



On the Effectiveness of Drought Warning Communication and Dissemination in Malawi

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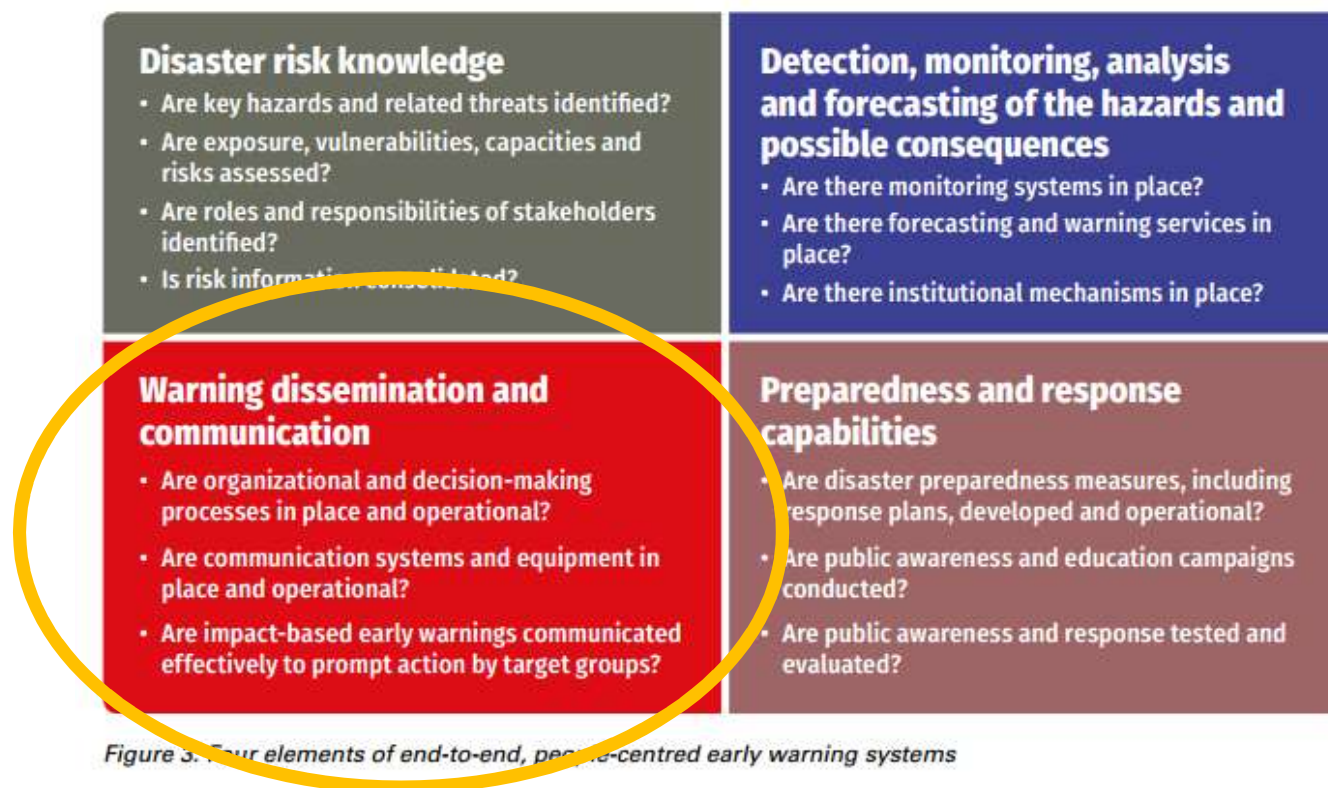
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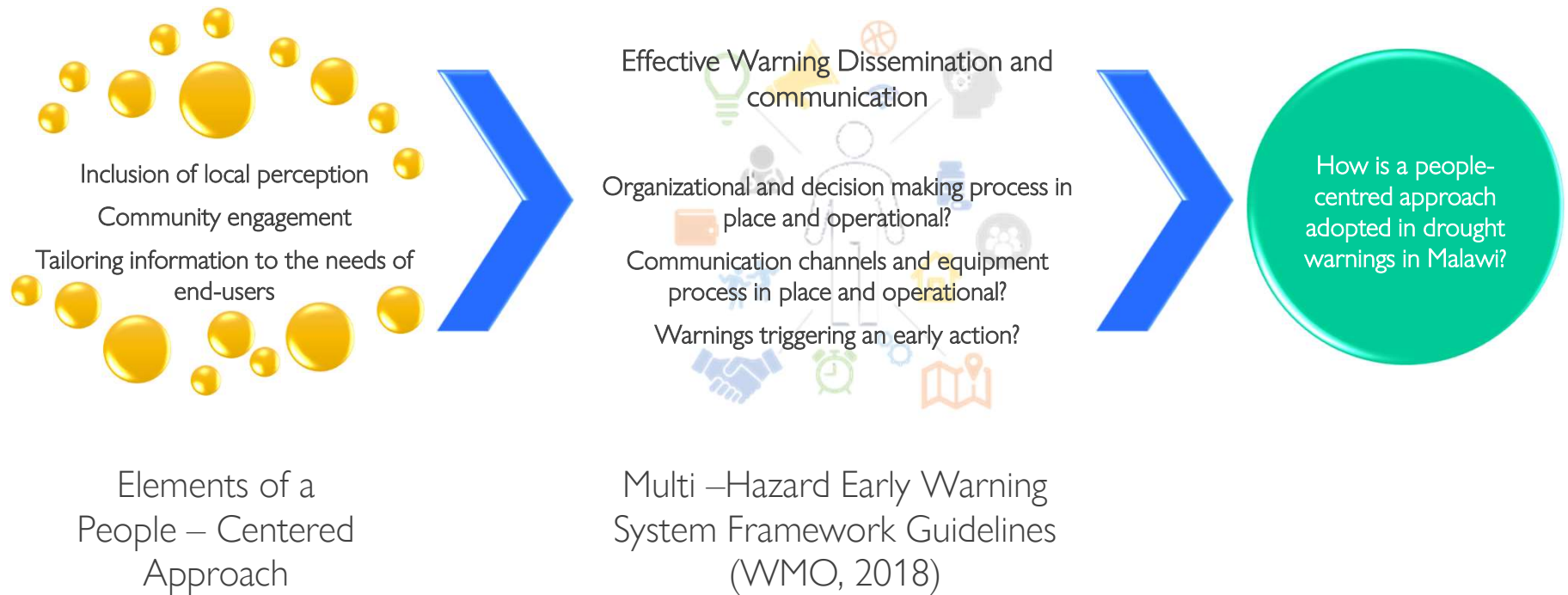


Conceptual framework – Multi Hazard Early warning System (WMO, 2018)

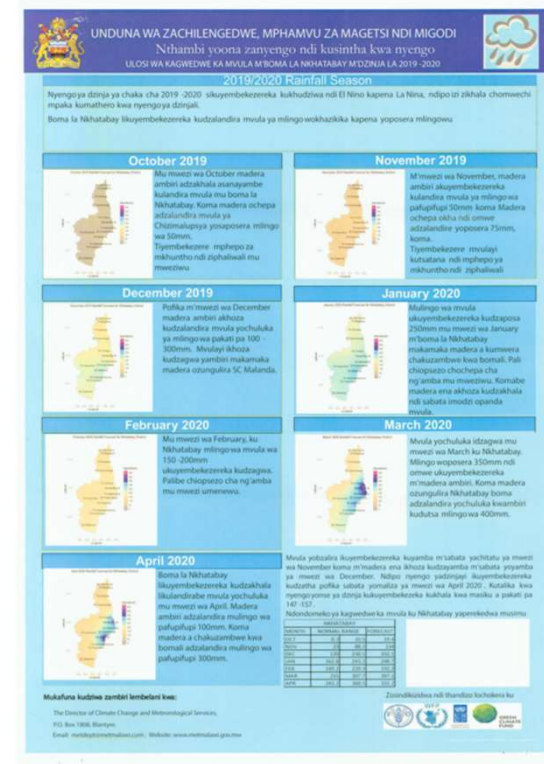
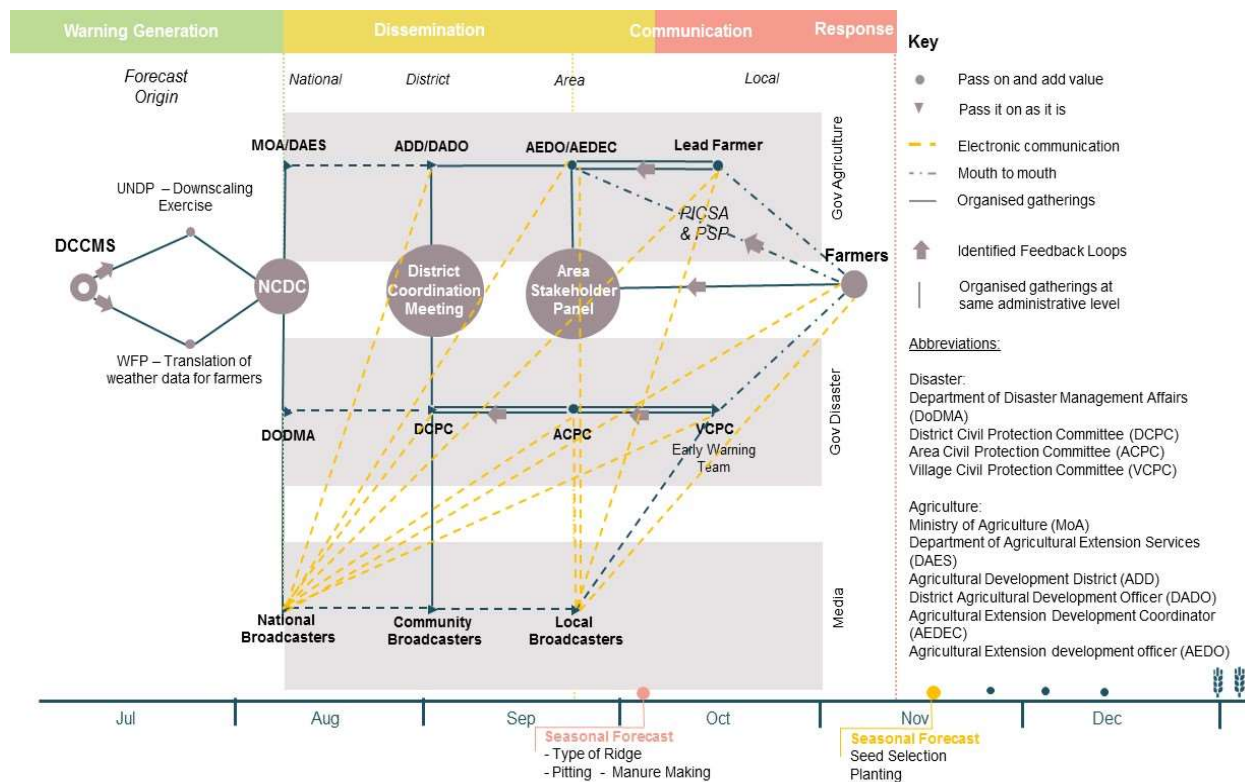


What does it take to effectively communicate drought warnings?

A People –Centered Approach



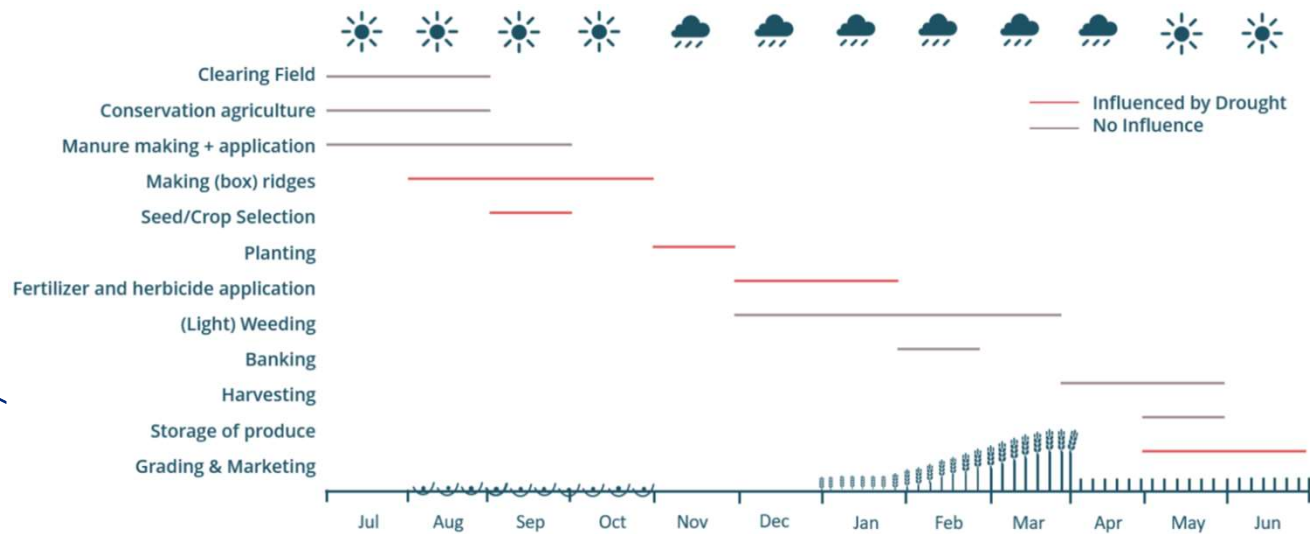
Dissemination, communication and value-add in drought warning in Malawi



Flowchart representing the organisational set-up and the dissemination and communication processes in place for drought warnings (source: Calvel et al., 2020)

2018–2019 Seasonal forecast for Salima District (source: Calvel et al., 2020)

Agricultural practices within the seasonal calendar



Agricultural Practices during the Season and the Influence of Drought (source: Streefkerk, 2020)

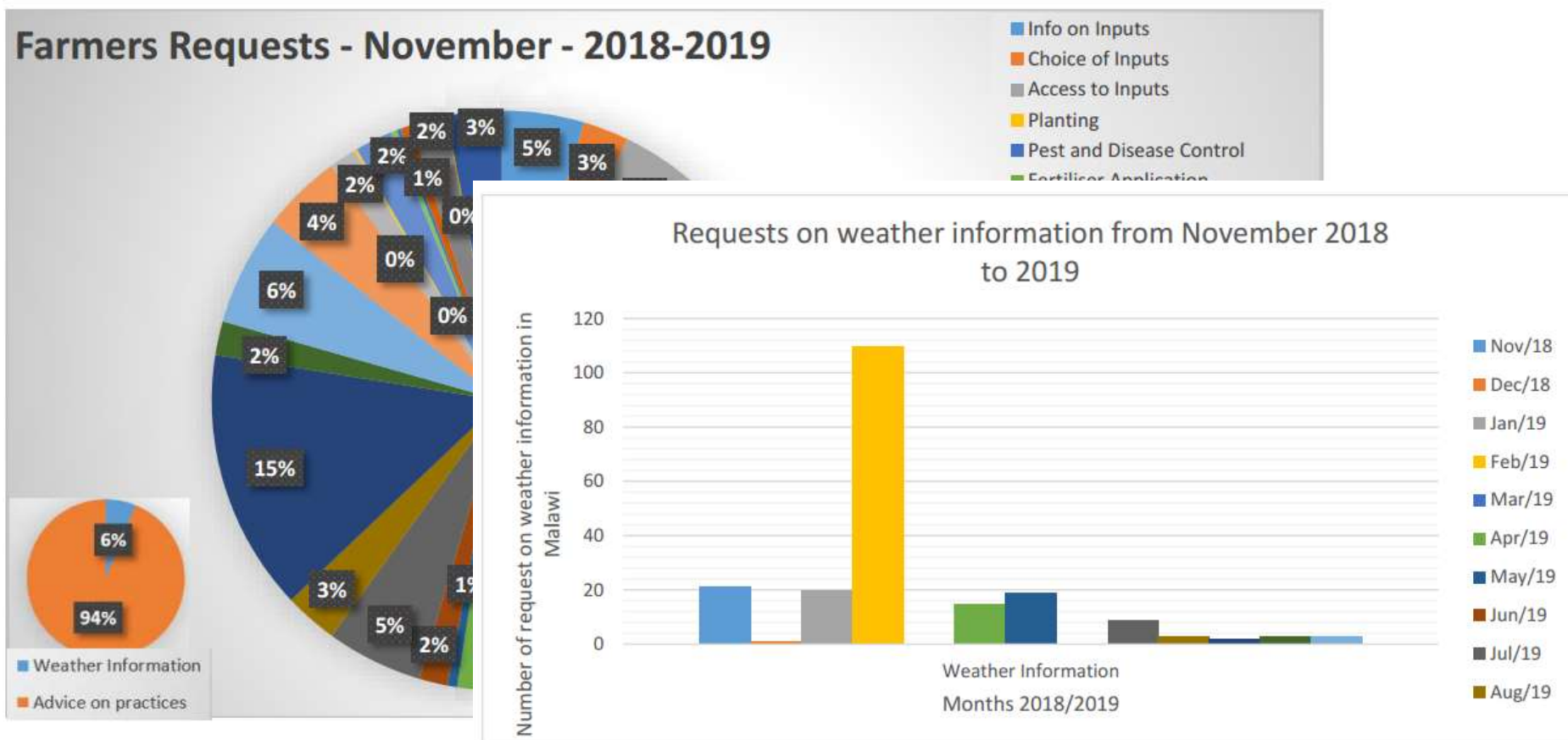
Developing seasonal calendar in a Focus Group Discussion (source: Streefkerk, 2020)

How is drought warning information used?

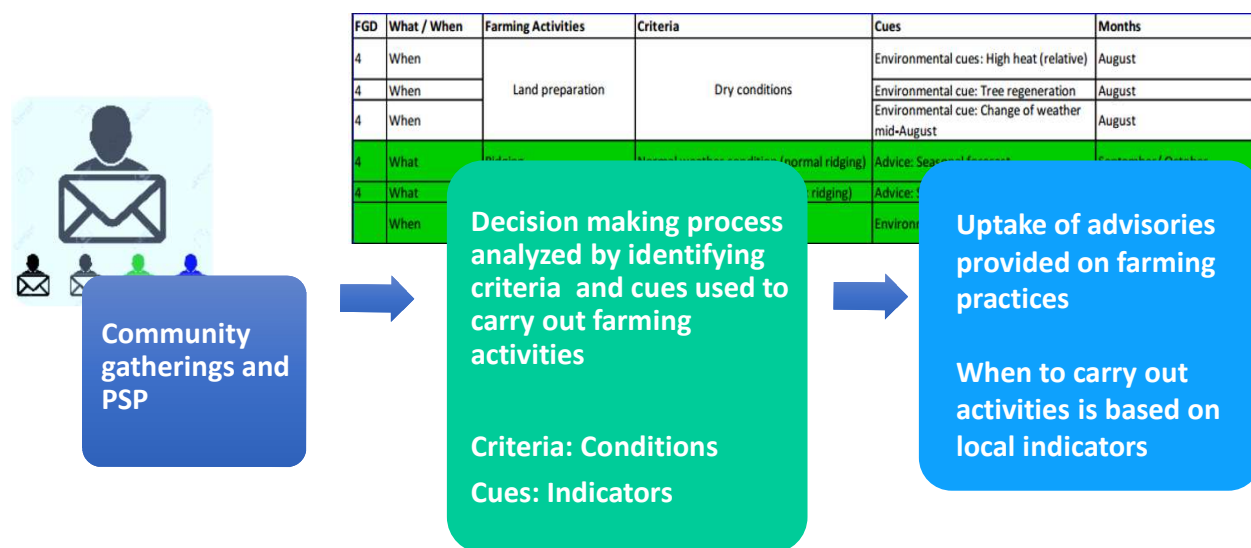
Environmental and social cues and criteria on what actions to take and when to take them

FGD	What / When	Farming Activities	Criteria	Cues	Months
4	When	Land preparation	Dry conditions	Environmental cues: High heat (relative)	August
4	When			Environmental cue: Tree regeneration	August
4	When			Environmental cue: Change of weather mid-August	August
4	What	Ridging	Normal weather condition (normal ridging)	Advice: Seasonal forecast	September/ October
4	What	Ridging	Drought weather condition (box ridging)	Advice: Seasonal forecast	September/ October
	When	Ridging	Dry conditions	Environmental cues: High heat (relative)	September/ October
4	When	Manure Making	Drought forecast	Advice	October
4	When	Manure Application	Dry conditions	Environmental cues: Clouds, look at the rainfall in the surroundings areas	October
4	When	Pitting	Drought forecast	Advice: Seasonal forecast	November
4	When	Pitting	Dry conditions	Environmental cues: Clouds, look at the	November
4	What	Seed Selection	Weather prediction : Drought or Normal	Advice: Seasonal forecast	November
4	What	Seed Selection	Best Quality (grading)	Advice and observations	November
4	What	Seed Selection	Market prices	Advice	November
4	When	Planting	Enough Rain (moist soil)	Environmental cues: Continuous high heat, Rainfall (moist soil) enough rain (50mm), Clouds, Thunderstorms, Planting after rain	November/ December
4	When	Weeding	Presence of weeds	Environmental cues : After heavy rains	January
4	What	Fertilizer app	What	Advice on what fertilizer to use	January
4	When	Fertilizer app	Soil moist and after planting	Environmental cues; presence of moist	January
4	What	Replanting	Weather forecast	Advice on what to replant	January
4	When	Replanting	Failure of seeds	Environmental cues	January
4	When	Replanting	Enough moisture content left	Advice on when to replant	January
4	When	Banking	After Planting and Need for heavy rainfall	Environmental cues: After planting and if it has rained in December, & Advice: on when to start banking (and how)	February
4	When	Top dressing	Soil moist and after planting	Environmental cues: After planting, if it has rained in December & Advice	February
4	When	Thinning	N/A	N/A	February
4	What	Application Pesticide	Type of pests present	Advice	February/March
4	When	Application P	510+ AN INITIATIVE OF THE NETHERLANDS RED CROSS litions	Environmental cues: No rainfall but need moist soil - during the dry spell 1-2 weeks	February/March

What types of drought warning information is requested?



Understanding the use of drought warnings in Malawi



Drought Warnings are used!

Warning information use is based on relevance





From impact based warning to actionable information

Farmers seek, prepare, and respond to drought warning information mostly when it is provided as advice on agricultural practices, rather than as weather-related information.

Information provided found to be useful – but mainly where it relates to the criteria and environmental cues that farmers can use to inform their decisions in a timely manner.

Based on our findings, we propose that by focusing on enhancing trust, improving information uptake and financial sustainability are key metrics for monitoring the effectiveness of early warning systems within the WMO MHEWS framework

Key Take-Home Message

Effective drought warning and seasonal forecasting requires in-depth understanding of the knowledge, perceptions and options available to recipients and what motivates them to act

Further reading: Calvel et al., 2020. doi: 10.3389/fclim.2020.578327 (out soon)