Using PARCHED - THIRST Software to Match Catchment Area to Cropping Area in Rainwater Harvesting System: A Case Study of a Field in Makanya Village in Same District

Problem Statement
Farmers practicing RWH for crop production understand the importance of having a large catchment area compared to the cropping area. But they don’t have the tools (such as PARCHED-THIRST (PT) Software) for matching the catchment area to the cropping area.

Modelling RWH system using PT Software

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Methodology
- Collection of weather data (rainfall, temperature, evaporation) (1998 - 2001) and soil profile data.
- Simulation of the 2.3 ha (current) and 3.3 ha cropping areas (after expansion) with respect to the 2.3 ha (current area), 3.3, 65, 55 and 67 ha potential catchment areas.

Results
- Figures 4 and 5 show the simulated yields, which indicate that rainfed maize will only achieve 0.4 t/ha compared to about 0.8 t/ha with RWH (no fertilizer applied).
- The current catchment area of 13 ha is enough for the 1.3 ha cropping area, but if increased to 3 ha, the catchment area required is between 40 - 45 ha.

Conclusions and Recommendations
- PT Software is useful in determining the required catchment area given the cropping area.
- More frontline extension officers should be trained in the use of PT software.