

## **Rainfall variability impacts on farmers' management strategies and crop yields**

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Throughout the semi-arid tropics, rainfall during the cropping season is extremely erratic, varying in both space and time. This high degree of rainfall variability, when combined with relatively low asset base of most rural households, restricts household crop management strategies and overall crop water productivity. A pilot study was undertaken across 40 households in the semi-arid Zhulube meso-catchment of Insiza District, Zimbabwe to determine daily rainfall patterns each household experienced and how this influenced crop management strategies relative to farmer-resource status during the 2007/08 cropping season. Households selected were either on the leeward or windward side of the meso-catchment and were at least 100 m apart. Each participating household was provided with a standard rainfall catch gauge and time was spent with a designated household representative to assess the resource status of the household and construct a whole farm resource allocation map that specified the dates of various crop management operations. This was followed up with detailed interviews to identify what the key drivers were for each management decision. At physiological maturity yield assessments were made for each crop planted, a note was also made of the number of crop failures. This enabled the water productivity, based on effective rainfall to be determined for each crop/field. Observed results showed that daily rainfall amounts varied considerably across the catchment. Households' resource status particularly their access to draft animal power, followed by access to seed and fertilizer played dominant roles to when a crop was planted and these relative to the rainfall received within the season, affected the overall crop yields.

Key words: Crop water productivity; Farm management decisions; Rainfall variability; Resource-endowment; Semi-arid areas

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