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Section: Sensitivity Analysis, Uncertainty Analysis, and Parameter Estimation for Agronomic
Models: II.

**Influence of Climate Information on Decision-Making in Maize Production Systems of the
Argentine Pampas.**

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Abstract

ENSO predictions offer the potential to improve agricultural risk management. The objective of this study was to explore necessary conditions for a forecast to result in benefits in maize production systems of the Argentine Pampas. First, “decision maps” were used to characterize the main decisions involved in maize production, to identify those decisions that are sensitive to climate fluctuations, and to assemble a realistic set of options for each decision under different climate scenarios. Then, the outcomes of tailoring crop management to predicted climate conditions were estimated using CERES-Maize. Two aspects of this work should be highlighted. First, the decision maps were developed through discussions with consultants from the study area, thus ensuring a realistic description of decisions and options. Second, the simulations revealed divergences in the preferred options identified by consultants and the simulation exercise. These differences were most noticeable in N fertilization rates. Advisors tended to reduce fertilization rate in response to La Niña (when dry conditions are more likely), while the simulations showed a drop in maize yields with low N rates, in most of the La Niña years. The conditions for the effective use of climate information were met suggesting that ENSO predictions could be effectively incorporated to improve the maize decision process.