



CGI



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# Bringing together Food Security and Big Data



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## 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



## Start of the project: April 2017

- strong focus on users
  - agile development
  - learning from other TEPs
- other ESA TEPs started beginning 2015 -

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



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**urban**  
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**geohazards**  
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**forestry**  
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**coastal**  
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**hydrology**  
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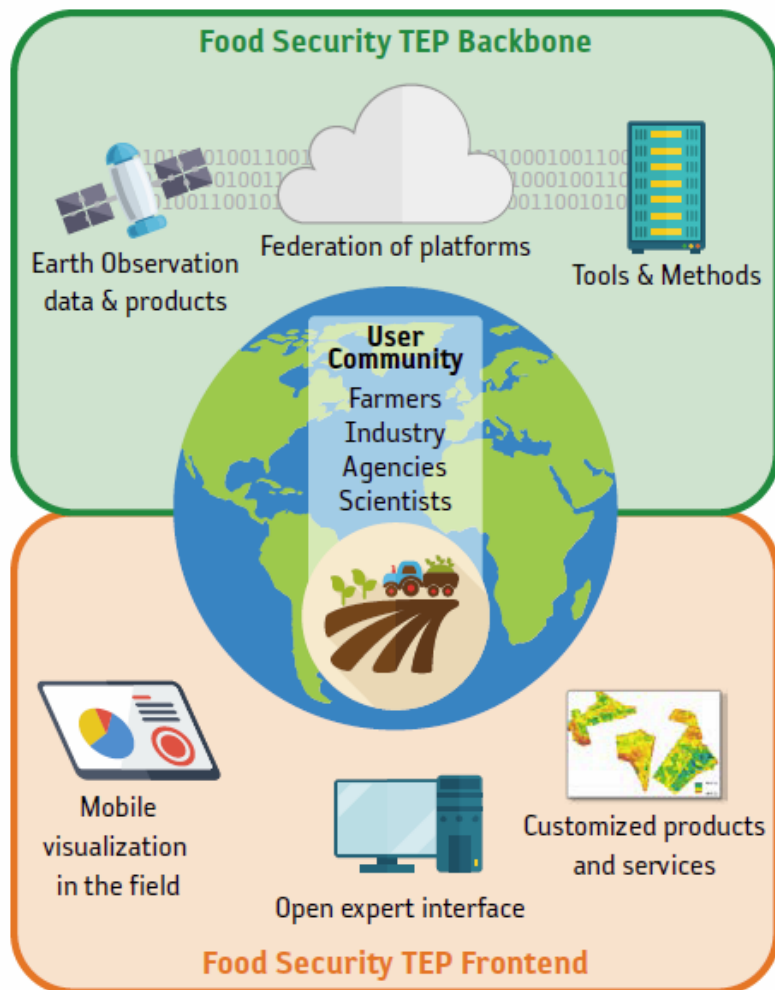
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# What is the Food Security Thematic Exploitation Platform?



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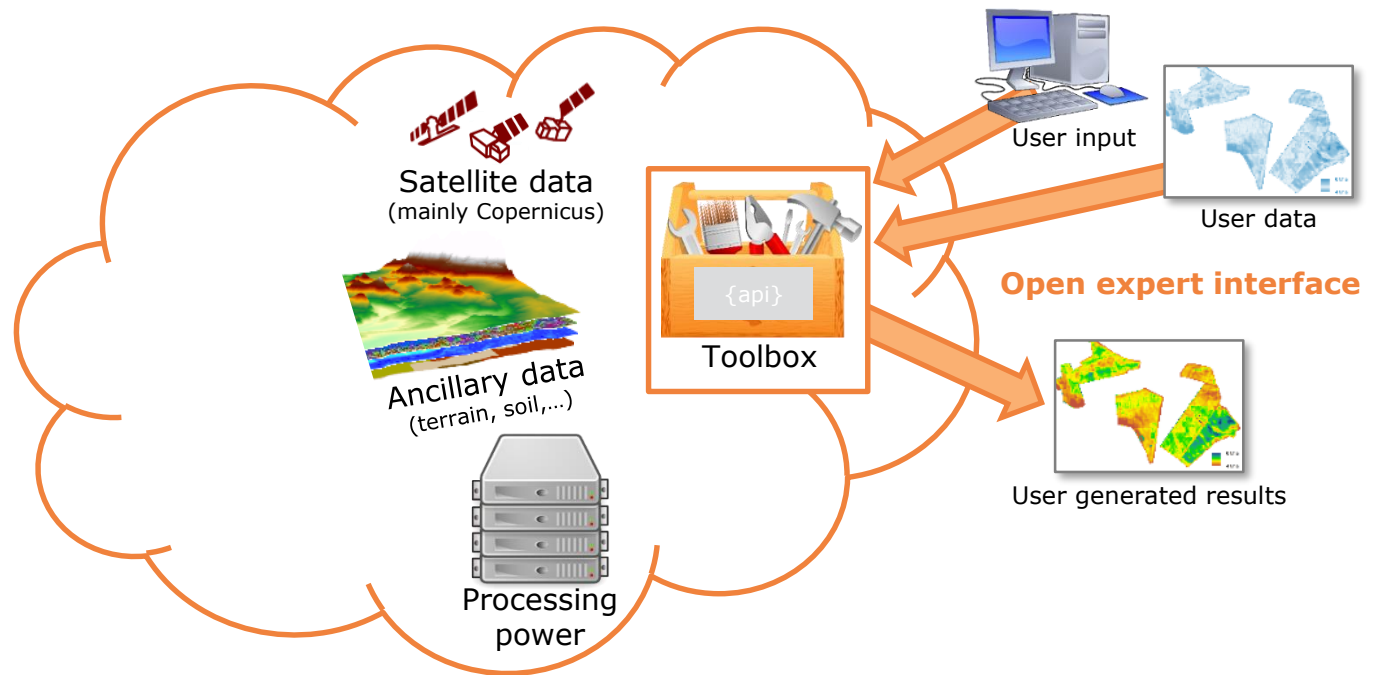
## “Supporting Sustainable Food Production from Space”

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



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- (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

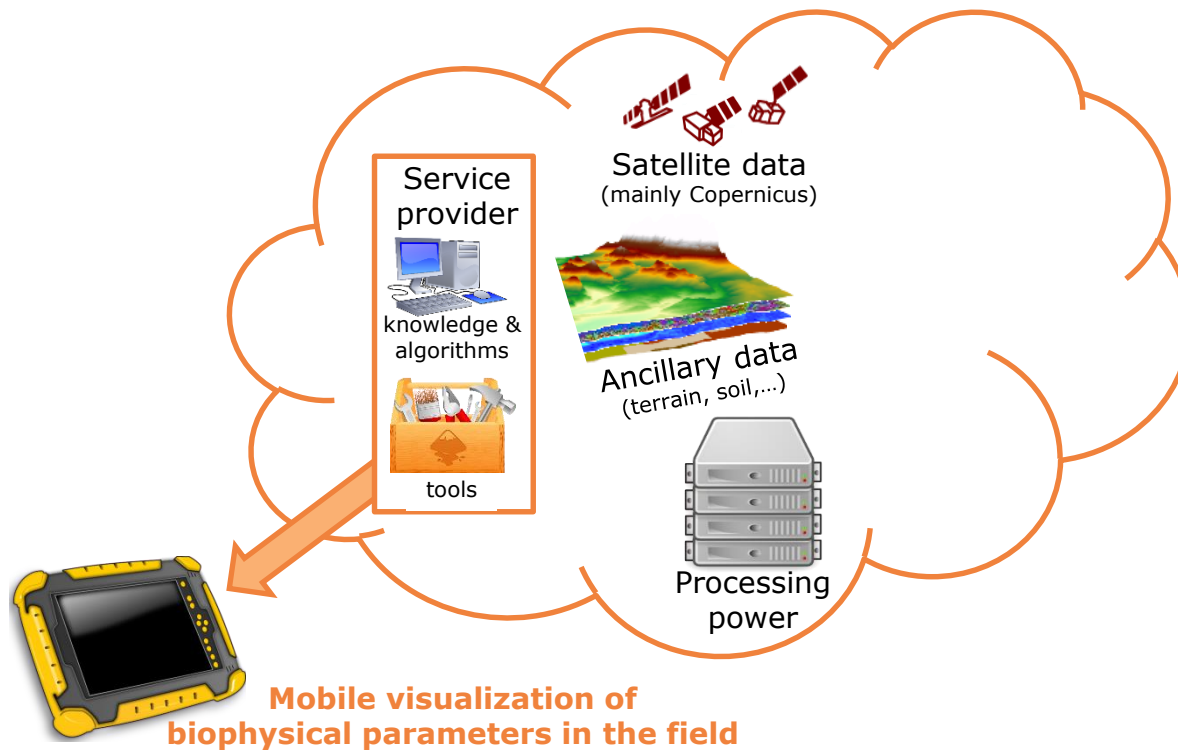
Expert users can use tools to compare and visualize data and their own knowledge and algorithms to process available open data with the available tools.

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



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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.



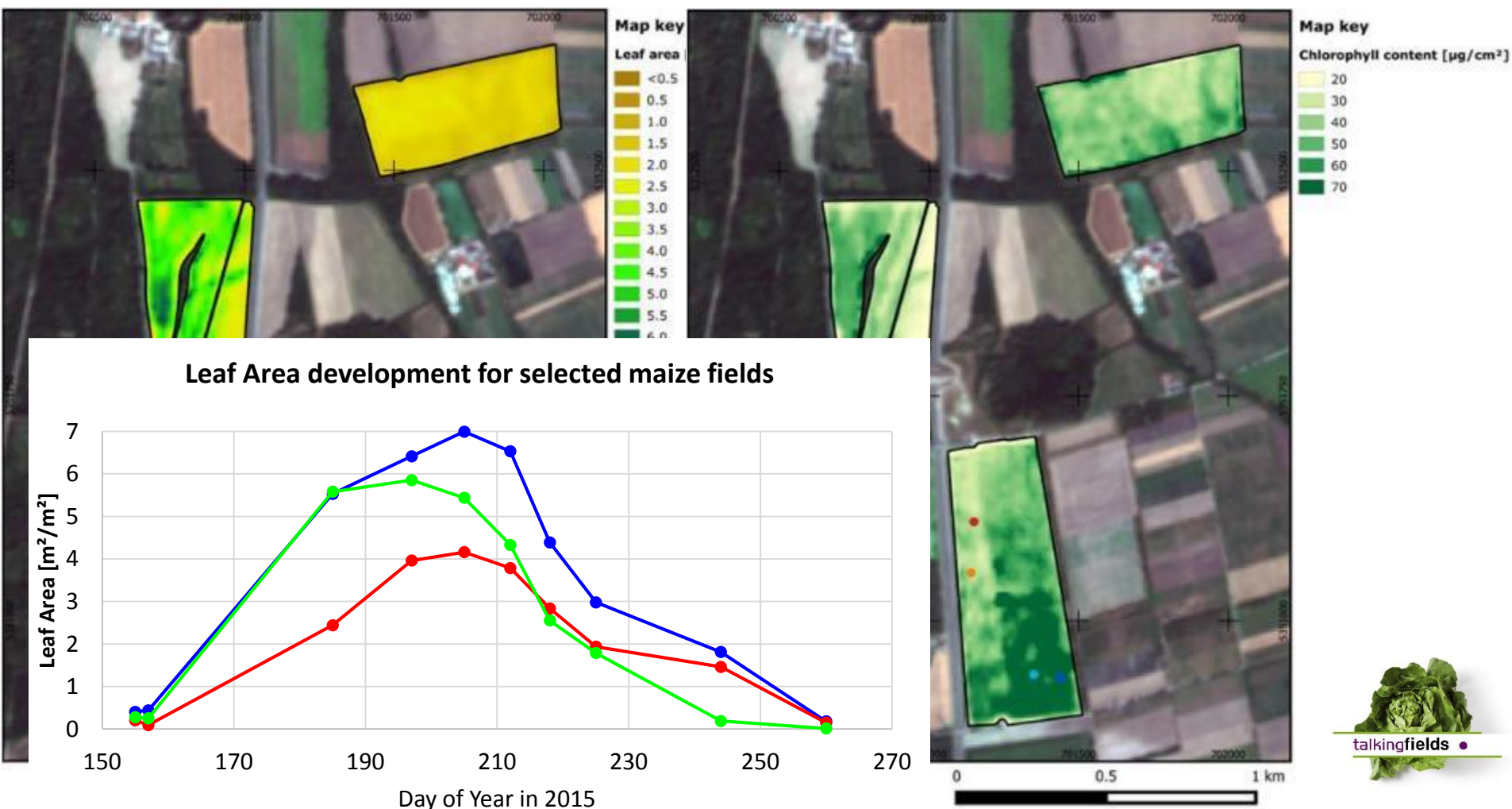
# Data Example

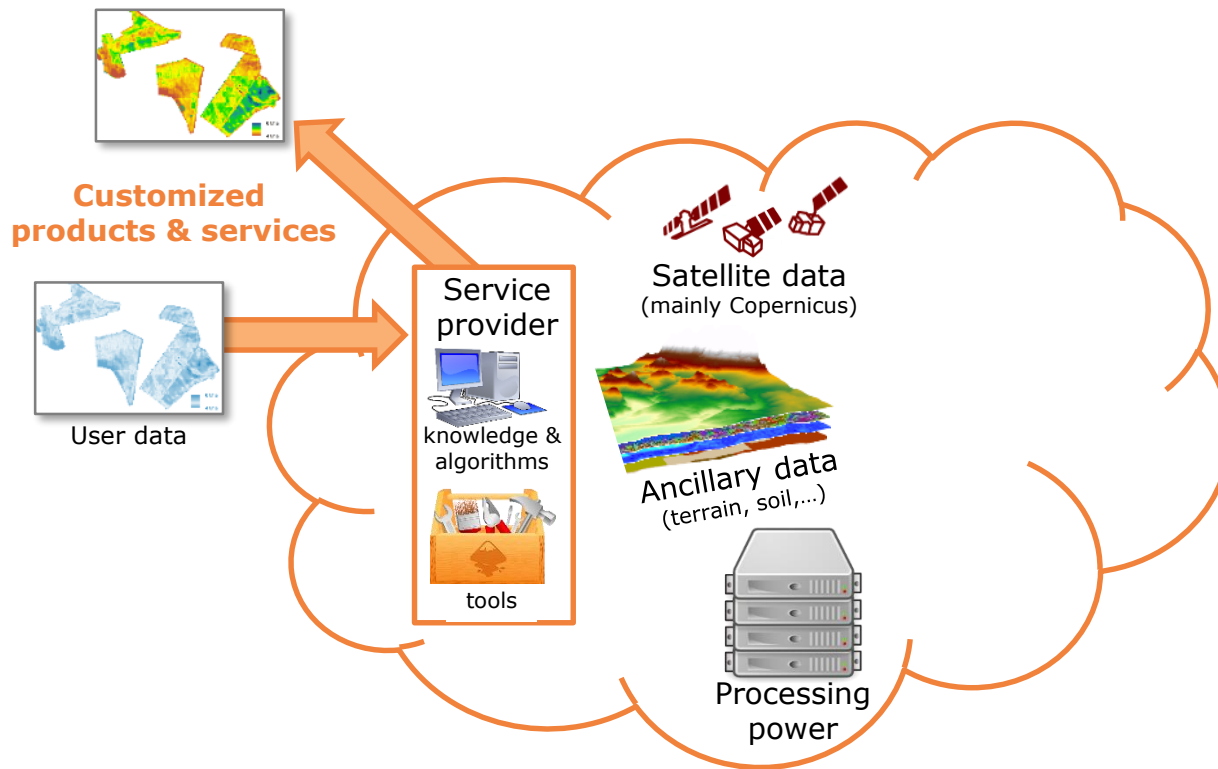


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# FS-TEP Customized: What is it for?



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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 open data on the FS-TEP
- additional (not open) 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**.





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  
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United Nations**

Our Portal is online, please visit: [foodsecurity-tep.eo.esa.int](http://foodsecurity-tep.eo.esa.int)

