

Abstract

Especially for smallholder farmers with limited land and financial resources, farming in arid and semi-arid lands (ASALs), where season-to-season rainfall fluctuation dictates production, is a risky business. Through participatory approaches, this study compares deterministic and probabilistic interpretations of climate forecasts and their use by smallholder farmers through a crop-growing season. The study revealed that deterministic advisories are good for smallholder farmers only when formulated from forecasts with higher accuracy than the historical climatological distribution. Otherwise, they cause farm loss in terms of labor and inputs. On the other hand, probabilistic advisories help farmers spread the risk to cater to all the uncertainty and in so doing bring out a balance between confidence and caution. However, farmers must be supported with enough sensitization to comprehend forecast probability, translate it into probabilistic advisories and use that to plan and manage farm activities. The findings support the hypothesis providing packaged climate products in transparent probabilistic terms in place of deterministic form can overcome inherent credibility challenges. The study's conclusion highlights important takeaways and new understandings of the advantage of using probabilistic advisories among resource-poor smallholder farmers.