



## Linking Drought Forecast Information to Smallholder Farmer's Strategies and Local Knowledge in Southern Malawi

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Most people of Malawi are dependent on rainfed agriculture for their livelihoods. This leaves them vulnerable to drought and changing rainfall patterns due to climate change. Farmers have adopted local strategies and knowledge which have evolved over time to help in reducing the overall vulnerability to climate variability shocks. One other option to increase the resilience of rainfed farmers to drought, is providing forecast information on the upcoming rainfall season. Forecast information has the potential to inform farmers in their decisions surrounding agricultural strategies. However, significant challenges remain in the provision of forecast information. Often, the forecast information is not tailored to farmers, resulting in limited uptake of forecast information into their agricultural decision-making.

Therefore, this study explores how drought forecast information can be linked to existing farmers strategies and local knowledge on predicting future rainfall patterns. By using participatory approaches, an understanding is created of what requirements drought forecast information should meet to effectively inform farmers in their decision-making. Based on these requirements a sequential threshold model, using meteorological indicators based on farmer's local knowledge was developed to predict drought indicators (e.g. late onset of rains and dry spells). Additionally, using interviews among stakeholders and a visualisation of the current information flow, further insights on the current drought information system was developed.

The results of this research show that local knowledge has a predictive value for forecasting drought indicators. The skill of the forecast differs per location with an increased skill for Southern locations. In addition, the results suggest that local knowledge indicators have an increased predictive value in forecasting the locally relevant drought indicators in comparison the currently used ENSO-related indicators. This research argues that the inclusion of local knowledge could potentially improve the current forecast information by tailoring it to farmer's forecast requirements and context. Therefore, the findings of this research could be insightful and relevant for actors or research fields involved in drought forecasting in relation to user-specific needs.

