



Climate Services for sustainable rangeland management



Umzimvubu



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Findings from surveys/focus groups show that Umzimvubu Catchment communities need locally contextualized Climate Services (CS) due to their reliance on natural resources for their focal NbS, **sustainable rangeland management**, and there are existing struggles in accessing digital CS especially for floods, fire and drought. Therefore, two CS are being co-produced:

(1) **Integrated Climate Risk Assessment (UCT-led)**, which is an interactive map-based decision-support platform to visualise spatial patterns of modelled climate risk (e.g., hazard, exposure, vulnerability, and composite risk maps) by using predefined datasets within an indicator-based climate risk assessment framework. The integrated climate risk system aims to incorporate long-term projections to supports long-term planning and policy development by identifying priority areas for NbS and climate risk management (Fig. 1).

(2) **Seasonal Wildfire Forecast (UCT-led + SAWS)** is an automated seasonal forecasting system for increased/decreased wildfire weather probabilities with leadtime up to 6 months, particularly ahead of the fire season (August–October), tailored for local accuracy. Using climate model forecasts and historical weather-fire relationships, it will generate monthly forecasts of fire weather conditions (Fig. 2).

Users and envisaged applications in Umzimvubu Hub

(1) **Integrated Climate Risk Assessment:** The primary end-user is NGOs/CBOs working with rangeland managers. However, as a secondary end-user, Municipal planners and managers, Extension officers, Agricultural organisations, Provincial/municipal government (DRR - disaster risk reduction) can utilise the CS. Potential applications include: (a) **Targeting interventions:** Help NGOs identify climate-risk hotspots and prioritise restoration actions (e.g. invasive alien plant clearing) while supporting evidence-based funding applications. (b) **Enabling adaptive management:** Monitor climate risk, water availability, and restoration outcomes over time using remote sensing and citizen science (e.g. via eco-champs) to inform future management decisions.

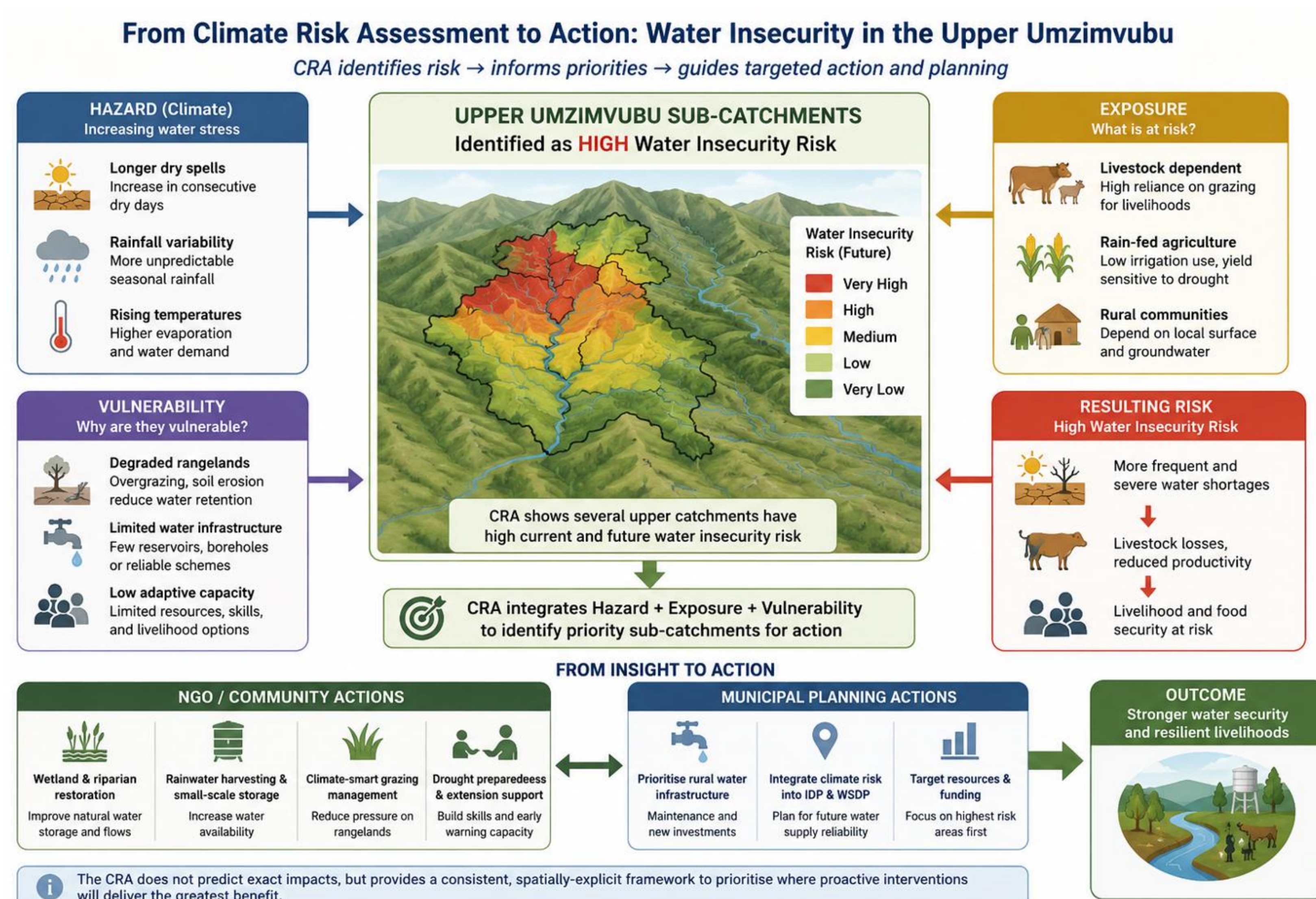


Fig. 1: CS mock-up for **Integrated Climate Risk Assessment** focused on water security presented at the multi-stakeholder CS co-evaluation workshop at Umzimvubu Catchment Partnership 48th quarterly meeting (26-28 May 2026).

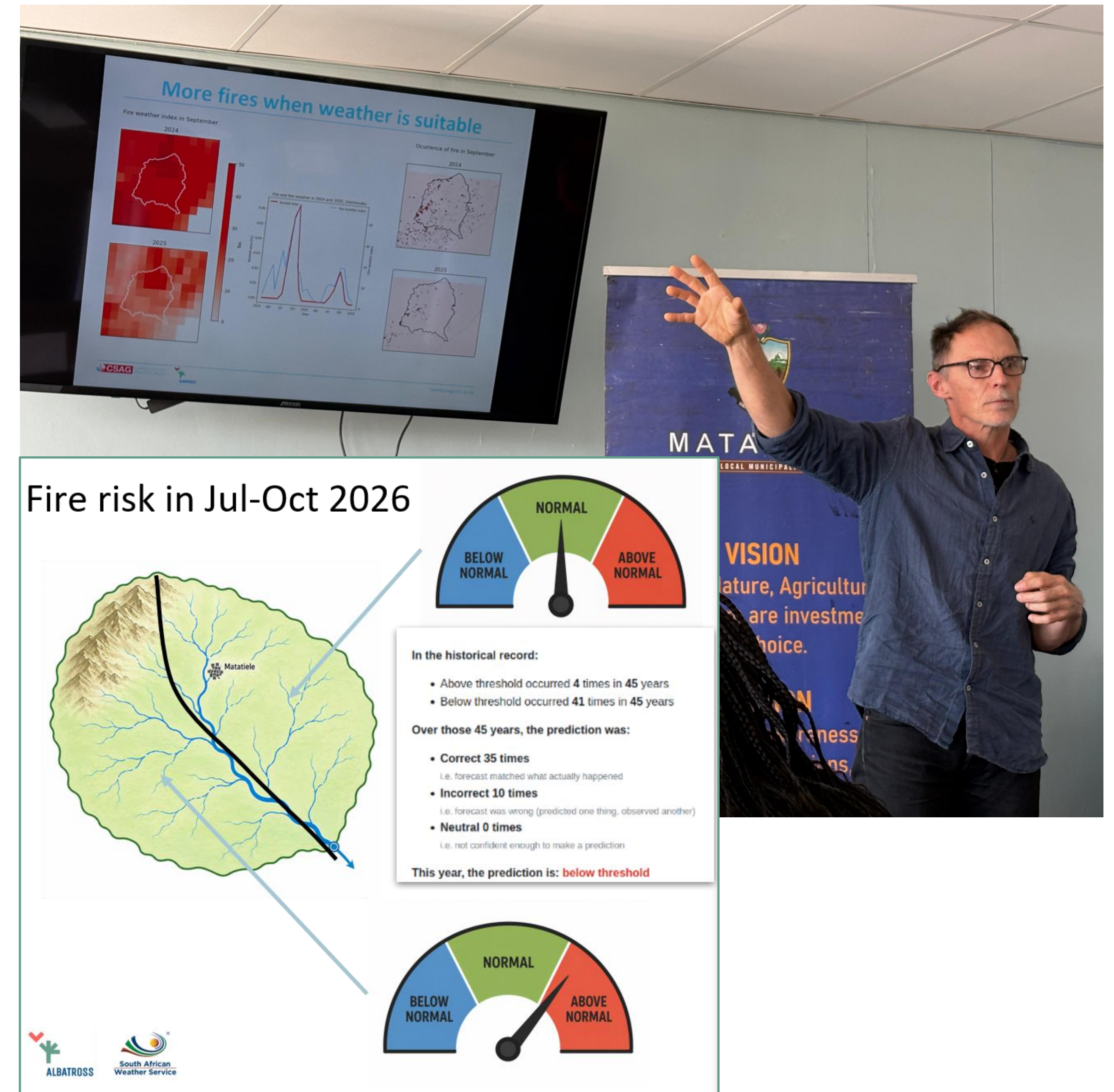


Fig. 2: CS mock-up for **Seasonal Wildfire Forecast** presented at the multi-stakeholder CS co-evaluation workshop at Umzimvubu Catchment Partnership 48th quarterly meeting (26-28 May 2026).

(2) **Seasonal wildfire forecast:** Primary end-users identified during the May 2026 workshop include municipal Fire and Disaster Management units, NGOs involved in land management and community development (e.g. ERS, MNP, CSA), and organisations supporting fire awareness (e.g. Tyelimhlophe Agricultural High School). While communities are the ultimate beneficiaries, seasonal climate services are most effectively operationalised through these intermediary organisations. A clear use case identified was **fire season preparedness**. Seasonal fire risk forecasts can help the municipal fire department justify funding requests and determine appropriate seasonal staffing levels based on expected fire risk.

Next steps and final outcome

By establishing an iterative, co-creation process to integrate the two CS into sustainable rangeland management, prototypes are being tailored for end-user's core operational work, including invasive alien clearing and management (Fig.1); fire management and awareness-raising (Fig.2); and integrating scientific and local and indigenous knowledge to improve CS usability and usefulness.



Over the next 6-12 months, CS prototypes will be shared through a web platform(s) and digital bulletin (email/WhatsApp), accompanied by guidance to support planning and decision-making; whilst we gather end-user feedback for further improvements.

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