

SPATIAL TARGETING OF CONSERVATION AGRICULTURE PRACTICES

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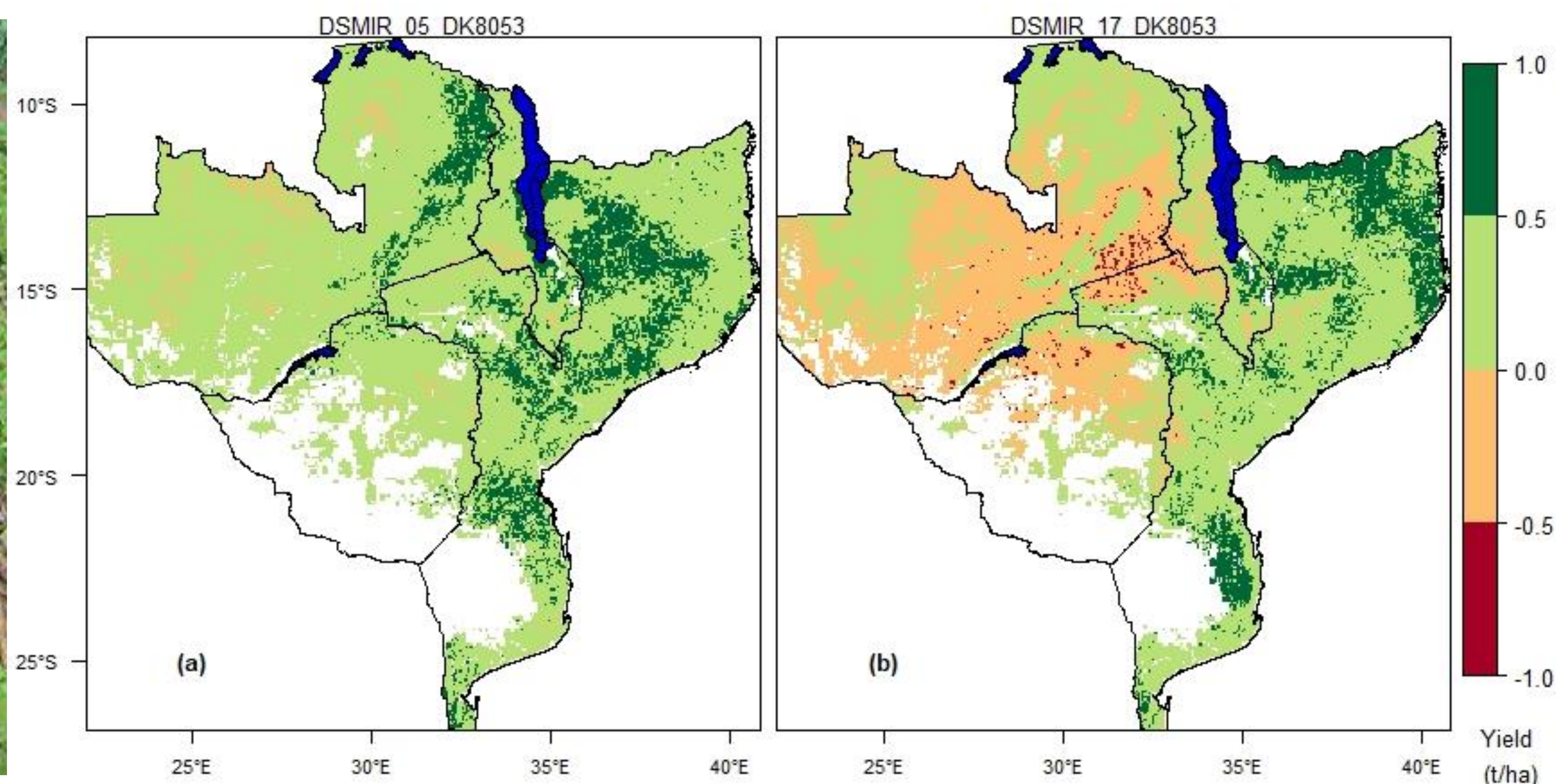


Fig. 1. Yield advantage of DK8050 maize variety grown in direct seeding with legume rotation (DSMR) CA system during a dry season in 2005 (a) and a wet season in 2017 (b).

BRIEF DESCRIPTION

Conservation agriculture (CA) practices have been tested for more than three decades in southern Africa with many benefits documented. However (s)low adoption of CA practices is partly attributed to poor spatial targeting. The objective of this study was to map out where and when the maize grown in different CA had a yield advantage compared to conventional tillage practices (CP). The maps identify suitable locations for scaling out different CA practices and accompanying technologies.

VALIDATION, SCALING SITES & SUITABLE AGROECOLOGIES FOR IMPLEMENTATION

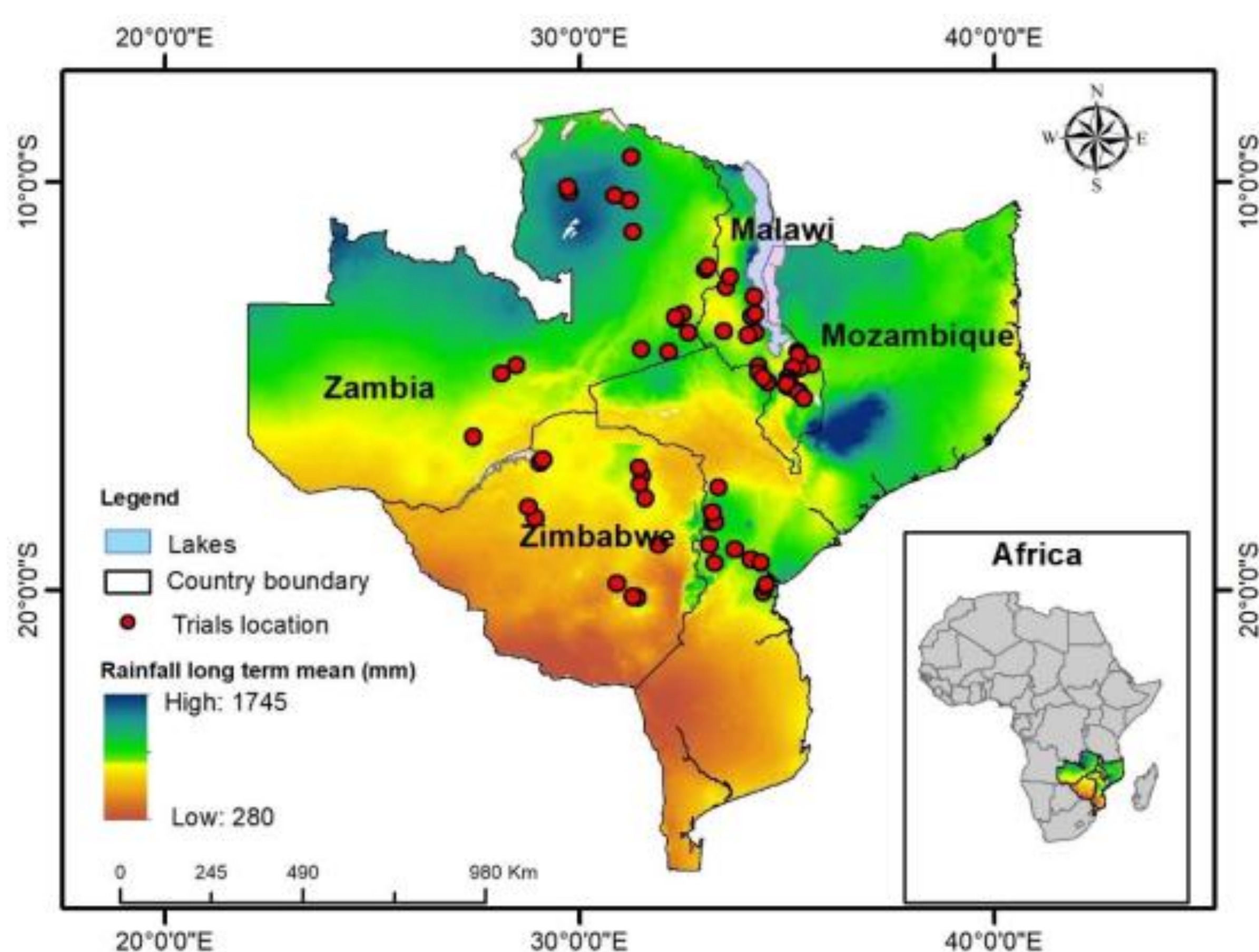


Fig. 2. Location of CA trials in southern Africa region.

Data obtained from long-term trials of CA (>13 year) in Southern Africa and remote sensing data was utilized to run machine learning models for predicting maize yields beyond the trials.

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KEY FINDINGS

- CA systems achieved yield advantage over CP during drought but loss at wetter than normal seasons.
- DSMR CA systems for DK8050 maize variety returned 0.2 to 1.6 t/ha of maize yield advantage during dry season compared to CP in northern Zimbabwe, South and Eastern Zambia.

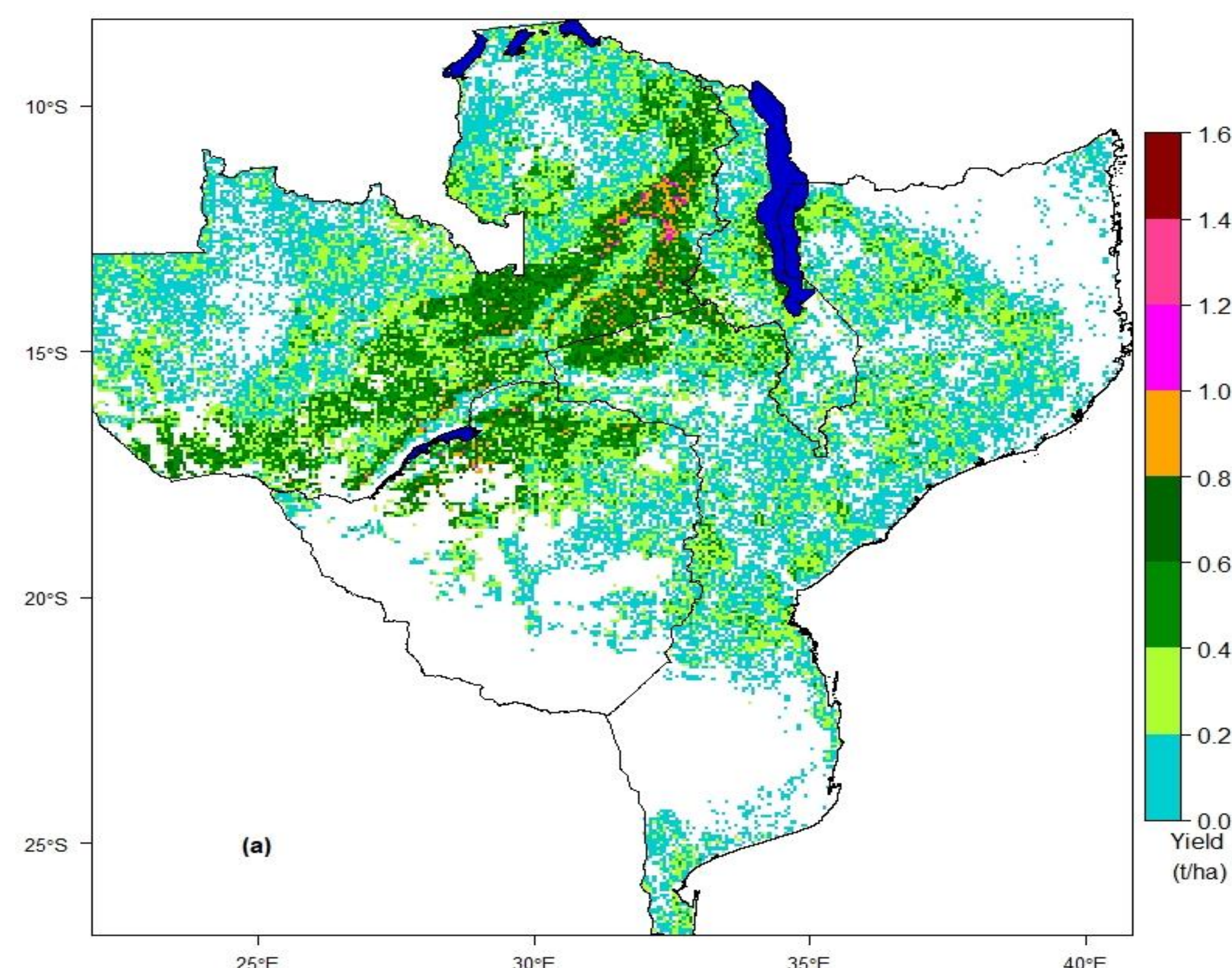


Fig. 3. Magnitude of maize yield advantage of DSMR CA system during drought season.

PARTNERS INVOLVED

