



# CLIMTAG

## Climate Information Tool for Agriculture

Agriculture is highly vulnerable to climate variability and change, making adaptation essential for ensuring resilience and sustainable production. CLIMTAG™ supports this need by providing tailored agri-climate information that enables **strategic planning** and helps build **climate-resilient agricultural systems**.

### TAILORED CLIMATE INFORMATION FOR THE AGRICULTURAL SECTOR

Access to **actionable, location-specific climate data** is often limited, yet crucial for adapting agricultural practices to increasing climate risks. CLIMTAG™ addresses this gap by offering decision-makers reliable, high-quality climate indicators based on historical and future datasets from the **Copernicus Climate Change Service**. This information supports impact assessment, adaptation strategy development, and the preparation of strong, evidence-based climate funding proposals.



[climtag.vito.be](https://climtag.vito.be)

### AGRI-CLIMATE INDICATORS AT HIGH RESOLUTION IN AN INTERACTIVE DASHBOARD



**INTERACTIVE PLATFORM FOR HIGH-RESOLUTION AGRI-CLIMATE INSIGHTS**

CLIMTAG™ offers **customized agri-climate indicators at high spatial resolution** through an **interactive web-based dashboard**. The indicators relate to climatic variables including rainfall, temperature, relative humidity, wind speed, solar radiation, and crop calendars. They also provide information such as the start of the rainy season, the duration of dry spells, drought periods, heat stress, drought-related precipitation deficit, and other climate-related risks relevant to agriculture.



**RELIABLE CLIMATE DATA SOURCES AND FUTURE SCENARIOS**

Historical climate information is extracted from **ERA5 reanalysis** climate data for the period 1981–2020. Future climate projections up to 2100 are extracted from the **CMIP6 multi-model ensemble**. Three **future climate scenarios** are included: SSP1-2.6, SSP2-4.5, and SSP5-8.5. All climate data is available from scientifically sound sources of the Copernicus Climate Data Store.



**ADVANCED DOWNSCALING AND BIAS CORRECTION TECHNIQUES**

Future climate projection datasets are **bias-corrected** using ERA5 reanalysis data. In addition, VITO's climate experts **downscale** the collected climate datasets using topographical methods and local weather datasets, as well as a correction factor for proximity to the sea. This way, **increasing the spatial resolution from the source resolution of approximately 25 km to around 1 km**.



**TIME HORIZONS AND USER-FRIENDLY CLIMATE EXPLORATION**

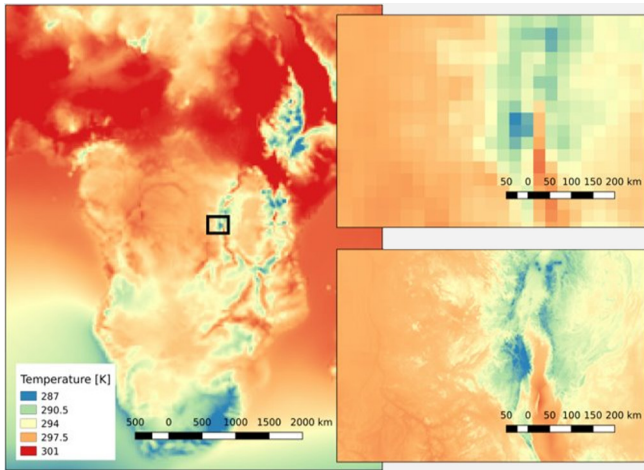
For **strategic adaptation planning**, past and future climate information is aggregated into **three time horizons**:

- near-term climate, covering 2011–2040
- mid-term climate, covering 2041–2070
- long-term climate, covering 2071–2100

CLIMTAG™ operates at country level, with an interactive dashboard offering spatially explicit agro-climate information in country-wide maps. You can explore seasonal variability and future climate trends at subnational level through intuitive graphs and download climate information for use in downstream applications.

## CO-CREATION SHAPES CLIMTAG™

CLIMTAG™ is developed through a **co-creation approach** to ensure it delivers **actionable and user-relevant climate information for agriculture**. VITO collaborates with partners such as the African Center of Meteorological Applications for Development (ACMAD) and engages with climate experts, agricultural stakeholders, and end users to design and refine the interface and indicators. This process ensures the tool meets the needs of key users, including national meteorological and hydrological services, ministries of agriculture, development agencies, climate service providers and consultants, and other organizations involved in agricultural planning and climate adaptation.



CLIMTAG™ downscaling

## NEW GENERATION OF CROP-SPECIFIC INDICATORS

The CLIMTAG™ team is also implementing a **new generation of crop-specific indicators** that combine climate data, Earth observation, and agronomical expertise. By linking climate information more directly to crop growth and production conditions, these indicators make the platform **even more actionable for agricultural stakeholders assessing climate impacts on specific crops**.

The new crop-specific indicators include **growing degree days, crop suitability indexes, hardiness indexes, and crop risk indicators**. Together, they support a more targeted analysis of how changing climate conditions may affect crop development, changing suitability and production risks across regions and future time horizons.

## EMPOWERED BY GLOBAL PROJECTS

CLIMTAG™ is currently **available in more than twenty African countries**, and is continuously being expanded. This is enabled by projects that help develop and scale the platform, including the pilot version supported by the Copernicus Climate Change Service, and the follow-up KLIMPALA project, supported by International Climate Funding from the Government of Flanders.

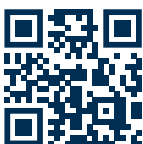
CLIMTAG™ is also **expanding to Europe**. With the support from FWO-IRI in the EMPHASIS-Belgium project, the platform is made available in five European countries: Italy, Belgium, Germany, France, and Portugal.

## CLIMTAG IN NUMBERS

- 25 African countries, and counting
- 5 European countries
- 47 agri-climate indicators
- 13 climate models (CMIP6)
- 3 future climate scenarios
- 1 km resolution



**Partner with us. Get access to actionable, location-specific climate information for better decision-making in agriculture.**



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