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In cooperation with:
University of Reading

COMMUNITY MARKETS FOR CONSERVATION

Digital Climate Services for Smallholder Farmers in Zambia and Malawi

Implemented by the *Fund for the Promotion of Innovation in Agriculture* (*i4Ag*)
As part of the special initiative *Transformation of Agricultural and Food Systems*

The Challenge

Lack of access to climate smart agricultural practices and decision-making tools

Critical to ensuring food security and reducing poverty, farmers in the Global South face numerous challenges, including climate variability and change. Their uptake of climate smart agricultural practices is also low, due in part to the limitations of traditional, top-down approaches to technology transfer in agricultural extension. Most farmers lack access to relevant information on climate and to transparent decision-making tools that they can use to identify and plan the best farming strategies and practices for their individual farm contexts.

The Innovation

E-PICSA: a digital support tool for agricultural extension and climate services

This project co-develops and implements a digital support tool for agricultural extension and climate services (E-PICSA). The tool empowers smallholder farmers in making better decisions for their individual farms and households to improve yields, food security, incomes, and resilience.

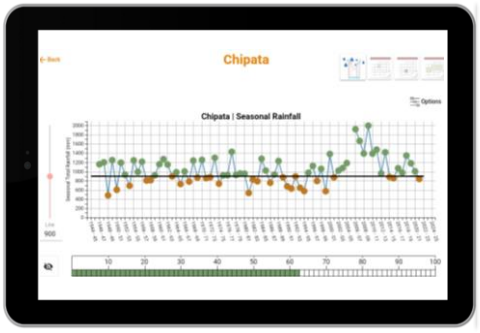
E-PICSA builds on PICSA (Participatory Integrated Climate Services for Agriculture), a farmer-centric climate service and agricultural extension approach. PICSA outlines a set of steps to be undertaken by smallholder farmers and supports them in making their own decisions and planning what is best for their individual farms.

E-PICSA involves two main digital innovations:

1. An automated system for National Meteorological Services (NMS) that provides quality-checked, locally-specific, historical rainfall and temperature data, and location-specific season and short-term forecast; it does so by making best use of existing station data and state-of-the-art satellite and reanalysis data.

2. The free E-PICSA app is designed with and for farmers and agricultural field staff. It improves the effectiveness and efficiency of the PICSA approach and increases its scale and reach through immediate access to up-to-date climate information (historic and forecast), its enhanced speed and scope of analysis, the consideration of an increased range of coping and adaptation practices, easier exploration of budgeting scenarios, and improved recording and monitoring to facilitate feedback and learning.

Name of the Project	Digital Climate Services for Smallholder Farmers in Zambia and Malawi
Name of the Global Fund	Fund for the Promotion of Innovation in Agriculture (i4Ag)
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)
Project Region	Eastern Province of Zambia and Central Region of Malawi
Implementing Partners	The University of Reading, Innovations in Development, Education and the Mathematical Sciences (IDEMS), Zambia Meteorological Department (ZMD), Ministry of Agriculture in Zambia, Community Markets for Conservation (COMACO), Department for Climate Change and Meteorological Services (DCCMS) in Malawi, Department of Agricultural Extension Services (DAES) in Malawi
Duration	07/2022 — 02/2025



E-PICSA app, developed jointly with extension workers and farmers. Site-specific historic rainfall information is used to support farmers' decisions on suitable crops to grow in specific locations.

The Main Objective

Empower smallholder farmers in making better decisions for their individual farms and households in order to improve yields, food security, incomes, and resilience

Methodological Approach and Innovation Partnership

The digitally enabled version of PICSA is being created through a process of co-development and iterative testing with farmers, agricultural field, and extension staff from public and private organisations.

The project is a collaboration between GIZ and the University of Reading (UoR), Innovations in Development, Education and the Mathematical Sciences (IDEMS international). Zambia Meteorological Department (ZMD), the Zambian Ministry of Agriculture (MoA), Community Markets for Conservation (COMACO), the Malawian Department for Climate Change and Meteorological Services (DCCMS), and the Malawian Department of Agricultural Extension Services (DAES) in Malawi.

Scaling and Sustainability

To ensure sustainability and the continuation of benefits for target groups, the project builds capacity in public and private sector organisations, thereby fostering ownership of the app and the supporting processes. E-PICSA is owned and maintained by the respective IT departments in DAES (Malawi) and ZMD (Zambia); the automated system providing location-specific climate data and forecasts are owned and maintained by DCCMS (Malawi) and ZMD (Zambia). This project improves the capacity of staff in their respective departments and ensures that they are equipped to maintain the E-PICSA app and supporting data system. Their improved capacity enables further app development in their countries after this project.

The objectives in figures

100 agricultural extension workers, *at least 35% of whom are women, use the digital extension solution to support smallholder farmers.*

10,000 smallholder farmers, *50% of whom are women, adapt their agricultural activities to climate variability and change.*

5,000 women smallholders *improve their decision-making power in the household.*

The project contributes to the achievement of these Sustainable Development Goals (SDGs):

The participatory budget tool is used by farmers to support their planning. E-PICSA makes it easier to build, adapt, and share budgets for multiple enterprises.

An extension worker explaining the seasonal calendar tool to a group of farmers, using E-PICSA.

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