food security tep

esa

The Food Security Platform

Supporting Sustainable Food Production from Space

Food Security TEP consortium, presented by Sven Gilliams (VITO)

21 November 2017

Vista CGI vito Hatfield CONSULTANTS

Bringing together Food Security and Big Data

What is the Food Security TEP

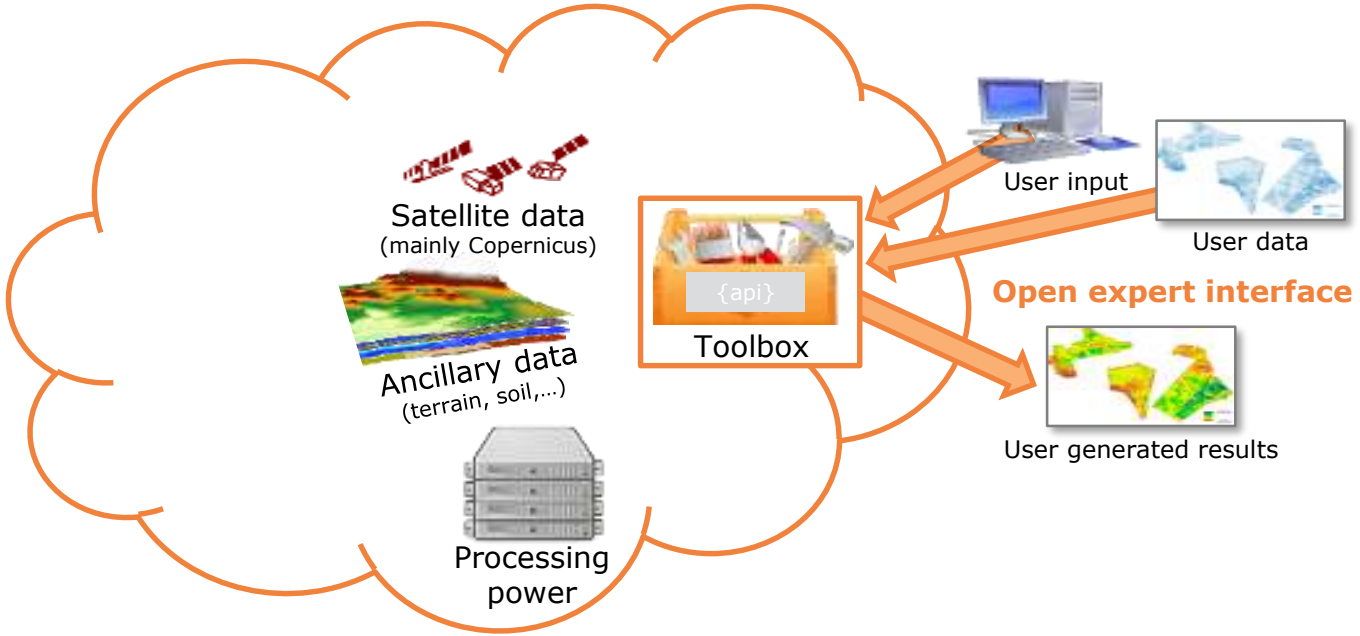
tep thematic exploitation platform

esa

"Supporting Sustainable Food Production from Space"

The innovative platform aims at simplifying the extraction of information from Earth Observation data for the advancement of data-intensive services in the food security sector mainly in Europe and Africa.

FS-TEP Essential: Environment for the Expert User



FS-TEP Essential: Available Data and Tools

(1) **Satellite data:** focused on Sentinel-2 in Phase 1, some additional data, pre-processed atmospherically corrected Sentinel-2 data as well as biophysical parameters (LAI, chlorophyll, fAPAR, fCover) for some areas (DE, BE, NL, selected parts of Zambia)

(2) **Ancillary data:** Terrain Maps, Soil Maps, some Meteo Data

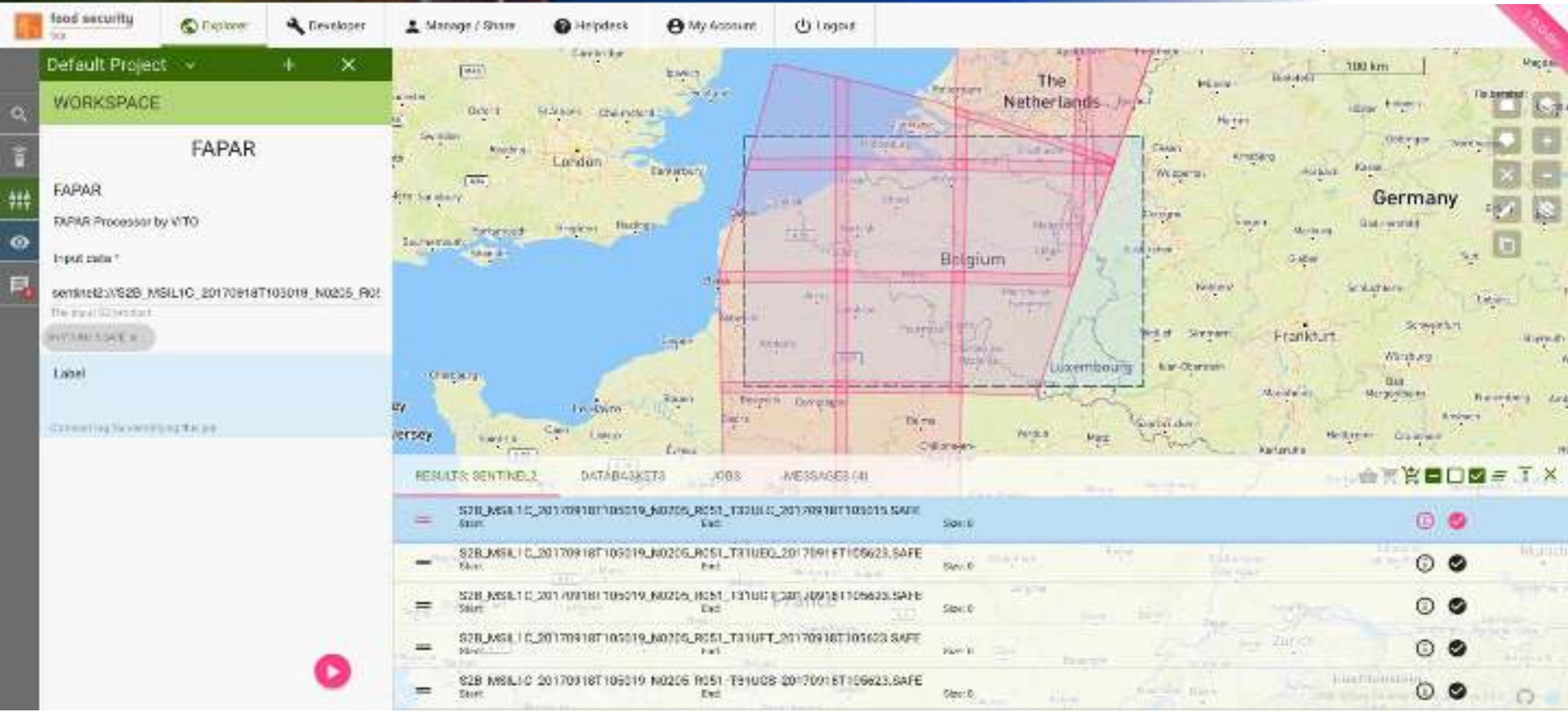
(3) **Tool boxes:** SNAP Toolbox, Sen2Agri Toolbox, GDAL

(4) **Basic functions:** Area and Time of Interest, basic GIS tools

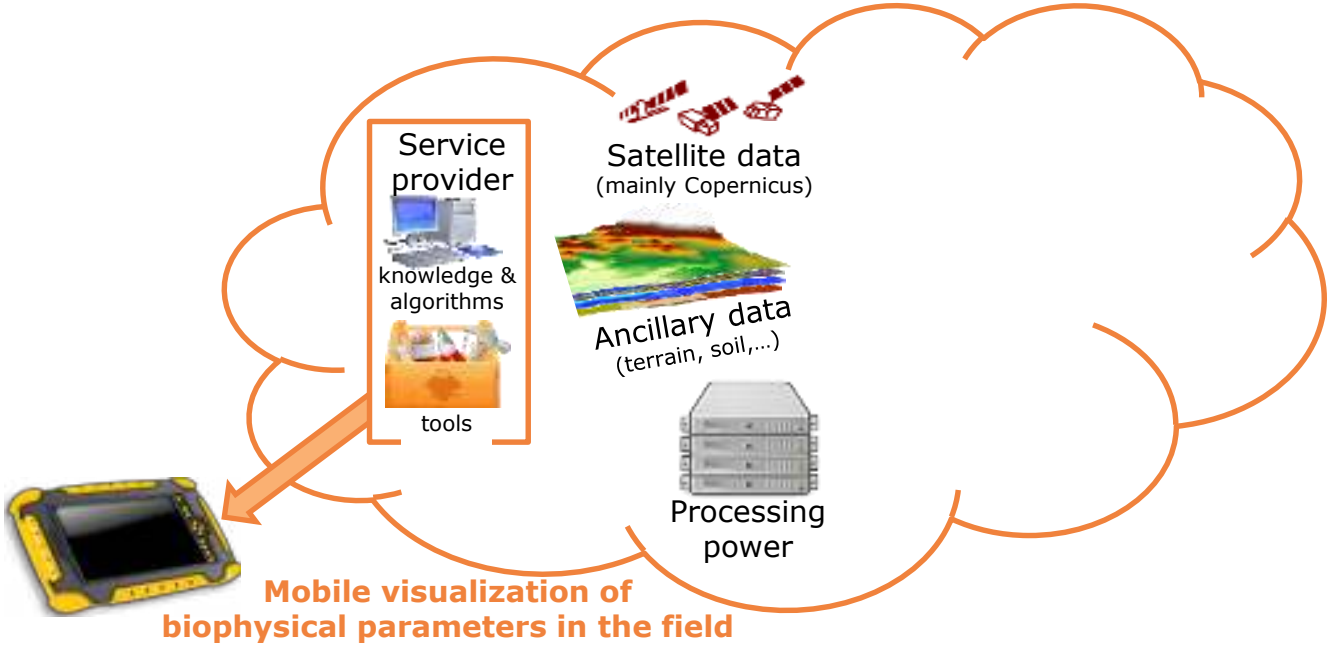
Expert users can use tools to compare and visualize data and their own knowledge and algorithms to process available data with the available tools.

For FS-TEP Essential, the data and tool provision is free, only used processing power and storage will be charged in some way (after end of ESA project).

Search data & Invoke processing



FS-TEP Mobile: Visualisation for Everybody



FS-TEP Mobile: What is it for?

FS-TEP Mobile provides **visualization for everybody**.

It is possible to

(1) Search and **visualize pre-processed biophysical parameters (leaf area, leaf chlorophyll, fAPAR, fCOVER)** in selected areas (in the beginning: DE, BE, NL, selected parts of Zambia).

(2) Have **basic GIS functionalities** to discover the products in space and time

FS-TEP Mobile can be taken out on the field on a mobile device to check areas that behave unexpectedly.

FS-TEP Mobile is **free of charge,** but data cannot be downloaded.

Data Example

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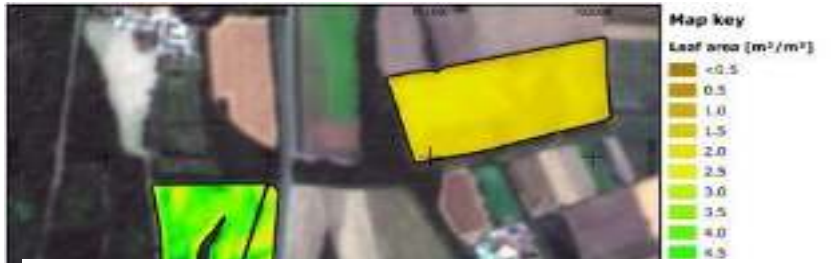
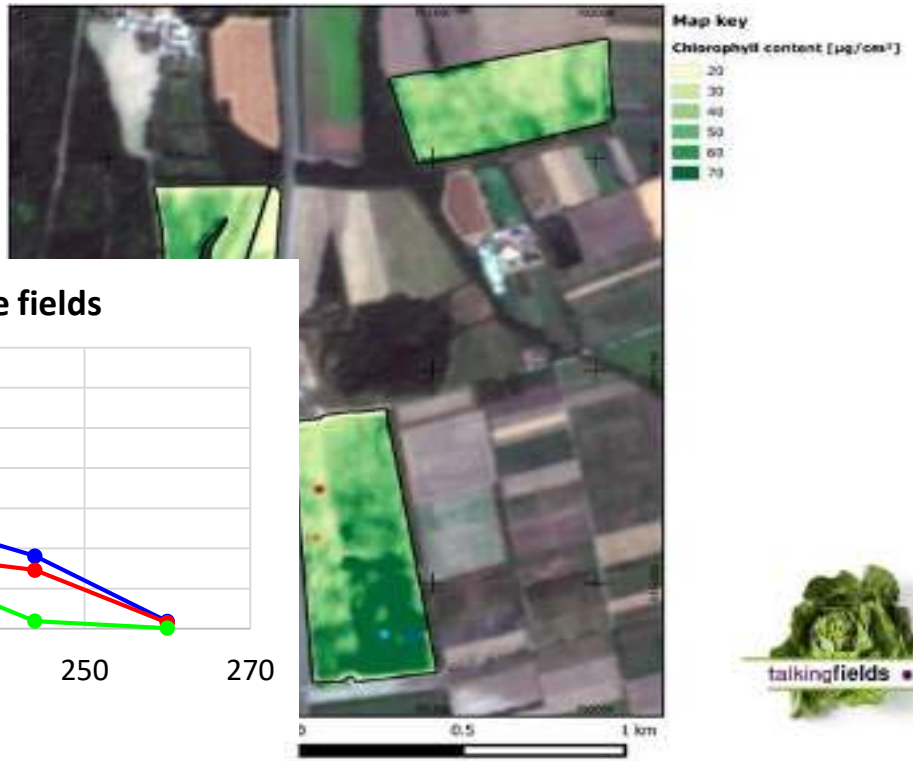
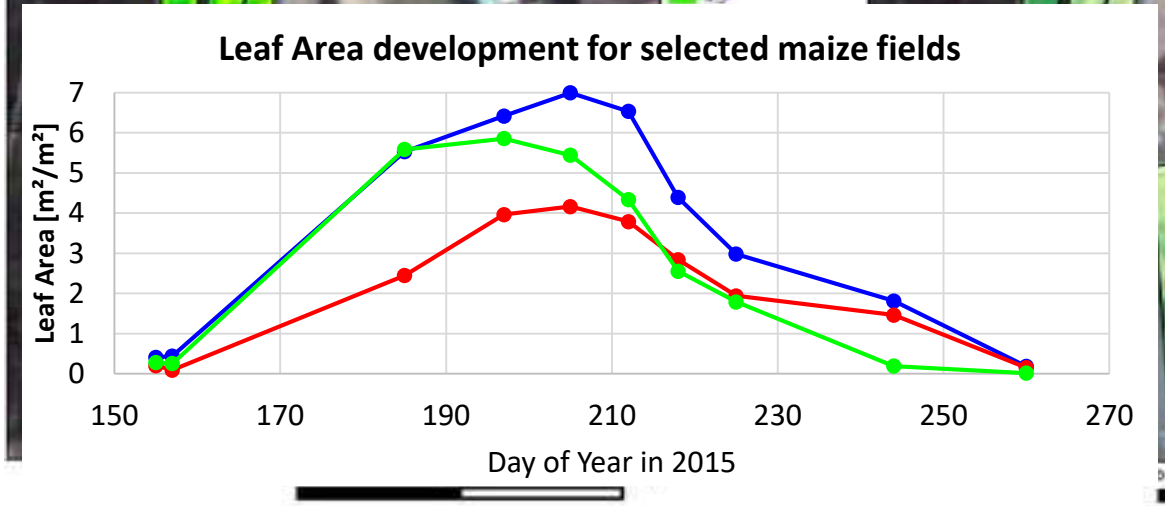
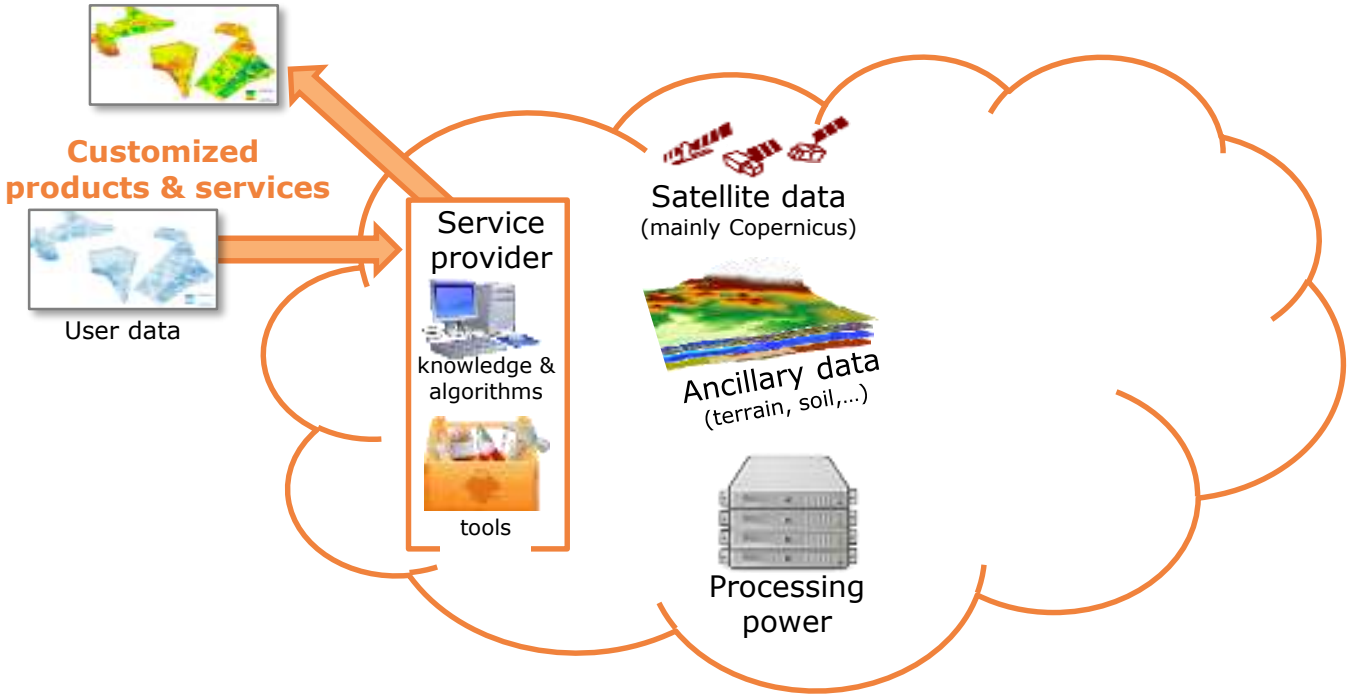






FS-TEP Customized Services



FS-TEP Customized: What is it for?

FS-TEP Customized allows the **purchase of EO-based services** without investing into dedicated personnel for EO data analysis.

Service Providers specialised in extracting information from satellite data use

- their IPR protected tools
- the FS-TEP infrastructure
- available data on the FS-TEP
- additional data provided by users (e.g. field boundaries)

to derive **high quality information** about crop status and deliver the customized results to the user.

FS-TEP Customized is **demonstrated** in three **service pilots.**

FS-TEP Service Pilots

Pilot 1 'Agriculture' (**VISTA** – VITO)

Central Europe & Eastern Africa

Pilot 2 'Agriculture' (**VITO** – VISTA)

Africa

Pilot 3 'Aquaculture' (**Hatfield**)

Africa

Food and Agriculture Organization of the United Nations

WatchITgrow® for the future of the Belgian potato chain ~ offering a customised service on FS-TEP

Monitoring potatoes from space!

Crop development

Field heterogeneity

Risk at production and quality losses

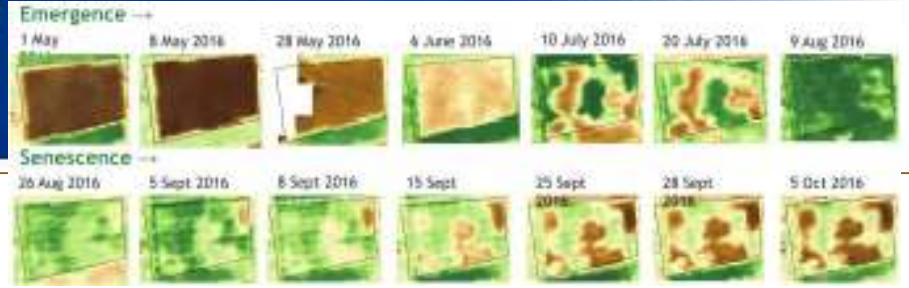
Yield forecasts

For all actors in the potato chain:

- Get access to satellite images, weather data, yield forecasts
- Store your own field data (e.g. treatments, yield samples,…)

www.watchitgrow.be

WatchITgrow® features



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Sentinel-2 of 20 July 2016 (10m)

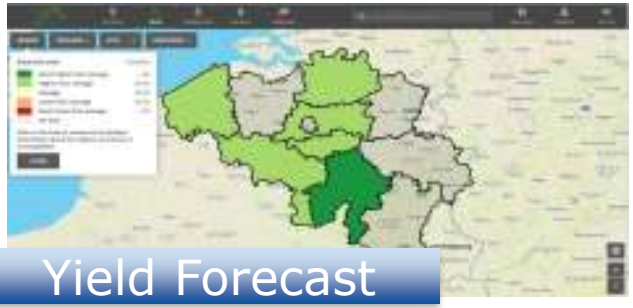
Field Anomalies

Compare Fields

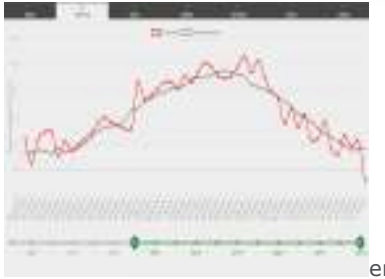
Sentinel-2 of 20 Aug 2016

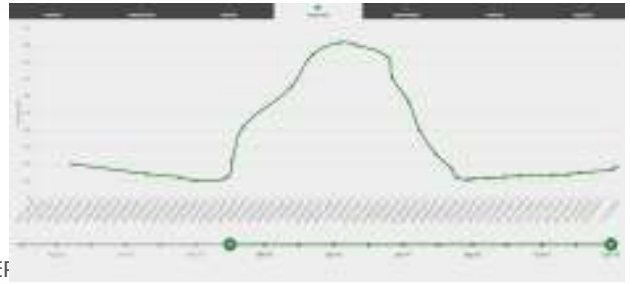
Field Heterogeneity

Monitor fields during season



Yield Forecast





Start Monitoring Your Fields

Our Portal is online, please visit: foodsecurity-tep.eo.esa.int

food security tep

URL: foodsecurity-tep.eo.esa.int

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Thank you!

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