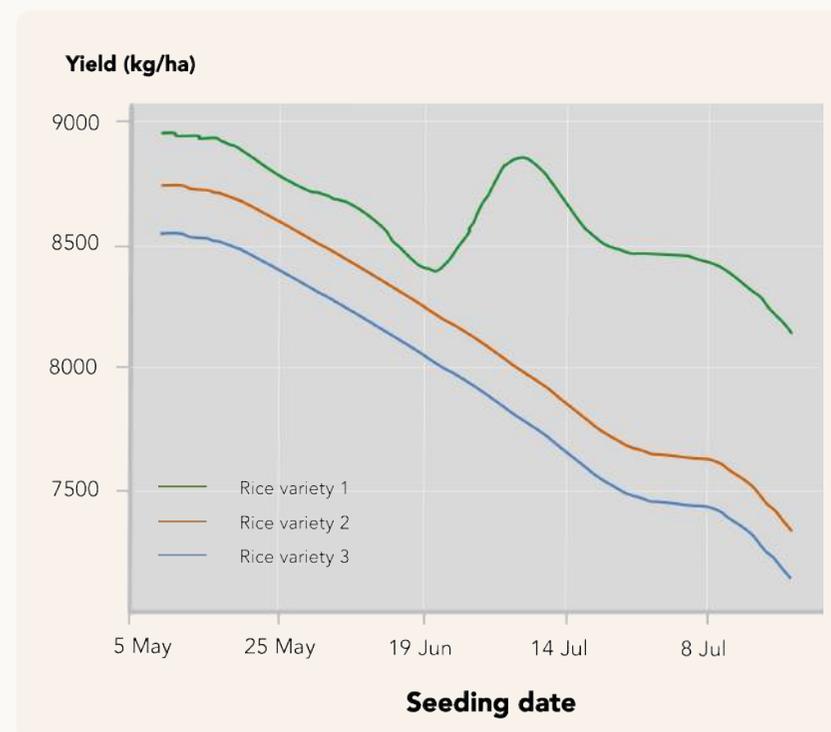
Despite generally favorable growing conditions in Colombia, day-to-day climatic fluctuations can reduce potential crop yields 30-50 percent, and major events like floods and droughts can destroy entire crops.² As climate change leads to increasingly erratic weather, farmers need more information in order to adapt their cultivation practices.

predicting agricultural best practices

CSAC, a partnership led by the International Center for Tropical Agriculture (CIAT) and the Colombian Ministry of Agriculture, uses meteorological data to generate regionally specific seasonal forecasts. CSAC provides this information to farmers, along with data on the economics and agronomy of rice cultivation. Working directly with growers most interested in adopting new strategies, CSAC uses the results of the climate models to help farmers reduce risk by optimizing planting times, crop varieties, and management strategies. Growers in the program then work alongside extension officers in their area to help other farmers understand and adopt the new strategies.³

reducing losses

Because of the project's warning of impending drought in northern Colombia, 170 growers in the department of Córdoba decided to leave 1,800 hectares fallow in 2013, saving them millions of dollars on seeds, fertilizers, and other agricultural inputs.⁴ The project also jumpstarted the climate change conversation among many rice growers and industry leaders in Colombia, who now see climate knowledge as critical to maximizing yields.⁵



This graph, constructed by CSAC models, shows the relationship between rice planting date, rice variety planted, and eventual yield, given the predicted climatic conditions for the upcoming year. Source: MADR-CIAT