



Detection and Integrated Assessment of Non- authorised water Abstractions using EO

*Detección y evaluación integrada de extracciones de agua no autorizadas
utilizando EO*



María-Llanos López
Anna Osann
María Calera
Milagros Alfaro

Alfonso Calera
Jesús Garrido



01/2017 – 12/2019 2,5 MEUR

IRRIGATION → Main use of water in the EU (agriculture)

Problem → Non-authorized water (over-) Abstractions

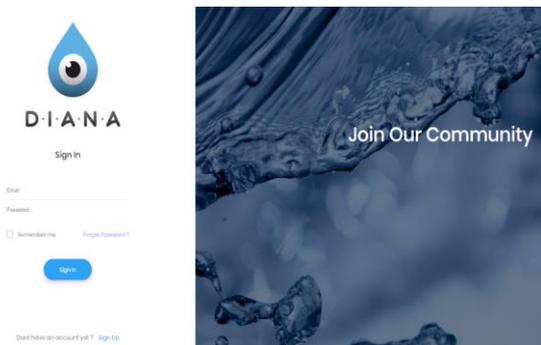
Scarcity of water resources and drought that is becoming a frequent phenomenon

Traditional time-consuming and costly field inspections



D · I · A · N · A

DIANA: commercial platform



**Non-authorized water
abstraction detection and
monitoring**



**Seasonal drought forecasting
and monitoring**



**Support for monitoring the
WFD**



- 1- Bembézar
- 2- Mancha Oriental

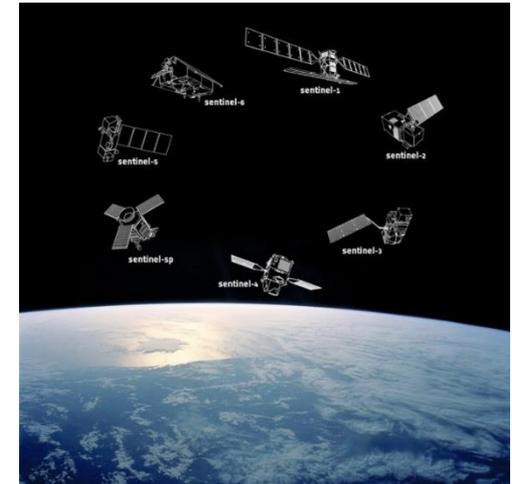
- 3- Tierra del Vino
- 4- Bajo Jalón





DIANA products based in EO

 Information from **remote sensing data** → **Copernicus** programm.

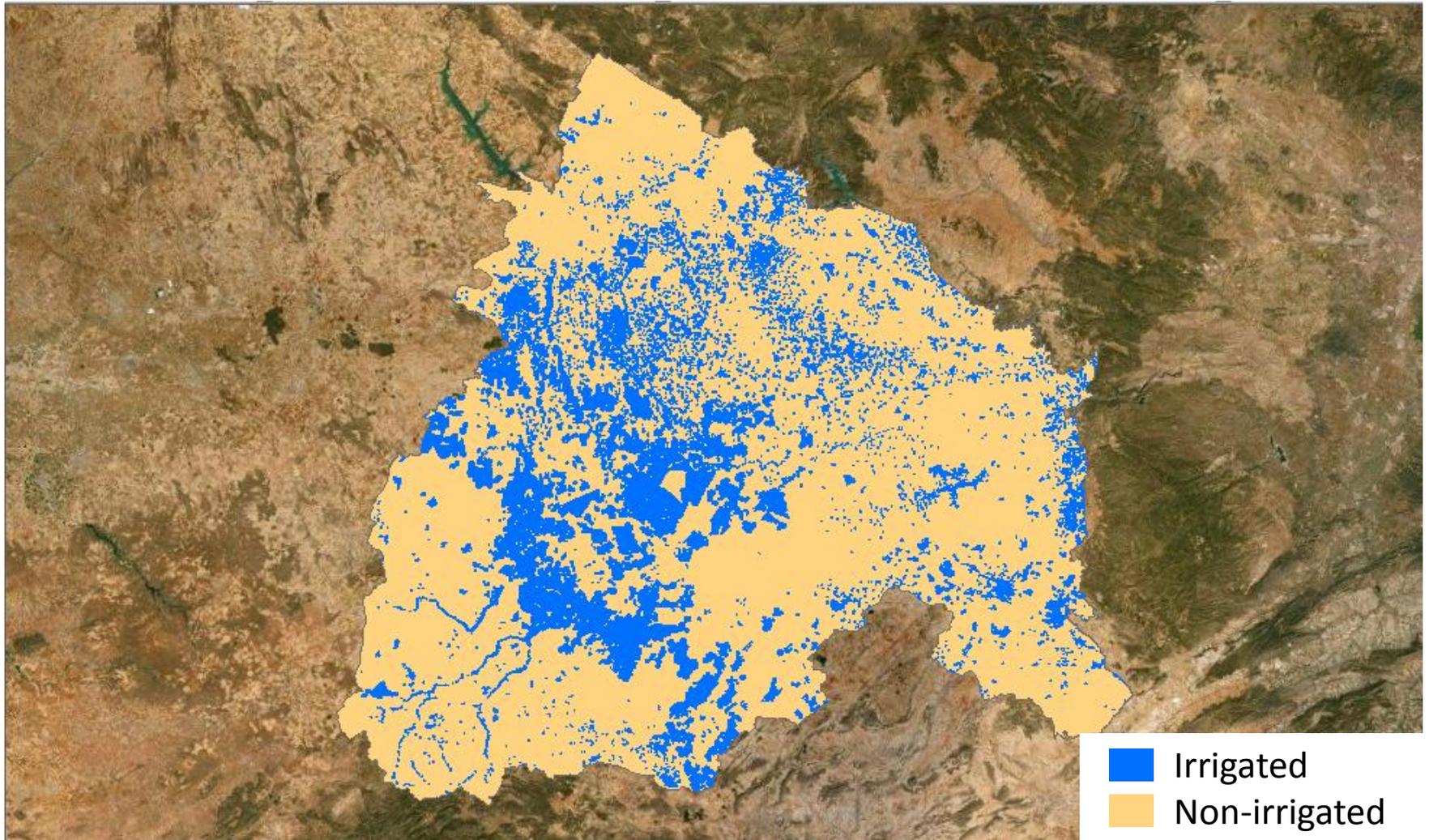


 Mature methodology, validated and recognized by the users themselves, with a history of more than 20 years of operational use (Mancha Oriental, ERMOT project).

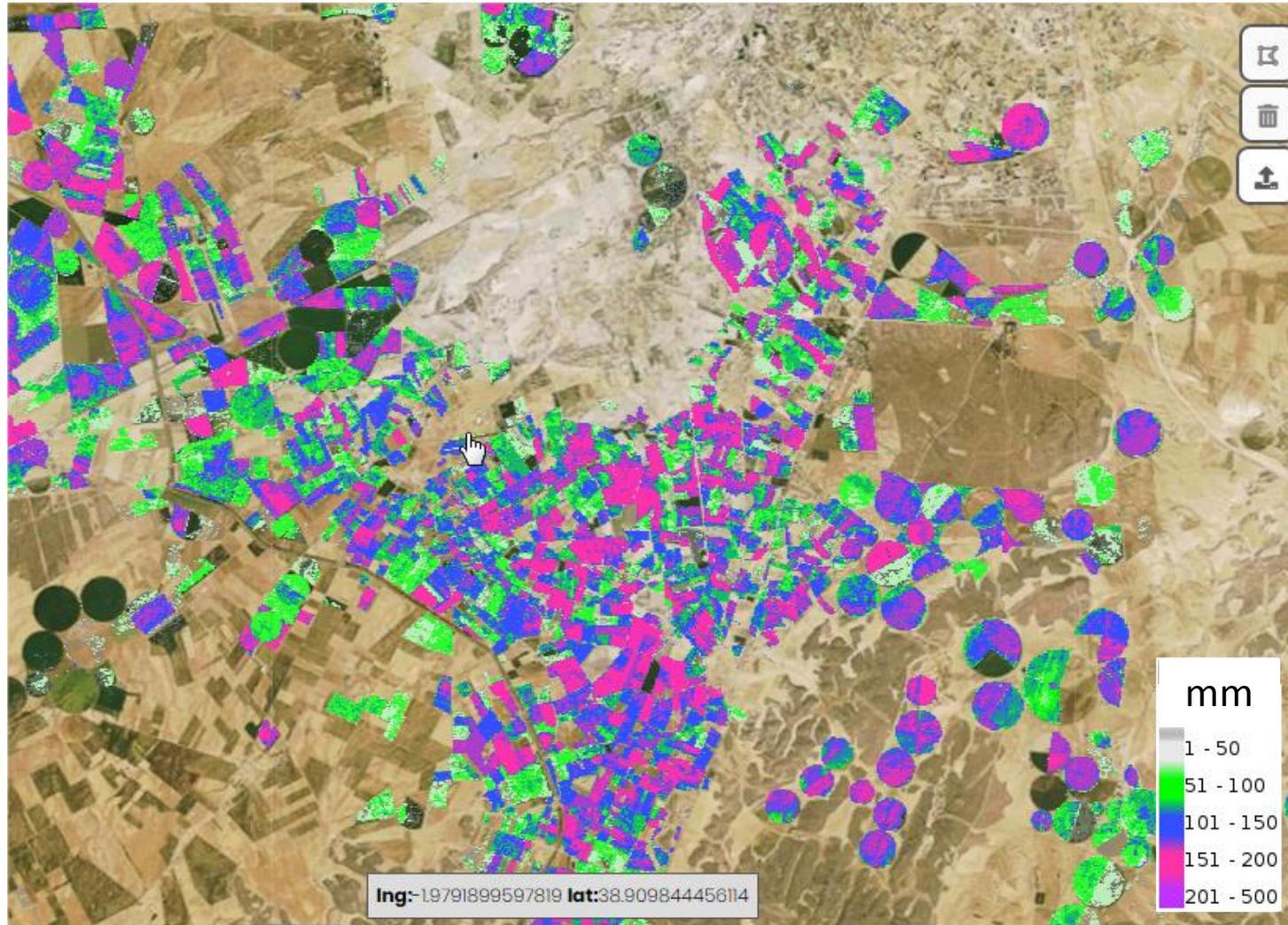


Water Abstractions Monitoring

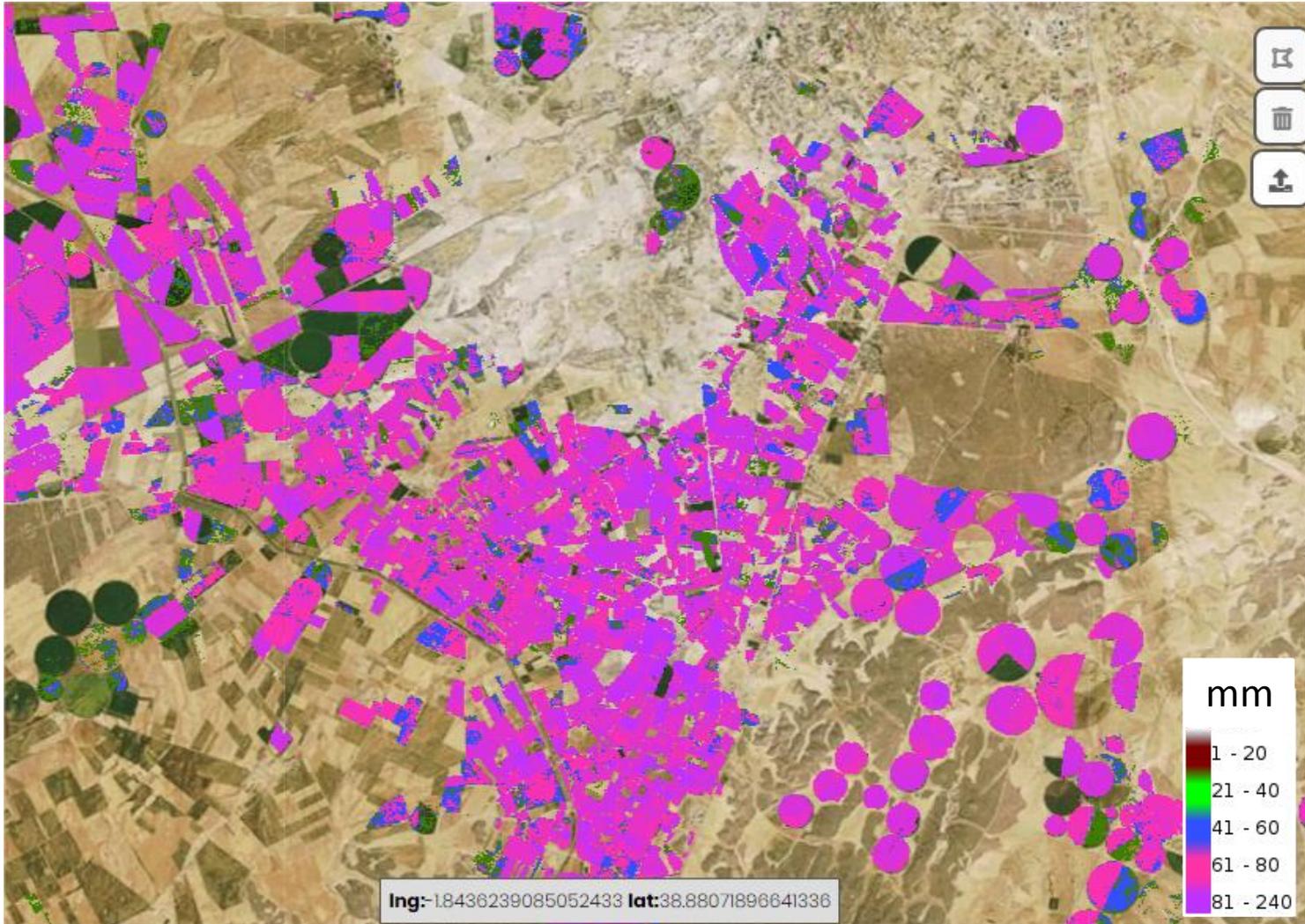
Map of Irrigated Areas

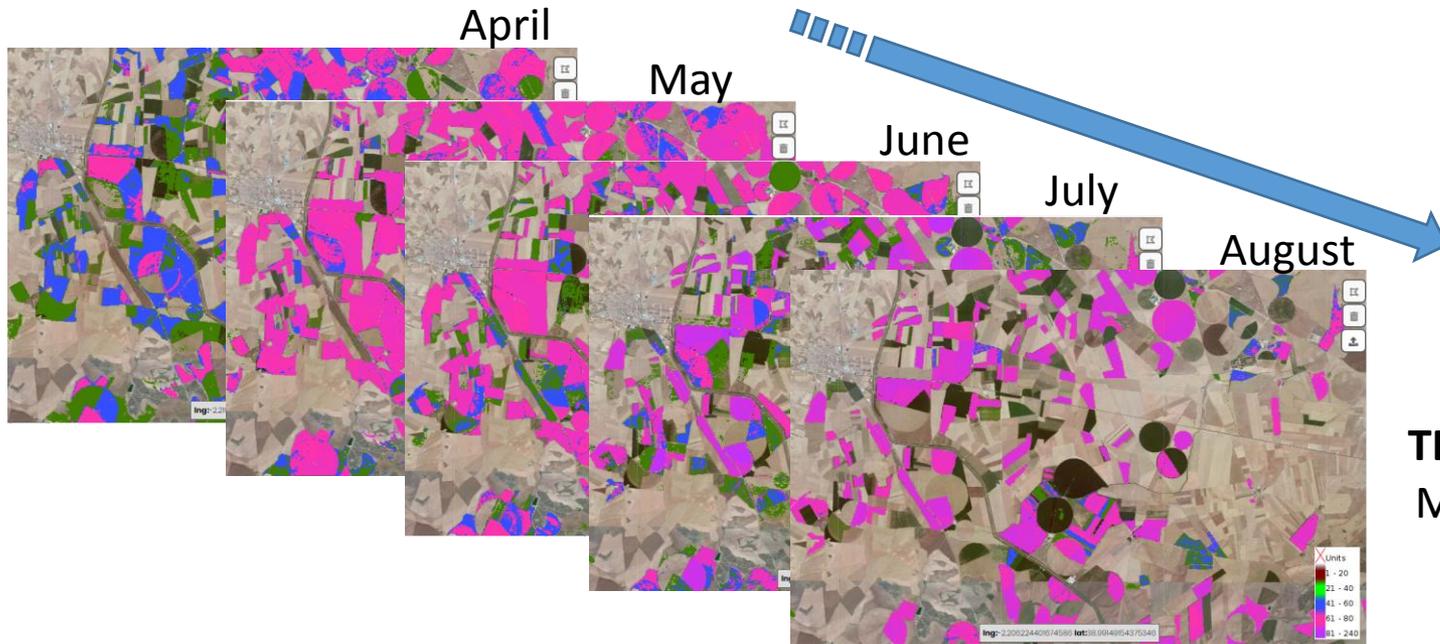


Map of Water Requirements



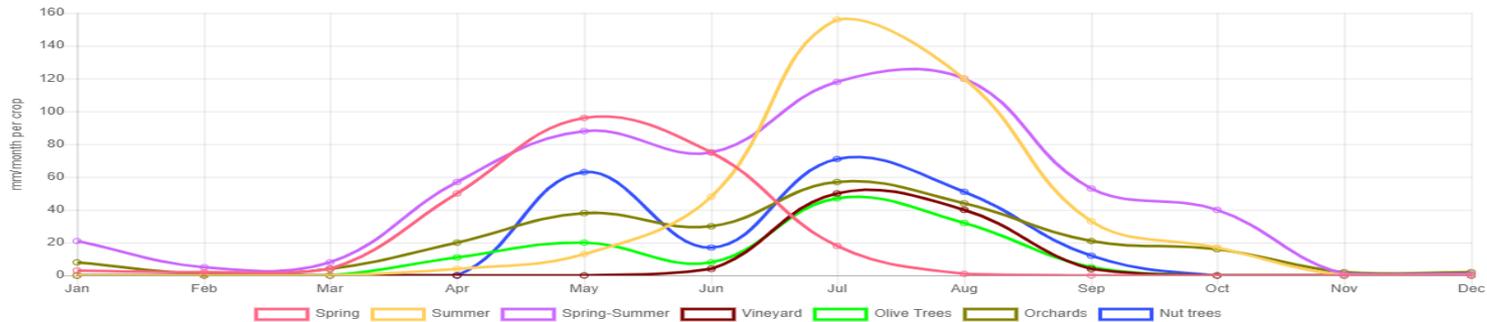
Map of consumed volumes

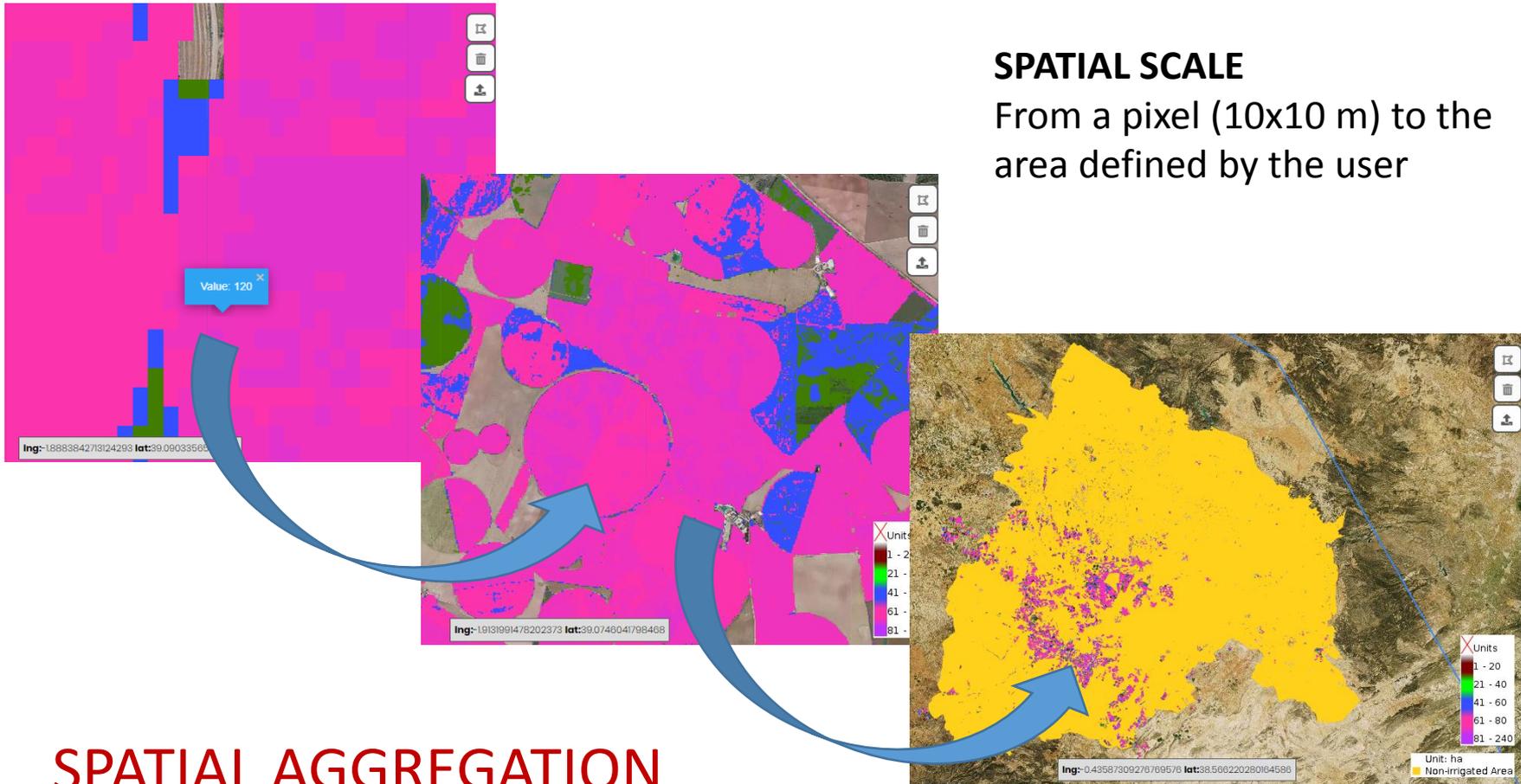




TEMPORARY SCALE
Monthly \leftrightarrow Annual

MONTHLY AVERAGE IRRIGATION PER CROP TYPE





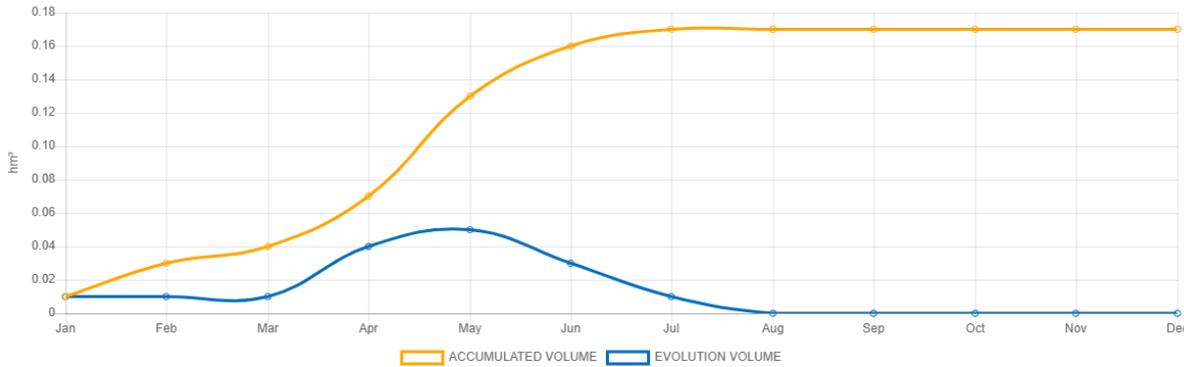
SPATIAL SCALE

From a pixel (10x10 m) to the area defined by the user

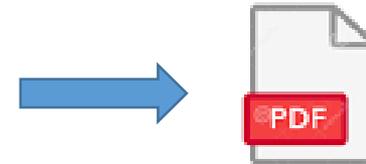
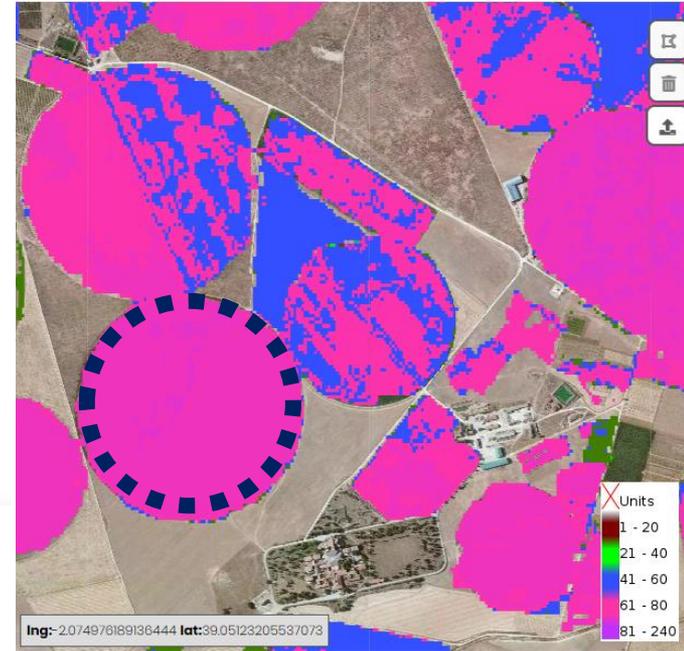
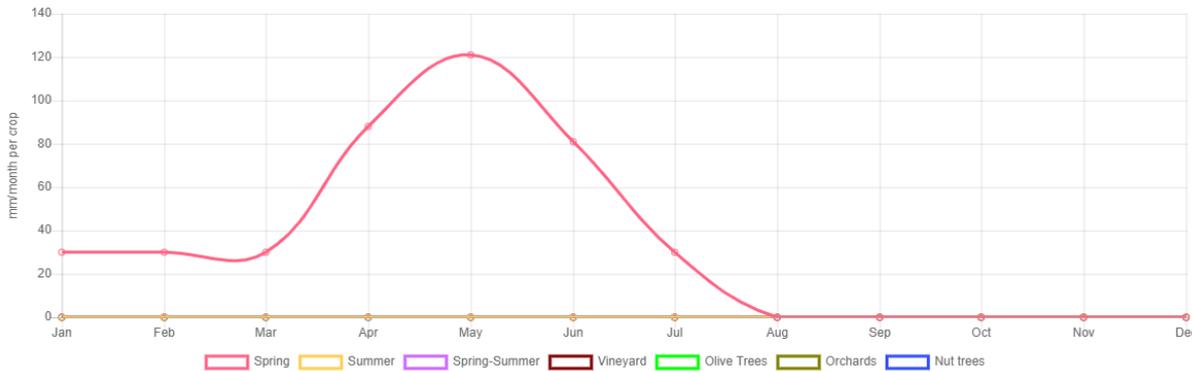
SPATIAL AGGREGATION

(mínimum pixel 10x10 m)

EVOLUTION AND ACCUMULATED VOLUMES



MONTHLY AVERAGE IRRIGATION PER CROP TYPE



2019 – Last year & Post-DIANA

Oct/Nov/Dec

2020

Evaluation



Fully operational DIANA platform as support to Planning and Control of unauthorized extractions



diana.agroapps.gr/#/water-abstractions

DIANA

Hola, María Llanos

Water Abstractions Drought Monitoring Water Framework Directive Areas Fields

PEAK DEMAND - MONTH

83 mm - Jun

IRRIGATED AREA

109.231 ha

ACCUMULATED VOLUME

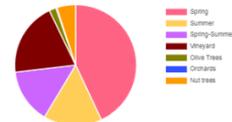
400.48 hm³

NON IRRIGATED AREA

931.268 ha

HA VOLUME

AREA PER CROP TYPE (%)



IRRIGATED AND NON-IRRIGATED AREA





¡GRACIAS !

mulțumesc!



THANKS

teşekkürler

GRAZIE

merci

ευχαριστώ

obrigad@s

dank u

<https://diana-h2020.eu/>



mllanos.lopez@agrisat.es