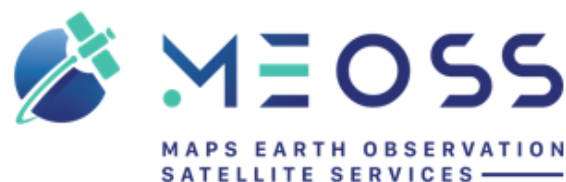




MEOSS

Space4Irrig

November 2022 | Oceania Geospatial Symposium



Earth monitoring services



SUSTAINABLE DEVELOPMENT GOALS



6.4 By 2030, substantially **increase water-use efficiency** across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement **integrated water resources management** at all levels, including through transboundary cooperation as appropriate



12.2 By 2030, achieve the sustainable management and **efficient use of natural resources**

12.8 By 2030, ensure that people everywhere have the **relevant information** and awareness for sustainable development and lifestyles in harmony with nature

12.A Support developing countries to strengthen their **scientific and technological capacity** to move towards more sustainable patterns of consumption and production

PROJECT CONSORTIUM

With the financial support of:



MEOSS



Mixed research unit

Conceptualization,
development and
marketing of the service

Development of
remote sensing
method



Water managers



Managers of missions of general
interest for the agricultural world



Géosciences pour une Terre durable
brgm

Committee of specialized experts

In-situ data collectors

Decision support tools to:

- **MONITOR** irrigated crops & water bodies,
- **EVALUATE** the irrigated & water areas,
- **ANTICIPATE** water needs and tensions.



MEO-Irrigation



Methods



→ IRRIGATION



Machine learning algorithm

Supervised detection using Sentinel-1 time series and in-situ data for model learning.

→ WATER RESERVE

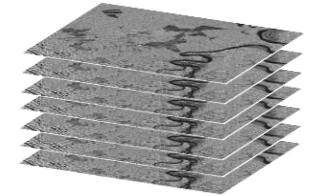
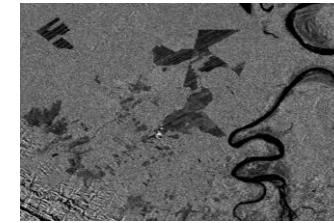


Thresholding technique

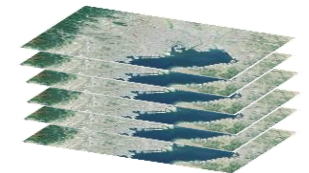
The pixels of the image are divided by a threshold T on spectral indices into two classes at each acquisition date.



Sentinel-1 (radar)

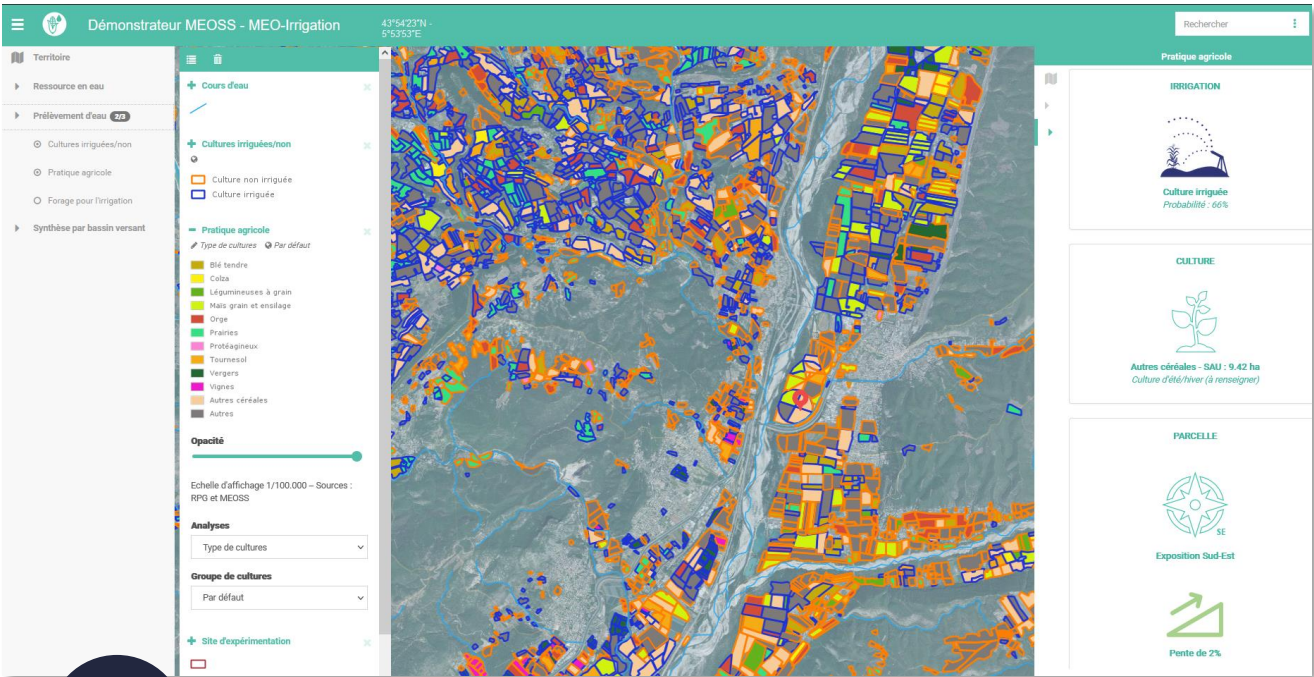
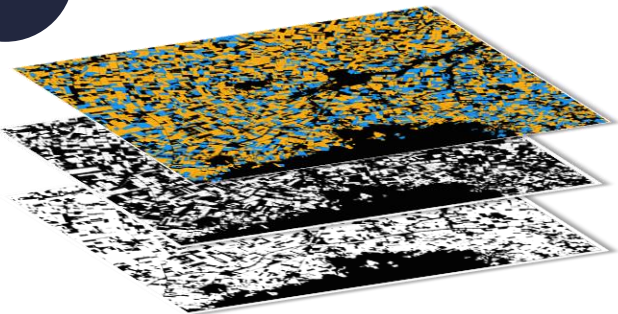


Sentinel-2 (optic)

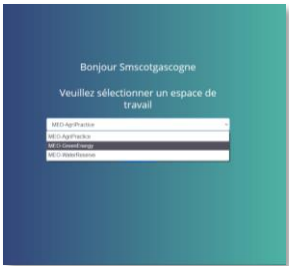
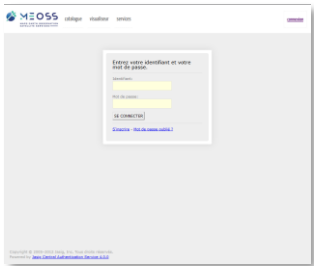


MEO-Irrigation products

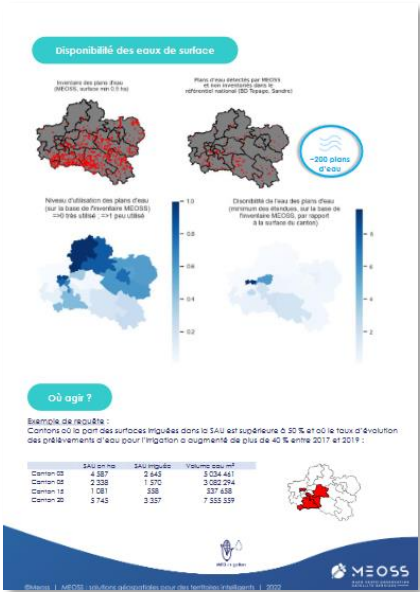
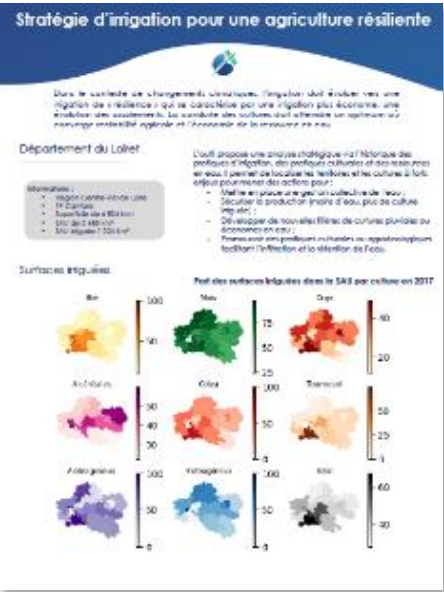
3 GIS data



1 Web-cartographic platform



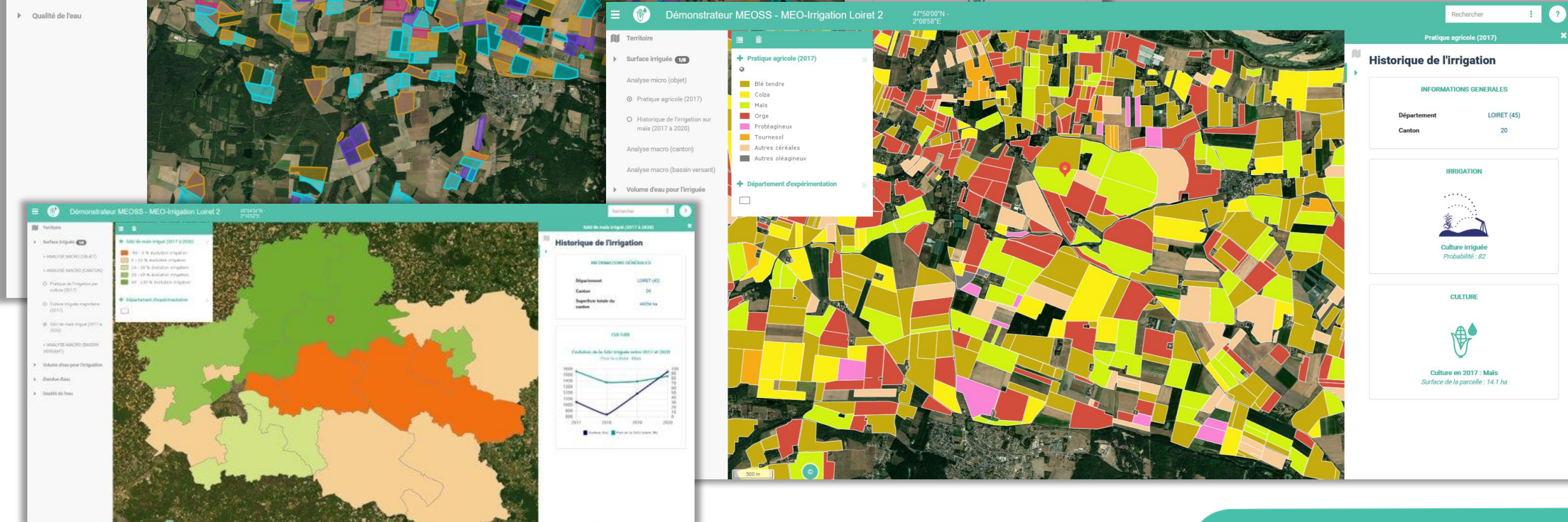
2 Synthetic report(s)





Micro analysis

- History/Rotation of irrigated plots
- Crops and irrigation practice



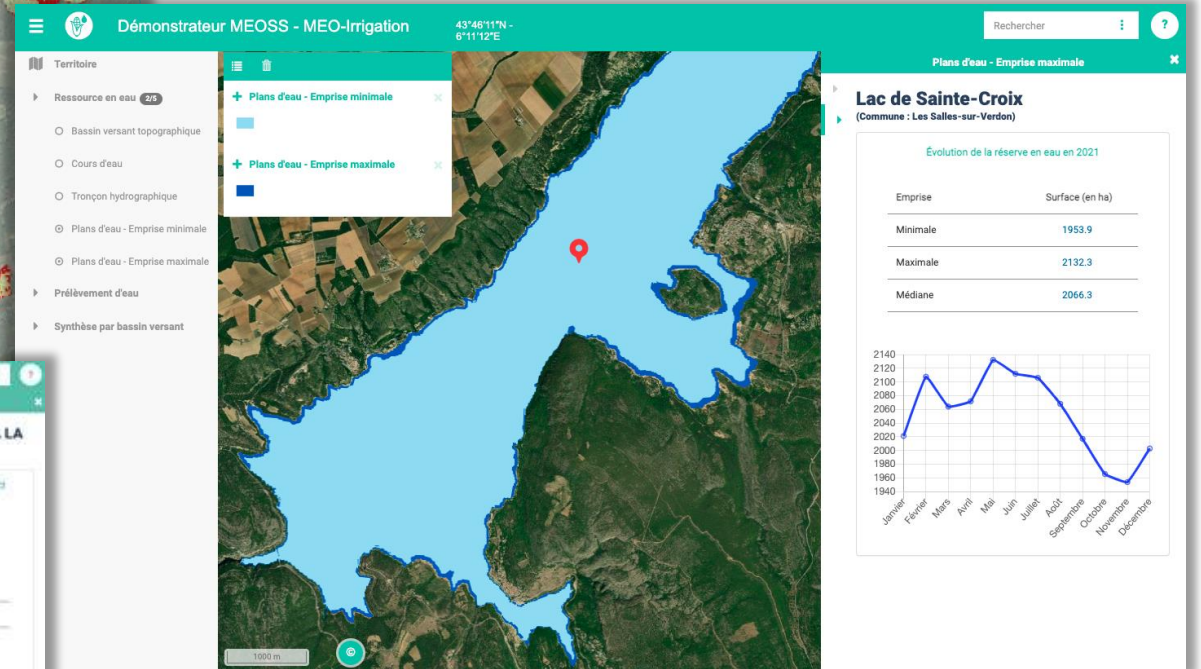
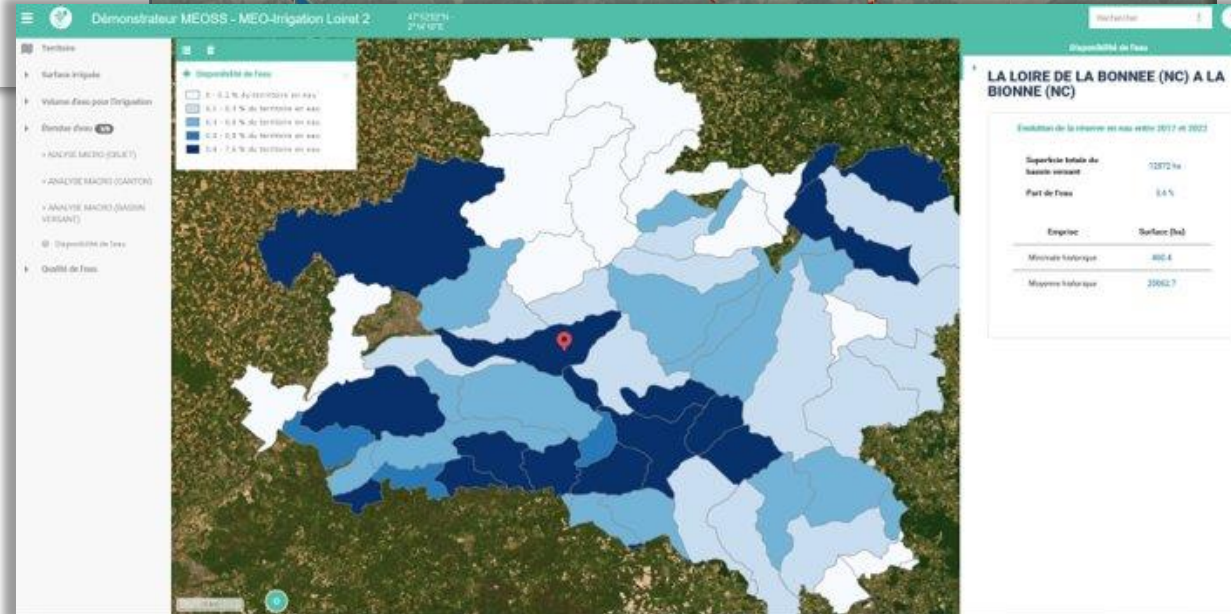
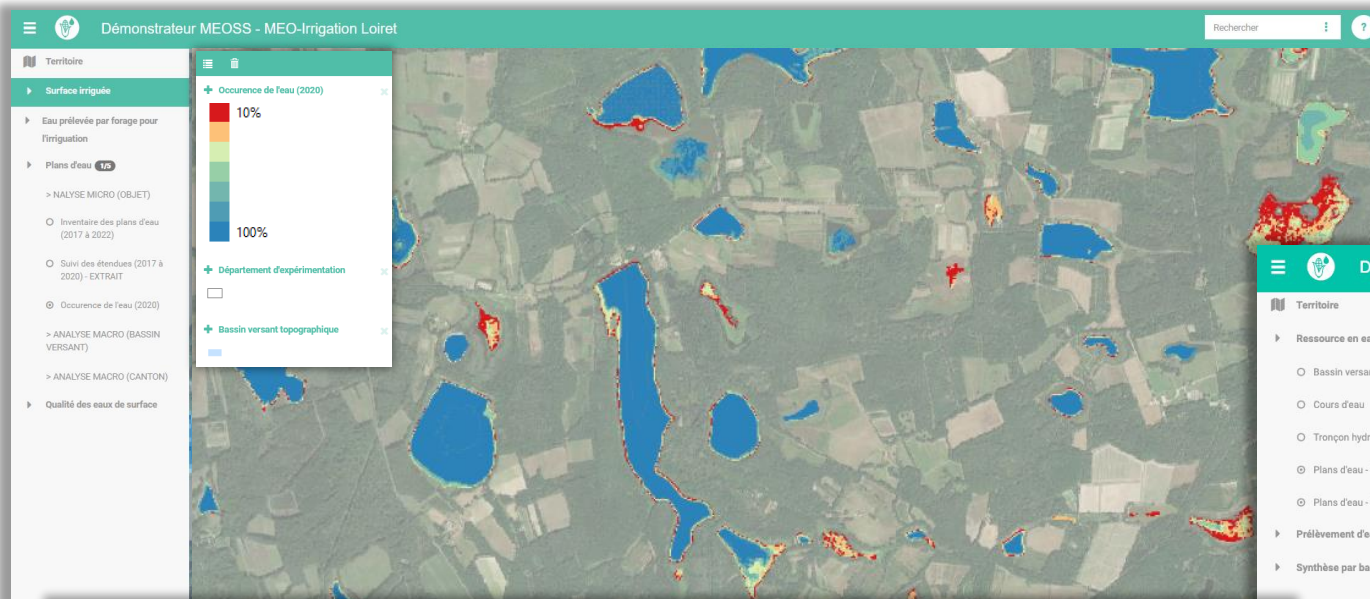
Macro analysis

- Evolution of irrigated areas



Micro analysis

- Water persistence
- Evolution of water surfaces



Macro analysis

- Water availability



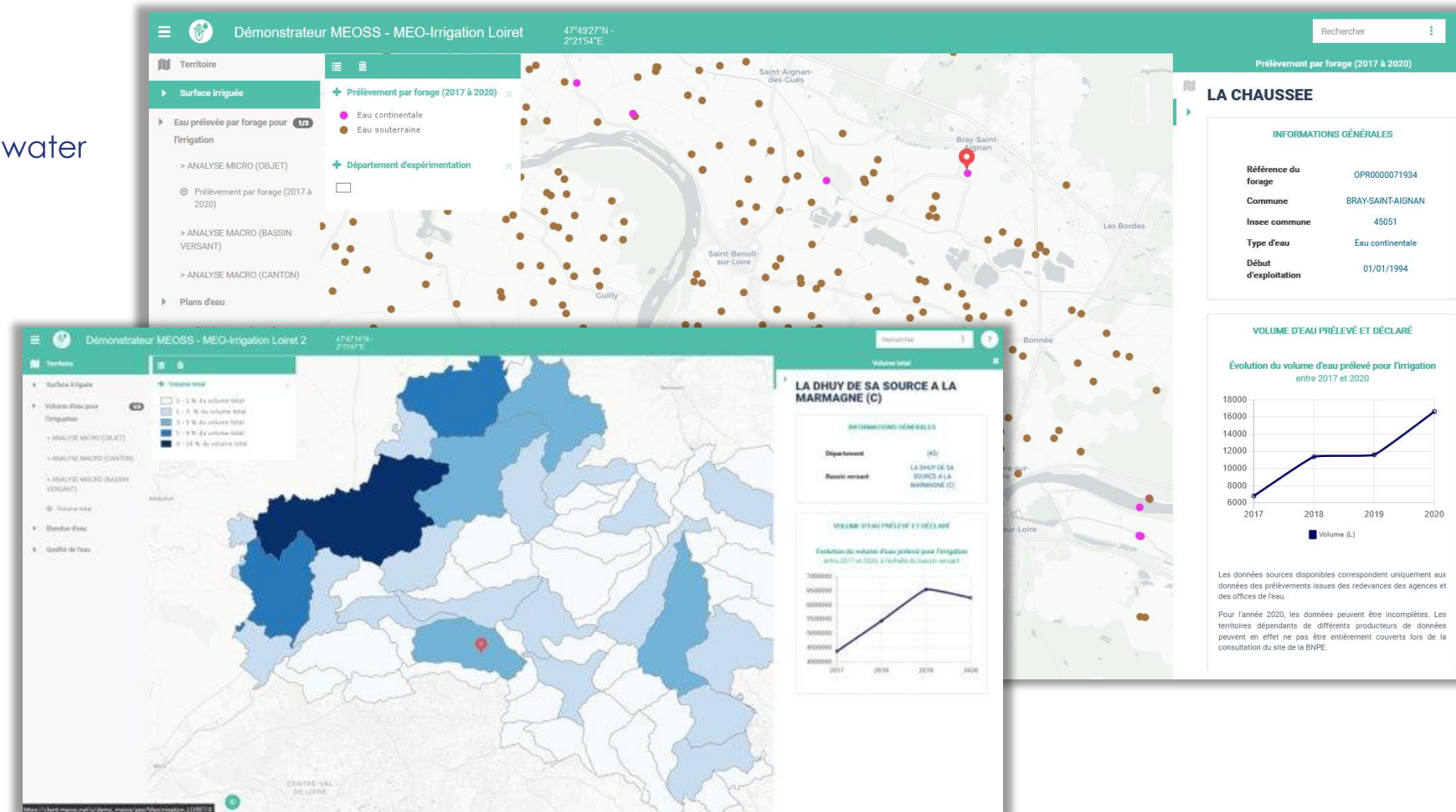
INTEGRATION OF LOCAL AND USER DATA

Micro analysis

- Borehole and volumes change of water withdrawn for irrigation

Macro analysis

- Aggregation of water withdrawn by borehole for irrigation at the sub-watershed level





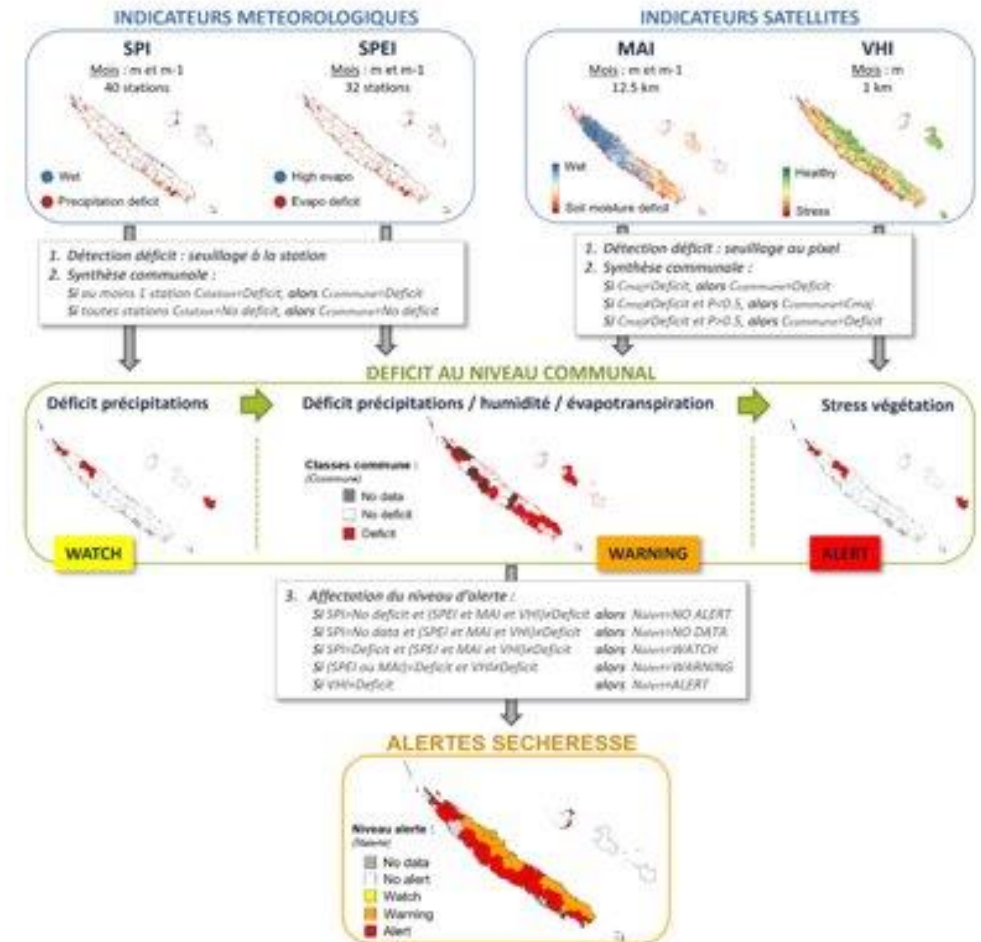
Irrigation monitoring is coming...

Partnership with the Caledonian company **INSIGHT**

EO4DM



Earth Observation 4 Drought Monitoring





MEOSS

MAPS EARTH OBSERVATION
SATELLITE SERVICES —



THANK YOU FOR YOUR ATTENTION !

CONTACT US

Nafissa Sfaksi

Contact@meoss.net

n.sfaksi@meoss.net



linkedin.com/company/meoss



twitter.com/MEOSS_Space



meoss.net

