iSAT: Intelligent Agricultural Systems Advisory Tool for Climate Risk Management and Farm Decision-Making

Turning climate forecasts into actionable farm guidance!

iSAT (Intelligent Agricultural Systems Advisory Tool) is a digital climate advisory system that helps governments improve agricultural planning and resilience. It provides farmers with location-specific and crop-specific guidance based on climate forecasts, using structured decision tree logic. This allows national systems to move from generic advisories to more precise, data-driven recommendations that support climate risk management in rainfed agriculture.

This technology is pre-validated.

8·7 Scaling readiness: idea maturity 8/9; level of use7/9

Inclusion assessment 👍 10 👎 5 STOP 6

Climate impact 👍 2

Problem

- Difficulty in providing **reliable and localized climate information** to farmers at scale
- Limited ability to move from **generic advisories to location- and crop-specific guidance**
- High vulnerability of national agriculture systems to **climate variability and unpredictable rainfall**
- Weak coordination between **climate forecasts and practical farm-level recommendations**

Solution

- Deliver **localized, climate-smart agricultural advisories at national scale**
- Convert climate forecasts into **clear, actionable farming recommendations**
- Reduce production risks through **seasonal and in-season decision support**
- Strengthen the link between **climate services and agricultural policy implementation**
- Improve monitoring of impact through **farmer feedback and performance data**
- Support **food security and climate resilience strategies** with evidence-based tools

Key points to design your project

iSAT turns climate forecasts into simple, localized farming advice that helps farmers make better decisions, reduce losses, and improve productivity. It strengthens food security, climate-smart agriculture, and rural resilience by improving how climate information is used at farm level.

- Target smallholder and rainfed farmers, especially in climate-vulnerable areas
- Build awareness through extension services and farmer organizations
- Partner with meteorological services, research institutions, ILRI, and extension systems
- Use SMS, IVR, mobile apps, radio, and voice calls for wide access
- Train extension agents and farmers on use of advisories

Key indicators: farmers reached, adoption of practices, yield changes, cost reduction, climate loss reduction, service coverage, farmer satisfaction

IP

Open source / open access

International Livestock Research Institute (ILRI)
Jacob Emanuel

Technology from

PRMS

Commodities

Maize, Cowpea, Groundnut, Millet

Sustainable Development Goals

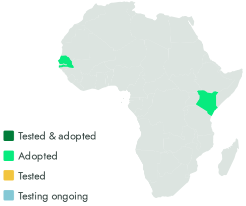
1 NO POVERTY
2 ZERO HUNGER
13 CLIMATE ACTION
15 LIFE ON LAND

Categories

Digital applications,

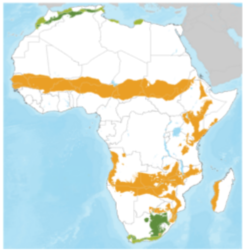
Digital Advisory and Extension

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Farmers, Advisory and Extension Services,