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Seasonal seed scenario planning: A framework for matching supply and demand in smallholder seed systems

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Abstract

Access to quality seed is a key input to successful smallholder farming and food security. Seed supply organisations, including private companies and public seed distributors, intend to supply farmers with sufficient seed of locally suitable varieties in a timely manner. But farmer demand for different varieties is not static. In drier years, for example, farmers are likely to demand more early-maturing varieties than in rain-abundant years. As seed suppliers cannot easily foresee demand, a mismatch between scheduled seed supply and varying farmer demand often leads to sub-optimal outcomes for both farmers and seed suppliers. Today, free online seasonal climate forecasts give an indication of expected rainfall quantities up to six months before the planting season. Seed suppliers can use this information to better anticipate farmers’ seed demand at crop and variety levels. Seed distribution can then be adapted, for example, by shipping higher amounts of early-maturing varieties into regions expected to face a rather dry season. Because seasonal climate forecasts are no perfect predictions, however, being prepared for any type of season is important. In an iterative co-design process involving private and public seed sector stakeholders from Zimbabwe and Ethiopia, we have developed a systematic, yet simple and heuristic procedure to support seed supply planning. ‘Seasonal seed scenario planning’ involves a data-driven analysis of the expected demand for different seed varieties under alternative seasonal climates (dry/average/wet) and facilitates informed decisions about seed supply management on that basis. This decision-support procedure uses a ready-made Microsoft Excel workbook to provide foresight about upcoming seed demand based on a seasonal climate forecast. A workshop guide, facilitated by a detailed PowerPoint slideshow, then supports decision-makers at seed supply organisations in collectively debating immediate adaptations for better matching expected seed demand. By exploring the concept of seasonal seed scenario planning, seed suppliers may also recognise other opportunities for systematically preparing for alternative seasonal climates. Applying the procedure can help to better serve farmers’ seed needs under climate variability.

Keywords: Climate forecasts, climate variability, decision making, seed supply, smallholder farmers