

Weathering Climate Change: How Farmers Learn from Forecast Outcomes*

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Abstract

Weather-induced risk reduces farmers’ incomes, and climate change is increasing such risk. Accurate short-to-medium-range rainfall forecasts, which predict weather between zero and fifteen days ahead, can mitigate this risk by helping farmers better time activities or take precautionary measures. But, this requires that farmers accurately interpret, trust and act on forecasts. Through lab-in-the-field and real-world experiments, this paper evaluates how farmers form beliefs about upcoming weather, and about forecasts themselves as they learn from forecast outcomes. Our findings indicate that (1) there is high demand for voice-call based weather forecasts measured as willingness-to-pay elicited in an incentive-compatible Becker–DeGroot–Marschak, and as take-up of a real-world service; (2) farmers’ beliefs about upcoming weather incorporate information in forecasts both in hypothetical decision-making scenarios and in the real-world; (3) farmers update their beliefs about the (in)accuracy of forecasts following incorrect forecasts both in incentivized experimental games with scenarios that mimic real-world decision making, and in the real-world — relying on forecasts less after erroneous predictions; (4) light-touch information interventions to improve probability comprehension, highlight that forecasts are not guarantees, and make climate change salient do not increase demand, use or trust in the service.

JEL Codes: C91, D81, O12, O13, Q12, Q54

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