

Earth Observation solutions for sustainable development: Hands-on e-shape climate services

e-shape pilot ReSAgri - Resilient & Sustainable ecosystems including Agriculture & food

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Senior Research Associate

National Observatory of Athens
Institute of Astronomy Astrophysics,
Space Applications & Remote
Sensing, BEYOND Center



OF THE USERS, BY THE USERS, FOR THE USERS

- A bottom-up approach.
- Instead of developing a service and then explore the potential for its application, our research is user-driven and shaped according to user actual needs.
- Services are co-designed in order to maximise their future adoption in operational practices.
- Rapid prototyping of the main service, followed by development of satellite services.
- Three main sectors:
 - i. Agro-Insurance
 - ii. Farmers' Cooperatives
 - iii. Industry



JOHN DEERE



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agriscience



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ResAGRI

ResAGRI - Resilient and Sustainable ecosystems including Agriculture and food

A service developed under Showcase 6 Pilot 4 of e-shape H2020 project, embracing four main pillars



Adverse Selection tool

Through an analysis of multi-decade high-resolution reanalysis data, underlying risks associated within a given agricultural parcel are identified, to support the everyday work of an underwriter.

[View the platform](#)



Damage Assessment

Damage assessment supporting tools tailored for multiple weather-related perils and based on the exploitation of EO, IoT and cloud processing technologies. Promotes rapid pay-outs and simplifies claims processes after a disaster.

[View the platform](#)



High Level Monitoring

Large scale insurance product/risk monitoring that allows for assessment of the risk at which the insurance company is exposed to from a higher level.

[View the platform](#)



Early Warning Suite

Early warning services leveraging on numerical weather prediction data, that provide weather-related alerts and warnings (flood, heavy precipitation events, heatwave, frost, gale winds) to the farmers at very high spatial resolution.

[View the platform](#)

AGRO-INSURANCE SECTOR NEEDS

UNDERWRITING

The capability to tailor insurance costs according to parcel vulnerability

DAMAGE ASSESSMENT

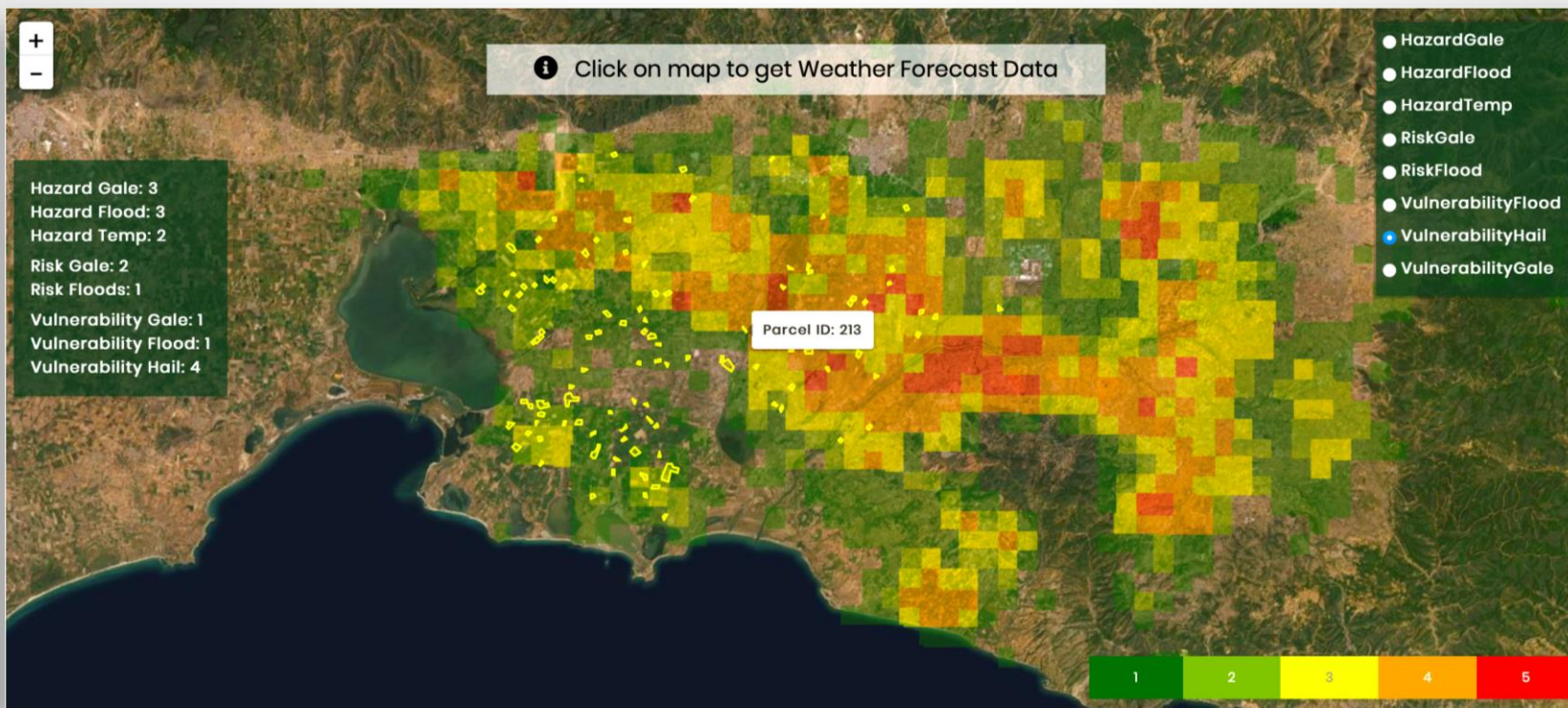
Reduce excessive physical evaluations and promote rapid payouts

EARLY WARNING

High resolution forecasts to consult clients on approaching perils

FREUD PROTECTION

Avoid fraudulent client applications in vicinity to extreme weather events



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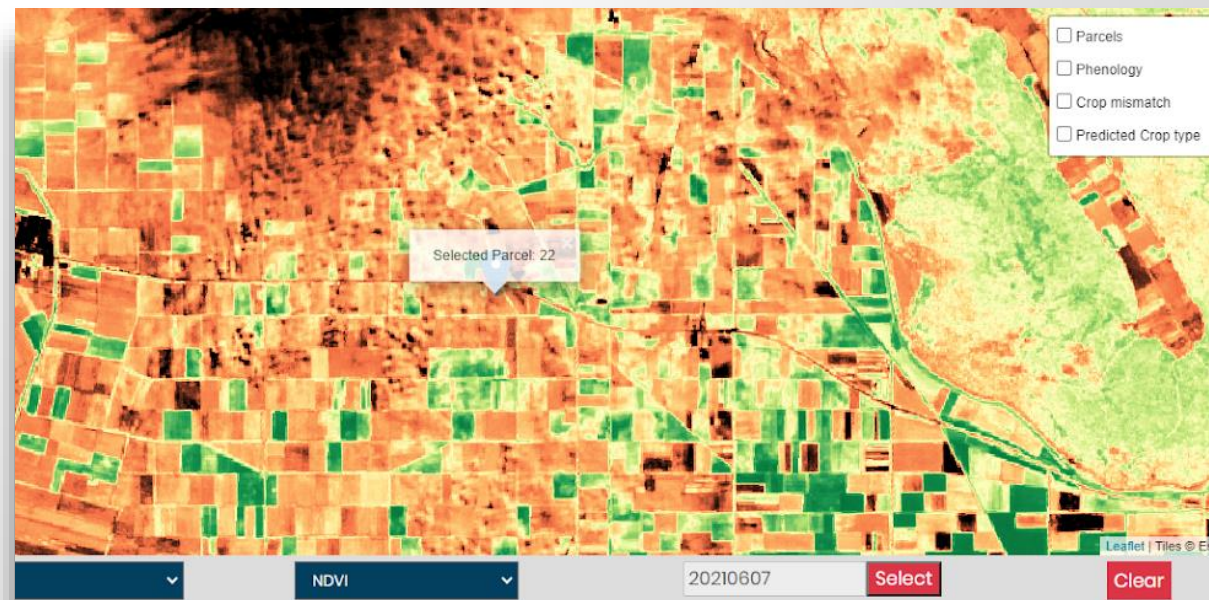
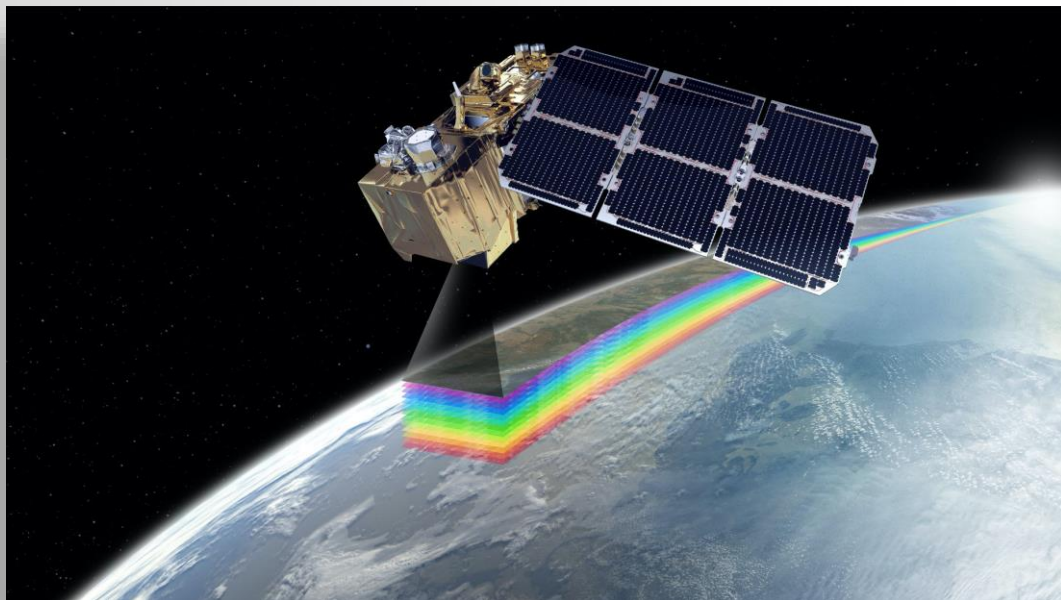
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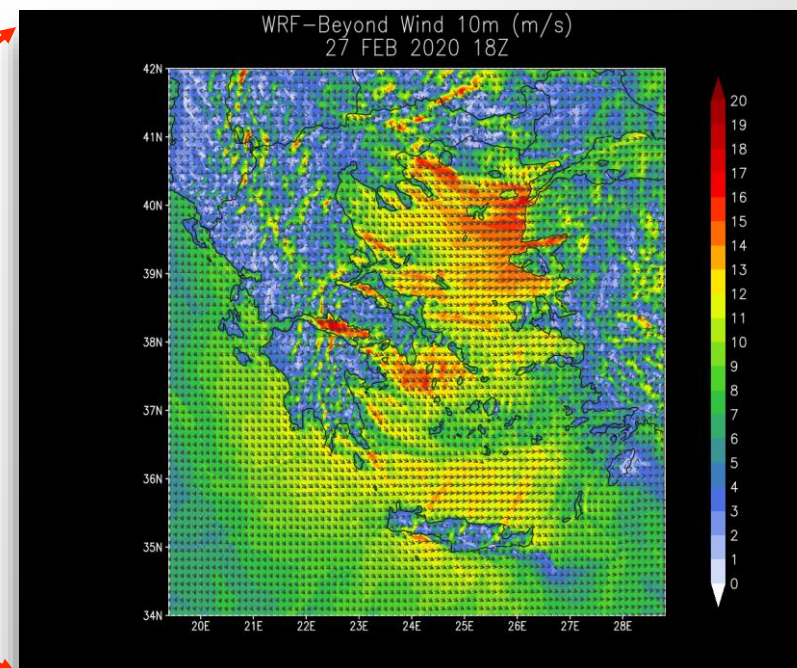
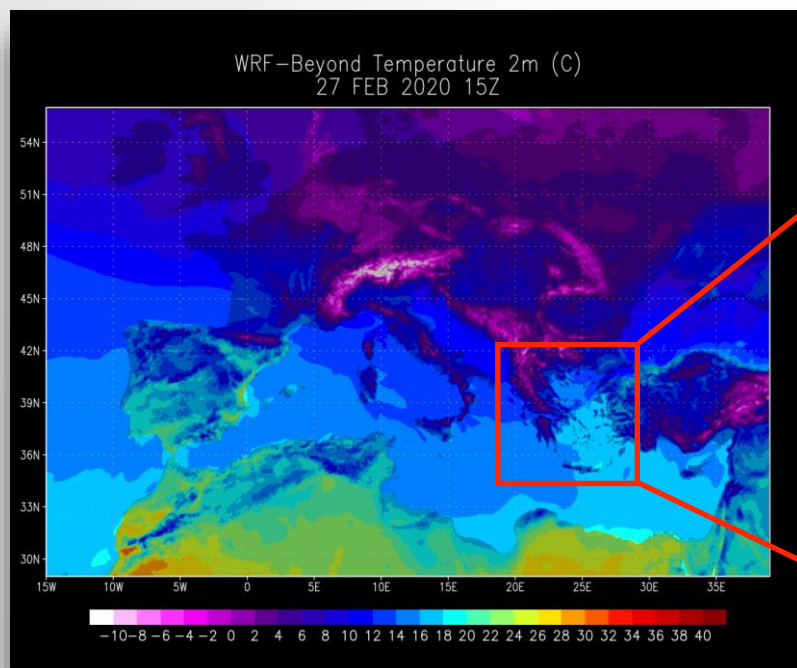
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ResAGRI Weather Risk

iLot Number	WRF-2day				GFS-10day			
	Extreme Temperature	Gale Winds	Heavy Precipitation Event	Hailstorm Risk	Extreme Temperature	Gale Winds	Heavy Precipitation Event	Hailstorm Risk
6295466982356								
6059046202034								
3753561273005								

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FARMER COOPERATIVES SECTOR NEEDS

WHEN TO SEED?

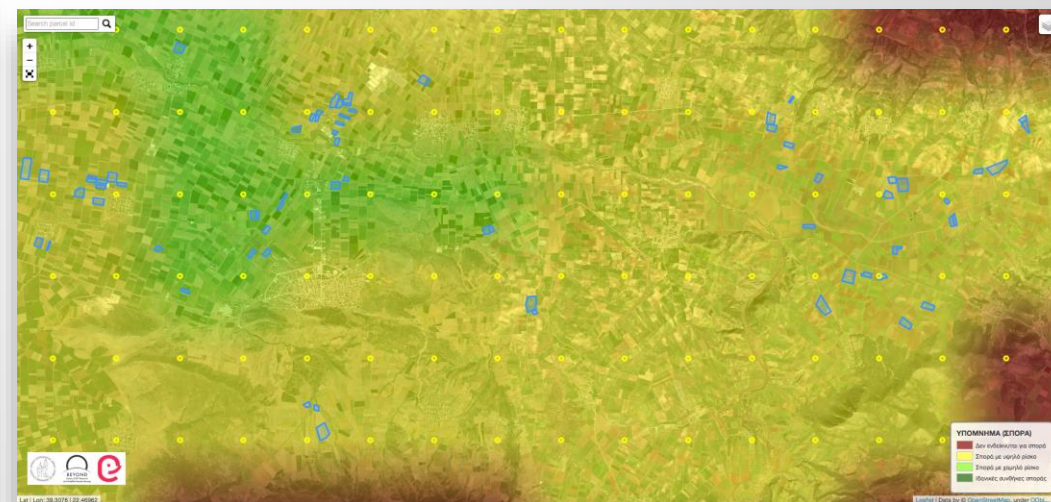
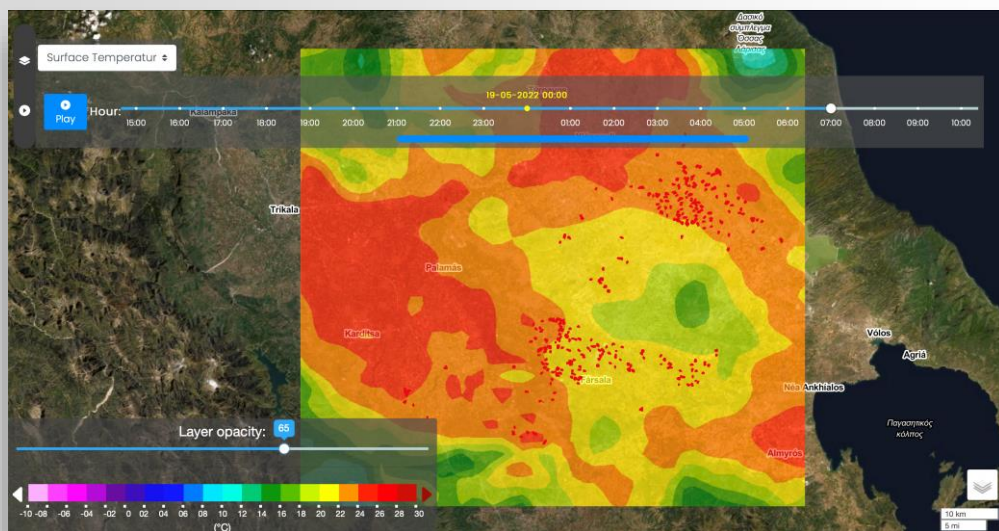
Via AI utilisation of soil & atmospheric simulations

WHEN TO IRRIGATE AND FERTILISE

High resolution forecasts to consult farmers on approaching weather perils

PHENOLOGICAL STAGE

e.g. to apply pix growth regulator at squaring stage



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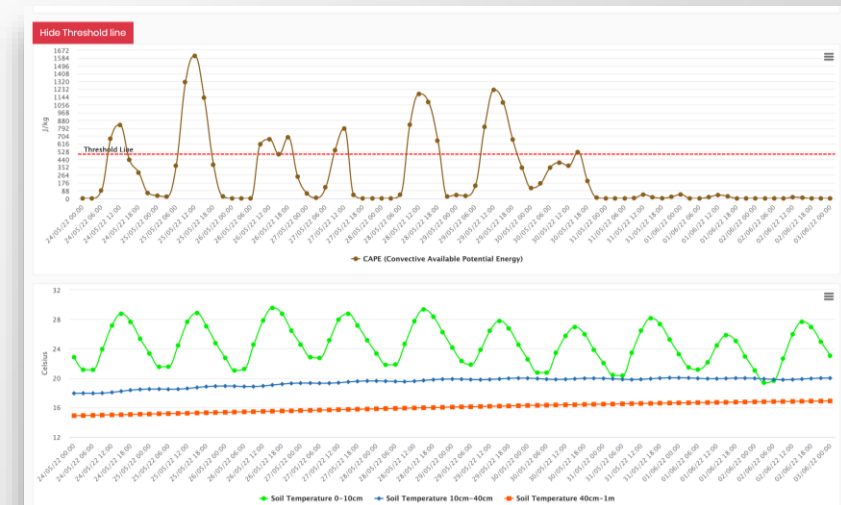
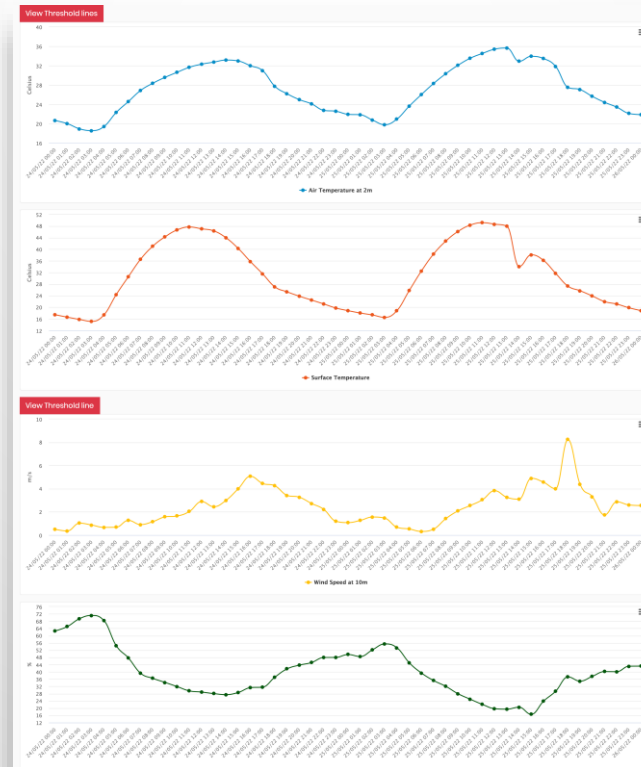
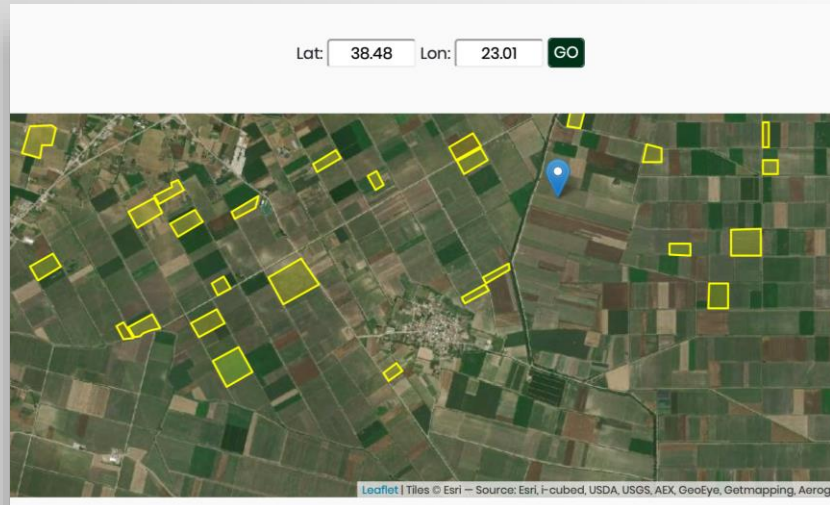
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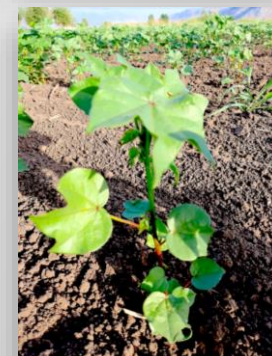
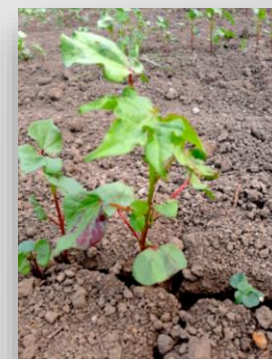
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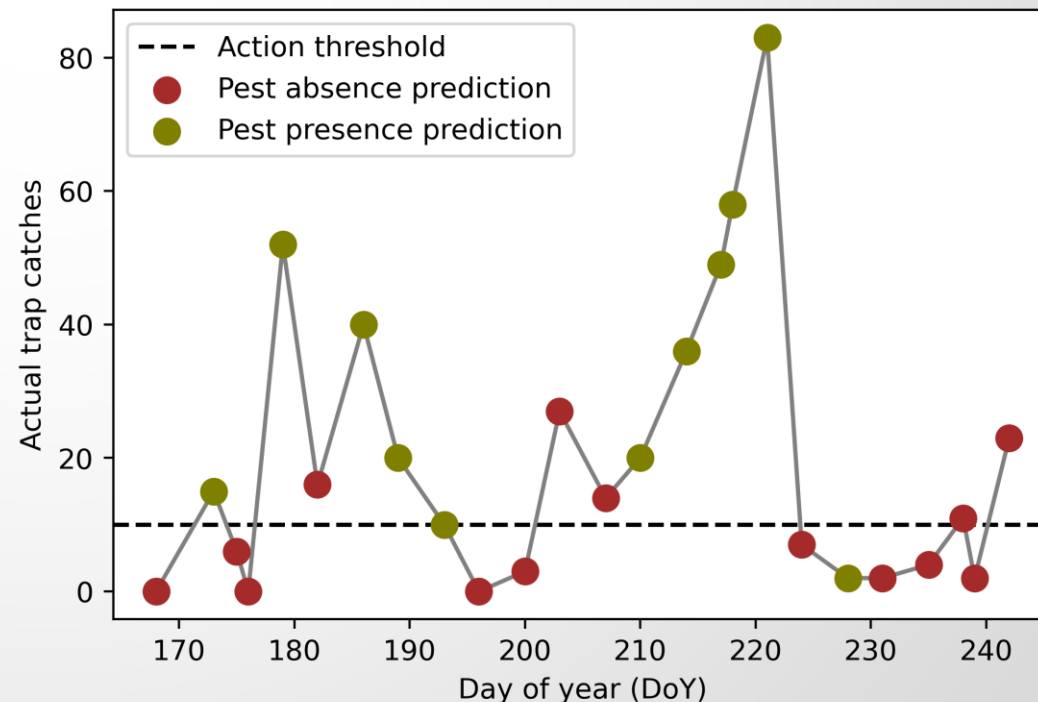


AGRO-INDUSTRY NEEDS

SOWING MAPS & PEST CONTROL
Sowing for additional crops & regions, consult upon pesticide use

YIELD ESTIMATION
Accurate estimation of total yield per hectare, months before harvest

INTRA-PARCEL INSIGHT
Identification of delays in crop growth early in the season to prevent production fallback

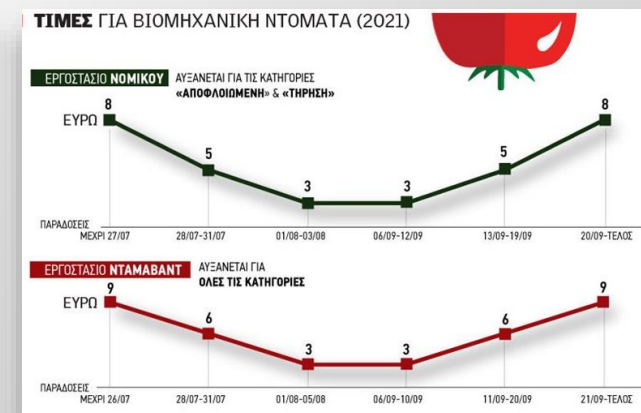
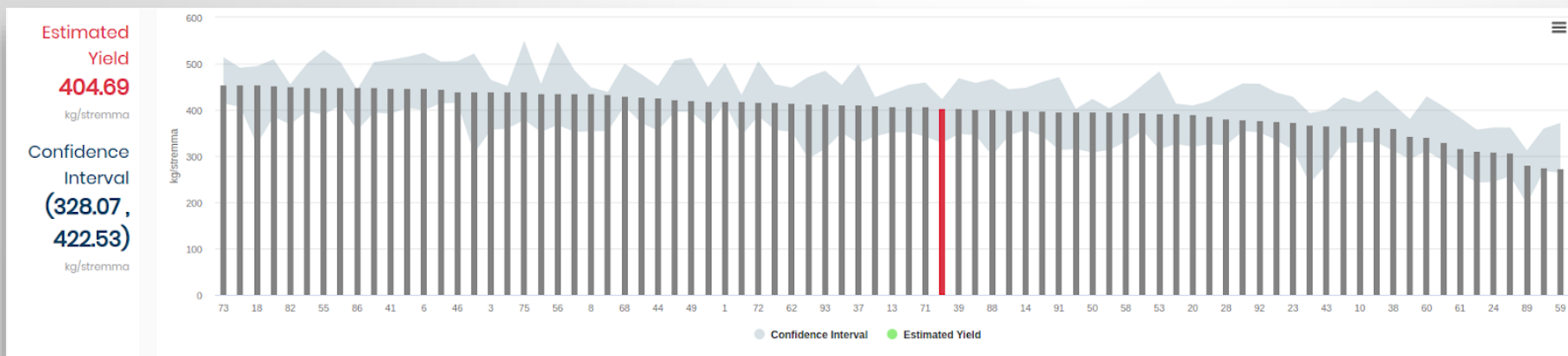


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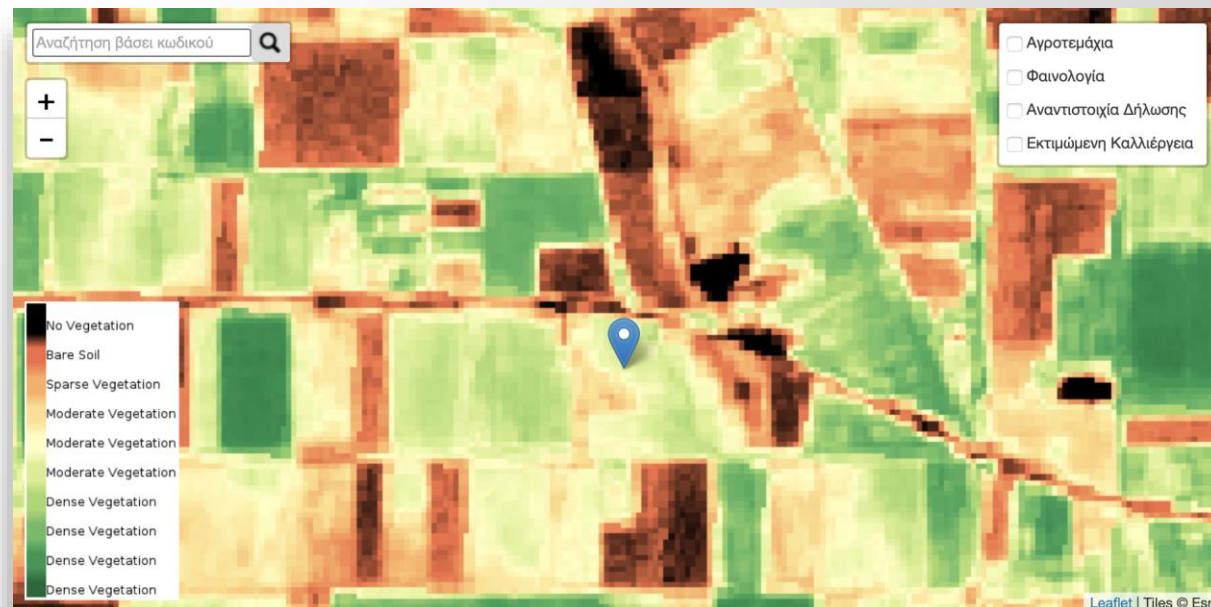
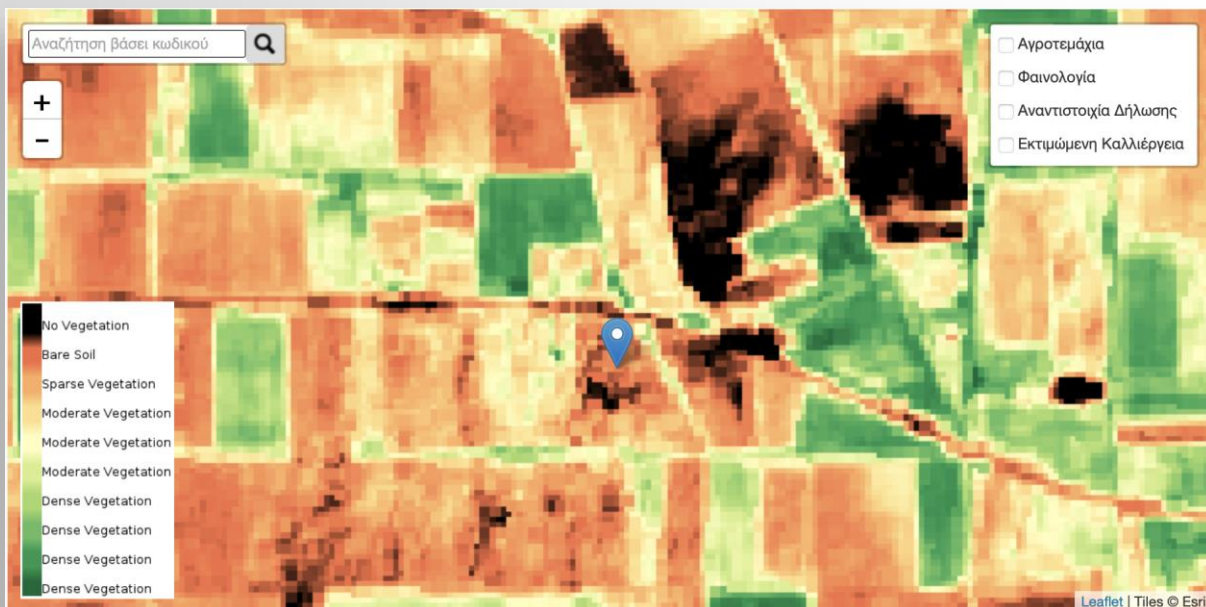
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Türkiye
Uzay Ajansı



Thank you

<http://www.resagri.eu>

<http://agrowth.beyond-eocenter.eu>

IMAGINATION
TAKES US
BEYOND
OUR LIMITS

