AgriSat Iberia S.L.

12/09/2022

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

AgriSat Iberia S.L.

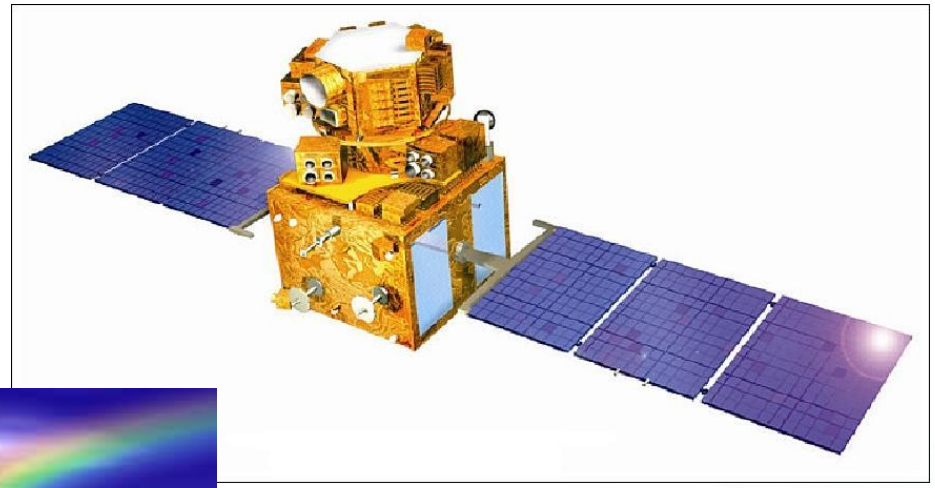
Mission statement: **Help farmers** to optimize inputs of **water & nutrients** in order to be **more competitive** and **make a better living** while **protecting the environment**

Expertise: **Operational services** based on **leading edge EO & GIS co-created with** and applied for **farmers, multi-actor community methodology**

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

AgriSat Iberia S.L.

"connecting Heaven….

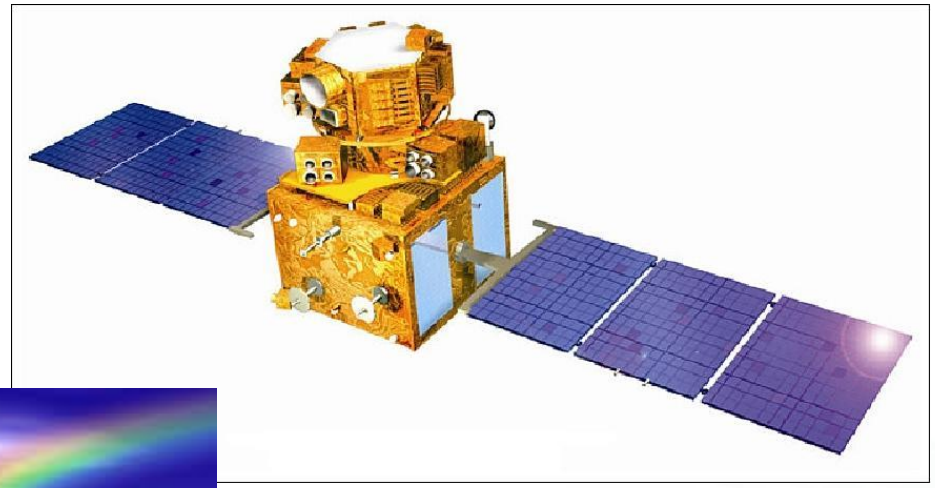


….and Earth"

part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

AgriSat Iberia S.L.

"connecting research….



….and farmers"

part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

AgriSat Iberia S.L.

Our history

1994 RS & GIS Lab

1997- ERMOT

2002-2005 DEMETER

2006-2010 PLEIADES

2010-2013 SIRIUS-GMES FREE L8 IMAGES

2014 AGRISAT

2015-2018 FATIMA FREE S2 IMAGES

2016-2019 APOLLO DIANA

2019-2024 **LENSES** REXUS FaST ....

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

AgriSat Iberia S.L.

Our team

Anna Osann

Vicente Bodas

Andrés Cuesta

Carmen Plaza

María Calera

Milagros Alfaro

M-Llanos López

Julio Villodre

David Roldán

Esteban Henao

Jaime Campoy

Braulio Moreno

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

AgriSat Iberia S.L.

Our main services

griSatwebGiS®

irrimaps®
Riego eficiente

fertimaps
Gestión agronómica eficiente

Hidrogestor
Administración inteligente

i+D

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

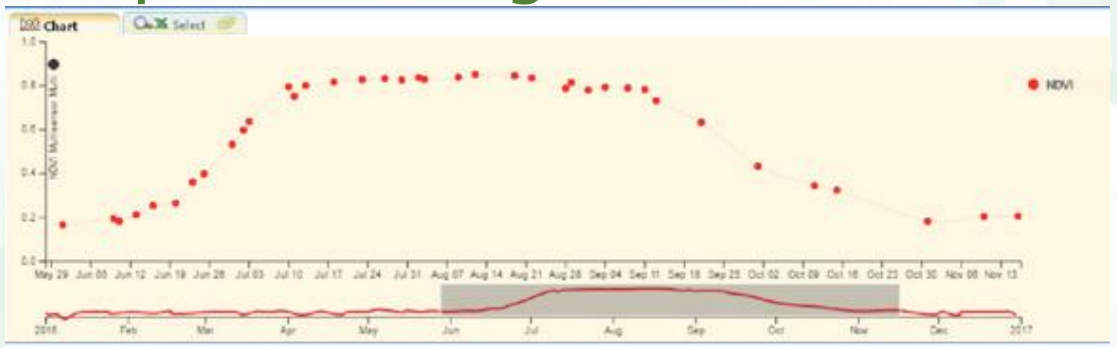
Platform (web and APP)

- Time series of:
  - Satellite images (S2A-S2B, Landsat)
  - Vegetation Indexes (NDVI, NNI)

RGB

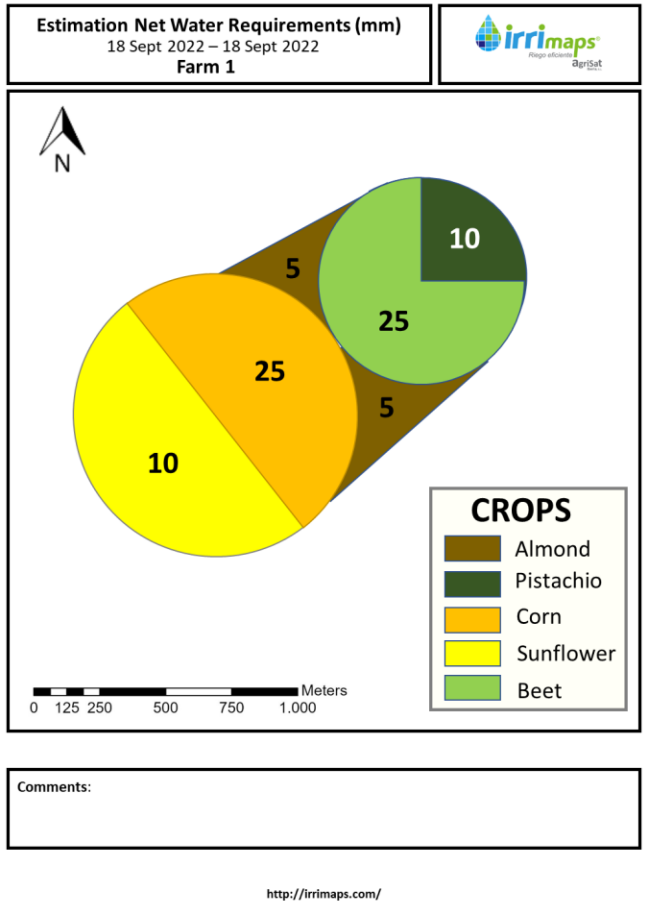
NDVI

Crop monitoring



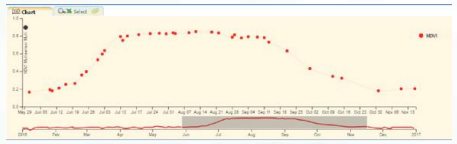
This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

Estimation of crop water requirements one week in advance



Based on Crop coefficient-Reference Evapotranspiration from FAO56

$$ETc = Kc \cdot ETo$$

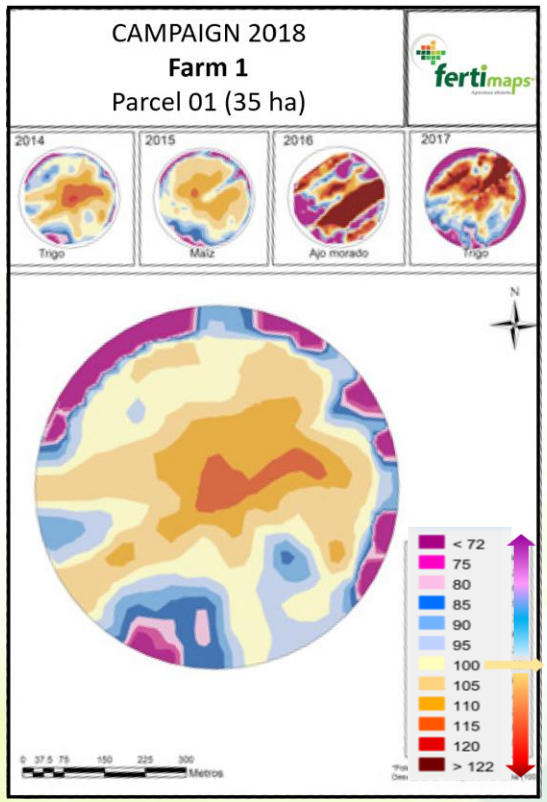


NDVI **ETo prediction**

Adjustment of crop water requirement according to the crop phenological state and the weather

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

Management Zone Map (MZM)
Characterization of the variability of agricultural plots



Lower productivity

Mean

Higher productivity

Crop growth is affected by soil fertility, environmental conditions and the crop management

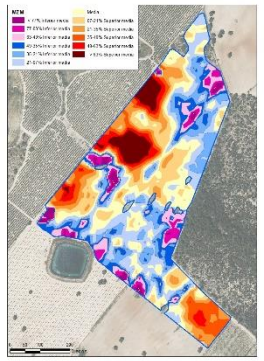
- Integration of the dynamic crop growth through the series of satellite images at pixel scale

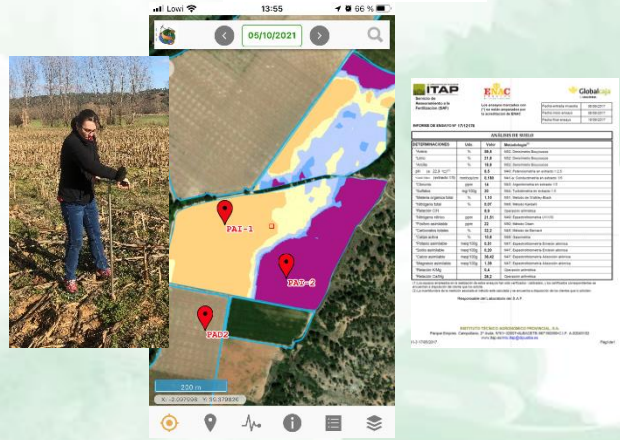
- The values of each pixel are compared to the mean value of the total crop unit → **MZM**

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

Management Zone Map (MZM)
Characterization of the variability of agricultural plots

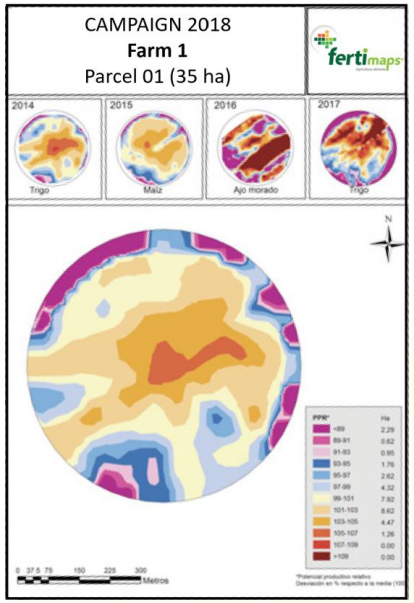
- Classify the area of the plot in categories with different productivity potential.
- Identify areas of the plot that require special attention
- Quantify damage to any crop incident.
- Determine the appropriate sampling points (soil, quality, maturity, harvest, ...)
  - Soil sampling at representative points in the different areas of the plot
  - Soil analysis and interpretation of results

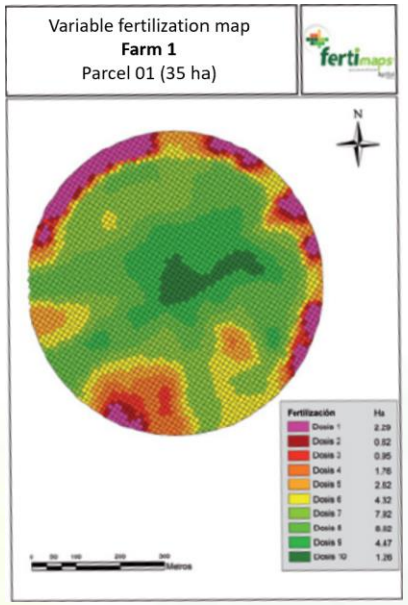




This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

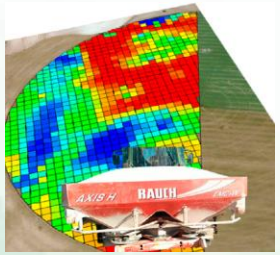
Management Zone Map (MZM)
Characterization of the variability of agricultural plots

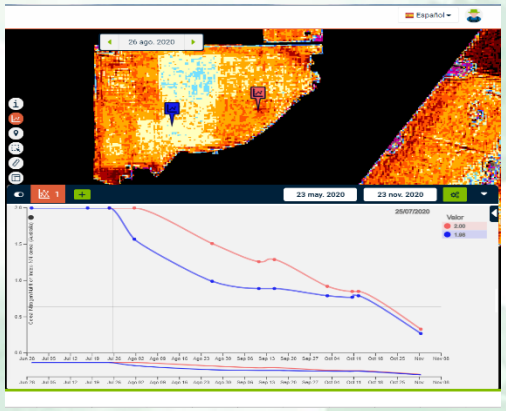




- Fertilization with variable rate
  - Maps of variable rate adapted to the farmers needs (machinery)

- Real-time monitoring using the Nitrogen Nutrition Index (NNI) to detect possible deficiencies in cereals.





This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

IRRIGATED SURFACES

The starting point is the map of the irrigated areas of the area of interest, which can be obtained with different methodologies.

More information

WATER NEEDS

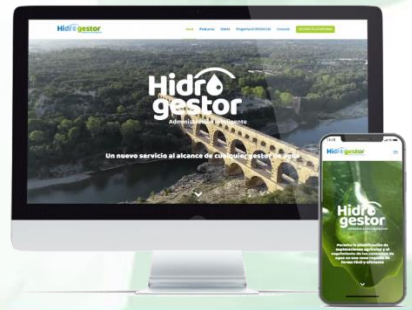
From the map of irrigated areas, the water needs or demands of the irrigated area are calculated through the calculation of crop evapotranspiration.

More information

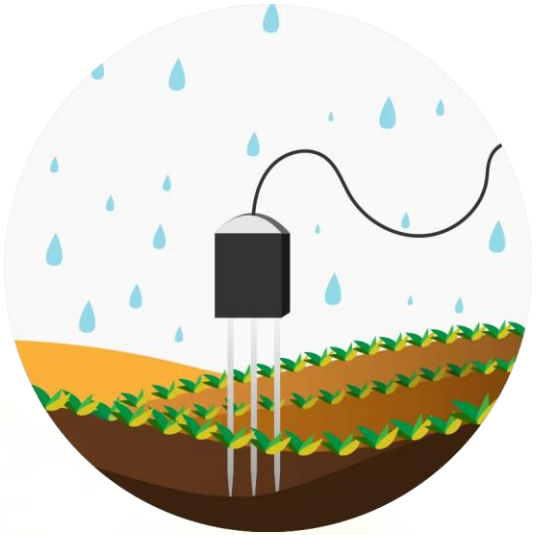
VOLUMES CONSUMED

From the water needs and through a balance of water in the soil, the volumes consumed for the area are calculated, in each plot.

More information



PRIMA PARTNERSHIP FOR RESEARCH AND INNOVATION IN THE MEDITERRANEAN AREA
This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]



Soil sensors

Weather stations

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

Potential → Exploitable Results

Pilot implementation

Water accounting and footprint

Land use map of agricultural crops

Land use suitability

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]

the LENSES project

agriSat Iberia, S.L.

This project is part of the PRIMA programme supported by the European Union.
GA n° [2041] [LENSES] [Call 2020 Section 1 Nexus IA]