



CGI



food security
tep

Bringing together Food Security and Big Data



Access to nutritious food is crucial to end hunger and malnutrition

Efficient use of satellite data and spatial information can

- sustainably increase agricultural and aquacultural productivity
- help farmers adapt to global change
- improve early warning initiatives



ESA TEPs**

"Bringing the users to the data"

A collaborative virtual work environment with

- access to EO data and tools
- processors and ICT resources
- one coherent interface

A collection of various satellite icons in different colors and orientations, scattered across the light blue background.

** **tep**
thematic exploitation platform

Start of the project: April 2017

The logo for the Food Security TEP, featuring the orange square icon and the text "food security tep".

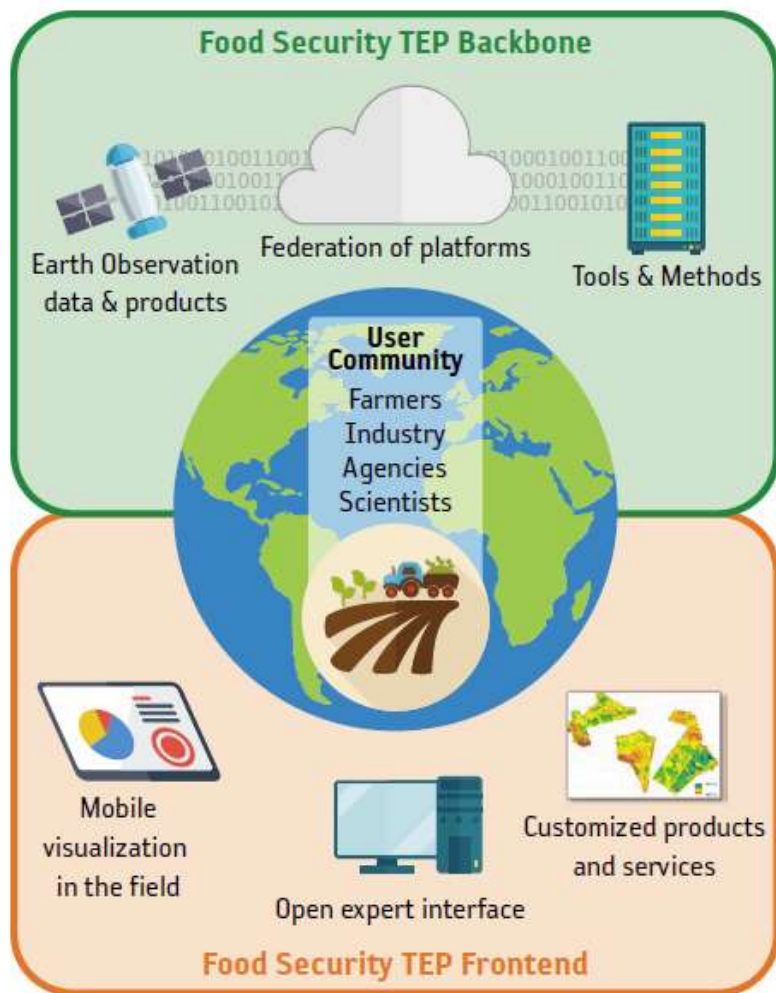
- strong focus on users
- agile development
- learning from other TEPs

- other ESA TEPs started beginning 2015 -

-----> <https://foodsecurity-tep.eo.esa.int/>

A row of logos for other ESA Thematic Exploitation Platforms: urban tep (purple), geohazards tep (orange), forestry tep (green), coastal tep (blue), hydrology tep (light blue), and polar tep (light blue).

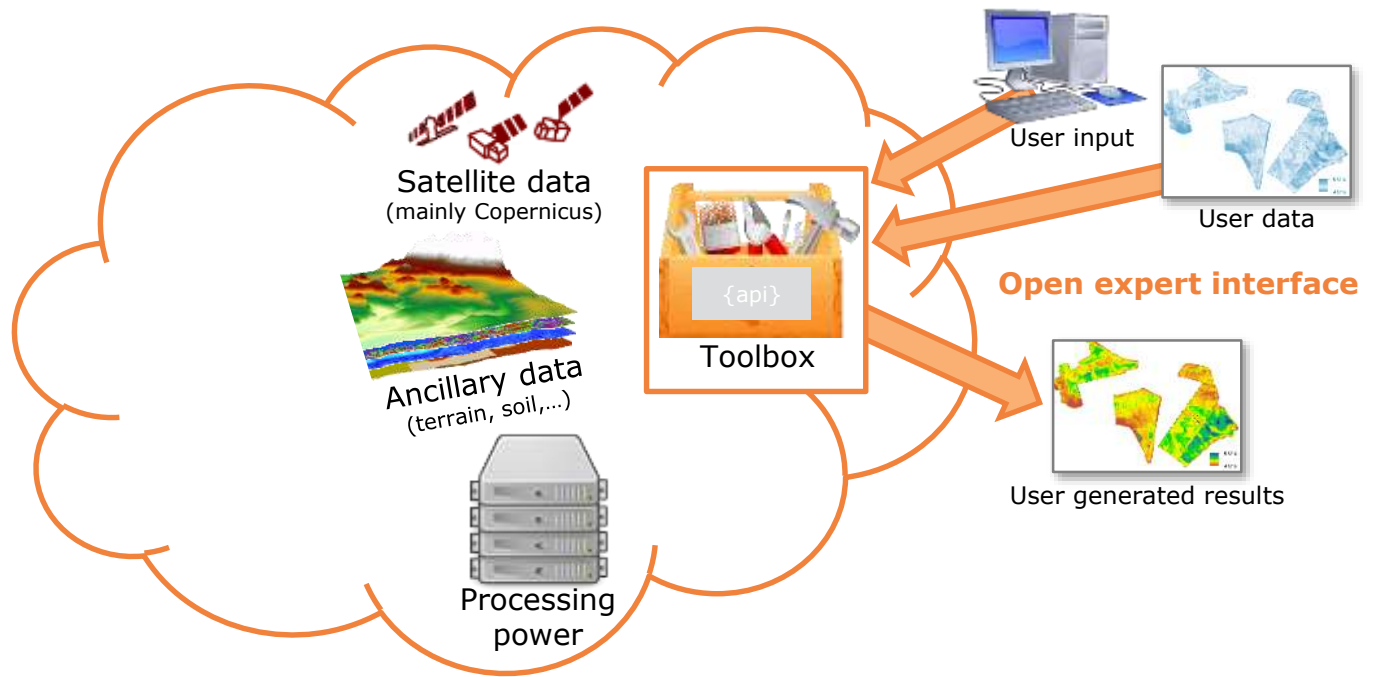
What is the Food Security Thematic Exploitation Platform?



“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

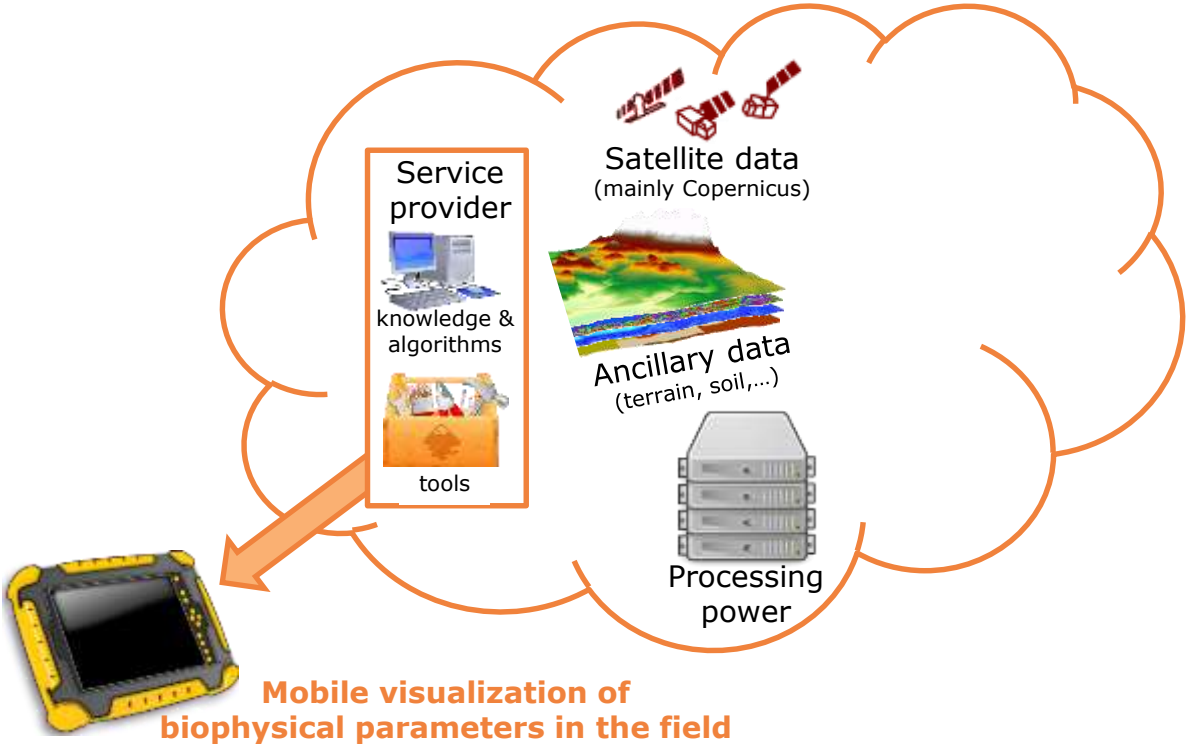


- (1) Satellite data:** focused on Sentinel-2 in Phase 1, some additional data, pre-processed atmospherically corrected Sentinel-2 data as well as biophysical parameters (LAI, chlorophyll, fAPAR, fCover) for some areas (DE, BE, NL, selected parts of Zambia)
- (2) Ancillary data:** Terrain Maps, Soil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

FS-TEP Mobile: Visualisation for Everybody



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.

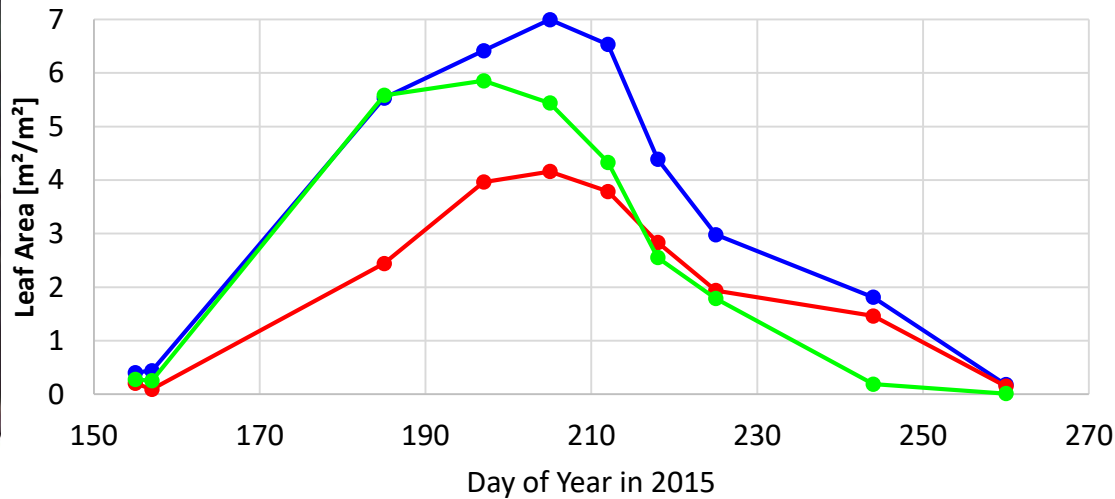
FS-TEP Mobile is **free of charge**, but data can not be downloaded.

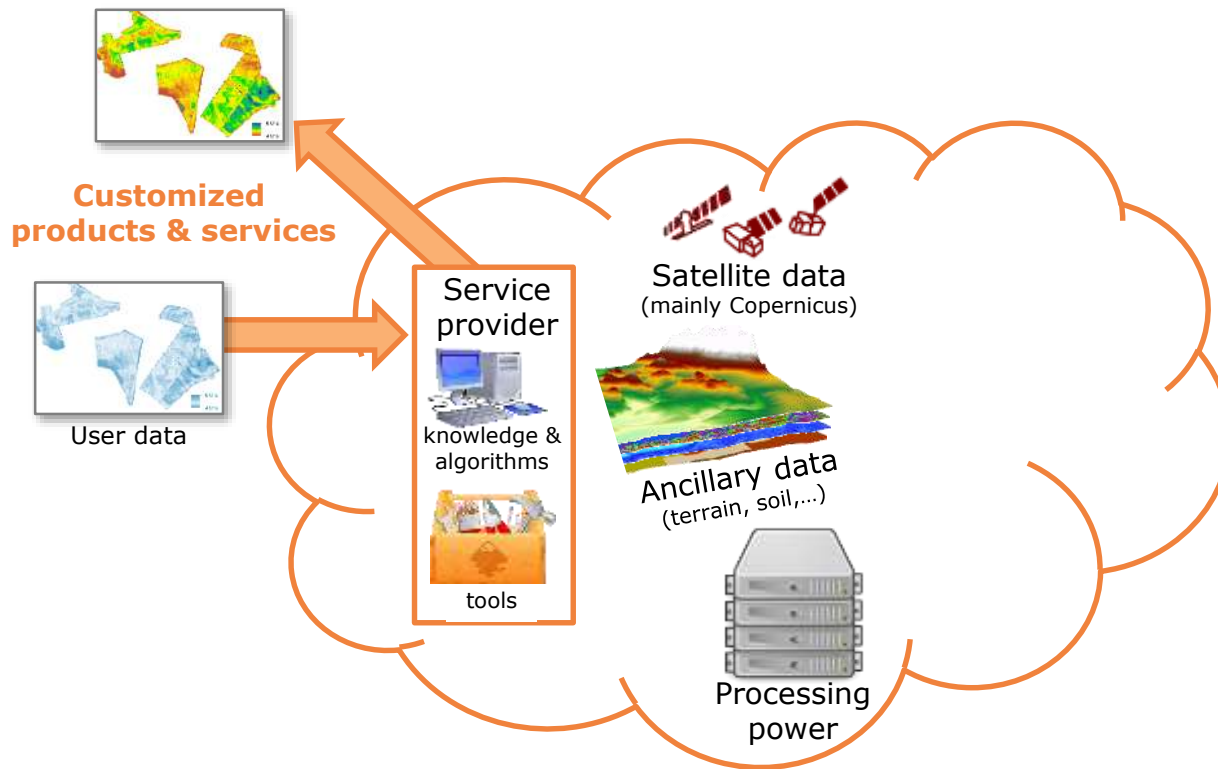
Data Example





Leaf Area development for selected maize fields





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

BayWa

belgapom

Pilot 2 'Agriculture' (VITO – VISTA)

Africa



FarmDrive

Pilot 3 'Aquaculture' (Hatfield)

Africa



Food and Agriculture
Organization of the
United Nations

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

